



Allied tanker *Dixie Arrow*, torpedoed in Atlantic Ocean by German U-71, in 1942 (U.S. Navy/National Archives and Records Administration)

Beating *Drumbeat*

Lessons Learned in Unified Action from the German U-Boat Offensive Against the United States, January–July 1942

By Casey L. Miller, Carl Jappert, and Matthew Jackson

In the first 7 months after the United States entered World War II, a handful of German U-boats almost brought the Allied war effort to a

standstill in a shockingly effective campaign against merchant shipping. From January to July 1942, the Germans would sink 585 vessels in U.S. waters—

over three million gross tons of shipping—and lose only six U-boats.¹ These shipping losses accounted for more than 20 percent of the *total* Allied vessels sunk over the entire war. Army Chief of Staff General George C. Marshall wrote to Admiral Ernest J. King, Chief of Naval Operations: “Another month or two of this will so cripple

Major Casey L. Miller, USA, is a Joint Plans Officer at Joint Task Force North in Fort Bliss, Texas. Commander Carl Jappert, USN, is the Commanding Officer of USS *New Hampshire*. Major Matthew Jackson, USAF, is a Joint Action Officer at the Air Land Sea Space Application Center in Hampton, Virginia.



Lookouts stand watch on Navy destroyer's deck house during convoy duty in Atlantic Ocean, June 1943 (U.S. Navy/National Archives and Records Administration)

our means of transport that we will be unable to bring sufficient men and planes to bear against the enemy . . . to exercise a determining influence on the war."² The effectiveness of the German attack, known as Operation *Drumbeat* (*Paukenschlag*), and the U.S. ineptitude in countering it, has transfixed historians for decades.

Examining this case study from a joint perspective provides timeless lessons for contemporary planners. Today, the American homeland faces a strategic environment that is arguably just as complex and lethal as it was in December 1941. Current strategic guidance notes that in future conflicts, the United States will again see attacks on the homeland aimed at undermining America's economic

power, will to fight, and ability to project military force.³ The Department of Defense and civilian governmental agencies charged with defending the Nation face an array of "all-domain" transregional threats limited only by our adversaries' means, motives, and imagination.⁴ With this in mind, it seems worthwhile to reexamine the causes of the delayed American response to an existential threat so that we can mitigate any future reoccurrence.

Accordingly, and in contrast to the bulk of previous *Drumbeat* analysis focusing on single-Service perspectives, assigning blame, or tracking U-boat exploits, this analysis seeks to understand *why* as comprehensively as possible. Why was the American response to the

German assault so ineffective? Why did American authorities take so long to address a problem that the British had been countering since 1940? Why were the Allies able to successfully force the U-boats into the mid-Atlantic by the summer of 1942? A holistic approach can begin to answer these questions. First, it is necessary to understand the adversary logic behind *Drumbeat* from the perspective of Admiral Karl Dönitz, commander of the German U-boat command. Next, analyzing the reactions and interactions of civilian strategic leadership, the Allies, and the Armed Forces illuminates various causes.

Ultimately, examining Operation *Drumbeat* from a joint perspective reinforces essential lessons in an era of

resurgent strategic competition, namely that

- clearly defined command relationships and responsibilities are essential
- military means negotiated prewar are often inadequate for the wartime task at hand
- allied contributions are critical, if not outright decisive
- anticipation, preparation, and adaptation are crucial to survival.

Allied and U.S. leadership had to learn these lessons during the first 7 months of 1942. In the meantime, the U-boats carried out a “merry massacre” off the U.S. coast.⁵ Civilian leaders struggled to adapt and trust their Allies. Military leaders blamed operational and organizational deficiencies on material shortfalls. Services struggled to overcome ingrained cultures and understand their roles and responsibilities. As a result, there was a broad failure to achieve unified action.⁶ Ultimately, it was mainly American willingness to adopt proven convoy methods and mobilization of the Nation’s incredible industrial capacity that saved it from its incompetence. However, contemporary planners need to anticipate that our future adversaries will not allow the United States the same time or opportunities to learn, adapt, and overcome.

The Road to *Drumbeat*, 1939–1941

Throughout World War II, Admiral Karl Dönitz remained steadfast in his belief that the only way to secure victory for Germany was with the U-boat. Dönitz was determined to maximize damage to Great Britain’s sea lines of communication. In his view, only an attritional war against Allied shipping could force Great Britain to sue for peace. “Our aim,” he noted, “should obviously be to sink as much enemy shipping as quickly as we could.”⁷ Yet Adolf Hitler and the Naval High Command (*Oberkommando der Marine*) remained fixated on employing Germany’s surface fleet to defeat the Royal Navy and destroy British merchant shipping in the Atlantic.⁸ Dönitz nevertheless made the most of his consistently meager resources.

After the fall of France in June 1940, the Battle of the Atlantic began in earnest. The Germans were able to establish U-boat bases on the French coast with direct access and increased operational reach into the Atlantic. In July 1940, Dönitz had 29 active U-boats, but the Germans still managed to inflict disproportionate casualties on their foes. In October 1940 alone, 8 U-boats were able to destroy 63 merchantmen (352,407 tons). As the year progressed, the U-boats put increasing pressure on Great Britain in preparation for Germany’s Operation *Sea Lion* (*Seelöwe*), the cross-Channel invasion of the British home islands. When the operation did not occur, Dönitz reoriented on “the only thing that counted”—sinking British shipping.⁹ By the end of 1940, however, the British had relearned valuable lessons from World War I—namely, no matter how lightly escorted, ships in convoys were safer than ships sailing alone. The British were also beginning to overcome escort shortages. Significantly, the United States agreed to trade 50 destroyers for the leasing rights of British naval bases in the Atlantic, Canada, and the Caribbean. This trade was “crucial to Britain’s ability to conduct the war in Europe.”¹⁰

In 1941, the British refined convoy systems and antisubmarine methods while the Germans pushed into the Atlantic and improved their tactics. From March to June 1941, with 21 operational vessels, the U-boats sank 203 ships (1,128,030 tons), honing the integration of *Luftwaffe* air support and wolfpack tactics (*Rudeltaktik*). However, things shifted against the U-boats in the second half of 1941, when the British captured German Enigma codes and machines and began decrypting all U-boat transmissions. Additionally, the British used high-frequency direction-finding (HF/DF) radio stations along the coast to track U-boats and divert convoys. The Americans also joined in and took responsibility for escorting convoys to Iceland and protecting “any ships of other nationalities as wished to attach themselves to such convoys.”¹¹ This “Undeclared War” frustrated German U-boat commanders’ attempts to adhere to Hitler’s strict

orders not to target American vessels.¹² Hitler further complicated efforts to concentrate forces against British shipping by ordering Dönitz to divert all operational U-boats to the new “main theater of operations,” the Mediterranean, to screen the *Wehrmacht*’s operations in North Africa.¹³ As a result, Dönitz retained only 10 U-boats to employ in the Atlantic. By the end of 1941, the widely dispersed U-boats began to suffer unaffordable losses of veteran crews.

December 7, 1941, brought new opportunities for U-boat command with the Japanese attack on Pearl Harbor. However, the Japanese attack caught the Germans by surprise. It took 5 weeks for Dönitz to get the five U-boats of his initial assault force 3,000 miles to U.S. waters for the first Operation *Drumbeat*.¹⁴ On January 13, 1942, they attacked, achieving “complete success.”¹⁵ The U-boats found “that conditions . . . were almost exactly those of normal peace-time.”¹⁶ By the end of January, the British recorded 62 vessels (327,357 tons) lost, with the bulk in U.S. waters. More U-boats arrived in February, as the Germans incorporated medium-range Type VIIC vessels to reinforce the longer range Type IX boats. The spring introduction of Type XIV U-tankers, or milk cows (*Milchkühe*), enabled U-boats to refuel and rearm at sea, extending their operational reach into the Caribbean and Gulf of Mexico. The U-boats found undefended targets from Key West to Trinidad. To make things worse, the Germans added a fourth wheel to their Enigma devices in April, and the Allies lost the ability to decrypt U-boat communications for over 10 months. Hitler’s spasmodic diversions, however, forced Dönitz to send most of his boats off Norway when it became the new “decisive theater of war.”¹⁷ Dönitz could only keep six to eight U-boats in U.S. waters from January to June 1942.

It took 3 months before the Americans started introducing a convoy system off the East Coast. Eventually, this system extended into the Caribbean and the Gulf of Mexico, but not until after the U-boats had inflicted horrendous casualties. The month of May saw the highest

monthly losses in any war area, with 41 ships (219,867 tons) sunk in the Gulf, over half of them valuable tankers. After this, Dönitz noted, “the convoy system was gradually introduced, and it became obvious that . . . the main effort in the U-boat war would have to be switched back to the wolfpack attacks on convoys” in the Atlantic.¹⁸ In the end, the U-boats sank 585 ships (3,080,934 tons), losing only 6 U-boats in the process. Dönitz concluded “that the results obtained had by far exceeded the high expectations held by U-boat Command in January. . . . The successes achieved by a small number of U-boats were extraordinary.”¹⁹

Civilian Leaders and Strategic Direction

Civilian strategic direction was essential in guiding the Allied responses to Operation *Drumbeat*. In December 1941, American strategic leadership quickly aligned war efforts with the “Plan Dog” recommendations of the former Chief of Naval Operations, Admiral Harold Stark. U.S. strategy aimed to defeat the Axis powers by holding off the Japanese in the Pacific while focusing on Germany’s decisive defeat. American strategic leaders knew the only way to defeat Germany was on the ground in Europe. Therefore, all preparations and shaping operations beginning in December focused on setting conditions for an eventual cross-Channel invasion of Europe with Great Britain as the staging area. However, U.S. and British leadership did not have a shared vision for implementing this strategy or the threat the U-boats posed to it. This disconnect directly affected the American response to *Drumbeat*.

Prime Minister Winston Churchill fully appreciated the U-boat threat to victory and the survival of Great Britain. He wrote that defeating the U-boats “was the dominating factor all through the war. Never for one moment could we forget that everything happening elsewhere on land, at sea, or in the air, depended ultimately on its outcome.”²⁰ Churchill took control of Britain’s war against the U-boats by forming and chairing the Battle of the Atlantic

Committee and leveraging “all the resources at the disposal of the British Government . . . to defeat the U-boat menace.”²¹ He worked directly with the Admiralty, “with whom [he] lived in the closest amity and contact.”²² He actively maneuvered the United States to increase its participation, convoy security, and escort production before entering the war. He secured the Anglo-American agreement, trading bases for 50 much-needed destroyer escorts.

Churchill was likely perplexed by his American counterpart’s passive role when *Drumbeat* commenced in January 1942. President Franklin Delano Roosevelt appears at first to have taken little active part in stopping the massacre of shipping off the U.S. coast. American civilian leadership dragged their feet in establishing a convoy system. They did not attempt to enforce a coastal blackout out of concerns it might impact tourism. It was as late as May in some locations before the Navy and War departments eventually rose to that challenge. National leadership focused on preparing for the cross-Channel invasion, and military shipping production priorities focused on building landing craft rather than escorts well into the first half of 1942.²³

However, President Roosevelt was just as effective at diplomacy and manipulation as Churchill.²⁴ Churchill expressed his “deep concerns” to Roosevelt regarding the unprecedented rate of sinkings in U.S. waters.²⁵ Great Britain could only watch as the Americans allowed tons of British shipping to get torpedoed in waters where the Royal Navy could do nothing. Roosevelt responded to Churchill’s concerns by suggesting that Britain might consider reducing its net imports.²⁶ Ultimately, Roosevelt maneuvered the British into providing additional escort resources in the American area while buying the United States time to mobilize its industry. By the end of March, the British had sent 10 corvettes and 24 armed trawlers to the fight. More significantly, the Allies agreed to adjust mid-Atlantic convoy routes and timetables to free up two destroyer escort groups to support America’s Eastern Seaboard.

Meanwhile, Roosevelt directed the U.S. Maritime Commission to build 24 million tons of shipping.²⁷ By the summer of 1942, America could produce Liberty ships in 90 days. Despite the apparent weak executive response to the U-boat threat, Roosevelt mobilized America’s production capacity, ensuring that the United States could outproduce anything the U-boats could sink. While one contemporary historian considers this approach “mindless,” by July 1942, America was producing 170 percent more tons of shipping monthly than the Germans were destroying.²⁸

The Allies: British and Canadian Military Assistance

The British and Canadian militaries made valiant efforts to help the United States form an effective response to the U-boat threat in U.S. waters. The Royal Canadian Navy notably assumed control of Atlantic convoy routing and contributed 40 percent of Atlantic convoy escorts to free American resources for coastal escort duty.²⁹ In addition to the vessels and seasoned crews they provided, the Allies brought critical experience and information to the table. As early as December 1941, the First Sea Lord, Admiral Dudley Pound, was in Washington looking for ways to enhance Anglo-American cooperation and coordination.³⁰ The British worked directly with the U.S. Navy Mission in London to maximize information-sharing and to pass on lessons learned. According to the Royal Navy’s historian, “The policy of the Admiralty had been to give to the American Navy virtually the whole of our knowledge and experience.”³¹ The Royal Navy openly shared its antisubmarine doctrine, tactics, techniques, and procedures with the U.S. Navy and Merchant Marine. Additionally, the British sent vital personnel to advise the U.S. Navy. In April, they sent Captain George E. Creasy, the Royal Navy’s director of antisubmarine warfare, to Washington along with Air Vice Marshal Geoffrey R. Bromet “to advise [the U.S. Armed Forces] on the formation, training, and organization of air and surface antisubmarine forces.”³²



Allied convoy in Atlantic Ocean moves toward its destination while Navy K-class lighter-than-air aircraft hovers overhead, watching for enemy U-Boats, June 1943 (National Museum of the U.S. Navy)

For intelligence, the Royal Navy sent advisors to convince the U.S. Navy of the need to form an operational intelligence center (OIC) to track U-boat movements, synthesize reporting, and provide guidance and warnings to merchant shipping. Commander Rodger Winn, a Royal Navy Volunteer Reserve officer and head of the Royal Navy's Submarine Tracking Room, was selected for this task.³³ Despite anticipated resistance, the Chief of Naval Operations, Admiral Ernest J. King, was highly receptive to the idea, and the U.S. Navy rapidly established an equivalent to the British OIC. One historian describes what became the "Atlantic Section, Operational Intelligence" as "the closest exercise of transatlantic cooperation of the war."³⁴

Despite British and Canadian contributions, the Americans still seemed to stubbornly resist implementing a coastal convoy system. To the British and Canadians, the Americans seemed "slow" in failing to adopt convoys.³⁵ Indeed, the Americans "first tried every conceivable measure—*except* convoy and escort."³⁶ In the end, the military Services had to make their own choices and learn their own lessons. No amount of Allied proselytizing seemed effective in changing American behavior on the topic of convoys.³⁷

The Army and Army Air Force: Rivalries and Responsibilities

The War Department's only means of contributing to the fight against the

U-boats was the newly branded Army Air Forces (AAF). Some even believed that the AAF was far better equipped, due to its monopoly on land-based bombers, to handle the problem than the Navy.³⁸ Unfortunately, prewar Army-Navy rivalries and ambiguous responsibilities hampered that response. To better understand these problems, it is crucial to review the Services' competing perspectives on airpower and the heated Army-Navy feud over funding and responsibilities that occurred during the interwar years. After World War I, the Navy Department focused on developing airpower to support the fleet. Meanwhile, airpower advocates in the Army wished to create a separate Army Air Force focusing on long-range



Coastguardsmen watch for possible depth charge explosion results during convoy patrol in Atlantic Ocean during World War II (National Museum of the U.S. Navy)

strategic bombing targeting vital centers deep inside enemy territory.³⁹ The problem for both departments was that the American public had shifted toward isolationism and had little interest in spending money on armaments, let alone airpower.⁴⁰

Due to the scarcity of congressional funding, the Army was reluctant to invest a significant portion of its meager budget into aviation. Conversely, the Navy saw larger, albeit still reduced, budgets for strengthening the fleet. This disparity led airpower advocates in the Army and Navy to continuously seek opportunities to compete and demonstrate their respective Service's superior operational concepts.⁴¹ The most referenced example of this was General William "Billy" Mitchell's

widely publicized bombing of the SMS *Ostfriesland* during a joint Army-Navy bombing experiment in 1921.⁴² Paranoia abounded. The Army Airmen believed the Navy might attempt to develop its own strategic airpower, while the Navy believed (correctly) that the Army Airmen were actively lobbying for the diversion of Navy funding to support Army bomber development.⁴³ These behaviors and perceptions continued into World War II, as the branches competed for funding and public attention.

This inter-Service rivalry over the future of airpower led to disputes over Service responsibilities in national defense. Until the development of aviation, the Navy and War departments enjoyed clear responsibilities when

defending the Nation. The Navy would intercept any invading fleet, and the Army would protect the coastline with artillery and infantry if enemy forces survived to reach the shores. The coastline and artillery range allowed for a clear delineation of responsibility.

However, the advent of the airplane blurred this line as the Army's new aircraft could reach targets far out at sea. The Army used these capabilities, and public spectacles like the bombing trials, to convince the American people that the Army needed to develop airpower as a defensive weapon. The War Department's persistence paid off; they eventually convinced Congress that naval aviation should be attached to the fleet while the Army should control

all land-based aviation.⁴⁴ Congress pressed Army Chief of Staff General Douglas MacArthur and Chief of Naval Operations Admiral William Pratt for an agreement on aviation development. In 1931, the chiefs released the MacArthur-Pratt Agreement, but it did little to stop the jurisdictional debate.⁴⁵

The Services held an additional Joint Army-Navy Board in 1935 to clarify their responsibilities and authorities for aerial operations over water in the Nation's defense. Yet despite the joint board's efforts, the refined guidance created further ambiguity as it now based Service responsibilities on "apparent" enemy intent and whether enemy objectives were likely ashore or at sea.⁴⁶ The board's guidance also failed to delineate boundaries, instead making vague references to "coastal area[s]" and subjective Service assessments of whether the enemy was "close enough to threaten . . . [American] territory."⁴⁷ Official guidance changed little before the attack on Pearl Harbor, and the ongoing disputes ultimately degraded the American response when *Drumbeat* commenced.

The Service rivalries, and the AAF's proclivity for long-range strategic bombing, prevented the development of equipment and training for antisubmarine warfare. The interwar agreements limited Army training operations to within 100 miles of the coast, and the Navy had to approve flights beyond this range. This policy discouraged the Army from training over the water, so it focused its efforts on bombardment. At the end of 1941, the AAF units "best equipped for antisubmarine operations trained almost exclusively in . . . [strategic] bombardment."⁴⁸ Unsurprisingly, when the German U-boat offensive began, the AAF was not ready to meet it.

Nevertheless, the Army still possessed the most capable aircraft, and the Navy's request for Army aviation came as early as December 1941. The War Department selected the 1st Bomber Command for this support. Despite its best-trained unit being on the West Coast, the command eventually provided 50 bombers, including 9 B-17s and a mixture of B-25s and B-26s. These

aircraft began patrolling 600 miles out to sea during daylight hours but only conducted two flights daily from three airfields. Unfortunately, antisubmarine reconnaissance was vastly different from anything the Army forces had practiced, and the aircraft initially lacked the detection equipment necessary for hunting U-boats, such as radar or Leigh Lights. The number of aviation assets and their training and equipment proved inadequate against the U-boat threat.

The AAF eventually improved its equipment and methods, although not in time to make a difference. The Service resolved its aircraft and equipment shortfalls through asset reallocation and production. As for training, official Air Force historians note, "Techniques had to be learned through actual experience; and, owing to the urgent need for antisubmarine patrols, the air units were forced to accomplish their training in the course of operational missions."⁴⁹ As the 1st Bomber Command began working jointly with the Navy along the coastal frontiers, it became apparent that the rivalries over responsibilities would need to end in favor of unified action.

The Navy Department: Multiple Roads to Unified Action

The Navy Department and Admiral King are the most common scapegoats for historians studying America's *Drumbeat* failures. However, the Navy's inadequacy in countering the U-boat threat early in 1942 did not come from a single source or individual. In the end, a national effort, with many aspects tied to the Navy, was necessary to counter and overcome *Drumbeat*. Adaptation and learning had to overcome material deficiencies, span operational seams, and fill the void between strategic priorities and unit-level tactics. While the Navy's incremental and comprehensive improvements contributed decisively to the defeat of the U-boats, it could not have succeeded alone.

In early 1942, policy divided Service responsibilities, and the U-boats fully exploited the seam in coastal defense. The Navy Department focused on fleet actions

and seagoing aircraft. Throughout the interwar years, the Navy prepared for decisive Mahanian-style naval engagements, focusing minuscule aviation budgets on aircraft that directly supported the fleet. Too few aircraft for coastal defense and long-range reconnaissance, like the PBY Catalina, were produced at scale in time to counter the U-boat threat in early 1942. Even then, while seaplanes that existed had valuable endurance, they were too slow to detect and engage a watchful U-boat before being spotted.

The Navy needed the right aircraft to be effective in antisubmarine warfare. The British proved that bomber-type airframes could be lethal against U-boats due to their endurance, operational reach, and ability to deliver a payload over a U-boat before it could crash dive. From the Navy's perspective, Army-Navy integration was essential if they wanted to provide the correct type of aircraft for the antisubmarine mission. At the Navy's request, in March 1942, the Army directed "all Army Air Force units allocated by defense commanders for operations over the sea to protect shipping and conduct antisubmarine warfare."⁵⁰ While this was a move toward providing the right aircraft, their numbers were still insufficient, and they were ill prepared to engage small moving targets. As the Navy eventually realized, they needed aircraft and pilots trained in the nuances of antisubmarine warfare, working in concert with a deliberate convoy system to provide adequate protection to shipping.

The Navy's surface fleet was in a similarly poor state of readiness regarding antisubmarine and escort capabilities in January 1942. Most of the Navy regarded antisubmarine warfare as an uninteresting secondary mission. Before the war, most officers believed that a destroyer could easily engage and defeat submarines using a combination of sonar, acoustics, and visual observation. This view led most Navy officers to adopt a hunter-killer mindset regarding enemy submarines. The reality in combat proved that killing U-boats was not so simple. Furthermore, chasing after reports or false contacts drew scarce escort assets away, leaving merchant shipping unprotected.

As the casualties from *Drumbeat* mounted, the Navy actively invested time and research in finding solutions to defeat the U-boat threat. Despite a lack of consensus on the best way to proceed, Admiral King commissioned the Atlantic Fleet Anti-Submarine Warfare Unit in March 1942 to unify analysis, training, tactics, and development efforts through a partnership with the scientific community.⁵¹ King eventually pulled this unit to Washington, DC, where it evolved into the Antisubmarine Warfare Operational Research Group (ASWORG). This group of civilian scientists and military personnel partnered with President Roosevelt's National Defense Research Committee to develop new techniques in antisubmarine warfare and to analyze and assess operations.⁵² Studies validated British reports that convoy-centric operations were more successful and began to overcome the hunter-killer mindset. Additional research from ASWORG led to the integration of technology with new search methods using radar and HF/DF systems to maximize the efficiency and lethality of surface and aerial escorts.⁵³ The outputs of this collaboration with the scientific community began to shape the Navy Department's response to the U-boat threat and to inform effective resource employment.

Nevertheless, the Navy's handling of its destroyer escort resources is another recurring point of historical condemnation. While an apparent misstep in allocation, competing factors make the situation less clear. The Navy's destroyer allocation prioritized fleet and transoceanic troop-carrying convoy protection while fighting what were essentially two wars in separate oceans.⁵⁴ These priorities left few destroyers to protect the western Atlantic coastal regions, even when Admiral King knew that Dönitz was deploying U-boats to the area.⁵⁵ It is unlikely that more destroyers would have had any measurable impact on shipping survivability in early 1942 without an accompanying coastal convoy system and integrated air cover. Random destroyers using ineffective hunter-killer methods would have been a gross waste of resources. However, trained destroyers operating with transatlantic convoys could

provide significant protection to the U.S. troops beginning to surge overseas in 1942. Ultimately, when faced with a limited number of available escorts, Admiral King opted to prioritize protection of "military lives [over] military cargo."⁵⁶

Like the aviation issues, the Navy's escort shortages began in the interwar years. The focus on fleet defense meant deep-water oceangoing destroyers were of utmost importance. The Navy leadership ignored President Roosevelt's prewar prompts to adopt a small craft program for coastal protection.⁵⁷ The Navy believed larger oceangoing destroyer escorts were more useful and that the industrial base could quickly build small coastal defense craft if needed.⁵⁸ Although not entirely untrue, this mindset proved counterproductive. In wartime, strategic demands focused production capacity on building landing craft while the merchant shipping that needed protection was under a relentless U-boat assault. Ultimately the Navy accepted the President's calls for mass production of small coastal protection vessels and shifted construction priorities accordingly.⁵⁹ Still, it was far from an immediate or ideal solution.

That ideal solution, and the culmination of efforts to counter *Drumbeat*, was the deliberate interlocking convoy system. The U.S. civilian maritime posture before 1942 was that of unencumbered coastal shipping spanning from Canada to South America. Unlike the island-bound British, the Americans remained relatively confident in the security of their sea lines of communication; the Navy was strong, and the oceans were vast. For the British, however, it was a matter of national survival. As a result, they were quicker to relearn the importance of a convoy system early in World War II, while the United States did not.

For nearly 3 months after the U-boat offensive commenced, the United States did not entertain the idea of a coastal convoy system. When King asked for recommendations from subordinate sea frontier commanders, they recommended against implementing such a system.⁶⁰ Contrary to evidence from the British experience, these commanders believed

that an inadequately protected convoy would be at greater risk than dispersed unescorted shipping. That notion cost many lives and many ships.

It was not until April 1, 1942, that Rear Admiral Adolphus Andrews, commander, Eastern Sea Frontier, explored an interim solution. The "bucket brigade" was an ad hoc convoy system using anchorages protected behind nets or mines, established approximately 1 day's sail time apart.⁶¹ Merchants traveled by day when U-boats were less active and sought refuge in these protected anchorages at night. This approach helped slow but did not end losses. Without air cover to force U-boats to dive, the attacks continued. Further steps to improve the convoy system included establishing the Convoy and Routing section under the Chief of Naval Operations, on May 15, 1942, and assigning naval aviation and escort assets directly to Sea Frontiers rather than operational naval commands such as the Atlantic Fleet. Admiral King further simplified command and control by assigning convoy coordination responsibilities to the originating Eastern, Gulf, or Caribbean Sea Frontier commanders.

The final interlocking convoy system turned the tide on shipping losses. Following mediocre success with the bucket brigade system, Admiral King called for an informal board to recommend a more enduring and effective solution. This system, established in late August 1942 and 8 months after the assault began, integrated air, escorts, and shipping movement times, resulting in continuous convoy protection. U-boat success rates dropped off precipitously following implementation.

Although the interlocking convoy system proved effective, it took a national effort and emerged after many failures. Success came from aligning priorities, enhancing organizational relationships, and leveraging effective partnerships with the scientific community. Additional factors, such as improved training, tactics, weapons systems, production, and allocation of the right ships and aircraft, paid dividends. All these efforts intertwined the merchant and military and formed the interlocking convoy system.



Boarding party from Navy destroyer escort USS *Pillsbury* works to secure tow line to bow of captured German submarine U-505, June 4, 1944 (U.S. Navy/Naval History and Heritage Command)

Conclusions and Implications: Unified Action in a Contested Homeland

Many factors contributed to the ineffective U.S. response to Dönitz's U-boat assault from January to July 1942. Petty rivalries, confusion over responsibilities, lack of training and equipment, refusal to listen to Allies, and divergent leadership visions contributed to failures. While primarily tied to establishing coastal convoys, the solutions were just as multifaceted. As the official Navy historian writes, it took cooperation “[between the Allies,] civilian scientists, between foreign policy and military operations, and between the armed forces and the public.”⁶² Beating *Drumbeat* was unequivocally an example of unified action in defense of the homeland.

Today's strategic environment includes an array of multidomain threats as well as new layers of bureaucracy and seams among alliances, departments, commands, and subordinate headquarters that could easily lead to the same mistakes America saw in 1942. Whether serving at a combatant command or the Department of Homeland Security, examining the Allied response to Operation *Drumbeat* is instructive for contemporary national security professionals attempting to achieve unified action. Planners should seek to internalize and apply *Drumbeat's* lessons as they prepare for future assaults against the United States that could come in any form, from a radicalized lone wolf to waves of hypersonic missiles. While we will not face Dönitz's U-boats, the timeless lessons learned defeating them should not have to be relearned in the next crisis.

Clearly defined command relationships and responsibilities are essential to maximize integration and minimize gaps that adversaries can exploit. When a major war breaks out, the tools will inevitably be insufficient, and the side that adapts more quickly will win. Close ties among civil society, the private sector, the scientific community, and the military will shorten this adaptation cycle. Allied contributions are critical, especially if the ally or partner has already been fighting the foe for years. Anticipation and preparation are crucial. This last lesson is probably the most important in an era of strategic near-peer competition. In 1942, Germany made enough mistakes that it allowed the United States and its Allies the time and space to react. To prepare for future conflicts, members of the joint force and national security community

should prepare to act in a unified and decisive manner from the beginning. The next time a foe brings the fight to the homeland, there might not be any second chances. JFQ

Notes

¹ Karl Doenitz, *Memoirs: Ten Years and Twenty Days*, trans. R.H. Stevens (London: Weidenfeld and Nicolson, 1959), 223.

² Dan Van der Vat, *The Atlantic Campaign: World War II's Great Struggle at Sea* (New York: HarperCollins, 1988), 267.

³ *2022 National Defense Strategy of the United States of America* (Washington, DC: Department of Defense, 2022), 4–5, <https://media.defense.gov/2022/Oct/27/2003103845/-1/-1/1/2022-national-defense-strategy-npr-mdr.pdf>.

⁴ *Ibid.*, 4.

⁵ Samuel E. Morison, *History of United States Naval Operations in World War II*, vol. 1, *The Battle of the Atlantic: September 1939–May 1943* (Boston: Little, Brown and Company, 1951), 128.

⁶ “Unified Action is a comprehensive approach that focuses on coordination and cooperation of the U.S. military and other interorganizational participants toward common objectives, even if the participants are not necessarily part of the same command or organization.” Joint Publication 3-0, *Joint Operations* (Washington, DC: The Joint Staff, January 17, 2017, Incorporating Change 1, October 22, 2018), x.

⁷ Doenitz, *Memoirs*, 116, 150.

⁸ George W. Baer, *One Hundred Years of Sea Power: The U.S. Navy, 1890–1990* (Stanford: Stanford University Press, 1994), 190.

⁹ Doenitz, *Memoirs*, 150.

¹⁰ Williamson Murray and Allan R. Millett, *A War to Be Won: Fighting the Second World War* (Cambridge: Belknap Press, 2000), 240.

¹¹ Doenitz, *Memoirs*, 188.

¹² *Ibid.*, 184–188.

¹³ *Ibid.*, 153–154.

¹⁴ *Ibid.*, 198–202.

¹⁵ *Ibid.*, 202.

¹⁶ *Ibid.*

¹⁷ Clay Blair, *Hitler's U-Boat War: The Hunters, 1939–1942* (New York: Random House, 1996), 442–444; Doenitz, *Memoirs*, 206.

¹⁸ Doenitz, *Memoirs*, 221–222.

¹⁹ *Ibid.*, 223.

²⁰ Winston S. Churchill, *The Second World War*, vol. 5, *Closing the Ring* (Boston: Houghton Mifflin Company, 1951), 6.

²¹ Doenitz, *Memoirs*, 116.

²² Winston S. Churchill, *The Second World War*, vol. 2, *Their Finest Hour* (Boston: Houghton Mifflin Company, 1949), 529.

²³ S.W. Roskill, *The War at Sea 1939–1945*, vol. 2, *The Period of Balance* (London: Her Majesty's Stationery Office, 1956), 93; Baer, *One Hundred Years of Sea Power*, 196; Blair, *Hitler's U-Boat War*, 451–452.

²⁴ George McJimsey, *The Presidency of Franklin Delano Roosevelt* (Lawrence: University Press of Kansas, 2000), 124–125.

²⁵ Roskill, *The Period of Balance*, 97.

²⁶ *Ibid.*

²⁷ Blair, *Hitler's U-Boat War*, 451; Van der Vat, *The Atlantic Campaign*, 270.

²⁸ Blair, *Hitler's U-Boat War*, 451; Van der Vat, *The Atlantic Campaign*, 271.

²⁹ Blair, *Hitler's U-Boat War*, 456.

³⁰ Roskill, *The Period of Balance*, 96.

³¹ *Ibid.*, 98–99.

³² *Ibid.*, 98.

³³ Van der Vat, *The Atlantic Campaign*, 264.

³⁴ *Ibid.*, 265.

³⁵ Roskill, *The Period of Balance*, 97.

³⁶ *Ibid.*, 98. Emphasis added.

³⁷ Van der Vat, *The Atlantic Campaign*, 265.

³⁸ Blair, *Hitler's U-Boat War*, 464.

³⁹ William Mitchell, *Winged Defense: The Development and Possibilities of Modern Air Power—Economic and Military* (New York: G.P. Putnam's Sons, 1925), xi–xix, 126–127; Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm, 1917–1941* (Washington, DC: Office of Air Force History, 1955), 44–48.

⁴⁰ Harold Sprout and Margaret Sprout, *Toward a New Order of Sea Power: American Naval Power and the World Scene, 1918–1922*, 2nd ed. (Princeton: Princeton University Press, 1946), 104–121.

⁴¹ George H. Monahan, “The Army-Navy Contest for Control of Land-Based Antisubmarine Aviation and the Military Unification Debate, 1942–1948,” in *The Sea and the Second World War: Maritime Aspects of a Global Conflict*, ed. Marcus Faulkner and Alessio Patalano (Lexington: University Press of Kentucky, 2019), 273–277.

⁴² Monahan, “Antisubmarine Aviation and the Military Unification Debate,” 273; Thomas Wildenberg, *Billy Mitchell's War With the Navy: The Interwar Rivalry Over Air Power* (Annapolis, MD: Naval Institute Press, 2013), 70–94.

⁴³ Monahan, “The Army-Navy Contest for Control of Land-Based Antisubmarine Aviation and the Military Unification Debate, 1942–1948,” 273.

⁴⁴ Archibald D. Turnbull and Clifford L. Lord, *History of United States Naval Aviation* (New Haven: Yale University Press, 1949).

⁴⁵ David E. Johnson, *Fast Tanks and Heavy Bombers: Innovation in the U.S. Army, 1917–1945* (Ithaca, NY: Cornell University Press, 1998), 154.

⁴⁶ The Joint Board, *Joint Action of the Army and the Navy* (Washington, DC: Government Printing Office, 1936), 8.

⁴⁷ *Ibid.*

⁴⁸ Wesley F. Craven and James L. Cate, eds., *The Army Air Forces in World War II*, vol. 1, *Plans and Early Operations, January 1939 to August 1942* (Washington, DC: Office of Air Force History, 1983), 521.

⁴⁹ *Ibid.*, 526.

⁵⁰ Morison, *The Battle of the Atlantic*, 241.

⁵¹ *Ibid.*

⁵² Blair, *Hitler's U-Boat War*, 476–479; Montgomery C. Meigs, *Slide Rules and Submarines: American Scientists and Subsurface Warfare in World War II* (Washington, DC: NDU Press, 1990), 54–63.

⁵³ Morison, *The Battle of the Atlantic*, 219–228.

⁵⁴ Charles M. Sternhell and Alan M. Thorn-dike, *Antisubmarine Warfare in World War II*, OEG Report No. 51 (Washington, DC: U.S. Navy Department, Operations Evaluation Group, 1946); Blair, *Hitler's U-Boat War*, 460.

⁵⁵ Ernest J. King, *U.S. Navy at War 1941–1945: Official Reports to the Secretary of the Navy* (Washington, DC: U.S. Navy Department, 1946).

⁵⁶ Blair, *Hitler's U-Boat War*, 460.

⁵⁷ Morison, *The Battle of the Atlantic*.

⁵⁸ Blair, *Hitler's U-Boat War*, 447–452.

⁵⁹ *Ibid.*, 451.

⁶⁰ Ken Brown, *U-Boat Assault on America: Why the U.S. Was Unprepared for War in the Atlantic* (Annapolis, MD: Naval Institute Press, 2017).

⁶¹ Blair, *Hitler's U-Boat War*, 525–526.

⁶² Morison, *The Battle of the Atlantic*, 203.