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Jamie McGrath

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PEACETIME NAVAL REARMAMENT, 1933–39

Lessons for Today

Jamie McGrath

[T]o maintain a navy which is not strong enough to win in battle is the worst form of extravagance.

REPRESENTATIVE CARL VINSON, 1934

The election of President Franklin D. Roosevelt in 1932 sparked an unprecedented peacetime naval rearmament that ultimately prepared America to fight and win World War II. The Republican administrations of the 1920s, driven by isolationism and austerity, had made a series of decisions that left the fleet underresourced and therefore incapable of defending the nation from a determined adversary. Roosevelt's efforts, combined with congressional action led by Representative Carl Vinson (D-GA), turned around a decade of neglect of the Navy, funded a balanced fleet, and revitalized the American shipbuilding industry.¹ The service and the industry responded immediately, building modern ships to designs that had been refined throughout the 1920s.

The post–Cold War decline of the U.S. fleet in many ways mirrors the decline that followed World War I. Calls today for a 355-ship “Navy the Nation Needs” appear to be in line with the actions taken in the 1930s to recover naval strength.²

Captain Jamie McGrath, USN, joined the Joint Military Operations faculty of the Naval War College in July 2017 following his tour as Chief, Joint Exercise Division, Joint Staff J7. A nuclear-trained surface warfare officer, he has served in a variety of billets at sea and on operational staffs, including command of Maritime Expeditionary Security Squadron 7 in Guam. He holds a BA in history from Virginia Tech, an MA in national security and strategic studies from the Naval War College, and an MA in military history from Norwich University.

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However, the principal actors differ significantly in their levels of commitment and coordination. Whereas the naval rearmament of the 1930s aimed to achieve desired ship numbers in under a decade, today's rebuilding plan projects a completion date over forty years in the future. The rapid growth of shipbuilding contracts in the mid-1930s forced shipbuilders to expand their collective infrastructure and workforce, while today's modest increase in projected construction rates leaves shipbuilders cautiously optimistic, at best, about investing in growth.

During the 1930s, the executive and legislative branches worked in concert with the Navy and industry to coordinate a rebuilding of the infrastructure needed to build a fleet rapidly in time of war. That level of close coordination is missing today, which threatens to leave America unprepared for future naval conflict.

AFTER WORLD WAR I: DECLINE OF THE FLEET

On Armistice Day 1918, the United States possessed one of the most modern fleets in the world and was building toward a navy equal in strength to the Royal Navy. However, post-World War I efforts to end future conflict, initiated by the United States and supported by the other major world powers, began in 1921–22 with the Washington Naval Conference. The resulting Five-Power Treaty called for a ten-year capital ship building “holiday” and placed restrictions on the size and numbers of future capital ships. To comply with the Five-Power Treaty’s limits, the United States scrapped seven of nine battleships and four of six battle cruisers laid down between 1919 and 1922, and America built no new battleships until 1937.³ The treaty also restricted the construction of various smaller warships.

However, successive Republican administrations, focusing on fiscal austerity and isolationist policies, chose to fund American naval construction at levels well below treaty limits. Throughout the 1920s, the General Board of the U.S. Navy, tasked with advising the Secretary of the Navy on naval policy, remained frustrated with the continued refusal of presidents and Congress to fund shipbuilding, not merely to have sufficient ships, but to field prototypes of new technologies so they could be evaluated in the fleet. While this forced the Navy to explore theories on the application and operationalization of sea power, ideas alone—without modern ships to execute them—were insufficient for national defense. Recognizing the impact of delaying warship construction, the General Board continued to advocate for building to the treaty limits to maintain sufficient capability to defend against the Japanese, who were widely recognized at the time as the most likely adversary of the United States. Unfortunately, the American political climate of isolationism and austerity precluded such shipbuilding, so the board continuously tailored its annual recommendations to make them more palatable to a reluctant Congress.⁴

As a result of this congressional reluctance, the U.S. Navy designed and built only two classes of ships following the completion in 1923 of the World War I construction program. These cruisers and submarines were developed in direct response to the perceived threat from Japan. Starting in 1921, the Navy designed and built a number of submarines intended to create a force capable of operating in Japanese waters, in anticipation of supporting fleet operations in the western Pacific. The cruiser program began in response to Japanese exploitation of a

loophole in the Five-Power Treaty that restricted the size of individual warships but not aggregate tonnage. Japan used this provision to embark on an aggressive cruiser-building program that challenged American naval strength in the Pacific. The United States initiated its cruiser-building program in 1924 with two units and added six more in 1928. In 1927, the General Board requested authorization to build an additional twenty-five cruisers, but Congress cut that request in its enactment of the so-called Cruiser Act (also known as the Butler Cruiser Bill) on February 13, 1929.⁵

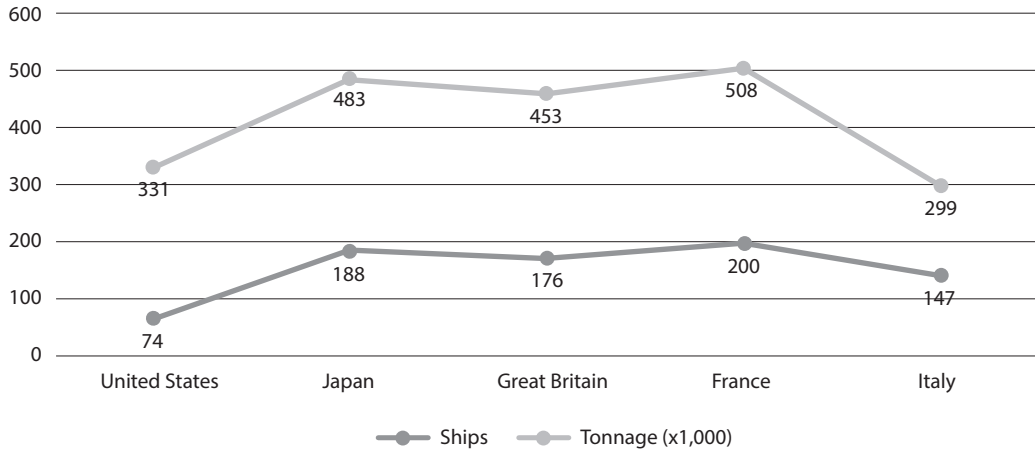
Despite this small and relatively inexpensive initiative to counter the Japanese naval buildup, lack of funding and presidential actions that delayed allocating available construction funds prevented the building of these vessels until after Roosevelt's election in 1932. By the early 1930s, the fiscal constraints of the Great Depression further curtailed construction, leaving the U.S. Navy inferior to the Japanese navy in modern warships, especially cruisers and destroyers.

The General Board and other naval advocates, including Admiral William V. Pratt, Chief of Naval Operations (CNO) from 1930 to 1933, struggled with Congress and the president to maintain a modern American fleet. But their attempts were in vain, and American underage warship numbers in the decade following the signing of the Five-Power Treaty lagged woefully behind those of the other four powers.⁶ In London in 1930, the world's major maritime powers agreed on further limitations to cruiser, destroyer, and submarine tonnages. After the signing of what is known as the London Naval Treaty, U.S. policy continued to keep the Navy below the levels the treaties allowed, in an effort to lead by example on disarmament. By 1932, with Hoover's proposed further reductions in several ship categories, there appeared to be no stopping point for naval disarmament.⁷

American constraint in shipbuilding ceded the initiative to the world's other naval powers. The other signatories to the Five-Power Treaty continued to build warships aggressively in the first decade under the treaty's constraints, as shown in figure 1. Japan, Great Britain, and France each executed construction programs at levels near or slightly exceeding the treaty limits. Italy's program, while slightly less aggressive, also built ships near to treaty limits in numbers, if not in tonnage. In contrast, between January 1922 and March 1933, American warship construction remained well below allowable treaty limits. Because of America's anemic shipbuilding program, the four other Five-Power Treaty signatories each outbuilt the United States, on average, by over one hundred ships and one hundred thousand tons. Japan more than doubled American shipbuilding output, giving it the parity it desired in the Pacific.

By the end of 1933, the American fleet consisted of 187 warships, only eighty-four of which were underage—less than half the number of underage ships in the

FIGURE 1
FIVE-POWER TREATY NATION WARSHIP BUILDING, 1922–33



Source: Derived from U.S. Navy Dept., *Annual Report of the Secretary of the Navy for Fiscal Year 1933* (Washington, DC: U.S. Government Printing Office, 1933), pp. 4–5.

fleet when the United States signed the Five-Power Treaty in 1922. This left the U.S. Navy 157,280 tons below the treaty limits for underage warships, even when including vessels under construction. This amounted to approximately ninety-six vessels below treaty limits, accounting for allowances by type. During the first ten years under the Washington Treaty system, the United States remained caught in a cycle of uncertainty over whether to spend the limited funds available on modernizing battleships, developing carriers, building submarines, supporting naval aviation, or renewing the destroyer fleet.⁸

The dearth of naval construction in the 1920s and early '30s left the American shipbuilding industry incapable of rapidly closing the gap between the shrinking fleet and the treaty limits. Over the course of the 1920s, the number of private shipyards involved in building naval vessels declined steadily. By 1933, only seven private shipyards capable of building warships remained, down from twenty-seven at the end of World War I. Many of the yards that had been building naval vessels turned to other products, such as railroad cars, fishing vessels, or luxury yachts, to maintain financial solvency.

But the reduction in the number of shipyards represented only a portion of the decline in shipbuilding infrastructure. Capacity degraded across the entire range of shipbuilding capabilities throughout the 1920s. Among the significant losses were the physical infrastructures needed to construct ships, such as building ways, and the cranes and outfitting equipment that were sold off to cover lack of profit. Commercial shipbuilding also suffered during this period, further diminishing the shipbuilding industrial base. Shipbuilders were not the only ones that suffered; ancillary industries, such as producers of marine propulsion

systems, armor, and engineering equipment, and even steel manufacturers, also contracted because of the loss of shipbuilding contracts.⁹

The loss of private shipyards and the underemployment of navy yards further led to the loss of workers with critical skills. Design capability eroded as trained naval architects and draftsmen left the business, but the loss of shipyard labor, especially skilled labor, had the most dramatic impact. During the 1920s, both the government's navy yards and private shipyards were unable to attract workers. In 1923, when the Five-Power Treaty went into effect, private shipyards in America employed 68,100 workers. By 1933, less than half that number—33,800 shipyard workers—remained at work in private yards. Because it appeared that jobs were not available in the shipbuilding industry, colleges saw severe declines in enrollment in marine engineering and naval architecture programs. Additionally, fewer people were learning the mechanical trades of shipbuilding, because active apprenticeship programs were no longer available. Workers who possessed those skills, as well as experienced draftsmen and ship designers, drifted away from shipyards, both government and private, to other industries in pursuit of paying employment. This drain in skilled workers represented “one of the most serious handicaps to a revival of shipbuilding.”¹⁰

THE 1930s: REARMAMENT BEGINS

The efforts of American naval leaders in the decade leading up to Roosevelt's election prepared the U.S. Navy to build a balanced fleet once naval construction authorizations and appropriations arrived. Although the General Board's influence waned during Admiral Pratt's tenure as CNO in the early 1930s, the road map outlined in the board's 1922 *U.S. Naval Policy* served as a guide for the naval rebuilding program of the mid-1930s.¹¹

Three mutually dependent concepts—War Plan ORANGE, the “balanced fleet,” and the “treaty navy”—helped secure internal cohesion and external support for naval construction when funding again became available. War Plan ORANGE did not constitute a specific plan, but it represented the manner in which USN planners envisioned fighting a war in the Pacific, using “orange” as the code word for Japan in U.S. planning parlance. The need to transit the vast open-ocean areas of the Pacific to reach the expected battle zone drove fleet and warship design throughout the 1920s and '30s.¹² The balanced fleet concept recognized that, while battleships remained the cornerstone of the Navy's ability to control the seas, a range of smaller vessels played crucial roles in that effort as well. The treaty navy concept that Pratt espoused provided the “magic formula for securing appropriations” despite American distrust of war machines and war manufacturing.¹³ The 1930 London Naval Treaty extended the capital ship building holiday to 1937, but it also extended tonnage limits across other classes of warships, so

Pratt advocated for building ships within the available treaty tonnage that supported the aging battle line. Additionally, by the 1930s, the importance of aircraft carriers and their associated aircraft had been demonstrated, so—with over fifty thousand tons of aircraft carrier tonnage available under the London Naval Treaty—the Navy encouraged expansion of the American carrier force.¹⁴

Pratt's successor as CNO, Admiral William H. Standley, and the chief of the Bureau of Construction and Repair, Rear Admiral Emory S. Land, worked closely with Representative Vinson to shape legislation that satisfied the Navy's construction needs and met congressional expectations for rebuilding American naval capability.¹⁵ This level of close cooperation between the Navy leadership and Congress allowed the Navy to execute shipbuilding plans rapidly when funds became available.

Legislation and Directives

A naval enthusiast since his time as Assistant Secretary of the Navy under President Woodrow Wilson, Franklin Roosevelt possessed an excellent grasp of naval issues. Now, as president, Roosevelt had authority over domestic and foreign affairs, which allowed him the resources to achieve the American naval supremacy in which he believed.¹⁶ In May 1933, as part of his effort to bring the country out of the Depression, Roosevelt submitted massive public works legislation that became the National Industrial Recovery Act (NIRA), which included provisions for funding naval construction. Under this legislation, Roosevelt allocated \$238 million to the Navy—nearly seven times the shipbuilding appropriation for fiscal year (FY) 1934. Since shipbuilding was a very labor-intensive activity, its value as a work-relief program alone justified this spending, but the boost in deliveries of modern naval vessels also improved the fleet. In March 1934, Representative Vinson ensured passage of the Vinson-Trammell Act (also known as the Naval Parity Act and the First Vinson Act), which made it U.S. policy to build ships up to the treaty limits and to replace ships as they aged, as the treaties then in effect allowed. These efforts combined not only to provide the U.S. Navy with a modern fleet to counter Japanese assertiveness in Asia but also to promote the strengthening and growth of the U.S. shipbuilding industry, which had languished in the 1920s owing to the lack of work.

Executive Order (EO) 6174, issued on June 16, 1933, the day after Roosevelt signed the NIRA into law, granted the Federal Emergency Administrator of Public Works “authority to allot the sum of not to exceed \$238,000,000 to the Department of the Navy for the construction of certain vessels, the construction whereof conforms to the London Naval Treaty and has heretofore been approved by me.”¹⁷ Coupled with the FY 1933 appropriation, the Navy now had nearly \$282 million to spend on new construction—a figure twice that allocated for shipbuilding in any year since 1920. Naval historian Samuel Eliot Morison credits Roosevelt's use

of NIRA funds to restart the naval building program as the principal impetus of the U.S. Navy's rebirth.¹⁸

On August 3, 1933, less than two months after Roosevelt's executive order, the Navy awarded contracts for the aircraft carriers USS *Yorktown* (CV 5) and USS *Enterprise* (CV 6), one heavy cruiser, two *Brooklyn*-class light cruisers, twelve *Gridley*-class destroyers, and three submarines to private shipyards, and contracted for two more destroyers on August 20, 1933. Orders for an additional two light cruisers, ten destroyers, and two submarines went to government yards. The funds allocated from the NIRA resulted in the construction of thirty-two warships, in addition to the five ships already contracted under the FY 1933 naval appropriation. One heavy and five light cruisers authorized by the 1929 Cruiser Act remained unfunded.¹⁹

After the initial surge of naval construction funded under the aegis of employment relief, Congress, led by Representative Vinson, acted to provide the president and the Navy with permanent authority to build to treaty limits and replace overage ships. Vinson's powerful influence resulted in passage of the aforementioned Vinson-Trammell Act of 1934, which provided what Vinson referred to as blanket authority for ship construction and replacement to treaty limits. Naval historian Norman Friedman describes the Vinson-Trammell Act as "fundamental legislation" that called for the Navy to maintain an underage treaty fleet.²⁰

Vinson and the Navy wanted a long-range plan for naval construction rather than an emergency program that was executed only when a crisis arose. Such a plan allowed for several improvements, including steady employment of available shipyards, incorporation of changes in ship design on the basis of operations, and prevention of block obsolescence. Vinson stressed that spreading ship construction out over several years allowed for the testing of various types and making improvements. It also allowed for delaying construction of smaller, more quickly built vessels, so that they would be delivered when the larger ships they were designed to support became available. Additionally, Vinson argued that building ships at a steady, predictable rate reduced unit costs, saving the American people money.²¹

The Vinson-Trammell Act authorized expansion of the Navy from its current state, but only to the limits permitted under the Five-Power Treaty of 1922 and the 1930 London Naval Treaty. An excerpt from the act follows:

That[,] subject to the provisions of the treaties signed at Washington February 6, 1922, and at London, April 22, 1930, the President of the United States is hereby authorized to undertake prior to December 31, 1936, or as soon thereafter as he may deem it advisable (in addition to the six cruisers not yet constructed under the Act approved February 13, 1929 (45 Stat. 1165), and in addition to the vessels being constructed pursuant to Executive Order Numbered 6174 of June 16, 1933), the

construction of: (a) One aircraft carrier of approximately fifteen thousand tons standard displacement, to replace the experimental aircraft carrier *Langley*; (b) ninety-nine thousand two hundred tons aggregate of destroyers to replace over-age destroyers; (c) thirty-five thousand five hundred and thirty tons aggregate of submarines to replace over-age submarines.²²

Several critical elements in this section of the act demonstrate the close coordination between Congress and the Navy that proved critical to restoring the fleet. First, the act acknowledged and provided congressional authorization for the ships ordered under President Roosevelt's EO 6174 of the previous summer. Second, the act directed completion of the 1929 cruiser program that had languished under President Hoover. Third, the act directed the replacement of certain overage vessels, amounting to sixty-five destroyers and thirty submarines—two categories in which the American fleet fell woefully short of treaty limits—in an effort to build a more balanced fleet. Fourth, the act recognized the intent and letter of the 1930 London Naval Treaty, calculating the available aircraft carrier tonnage to build USS *Wasp* (CV 7) to replace USS *Langley* (CV 1) to achieve the maximum number of aircraft carriers allowed under the treaty, once the latter ship was converted to a seaplane tender. This also enhanced balance by increasing the aviation capability of the fleet.

While these elements of the act allowed for immediate shipbuilding, the next section had greater implications for naval construction over the long term. “[The] President of the United States is hereby authorized to replace, by vessels of modern design and construction, vessels in the Navy in the categories limited by the treaties signed at Washington, February 6, 1922, and at London, April 22, 1930, when their replacement is permitted by the said treaties.”²³

This clause provided the authority for which the Navy had longed—namely, to plan for and build new warships as the current fleet aged. The date a vessel became overage could be predicted, replacements could be scheduled, and construction requirements could be forecast with some accuracy. Accurate forecasting allowed shipyards to hire and retain workers, knowing that a consistent flow of new construction was forthcoming.

On its passage, Vinson praised the act, stating that it “is no mere piece of paper. It means real fighting ships. We will provide the money this session to start work on part of the vessels authorized.”²⁴ Initial funding arrived when Roosevelt allocated forty million dollars from the Emergency Relief Appropriations Act of 1935 to augment the FY 1935 naval appropriations and start construction on the first twenty ships and 225 aircraft authorized in the Vinson-Trammell Act. By November 1934, the Navy let contracts and work began on these vessels, nine in private yards and eleven in navy yards.²⁵ Although the Vinson-Trammell Act provided only authorization and not appropriation, it reversed twelve years of naval

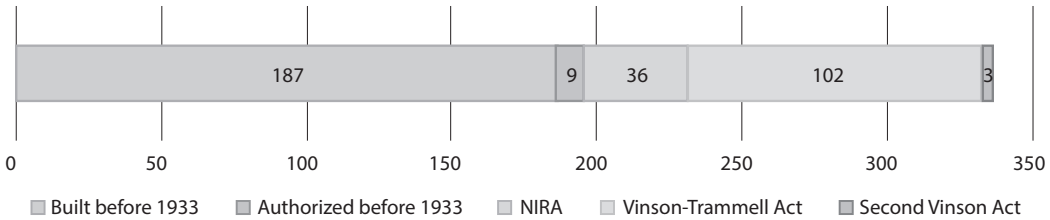
retrenchment and represented the first significant action explicitly to strengthen the Navy between the two world wars.

Nonetheless, to the dismay of naval leaders, President Roosevelt continued to react to political pressure by reducing or deferring many of the Navy's requests for new warship appropriations. Roosevelt remained especially sensitive to the political influence of those in the American peace movement and other isolationists. The 1935 naval appropriation, approved after the Vinson-Trammell Act passed, amounted to just \$11.7 million—half of President Roosevelt's request, and less than the previous year's appropriation before the influx of money from the NIRA.²⁶ However, Congress gradually approved funding, but it did so without fanfare, allowing Roosevelt to placate the isolationists by downplaying naval expansion and emphasizing that national policy aimed only to build a fleet to treaty limits.²⁷

Impact on Shipbuilding Capabilities

It was the authority that the Vinson-Trammell Act granted that allowed the Navy to accomplish its prewar cultivation of shipyards that would be capable of expanding to build a wartime fleet. In wartime, private shipyards provide critical surge capacity to build the fleet rapidly. The Vinson-Trammell Act reversed the preceding decade's shrinkage of private shipyards by allowing the Bureau of Construction and Repair to distribute construction contracts among private and government yards throughout the 1930s. This provided the shipbuilding industry with practice in the construction of new ships and new shipbuilding techniques in advance of World War II.

But the act authorized more shipbuilding than could be accomplished in available shipyards. Existing yards had to expand or more yards needed to be opened to build warships. Either option would mean greater employment. The path chosen was to expand shipbuilding infrastructure within existing private shipyards. No new private companies capable of building warships for the Navy opened yards before 1937, but each of the existing yards ramped up manpower and production capacity to meet the expanding demand. However, even with the building program implemented by the Vinson-Trammell Act and subsequent acts, the shipbuilding industry approached the high levels of production needed for wartime support only in 1941, spurred by massive 1940 building programs. In contrast, by 1938 just ten large private shipyards existed—only a modest increase. That number reached forty by 1941 and eighty by 1945, the latter representing the full expansion necessary to support the war effort and complete over 1,500 naval vessels.²⁸ While the Vinson-Trammell Act provided a reliable program and appropriations slowly followed, it took several years of combat before the volume of production needed for war was achieved. This, however, represented a marked

FIGURE 2
SHIPS IN THE U.S. FLEET, DECEMBER 1941

Sources: U.S. Navy Dept., *Annual Report for Fiscal Year 1934*, pp. 17–19; Cook, *Carl Vinson*, pp. 90–101; *Dictionary of American Naval Fighting Ships*, www.history.navy.mil/.

improvement over the World War I program, under which less than 10 percent of the projected construction was completed in time for war.

At the dawn of U.S. entry into World War II, the American fleet mustered 337 warships, consisting of ships built both before and after the signing of the Five-Power Treaty (see figure 2). The peacetime rearmament efforts of President Roosevelt and Representative Vinson contributed 95 percent of the modern warships available for the war—over 40 percent of the total active fleet on December 7, 1941. Because few of the ships laid down in the emergency programs of the 1940s were completed before the end of 1942, the fleet on hand when the Japanese attacked Pearl Harbor differed little from that which existed in the late 1930s. The ships already under construction soon more than quintupled the size of the fleet—a feat that would have been impossible to accomplish without the deliberate building program of the 1930s that the Vinson-Trammell Act of 1934 authorized.

By strengthening the shipbuilding industrial base, American shipyards prepared for the wartime surge to build the enormous fleet that eventually defeated Japan. From 1940 through 1945, American public and private shipyards produced over 1,500 naval vessels, from battleships and carriers to submarine tenders and minelayers. This number does not include the thousands of smaller vessels, from tugboats to landing craft, nor the massive merchant fleet that carried the American war machine overseas.²⁹

This effort would have been impossible to carry out in 1934, given the depressed state of the American shipbuilding industry at that time. Rebuilding the U.S. Navy in the 1930s provided not only the ships that held the line in 1942 but also the necessary time and experience for American shipyards to recover from a decade of neglect. By doubling the shipbuilding industry's workforce between 1934 and 1938, the rearmament effort restored the nucleus of skilled labor that would prove so crucial over the next seven years of increased naval construction. Shipyards expanded their infrastructure to meet the increased number of ships under construction, including modernizing building ways, machine shops, and supply chains, thereby setting up those yards for the surge of wartime construction.

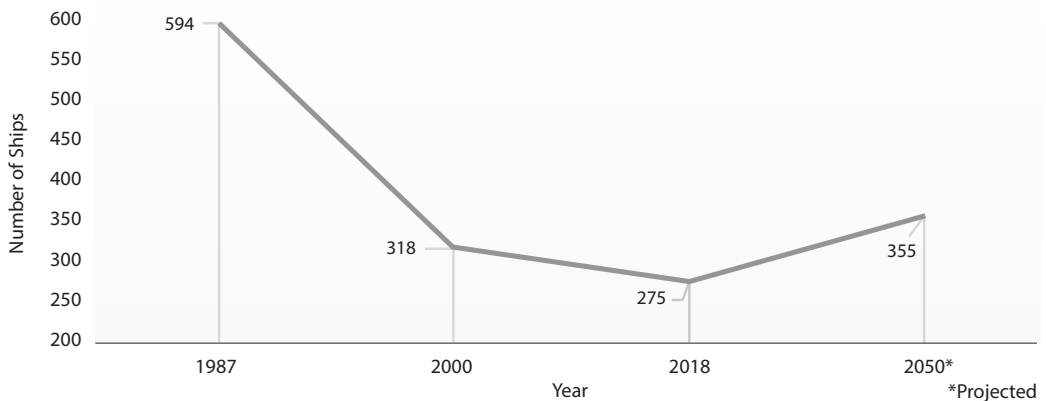
American shipbuilding during World War II was successful because of the combined and concerted efforts of the president, Congress, the Navy, and industry in the decade prior to the war.

AFTER THE COLD WAR: DECLINE OF THE FLEET

The decline of the American fleet in the years following the end of the Cold War (see figure 3) mirrors in many ways the decline of the 1920s. However, significant differences do exist, primarily in their respective forcing functions. In the 1920s, a global desire to end warfare led to international treaties that limited the size of the fleet, whereas no such conventions exist today. Instead, a perceived post-Cold War “peace dividend” initiated today’s decline.

There were other significant differences between the two declines. As mentioned above, one reason the United States limited investment in naval construction in the 1920s was its pursuit of isolationist policies that circumscribed its commitment to world politics. So, although naval leaders complained that the fleet was inadequate to project power across the Pacific, the ships of the 1920s Navy were sufficient to defend the Western Hemisphere and meet the Navy’s peacetime constabulary missions. In contrast, America not only maintained its role as a global leader in the post-Cold War era but also took on the mantle of the world’s single hegemon. Today’s fleet of 275 ships is tasked with maintaining the same level of presence as the six-hundred-ship fleet of the late 1980s, and as a result the fleet is operating at a much higher rate than it was designed to support. As Vice Admiral Thomas S. Rowden, Commander, Naval Surface Forces, noted near the end of his tenure in early 2018, “Simple math tells you that when you

FIGURE 3
POST-COLD WAR USN BATTLE FORCE



Sources: “US Ship Force Levels 1886–Present,” *Naval History and Heritage Command*, November 17, 2017, www.history.navy.mil/; 2050 projected battle force derived from FY 2019 shipbuilding plan.

had 600 ships and were deploying 100, and when you've [now got fewer than] 300 ships and you're deploying 100, there's more stress on the force."³⁰

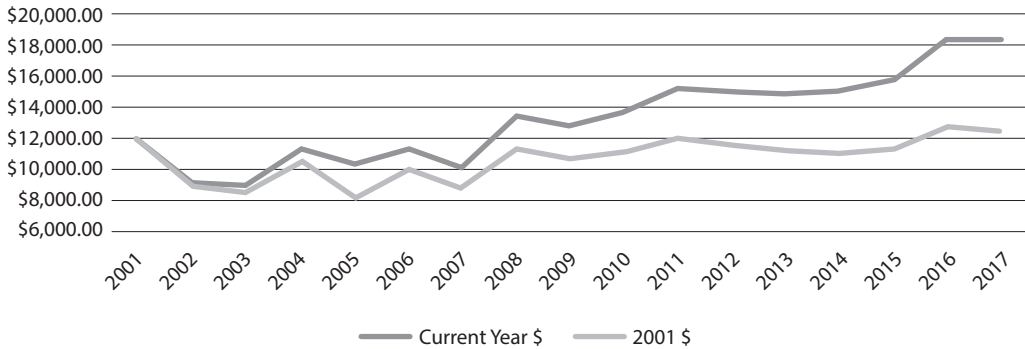
Just as in the 1920s, the post-Cold War decline of the fleet followed an impressive naval buildup, leaving a surplus of naval capacity once the conflict ended. In the final decade of the Cold War, President Ronald W. Reagan's administration dramatically increased military spending in an effort to defeat the Soviet Union. Secretary of the Navy John F. Lehman led the drive for a six-hundred-ship Navy, an effort that peaked at 594 ships in 1987. Lehman's Navy relied on recommissioned World War II-era *Iowa*-class battleships; service-life extension programs for Vietnam-era ships; and large new-construction programs, including *Ticonderoga*-class guided-missile cruisers with the new Aegis weapons system, *Oliver Hazard Perry*-class guided-missile frigates, *Los Angeles*-class attack submarines, *Ohio*-class ballistic-missile submarines, *Avenger*-class mine countermeasures ships, *Whidbey Island*-class dock landing ships, and *Henry J. Kaiser*-class replenishment oilers. Lehman also accelerated construction of *Nimitz*-class aircraft carriers.³¹

As in the 1930s, the American shipbuilding industry benefited greatly from this buildup. Naval ship construction provided 93 percent of all shipbuilding in American shipyards in 1985. This level of shipbuilding activity buoyed an otherwise stagnant manufacturing sector, provided a robust, skilled ship-construction workforce, and furnished an abundance of ships from which to draw when Congress curtailed shipbuilding in the 1990s.

The fall of the Berlin Wall in November 1989 and the subsequent dissolution of the Soviet Union on Christmas Day 1991 meant that America and its allies had won the Cold War. The aftermath brought calls for disarmament similar to those after World War I. While those calls did not result in an international disarmament treaty as in 1922, they did persuade the United States and other NATO nations to make internal decisions to capitalize on a peace dividend, including drastically cutting military spending. Without a looming adversary, the justification for large defense budgets vanished, and the United States abandoned its six-hundred-ship Navy policies and building plans. From the defense budget's peak in 1985, America slashed defense spending over the next sixteen years, cutting it to a low of 3 percent of the total budget by 2000.³²

The terrorist attacks of September 11, 2001, resulted in an immediate and dramatic increase in defense spending, but spending on naval construction remained stagnant through the first several years of the global war on terror. Shipbuilding and conversion appropriations remained below 2001 levels in current-year dollars until 2008 (see figure 4). With the additional war appropriations included, shipbuilding accounts rose slowly through the end of the decade, and at an average rate of 25 percent through the first half of the 2010s. But after

FIGURE 4
U.S. SHIP CONSTRUCTION, NAVY ACCOUNT, 2001–17



Source: Derived from Department of Defense budget estimates for Navy shipbuilding and conversion for FY 2001 through FY 2018, available at www.secnav.navy.mil/.

accounting for inflation, shipbuilding appropriations since 2001 have increased by only 9 percent.

While the 1980s provided a boom of warship and naval auxiliary construction, the 1990s saw curtailment of planned building programs, including truncating the *Seawolf* class of attack submarines to three ships from the twenty-nine planned. The majority of ships decommissioned in the first decade of the peace dividend were Vietnam War–era vessels that had reached or exceeded the end of their expected service lives. Since 2000, the Navy has decommissioned 143 vessels, many—such as the *Spruance*-class destroyers and the *Oliver Hazard Perry*-class guided-missile frigates—before the end of their planned service lives, to save the cost of maintenance and modernization. During the post–World War I and post–World War II drawdowns, the Navy retained large numbers of decommissioned vessels in inactive reserve status. By contrast, during the post–Cold War drawdown, the Navy disposed of many of the ships it decommissioned through foreign military sales or expended them as targets, making them unavailable for reactivation to expand the fleet rapidly. The result is a present-day 275-ship Navy with little capacity for rapid expansion in a time of crisis.

Since the turn of the twenty-first century, the Navy has maintained a steady but slow shipbuilding pace. Unlike during the 1920s, the modern Navy recognized the need to build a balanced fleet that included surface combatants, submarines, amphibious ships, and naval auxiliaries. The post–Cold War building programs addressed this need, but building across this range of ship types resulted in an overall reduction in the funds available to build warships.

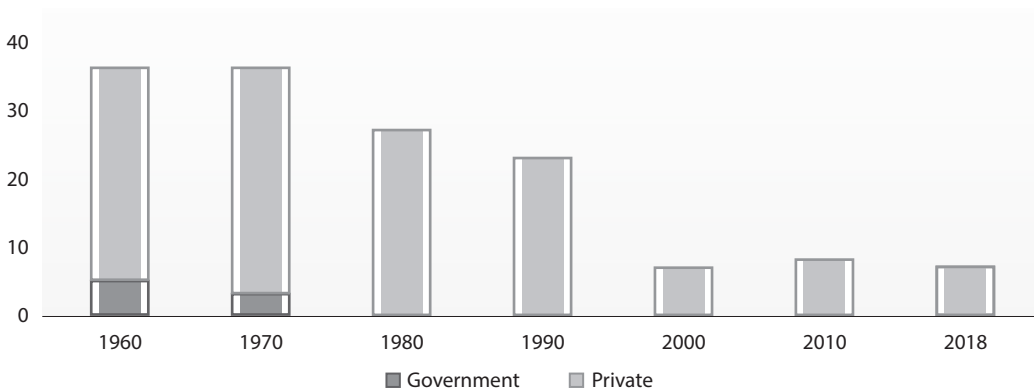
The Navy and Congress also acknowledged, as Representative Vinson argued in the early 1930s, that it was necessary to maintain a minimum level of industrial capacity. Keeping production lines operating became one of the goals of the shipbuilding program during the post–Cold War drawdown. The Navy

commissioned eighty-one vessels between 2000 and 2018, for an average of just under five per year. But that rate merely maintained the status quo for a struggling shipbuilding industry, and the single-ship contracts and uncertain future that resulted from this build rate prevented shipbuilders from investing in future capacity. Naval drawdowns not only increase production costs but also degrade industrial capacity, which severely impacts the Navy's ability to respond in the event a cold war turns hot.

Again, as in the 1920s, the dearth of new construction caused the American shipbuilding industry to contract, with two significant effects. First, low-rate production caused an increase in per-ship costs as high as 30 percent. Second, lack of naval-construction contracts resulted in the loss of shipbuilding infrastructure and the skilled shipbuilding labor force. As shown in figure 5, seventeen shipyards have stopped building warships for the U.S. Navy since the end of the Cold War. The Navy now depends on seven privately operated shipyards to build the future fleet—just as it did in 1932. However, unlike during the 1930s, America's government shipyards no longer build new warships; thus the contraction of private shipyards represents an even more severe reduction in capacity.

The concentration of shipbuilding capacity risks significant reduction of critical naval capabilities if combat losses occur, or our adversaries target these few shipyards, or both. Despite the Navy's attempts to provide sufficient work for each shipyard to maintain a minimum operating capability, the workload for warship construction is concentrated in only a few of these yards. Only one shipyard is currently capable of building the nuclear-powered aircraft carriers deemed critical to the Navy the Nation Needs plan. Destroyer, submarine, and littoral combat ship construction occurs in only two yards for each type. The

FIGURE 5
NUMBER OF U.S. SHIPYARDS BUILDING NAVAL VESSELS, 1960 TO THE PRESENT



Source: Derived from "U.S. Builders of Large Ships," *Shipbuilding History*, www.shipbuildinghistory.com/.

remaining two yards involved in building ships for the Navy specialize in amphibious ships and fleet auxiliaries.

Huntington Ingalls Newport News Shipbuilding, the only yard building aircraft carriers, is delivering them at an average rate of 5.6 years per carrier. Submarines are building at an average rate of slightly less than one per year. Orders for *Arleigh Burke*-class destroyers were halted in 2005 but restarted in 2010, with the intent of keeping the two shipyards building them in business until the Navy completed plans for the Flight III guided-missile destroyers, which will have increased anti-air warfare and ballistic-missile-defense capabilities.³³ These multiyear procurement contracts maintain a production rate of slightly more than two destroyers per year. But with decommissioning rates of about eight per year, commissioning rates of less than five per year continue the trend of a declining, albeit more modern, fleet.

The cumulative effect of reduced shipyard employment is that it leaves the United States without a viable surge shipbuilding capability. Unlike during the interwar period, government shipyards no longer build ships, instead focusing their efforts on maintaining nuclear-powered vessels, to the exclusion of most other activities. These navy yards, therefore, contribute nothing to current shipbuilding capacity. Additionally, instead of nine navy yards, today only four remain, further limiting surge production capacity in time of crisis. Exacerbating the shrinking of the U.S. shipbuilding industry, over the past three decades the Navy severely cut ship-maintenance budgets to save money. Limiting the use of shipyards conducting maintenance and modernization activities led to the closure of additional shipyards that had specialized in ship repair and severe workforce reductions in those that remained in operation.

Without a significant increase in shipbuilding and without a commitment to funding maintenance and modernization budgets, the American shipbuilding workforce threatens to disappear—again—over the course of the next decade. Many of the same complaints heard in the 1920s and '30s about the drain of skilled workers out of the shipbuilding trades echo today. The current workforce is aging, and shipyards struggle to recruit apprentices willing to commit to learning shipbuilding trades, because potential recruits do not foresee a secure future in doing so. This decline is reversible, but—as before—only with increased shipbuilding contracts.

The one shipyard that has joined the naval construction effort since the end of the Cold War—Austal USA, in Mobile, Alabama—demonstrated that shipyard trades could be developed from a skilled workforce outside traditional shipbuilding regions. When Austal was awarded block-buy contracts for the Littoral Combat Ship and Expeditionary Fast Transport, it nearly doubled its workforce.

But the commitment to build expeditionary fast transports ends with Austal's delivery of the twelfth ship in 2018, and the last littoral combat ship order is planned for 2019. Unless Austal wins the contract for the next-generation frigate, its newly trained workforce will have nothing to do.³⁴

Jennifer R. Boykin, president of Newport News Shipbuilding, writes of the shipbuilding industry's cautious optimism resulting from the call for a 355-ship Navy. A long-range shipbuilding plan that calls for growing the fleet "provides certainty for the shipbuilding industrial base that stabilizes our workforce." She goes on to remind us that shipbuilders are not the only ones depending on growth in naval construction. "Thousands of businesses, large and small, provide the material, equipment, and services necessary to build our nation's fleet. Shipyards across the country depend on these businesses every day to help us meet cost and schedule commitments to the Navy. But that supplier base is smaller today than in the past, declining from almost 15,000 companies at its peak in the early 1990s to about 5,000 companies today, and many of them have fewer than 200 employees."³⁵

Without action to reverse these trends, America risks being unprepared to recover this vital sector of our national defense capability. Worse, it will be unprepared for future conflict.

2018: REARMAMENT BEGINS?

Like President Roosevelt, President Donald J. Trump has called for rebuilding the Navy. His proposal for a 355-ship Navy matches the Navy's 2016 Force Structure Assessment, which determined that 355 ships are necessary to meet the requirements placed on the Navy today, the Navy the Nation Needs.³⁶ Congress, too, has taken action to make a 355-ship Navy the policy of the United States.

But there the similarities end. The Vinson-Trammell Act of 1934 provided a specific and quantifiable shipbuilding program, to be executed within ten years. In contrast, the National Defense Authorization Act (NDAA) for 2018 contains a single sentence stating that "[i]t shall be the policy of the United States to have available, as soon as practicable, not fewer than 355 battle force ships, comprised of the optimal mix of platforms, with funding subject to the availability of appropriations or other funds."³⁷ In 1934, presidential and congressional action resulted in real contracts for ship construction, but efforts today have not resulted in any significant immediate increases in warship procurement.

The current plan is too little, too late, and has little in common with the robust and enthusiastic commitments of the 1930s. In 1933, the Bureau of Construction and Repair awarded contracts for new ship construction within two months of the issuance of EO 6174; today's Navy took six months to provide a shipbuilding plan to Congress—a plan under which increased construction does not begin

until a year in the future. The Navy justifies this delay by the need to conduct critical maintenance and modernization of the current fleet, which does represent a more immediate priority.

However, even when shipbuilding increases begin, the anticipated pace does not represent an urgent effort to restore fleet strength. The Navy's FY 2019 shipbuilding plan achieves the Navy the Nation Needs, including a twelve-aircraft-carrier fleet, in 2060—over forty years in the future. The plan does meet the requirements for the Navy the Nation Needs in all other ship categories by 2050—but that is still over thirty years in the future.³⁸ Between 2019 and 2024, the Navy's shipbuilding plan proposes building only ten additional ships over the previous 308-ship building plan—an increase of merely two ships per year.³⁹ Congress had asked the Navy to budget for an additional fourteen ships over the same period, or an increase of two and a half ships per year. Senator Roger F. Wicker (R-MS), chair of the Seapower Subcommittee of the Senate Armed Services Committee, comparing the Navy's plan with the 2018 NDAA language, put it succinctly: “[T]he Navy shipbuilding plan that doesn't get to 355 ships until the mid-2050s is unacceptable.”⁴⁰

The shipbuilding plan includes provisions for accelerated building, with “additional resources, service life extensions, and strong industry response.”⁴¹ Responding to Senator Wicker's concerns, Under Secretary of the Navy Thomas B. Modly claimed that 355 ships could be achieved in the 2030s, and placed responsibility for accelerated shipbuilding on Congress to provide additional funding. According to the Congressional Budget Office, that additional funding would amount to over three billion dollars—a sum potentially unacceptable to Congress and the American public. Vice Admiral Thomas J. Moore, the commander of Naval Sea Systems Command, provided specific plans for service-life extensions and delayed decommissionings of *Avenger*-class mine countermeasures ships, *Cyclone*-class patrol craft, and *Ticonderoga*-class guided-missile cruisers, and a pilot program for extending the life of *Los Angeles*-class attack submarines.⁴² These actions would abate the imbalance between decommissioning and commissioning, but, as Representative Robert J. Wittman (R-VA), chairman of the Seapower and Projection Forces Subcommittee of the House Armed Services Committee, notes, “[T]hat is still of limited utility, you still have to build new ships.”⁴³ Echoing Wicker's concerns, Wittman also criticizes the Navy's FY 2019 shipbuilding budget submission for being so low, noting, “The floor is \$26.2 billion and 13 ships. Anything else is unacceptable.”⁴⁴ Demonstrating Congress's frustration with the Navy's less aggressive shipbuilding program, the Consolidated Appropriations Act of 2018 provides \$23.8 billion for ship construction, including building a total of fourteen ships—five more ships than the Navy requested. Congress's action adds an additional littoral combat ship and accelerates the acquisition of a fourth

expeditionary sea base and the lead ship of the next-generation amphibious warship, the LX(R).⁴⁵ There clearly is a disconnect between the Navy and Congress over accelerating fleet expansion and the mechanism by which to achieve it.

Current CNO Admiral John M. Richardson claims that sufficient current industrial capacity exists to increase production rates.⁴⁶ Shipyards, however, remain reluctant to hire and train additional workers or expand their physical infrastructure without assurances of future orders.⁴⁷ The additional ten ships planned, spread out over five years and across seven shipyards, averages to an additional 0.3 ships per year for each yard—well below the rates the CNO states are possible, and not exactly a level of expansion that encourages investment. But Boykin of Newport News Shipbuilding again offers some cautious optimism that things are moving in the right direction, stating that “our industry has long awaited a signal from the government to prepare, invest, and grow. I believe this budget agreement, combined with the Navy’s 30-year shipbuilding plan to grow our fleet, are telling our shipbuilding industrial base that it is time for our Navy to grow into the larger, stronger, and more powerful force that our nation needs.”⁴⁸

One similarity with the 1930s buildup is the expansion of block purchases of ships. Funding construction of multiple ships at a time using multiyear procurement contracts results in a 10 percent reduction in unit costs by allowing shipyards to achieve an economy of scale not available with single-ship contracts. The FY 2019 shipbuilding plan and the recently passed Bipartisan Budget Act of 2018 both allow for multiyear procurement contracts for destroyer, submarine, amphibious dock landing ship, and fleet oiler construction.⁴⁹

In the 1920s and ’30s, America possessed the greatest industrial potential of any nation in the world. Although Japan’s naval construction exceeded America’s before 1941, both sides recognized America’s ability to outbuild the Japanese once America reached its full industrial potential. Today, America’s ability to outbuild its adversaries is not guaranteed. China presents the most significant threat to American supremacy at sea today, as the seventy-eight-ship naval parade staged for President Xi Jinping in April 2018 demonstrated. Chinese shipyards are building modern warships at a rate equal to U.S. yards, but the Chinese shipbuilding industry is not operating at full capacity for naval construction. With over a dozen shipyards building large merchant vessels, China has the industrial base to expand warship construction rapidly; America has no such commercial shipbuilding base to expand.⁵⁰ This disparity puts the United States in the precarious position that Japan occupied during World War II: unable to match its opponent in building a modern fleet or to make up for losses once conflict begins.

Much can be learned from the peacetime naval rearmament of the 1930s. It takes a concerted effort from the executive, Congress, the Navy, and industry to

achieve the balanced fleet required to fight and win wars at sea. Today, each of these players asserts the desire to rebuild the Navy in this age of renewed maritime competition, but coordination among them is missing. The Navy needs a more aggressive shipbuilding plan. Congress needs to follow up on its policy statement and appropriate the funds required to accelerate ship construction. More importantly, the Navy and Congress must work together toward a common understanding of fleet requirements. The shipbuilding industry's response to calls for a larger fleet naturally lags government action. Therefore, the government must collaborate with private shipbuilders to meet the strategic imperative of expanding the American shipbuilding industrial base.

Rebuilding the fleet in the 1930s prepared the nation for an unknown war that came in 1941. In the same way, the United States must embark on a fleet-rebuilding effort now to ensure the nation is ready for the next conflict when it arises.

NOTES

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3. Figures on pre-1950 shipbuilding, shipyards, and employment throughout are derived from H. Gerrish Smith and L. C. Brown, “Shipyard Statistics,” in *The Shipbuilding Business in the United States of America*, ed. F. G. Fassett Jr. (New York: Society of Naval Architects and Marine Engineers, 1948), vol. 1; Michael Lindberg and Daniel Todd, *Anglo-American Shipbuilding in World War II: A Geographic Perspective* (Westport, CT: Praeger, 2004); Clinton H. Whitehurst Jr., *The U.S. Shipbuilding Industry: Past, Present, and Future* (Annapolis, MD: Naval Institute Press, 1986); and U.S. Navy Dept., *Annual Report of the Secretary of the Navy for Fiscal Year 1934* [and subsequent years] (Washington, DC: U.S. Government Printing Office, 1934).
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5. Lindberg and Todd, *Anglo-American Shipbuilding*, pp. 88–91.
6. Part 3, Section I, of the Five-Power Treaty allowed the replacement of capital ships and aircraft carriers considered “over-age”—twenty years after their completion. Limitation of Naval Armament [Five-Power Treaty or Washington Treaty], February 6, 1922, 43 Stat. 1655, T.S. No. 671. Article 9 of the 1930 London Naval Treaty expanded the overage replacement criteria to all warship classes, and Annex I defined overage limits for the various ship classes. *Underage* ships are all those newer than those that have reached overage replacement age.
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8. Heinrichs, "The Role of the United States Navy," pp. 198–99.
9. Lindberg and Todd, *Anglo-American Shipbuilding*, pp. 68, 87; Furer, *Administration of the Navy Department*, pp. 214–15.
10. Furer, *Administration of the Navy Department*, p. 215.
11. Kuehn, *Agents of Innovation*, pp. 170–71. The 1922 U.S. *Naval Policy* document has been lost to history. The text of the policy was included in the 1925 report of the proceedings of the General Board. Kuehn reproduces it as appendix 2 of his book. Some debate exists on how to title this document; I have chosen to follow Kuehn's convention.
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13. Heinrichs, "The Role of the United States Navy," p. 206.
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22. Vinson-Trammell Act of 1934, Pub. L. No. 73-135, 48 Stat. 503 (1934).
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38. Office of the Chief of Naval Operations, *Report to Congress*, p. 6.
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