US DESTROYERS 1934–45

Pre-war classes

DAVE McCOMB

ILLUSTRATED BY PAUL WRIGHT

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INTRODUCTION

The destroyer force with which the United States entered World War II was the product of twenty years of peace, 1919–1939.

On the nation's economic front, these two decades couldn't have been more different. Following a brief recession after World War I, the American economy expanded at an unprecedented rate and in 1929 gross national product reached one-third of the world total. Conversely, that October's stock-market crash ushered in the Great Depression, a decade of hardship at home and around the world.

The fortunes of the American shipbuilding industry were nearly the reverse. During the four years after the war ended, deliveries dropped to less than 5 percent of the World War I peak and stayed there until 1938. This near collapse brought plant closings, layoffs, and a corresponding loss of expertise that jeopardized the industry's future ability to rebound – a circumstance decried in 1944 by no less than the US Chief of Naval Operations Admiral Ernest J. King as a mistake that should never be repeated.

In 1921, however, such a risk was of little concern as the US hosted a Naval Arms Limitation Conference at Washington. In the hope of gaining a lasting peace, it offered to sacrifice its postwar superiority in capital ships and not to strengthen existing bases or establish new ones in the Pacific. The conference ended in February 1922 with nations agreeing to limit battleship tonnage and to abide by the resulting treaty at least through 1936, with two years' notice given before any withdrawal.

The United States' world view proved naive. In 1925–1928, while Japan completed 125 large combatant ships and Britain, France, and Italy a collective 275, the US commenced a building "holiday" during which it commissioned only 11. This did not at first raise any alarm at home, where activist Brigadier General "Billy" Mitchell had promoted the view that air power made a surface navy unnecessary and pacifists maintained that building up the Navy would promote war. Disinterest continued throughout Herbert Hoover's presidency, 1929–33, during which time keels for only 11 more large warships were laid down.

But the world was not moving toward a lasting peace. Germany's postwar civilian government never succeeded in establishing a sound economy. In 1933, new German Chancellor Adolf Hitler set about mobilizing armed forces, which in 1935 he announced to the world as a fait accompli. Japan, too, was unhappy; a British ally in World War I, it chafed at its quota under the

The streamlined Sims class epitomized a transition between an era of shipyards as engine builders and shipyards as assembly facilities, a central theme in the design history of the US Navy's prewar destroyers. Here *Anderson*, the first to commission, runs builder's acceptance trials in 1939. (NH 96119)

Washington Treaty and further resented United States legislation excluding Asians from applying for US citizenship. In 1931, the Japanese Army occupied Manchuria and looked forward to further territorial expansion.

Through all this the US Navy, though neglected, was not idle. Despite a long-term manpower reduction beginning in 1922 to fewer than 100,000 officers and enlisted personnel, it maintained its preparedness via a nucleus of dedicated career professionals. It also supported programs – e.g., at the Naval War College at Newport, Rhode Island, always a respected source of advanced thinking, and at the new Naval Research Laboratory at Anacostia, District of Columbia, which was soon to develop the first operational US radar – through an extended network of public and private efforts to advance science in the service of national defense.

In 1927, a second Naval Arms Limitation Conference at Geneva accomplished little, but a third one at London in 1930 extended individual ship and total tonnage limitations to cruisers and destroyers. For the latter, the United States' limit was 150,000 long tons standard displacement, of which 16 percent could be up to 1,850 tons while the balance was not to exceed 1,500 tons, i.e. 13 of the former and 84 of the latter. In this light, with its entire destroyer force consisting of 1,200-ton flush-deckers designed *c.*1916, the time had come for the United States to end its building holiday.

DESIGN AND DEVELOPMENT

The United States' procedure for building new warships began with two actions by Congress: one to authorize construction and a separate one to appropriate funds. With advice from a General Board of senior admirals, the Secretary of the Navy then approved contracts and turned over the design process to three independent technical bureaus – Construction and Repair for the hull and fittings, Engineering for propulsion and auxiliary machinery, and Ordnance for armament – which prepared specifications and contract plans upon which shipbuilders based their bids. The shipbuilders (Navy yards or private firms) then prepared their own detailed designs or subcontracted them to an outside design agent.

The function of US Navy destroyers, which had not changed much since 1905 when it was first described, was to protect the fleet from enemy torpedo

Farragut (foreground) and her class steam off San Diego in an exhibition staged for *Movietone News* in September 1936. Contemporary doctrine contemplated destroyers advancing to launch a torpedo attack against an enemy battle line. Here, the smokescreen has been laid by aircraft. (NH 67293)

boat attacks and to attack offensively with their own torpedoes. For these tasks, they needed speed and seakeeping ability sufficient to screen the fleet in any except the worst weather. By the late 1920s, in light of the modern weapons systems evolving, this was something the remnants of the Navy's force of 273 World War I era flush-deck destroyers could no longer be expected to provide.

In 1927, the Bureau of Construction and Repair reopened the destroyer design question for the purpose of consolidating postwar developments. Two years later, studies yielded a 1,440-tonner intended to combine the long range and heavy armament needed to operate with a fleet fighting its way across the Pacific to relieve the U.S.-held Philippines. By November 1930, the Bureau of Construction and Repair had investigated three designs of 1,375, 1,500 and 1,850 tons. April 1931 yielded a 1,500-ton ship with increased speed and seaworthiness compared with the flush-deckers – still too small to maintain station with a modern high-speed carrier task force in rough weather, but capable of delivering a torpedo attack in anything less.

Meanwhile the Bureau of Ordnance, recognizing the growing threat posed by aircraft, experimented during the 1920s with "dual-purpose" guns that could be used against both surface and air targets. The resulting 5-inch/38-caliber weapon had power, reliability, and rapid-firing capability. Teamed with a powered fire control director that could deliver firing solutions for high-speed targets, it proved so effective that it was adopted as the main antiaircraft armament on cruisers, battleships, and carriers, and emerged as the most successful naval gun of its type in World War II.

Against surface ships, the Mark 15 torpedo developed in 1931 was longer and heavier than those of World War I but similar in speed and range. Against submarines, the depth charge was little changed since its development in World War I and could be rolled off stern-mounted tracks or projected away from the ship by centerline-mounted "Y-guns."

Regarding machinery, standard practice in World War I had been for the Bureau of Engineering to issue specifications to shipbuilders, who executed their own designs. By 1930, however, only three private shipbuilders retained their own design departments (Bethlehem Shipbuilding Corporation in Quincy, Massachusetts; New York Shipbuilding in Camden, New Jersey; and Newport News Shipbuilding and Dry Dock Company in Virginia). All three were licensed to fabricate turbines by Britain's long-time world leader, the Parsons Marine Steam Turbine Co., Ltd., which reviewed their proposed designs in light of its latest research, and also made them available to the British Admiralty.

In February 1931, Congress passed the Naval Appropriations Act for fiscal year 1932, which funded five 1,500-ton destroyers left over from a 1916 authorization; in June 1932, it funded three more for fiscal year 1933 and then eight 1,850-tonners for 1934. Contracts for these 16 destroyers

Porter-class 1,850-tonners *Balch*, *Moffett*, *Winslow*, and *McDougal*, moored at San Diego in 1939, exhibit their single-purpose 5-inch twin mounts and 1.1-inch antiaircraft gun positions fore and aft. (NARA 80-G-422626)

were awarded to two of the big three – Bethlehem for the 1,500-tonners and "New York Ship" for the 1,850-ton leaders – for which the Bureau of Engineering provided specifications consistent with Parsons' conservative design philosophy.

Pre-World War II US Navy Destroyer Designs: Fiscal Years Funded

Class (ships)	Standard Displacement	Design Agent	32	33	34	35	36	37	38	39	40	41	42
Farragut (8)	1,500	Bethlehem	5	3									
Porter (8)	1,850	New York Shipbuilding			8								
Mahan (16)	1,500	Gibbs & Cox			16								
Dunlap (2)	1,500	Gibbs & Cox				2							
Bagley (8)	1,500	Gibbs & Cox				8							
Gridley (4)	1,500	Bethlehem				2	2						
Somers (5)	1,850	Gibbs & Cox				2	3						
Benham (10)	1,500	Gibbs & Cox					10						
Sims (12)	1,570	Gibbs & Cox						12					
Benson (30)	1,620	Bethlehem							6			4[2]	20[2]
Gleaves (66)	1,630	Gibbs & Cox							2	8[1]	8[1]	23[2]	25[2]

[1]Also known as the Livermore class [2]Also known as the Bristol class

The Treaty Classes: 1,500-Ton Destroyers

Fiscal years 1932 and 1933: the Farragut class

On September 20, 1932, three years into the Great Depression, as national unemployment climbed toward 25 percent, workers at Bethlehem Shipbuilding's nearly empty Fore River Yard in Quincy, Massachusetts, laid down the keel for a new USS *Farragut*.

On the outside, she bore little resemblance to the flush-deckers. Like them, her hull was long and narrow with a length-to-beam ratio of about 10:1, but for improved strength the Bureau of Construction and Repair had specified a welded hull with longitudinal frames. Seakeeping was also improved via a

Like a knife through butter, Bath-built *Dewey*, the second "gold-plater," slices past a coastal schooner at 30 knots during builder's acceptance trials off Owl's Head Light, Rockland, Maine in September 1934. Her weapons are not yet mounted. (NARA 19-N-119352)

raised forecastle, which gave her more than four feet of additional freeboard at the bow, while amidships her reduced freeboard lowered her center of gravity. High above, a Mark 33 main battery director controlled five 5-inch/38s, which were mounted on pedestals fixed to the deck. Two quadruple torpedo tube mounts were also fitted on her centerline abaft her No. 3 5-inch gun. Depth charges were not part of her original armament, though tracks were added in 1936.

On the inside, the introduction of alternating current and other amenities made her seem "lavish" to old hands, giving rise to the nickname "gold-plater," but little else below decks was revolutionary. Operating at 400 psi and 648°F, her four boilers fed saturated steam to Parsons-designed turbines, which generated 42,800 shaft horsepower (shp) at a specified 3,460 rpm and 2,320 rpm for her high- and low-pressure turbines respectively. Single reduction gears reduced turbine speed to a designed propeller speed of 392 rpm.

Farragut was commissioned in March 1934, less than a week before the first destroyers of the next 1,500-ton class, the Mahans, were laid down; Maine's Bath Iron Works followed with *Dewey* while the other six Farraguts were built at four Navy yards. All joined the fleet by April 1935: average time to launch was 15 months; commissioning took another five. Trials speed was 36½ knots. Standard displacement turned out to be well under 1,500 tons, which left room to grow within treaty limits.

Hull Numbers	Names
348–355	*Farragut,*[1] *Dewey,*[2] *Hull,*[3] *Macdonough,*[4] *Worden,*[5] *Dale,*[3] *Monaghan,*[4] *Aylwin*[5]

[1]Bethlehem Quincy [2]Bath [3]New York NY [4]Boston NY [7]Puget Sound NY [5]Philadelphia NY

Fiscal year 1934: the Mahan class

The depression was still worsening when President Franklin D. Roosevelt took office in March 1933 with a priority of putting the nation back to work. As former Assistant Secretary of the Navy from 1913 to 1920, he well understood the Navy's needs but at first, against the prevailing pacifism, he could not afford to provoke public opposition. An opportunity came at the end of his first hundred days, however, when Congress passed the National Industrial Recovery Act (NIRA), Title II of which established a $3.3 billion Public Works Administration program. That same day the President quietly issued an executive order appropriating $238 million of it for combatant ships, including carriers *Yorktown* and *Enterprise* and 20 destroyers.

As a result of competitive bidding, contracts for six destroyers were awarded not to the "big three" this time, but two each to Bath Iron Works, Federal Shipbuilding & Dry Dock Co., (a division of US Steel) at Kearny, New Jersey, and United Shipyards, Inc. on nearby Staten Island, New York. Lacking adequate design and drafting organizations of their own, the three chose the firm of Gibbs & Cox to be their design agent. The choice was controversial: the 11-year-old firm had no experience in designing warships. It had, however, designed four Grace Line passenger-cargo liners built at Federal and equipped them with superheated steam boilers, high-speed turbines and double reduction gears, i.e. a propulsion system far more advanced than any the US Navy had yet attempted.

Soon to become Engineer-in-Chief of the Navy was Rear Admiral Harold G. Bowen, who saw in this choice an opportunity for "emancipation" from British engineering. Like Gibbs & Cox founder William Francis Gibbs, Bowen well knew that American firms such as General Electric, Westinghouse and Allis-Chalmers had developed steam turbine installations for municipal electric companies that had already set new worldwide standards for economy. With the integral superheat boilers and closed feedwater systems needed to achieve high thermodynamic efficiency, some of these new plants were already operating at steam pressures and temperatures considered optimal: 600 psi and 850°F. If applied to ships, Admiral Bowen reasoned, such technology could yield enormous advantages in strategy, supply, and mainte-nance. Accordingly, he agreed that the new destroyers should be equipped with the most advanced machinery available.

The resulting Mahan class set precedents, including an increased use of welding. Carefully scaled mock-ups were used in planning the engineering spaces, which so impressed the Navy that it began specifying them in future contracts. These spawned a generation of extremely accurate ship models by Gibbs & Cox, which still stand as exemplars of the art of model making.

As Chief of the Bureau of Engineering in the 1930s, Rear Admiral Harold Gardner Bowen, USN (1883–1965) promoted applied research in many fields. Against strong opposition, he championed the development of new propulsion technology for destroyers and, by the end of the decade, succeeded in standardizing machinery designs that ushered in a new era of reliability and efficiency for combatant ships. Among the many benefits: cruising ranges were extended by 20–30 percent, which gave the US Navy an enormous strategic advantage during the war. He later became the Naval Research Laboratory's first Chief of Naval Research, for whom its Bowen Award for Patented Inventions is named. (NARA 80-G-603365)

Mahan, *c.*1938, with *Cushing*, *Smith*, and other Mahan-class sisters attached to Destroyer Squadron 5. World War II squadrons generally consisted of two four-ship divisions and a flagship, which was normally assigned to the low-numbered division later in the war. (NH 60644)

Internally, while pressure was kept at 400 psi as in the Farraguts, temperature was planned for 850°F but then lowered to 700°F over concerns about the use of ordinary lubricating oil. High- and low-pressure turbine speeds were increased to 5,850 rpm and 4,926 rpm respectively, which required double reduction gears. Separate 10,000 rpm cruising turbines were installed to maximize fuel economy over long distances.

Externally, in a reassessment of the importance of the torpedo, the battery was increased to 12 tubes: one centerline mount between the stacks and one "wing" mount on each side at the waist.

Sixteen ships were laid down in 1934 and, except for *Downes*, all were commissioned in 1936.

Hull Numbers	Names
364–379	*Mahan*,[1] *Cummings*,[1] *Drayton*,[2] *Lamson*,[2] *Flusser*,[3] *Reid*,[3] *Case*,[4] *Conyngham*,[4] *Cassin*,[5] *Shaw*,[5] *Tucker*,[6] *Downes*,[6] *Cushing*,[7] *Perkins*,[7] *Smith*,[8] *Preston*[8]

[1]United [2]Bath [3]Federal [4]Boston NY [5]Philadelphia NY [6]Norfolk NY [7]Puget Sound NY [8]Mare Island NY

Fiscal year 1935: the Dunlap, Bagley, and Gridley classes

The Naval Appropriations Act of 1934 funded the Mahans and the Porter-class leaders but no additional ships, leaving the US as the one world power without plans to bring its destroyer force up to treaty strength. In March 1934, however, Congress passed the Vinson-Trammell Act, which authorized 65 more destroyers. This was followed in June by an Emergency Relief Appropriation Act that funded 12 1,500-tonners and two leaders.

Several classes with only minor differences were now built in rapid succession. This unfortunate haste was driven by a need to provide employment during the depression, with the Navy already under fire for delays due to the time needed for preparing plans, tooling development, and procurement. With the Mahans not yet complete and 20,000 engineering drawings already in use, however, Gibbs & Cox had neither the time nor the benefit of experience at sea on which to base any redesign.

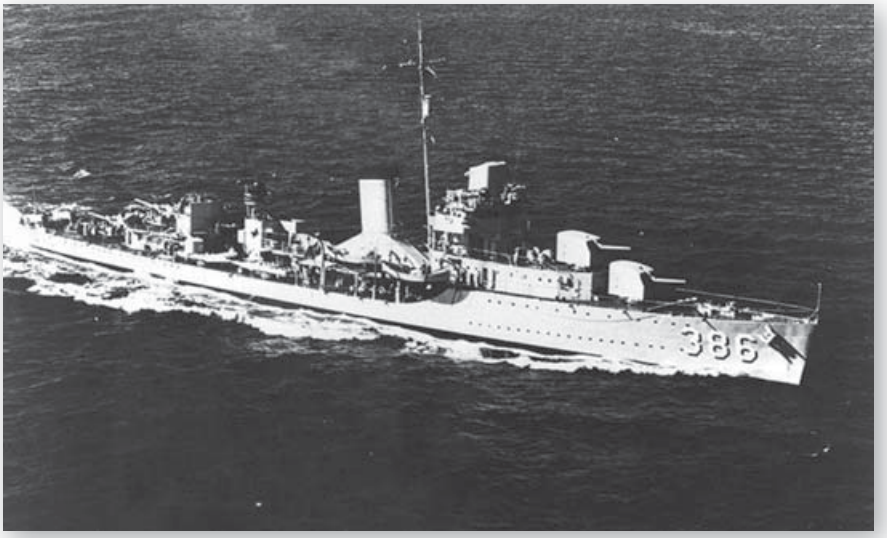
Twenty-six ships were completed with the Mahan power plant: to the 16 original Mahans were added two Dunlaps and eight Bagleys. The Dunlaps were so similar to the Mahans that some sources do not differentiate them

Dunlap (shown here) and *Fanning* repeated the Mahan design except for the substitution of base-ring mounted 5-inch/.38s forward, protected by fully enclosed gunhouses, and a single pole mast. (NHHC)

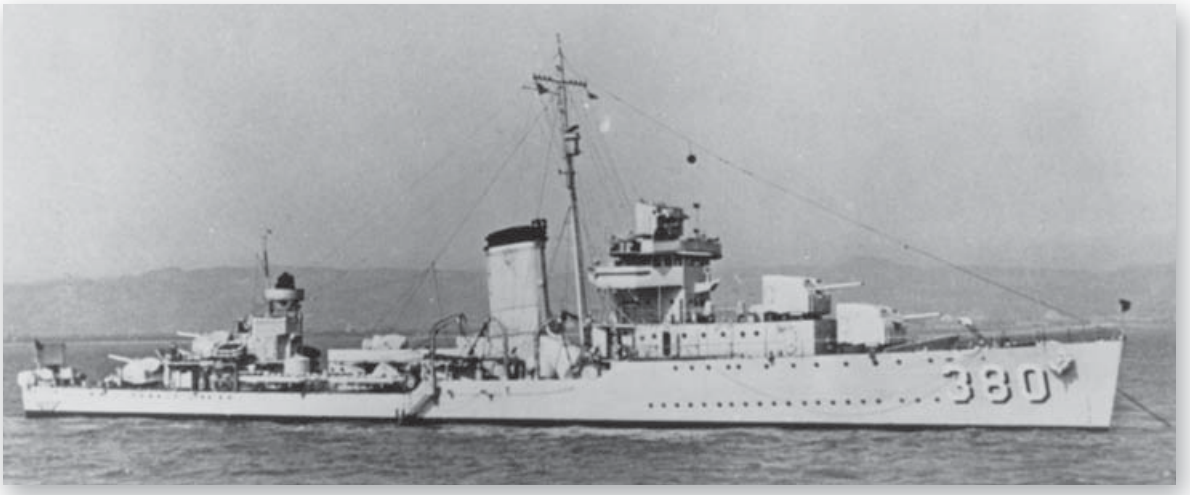
as a separate class. They differed mainly in their incorporation of a base ring for each forward 5-inch/38 through which passed a projectile hoist that rotated with the gun; the entire mount was enclosed by a gunhouse. The Bagleys were similar – their machinery was the same as the Dunlaps but above deck their boiler uptakes were trunked into a single stack. The Bagleys also carried 16 torpedo tubes in four quadruple mounts, two on each side.

Bethlehem had also bid, meanwhile, and from it the Navy ordered two Gridleys. These also had a single stack and 16 tubes, with the firm's preferred low-speed turbines, and single reduction gears, but with pressure and temperature raised to 600 psi and 700°F. By now, however, Admiral Bowen was convinced of the merits of high-pressure high-temperature steam and, as he prepared to head the Bureau of Engineering, he notified the "big three" builders that the bureau would enforce provisions of the Espionage Act of 1917 and that they would have to sever their relationships with Parsons.

United Shipbuilding built *Dunlap* and *Fanning*; four Navy yards built the eight Bagleys; and Bethlehem the two Gridleys at Quincy. All were laid down in 1935 and commissioned in 1937.



Bagley's machinery was carried over from the Mahans but her boiler uptakes were trunked together above decks into a single stack. She carried 16 torpedo tubes in four quadruple mounts, two on each side. (NH 97726)



Bethlehem-designed *Gridley* was similar to the Bagleys. Her machinery was capable of operating at 600 psi and was the first to develop 50,000 shp. (NH 67719)

Hull Numbers	Names
380, 382[A]	*Gridley*,[1] *Craven*[1]
384–385[B]	*Dunlap*,[2] *Fanning*[2]
386–393[C]	*Bagley*,[3] *Blue*,[3] *Helm*,[3] *Mugford*,[4] *Ralph Talbot*,[4] *Henley*,[5] *Patterson*,[6] *Jarvis*[6]

[A]Gridley class [B]Dunlap class [C]Bagley class
[1]Bethlehem Quincy [2]United [3]Norfolk NY [4]Boston NY [5]Mare Island NY [6]Puget Sound NY

Fiscal year 1936: the Benham class and two more Gridleys

Twelve more 1,500-tonners authorized under the Vinson-Trammell Act were funded in 1936: ten from Gibbs & Cox with only small changes from the Bagleys – the Benham class – and two more to the Gridley design.

Benham, contracted in 1935, continued the use of high-speed turbines and double reduction gears. Like the Mahans and successors, she was designed for 850°F but like the Gridleys she operated at 600 psi and 700°F. With three rather than four boilers and machinery that weighed about 12 percent less, however, her fuel consumption at 12 knots fell by 22 percent compared with the Gridleys and her cruising radius at 15 knots rose by about the same amount.

Topside, her more efficient fireroom arrangement paid off in a less congested main deck, differing from the Bagleys in a lack of prominent boiler uptakes. Also, for the first time, all of her 5-inch guns were base-ring mounted.

Ten Benhams were built, three by Federal and seven divided among five Navy yards. Laid down in 1936 and '37, they commissioned in 1939. Keels for two more Gridleys were also laid at Bethlehem's San Francisco yard in 1936; they completed in 1938. One of these, *Maury*, achieved the highest trial speed of any US destroyer at 42.8 knots.

Hull Numbers	Names
397–399[A]	*Benham*,[1] *Ellet*,[1] *Lang*[1]
400–401[B]	*McCall*,[2] *Maury*[2]
402–408[A]	*Mayrant*,[3] *Trippe*,[3] *Rhind*,[4] *Rowan*,[5] *Stack*,[5] *Sterett*,[6] *Wilson*[7]

[A]Benham class [B]Gridley class [1]Federal [2]Bethlehem San Francisco [3]Boston NY [4]Philadelphia NY
[5]Norfolk NY [6]Charleston NY [7]Puget Sound NY

Benham and her nine sisters of 1936 were repeat Bagleys except for base ring mounts applied to the after 5-inch/38s and upgraded machinery, which allowed less prominent boiler trunks. (NH 81173)

The Treaty Classes: 1,850-Ton Destroyer Leaders

Unlike the Royal Navy, the US Navy had no tradition of differentiated destroyer leader designs and although sketches had been prepared in 1917 and 1927, it was only in response to the London Treaty that ships were produced.

Fiscal year 1934: the Porter class

Eight ships of the Porter class followed the Farraguts. New York Shipbuilding prepared the design and, under authorization from NIRA, laid keels for four ships in December 1933. Bethlehem Quincy laid down the other four the next year with authorization left over from the Naval Preparedness Act of 1916.

Funded in 1934 they were handsome ships, 40 feet longer than the Farraguts, with tripod mainmasts, aft superstructures, and a general arrangement chosen with surface action in mind: eight single-purpose 5-inch/38s – which could be elevated only to a maximum of 35 degrees – in four twin base-ring mounts, with two quadruple 1.1-inch mounts for antiaircraft defense.

Like the Farraguts, the Porters carried a torpedo battery of eight 21-inch tubes in two centerline mounts. They could also carry eight torpedo reloads in special containers abreast of the after stack, although reloading under way was awkward at best.

Led by *Phelps*, seven Porters were commissioned in 1936; *Winslow* followed in 1937.

Porter and her seven sisters, the first 1,850-ton leaders, completed with eight 5-inch single-purpose guns in twin mounts, used the same generation of machinery as the Farraguts. (NH 66338)

Hull Numbers	Names
356–363	*Porter*,[1] *Selfridge*,[1] *McDougal* ,[1] *Winslow*,[1] *Phelps*,[2] *Clark*,[2] *Moffet*,[2] *Balch*,[2]

[1]New York Ship [2]Bethlehem Quincy

Fiscal years 1935 and 1936: the Somers class

The Somers were intended as repeat Porters: five 1,850-tonners to fill out the treaty quota of 13. Authorization came from the Vinson-Trammell Act. Two ships from Federal, using Gibbs & Cox as its design agent, were funded in 1935 followed by three more from Bath the next year.

Like the Benhams, the Somers machinery was designed to operate at 600 psi and 850°F and the performance gains over the previous class were similar: about 22 percent better fuel consumption at 12 knots and 21 percent greater cruising radius at 15 knots compared with the Porters. *Somers'* internal arrangement also permitted trunking the boiler uptakes into a single stack, which made possible three centerline torpedo mounts.

Somers was commissioned in December 1937 to face controversy. The Board of Inspection and Survey recommended that further installations of her type of machinery should be suspended until it had been tested in service. With the virtues of the Mahan design already proven, Admiral Bowen took umbrage but the Chief of Naval Operations ordered *Somers* out on a shakedown cruise to which the admiral added his own orders that the commanding officer do everything he could think up to "bust up the machinery" of his new ship. When *Somers* returned after 11,000 miles at sea, her commanding officer reported to the CNO that the machinery couldn't be busted, clearing the way for the standardization of Navy machinery that Admiral Bowen had been pushing for.

Hull Numbers	Names
381, 383, 394–396	*Somers*,[1] *Warrington*,[1] *Sampson*,[2] *Davis*,[2] *Jouett*,[2]

[1]Federal [2]Bath

The Post-Treaty Classes

Both Germany and Japan withdrew from their treaty obligations at the end of 1936. Around the world a naval shipbuilding race ensued while in the United States public sentiment remained opposed to a "worse than useless Navy." Six months later, Japan invaded China and her navy went on a war footing.

Somers was the US Navy's first ship designed to steam at 600 psi and 850°F. Her machinery proved reliable and efficient and opened the door for the adoption of advanced engineering designs throughout the Navy. (NARA 19-N-17969)

Fiscal year 1937: the Sims class

In June 1936, the Naval Appropriations Act of 1937 funded 12 more destroyers authorized under Vinson-Trammell.

Meanwhile, the Mahans were already realizing the anticipated gains in ruggedness, reliability, ease of operation, and efficiency. In this light, although a revised Naval Arms Limitation Treaty allowed a "light surface vessel, sub-category (c)" to displace up to 3,000 tons and carry up to 6.1-inch guns, the Navy elected not to design a larger destroyer on short notice. Rather, it upgraded its existing 1,500-ton design to improve ruggedness and dependability, retaining the Benhams' machinery at 600 psi and 700°F, but lengthening the hull by seven feet to relieve congestion in the engineering spaces.

The resulting Sims class displaced 1,570 tons. Their general arrangement was little changed from the Benhams but their appearance was strikingly new, with a streamlined sheer strake and a pilot house faired in the hope of reducing wind resistance enough to increase speed. While the benefits were never quantified, these ships were a pleasure to behold. Shipmates were delighted.

The Sims class was also the first class to incorporate the new Mark 37 main battery director, a fully enclosed, armor-protected housing ready to accommodate future fire-control radar with a firing solution "computer" located below decks. For armament, they at first reverted to the original Mahan configuration with five 5-inch/38s and three torpedo mounts.

Laid down in 1937 and '38 at Bath, Federal, Newport News and four Navy yards, six Sims were commissioned in 1939 and six in 1940.

Hull Numbers	Names
409–420	*Sims,*[1] *Hughes,*[1] *Anderson,*[2] *Hammann,*[2] *Mustin,*[3] *Russell,*[3] *O'Brien,*[4] *Walke,*[4] *Morris,*[5] *Roe,*[6] *Wainwright,*[5] *Buck*[7]

[1]Bath [2]Federal [3]Newport News [4]Boston NY [5]Norfolk NY [6]Charleston NY [7]Philadelphia NY

Fiscal years 1938–40: the Benson and Gleaves classes

In the summer of 1937, the Navy requested bids for eight destroyers to be funded in fiscal year 1938. Six shipyards responded and the Navy selected Bath Iron Works, with plans by Gibbs & Cox. When Bethlehem threatened not to participate, however, the Navy Department relented, and awarded it the contract for preparing the plans.

The new *Sims*, not yet fitted with her main battery director, carries five 5-inch/.38s and 12 tubes: one quadruple mount on the centerline and one on each wing. Characteristic of the prewar period are whaleboats that masked her No. 3. 5-inch gun. (NH 24122)

Several months later, Bethlehem proposed engineering changes reflecting its own prior practice. Now seriously taken aback, Admiral Bowen's first thought was to reject this "bastard" design but he reconsidered in the interest of trying out a few ships in service – the Benson class. Meanwhile, the bureau proceeded toward standardizing its machinery specification at 600 psi and 850°F, to be introduced with Bath-built *Livermore* in the fiscal year 1939 program; whereupon Bath retroactively applied this change to its two fiscal year 1938 ships, *Gleaves* and *Niblack*. Thus the Gleaves class became the first US Navy class with a modern, standardized engineering plant.

Improvements in boiler technology made another change possible: dividing the boilers and engines into two "split" plants in the manner anticipated in 1905. In this new arrangement, to minimize the likelihood that a single hit would disable a ship, the forward fireroom and engine room were placed together, as were the after fireroom and engine room; the two stacks from the two separated firerooms became a familiar part of the US Navy "look." The two classes also introduced the quintuple torpedo tube mount.

Designed by Bethlehem, *Benson* was the lead destroyer for the 1938 program. Built before radar was available, she carries a crow's nest at the yardarm. Throughout their careers, *Benson* and her sisters operated interchangeably with the contemporary Gleaves class. (NARA 80-G-456226)

A

TILLMAN vs. GLIDER BOMBS

In November 1943, after Operation *Avalanche* forces secured Naples, a 23-ship convoy escorted by seven destroyers from DesDivs 29 and 31 – plus British escorts – tried to get through with reinforcements and supplies. At dusk on the 6th, Axis aircraft appeared off the Algerian coast and torpedoed *Beatty*. At about the same time, *Tillman* spotted a Dornier 217 bomber, which promptly released an Hs.293 radio-controlled glider bomb that turned sharply and headed for the ship.

As the rocket-powered bomb screamed down at 400 knots or more, *Tillman's* port 20mm battery opened up a terrific volume of fire and at about 1,000 yards began to score. At first this had no effect. At about 600 yards, however, just when it seemed that nothing could stop it, the glider pitched down, crashed and exploded within 200 yards of the ship. Immediately, a second Hs.293 crossed ahead and then circled and crashed so close aboard to starboard that part of one wing was blown on to *Tillman's* depth charge racks. This time her 5-inchers also shot down the plane that had launched it.

Over the next four minutes, *Tillman* evaded a third glider bomb and then was attacked from starboard by five torpedo planes. Ahead emergency full with left full rudder, then backing her port engine emergency full as the planes launched torpedoes at 2,200 yards, *Tillman* completed a swing to port just as two torpedoes passed up her starboard side, one a mere 60 feet away.

Fifteen minutes after the action commenced, *Tillman* resumed flank speed to regain her station with the convoy.

Following the "Bath change," *Gleaves* became the first destroyer equipped with standardized machinery that realized the potential of high-pressure high-temperature steam. Her round stacks were the main external differentiation from the Bensons. (NARA 19-N-22951)

Twenty-four destroyers were funded by the Naval Appropriations Acts of 1938, 1939 and 1940, eight per year. The first 16 of these were also the last of the 65 ships authorized under the Vinson-Trammell Act; the last eight came under the 20 Percent Expansion Act of May 17, 1938.

Laid down mainly in pairs at Bethlehem, Bath, Federal and Navy yards, the 24 ships all commissioned within a 12-month period, July 1940–July 1941. As with the Sims, many shipmates regarded them as things of beauty and appreciated the high standard of craftsmanship that went into their many fitted parts.

Hull Numbers	Names
421–422[A]	*Benson*,[1] *Mayo*[1]
423–424[B]	*Gleaves*,[2] *Niblack*[2]
425–428[A]	*Madison*,[3] *Lansdale*,[3] *Hilary P. Jones*,[4] *Charles F. Hughes*[5]
429–436[C]	*Livermore*,[2] *Eberle*,[2] *Plunkett*,[6] *Kearny*,[6] *Gwin*,[3] *Meredith*,[3] *Grayson*,[4] *Monssen*[5]
437–444[D]	*Woolsey*,[2] *Ludlow*,[2] *Edison*,[6] *Ericsson*,[6] *Wilkes*,[3] *Nicholson*,[3] *Swanson*,[4] *Ingraham*[4]

[A]Benson class [B]Gleaves class funded 1938 [C]Gleaves class funded 1939 [D]Gleaves class funded 1940
[1]Bethlehem Quincy [2]Bath [3]Boston NY [4]Charleston NY [5]Puget Sound NY [6]Federal

TOWARD A TWO-OCEAN WAR

In June 1939, Secretary of the Navy Charles Edison organized a publicity stunt to demonstrate the Navy's engineering accomplishments to a skeptical press. With her commissioning still two months away, the untested Sims-class destroyer *Hammann* stood out of New York Harbor with members of the press embarked. Operating at 850°F, she performed without fault through a series of tests. In one of these she made 40 knots, stopped dead in 50 seconds and then made 22 knots astern after a mere 20 seconds more. No further criticism was heard.

Modifications

Inside the Navy there was more controversy, however. In laying down a new class each year while trying to improve fighting qualities, each of the three bureaus had exceeded its original weight estimates. Successive classes were becoming increasingly top-heavy. To be safe, suspect destroyers were ballasted with lead. Early in 1939, however, a festering conflict between the Bureau of Engineering and the Bureau of Construction and Repair over high-pressure high-temperature steam came to a head when one of the Sims failed her inclining test, indicating a lack of reserve stability.

Immediately, the several Sims that had been completed to their original design lost their No. 3 5-inch guns and wing torpedo tubes in favor of two centerline mounts. Additional fixes were accomplished by redistributing weight and substituting lighter materials but, as with all the 1,500-tonners before them, there was no substitute for eliminating topweight. At different times, therefore, the after 5-inch guns on an individual ship may have had no gunhouses, open-topped gunhouses covered by canvas for protection against the arctic cold and ice, or full gunhouses for splinter protection. Eventually, any fitting that could not be justified was removed in the name of stability – even one of the anchors, with its hawse pipe plated over.

Radar

As built, all the prewar destroyers depended on lookouts stationed in a time-honored crow's nest fitted high on the mast. In 1941, a replacement began to appear in the form of the long-wave SC radar, a result of the Naval Research Laboratory's work. With its ungainly stacked-dipole "bedspring" antenna mounted atop the mast, the SC could detect planes and large surface vessels at ranges of up to 20,000 yards.

For smaller objects such as submarine periscopes, a short-wave radar would be needed, but such a design was not possible without a source of high-energy pulses at high frequencies. Fortunately, scientists at Britain's University of Birmingham had developed such a device, the magnetron, which, with Prime Minister Churchill's consent and in return for funding, they offered to America in September 1940. Over the next two years, Bell Labs and Raytheon completed work on a microwave surface search radar, the highly successful SG, with its small rotating parabolic reflector that could be fitted on a destroyer mast below the SC antenna.

The magnetron also powered a new gunfire control radar, the FD, later referred to as the Mark 4. After testing in *Roe* in September 1941, the first production unit was installed in *Morris* atop her Mark 37 gun fire control system in January 1942.

Hoping the *Tirpitz* would not suddenly emerge from the fog: Sims-class 1,570-tonners of DesRon 2 on the North Atlantic neutrality patrol in the days before radar. (NH 47006)

Antiaircraft defense

Effective antiaircraft defense was another concern. Throughout the 1930s, the Browning .50-caliber machine gun had been a destroyer's universal protection, with the quadruple 1.1-inch machine cannon initially fitted in the leaders. Both weapons had shortcomings, however, soon magnified by the threat posed by ever faster and better-protected aircraft:

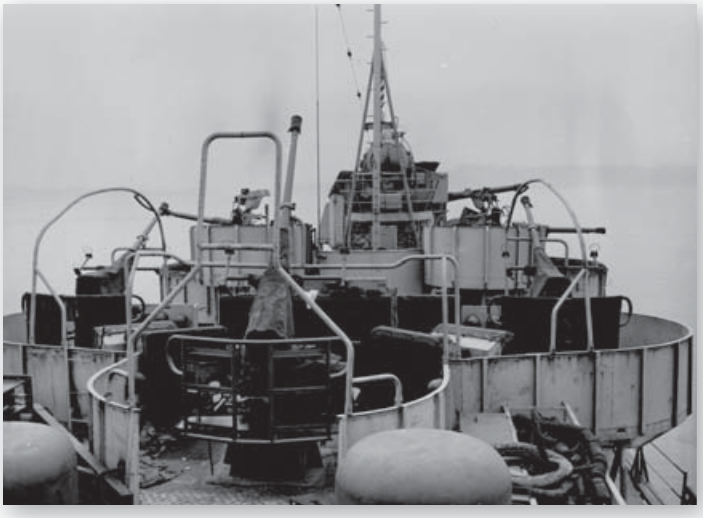
Kearny was first to demonstrate the toughness of American destroyers by surviving a torpedo hit from U-568 on October 17, 1941, before the United States formally entered the war. The damage to her forward fireroom is evident as she lies off Iceland alongside *Monssen*. (NARA 80-G-28788)

while the 1.1-inch "Chicago Piano" was too unwieldy for close-in defense and could overheat and jam, the .50 cal was too light – even multiple rounds might not stop a plane and a destroyer lacked room to mount enough guns to make up the difference. By 1940, the Navy regarded insufficient antiaircraft defense as its most serious weakness. But here, too, the British had solutions to suggest.

For short range, they had begun using an air-cooled 20mm machine gun developed by the Swiss firm Oerlikon. A single mount could fire an explosive bullet about two and a half times the weight of the .50 cal at a nominal rate of 450 rounds per minute, making it up to ten times as effective. As a free-swinging gun, it could be brought into action quickly and could be effective at 1,000 yards. The US Navy adopted it immediately, and from the beginning of the war until the invasion of the Philippines the 20mm was credited with nearly one-third of all aircraft shot down.

For intermediate range, the 40mm Bofors machine gun was both light enough for a destroyer and heavy enough to stop a plane. A 4.8-lb cartridge carried a projectile weighing slightly less than 2 lb; four cartridges were loaded into a clip. A crew of seven plus ammunition handlers could fire at a rate of 120 or more rounds per minute per barrel and when controlled by a Mark 51 director mounted nearby its effective range was nearly 4,000 yards. First installed in mid-1942, the water-cooled 40mm twin soon replaced the 1.1-inch quad. From Leyte in 1944 until Okinawa in 1945, when attacking planes no longer kept their distance, the 40mm accounted for about half of all aircraft kills.

There were other modifications – outboard-mounted "K-gun" depth charge projectors, for example, which appeared at the end of 1941 to replace the centerline-mounted "Y-gun" – but the advances in radar and antiaircraft defense were the most significant of the period. Ill-equipped as designed to meet the emerging threat, the prewar destroyers would have suffered severely (as did their Japanese counterparts) without them.



Pipe guards were installed to prevent antiaircraft guns from firing into their own ships when "lock-out" cams were not available. In 1944, *Wainwright*'s elaborate installation nearly encloses her unique battery of army-type 40mm single mounts. (NARA 19-N-68041)

Mobilization

Germany invaded Poland on September 1, 1939. On September 8, President Roosevelt declared a limited emergency: the Navy's authorized enlisted personnel strength was increased from 131,000 to 191,000; retired officers and enlisted personnel were recalled; competitive bids were eliminated. The Navy also initiated expansion of shipbuilding facilities, which eventually could be found along navigable waters all around the country. General industry followed suit in developing a complete supply chain to meet shipbuilding requirements.

On May 10, 1940, Germany launched a "blitzkrieg" attack against Holland and Belgium, temporarily trapping a third of a million British troops at Dunkirk and forcing an armistice with France on June 22. Congress at last responded with the Vinson-Walsh "Two-Ocean Navy" Act of July 19, 1940, which authorized an expansion in combat tonnage of about 70 percent, including 115 destroyers – the largest single naval building program ever undertaken.

Had there been no fresh sense of urgency, all this new construction might have been built to the new 2,100-ton Fletcher design being planned for fiscal year 1941. Implementing that changeover would take time, however, and after the 24 new Bensons and Gleaves arrived, no further commissionings could be expected until mid-1942 at best. On May 23, therefore, Secretary of the Navy Edison approved construction of 12 more ships of the existing design.

Fiscal years 1941 and 1942: repeat Benson and Gleaves classes

Ultimately, 72 repeat ships were built. Contracts for 12 were awarded in May 1940; 15 more in September; 41 in December; and a final four on February 1, 1941. While the Gleaves design was now standard, Bethlehem's additional capacity was needed so between 1941 and 1942 orders were placed for 24 repeat Bensons in addition to 48 Gleaves. Collectively known at the time as the Bristol class, all these ships carried four 5-inch/38s in full gunhouses. Until the 40mm became available, 24 of them mounted a 1.1-inch quad and five 20mm singles, but two 40mm twins and four 20mm were standard. Ten torpedo tubes were at first carried; these were later reduced to five.

Five ships were commissioned in 1941; 20 more arrived by the time the first Fletcher joined them in June 1942; all but 15 had arrived by the end of that year and the last one, *Welles*, finally appeared in August 1943.

By the end of their production runs, the high-volume yards, Bethlehem Quincy and Federal, were completing new ships in as little as five months. To simplify construction and improve visibility, the last ten ships from both Federal and Seattle-Tacoma Shipbuilding incorporated "square" bridges. Federal was unusual in building new Gleaves alongside its Fletchers; other builders switched to Fletchers or ceased destroyer production when their contracts were fulfilled.

Hull Numbers	Names
453–458[B]	*Bristol*,[1] *Ellyson*,[1] *Hambleton*,[1] *Rodman*,[1] *Emmons*,[2] *Macomb*[2]
459–460[A]	*Laffey*,[3] *Woodworth*[3]
461–464[B]	*Forrest*,[4] *Fitch*,[4] *Corry*,[5] *Hobson*[5]
483–490[B]	*Aaron Ward*,[1] *Buchanan*,[1] *Duncan*,[1] *Lansdowne*,[1] *Lardner*,[1] *McCalla*,[1] *Mervine*,[1] *Quick*[1]
491–492[A]	*Farenholt*,[6] *Bailey*[6]
493–497[C]	*Carmick*,[7] *Doyle*,[7] *Endicott*,[7] *McCook*,[7] *Frankford*[7]
598–617[A]	*Bancroft*,[8] *Barton*,[8] *Boyle*,[8] *Champlin*,[8] *Meade*,[6] *Murphy*,[6] *Parker*,[6] *Caldwell*,[3] *Coghlan*,[3] *Frazier*,[3] *Gansevoort*,[3] *Gillespie*,[3] *Hobby*,[3] *Kalk*,[3] *Kendrick*,[9] *Laub*,[9] *Mackenzie*,[9] *McLanahan*,[9] *Nields*,[8] *Ordronaux*[8]
618–628[C]	*Davison*,[1] *Edwards*,[1] *Glennon*,[1] *Jeffers*,[1] *Maddox*,[1] *Nelson*,[1] *Baldwin*,[7] *Harding*,[7] *Satterlee*,[7] *Thompson*,[7] *Welles*[7]
632–641[B]	*Cowie*,[4] *Knight*,[4] *Doran*,[4] *Earle*,[4] *Butler*,[10] *Gherardi*,[10] *Herndon*,[11] *Shubrick*,[11] *Beatty*,[5] *Tillman*[5]
645–648[C]	*Stevenson*,[1] *Stockton*,[1] *Thorn*,[1] *Turner*[1]

[A]Benson class [B]Round bridge Gleaves class [C]Square bridge Gleaves class
[1]Federal [2]Bath [3]Bethlehem San Francisco [4]Boston NY [5]Charleston NY [6]Bethlehem Staten Island
[7]Seattle-Tacoma [8]Bethlehem Quincy [9]Bethlehem San Pedro [10]Philadelphia NY [11]Norfolk NY

With the commissioning of *Emmons* on December 5, 1941, the US Navy entered World War II with 100 destroyers 7½ years old or less. While not as large as the Japanese ships that many of them would soon engage, they were nonetheless robust, with reliable and efficient machinery, a superior director-controlled main gun, effective radar, and improving short-range antiaircraft defense, all manned by career Navy men who quickly learned how to fight them and then brought their experience back home. Even in their maturity, as conditions changed, the prewar destroyers adapted and performed well.

DESTROYERS IN ACTION

The Atlantic and Mediterranean

The Battle of the Atlantic

World War II began on September 1, 1939, when Germany invaded Poland. Four days later, caught between Great Britain's urgent need for supplies and his own country's desire to appear neutral, President Roosevelt ordered the US Navy to commence "neutrality patrols," initially in American coastal waters but over the next two years these moved ever eastward into the Atlantic. Meanwhile, German U-boat attacks, initially concentrated around the British Isles, extended westward into the Atlantic.

Not surprisingly, it was in the mid-Atlantic south of Iceland that the first action occurred in September 1941 between U-652 and the flush-decker *Greer*, which prompted President Roosevelt to authorize United States ships to shoot on sight. Later that month, to help defend against U-boat "wolfpacks," American destroyers began escorting convoys into the area. There, in October, *Kearny* was torpedoed in her forward engine room – and instantly vindicated the split powerplant design by remaining afloat and making Iceland under her own power.

Within a month of America's entry into the war, U-boats began to arrive in American coastal waters. With American destroyers protecting the North Atlantic convoys, there was little to stop U-boats along the eastern seaboard:

Atlantic Fleet destroyer squadrons in early 1942

Squadron	Division	Ships
DesRon 7	DesDiv 13	*Benson*[5] *Mayo*[5] *Gleaves*[6] *Niblack*[6] *Plunkett*[S6]
	DesDiv 14	*Charles F. Hughes*[5] *Hilary P. Jones*[5] *Lansdale*[5] *Madison*[5]
DesRon 8	DesDiv 15	*Lang*[3] *Stack*[3] *Sterett*[3] *Wainwright*[S4] *Wilson*[3]
	DesDiv 16	*Mayrant*[D3] *Rhind*[3] *Rowan*[3] *Trippe*[3]
DesRon 9	DesDiv 17	*McDougal*[D1] *Moffett*[1] *Sampson*[2] *Winslow*[1]
	DesDiv 18	*Davis*[S2] *Jouett*[2] *Somers*[2] *Warrington*[2]
DesRon 10	DesDiv 19	*Ellyson*[S6] *Emmons*[6] *Hambleton*[6] *Macomb*[6] *Rodman*[6]
	DesDiv 20	*Forrest*[D6] *Fitch*[6] *Corry*[6] *Hobson*[6]
DesRon 11	DesDiv 21	*Eberle*[6] *Ericsson*[6] *Kearny*[6] *Livermore*[6] *Roe*[S4]
	DesDiv 22	*Grayson*[6] *Gwin*[D6] *Meredith*[6] *Monssen*[6]
DesRon 13	DesDiv 25	*Bristol*[6] *Buck*[S4] *Edison*[6] *Ludlow*[6] *Woolsey*[6]
	DesDiv 26	*Ingraham*[6] *Nicholson*[6] *Swanson*[6] *Wilkes*[D6]

[S]Initial and/or long-term squadron flagship [D]Division flagship
[1]Porter class [2]Somers class [3]Benham class [4]Sims class [5]Benson class [6]Gleaves class.

Atlantic Fleet destroyer squadrons formed in late 1942 and 1943		
Squadron	**Division**	**Ships**
DesRon 15	DesDiv 29	*Beatty*,[2] *Davison*,[2] *Mervine*,[S2] *Quick*,[2] *Tillman*[2]
	DesDiv 30	*Cowie*,[D2] *Doran*,[2] *Earle*,[2] *Knight*[2]
DesRon 16	DesDiv 31	*Kendrick*,[1] *Laub*,[1] *Mackenzie*,[1] *McLanahnan*,[1] *Parker*[S1]
	DesDiv 32	*Boyle*,[D1] *Champlin*,[1] *Nields*,[1] *Ordronaux*[1]
DesRon 17	DesDiv 33	*Glennon*,[2] *Jeffers*,[2] *Maddox*,[2] *Murphy*,[1] *Nelson*[S2]
	DesDiv 34	*Butler*,[D2] *Gherardi*,[2] *Herndon*,[2] *Shubrick*[2]
DesRon 18	DesDiv 35	*Carmick*,[2] *Doyle*,[2] *Endicott*,[2] *McCook*,[2] *Frankford*[S2]
	DesDiv 36	*Baldwin*,[D2] *Harding*,[2] *Satterlee*,[2] *Thompson*[2]
[S]Initial and/or long-term squadron flagship [D]Division flagship [1]Benson class [2]Gleaves class		

no organization for protecting shipping, no convoys, not even a blackout plan for coastal cities. Sinkings rose to one per day, threatening America's entire war effort. "Roving patrols" had little effect. The carnage stopped only when a convoy system was adopted in late spring. Thereafter, losses fell to less than one percent as the U-boat offensive shifted first to the Caribbean and, when defenses stiffened there as well, back to the North Atlantic.

For Atlantic Fleet destroyers during this period, convoy assignments continued. When the destination was the Caribbean, South America, the Azores, or African or Mediterranean ports, the escort might be all American. Patrolling in southern waters, DesRon 9's 1,850-tonners had some successes in intercepting German blockade-runners. Also in the Atlantic were carriers *Ranger* and *Wasp*, and in both April and May 1942 *Wasp* delivered Spitfire fighter aircraft from Britain through the Strait of Gibraltar to beleaguered Malta, once with *Lang* and *Madison* in her screen and once with *Lang* and *Sterett*.

When the destination was Murmansk or Archangel in Russia, across the frigid Barents Sea, a few American destroyers might share an assignment with multiple British escorts. Convoy PQ-17, which departed Iceland in June 1942, suffered particularly severe losses. With DesRon 8's *Wainwright* and *Rowan* in the screen and *Mayrant* and *Rhind* attached to a cruiser-destroyer covering force, faulty intelligence was received that battleship *Tirpitz* was at sea and the convoy's merchantmen were ordered to disperse. Alone, the individual ships had little chance of survival: of the 33 that had scattered, U-boats and aircraft found and sank 22.

Allied technology, doctrine, and numbers eventually prevailed, however. Beginning in 1942, the new SG radar and high-frequency direction finders (HF/DF, known as "huff-duff") enabled escorts to detect surfaced U-boats at greater ranges than the U-boats could detect them in return. Later, escort aircraft carriers began arriving to form the nucleus of "hunter-killer" groups with both flush-deck and modern destroyers. By mid-1943, when specialized destroyer escorts began relieving them, the outcome was no longer in doubt.

Hilary P. Jones ("High Pressure Jones"), one of the original Bensons, operated mainly in the Atlantic until Operation *Shingle* in 1944; then participated in the sinking of U-616 before supporting the invasion of southern France. Here in August 1943, she shows her speed and her armament of five 5-inch and six 20mm guns. (NARA 80-G-419690)

For the Normandy invasion, combat artist Dwight Shepler embarked in *Emmons* to take photos and sketch scenes, which he later completed in his studio. Here in *The Battle for Fox Green Beach*, *Emmons* provides gunfire support for troops landing on Omaha Beach on D-Day, June 6, 1944. (NH 19-K-N-570)

North Africa and Europe

In November 1942, the United States participated in the invasion of North Africa. Serving in Operation *Torch* were Destroyer Divisions 16 and 21 with flagships *Wainwright* and *Roe* plus Squadrons 10, 13, and 15. In January 1943, President Roosevelt and Prime Minister Churchill met at newly occupied Casablanca, where they decided to continue on to Italy by way of Sicily. Operating from Mers-el-Kébir, Algeria during the ensuing buildup, Squadrons 16 and 17 began to join the *Torch* destroyers in escorting convoys and conducting anti-submarine patrols in the western Mediterranean.

On July 10, with DesDiv 13 added, 3,200 Allied ships transported 250,000 troops under Generals Montgomery and Patton for Operation *Husky*, the invasion of Sicily. Before dawn that morning, *Maddox* was bombed and sunk but over the next five and a half weeks destroyers proved their versatility against every form of opposition, knocking out enemy positions and tank formations and defending against aircraft. *Buck* sank an Italian submarine; *Rhind* and *Gherardi* held off MS-boats, the fast Italian torpedo craft.

If Sicily was a trial, then the Italian mainland was nearly an execution. During the Operation *Avalanche* landings at Salerno south of Naples on September 9, gunfire from DesDiv 25 was vital in helping troops overcome fierce opposition ashore, which in some sectors almost pushed them back into the sea. That evening, a German S-boat torpedoed *Rowan*, which sank in 40 seconds. *Bristol*, which picked up a mere 72 survivors, was herself torpedoed in October while U-616 torpedoed DesRon 13 flagship *Buck*, also with heavy loss of life.

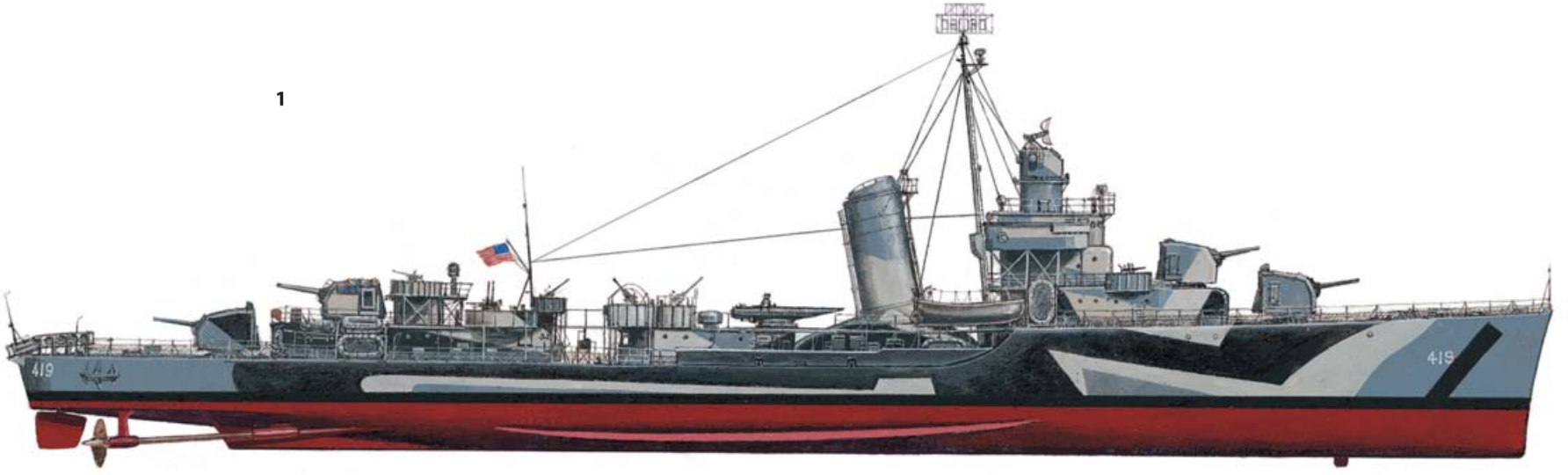
B

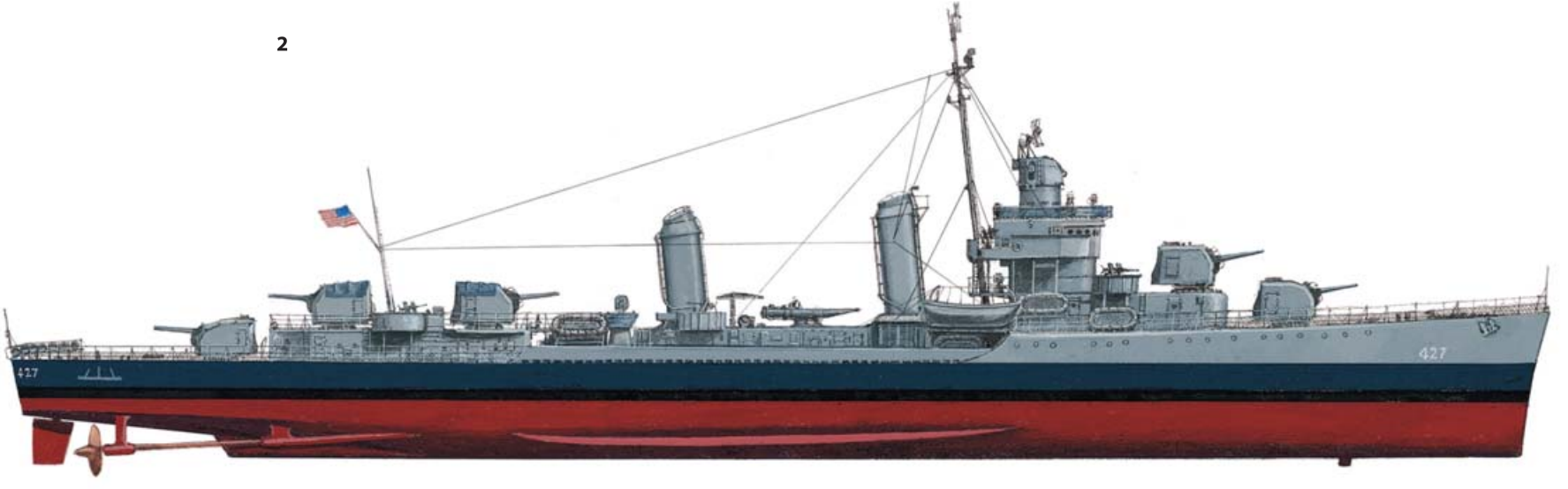
1) USS *WAINWRIGHT* (DD 419), 1944

Of all the Sims-class 1,570-tonners, none surpassed *Wainwright's* record for variety. With the Atlantic Fleet, she escorted convoys to such diverse destinations as Russia and North Africa, led DesRon 8 in four Mediterranean operations and earned engagement stars for three antisubmarine assessments. Transferred to the Central Pacific in 1945, she ended the war in the Aleutians. Here she appears in her 1944 camouflage, Measure 32/3D.

2) USS *HILARY P. JONES* (DD 427), 1944

One of the original Benson class, *Hilary P. Jones* received the Navy Unit Commendation for gunfire support "not equalled by other destroyers" off San Remo and Port Maurizio, Italy in September 1944 while fighting off a full range of full-sized and midget submarines, human torpedoes, torpedo boats, and explosive boats. Here she appears in the Measure 22 camouflage she carried through most of the war.





One of the most famous photographs taken during the Japanese attack on Pearl Harbor, December 7, 1941 shows *Shaw*'s forward magazine exploding. She, *Cassin*, and *Downes* were all in dry dock when the Japanese attacked. (NARA 80-G-16871)

All three destroyers damaged at Pearl Harbor were repaired and returned to service but on December 10, 1941, three days after the Japanese attack, none has yet been moved. *Shaw*, at top, has lost her bow; *Cassin* and *Downes*, inboard of battleship *Pennsylvania* at bottom, are burned out. At center is the light cruiser *Helena*. (NARA 80-G-387598)

Over the next months, the Italian land campaign became a stalemate. On January 22, 1944, to relieve the pressure, troops were landed in the German rear at Anzio, south of Rome. For this Operation *Shingle*, DesDiv 14 joined to bring DesRon 7 up to full strength. Again destroyers earned high praise for their fire support and again they fought off aircraft – 32 waves of them in the first ten days. Squadron flagships *Plunkett* and *Woolsey* distinguished themselves during this period, the former surviving a 14-plane attack on January 22.

The Italian campaign dragged on. Off Algeria in April, veteran *Lansdale* was lost to an aerial torpedo. In May, after a protracted hunt, *Ellyson*, *Hambleton*, *Rodman*, *Emmons*, *Macomb*, *Gleaves*, *Nields*, and *Hilary P. Jones*, with help from a British Wellington bomber, forced *Buck*-killer U-616 to the surface and sank her after her crew abandoned her, a battle some later nicknamed "Operation *Monstrous*."

Thirty-three American destroyers gathered around Britain in June for Operation *Neptune*, the Normandy invasion. Among them were three of the DesRon 9 1,850-tonners from the South Atlantic and DesRon 18, the last Atlantic Fleet squadron to form. Guided by shore fire-control parties during the desperate fighting on D-Day, some pressed so close to the beaches to deliver accurate fire that they touched bottom. *Corry* was sunk by shellfire and possibly also a mine that day; *Glennon* was later mined and also lost.

The final major amphibious operation in the European theater was Operation *Anvil*, the invasion of southern France in August 1944. There, the Atlantic Fleet destroyers again demonstrated their crack marksmanship in shore bombardments along the French and Italian Rivieras before turning to targets along the German-occupied Italian coast until the end of the war.

The Pacific

On December 7, 1941, Japanese planes bombed Pearl Harbor. The same day, December 8 in the eastern hemisphere, they attacked the Philippines. As in the Atlantic, the outbreak of war in the Pacific caught the US Navy unprepared. British Prime Minister Winston Churchill immediately requested a meeting with President Roosevelt, and at the "Arcadia" conference in Washington at the end of the year the two reaffirmed a prior staff decision to "beat Hitler first." Despite the great distances involved and the superior numbers of the Japanese fleet, resources available to oppose it would be limited – for nearly two years, as it turned out. In this light, while *Hambleton* and *Emmons* were sent to the west coast of South America on a diplomatic mission to ensure the Japanese would never be welcome to threaten the Panama Canal from bases there, new Pacific Fleet Commander-in-Chief Admiral Chester W. Nimitz prepared to move west from Pearl Harbor.

Pacific Fleet destroyer squadrons in early 1942

Squadron	Division	Ships
DesRon 1	DesDiv 1	*Dewey*,[1] *Hull*,[1] *Macdonough*,[1] *Phelps*,[S7] *Worden*[1]
	DesDiv 2	*Aylwin*,[1] *Dale*,[1] *Farragut*,[D1] *Monaghan*[1]
DesRon 2	DesDiv 3	*Anderson*,[8] *Hammann*,[8] *Hughes*,[8] *Morris*,[S8] *Sims*[8]
	DesDiv 4	*Mustin*,[D8] *O'Brien*,[8] *Russell*,[8] *Walke*[8]
DesRon 3	DesDiv 5	*Cassin*,[2] *Conyngham*,[2] *Clark*,[S7] *Downes*,[2] *Reid*[2]
	DesDiv 6	*Case*,[D2] *Cummings*,[2] *Shaw*,[2] *Tucker*[2]
DesRon 4	DesDiv 7	*Bagley*,[5] *Blue*,[5] *Helm*,[5] *Henley*,[5] *Selfridge*[S7]
	DesDiv 8	*Mugford*,[D5] *Ralph Talbot*,[5] *Patterson*,[5] *Jarvis*[5]
DesRon 5	DesDiv 9	*Drayton*,[2] *Flusser*,[2] *Lamson*,[2] *Mahan*,[2] *Porter*[S7]
	DesDiv 10	*Cushing*,[D2] *Perkins*,[2] *Preston*[2], *Smith*[2]
DesRon 6	DesDiv 11	*Balch*,[S7] *Craven*,[4] *Gridley*,[4] *Maury*,[4] *McCall*[4]
	DesDiv 12	*Benham*,[6] *Dunlap*,[D3] *Ellet*,[6] *Fanning*[3]

[5]Initial and/or long-term squadron flagship [D]Division flagship [1]Farragut class [2]Mahan class [3]Dunlap class [4]Gridley class [5]Bagley class [6]Benham class [7]Porter class [8]Sims class

Though too weak at first to challenge the Japanese fleet directly, Admiral Nimitz could show the flag. He had six destroyer squadrons available: DesRons 1, 3, and 4 – at Pearl Harbor on December 7 when the Japanese attacked; DesRons 5 and 6 – at sea with aircraft carriers *Lexington* and *Enterprise* respectively; and DesRon 2, soon to arrive in the Pacific with *Yorktown*. By February, Squadrons 1 and 2 were ready to sortie with carrier task forces on hit-and-run raids on Japanese-held island installations from the Central Pacific west to Rabaul and New Guinea. In March, *Hornet* stood into San Francisco from the Atlantic with DesDiv 22. In April, escorted by Vice Admiral William F. Halsey, Jr.'s *Enterprise* and her DesRon 6 screen, and with Colonel James Doolittle's 16 B-25 bombers embarked in *Hornet*, they crossed the Pacific to bomb Japan for the first time.

Early May brought the first carrier-vs.-carrier confrontation at the battle of the Coral Sea. After 13 destroyers from Squadrons 1 and 2 screened Vice Admiral Frank Jack Fletcher's *Yorktown* and *Lexington* in a raid on Tulagi in the British Solomon Islands, planes from the two carriers intercepted a Japanese invasion force bound for Port Moresby, New Guinea, across the Coral Sea from Australia. In the first naval battle in which opposing ships did not sight one another, American aircraft sank the small carrier *Shoho*. *Sims* was bombed and sunk with oiler *Neosho*. Finally both American carriers were hit, and *Lexington* scuttled after *Hammann*, *Anderson*, and *Morris* helped take off her crew.

"Lady Lex" *in extremis*: after the battle of the Coral Sea, it appeared that damaged carrier *Lexington* might be saved until a series of internal explosions got the better of her. Here, *Hammann* takes aboard swimmers as her crew abandons ship. (NARA 80-G-16668)

C

USS *MORRIS* (DD 417), 1942

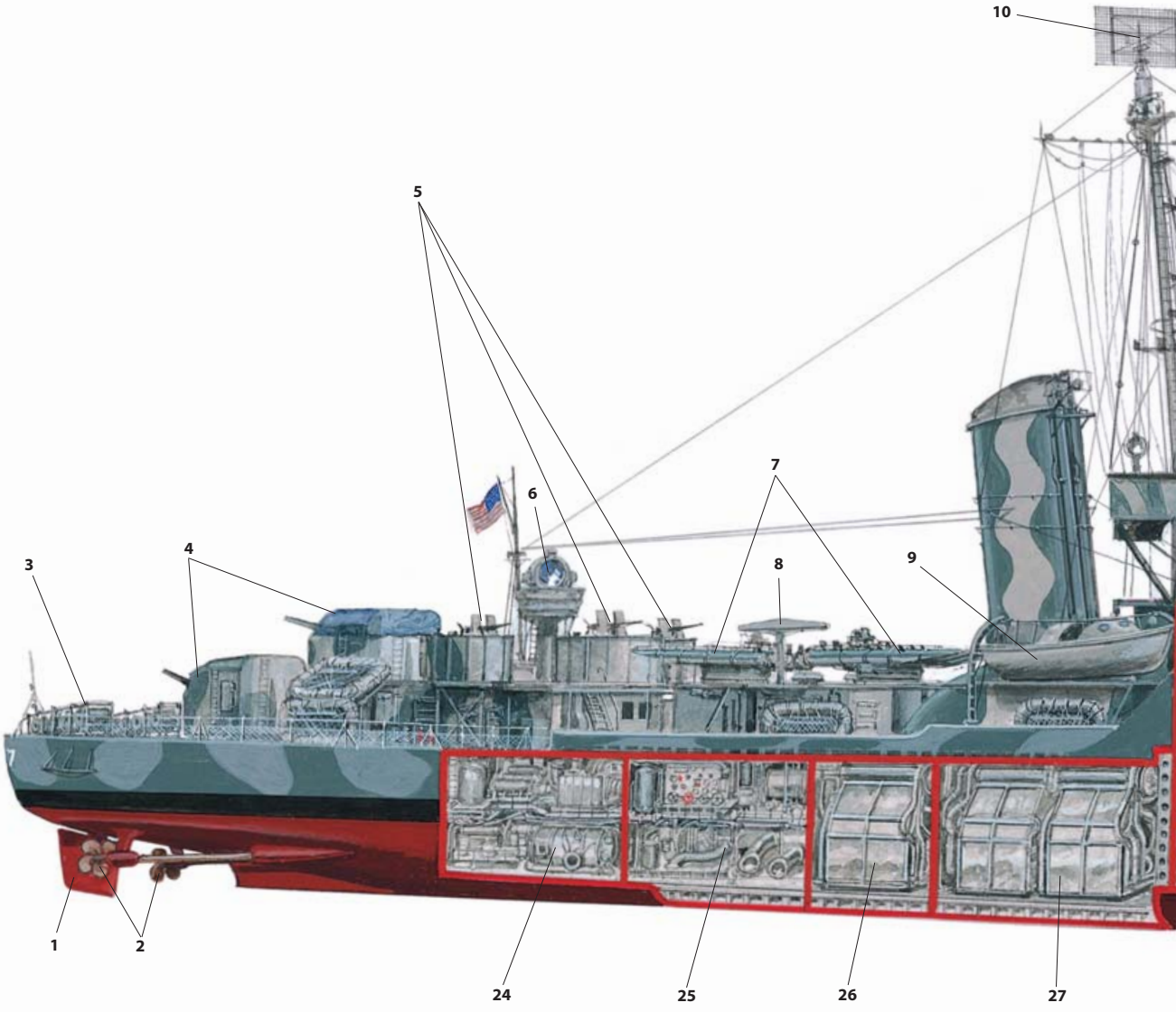
The 1,570-ton Sims class represented a transition in United States destroyer design. They were the last of the one-stack destroyers arranged with both their firerooms together, forward of their engine rooms. They were the first destroyers equipped with the advanced Mark 37 main gun director and the first designed with a streamlined pilot house and rounded deck edges forward.

Immediately on commencement of hostilities with Japan and Germany in December 1941, the nine Sims-class ships of Destroyer Squadron 2 were withdrawn from neutrality patrol duty in the Atlantic for transfer to the Pacific. En route, at the Charleston Navy Yard, flagship *Morris* became the first destroyer fitted with fire control radar.

In comparison with the original Sims design, topweight reduction measures may be seen everywhere. *Morris* carries four instead of the original five 5-inch/38s; the No. 3 mount is housed not in a full gunhouse but in an open-topped shelter covered by canvas. Forward, she carries a single 20mm mount on each side; aft, three more 20mm are fitted in the position originally intended for the fifth 5-inch gun. Amidships, there are two quadruple torpedo tube mounts rather than the three originally carried by the early ships of the class.

In common with other Atlantic Fleet destroyers at the time, *Morris* is painted in a modified version of the Measure 12 camouflage, which she retained through the battles of the Coral Sea and Midway.

In the Pacific, *Morris* rescued a total of 1,750 survivors from four sinking carriers – *Lexington, Yorktown*, and *Hornet* in 1942 and *Liscome Bay* in 1943 – twice damaging her superstructure against the carriers' overhanging flight decks. She continued as DesRon 2 flagship throughout the war until Okinawa, where her bow was nearly severed by a kamikaze strike on April 6, 1945. She returned home but was not repaired.

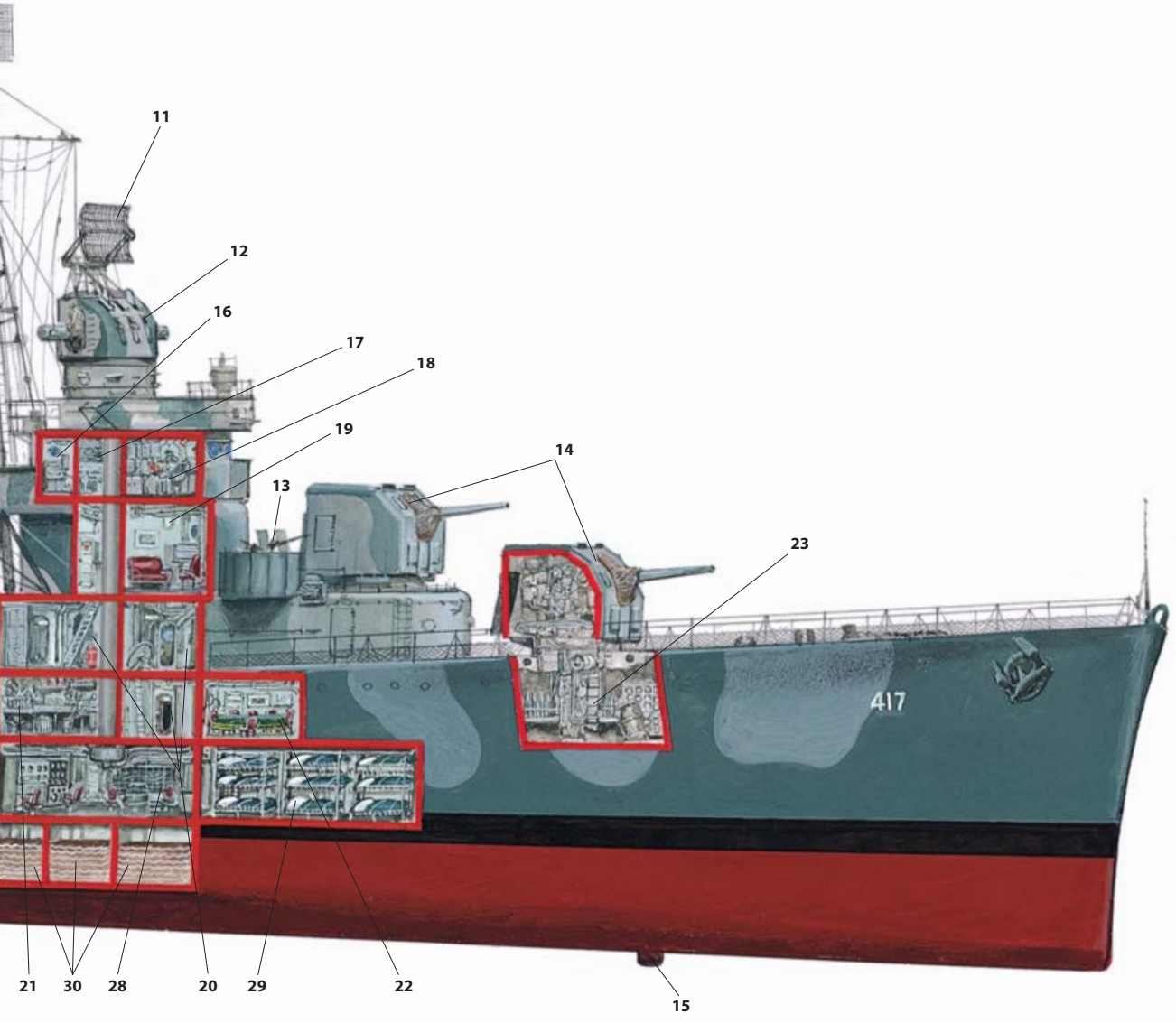


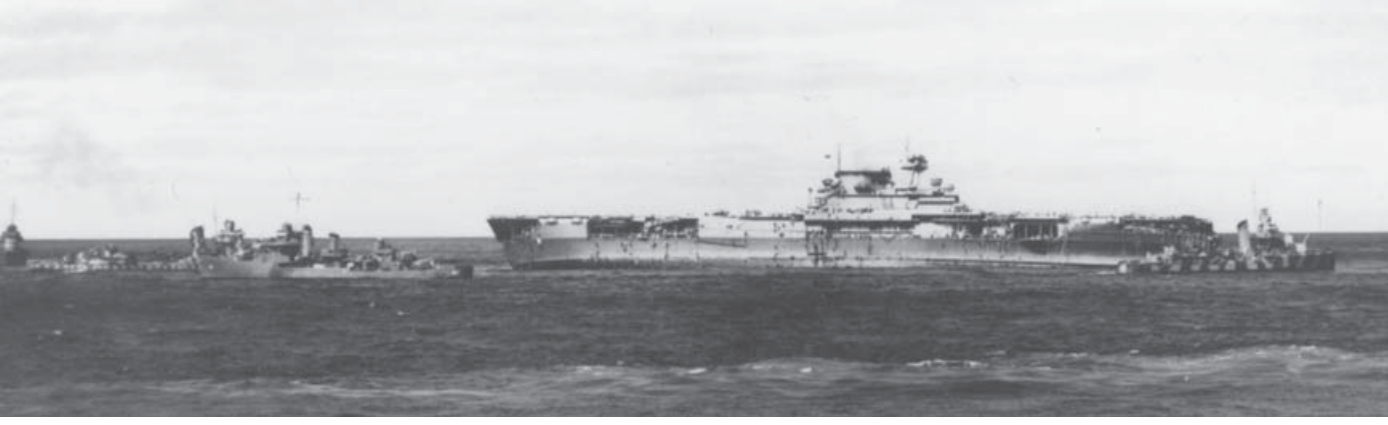
HULL AND TOPSIDES

1. Rudder
2. Propellers
3. Depth charge tracks
4. 5-inch/38 mounts
5. 20mm single mounts
6. 36-inch searchlight
7. Quadruple 21-inch torpedo tube mounts
8. Torpedo loading crane
9. 26-foot motor whaleboat
10. SC surface search radar antenna
11. FD fire control radar antenna
12. Mark 37 gun director
13. 20mm single mount
14. 5-inch/38 mount
15. Sonar

INTERIOR

16. Captain's sea cabin
17. Chart house
18. Pilot house
19. Unit commander's cabin
20. Passage
21. Galley
22. Wardroom
23. Ammunition handling room
24. After engine room
25. Forward engine room
26. After fireroom
27. Forward fireroom
28. Control room
29. Crew's mess and berthing compartments
30. Fuel





"Taxi! Taxi!" hailed *Yorktown's* crew as destroyers closed to take them off following the Battle of Midway. Here, two of her Sims-class escorts from DesRon 2 plus *Benham* and *Balch* are engaged in rescuing all hands. (NARA 80-G-21694)

Hurrying back to Pearl Harbor with *Yorktown* for emergency repairs, these three destroyers plus *Hughes* and *Russell* joined her screen for the battle of Midway in June, while nine others from Squadrons 1, 3, and 6 stood out ahead with Rear Admiral Raymond A. Spruance's *Enterprise* and *Hornet*. The Japanese lost four carriers and turned back. *Yorktown* was also lost, however, after a submarine torpedoed her and sank *Hammann* alongside.

Two days later, *Wasp* cleared Norfolk for the Pacific with her long-time escort DesDiv 15 plus *Farenholt*, the first arrival of the new DesRon 12, as the Allies contemplated an offensive of their own.

Atlantic Fleet destroyer divisions transferred to the Pacific in 1942

Division	Ships	Escorting
DesDiv 22	*Grayson*,[1] *Gwin*,[D1] *Meredith*,[1] *Monssen*[1]	*Hornet*
DesDiv 15	*Lang*,[D2] *Stack*,[2] *Sterett*,[2] *Wilson*[2]	*Wasp*

[D]Division flagship [1]Gleaves class [2]Benham class

Benham with *Yorktown* survivors embarked while their ship threatens to capsize on the afternoon of the battle of Midway, June 4, 1942. Still afloat two days later, *Yorktown* was torpedoed with *Hammann* alongside. Both were sunk. (NH 95574)

Guadalcanal

Where to invade? General Douglas A. MacArthur, Admiral Nimitz's army counterpart in the Pacific, advocated Rabaul. In July, however, Japanese workers began clearing an airfield at the old Lunga coconut plantation on Guadalcanal in the Solomon Islands. From there, bombers could reach the New Hebrides Islands (Vanuatu) on the Allied supply route to Australia and New Zealand. The Allied response was Operation *Watchtower*, a campaign against Rabaul beginning at Guadalcanal – code named "Cactus" – which lasted 19 months, half the remaining duration of the Pacific war.

On August 7, 1942, an expeditionary force with destroyers from Squadrons 1, 4, 6, and Division 22 landed the 1st Marine Division at Guadalcanal to seize the soon-to-be-named Henderson Field from Japanese construction crews.

The next night at the battle of Savo Island, a cruiser column from Rabaul demonstrated the Japanese Navy's night-fighting supremacy by surprising two separate cruiser-destroyer formations, hitting five heavy cruisers and sinking four in a victory that would truly have been complete had they also sunk the

transports they had been sent to destroy. In contrast, caught by surprise so soon after Midway, it took Japanese carriers *Shokaku* and *Zuikaku* two weeks to appear. At the resulting battle of the Eastern Solomons, while carrier *Saratoga* escaped, *Enterprise* sustained three bomb hits as her combat air patrol and her screen from DesRon 6 and DesDiv 22 fought off attackers.

Pacific Fleet destroyer squadrons formed in late 1942 and 1943

Squadron	Division	Ships
DesRon 12	DesDiv 23	*Aaron Ward*,[2] *Buchanan*,[2] *Farenholt*,[S1] *Laffey*,[1] *Woodworth*[1]
	DesDiv 24	*Duncan*,[2] *Lansdowne*,[D2] *Lardner*,[2] *McCalla*[2]
DesRon 14	DesDiv 27*	*Edwards*,[2] *Frazier*,[1] *Gansevoort*, [S1] *Meade*[1]
	DesDiv 28	*Bailey*,[SD1] *Bancroft*,[1] *Caldwell*,[1] *Coghlan*[1]
DesRon 19	DesDiv 37	*Stevenson*,[D2] *Stockton*,[2] *Thorn*,[2] *Turner*[2]
	DesDiv 38	*Gillespie*,[1] *Hobby*,[D1] *Kalk*,[1] *Welles*[2]

[S]Squadron flagship [D]Division flagship [1]*Benson* class [2]Gleaves class

**Barton*, sunk at Guadalcanal, may have been intended to join this division.

September brought a deepening predicament. Ashore, the Marines barely hung on against suicidal ground charges. At sea, enemy submarines managed to damage *Saratoga* and sink *Wasp* – the latter scuttled by torpedoes from *Lansdowne*. This news was particularly galling to the DesDiv 15 veterans who had seen *Wasp* safely all the way from the Mediterranean and only five days earlier had turned over screening duties to the novice DesRon 12.

October was the low point. At the battle of Cape Esperance on the night of the 12th, a task force built around *Wasp's* cruisers and destroyers – no longer with their carrier to screen – crossed the bow of a weaker Japanese force and turned it back. *Duncan* was lost. That engagement was one of a kind, however, and left the Japanese still in control of the sea, free to land more troops on Guadalcanal and to bombard Henderson Field at will.

The situation was critical. Without aircraft or fuel with which to defend themselves, the Marines hunkered down. Destroyer *Meredith* tried to make it through with tug *Vireo* and a fuel barge but 38 planes from *Zuikaku* overwhelmed and sank her. Survivors drifted for three days, taking turns between life rafts and treading water. Many succumbed to sharks until a mere 97 were rescued by "angels in white hats with dungarees" – *Grayson*, *Gwin*, and tug *Seminole*.

Now Admiral Nimitz brought in Admiral Halsey, to the cheers of those who had known him from the Pacific raids. There promptly ensued another carrier engagement, the battle of the Santa Cruz Islands, in which the crew of the sinking *Hornet* became DesRon 2's third carrier rescue of the year, and *Enterprise* was damaged again. In defending her, *Smith* was crashed into by

Destroyermen made their own humor. During one repainting in 1942, *Meredith's* modified Measure 12 camouflage gained the silhouette of a mermaid. Indiscernible from above decks but hard to overlook from an approaching motor whaleboat. She was short-lived. Sadly, so was *Meredith*, shown here at Fiji that June. (NARA 80-G-266846)

an attacking plane but survived – partly by steering through the frothy wake of battleship *South Dakota*, which helped quench her flames. The battle stripped both sides of operational carriers, setting the stage for the climactic after-dark surface actions of the campaign.

In November, twice in three nights in the naval equivalent of hand-to-hand combat, American task forces fought the Japanese to a standstill, losing seven destroyers of the 12 engaged but costing the Japanese dearly.

It was the turning point of the Pacific war. On the night of Friday the 13th, an American cruiser-destroyer task force broke up a superior Japanese bombardment force as the Marines watched from shore. Their commander General A.A. Vandegrift – soon to become Marine Corps Commandant – later expressed his thoughts about the men of the cruisers and destroyers *Cushing*, *Laffey*, *Sterett*, *Aaron Ward*, *Barton*, and *Monssen* plus 2,100 tonners *Fletcher* and *O'Bannon* ". . . who with magnificent courage against seemingly hopeless odds drove back the first hostile attack and paved the way for the success to follow. To them the men of Cactus lift their battered helmets in deepest admiration."

Two nights later, the Japanese were turned back again when four destroyers led battleships *Washington* and *South Dakota* into action. *Walke*, *Benham*, and *Preston* were lost and *Gwin* was damaged that night but with two battleships of their own lost in the two engagements, the Japanese now knew they could not sustain the campaign.

Two weeks later, however, there was another serious reversal at the battle of Tassafaronga. Again, an American task force, with destroyers tied to a cruiser formation, tried to break up a Japanese formation – this time destroyers only, some laden with drums of supplies. Again, four American heavy cruisers were hit – one torpedoed and sunk and three heavily damaged. And again, as too often before, the US Navy could not account for what had happened, understanding neither the Japanese strengths nor their own weaknesses. Learning would have to wait still longer except in one respect: the demonstrated value of the SG radar in plotting the enemy's course soon led to well-thought-out installations in both new and old destroyers – the Combat Information Center (CIC).

There was one more action as the Japanese withdrew from Guadalcanal. Off Rennell Island to the south, on January 28, 1943, a US convoy escort of six cruisers, DesDiv 27's *Frazier*, *Meade* and *Edwards* and five new 2,100-tonners came under repeated air attacks. Heavy cruiser *Chicago* was sunk, the sixth loss among the 17 heavies with which the US Navy had entered the war. Within two weeks, however, the Japanese completed their withdrawal from Guadalcanal.

D

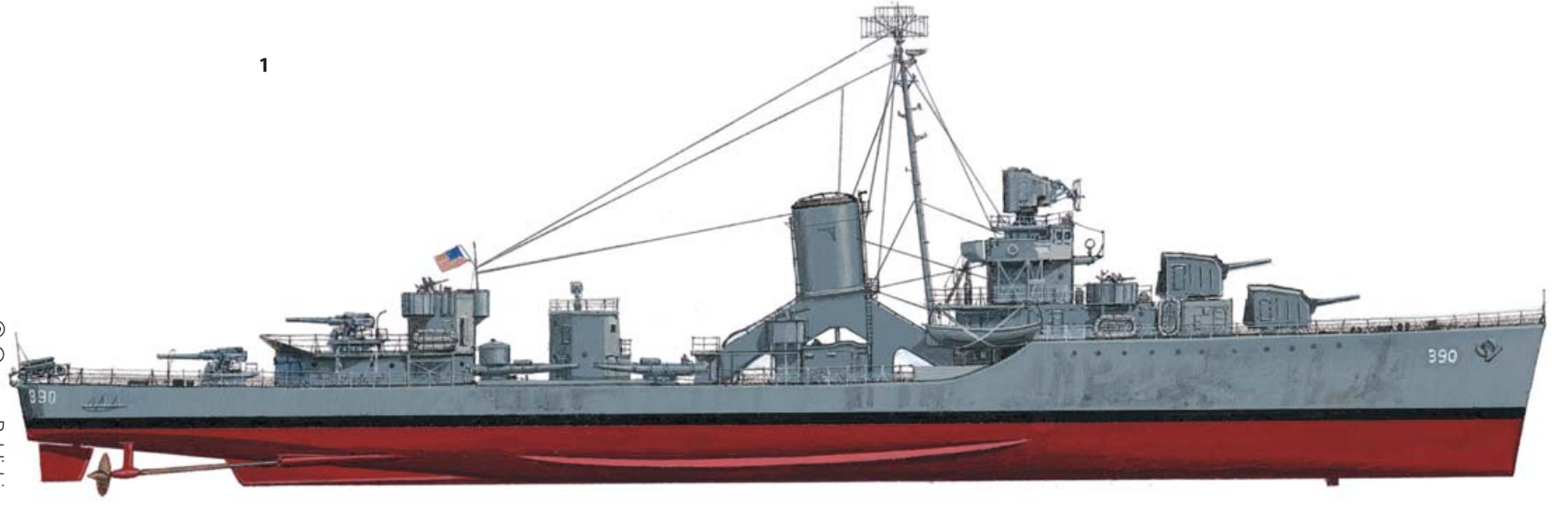
1) USS *RALPH TALBOT* (DD 390), 1943

Of the eight Bagleys, none saw more action in the Solomon Islands than the "Rat Trap," *Ralph Talbot*. Lucky to escape at all from the battle of Savo Island in 1942, she was back in the same waters in 1943, escorting transports, bombarding the Munda airstrip and joining DesRon 12 for the battle of Kolombangara. Here she appears in the weathered Measure 21 navy blue camouflage characteristic of destroyers in the Solomon Islands.

2) USS *STERETT* (DD 407), 1943

After their arrival in the Pacific, the four Benhams of DesDiv 15 were among the most active destroyers in the Solomon Islands campaign. There, *Sterett* earned an unmatched six engagement stars and was awarded the Presidential Unit Citation for her role in two key battles, Guadalcanal and Vella Gulf. Her design superseded that of *Ralph Talbot*.

1



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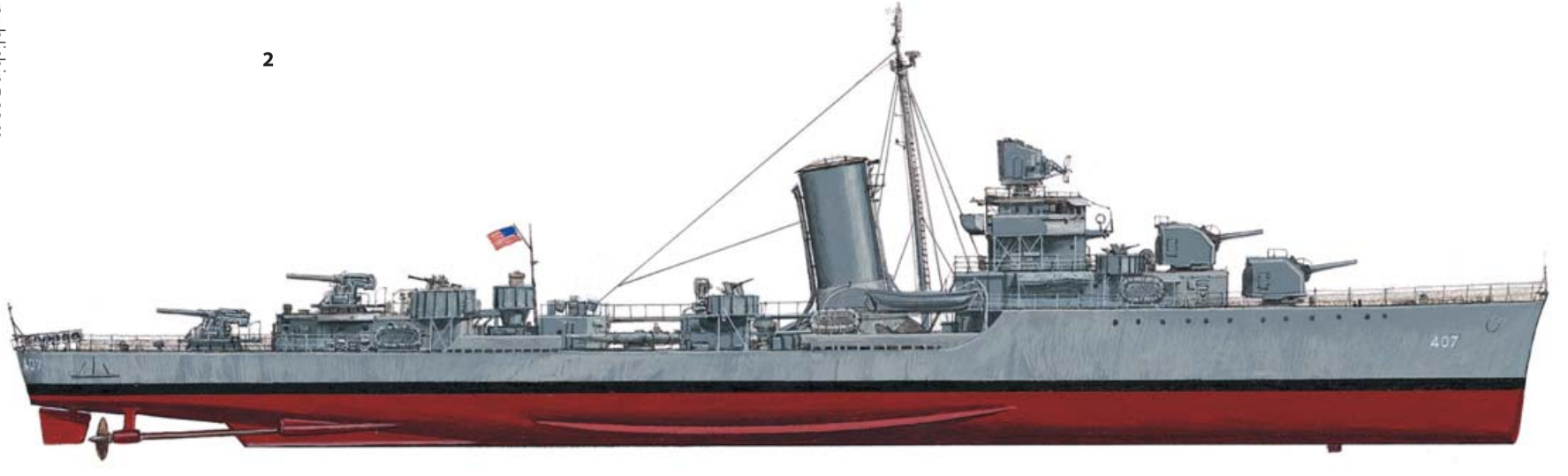


The unmistakable silhouette of a Bagley-class destroyer in a hard turn off Tulagi during the Japanese torpedo plane attack on August 8, 1942, the day after the Guadalcanal invasion. *Jarvis* was torpedoed this day and then lost with all hands the next day while trying to make Sydney, Australia for repairs. (NH 97751)

New Georgia

Admiral Halsey now paused before resuming the offensive in the New Georgia Island Group. Again the objective was to seize a Japanese airfield before it could be made operational – this time one at Munda Point on New Georgia Island. Missions to bombard it had begun in January 1943. In March, two task forces were formed, each consisting of a four-ship light cruiser division plus a squadron of the new 2,100-ton destroyers, one under Rear Admiral W.L. ("Pug") Ainsworth and one under Rear Admiral A.S. ("Tip") Merrill.

The amphibious operation got under way on June 30, when Rear Admiral R.K. ("Kelly") Turner's transports landed Marines at Rendova Island. Across Blanche Channel on New Georgia Island, there ensued a prolonged land campaign with the Japanese bringing in reinforcements via Vila Plantation on Kolombangara Island while American forces tried to cut them off.

Over the next two weeks, nightly operations resulted in the similar battles of Kula Gulf and Kolombangara, in which Japanese torpedoes cost Admiral Ainsworth another four cruisers – one sunk and three badly damaged. In the confusion, Kolombangara was also another bad night for Squadron 12: *Gwin* was sunk and *Buchanan* and *Woodworth* collided with one another.

Embarrassed, Ainsworth wrote to Admiral Nimitz, "No one knows the fallacy of chasing Jap torpedo boats with cruisers better than I," but his admission at last helped set the stage for change. Dissection of a beached Japanese torpedo now revealed how lethal these weapons were; Merrill's cruisers, the only ones remaining in the theater, must not be risked within their range. To the delight of destroyermen, this meant that the Solomons campaign was about to become purely a destroyer fight.

Vella Gulf

Back in 1942 after Tassafaronga, Rear Admiral Turner had established a destroyer "striking force" for independent operation under his command. On July 15, 1943, Rear Admiral Theodore S. Wilkinson relieved Admiral Turner and two weeks later gave command of the striking force to Commmander Arleigh A. Burke, the Solomons' most aggressive destroyer division commander. Excited about the prospects of independent offensive operation and taking *Maury* as his flagship, Commander Burke wrote out a battle plan and then went

A disastrous start to the Guadalcanal operation: *Blue* and *Patterson* stand by the Australian heavy cruiser *Canberra* to fight fires and rescue survivors the morning after the battle of Savo Island, August 9, 1942. *Canberra* and three American heavy cruisers were lost. (NARA 80-G-13488)

through the ship to review it with everyone from officers to machinist mates. Six days later on August 3, however, he was relieved by Destroyer Division 12's Commander Frederick W. Moosbrugger.

Admiral Wilkinson soon ordered a sweep of Vella Gulf on the night of the 6th to intercept a possible enemy supply run to Vila. For Commander Moosbrugger, it was an easy decision to adopt Burke's excellent plan. On the morning of the sweep, he reviewed it in a meeting with all six of his destroyer commanders to be sure everyone understood it. The force would be divided into two three-ship divisions. He would lead one from his flagship *Dunlap* with *Craven* and *Maury*, all with an eight-torpedo broadside. DesDiv 15 Commander Rodger W. Simpson with *Lang*, *Sterett* and *Stack*, whose 40mm twins had replaced eight of their original 16 tubes, would follow inshore. If enemy cruisers or destroyers were encountered, Moosbrugger would close and launch torpedoes while Simpson would maneuver to follow up immediately from a radically different bearing.

New to the Pacific, *Laffey* comes alongside cruiser *San Francisco* to exchange mail, September 4, 1942. *Laffey* soon joined DesRon 12 escorting *Wasp*, fought in the battle of Cape Esperance and was sunk at the battle of Guadalcanal. (NH 97864)

That night, as Admiral Wilkinson had foreseen, four Japanese destroyers entered Vella Gulf en route to Vila with troops and supplies. Perfectly deployed in ambush and closing at a relative speed of 50 knots, Moosbrugger's division launched 24 torpedoes and turned away. "After what seemed like an eternity," he wrote in his action report, the first three, *Hagikaze*, *Arashi*, and *Kawakaze*, exploded and Simpson's division immediately finished them off. Alert *Shigure* fired a return torpedo spread at Moosbrugger, which missed, took a dud hit in the rudder, made smoke, and escaped.

The battle of Vella Gulf was a victory to savor: it was both the US Navy's first independent destroyer action in the South Pacific and a resounding vindication of destroyers on the attack with radar and torpedoes, coordinated by the CIC – all achieved without damage or casualties. "The enemy performed superbly that night," wrote *Shigure's* commander Captain Tameichi Hara postwar. "One of the astounding torpedo successes in history [and] an unprecedented defeat of our destroyers, the significance [of which] was finally realized at Rabaul."

Rabaul

The following day was the first anniversary of the Marines' landing at Guadalcanal. In that year, the U-boat war in the Atlantic had turned in the Allies' favor. Soon forces would be released to the Central Pacific: *Enterprise* and *Saratoga* were coming back, to be joined by no less than nine new carriers,

A bad day in the South Pacific: on September 15, 1942, while supporting Marines on Guadalcanal, carrier *Wasp*, battleship *North Carolina*, and *O'Brien* were all torpedoed by submarines. *Wasp*, burning on the left, was lost; *O'Brien*, thought to be seaworthy, started home but sank en route on October 19. (NARA 80-G-475818)

At the battle of the Santa Cruz Islands, DesRon 5 flagship *Porter* was singularly unlucky, sunk by a torpedo jettisoned by an American plane that then ditched close aboard, whose crew she had stopped to rescue. Here, *Shaw*, with *Porter* survivors embarked, shows off her new bow and forward 5-inch/38 pedestal mounts. (NARA 80-G-33381)

with more coming. One hundred and twenty-one new destroyers had also been placed in commission, most of them destined for the Pacific.

Equally significant was Halsey's new strategy. Munda had finally fallen on August 5th, but with Tokyo still 3,000 miles away, he now saw a better way to advance than island-by-island: he could leapfrog hotspots, cutting off Japanese forces while preserving his own. Bypassing Kolombangara, Wilkinson's amphibs occupied Vella Lavella and over the next months the destroyers' continuing mission was to cut off enemy reinforcements in the region. On one of these operations in October, *Selfridge* had her bow blown off by an enemy torpedo while 2,100-tonner *O'Bannon* was damaged and *Chevalier* sunk, but such losses no longer seemed a large sacrifice: the US Navy was winning the war.

On November 1, Admiral Wilkinson's forces landed on Bougainville, one jump short of Rabaul, giving now-Captain Burke and his newly assigned squadron of 2,100-tonners two chances to demonstrate his own tactics in the battles of Empress Augusta Bay and Cape St. George.

Thereafter, the Solomons campaign ended not with an assault on Rabaul but with a decision to leapfrog and isolate it too, but with an exclamation point. On the night of February 17–18, 1944, now-Captain Rodger Simpson, new commodore of Destroyer Squadron 12, whose ships had been in the theater for nearly 19 months, steamed up St. George's Channel, swept the seas around Rabaul, fired nearly 3,900 rounds of 5-inch and launched 15 torpedoes into one of its anchorages and then, to their own surprise and delight, retired without incident. Rabaul had become a paper tiger. A week later they did it

E

TASK GROUP 31.2 EN ROUTE TO VELLA GULF

The battle of Vella Gulf took place nearly twelve hours' steaming distance from the American destroyer base at Purvis Bay, Florida Island, near Guadalcanal. To arrive in the gulf before midnight as planned, Commander Frederick Moosbrugger's Task Group 31.2 stood out of Purvis Bay at 1130 hours on August 6, 1943 and headed west. Hoping to avoid detection by enemy aircraft, the formation passed south of Rendova Island during the afternoon before turning north into Gizo Strait.

Here, en route, the six 1,500-tonners are working into a circular antiaircraft formation. Gridley-class *Maury* in the foreground and sister *Craven* in her wake at left both carry 16 torpedo tubes – two quadruple mounts on each side. The two form "Division A-1" with Commander Moosbrugger's flagship *Dunlap* in the center of the formation; she carries one quadruple mount between her two stacks and one on each side further aft.

The other three single-stackers are all members of the Benham class. Originally fitted with sixteen tubes as in the Gridleys, by mid-1943 they have had their after quadruple mounts replaced with two 40mm twin Bofors. At center, overhauling *Dunlap* to take the lead is Commander Rodger Simpson's "Division A-2" flagship *Lang*; on the far side of the formation are her DesDiv 15 sisters, *Sterett* and *Stack*.

After dark, the six destroyers will enter Vella Gulf and form two divisions for their sweep northward along Kolombangara Island's west shore: Division A-1 offshore, in the best position to deliver a torpedo attack if enemy destroyers appear; Division A-2 inshore, where enemy barges might be found.

Cushing stands out of Mare Island Navy Yard on July 15, 1942, soon to head for Guadalcanal. Four months later, she was lost while leading the American cruiser-destroyer force at the battle of Guadalcanal, of which Admiral Halsey said, "No honor could be too great; my pride in you is beyond expression." (NH 97852)

again to the north at Kavieng, a fitting final bow for *Farenholt*, *Buchanan*, *Woodworth*, *Lansdowne*, and *Lardner*, whose tour had spanned the entire Solomons campaign and whose shipmates ever after called themselves "Simpson's Scrapperoos."

The Solomons was not the only route to Rabaul. On June 30, 1943, concurrent with the Rendova landings, "MacArthur's Navy," the Seventh Fleet with Rear Admiral Daniel E. Barbey's amphibious force, had begun working its way up the New Guinea coast, also toward Rabaul. Supported by eleven Mahans plus *Mugford*, Barbey commenced a series of landings that rolled up the Japanese presence in eastern New Guinea and western New Britain.

In March 1944, MacArthur occupied Manus in the Admiralty Islands. There, Halsey's forces met him, completing the encirclement of Rabaul.

The Aleutian Islands

The South Pacific was not the only front. The need to contest the Aleutian Islands, the "birthplace of bad weather," stemmed from a misperception of their strategic value. After the Japanese had occupied Attu and Kiska Islands in 1942, the US Navy devoted resources – eventually including three battleships – to rooting them out. *Case*, *Reid*, *Gridley*, and *McCall* were among the first destroyers deployed to Alaska. They were later joined by reinforcements from Squadrons 1, 2, and 14 and some 2,100-tonners but eventually the weather defeated both sides.

Low-key Commander Frederick Moosbrugger was well liked by subordinates. Victor at the battle of Vella Gulf in 1943, he was placed in overall command of the destroyers on the picket lines at Okinawa in 1945. (NARA 80-G-331686)

In late March 1943, the campaign provided the last daylight surface action of the war without intervention by aircraft or submarines: the battle of the Komandorski Islands. It began when an American scouting line encountered a stronger Japanese force escorting a convoy. After a running gun fight in which cruiser *Salt Lake City* was temporarily disabled, *Dale* stood by her while *Bailey*, *Coghlan*, and *Monaghan* were ordered on an apparent death ride against the oncoming enemy formation. To their surprise and relief, as they reached torpedo range, the Japanese broke off the action and retired, once again with victory seemingly in their grasp.

Modifications

As tours ended, divisions, squadrons, and individual damaged ships returned home to facilities such as the Mare Island Navy Yard at Vallejo, California to be refitted with the latest modifications before being sent out again.

Antiaircraft protection was the focus of most refits. For long-range defense, the 5-inch/38 gun was powerful but lacked the accuracy needed to down a fast-moving plane at 10,000 yards. In 1943, a solution arrived in the form of the proximity influence or variable time ("VT") fuze, which emitted a radio signal and detonated when it detected a target. With it, the need for a direct hit disappeared and the likelihood of a kill increased by about four

times. For short-range defense, any ships without 40mm and 20mm guns now received them; radar was upgraded, a CIC was installed and, below decks, ammunition stowage was increased. Crews also were rotated, with perhaps half a ship's complement replaced and increased as new armament required.

These modifications always meant removing topweight to compensate. Torpedo batteries were obvious candidates for deletion – at first reluctantly done to resolve stability problems; later willingly so in favor of antiaircraft upgrades. Yet inclining experiment results continued to show that ships were overloaded and while even the Chief of Naval Operations, Admiral King, warned that "all hands ... must be buoyancy- and stability-minded" as early as 1942, the risk of capsizing persisted.

ABOVE LEFT
Dunlap, Commander Moosbrugger's flagship at Vella Gulf, launches a practice torpedo from her centerline tubes. By the time of the battle of Vella Gulf, problems that had plagued American torpedoes were corrected. (NARA 80-G-413483)

ABOVE RIGHT
The wreckage of *Selfridge's* No. 2 5-inch/38 twin mount after the battle of Vella Lavella. When she returned to service, these 5-inch single-purpose guns were replaced by a 5-inch dual-purpose twin mount and a 40mm quad. (NARA 80-G-273873)

Across the Pacific

In 1944, with ever increasing resources available to Admiral Nimitz, the pace of the Pacific war had accelerated. In November 1943, even before the Solomons campaign concluded, the Marines had landed in the Gilbert Islands. From there, Vice Admiral Spruance's fast carriers leapfrogged across the vast distances of the Central Pacific at a pace that made Halsey in the Solomons seem slow – to the Marshalls, to Guam and the Marianas and then to Palau in the western Carolines. Destroyers attached to these carrier task forces faced a mix of shore bombardment and antiaircraft action plus rescue missions. DesRon 2 veterans experienced their fourth carrier rescue when a submarine torpedoed *Liscome Bay* in the Gilberts.

Meanwhile, from Manus, General MacArthur launched a jungle campaign along New Guinea's north coast, supported by the Seventh Fleet. For the unlucky destroyers attached, life on the Equator seemed an unending misery with few highlights.

The battles for Leyte Gulf that followed the invasion of the Philippines in October 1944 were not the 1,500-tonners' fight, their weaker antiaircraft fits relegating them to secondary roles as convoy escorts for supply echelons. The attack on Ormoc on Leyte's west side however, was a different matter – a strike to snuff out Japanese reinforcements that resembled the Solomons campaign in that it featured air, surface,

BELOW
Returning in triumph from its overnight raid on Rabaul, February 18, 1944, DesRon 12 completes a formation "S-turn" off Guadalcanal to honor the dead lost in these waters. From upper left: *Lansdowne*, *Lardner*, *Woodworth*, *Buchanan*, and flagship *Farenholt*. (NARA 80-G-220757)

Before the Aleutian winter dawn on January 12, 1943, *Worden* crept across shallows to land troops in Amchitka's Constantine Harbor but grounded on the way out and began breaking up. As her crew abandoned ship into the frigid water, *Dewey* and a transport attempted rescue but 14 shipmates were lost. (NARA 80-G-75586)

and undersea combat, now with a new element: suicide planes. On December 7, 1944, *Lamson* was hit and saved but *Mahan* was lost, as was *Reid* four days later. It was now clear that every ship within range of enemy airfields had become a potential target.

Eleven days later, there followed one of the war's most famous calamities, the great typhoon of December, which roared through carrier formations at sea east of the Philippines, now under Admiral Halsey. Here, destroyer stability was put to the test and three destroyers were lost, 2,100-tonner *Spence*, plus *Hull* and *Monaghan*. Two of their Farragut-class sisters, *Dewey* and *Aylwin*, managed to survive, the former sustaining rolls in which its inclinometer pinned at 75 degrees.

From Leyte, the kamikaze threat intensified as General MacArthur moved on to Luzon's Lingayen Gulf, from where his army faced an easy overland approach to Manila. Thereafter, destroyers attached to his Seventh Fleet supported the occupation of the Visayan Islands (central Philippines), Mindanao and eventually Borneo, the war's last amphibious operation.

Admiral Nimitz, meanwhile, moved north to take Iwo Jima, within range of airfields in the Japanese home islands. All hands were needed, and with the reduction of targets in the Atlantic and Mediterranean, some of the newer Atlantic fleet destroyers were transferred to the Pacific to relieve 1,500 tonners, many of which were becoming tired. The four Gridleys in particular lacked the stability needed to carry any 40mm twins and, after 500,000 miles, *Maury's* deck had begun to crack.

Only 23 prewar destroyers were engaged at Iwo Jima and 29 at Okinawa, where now-Captain Moosbrugger set up a system of radar picket stations to provide early warning of incoming air raids. There, *Morris* and *Shubrick* were damaged too severely to be repaired; it was lucky that none of the prewar destroyers was sunk.

Meanwhile, at the end of 1944, twelve Gleaves-class 1,630-tonners from DesRons 10, 17, and 18 had been converted as high-speed minesweepers – with their main gun batteries reduced to three 5-inch/38s – and sent to Okinawa as Mine Squadron 20.

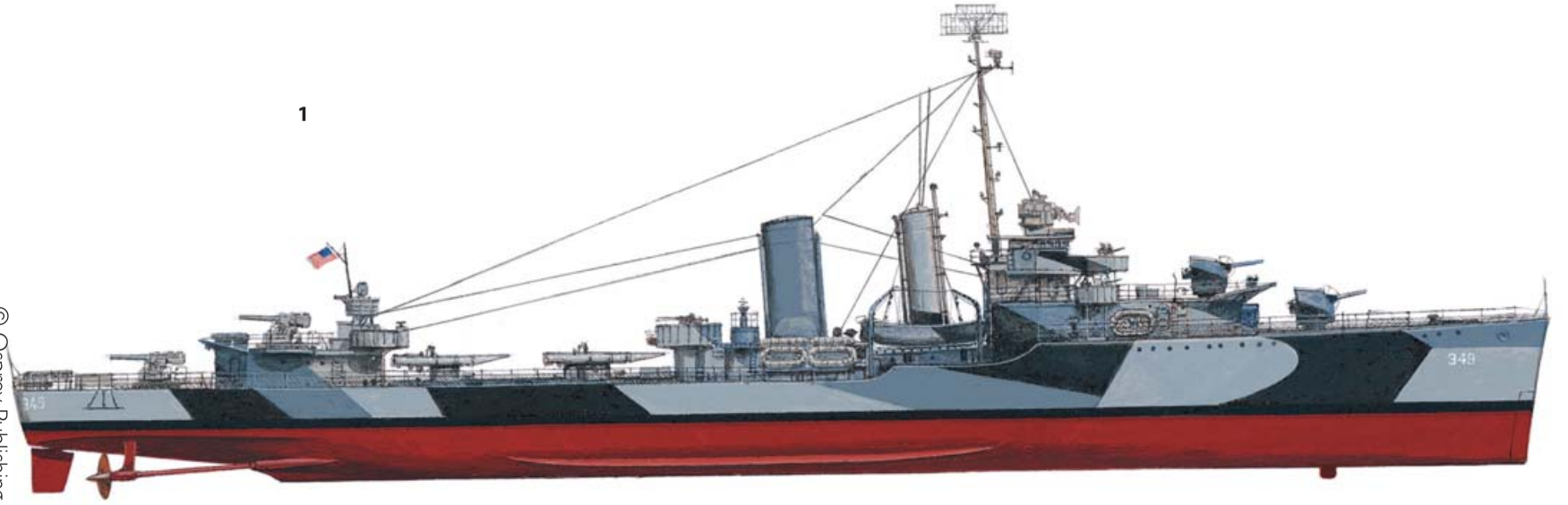
F

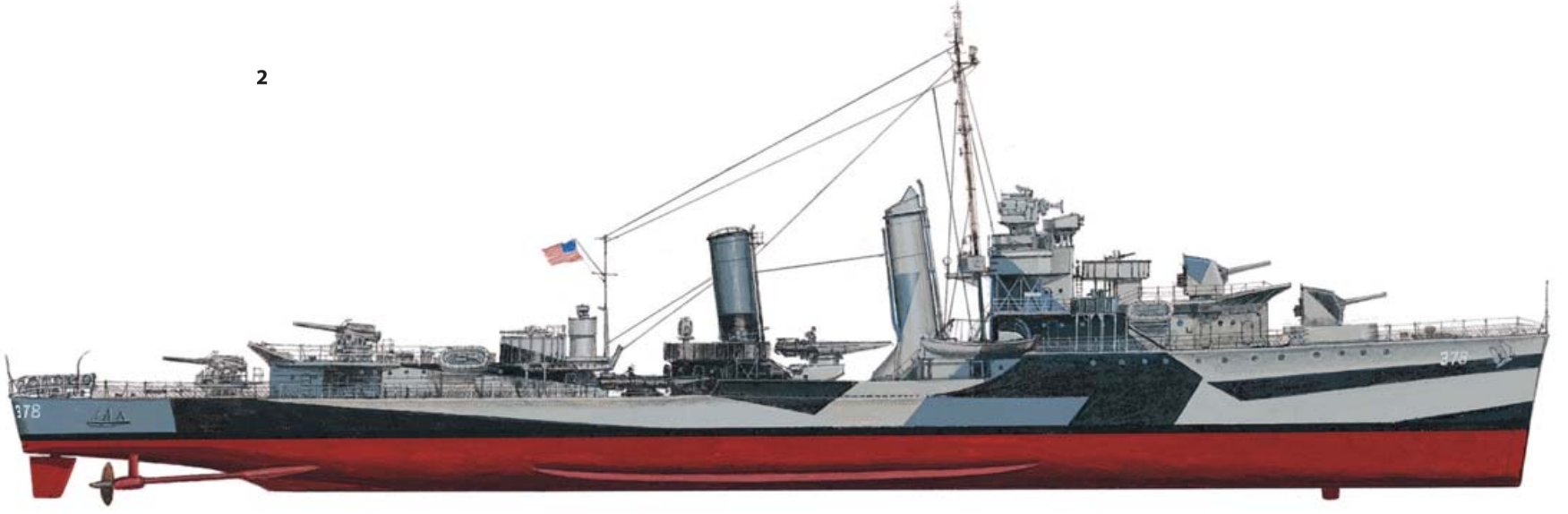
1) USS *DEWEY* (DD 349), 1944

In December 1944, *Dewey* and *Aylwin* were lucky to survive the typhoon that hit Admiral Halsey's Third Fleet east of the Philippines. At the time, both were painted in the Measure 31 Camouflage Design 6D, as was their Farragut-class sister *Hull*, which was lost.

2) USS *SMITH* (DD 378), 1944

A recipient of the Presidential Unit Citation from the battle of the Santa Cruz Islands in 1942, *Smith* was, by the end of 1943, the only survivor of the original DesDiv 10. In December 1944, she and her remaining sisters from the original DesRon 5 – *Mahan*, *Drayton*, *Lamson,* and flagship *Flusser* – all wore the Measure 31 Camouflage Design 23D for the amphibious operation into Ormoc Bay.





Retiring from the assault on Ormoc, December 7, 1944, *Lamson* was hit by a kamikaze and ordered sunk when her fires appeared uncontrollable, but was saved when rescue tug ATR-31 came alongside to fight fires and take her in tow. (NARA 80-G-290898)

Rodman and *Emmons* were the first to have to fight for their lives there. On April 6, 1945, having operated together without damage through three years of service in the Atlantic and Mediterranean, and after having cleared mines for the Okinawa landings for two weeks, they were covering inshore mining operations when the first mass kamikaze attack arrived. After one plane crashed *Rodman*, *Emmons* commenced circling her sister to ward off others. She succeeded in splashing six aircraft, but as her ammunition began to run out she was herself hit five times in rapid succession and sustained four additional near misses. While *Rodman* survived two more crashes in the 3½-hour onslaught, noble *Emmons*, with more than half of her crew killed or wounded, had to be abandoned and scuttled.

Destroyers converted as Ellyson-class fast minesweepers in 1944 and 1945

Squadron	Ships
MinRon 20 (1944)	*Butler, Ellyson,[S] Emmons, Fitch, Forrest, Gherardi, Hambleton, Harding, Hobson, Jeffers, Macomb, Rodman.*
MinRon 21 (1945)	*Carmick, Cowie,[S] Davison, Doran, Doyle, Earle, Endicott, Knight, McCook, Mervine, Quick, Thompson.*

[S]Squadron flagship

Inclining experiments were the Navy's means of determining stability. Here in September 1944, *Aylwin* is loaded with weights placed at known distances off her centerline so changes in trim may be measured. Although this test indicated reduced stability, *Aylwin* was sent to sea. Three months later off the Philippines, she and sister *Dewey* barely survived the great typhoon in which their Farragut-class sisters, *Hull* and *Monaghan*, were lost. (NARA)

Undergunned, with only half the number of 5-inch barrels of the newest destroyers, the minesweepers were especially vulnerable at Okinawa. Within the next ten days, *Jeffers* was holed by a suicide near miss but stayed in the theater; *Harding* and *Hobson* each received bomb hits that put them out of the war. In May, *Macomb* was crashed but returned to action after repairs. *Forrest* was also hit and *Butler* flooded by a near miss; neither was repaired.

Victory

The lucky survivors continued on to Japan with Admiral Halsey's Third Fleet. There, on August 28, *Ellyson* and *Hambleton* swept ahead for the occupation of the Yokosuka Naval Base at the entrance of Tokyo Bay. The next day, *Macomb*, *Ellyson*, and *Jeffers* cleared the way for a grand parade of Allied ships into the bay.

For the surrender ceremony, DesRon 12's *Buchanan* transported General MacArthur's party from the Yokohama Customs House Pier to *Missouri*, while *Lansdowne* brought the Japanese delegation. Also present were *Lardner* and *Kalk*, and DesRon 7's *Benson*, *Mayo*, *Madison*, *Hilary P. Jones*, and *Charles F. Hughes*, the five survivors of the original Benson class, recently arrived from the Atlantic.

Prewar destroyers had the honor of hosting surrender ceremonies at other bases. In Japan, *Flusser* and *Ralph Talbot* led the way into Sasebo. Elsewhere across the Pacific, *Stack* received the surrender at Truk, *Bagley* at Marcus Island, *Rhind* at Pagan in the Palaus, *Dunlap* at Chichi Jima in the Bonin Islands, and *Tillman* at Yap.

The last modification: *Sterett*, as she would have returned to the war zone had the war continued, with four 5-inch and no less than eight 40mm and eight 20mm in twin mounts, but no torpedo tubes. (NARA 19-N-119852)

LOOKING BACK

The destroyers described in this book occupied a vital niche in US Navy history. Smaller than optimal for the duty they faced, they were not accorded the attention received by later classes. Yet they were the test beds for technological advances that made the later classes possible. In the Atlantic and Mediterranean, they were the destroyers of choice for endless unsung patrol and convoy operations; in the Pacific, they carried the Navy through the war's first year when the outcome was in doubt and earned admiration in their own time as some of the gutsiest ships in the fleet.

Their casualty rate was correspondingly high; about one in four ships – 42 of 169 – were lost or damaged too severely to warrant repair: 16 of the 61 1,500-tonners and leaders, five of the 12 Sims class, 15 of the 96 1,620 and 1,630-tonners, and one converted minesweeper were lost; three other minesweepers and two other destroyers damaged at Okinawa were not repaired. Some had steamed more than 100,000 miles per year, 300,000 miles between Pearl Harbor and VJ day, 500,000 miles in their careers. Lucky was any ship that got home safely; only a few sustained neither damage nor casualties.

Losses

Year	Theater	Ships
1942	Atlantic	*Ingraham*
	Pacific	*Barton*, *Benham*, *Blue*, *Cushing*, *Duncan*, *Hammann*, *Jarvis*, *Laffey*, *Meredith*, *Monssen*, *O'Brien*, *Porter*, *Preston*, *Sims*, *Tucker*, *Walke*
1943	Atlantic	*Beatty*, *Bristol*, *Buck*, *Maddox*, *Rowan*
	Pacific	*Aaron Ward*, *Gwin*, *Henley*, *Perkins*, *Worden*
1944	Atlantic	*Corry*, *Glennon*, *Lansdale*, *Turner*, *Warrington*
	Pacific	*Hull*, *Mahan*, *Monaghan*, *Reid*
1945	Pacific	*Butler*,[12] *Forrest*,[12] *Emmons*,[2] *Harding*,[12] *Morris*,[1] *Shubrick*[1]

[1]Damaged and not repaired [2]After minesweeper conversion

BELOW LEFT
Ellyson in December 1944 after conversion as a fast minesweeper. On August 28, 1945, while sweeping the approaches to Yokosuka, she and sister *Hambleton* became the first major Allied warships to enter Tokyo Bay. (NARA 80-G-382792)

BELOW RIGHT
Newly fitted minesweeping gear on board *Cowie*, flagship of MinRon 21, the second squadron of converted Gleaves-class destroyers sent to the Pacific in 1945. Hostilities ceased while the squadron was still forming; it arrived in the western Pacific only in time to join in postwar minesweeping operations. (NARA 19-N-86582)

ABOVE
Buchanan, at the Yokohama Customs House Pier on the morning of September 2, 1945, as General MacArthur and his party arrive for transport to the battleship *Missouri* at anchor in Tokyo Bay for the surrender ceremony that ended World War II. (NARA SC 304314)

ABOVE RIGHT
A sight to remember: the Japanese delegation disembarks from *Lansdowne* for transfer to the battleship *Missouri* in Tokyo Bay for the surrender ceremony on the morning of September 2, 1945. (NARA 80-G-339352)

During the war, the Navy named at least 26 new destroyers and destroyer escorts for officers and men killed in the line of duty in these ships, including seven for *Meredith* shipmates and five lost with *Hammann*. It also selected 14 destroyers of prewar design for special honors. *Smith*, *Sterett*, *Maury*, *Laffey*, and *Buchanan* all received the Presidential Unit Citation for their roles in the Solomons campaign; *Hobson* was part of a hunter-killer task group in the Atlantic in 1944 that received the same award. *Bailey* was singled out to receive the Navy Unit Commendation for the torpedo attack at the battle of the Komandorski Islands in 1943; *Woolsey*, *Plunkett*, and *Hilary P. Jones* were also recognized for their performances in the Mediterranean in 1943–44, as were minesweepers *Rodman*, *Emmons*, *Macomb*, and *Butler* for Okinawa. After the war, all the 1,500-tonners, leaders and Sims were retired. Some were used as targets in the atomic tests at Bikini Atoll in 1946; others were broken up.

Decorations

Award	Ships
Presidential Unit Citation	*Buchanan*, *Hobson*,[1] *Laffey*, *Maury*, *Smith*, *Sterett*
Navy Unit Commendation	*Bailey*, *Butler*,[2] *Emmons*,[2] *Hilary P. Jones*, *Macomb*,[2] *Plunkett*, *Rodman*,[2] *Woolsey*

[1]USS *Bogue* antisubmarine task group [2]After minesweeper conversion

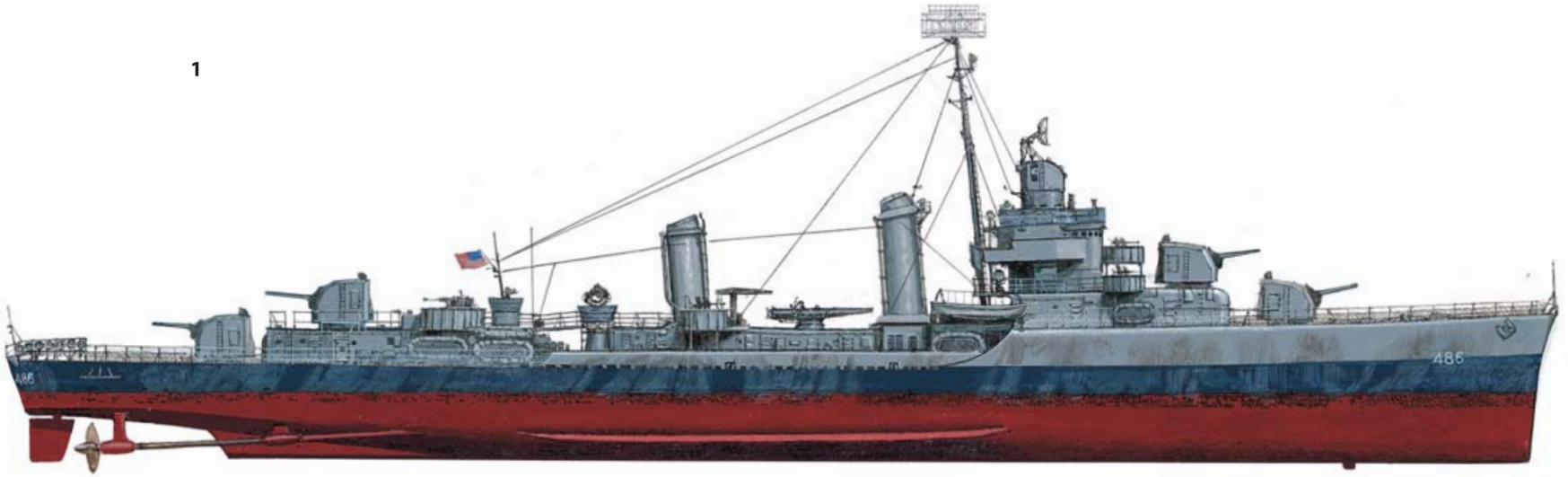
Of the Bensons and Gleaves, twelve minesweepers remained in commission and served in the Korean War while *Livermore*, *Eberle*, *Ludlow*, *Nicholson*, and *Woodworth* served as naval reserve training ships. Fourteen ships went to foreign navies: *Buchanan*, *Lansdowne*, *Lardner*, and *McCalla* to Turkey in 1949; *Nicholson* and *Woodworth* to Italy in 1951; *Eberle* and *Ludlow* to Greece; *Ellyson* and *Macomb* to Japan; *Benson*, *Hilary P. Jones*, and *Rodman*

G

1) USS *LANSDOWNE* (DD 486), 1945
One of six repeat Gleaves-class 1,630-tonners that formed the heart of DesRon 12 in the Pacific, *Lansdowne* earned three engagement stars for antisubmarine actions in the Atlantic before joining the Solomon Islands campaign. Undamaged through nine more operations, the "Lucky L" ended the war in the Measure 22 camouflage shown here.

2) USS *ELLYSON* (DMS 19), 1945
Ellyson, laid down alongside *Bristol* in December 1940, operated for three years as flagship of Destroyer Squadron 10 in the Atlantic. In December 1944 after conversion as a high-speed minesweeper, the "Elly Mae" went to the Pacific as flagship of Mine Squadron 20. She appears here in the Measure 32 Camouflage Design 22D shared by other destroyer-minesweepers in her squadron.

1



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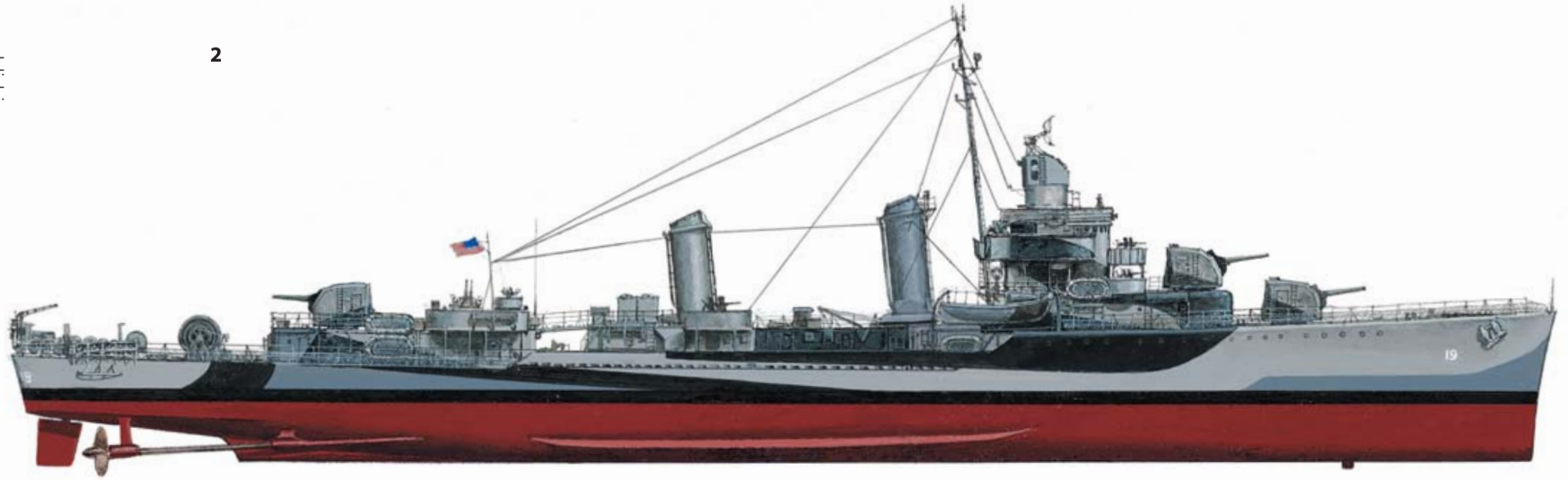

Enemies no more: destroyers had the honor of receiving the surrender at several locations. Here in *Dunlap's* wardroom after the surrender of the Bonin Islands, Captain Harold Smith, USN discusses additional details with Japanese Captains Nishiyotsuji and Sugimura. (NARA 80-G-386402)

to Taiwan in '54 and '55; and *Plunkett* to Taiwan in '59. The remainder was placed in reserve until the 1960s or '70s, when they were used as targets or sold for scrap. None were preserved.

These ships lived on, however, in the memories of shipmates, some of whom still held annual reunions 70 years later – and, in the case of some Operation *Monstrous* veterans who developed a warm relationship with the U-616 survivors they had rescued – their legacy treasured by family members, friends, admirers, and even their former enemies.

SELECT BIBLIOGRAPHY

Bauer, K. Jack and Roberts, Stephen S., *Register of Ships of the US Navy, 1775–1990: Major Combatants*, Greenwood Press, Westport, CT (1991)

Bell, Frederick J., *Condition Red, Destroyer Action in the South Pacific*, Longmans, Green and Co., New York (1943)

Billingsley, Edward Baxter, *The Emmons Saga*, iUniverse, Inc., Lincoln, NE (2005)

Bluejackets' Manual, 10th Edition, US Naval Institute, Annapolis, MD (1940)

Bowen, Harold G., *Ships Machinery and Mossbacks*, Princeton University Press, Princeton, New Jersey (1954)

Calhoun, C. Raymond, *Typhoon: the Other Enemy*, US Naval Institute, Annapolis, MD (1981)

Crenshaw, Russell Sydnor, Jr., *South Pacific Destroyer*, Naval Institute Press, Annapolis, MD (1998)

Friedman, Norman, *US Destroyers: An Illustrated Design History*, US Naval Institute, Annapolis, MD (1982)

King, Ernest J. (Commander-in-Chief, United States Fleet and Chief of Naval Operations), *Official Reports to the Secretary of the Navy*, US Navy Department, Washington, DC (1946)

Morison, Samuel Eliot, *History of United States Naval Operations in World War II* (15 volumes), Little, Brown & Co., Boston, MA (1947–1962)

O'Hara, Vincent P., *The US Navy Against the Axis: Surface Combat 1941–45*, Naval Institute Press, Annapolis, MD (2007)

Reilly, John C., Jr., *United States Navy Destroyers of World War II*, Blandford Press, Poole, Dorset, UK (1983)

Roscoe, Theodore, *United States Destroyer Operations in World War II*, US Naval Institute, Annapolis, MD (1953)

Rowland, Buford, and Boyd, William, *US Navy Bureau of Ordnance in World War II*, Department of the Navy/GPO, Washington, DC (1953)

Sumrall, Robert F., *Sumner-Gearing-class destroyers, their design, weapons and equipment*, Naval Institute Press, Annapolis, MD (1995)

Walsh, David I. (Chairman of the Committee on Naval Affairs, United States Senate), *The Decline and Renaissance of the Navy, 1922–1944*, GPO (1944)

Whitley, M.J., *Destroyers of World War Two: An International Encyclopedia*, Naval Institute Press, Annapolis, MD (2000)

APPENDICES: Dimensions and Design Specifications

The Treaty Classes: 1,500-ton destroyers

Class	Farragut	Mahan	Dunlap	Bagley	Gridley	Benham
Design Agent	Bethlehem	Gibbs & Cox	Gibbs & Cox	Gibbs & Cox	Bethlehem	Gibbs & Cox
Length (overall)*	341' 3"	341' 3⅜"	341' 2⅜"	341' 3⅜"	340' 10⅞"	341' 2"
Length (waterline)*	334'	334'	333' 10¾"	334'	333' 10½"	333' 11½"
Beam*	34' 2⅞"	35' ⅜"	35' ⅜"	34' 11¾"	35' 6¼"	35' 6⅛"
Draft (max)	16' 4"	17' 2"	17' 2"	17' 1"	17' 1"	17' 3"
Freeboard at bow*	21' 9⅝"	21' ¾"	21' 4¾"	21' 5"	21' 4"	21' 2¾"
Displacement: standard [long tons]*	1,500	1,500	1,500	1,500	1,500	1,500
Displacement: to design waterline [long tons]*	1,738	1,715	1,715	1,725	1,725	1,702
Fuel [long tons] (95% full)	500		513	501	525	490
Boilers	4	4	4	4	4	3
Steam Conditions (war)	400psi; 648°F	400psi; 700°F	400psi; 700°F	400psi; 700°F	565psi; 700°F	565psi; 700°F
Design Shaft Horsepower	42,800	48,000	48,000	48,000	50,000	50,000
Screws	2	2	2	2	2	2
Rudders	1	1	1	1	1	1
Design Speed	36.6 knots	36.5 knots	36 knots	35.5 knots	35.5 knots	36.5 knots
Cruising Range (war)	5,980nm @ 12 knots	6,940nm @ 12 knots	6,940nm @ 12 knots	5,520nm @ 12 knots	6,500nm @ 12 knots	6,940nm @ 12 knots
Tactical diameter	850 yards @ 35.5 knots	870 yards @ 30 knots	870 yards @ 30 knots	880 yards @ 30 knots		880 yards @ 30 knots
Officers/Men	10/150	8/150	8/150	8/150	8/150	9/175

The Treaty Classes: 1,850-ton destroyer leaders

Class	Porter	Somers
Design Agent	New York Ship.	Gibbs & Cox
Length (overall)*	381' ½"	381' 2¼"
Length (waterline)*	372'	372' 2¼"
Beam*	36' 6½"	36' 6"
Draft (max)	17' 9"	18'
Freeboard at bow*	23' 8"	23' 7¹⁵⁄₁₆"
Displacement: standard [long tons]*	1,850	1,850
Displacement: to design waterline [long tons]*	2,131	2,130
Fuel [long tons] (95% full)*	635	619
Boilers	4	4
Steam Conditions (war)	400psi; 648°F	565psi; 730°F
Design Shaft Horsepower	50,000	52,000
Screws	2	2
Rudders	1	1
Design Speed	36.5 knots	37.5 knots
Cruising Range (war)	6,380nm @ 12 knots	7,020nm @ 12 knots
Tactical diameter	860 yards @ 30 knots	860 yards @ 30 knots
Officers/Men	13/193	10/225

The Post-Treaty Classes

Sims	Benson	Gleaves
Gibbs & Cox	Bethlehem	Gibbs & Cox
348' 1¾"	348' 1¹³⁄₁₆"	348' 2¼"
340' 10⅛"	340' 11³⁄₁₆"	340' 11¼"
36' 1⅞"	35' 9¼"	36' 1⅞"
17' 4"	17' 6"	17' 6"
21' 4½"	20' 3⅜"	21' 2½"
1,570	1,620	1,630
1,770		1,816
451		444
3	4	4
565psi; 715°F	575psi; 700°F	580psi; 825°F
50,000	50,000	50,000
2	2	2
1	1	1
37 knots	36.5 knots	37 knots
5,640nm @ 12 knots	5,580nm @ 12 knots	5,250nm @ 12 knots
843 yards @ 30 knots	960 yards @ 30 knots	
10/182	9/182	9/199

* Source: survey data published by the Bureau of Construction and Repair in the General Information Book for the name ship of each class.
Note: three groups shared common hulls – the Mahan through Benham classes, Porter and Somers classes and Benson and Gleaves classes. Within each class, individual ships varied in dimensions, e.g., in overall length by as much as one foot.

Recognition Features

The Treaty Classes: 1,500-ton destroyers

Class	Farragut	Mahan	Dunlap	Bagley	Gridley	Benham
Stacks	2: forward smaller	2 equal; cap on forward	2 equal; cap on forward	1 prominent trunks	1 elongated	1 no trunks
Mast*	Pole forward; main	Tripod forward; pole main	Pole forward;	Pole forward; no main	Pole forward; no main	Pole forward; no main
Torpedo tubes*	8 centerline [1]	4 centerline [1] 8 wing [1]	4 centerline [1] 8 wing [1]	16 wing [1]	16 wing [1]	16 wing [1]
5-inch/38 cal. mounts*	4 or 5 dual purpose	4 or 5 dual purpose	4 or 5 dual purpose	4 dual purpose	4 dual purpose	4 dual purpose

The Treaty Classes: 1,850-ton destroyer leaders

Class	Porter	Somers
Stacks	2 equal; cap on forward	1 stepped aft
Mast*	Tripod forward; main	Pole forward; no main
Torpedo tubes*	8 centerline [1]	12 centerline [1]
5-inch barrels	8 single purpose	8 single purpose

The Post-Treaty Classes

Sims	Benson	Gleaves
1 capped	2: flat sides	2: round
Pole forward; no main	Pole forward; no main	Pole forward; no main
8 centerline [1]	5 or 10 centerline [2]	5 or 10 centerline [2]
4 or 5 dual purpose	4 or 5 dual purpose	4 or 5 dual purpose

* As built; see text and www.destroyerhistory.org for details and modifications. [1] Quadruple mounts [2] Quintuple mounts

INDEX

References to illustrations are shown in **bold.**

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EDITOR'S NOTE

The following abbreviations indicate the sources of the images used in this volume:

NARA	National Archives and Records Administration, College Park, MD
NH	Naval History & Heritage Command, Washington, DC

The following data will help in converting the Imperial/American measurements to metric:

1 mile = 1.6km
1lb = 0.45kg
1yd = 0.9m
1ft = 0.3m
1in. = 2.54cm/25.4mm
1gal = 4.5 liters
1 ton (US) = 0.9 tonnes

AUTHOR'S NOTE

This book reflects the extensive and selfless contributions of time and knowledge from many wonderful people, outstandingly Tin Can Sailors' Executive Director Terry Miller, Captain Pete Orvis, Vince O'Hara, Rick Davis, Professor Warren Gabelman, Captain and Mrs. Steve Davis, Chuck Haberlein, Ed Finney, Don Montgomery, Tim Rizzuto, Steve Roberts, Andy Wilde, and especially shipmates of USS *Emmons*, USS *Lansdowne*, veterans of the battle of Vella Gulf, and the incomparable Captains Cal Calhoun, Russell Crenshaw Jr., and Vining Sherman, who lived it.

Squadron tables show initial or intended composition only.

Those wishing to explore this subject in more detail may find additional photographs, maps and track charts, records, and tables at: www.destroyerhistory.org.