US Navy Minesweeping in the Second World War and the Postwar Clearance

USS Terror (CM-5) website, terror.ringleib.com · November 2026

A companion to the minelaying essay: how the Navy found, cut, and exploded mines, the ships that did the work, and how—after the guns fell silent—the same force, and Japanese crews under American supervision, tried to make mined waters safe again. *Terror*'s war, for much of 1945, was not planting fields but tending the sweepers that opened Iwo Jima and Okinawa.

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How the Navy swept

Minesweeping is slower than almost any other naval task, and less forgiving of a missed line. A field may be mixed—moored contact mines in the same water as magnetic, acoustic, or pressure weapons, some with ship counters that let a set number of vessels pass before they fire—and the only honest way to clear it is to sweep for each type in turn, then sweep again. By October 1945, Tamara Moser Melia's official history records, American forces had swept more than 10,173 contact mines in all theaters, but only 467 influence mines. The disparity mattered after the surrender, when the leftover American influence fields around Japan proved far harder to remove than the old moored mines had been.

Doctrine distinguished three kinds of work, borrowed in large part from the Royal Navy and practiced, with local variations, from the English Channel to the Inland Sea. Exploratory, or search, sweeping was the first pass through water that might or might not be mined: a formation wide enough to find a field, without committing every ship to a dense, overlapping cut. Clearance sweeping followed, with paths overlapping so that a mine missed by the lead ship would meet the next wire or influence tail. Check sweeping came last, and was often repeated until a prescribed number of runs produced no cuts and no explosions. A channel was not "safe" because a staff officer hoped it was; it was safe when the check sweeps were clean, the line had been buoyed, and the hydrographic office had published it.

In 1941 the Navy adopted, almost wholesale, the British practice of Q-routes: specified channels between harbors that were regularly surveyed and swept, as a defense against both submarines and mines. Nets and booms closed many American harbor mouths; the Q-routes were the lanes that remained open. The need was not theoretical. German submarines, a 1946 Navy account later disclosed, laid nineteen minefields along the East Coast of the United States, from Trinidad to Newfoundland, including

areas off Boston, New York, and the mouth of the Mississippi. Wooden fishing craft, hastily borrowed, and the first classes at the Naval Mine Warfare School at Yorktown, which opened in January 1941, were what the Navy had at first to keep those routes open.

In assault work the same idea appeared as a swept channel to the transport area and the fire-support area, marked as well as time and enemy fire allowed by dan buoys—light floats streamed from the sweepers to show the edges of the cut. A buoyed channel was a promise only as good as the last check sweep. Hydrographic parties often accompanied the minecraft, charting what had been swept so that later Notices to Mariners, issued by the Navy's Hydrographic Office and its Allied counterparts, could tell ordinary shipping where to go and where still to keep out. When a route was "declared safe," as Admiral King's Okinawa report used the phrase, the declaration rested on that sequence: a clearance, a check, a chart, and a published notice—not on the absence of a known field on a planning overlay.

Assault sweeping had its own logic. High-speed minesweepers went in first, sometimes under cover of battleship gunfire, to open a path for the bombardment ships and then for the landing craft. The lead ship in a tight formation was the only one not steaming in water already cut. Wooden motor minesweepers followed into the shallows, where a destroyer's draft would have been a danger in itself. Underwater demolition teams reconnoitered the last yards to the beach, looking for mines and obstacles the sweepers could not reach. The work was done as close as possible to the landing hour, because a channel left empty overnight could be reseeded by aircraft or coastal craft.

The gear

For moored mines the standard tool, in American as in British service, was the Oropesa or "O" sweep, named for the ship that first used it in the First World War. A wire armed with cutters was towed submerged. A multiplane kite called a depressor held the inboard end down; a vaned otter, streamed from one or both quarters, pulled the outboard end away from the ship so that the wire ran at an angle astern; a streamlined float on the surface marked the end of the sweep. The wire could also be towed between two ships abreast. When it found a mooring cable, the cutters parted it, the mine bobbed up, and gunfire or a demolition party finished the case. Anti-sweep mines, with only a tiny charge, could be mixed into a field to cut the sweeper's own wire. Paravanes streamed from combatant ships were a related, simpler protection: they were meant to fend a mooring clear of the hull, not to clear a channel for anyone else.

Influence mines could not be cut. They sat on the bottom, or hung in the water, and waited for a ship's magnetic field, its underwater noise, or the pressure hump of a hull passing over. The object of an influence sweep was to make a mine fire at a safe distance from the sweeper. Degaussing—coils wrapped around a steel hull, carrying a current that opposed the ship's own field—reduced the magnetic signature enough, in theory, for a sweeper to pass over a magnetic mine while towing a stronger lure. "Degaussing," "wiping," and "flashing" were related, sometimes temporary, treatments of a ship's permanent magnetism. The active magnetic sweep the Allies inherited from the British was the LL, or "double L": buoyant cables with long- and short-tailed electrodes, streamed by a degaussed ship, through which a pulsed current was passed so that the field in the water would trip a mine well astern. Acoustic mines were worked with towed noisemakers—hammers and boxed oscillators loud enough to satisfy a microphone in the mine case. Combination magnetic-acoustic mines, which required both signatures at once,

demanded both kinds of gear in the water together. Ship counters and delayed arming made all of this slower. A field might have to be swept many times before the last mine used up its count. Mixed fields were worse: the same water had to be worked with Oropesa gear for moored mines, then with magnetic and acoustic tails, one influence at a time, because a single pass with one type of broom left the others asleep.

Pressure mines were the problem no one solved cleanly. The German “oyster,” withheld for most of the war for fear the Allies would copy it, fired when the pressure on the case dropped by a small amount for several seconds—the sort of change a 120-foot ship made at about ten knots. Barges, water-filled balloons, and devices with hopeful names (the “Loch Ness Monster,” a huge nylon sleeve; the “egg crate”; the “cube steak”) were tried and found wanting. Summer storms sometimes set combination pressure-acoustic mines off, and sweepers learned to work acoustic gear in that weather, until the Germans coarsened the settings. The only practical method for running something ship-like over a pressure field was the “guinea-pig” ship: a Liberty ship padded and filled with buoyant material, with a skeleton crew or a remote pilot, sent through a channel to see whether anything was still alive. The Germans used such ships to open paths; the Allies used them mainly to check passages already swept. American combination and low-frequency acoustic mines, planted in Japanese waters in 1945, were similarly hard to sweep. Fleet Admiral King allowed them to be laid only with timed sterilizers, in the spirit of the Hague rules, so that they would eventually go safe. Sterilizers were not a clearance plan.

Minehunting—finding a mine and identifying it, rather than towing a lure through a whole area—was recognized by 1944 as the true answer to mixed influence fields, but the tools were still primitive. Experimental QLA sonar, fitted to a handful of submarines late in the war, let those boats pick their way through moored fields in the Sea of Japan. Towed magnetic detectors were tried. Converted infantry landing craft, later called AMCU minehunters, carried sonar and locating gear intended to put divers on a mine; few were kept in commission after 1945. What worked, when a mine could be seen or marked, was disposal by hand. Explosive ordnance disposal divers and underwater demolition teams reconnoitered assault beaches, placed countermines, and dealt with cases the sweep wire had brought up. Navy hydrographic units charted and marked the swept water. Aircraft helped too. In the Mediterranean in 1944, blimps, notably K-109, vectored Mine Squadron 11 and Mine Division 18 through shallow fields and assisted in identifying eighty-six mines. Off Key West that November, a Navy airship used a .50-caliber machine gun, over seven days, to sink twenty-two mines that sweepers had already raised: the first combined air-and-surface clearance operation the Navy recorded. Spotters on hills and in fishing boats, used extensively by the Japanese in the Shimonoseki Strait, were a cruder form of the same idea.

The ships

The Navy entered the war short of purpose-built sweepers and spent the next four years catching up. Melia records that more than 950 ships, including 283 fleet minesweepers, joined the mine-countermeasures fleet; fifty-eight of those ships became casualties, a relatively low figure that, she notes, reflects how few influence mines the force actually faced until the last year of the war. An April 1946 account in

the Naval Institute *Proceedings* put the force still available for the postwar job at about four hundred sweepers of all classes, and observed that nearly ninety-five percent of the wartime minesweeping people, officers and enlisted, had been reservists.

Two *Raven*-class ships, *Raven* (AM-55) and *Osprey* (AM-56), were the prototypes: steel fleet sweepers of about 220 feet and 810 tons, able to keep the sea and to stream both mechanical and influence gear. The *Auk* class that followed—ninety-three ships, shared with the Royal Navy, which called its portion the *Catherine* class—was an improved *Raven*, diesel-electric, a little heavier, good for about eighteen knots, and built to do long offshore sweeps as well as assault work. Eleven *Auks* were lost in the war, six to direct enemy action. The mass-production steel sweeper was the *Admirable* class, 184 feet, about fourteen or fifteen knots, 123 completed, with auxiliary engines strong enough to power magnetic tails. They escorted, patrolled, and swept, and several were lost doing the last of those jobs.

The workhorses of the shallow water were the YMS boats: wooden-hulled auxiliary motor minesweepers, 136 feet long, with a crew of about thirty, shallow draft, and enough endurance to cross oceans in convoy and then work a beach approach. Some 481 were completed. Their wooden hulls were chosen partly for speed of building and partly in the hope of a smaller magnetic signature; they still had steel engines and fittings, and degaussing had limits, as Balikpapan would show. Smaller still were the auxiliary coastal minesweepers (AMc), including the *Accentor* class of some seventy 97-foot wooden craft, whose design owed much to the tuna boats Commander (later Vice Admiral) Sharp had found useful before the war, and a host of converted fishing boats, launches, and barges rigged with light gear for harbors and wreck-strewn anchorages. Until October 1944 there was no specialized mine-warfare type command in the Pacific comparable to the Atlantic arrangement; Sharp then gave up his third star, reverted to rear admiral, and took Minecraft, Pacific Fleet, with operational command of the mine flotilla (Task Group 52.2) for the advance on Japan. *Terror* became his flagship the following January.

High-speed minesweepers (DMS) were destroyers with their torpedo tubes landed and sweep gear fitted, used to lead an assault force at a speed the little wooden boats could not match. The first conversions, from 1940, were flush-deck *Wickes*- and *Clemson*-class four-stackers—among them *Palmer* (DMS-5), *Hovey* (DMS-11), and *Long* (DMS-12)—which had already grown old as destroyers and which would die, several of them, in Lingayen Gulf. In 1944 a group of newer *Gleaves*-class destroyers, including *Emmons* (DMS-22) and *Rodman* (DMS-21), were converted for the same work and sent on to Okinawa. (The *Allen M. Sumner*-hull ships that served as minecraft in 1945 were, in the main, the *Robert H. Smith*-class destroyer-minelayers, already treated in the companion minelaying note; they screened sweepers and stood radar-picket duty, but they were not the DMS conversions of the assault van.)

Terror (CM-5) was built as a minelayer, and she planted fields, but from 6 January 1945 she was also flagship of Rear Admiral Alexander Sharp, Commander Minecraft, Pacific Fleet, and a tender to the sweepers. The Dictionary of American Naval Fighting Ships and a compiled 1969 ship history in the owner's private papers tell the same operational story. After alterations at Pearl Harbor to take a flag staff, she issued mines and gear at Ulithi, then steamed to Tinian and tended the Iwo force. On the morning of 17 February, with fire from the cliffs interfering with motor minesweepers close inshore, she closed to 10,000 yards and fired her five-inch guns for twenty minutes to cover them. That afternoon she

became a casualty-evacuation and repair ship for damaged sweepers and for small craft supporting the underwater demolition teams; her medical spaces were soon overcrowded. She left the island on the evening of the 19th, landed wounded at Saipan, and went back to Ulithi to service the Okinawa force.

She arrived off Kerama Retto on 24 March and anchored in the harbor on the 29th. For weeks she issued water, diesel oil, smoke, provisions, minesweeping spares, and radio, radar, and sonar parts, repaired hulls and engines, and ran a flagship with a swollen staff, while going to general quarters ninety-three times in April alone. On 1 May a kamikaze hit her communication platform; the official history records 41 dead, 7 missing, and 123 wounded. She was repaired on the West Coast, returned to Okinawa after the surrender, rode out a heavy typhoon in mid-September (holed alongside *Patoka*, and soon repaired) and Typhoon Louise on 9 October, which beached or wrecked more than a hundred vessels in Buckner Bay and Unten Ko. *Terror* came through Louise undamaged, and in December was relieved as flagship.

The wartime sweeps

The first American assault sweeps of the war, off North Africa in November 1942, were exploratory work by *Raven* and *Osprey*. In the Mediterranean that followed—Sicily, Salerno, Anzio—the fields were still mostly contact and simple magnetic mines, and the lessons were as much about time and traffic as about gear. At Salerno, Melia notes, insufficient time to clear the approaches cost a ship. At Anzio in January 1944, twenty-three sweepers opened the approaches in time, and found crowding a greater hazard than the mines.

Normandy was different. Early intelligence had pointed to contact mines; the real problem, once the landing was in, proved to be German pressure and combination mines, the “oysters” Hitler had finally ordered sown around the invasion coast, Le Havre, and Cherbourg. On 5 June, while Mine Squadron 7 and Minesweeper Squadron “A” were crossing toward Utah Beach, *Osprey* struck a mine and sank that evening. Her Dictionary of American Naval Fighting Ships entry does not give a casualty total, and none is offered here. *Tide* (AM-125), sweeping fire-support channels and, on the night of 6–7 June, helping to guard the Carentan estuary against E-boats, drifted over the Cardonet Banks on the morning of the 7th while recovering her gear. A mine lifted her out of the water, broke her back, and tore out her bottom. Her commanding officer, Lieutenant Commander Allard B. Heywood, died soon after the explosion. *Swift* tried to tow her to the beach; the strain broke her in two, and she sank after the last survivors were off. In the American sector, landing forces also detonated magnetic mines, losing several combatant ships and at least sixteen landing craft. The thick mixed fields, and the ingenious “Katie” mines on tripods that rolled aside from a sweep wire and then righted themselves, were found in quantity only after the landing, especially at Cherbourg, where Allied forces swept eight times a day for eighty-five days and still had to send divers to countermine.

In the Pacific the sweepers were in the van of the island assaults, from Guadalcanal onward. Flush-deck DMS ships screened transports, bombarded, and cut channels up the Solomons and into the Palaus and the Philippines. *Hovey*, already a high-speed sweeper on 7 December 1941, was at sea off Pearl Harbor that morning; she later swept and fired at Guadalcanal, towed PT boats into Tulagi, and went on to Cape Torokina, the Palaus, and Leyte before her last run into Lingayen. The cost of that last run became visible in January 1945. *Long*, sweeping under air attack on the 6th, was crashed by a suicide aircraft on her

port side below the bridge; a misunderstood order sent her after crew over the side, and *Hovey* took off 149 men from *Long* and from *Brooks*, herself also hit. A second aircraft finished *Long* that afternoon; she capsized the next morning. In the night retirement, at 0455 on 7 January, *Hovey* was struck by a torpedo in her after engine room, broke in half, and sank in about two minutes, with 24 of her own men killed and 24 more who were survivors from *Long* and *Brooks*. That same 7 January, *Palmer*, already making repairs after a turbine casualty, was hit by two bombs from a low-flying bomber and sank in six minutes: 2 killed, 38 wounded, and 26 missing, according to her official history. *Salute* (AM-294), an *Admirable*-class sweeper of Mine Division 34, had already swept at Leyte, Ormoc, Mindoro, Lingayen, and in Manila Bay off Corregidor—where, on 14 February, the sweepers came within 5,000 yards of the island and were repeatedly straddled before supporting ships silenced the guns. In late April she spent eight days sweeping the Sulu Sea off Palawan.

Borneo, in the last months of the war, combined Japanese moored mines with Allied influence mines laid earlier to close the oil ports. Off Brunei Bay, *Salute* struck a moored mine on 8 June, her keel broken, and sank after a long fight to save her. A Naval History and Heritage Command account gives nine men killed, most of them in the engine room, and 59 survivors, of whom 42 were wounded. The force went on; by mid-June it had added hundreds of mines to the count, and more than 500 were ultimately cleared from Brunei Bay. Admiral King's official report notes a further week of sweeping at Miri-Lutong, to the south, in which 458 mines were swept, and records *Salute*'s loss "with many casualties." At Balikpapan, beginning sixteen days before the 1 July landing, sweepers worked under fire from coastal guns. King's report states that three sweepers were damaged by gunfire and that three were sunk and one damaged by mines. Melia's later official history says that seven YMSs were sunk by advanced Allied influence mines their own wooden, degaussed hulls could not ignore. The two counts have not been reconciled here; what is not in dispute is that this was the first time Pacific Fleet sweepers had faced a large body of American and British influence mines, and that the amphibious force landed on 1 July through a path the sweepers had opened, at a price that shocked the mine force.

Okinawa was the largest American minesweeping operation of the war. On 24 March, L-minus-8, seventy-five sweepers began work under cover of fast-battleship gunfire, and continued through the capture of Kerama Retto and Ie Shima and the clearing of southern Okinawa's coastal perimeter. King's third report states that, including re-sweeping, more than 3,000 square miles were swept and declared safe before L-day, with some 177 mines swept and about 80 floaters destroyed, and that bombardment and assault ships then closed the beaches without significant loss from mines. Melia, covering the same week and then the two months that followed, gives 222 contact mines for the pre-assault week, more than 510 contact mines swept in the operation as a whole, 95 aircraft shot down by the minecraft, and four sweepers sunk and sixteen damaged. The pre-assault figures differ; both accounts agree that the assault shipping was not, in the event, badly hurt by mines, and that kamikazes, not moored cases, were what mauled the force afterward.

Among the sunk were *Skylark* (AM-63), which, while sweeping off the Hagushi beaches on 28 March, struck a mine on her port side amidships, then a second twenty minutes later, and sank; five men were killed, and *Tolman* (DM-28) took off the rest. *Swallow* (AM-65), after a week of approach sweeps and then antisubmarine patrol, was hit on the starboard side amidships by a kamikaze at 1858 on 22 April,

took a 45-degree list, and capsized six minutes after the order to abandon; her official accounts do not state a death toll. *Emmons*, converted only the previous autumn, had helped clear Okinawa's waters for the 1 April landings and then gone to picket duty. On 6 April, circling the already hit *Rodman* to give antiaircraft cover, she was struck by five suicide aircraft almost at once. Her Dictionary of American Naval Fighting Ships entry records 60 dead and 77 wounded that day; the hulk was sunk on the 7th. The first enemy air attack of the campaign, King noted, had come on 24 March, the day the sweepers arrived.

After the guns stopped

The surrender did not end the work. It changed the problem. Melia's figures are the most careful official tally of what the Americans themselves had already done, and of what remained: by October 1945 they were practiced at cutting contact mines and still little practiced at influence work, and more than 25,000 influence mines were still in Pacific waters. A 1952 *Proceedings* account of the occupation put the American plant around Japan—B-29s and submarines—at more than 10,000 mines, and Japanese-sown mines in the same area and the Inland Sea at more than 55,000. A 1946 *Proceedings* article, written while the job was just beginning, estimated that more than ten times the 10,000 mines already swept remained in the Pacific alone, spread over some 200,000 square miles from Japan to Burma, and that the Navy thought clearance might take two years. Those contemporary estimates do not all agree with one another, or with Melia's later count of influence mines; they are recorded here as they were given. What every account agrees on is that the leftover fields were large, mixed, and, in the case of the most modern American weapons, poorly located from a sweeper's point of view. Many of the B-29 mines had been dropped at night and at low altitude, and were not where the plots said they were.

U.S. policy, lacking the ships and the technology for a complete sweep, was to clear only essential waters "on a minimum risk basis for U.S. forces": the approaches needed to land occupation troops and to recover Allied prisoners. Rear Admiral Arthur D. Struble, who succeeded Sharp, tried aerial countermining without notable success and then resorted to guinea-pig ships. Beginning in September 1945, about 350 small Japanese vessels, under Captain Kyuzo Tamura and assisted by U.S. ships, were put to work in coastal waters the Americans did not need for themselves. According to the 1952 account, some Japanese sweeping was done under Allied Powers orders between 15 August and 1 September, then suspended for reorganization; Admiral John J. Ballentine, acting for Commander Fifth Fleet and for the Supreme Commander, ordered Japanese sweepers to report at Kure, Yokosuka, Sasebo, and Osaka, and the work resumed. Early in November, Commander Fifth Fleet placed all Japanese minesweepers under Commander Task Group 52.10, the first systematic supervision since the surrender. On 26 March 1946 that supervision passed to the minesweeping officer on the staff of Commander Naval Forces, Japan, named in the 1952 article as Captain Donohu. American assets were withdrawn in May 1946, after, in Melia's words, "reportedly sweeping 12,000 mines in 22,000 square miles." A Navy official had estimated that year that two years would finish the job. The Japanese fleet—ex-Navy crews, still at the work—went on under Commander U.S. Naval Forces, Japan, later Commander Naval Forces, Far East.

The hard water was the water Operation Starvation had closed. Shimonoseki Strait, the narrow gate between the Inland Sea and the East China Sea, had been the first and most heavily mined target of the B-29 campaign. Wartime Japanese officers interrogated after the surrender described currents that moved

mines, a need to sweep the whole strait so that ships could reach beach moorings, and pressure and low-frequency acoustic weapons they could not reliably counter. A hydrobar in very calm water had accounted for two or three pressure mines at Niigata in August; Captain Tamura told interrogators there was still no effective countermeasure, in any country, for the low-frequency acoustic mine and the magnetic-pressure mine. Those were the weapons American and Japanese sweepers now had to live with, minus only whatever sterilizers had already run out. The Inland Sea, the harbors, and the approaches were assigned to the Japanese, first as a military necessity and then, as the 1952 account makes clear, to get Japanese shipping moving again for the occupation economy. U.S. ships, after the first strategic cuts, also swept in the Inland Sea for that purpose. A Japanese government summary of the first two years, quoted in that article, credited the continuation of the work—clearing all of the moored mines and a majority of the influence mines, despite "deterioration of morale"—to American supervision on the one hand and to Tamura and his subordinates on the other. It was an unusual admission, and a reminder that the long clearance was, in practice, a Japanese operation under an American officer's eye.

It was not a two-year job. In 1971, Melia records, estimates were that after twenty-six years of sweeping, more than 2,000 sensitive influence mines remained in shallow water. Hazards outlived the sterilizers' design life, and they outlived the men who had laid the fields. Merchant ships were still being lost in Japanese waters in the months after the surrender; a 1946 report cited Domei accounts of three sinkings near Kobe in a single week of October 1945. Clearance went on, under Japanese civilian authority and the Maritime Safety Agency and its successors, for a generation.

Elsewhere in the Pacific the pattern was the same, on a smaller scale: sweep what American ships needed, leave the rest, or put former enemy crews to work under American advisers. Seventh Fleet's new occupation tasks, as King listed them, included clearing minefields and opening ports in its area—the Yellow Sea, the Gulf of Bohai, the Chinese coast, and the navigable Yangtze—as well as landing troops in Korea and North China. YMSs of Mine Squadron 106 swept remaining contact mines in Philippine, Korean, and North Chinese harbors where U.S. shipping would be at risk. When Chinese Nationalist forces had to be lifted from Indochina in September 1945, Japanese sweepers with American advisers were assigned the dangerous Haiphong Channel, while the YMSs swept staging areas at Đồ Sơn, found no mines there, and later joined the Haiphong work, where they were reported to have accounted for five American magnetic mines. Minecraft, Pacific Fleet, publicized the opening of major Pacific sea lanes as "the greatest minesweeping job in history." It was a large job. It was not a complete one.

In Europe the United States was already heavily committed in the Pacific, and said so. On 22 November 1945, at Admiralty House in London, an agreement constituting an International Organization for the Clearance of Mines in European Waters was signed for the Soviet Union, the United States, France, and the United Kingdom. A State Department instruction earlier that autumn had authorized American representation on an equal footing, but had also made clear that the U.S. Navy would not be obligated to furnish additional minesweeping equipment or to take part with its own ships: large numbers of American minecraft had already gone to Allied European navies under Lend-Lease, and the Pacific commitments could not be reduced. The British, French, Soviet, and other European forces, with those transferred ships among them, inherited the North Sea—still fouled in places by the 1918 barrage as well as by the later war—the Channel, and the Mediterranean, including the leftover German pressure fields and

the long business of check-sweeping routes and publishing them. Allied experience at Cherbourg—weeks of daily, repetitive sweeps, and divers on individual mines—was the pattern for many harbors. Passages were declared safe the same way they had been in the Pacific: after clearance and check sweeps, with the results issued to mariners as swept channels and as danger areas still to be avoided, through Notices to Mariners and the routing instructions of the new international organization. Residual risk remained, in European waters as in Japanese, for years after a route had been printed as open.

Losses in the postwar clearance were real, and they are easy to overstate or to invent. Melia's figure of fifty-eight American mine-countermeasures ships lost or written off as casualties is a wartime total, not a postwar one. *Salute*, *Osprey*, *Tide*, *Skylark*, *Swallow*, *Hovey*, *Long*, *Palmer*, and *Emmons* were lost before the surrender, in the act of opening beaches. After V-J Day the Americans, by design, took a minimum-risk cut and then largely stepped back; the Japanese ex-Navy sweepers did the long, dangerous remainder in their own home waters, including the pressure fields no one could honestly call sweepable. This essay does not offer a postwar death toll for those crews, or for the merchant ships that still found mines, because the official American accounts used here do not give a figure that will bear repetition as a settled count. The honest conclusion is quieter than a number: a channel was opened when it had been swept, check-swept, buoyed, and published; some channels took decades; and some water, into the 1970s, was still not clear.

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Private papers, including a compiled 1969 history of *Terror*, were used to confirm her tender and flagship work at Tinian, Iwo Jima, and Kerama Retto. Operational facts given above follow the public Dictionary of American Naval Fighting Ships account wherever the two overlap.

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