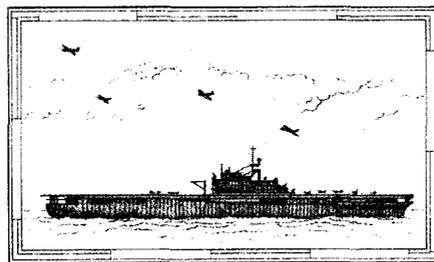


VICTORY AT SEA

by DAVID M. KENNEDY

Recent movies like Saving Private Ryan and The Thin Red Line have vividly depicted the face of land battle in the Second World War, but the story of the American war is incomplete without the sweep and strategic stakes of the war at sea, in which 104,985 American sailors and Marines were wounded, 56,683 were killed, and more than 500 U. S. naval vessels were sunk. Lest we forget



MILITARY necessity is a profligate breeder of inventions. The Second World War incubated revolutionary innovations in all spheres of warfare: tanks transformed land battle; strategic bombers opened new fighting frontiers in the air; submarines and aircraft carriers rendered obsolete centuries of doctrine about waging war at sea. By war's end these vaulting leaps in military technology had swept all the combatants, including the United States, across older moral frontiers as well.

The Japanese attack on Pearl Harbor, on December 7, 1941, dramatically heralded the new age of naval combat. Aircraft launched from half a dozen Japanese carriers, operating thousands of miles from home, made quick work of crippling the eight aging U.S. battleships anchored helplessly below them. Though it would take some time to become apparent, Pearl Harbor ended the era of the dreadnoughts. In a few minutes of a Hawaiian Sunday morning a few hundred Japanese pilots enormously widened the arc of naval war, and transformed its very nature. Future sea battles would be fought over distances once unimaginable, and by sailors who never laid eyes on an enemy ship.

Japan would in time pay a horrific price for its moment of victory at Pearl Harbor, but the attack was hardly a gesture of suicidal folly. It was a carefully calculated risk that held out the prospect of huge rewards. The potential gains seemed especially alluring in December of 1941. Hitler's conquest of France and the Netherlands in the preceding year and the Battle of Britain had left the resource-rich European colonies in Southeast Asia and the Indonesian archipelago temptingly vulnerable. The Americans seemed more concerned with the disintegrating situation in Europe than with events in the Pacific, and appeared unlikely to muster either the resources or the will to fight a two-ocean war. When Germany's invasion of the Soviet Union, in June of 1941, distracted Japan's traditional rival for hegemony in East Asia, Japanese expansionists saw a historic opportunity. Now was the time to plunge into the paddies and rubber plantations of French Indochina and British Malaya, and the coveted oil fields of the Dutch East Indies. This "Southern Operation" would seal off China from outside help, thus underwriting victory in Japan's frustrating four-year war against Chiang Kai-shek's feckless but tenacious Chinese army. It would cast out the hated European and American colonizers once and for all, ending centuries of Western dominance in Asia. More immediately, seizing the Dutch East Indies oil fields would secure Japanese fuel supplies, nullifying the effect of the embargo that America had imposed in July, in a futile effort to restrain Japanese expansion into Southeast Asia.

At an imperial conference in the first week of September, 1941, Japanese officials resolved that if a reversal of the American embargo was not achieved through diplomatic means by early October, Japan should launch the Southern Operation. But as Japanese war games had repeatedly demonstrated, for the operation to be successful Japan must first knock out the British naval facility at Singapore, deny the Americans the use of the Philippines as a forward basing area, and venture far out into the Pacific to cripple the main elements of the U.S. Pacific Fleet at Pearl Harbor, Hawaii. The plan was hugely ambitious but not mad. Its slender logic resided for the most part in the hope that the isolationist and militarily unprepared Americans would be so stunned by Japan's lightning blows that they would lose the will to fight

a protracted war, and would accept a negotiated settlement guaranteeing Japan a free hand in Asia. All the Japanese planners understood that a conventional victory, ending in the complete defeat of the United States, was an impossibility. Admiral Takijiro Onishi was one of the few voices warning that an attack on Pearl Harbor might make the Americans "so insanely mad" that all hope for compromise would go up in flames. Everyone knew that if the Americans should choose to fight a war to the finish, Japan was almost certainly doomed. The Emperor, a diminutive figure revered by his people as the son of God, a taciturn man who usually sat impassive during these ritualized conferences, appreciated the perils ahead. He sharply reminded his military leaders that China's extensive hinterland had cheated Japan of victory on the Asian mainland, and that the Pacific was "boundless." To that cryptic utterance there was no effective rejoinder. The plan was approved.

PEARL HARBOR

SO it was that in early December of 1941 Admiral Isoroku Yamamoto, commander in chief of Japan's Combined Fleet, fretted in his headquarters aboard the battleship *Nagato* in Hiroshima Bay. He had directed a powerful task force under Vice-Admiral Chuichi Nagumo to sortie on November 26 from Hitokappu Bay, in the Kurile Islands, under orders to attack the U.S. Pacific Fleet base at Pearl Harbor. Yamamoto had provided that "in the event an agreement is reached in the negotiations with the United States, the Task Force will immediately return to Japan," but the negotiations had by now irretrievably collapsed. There would be no turning back.

Other Japanese naval forces were at the same time initiating the enormous Southern Operation, slicing southward from Japan to land invasion troops in the Philippines, Malaya, and the great oil-rich prize of the Dutch East Indies. The Pearl Harbor expedition was the pivot of this complex scheme, and surely the most perilous of the several daring military operations Japan now had under way.

So much could go wrong. The strike force, designated First Air Fleet, had been organized only eight months earlier, and had never fought a concerted action. The six aircraft carriers that composed its fighting core embodied the experimental concept of naval air power, long advocated by visionaries such as the American Billy Mitchell and the First Air Fleet's own air staff officer, Commander Minoru Genda, but still virtually untested in the unforgiving crucible of battle. The very length of the 4,000-mile attack route, well beyond the Japanese navy's traditional radius of action, necessitated tricky refueling at sea, and amplified the chances for detection.

Surprise would enormously enhance the prospects for success, just as surprise had favored Japan when it launched its other great war against a Caucasian power by besieging the

Russian fleet at Port Arthur in 1904. So Nagumo's ships ploughed methodically eastward from Hitokappu Bay in strict radio silence, enveloping themselves as well in the cloud and mist of an eastering weather front. Yamamoto could trace their putative movements on his charts, but would know nothing for certain until radio silence was broken.

Short, deep-chested, swift and sarcastic in argument, bold and ingenious in battle, born in 1884 in the great flowering of the Meiji Restoration, Yamamoto was at the summit of his distinguished naval career in 1941. He had firsthand knowledge of his adversary. He had studied English at Harvard in the 1920s, and later served as naval attaché in Washington, where he had earned a reputation as a shrewd poker player. He had also acquired a sober respect for the war-making po-

cow the isolationist Americans into acquiescing in Japan's dominance over China and the Pacific. At a minimum, knocking out the U.S. Pacific fleet would buy precious time for the Southern Operation to go forward unmolested, and for Japan so to consolidate its hold on Southeast Asia that it could not easily be dislodged.

Success at Pearl Harbor would vindicate the Japanese navy, so long denied a role in the land war in China, yet fiercely proud of the part it had played in the Russo-Japanese War of 1904–1905—especially its legendary conquest of the Russian fleet at the Battle of Tsushima Strait, in 1905. For the Japanese people, and especially for seamen like Yamamoto, Tsushima represented not only a glorious naval victory but a confirmation and font of racial pride. Tsushima had demonstrated the vulnerability of the haughty Western powers in the face of Japan's rising industrial might and abiding moral superiority. Yamamoto himself had been blooded at Tsushima. His left hand, missing two fingers lost in that battle, daily reminded him of the near-mythic spell that Tsushima still cast for his service and his nation.

At sea on December 4, silent and undetected several hundred miles northwest of Hawaii, Vice-Admiral Nagumo's sprawling flotilla of nearly three dozen ships swung from its easterly course to a southeasterly bearing. On the morning of December 6 Nagumo completed his final refueling. His oilers angled away to take station at the rendezvous point for the return voyage. Freed of the lumbering tankers, at 11:30 Nagumo ordered speed increased to twenty knots and pointed his ships due south, carving a course that would bring them to the launching sector, 200 miles north of Oahu, just before dawn the next day. At 11:40 his flagship, the giant carrier *Akagi*, ran up the very "Z" flag that Admiral Togo had flown at the Battle of Tsushima Strait, thirty-six years before. Flushed with patriotic emotion, Japanese sailors and pilots cheered wildly.

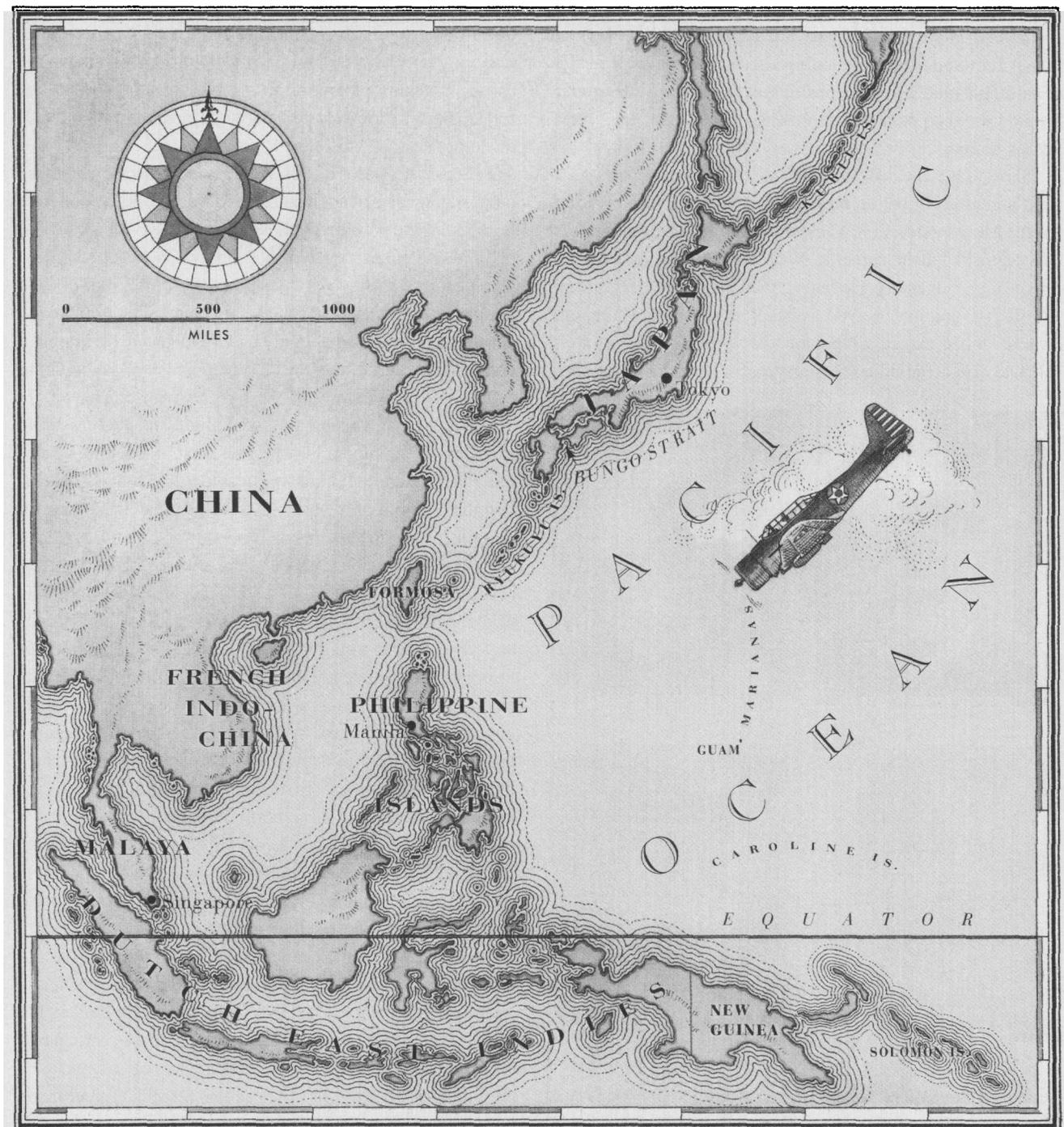
With Togo's historic pennant snapping in the wind, Nagumo's arrowhead-shaped armada plunged through heavy seas, bearing relentlessly down on its target. Destroyers patrolled along its flanks, submarines guarded its rear, and an imposing cordon of battleships and cruisers closely jacketed the precious carriers with their lethal cargoes at the arrowhead's heart.

Just before 6:00 A.M. Nagumo wheeled due east again, to launch his planes into the wind. Pilots, wearing bandannas emblazoned with the word *Hissho* ("Certain Victory"), scrambled into their aircraft. Within minutes 183 planes had lifted from the decks of the six carriers and were shaping their triangular formations for the first attack wave. Fifty-one dive bombers made up the high squadron, with forty-nine level bombers below, and forty torpedo planes lower still. High overhead ranged forty-three Mitsubishi A6M fighters—the swift and nimble "Zeros" that would soon terrorize American fighting men all over the Pacific. By the time the second attack wave had been launched, about an hour later, some



tential of the United States. He knew that its vast industrial base and large population would make it a formidable foe if it ever mustered the political will to fight, and probably an invincible foe if the conflict was protracted. Through the tense debates since 1937 about Japan's foreign policies, Yamamoto's had been a voice of moderation. He did not fully trust Japan's Axis allies, and repeatedly pleaded for alternatives to war with the United States. Yet to Yamamoto had fallen the task of devising the battle plan for that war. A devoted patriot and loyal warrior, Yamamoto had done his duty faithfully—and brilliantly.

The attack on Pearl Harbor fitted Yamamoto's gambler's temperament. It entailed gigantic risks, but also held out the promise of extravagant rewards. If fully successful, it might



350 aircraft, led by Commander Mitsuo Fuchida, were droning southward toward Oahu.

At the very moment that Nagumo ordered his carriers to point their bows into the wind, shortly before noon Washington time, Army Chief of Staff George C. Marshall was returning from a Sunday-morning horseback ride to his War Department office in Washington. There aides presented him with a translation of a freshly decrypted message from Tokyo. It contained a lengthy and final reply to the ten-point American position that Secretary of State Cordell Hull had presented to Ambassador Kichisaburo Nomura on November 26, and

instructed Nomura once and for all to break off negotiations. As Marshall scanned the sterile diplomatic prose, he reached its alarming codicil, ordering Nomura to submit the reply "at 1:00 P.M. on the 7th, your time." To Marshall the highly unusual specification of a precise time, and on a Sunday at that, was ominous. The time was scarcely an hour away. Marshall immediately drafted a message to be sent to Army commands in the Philippines, Panama, Hawaii, and San Francisco: "Japanese are presenting at one pm eastern standard time today what amounts to an ultimatum. . . . Just what significance the hour set may have we do not know but be on the

alert accordingly. Inform naval authorities of this communication." Within minutes the message was encoded and dispatched by radio to all destinations—except Hawaii. Atmospheric conditions were creating heavy static that temporarily blocked the wireless channel to Honolulu. The War Department signal officer chose the next-fastest communication route: a commercial Western Union teletype. The message left Washington on the Western Union wire at 12:17 P.M., and was relayed by the Radio Corporation of America installation near San Francisco to Hawaii. It reached Honolulu sixteen minutes later—7:33 A.M. Hawaii time. A messenger picked up the telegram at RCA's Honolulu office, mounted his motorcycle, and roared away to deliver it to General Walter C. Short at Fort Shafter, several miles away. Fuchida's planes were then twenty minutes north of Oahu. Still en route when the attack commenced, the messenger reached Fort Shafter only after Fuchida's planes had wreaked their destruction.

That communications delay was not the only missed opportunity to spoil the Japanese surprise. As Fuchida's attackers formed up over their carriers, just before 7:00 A.M., an American destroyer patrolling outside Pearl Harbor's mouth sighted and depth-bombed a Japanese midget submarine trying to slip into the anchorage. But the destroyer's report of this contact was discounted as another in a series of frustratingly unconfirmed submarine sightings, and set aside for further verification.

Minutes after the submarine contact, an Army radar operator on northern Oahu reported an unusually large flight of incoming aircraft. They were, in fact, Fuchida's first wave, still nearly an hour away, but the operator's superior officer irresponsibly intuited that the blips on the screen represented a flight of B-17 "Flying Fortresses" being ferried in from California to Hickam Field. The officer was brought to this tragic miscalculation at least in part by his recollection that radio station KGMB had been broadcasting all night—a programming schedule that almost invariably meant B-17s were arriving from the mainland, their navigators using the station's beam as a homing signal. Fuchida's pilot was meanwhile using that same beam, carrying saccharine Hawaiian tunes, to guide him to Oahu.

When Fuchida sighted land from his lead bomber, at about 7:30, he gave the order to assume attack positions. Below the warplanes the American ships and aircraft lay serenely unsuspecting and virtually undefended, exactly as described by the espionage reports from Japan's Honolulu consulate. For more than an hour bombs and bullets pelted down on the unmaneuverable American battleships, mostly moored in pairs in "Battleship Row," off Ford Island, and on the unflyable American airplanes, parked wingtip-to-wingtip at Bellows, Wheeler, and Hickam Fields so that they could be guarded against land-based sabotage. When the last Japanese plane winged away, at about 10:00 A.M., eighteen U.S. naval vessels, including eight battleships, had been sunk or heavily

damaged. More than 180 aircraft were destroyed, and at least 120 disabled. The dead numbered 2,403—1,103 of them entombed in the battleship *Arizona*, which sank rapidly after a bomb exploded in its forward magazine. Another 1,178 men were wounded. Columns of smoke obscured Fuchida's final reconnaissance as he departed for the *Akagi*, but he knew beyond question that his airmen had triumphantly accomplished their mission.

THE PHILIPPINES

VICTORY took only a bit longer in the American colony of the Philippines. At his Manila headquarters Douglas MacArthur, commanding general of U.S. forces in the Far East, learned early in the morning of December 8 that Pearl Harbor had been attacked. Incredibly, and unforgivably, he made no use of the next nine hours to mount a counterattack against Japanese positions on Formosa (Taiwan), as his air commander urged, or even to launch or disperse his own aircraft. They were caught bunched on the ground—"On the ground! On the ground!" President Franklin Roosevelt exclaimed incredulously—when Japanese bombers and fighters appeared overhead shortly after noon. Within minutes MacArthur's force of some three dozen B-17 bombers, on which he had obstreperously premised his claim to be able to defend the Philippines indefinitely, was severely damaged.

When the Japanese began landing troops on the principal Philippine island of Luzon, on December 22, MacArthur



Douglas MacArthur



Jonathan M. Wainwright

speedily jettisoned his always dubious scheme to repel the invaders on the beaches and on the central Luzon plain, and began gathering men and supplies for a retreat into the Bataan Peninsula and the island fortress of Corregidor, where he set up his command post. MacArthur, sometimes accused of being a legend in his own mind, soon earned himself the derogatory nickname "Dugout Doug," bestowed on him by his suffering troops on Bataan while he sat in the relative comfort of Corregidor, only once making the brief torpedo-boat run across to the peninsula to hearten his men.

They sorely needed heartening. The swift retreat into the

peninsula of more than 70,000 American and Filipino troops and another 26,000 civilian refugees left them all wretchedly undersupplied. Lacking fresh food, medicines, clean drinking water, and sanitary facilities, thousands fell victim to scurvy, beriberi, malaria, and dysentery.

Knowing that the Philippine garrison was doomed, Roosevelt ordered MacArthur to depart for Australia. On the night of March 12 the general and his family and personal staff were evacuated from Corregidor in four PT boats, leaving General Jonathan M. Wainwright in command. With characteristic self-regard and uncharacteristic lack of orotundity, MacArthur announced, "I shall return." As a face-saving measure—and as a prophylaxis against backlash from the general's many political friends—the President simultaneously conferred upon MacArthur the Congressional Medal of Honor.

The medal was small comfort for the masses of sick soldiers and civilians left behind in the Philippines. Though MacArthur fulminated by radio from his new base in Australia that his troops should break out of Bataan and take to the mountains as guerrillas, Wainwright knew the notion was fatuous. The Bataan contingent surrendered on April 9, and on May 6 an emaciated Wainwright, hopelessly holed up in Corregidor's putrescent Malinta Tunnel, tortured by the resonant moaning of thousands of ill and wounded men crammed into the dank thousand-foot-long shaft, finally capitulated. In his diary Dwight D. Eisenhower took note of these events: "Corregidor surrendered last night. Poor Wainwright! He did the fighting . . . [MacArthur] got such glory as the public could find. . . . MacArthur's tirades, to which TJ [MacArthur's aide, T. J. Davis] and I so often listened in Manila, would now sound as silly to the public as they then did to us. But he's a hero! Yah."

More than a year later, after three American survivors escaped from a prisoner-of-war camp on Mindanao, made their way to Australia, and told the story, the world learned of the cruel episode that then ensued. There were some extenuating circumstances, but these were scarcely sufficient to exonerate the Japanese from the indictment that they behaved with wanton barbarity. The Japanese had planned on bagging some 40,000 prisoners of war in the Philippines sometime in the summer of 1942. Instead they found themselves with nearly 70,000 captives on their hands in April and May, 10,000 of them Americans, all of them suffering from months of siege and illness, as were the Japanese themselves. These logistical and medical problems only exacerbated a more fundamental clash of cultures.

Japanese military leaders had adopted the ancient samurai ethos of *Bushido* to develop a military code that engendered what two scholars have described as "a range of mental attitudes that bordered on psychopathy," including the notion of "surrender as the ultimate dishonor, a belief whose corollary was total contempt for the captive." That contempt the Japa-

nese troops now vented savagely on the American and Filipino captives they herded along the route of the "Bataan Death March," a grisly sixty-five-mile forced trek to crude prisoner-of-war camps near the base of the Bataan Peninsula. Japanese guards denied water to parched prisoners, clubbed and bayoneted stragglers, and subjected all the captives to countless humiliations and agonies. Some 600 Americans and as many as 10,000 Filipinos died along the route of the march. Thousands more perished in the filthy camps. This death march presaged the pitiless inhumanity that came to possess both sides in the ensuing three and a half years of war in the Pacific.

MIDWAY

"The closest squeak and the greatest victory."

—George C. Marshall on the Battle of Midway

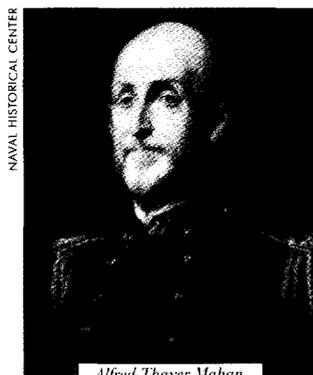
FUCHIDA'S fliers at Pearl Harbor had seen to it that not a single battleship remained in action in the U.S. Pacific Fleet. But battleships were the capital weapons of the previous war. In the war that was now so bloodily begun, aircraft carriers would be trumps, and no U.S. Pacific Fleet carriers had been at Pearl Harbor on December 7. The *Yorktown* had been detached in April for duty in the Atlantic. The *Saratoga* was stateside for repairs. The *Enterprise* and the *Lexington* were at sea near Wake and Midway Islands respectively. Fuchida's raiders had also failed to damage Pearl Harbor's repair shops. More important still, they had left intact the enormous fuel-oil tank farm. Loss of that fuel supply, every drop of it laboriously hauled from the American mainland, would probably have forced the U.S. Navy to retreat to its bases on the West Coast, at a stroke sweeping the western Pacific of American ships more cleanly than any other imaginable action. But Nagumo rejected suggestions that he undertake a second strike, against the repair and fuel facilities, or linger in the area to search for the missing carriers. He seemed paralyzed by the very ease of his victory. He had lost but twenty-nine aircraft, and his fleet remained unsighted. In the historian Gordon Prange's apt words, he must have felt "as if he had rushed forward to break down a door just as someone opened it." For Nagumo, what he had achieved on the morning of December 7 was victory enough. Yet his failure to return for the final, definitive kill risked eventual defeat.

For his part, Adolf Hitler made less than optimal use of the Pearl Harbor attack. Though the strict terms of their alliance with Japan did not require it, since Japan had been the attacker, not the attacked, Hitler and Mussolini on December 11 somewhat impetuously declared war on the United States, which then recognized a state of war with Germany and Italy.

Hitler here missed an opportunity to work incalculable mischief with the American commitment to give precedence to the European war. If Der Führer had not now obligingly declared war on the United States, Roosevelt, given the ap-

parent willingness of both sides to acquiesce in protracted and undeclared naval war in the Atlantic, would have had difficulty finding a politically usable occasion for declaring war against Germany. In the absence of such a declaration Roosevelt might well have found it impossible to resist demands to undertake the maximum U.S. effort in the Pacific, against the formally recognized Japanese enemy, rather than in the Atlantic, in an undeclared war against the Germans. This was precisely Churchill's worry, and it was not easily laid to rest. Well after the German declaration of war Roosevelt came under stubborn pressure to give priority to the fight against Japan. Pressure came from the Navy, which always took the Pacific war to be its special province, and from public opinion, infected by a legacy of racial animosity and inflamed by the humiliation of the Pearl Harbor attack.

The string of relatively easy Japanese victories in the first four months of the war provoked a heated debate among Japanese military planners about what their next step should be. The success and momentum of the Southern Operation seemed to dictate one answer: consolidation and



buildup of the bases tenuously established in New Guinea and the Solomon Islands, followed by further advances into New Caledonia, Fiji, Samoa, and perhaps eventually Australia. But Yamamoto put the full weight of his authority behind a contrary plan. Finish the job begun at Pearl Harbor, he urged, by seizing Midway Island, some 1,100 miles west of Hawaii. Politically, Midway in Japanese hands would menace Hawaii with the threat of invasion, providing a potent bargaining chip with which to force the Americans to negotiate a settlement. Militarily, a Japanese presence on Midway would lure forth the remaining elements of the U.S. Pacific Fleet for the "decisive battle." Toward the waging of that battle Yamamoto's career and the training and preparation of the entire Imperial Japanese Navy had long been consecrated.

The doctrine of the decisive battle was distilled from decades of Japanese planning about how to wage war against the United States in the Pacific. That planning derived in turn, ironically, from the theories of the American naval strategist Alfred Thayer Mahan. A U.S. naval officer and the president of the Naval War College, Mahan argued in his influential work *The Influence of Sea Power Upon History* (1890) that command of the sea was the key to success in war, and that the way to secure the sea was to engage the enemy's main force and destroy it. As Japanese planners adopted this thinking for possible war against the United States, they envisioned the swift capture of the Philippines and Guam, thus

forcing the U.S. fleet to battle. As the U.S. Navy transited the Pacific, Japanese submarines would harass it in the eastern Pacific, and land-based aircraft would strike as it passed through the Marshall and Gilbert Islands. When the weakened fleet approached the Marianas or the Carolines, or perhaps the Philippines, it would confront a fresh, overpowering Japanese naval force and be decisively defeated.

Yamamoto had argued in 1941 that rather than lie in wait for the U.S. fleet in the western Pacific, the Japanese navy should employ the First Air Fleet, embarking some 500 high-performance aircraft, flown by magnificently trained pilots, to mount an attack directly in mid-ocean, at the U.S. base in Pearl Harbor. That task Japan had only partly accomplished on December 7, Yamamoto insisted. Now was the time to hit the Americans again at a place they would be compelled to defend with their full strength—Midway—and destroy the U.S. Pacific Fleet once and for all. With the Pacific cleansed of American ships, Japan would have an unchallenged defensive perimeter, stretching from the North Pacific through mid-ocean to the South Pacific. The Southern Operation would be impregnable secure. Within its perimeter Japan would hold Guam and the Philippines as hostages, and perhaps Hawaii and Australia as well. Safe behind this barrier, Japan could easily sustain a strategically defensive posture, and sue for a negotiated peace on terms it dictated. These were heady notions. In May of 1942 they intoxicated even such a calculating pragmatist as Yamamoto. The faint prospect of victory that had earlier swum mistily at the outermost rim of his imagination, the military historian John Keegan has written, now "seemed to lie only one battle away."

AMERICAN strategic doctrine for war against Japan was virtually the mirror image of this Japanese thinking. Code-named the "Orange Plan," it had first been formulated early in the century, and also reflected Mahan's influence. The Orange Plan assumed an early Japanese capture of the Philippines, and made relief of the Philippines the main U.S. objective. The American garrison there was supposed to hold out for three or four months while the U.S. fleet crossed the Pacific, engaged the main body of the Japanese fleet, destroyed it, and thereby ended the war. Always unrealistic, the plan was revised in 1935 to provide for the capture of the Marshall and Caroline Islands as staging areas for the main engagement with the Japanese fleet—a tacit admission that the war would last years, not months, and an admission as well of the cynicism that had always underlain expectations about the sacrificial role of the Philippine garrison. Yet whatever its flaws, the Orange Plan constituted the foundation of the U.S. Pacific war strategy in 1942, and would in many ways continue to do so right down to 1945. In the two interwar decades war games were fought at the Naval War College on these assumptions no fewer than 127 times, planting the Orange Plan's premises deep in the American strategic mind.

In early 1942, however, the United States could not possibly muster a naval force that would even begin to make Orange operational. The only event that had conformed to the plan's predictions was the loss of the Philippines, and it would take not three months but more than three years to retrieve them. As a partial and weak substitute for the great fleet action envisioned by Orange, small strike forces engaged in hit-and-run raids on scattered Japanese island outposts.

By far the most daring and consequential of these raids struck not against outlying military stations in the far Pacific but against the Japanese home islands themselves. Probing carefully westward past Midway Island to within 650 miles of Tokyo, the USS *Hornet* on April 18 launched sixteen cumbersome B-25 bombers never designed to be flown from a carrier deck. Wobbling up over the violently churning sea, the planes sidled into formation behind their leader, Lieutenant Colonel James H. Doolittle. They bombed Tokyo and a handful of other Japanese cities and then, at the extreme limit of their flying range, crash-landed in China. Japanese occupation troops captured some of the airmen. One died in prison, and three were executed after facing charges at a show trial that they had bombed civilian buildings and machine-gunned

a school. Not incidentally, these events further fed the appetites of both sides for a war of vengeance.

The Doolittle raid did little material damage. The Japanese government made no official acknowledgment of the attack, even to its own citizens, to whom the scattered and mostly harmless explosions of April 18 remained somewhat mysterious.

But Doolittle's B-25s packed a momentous psychological wallop. They vividly demonstrated to Japanese military leaders the vulnerability of their home islands through the Midway slot in Japan's defensive perimeter. To all of Yamamoto's already weighty arguments about the attractions of an attack on Midway, the necessity of sealing that slot was now added. Debate ceased in the Japanese high command about the relative priority of the South or Central Pacific. Both operations would now go forward, straining to the utmost the already stretched resources of the imperial navy.

Summoning Nagumo, the hero of Pearl Harbor, Yamamoto began to fit the First Air Fleet for an offensive operation against Midway Island. Nagumo's orders this time were to land an occupation force on Midway and begin its outfitting as a forward base, which would lure the Americans to the decisive battle, and which might serve in time as a launching ground for the invasion of Hawaii. It was Yamamoto's most ambitious plan ever, overshadowing even the audacity of the

December 7 attack, and it demonstrated that not even this prudent planner was immune to the recklessness induced by "victory disease."

Nagumo believed that his failure to find the American carriers in port on December 7 had been handsomely redressed in May of 1942 at the Battle of the Coral Sea, where Japanese pilots had reported sinking two American carriers. Though two Japanese carriers, the *Shokaku* and the *Zuikaku*, were sufficiently damaged or had their air squadrons so shredded at Coral Sea that they could not take part in the assault on Midway, the First Air Fleet retained the *Akagi*, the *Kaga*, the *Hiryu*, and the *Soryu*, a still-potent quartet of fleet-class carriers that embarked more than 270 warplanes. Nagumo also trusted in the complicated battle plan for the Midway operation, which called for a diversionary raid on Alaska's Aleutian Island chain, to draw off American naval strength. And of course Yamamoto and Nagumo both took comfort from the reflection that they held again, as they had so triumphantly at Pearl Harbor, the hole card of secrecy. Anticipating the decisive battle that would crown his career and seal his nation's dream of empire, amid lavish pomp and ceremony on May 27, the anniversary of the Battle of Tsushima Strait, Nagumo sortied the First Air Fleet through the Bungo Strait from Japan's Inland Sea—and into the jaws of a trap.

While Yamamoto and Nagumo had gathered the nearly 200 ships of the Midway strike force from over the far horizons that bounded Japan's immense area of conquest, American cryptanalysts had feverishly studied their transcripts of the swelling volume of encoded Japanese radio traffic, trying to determine where Japan would strike next. The collective effort to crack the Japanese codes was known as "Magic," and in the upcoming Battle of Midway, Magic would demonstrate its military value along with the aptness of its name.

Working without sleep amid spine-cracking tension in a windowless basement room at Pearl Harbor, Commander Joseph J. Rochefort, the chief of the Combat Intelligence Unit colloquially known as "Station Hypo," pored over the maddeningly fragmentary intercepts piled atop his makeshift worktable of planks and sawhorses. Rochefort had adapted to this molelike existence by working in slippers and a red smoking jacket. In the spit-and-polish Navy, he and his equally unkempt colleagues were regarded as eccentric. But their knowledge of the Japanese language, in a Navy that had only about forty competent Japanese-speakers, was indispensable, as was their mastery of the arcana of cryptanalysis—the sorcerer's art of deciphering the enemy's most



James H. Doolittle

NAVAL HISTORICAL CENTER



Chester W. Nimitz

NAVAL HISTORICAL CENTER



Joseph J. Rochefort

carefully guarded communications codes.

Station Hypo's nemesis and obsession was the Japanese naval code, JN-25. It was an immensely complex cipher, and Rochefort and his colleagues could make sense of only 10 to 15 percent of most intercepts. But in the welter of communications traffic that Hypo was monitoring in the spring

of 1942, one term recurred with unsettling frequency: "AF," obviously the name of the next major Japanese target. Where or what was "AF"?

Rochefort had a hunch, and he played it shrewdly. Guessing that AF was Midway, in early May he baited a snare by arranging for the small Marine and Army Air Force garrison at Midway to radio in clear that their distillation plant had malfunctioned and they were running short of fresh water. The ruse worked. Within two days Station Hypo received confirmation of a coded Japanese message that "AF" was low on fresh water. Jackpot! Midway it was, then, and Hypo had proved it. The U.S. Navy would be there, ready and waiting.

ADMIRAL Chester W. Nimitz wasted no time in using Rochefort's information, which proved to be the single most valuable intelligence contribution to the entire Pacific war. A descendant of German colonists who had settled the west-Texas Pedernales River country early in the nineteenth century, Nimitz was a quiet, scholarly man, fluent in his ancestral tongue. He sought relaxation by firing his pistol on a target range. He had arrived in Hawaii to take up the position of commander in chief of the Pacific Fleet on Christmas morning, 1941. The whaleboat ferrying him from his seaplane to shore had passed the devastated hulks along Battleship Row and threaded through small craft that were still retrieving surfacing bodies from the sunken ships. As much as any man in the Navy, Nimitz burned to retaliate for Decem-

ber 7. But in what his naval-academy class book described as his "calm and steady Dutch way," he was determined to do it methodically, with a minimum of risk and more than a fair chance of success. Rochefort's cryptanalysts had now handed this careful, deliberate man a priceless opportunity.

Nimitz reinforced Midway with planes, troops, and anti-aircraft batteries. He ordered Task Force 16, comprising the carriers *Enterprise* and *Hornet*, back to Pearl Harbor from the South Pacific. He issued similar orders to Rear Admiral Frank Jack Fletcher's Task Force 17, left with only the wounded *Yorktown* after the inconclusive Battle of the Coral Sea. The *Yorktown* limped into Pearl Harbor on May 27, trailing a long, glistening oil slick as she nosed into a giant dry dock. A hip-booted Nimitz was sloshing about at her keel inspecting the damage even before the dry dock had fully drained. Told that repairs would take weeks, a reasonable estimate, Nimitz curtly announced that he must have the ship made seaworthy in three days. The dry dock instantly became a human anthill. Hundreds of workers swarmed over the *Yorktown*, amid showers of sparks and clouds of smoke from the acetylene torches cutting away and replacing her damaged hull plates. The *Yorktown* refloated on May 29. The next day, accompanied by her support ships in Task Force 17, as the ship's band incongruously played "California, Here I Come," she headed toward the rendezvous point—hopefully dubbed "Point Luck"—with Task Force 16, commanded by Rear Admiral Raymond A. Spruance. Fletcher, aboard the *Yorktown*, was in overall command of the task forces.

While the three American carriers stealthily moved to their stations northeast of Midway, Nagumo approached from the northwest. The Japanese commander had good reason to assume that only the *Enterprise* and the *Hornet* remained afloat in the U.S. Pacific fleet, and he believed them to be in the South Pacific, where they had been spotted on May 15. As dawn approached on June 4, Nagumo had no inkling that Fletcher and Spruance awaited him beyond Midway, over the eastern horizon. All his attention focused on Midway Island, from which B-17s and Catalina flying boats had ineffectually bombed his troop transports during the preceding afternoon and night.



Frank Jack Fletcher



Raymond A. Spruance



Wade McCluskey



Maxwell Leslie

At 4:30 A.M. on June 4 Nagumo flew off several squadrons of bombers to attack Midway, preparatory to the troop landings. They dropped their ordnance—high-explosive fragmentation bombs designed for ground targets—according to plan. But the commander asked for a second strike to finish the reduction of Midway's defenses. His message arrived just as Nagumo's carriers were coming under attack from Midway-based aircraft. Not a single American bomb touched his ships, but the very appearance of the American planes was enough to persuade Nagumo to accede to the request for a second strike on Midway. On the *Akagi* and the *Kaga*, Nagumo had been holding some ninety-three aircraft loaded with armor-piercing anti-ship ordnance, against the possibility that he might engage elements of the U.S. fleet. But at 7:15, increasingly confident that he had little to fear from American ships, he gave the order to rearm those aircraft with fragmentation bombs for a second assault against Midway. The refitting operation would take about an hour.

Even as Nagumo's perspiring sailors set about their task, Spruance, still to the northeast of Midway, was ordering full deckloads of bombers and torpedo planes on the *Enterprise* and the *Hornet* to lift off and strike the Japanese carriers. Nagumo's seamen toiled about the decks of his giant carriers, shuffling bomb-racks and hurriedly stacking torpedoes. Then, in the midst of the complicated rearmament operation, the Japanese cruiser *Tone's* scout plane reported at 7:28 that ten enemy ships were in sight. Their position was within range of carrier-based aircraft, but the initial report did not identify the types of ships. Nagumo nevertheless decided as a precaution to halt the rearmament process. Meanwhile, he implored the reconnaissance plane to ascertain the ship types.

Nagumo's skull must have throbbed with the agonies of decision and command. He was still under attack from Midway-based aircraft; his own returning assault planes were beginning to appear overhead; his decks were stacked with bombs of all types; and an unexpected American fleet had been spotted. Ominously, the *Tone's* patrol plane next radioed that the enemy flotilla was turning into the wind—the position from which carriers launch their aircraft. Apprehension gripped the surprised Japanese, only to be allayed moments later by a report that the enemy flotilla consisted of five cruisers and five destroyers—and then to be revived by a message minutes afterward that the rising dawn had revealed a carrier in the rear of the American formation.

This news was alarming but not catastrophic. Nagumo still believed that his force was far superior in numbers, technology, and skill to anything the Americans could throw against him. Indeed, even while anxiously awaiting word from the *Tone* scout plane, the First Air Fleet's ships and fighters had badly mauled the Midway-based attackers, not one of which had yet managed to score a hit. Mitsuo Fuchida, the Pearl Harbor veteran serving as the *Akagi's* flight leader, later wrote, "We had by this time undergone every kind of air at-

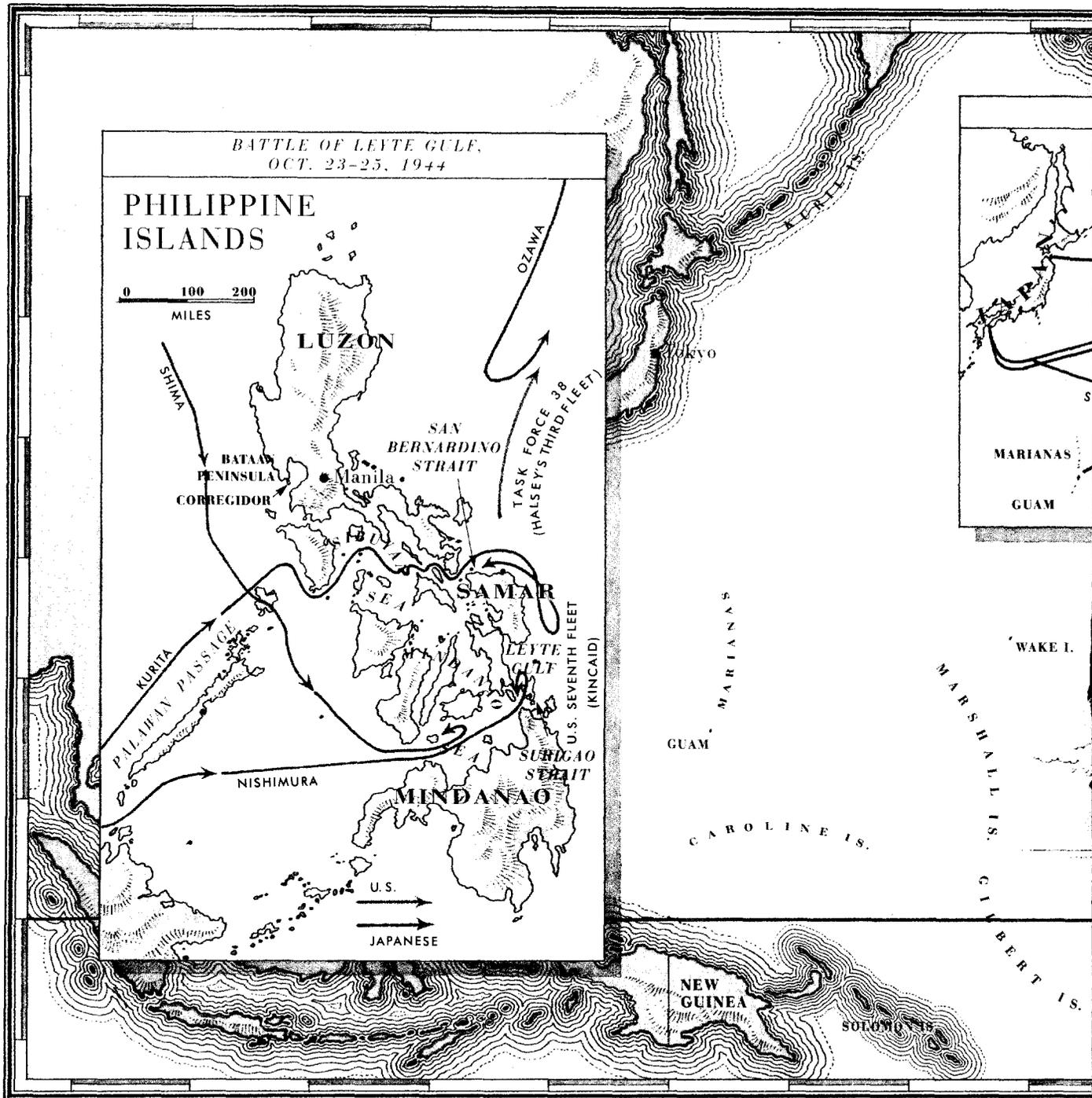
tack by shore-based planes—torpedo, level bombing, dive-bombing—but were still unscathed. Frankly, it was my judgment that the enemy fliers were not displaying a very high level of ability."

Emboldened by such thoughts, the Japanese now saw the American carrier less as a threat than as an opportunity for inflicting additional punishment on the inept Americans. The battle thus far had emphatically confirmed Japanese combat superiority. Apprehension gave way to resolve—and to a fatal relaxation of the sense of urgency. Nagumo, confident that he held the upper hand, calmly waited to recover all his Midway bombers and fighters before magisterially turning to meet the American flotilla, still believing that only a single carrier confronted him. Meanwhile, he reversed his earlier rearmament order and directed his planes to be fitted with anti-ship weapons once again, adding to the confusion and the piles of explosive ordnance strewn about his flight decks.

Shortly after 9:00 A.M. Nagumo executed his change of course to close with the American fleet, perhaps even to force the decisive battle that was the stuff of the Japanese navy's dreams. What followed was decisive, all right, but for Japan and the imperial navy it was a nightmare.

Nagumo's several armament changes and his delay in seizing the initiative contributed powerfully to his undoing, but for the moment his change of course proved advantageous. Many of the American planes launched from the *Hornet* and the *Enterprise*, along with some from the *Yorktown*, which had put its airmen aloft at around 8:30, never found him. Flying at the limits of their operational range, they arrived at the sector where the Japanese were supposed to be, only to look out over empty seas. Many wandering American aircraft fell from the sky for want of fuel. Those who did locate the Japanese fleet tried in vain to penetrate the curtain of anti-aircraft fire and the swarming Zeros to reach the Japanese carriers. Shortly after 10:00 A.M. a clutch of Zeros almost completely annihilated a torpedo-bombing squadron from the *Yorktown* as it came in low to launch its weapons. By 10:24 Nagumo appeared to have beaten off the last of the attacks. His proud fleet was still unscratched and was poised to loft a counterattack against the American fleet. For a brief moment Japan seemed to have won the Battle of Midway, and perhaps the war.

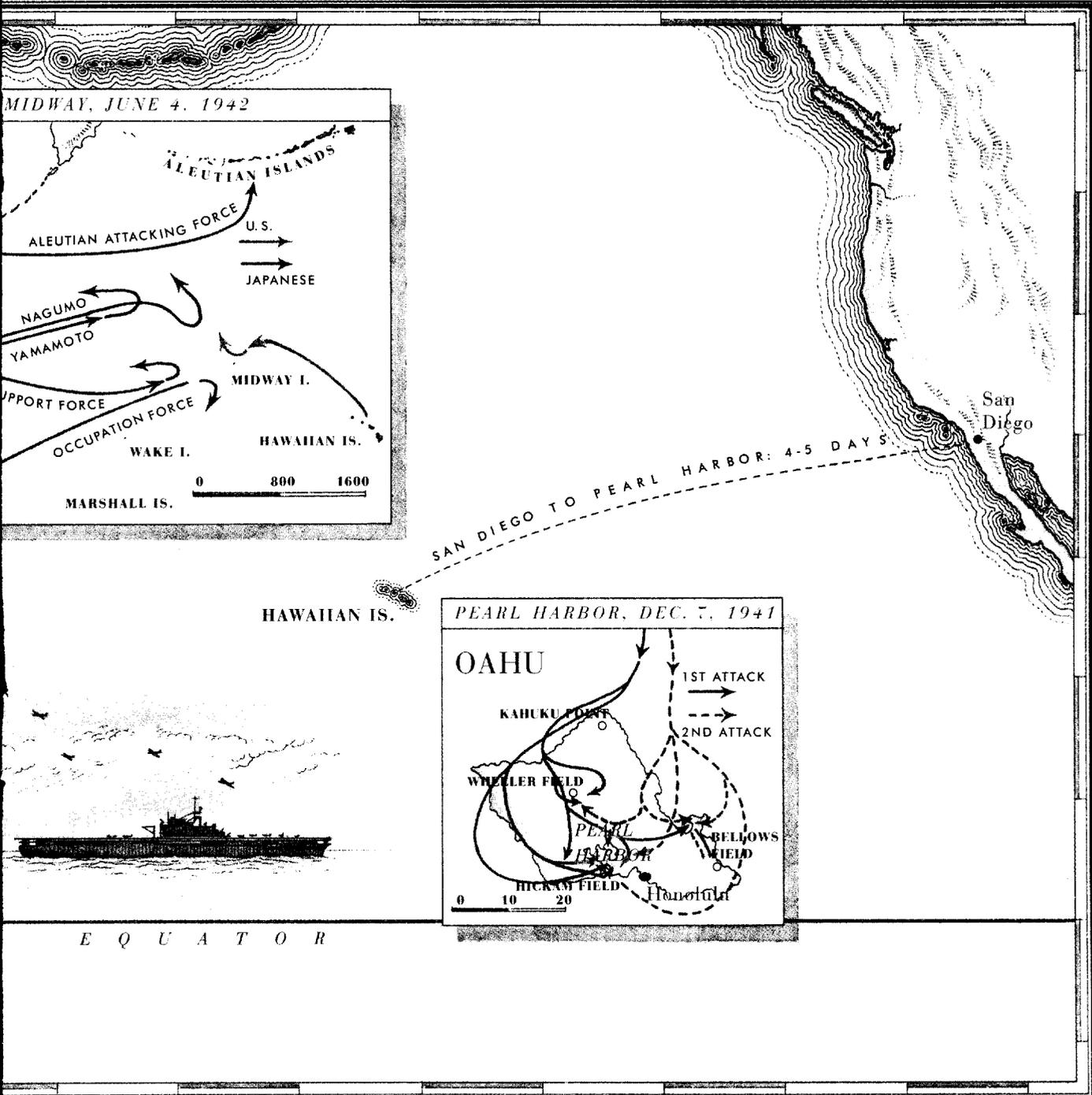
One American flier scanning the scene from above was on the verge of coming to just that conclusion when suddenly he saw "a beautiful silver waterfall" of "Dauntless" dive bombers cascading down on the Japanese carriers. Navigating by guess and by God, Lieutenant Commander Wade McCluskey, from the *Enterprise*, and Lieutenant Commander Maxwell Leslie, from the *Yorktown*, had managed to arrive above the Japanese fleet at the precise moment its combat air patrol of Zeros had been drawn down to the deck to repel the *Yorktown's* torpedo bombers, and at the moment of the First Air Fleet's maximum vulnerability. With the dread



Zeros too low to be effective, the Dauntlesses poured down through the miraculously open sky to unload their bombs on the Japanese carriers, their flight decks cluttered with confused ranks of recovered and warming-up aircraft, snaking fuel hoses, and stacks of munitions from the various rearmament operations.

In five minutes the dive bombers, no less miraculously scoring the first American hits of the day, mortally wounded three Japanese carriers. Roaring gasoline-fed fires raged through all three ships. The *Kaga* and the *Soryu* sank before sunset. The *Akagi* was scuttled during the night. Of the First

Air Fleet's magnificent flotilla of carriers, only the *Hiryu* remained to strike a counterblow against Fletcher's flagship, the battered *Yorktown*, which the sea enveloped at last at dawn on June 7. The *Hiryu* itself was overtaken by American fliers in the afternoon of June 4, and sank the next morning. Nagumo had lost four of the six carriers with which he had attacked Pearl Harbor just half a year earlier. Spruance wisely refrained from pursuing the remaining Japanese vessels, which were retreating to the west, where he would have collided with Yamamoto's battleships—swift, powerful, night-trained, and thirsty for vengeance—just as darkness fell.



Inset maps are based on maps executed for David M. Kennedy's *Freedom From Fear* by Jeff Ward; they have been used with permission from Oxford University Press

At Midway the Americans turned the trick of surprise back upon the Japanese and at least partially avenged Pearl Harbor. When the chaos of combat had subsided, the essential truth of Midway stood revealed: in just five minutes of incredible, gratuitous favor from the gods of battle, McCluskey's and Leslie's dive bombers had done nothing less than turn the tide of the Pacific war. Before Midway the Japanese had six large fleet-class carriers afloat in the Pacific, and the Americans three (four with the *Saratoga*, which was returning from repairs on the West Coast at the time of the battle at Midway). With the loss of just one American

and four Japanese carriers, including their complements of aircraft and many of their superbly trained fliers, Midway inverted the carrier ratio and put the Japanese navy at a disadvantage from which it never recovered. In the two years following Midway, Japanese shipyards managed to splash only six additional fleet carriers. The United States in the same period added seventeen, along with ten medium carriers and eighty-six escort carriers. Such numbers, to be repeated in myriad categories of war materiel, spelled certain doom for Japan, though it was still a long and harrowing distance in the future.

THE BATTLE OF THE ATLANTIC

AMERICA'S war against Germany, like its war against Japan, began at sea, and began just as badly for the poorly prepared United States. The Battle of the Atlantic, which had pitted Britain against Germany since 1939, was a contest for supremacy on the ocean highway across which all American supplies and troops must flow to Europe. Everything depended on keeping that highway open. Dwight Eisenhower, newly promoted to brigadier general and freshly installed as chief of the Army's War Plans Division, submitted a penetrating assessment of the importance of the North Atlantic sea-lanes to George Marshall on February 28, 1942. "Maximum safety of these lines of communication is a 'must' in our military effort, no matter what else we attempt to do," Eisenhower emphasized. Shipping, he presciently added, "will remain the bottleneck of our effective effort," a statement that echoed repeated pronouncements by both Churchill and Roosevelt that the struggle with Hitler would be won or lost at sea.

It looked at first more likely to be lost. When he declared war on the United States, shortly after the Pearl Harbor attack, Hitler untethered the German submarine service from the restraints against which it had long chafed. Karl Dönitz, the chief of the German submarine fleet, could now loose his U-boats (from the German word for "submarine," *Unterseeboot*) as far westward as America's Atlantic shoreline, cutting the Allied supply lines at their source and avenging the insults of America's increasingly open support of Britain, especially the Lend-Lease Act of 1941. Dönitz determined "to strike a blow at the American coast" with a *Paukenschlag*, a word usually translated as "drumbeat" but also connoting "thunderbolt." German submariners themselves described the campaign against U.S. coastal shipping as the "Happy Time," or even the "American Turkey Shoot." By whatever name, the naval blitzkrieg that Dönitz launched in early 1942 threatened to shut down America's war against Hitler almost before it could get started.

As early as mid-January, 1942, Dönitz had dispatched five U-boats, each packing fourteen to twenty-two torpedoes, to the eastern coastal waters of the United States. Additional boats soon followed, their operational range and ability to remain on battle station enhanced by submarine tankers, or *Milchkuhen* (milk cows), that refueled the U-boats at sea. Within just two weeks Dönitz's undersea raiders sank thirty-five ships in the waters between Newfoundland and Bermuda—a loss of more than 200,000 tons. The prize targets were tankers lumbering up from Caribbean and Gulf Coast oil ports to northeastern refineries and storage depots. "By attacking the supply traffic—particularly the oil—in the U.S. zone," Dönitz said, "I am striking at the root of the evil, for here the sinking of each ship is not only a loss to the enemy

but also deals a blow at the source of his shipbuilding and war production. Without shipping the [English] sally-port cannot be used for an attack on Europe."

Still imagining the war to be far away, and fearing to cramp the tourist trade, seaboard cities like New York, Atlantic City, and Miami refused to enforce blackouts. The backdrop of their bright lights, visible up to ten miles from shore, created a neon shooting gallery in which the U-boats nightly lay in wait on the seaward side of the shipping lanes and picked off their sharply silhouetted victims at will. U-boats prowling the Atlantic coast in January sank eight ships, including three tankers, in just twelve hours. On February 28 a German submarine torpedoed and sank the American destroyer *Jacob Jones* in sight of the New Jersey coast. Only eleven of its crew members survived. On the evening of April 10 a surfaced U-boat used its deck gun to scuttle the *Gulfamerica* off Jacksonville Beach, Florida. The flaming tanker went down so close to shore that the departing U-boat commander gazed in fascination through his binoculars as thousands of tourists, their faces bathed in the red glow of the ship's fire, poured out of their hotels and restaurants to gape at the spectacle. "All the vacationers had seen an impressive special performance at Roosevelt's expense," Commander Reinhard Hardegen gleefully recorded in his log. "A burning tanker, artillery fire, the silhouette of a U-boat—how often had all of that been seen in America?" In broad daylight on June 15 a U-boat torpedoed two American freighters within full view of thousands of horrified vacationers at Virginia Beach, Virginia. By July of 1942, 4.7 million tons of Allied shipping had gone to the bottom, the majority in the operational area of American coastal waters that the Navy called the Eastern Sea Frontier. Tanker sinkings were consuming 3.5 percent of available oil-carrying capacity every month—a rate of loss so ominous that Chief of Naval Operations Admiral Ernest J. King had recently confined all tankers to port for two weeks.

To counter the U-boat menace King could at first do little. In Roosevelt's quaint phrase, there was simply a "lack of naval butter to cover the bread." The U.S. Atlantic Fleet was already hard pressed to shoulder its modest share of the burden of escorting North Atlantic convoys, and the sudden flaring of the Pacific war consumed virtually all new naval construction. The entire anti-submarine force available to the Eastern Sea Frontier command when the German sub offensive began consisted of three 110-foot wooden sub-chasers, two 173-foot patrol craft, a handful of First World War—vintage picket ships and Coast Guard cutters, and 103 antiquated short-range aircraft, almost none of them equipped with submarine-seeking radar. For a time this puny fleet was supplemented by the Coastal Picket Patrol, or "Hooligan Navy," a motley flotilla organized by private yachtsmen (including a pistol-and-grenade-toting Ernest Hemingway at the helm of his sport-fishing boat *Pilar*). They formed a swashbuckling but decidedly amateurish patrol line some fifty miles offshore,

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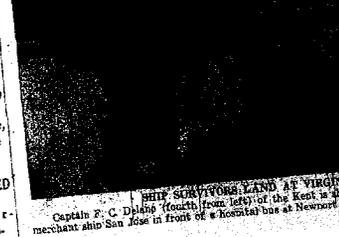
U-BOATS SINK ONE M

Countries S. A. Vote against Axis

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Captain J. C. Dilling (fourth from left) of the *Keokuk* and merchant ship *San Jose* in front of a hospital base at Newport News.

reporting countless false submarine sightings that caused further dissipation of the Eastern Sea Frontier's desperately scant resources. In an ironic reversal of the Lend-Lease help that America had extended to Britain a year earlier, the Royal Navy transferred ten escort vessels and two dozen anti-submarine trawlers to the Americans for coastal defense, along with two squadrons of aircraft. In a compound irony, the planes had originally been built in the United States. But even as the Eastern Sea Frontier began to accumulate the rudiments of an anti-submarine force, King persisted in deploying it badly. Contrary to all the hard-won lessons of the North Atlantic naval war, King clung to the belief that inadequately escorted convoys were worse than none, because they made

for concentrated targets, only thinly protected. In consequence, merchant ships continued to sail independently, making easy prey for single submarines, while the handful of vessels that the Eastern Sea Frontier could muster to protect coastal shipping were dispatched together in futile pursuit of frequently phantom sightings. King's stubbornness infuriated his colleagues. King was "the antithesis of cooperation, a deliberately rude person . . . a mental bully," Eisenhower noted in his diary. "One thing that might help win this war is to get someone to shoot King." When King finally relented and in May organized a convoy system along the Atlantic coast, the results were dramatic. Just fourteen ships went down in the Eastern Sea Frontier that month, a sharp decline from the winter's disastrous rates of loss. Dönitz's boats continued to prey on Caribbean shipping for another two months, but by the summer of 1942 the Interlocking Convoy System protected coastwise sailings from Brazil to Newfoundland. At the end of July, Dönitz withdrew his last two U-boats from North American waters. *Paukenslag* was ended. It had dealt a grievous blow to American shipping and measurably slowed American mo-



Karl Dönitz



Ernest J. King

bilization, not to mention wounding the pride of the U.S. Navy, but it had been stopped short of catastrophe. The Eastern Sea Frontier was secure.

If Dönitz had retired from the American coastline, it was merely to concentrate his forces in the mid-ocean zone where the Battle of the Atlantic was now most fiercely joined. After re-allocating the last of the U-boats from the *Paukenschlag*, Dönitz had well over 200 submarines available for deployment in the broad Atlantic. German boatyards were adding at least fifteen new submarines to his fleet every month. Against those growing numbers Dönitz tallied his estimates of Allied carrying capacity and replacement rates. If he could sink

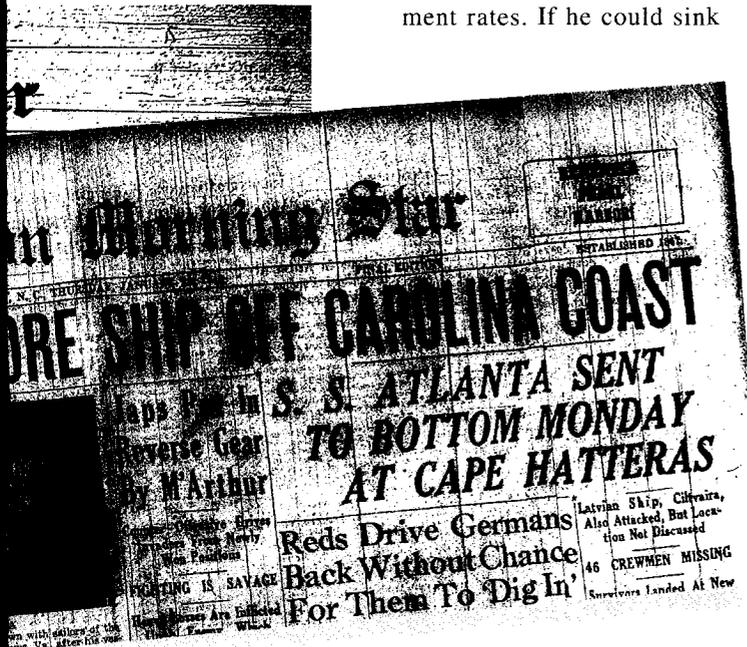
percent of the escorts in the North Atlantic.) When aided by aerial reconnaissance, the escorts had a fighting chance of harassing the U-boats away from the convoy's path. But once a submerged wolf pack had closed undetected to torpedo range, it could wreak wholesale destruction on convoy and escorts alike. The U-boats naturally concentrated, therefore, in those ocean areas out of range of Allied aircraft. There they could steam with impunity on the surface, diving only for the final attack. They especially favored two locations: the Norwegian Sea, the far northern passage to the Russian ports of Murmansk and Archangel; and the "air gap" southeast of Greenland, through which all convoys to both Britain and Russia had to pass. One combined surface, undersea, and air attack on the Russia-bound convoy PQ17 in the Norwegian Sea in July forced the escorting warships to separate from the convoy, and then scattered and sank twenty-two of the thirty-three merchantmen, an especially large loss. In August and September, U-boats attacked seven convoys in the Greenland air gap and sank forty-three ships. In November total Allied losses again topped 800,000 tons, 729,000 of which fell to the U-boats.

Nature added to the Allies' woes in the man-and-ship-eating North Atlantic. Blast-force winds, towering green seas, snow squalls, and ice storms claimed nearly a hundred ships during the winter of 1942-1943. In March of 1943 a screaming gale slammed two convoys together, chaotically scrambling their sailing columns and wreaking wild confusion among their escorts. Dönitz capitalized on the disruption by dispatching several wolf packs to feed on the havoc. At a cost of just one U-boat lost, twenty-two merchantmen were sunk out of the ninety that had set sail from New York a few days earlier, along with one of the escort vessels.

At these rates of loss the Atlantic lifeline might soon have been permanently severed. In fact, the disaster of PQ17 contributed to the Western Allies' decision to suspend all North Atlantic convoys to the Russians for the remainder of 1942, triggering bitter complaints from Stalin. (The alternate but much-lower-capacity supply route to Russia, through the Persian Gulf and overland from Iran, remained open.) As for Britain, the sinkings in the Atlantic had by year's end cut its civilian oil reserves to a three-month supply, and imports of all kinds had withered to two thirds of pre-war levels.

THE TIDE TURNS IN THE ATLANTIC

WHEN Churchill and Roosevelt met at Casablanca in mid-January of 1943 to discuss the war's progress, they were given a spectacular reminder of the continuing importance and unrelieved vulnerability of the Atlantic lifeline. Just days before the two statesmen greeted each other in the Moroccan city, U-boats off the West Afri-



700,000 tons of Allied merchant shipping a month, he calculated, victory would be his: Britain would face starvation, Russia defeat, and America permanent isolation on the far side of the Atlantic. By mid-1942 success seemed to be at hand, as worldwide Allied shipping losses exceeded 800,000 tons a month. Despite frantic round-the-clock construction in both British and American shipyards, new Allied shipbuilding could not offset deficits on that scale. For 1942 as a whole, the Germans sank more than eight million tons of U.S. and British shipping, a loss that threatened to rob the Allies of their war-making power if not soon reversed. "The U-boat attack was our worst evil," Churchill later wrote, "the only thing that ever really frightened me during the war."

Cruising in packs of a dozen or more, the U-boats inflicted damage that only grew more costly as 1942 unfolded. The Allied convoys were typically composed of ten columns totaling about sixty vessels, mostly American merchantmen carrying mostly American cargoes. They slogged eastward at eight or nine knots, loosely jacketed by as many as a dozen warships, almost all of them British or Canadian, weaving warily around their flanks. (The U.S. Navy provided just two

can coast had attacked a special convoy ferrying precious oil from Trinidad to support the North African campaign. Just as the Casablanca conference opened, the convoy's few survivors reached Gibraltar, directly across the mouth of the Mediterranean from Morocco, telling harrowing tales of the shattering losses they had witnessed: seven of nine tankers sunk, 55,000 tons of shipping and more than 100,000 tons of fuel gone. It was one of the most devastating U-boat attacks of the war. That sorry spectacle surely reinforced Churchill's and Roosevelt's determination to gain the upper hand in the Atlantic.

But though even greater losses lay ahead, in fact the Battle of the Atlantic was already turning in the Allies' favor, and with astonishing swiftness. British scientists had in December of 1942 finally broken the Triton cipher, the German code through which Dönitz communicated with his subs. Most important, the arrival from American shipyards of additional escort vessels—particularly the new escort carriers, or "baby flat-tops," that were built on merchant hulls, carried about two dozen aircraft, and were designed principally for ferrying aircraft, anti-submarine patrol, and close-in tactical air support for beach assaults—at last gave the Allies an insuperable advantage.

The U-boats of this era were in fact not true submarines at all but submersible torpedo boats that could dive for brief periods before, during, and after an attack. They were unable to remain submerged for long, and were not designed for high-speed running under water. To reach their attack stations, to overtake prey, or to replenish their air supply, they were obliged to steam on the surface, where they were especially vulnerable to being sighted and assaulted from the air. When Roosevelt in March of 1943 compelled King to transfer sixty very-long-range B-24 "Liberator" aircraft from the Pacific to the Atlantic, the Allies at last closed the mid-ocean air gap in which Dönitz's submarines had done their worst damage.

Now it was the German submariners' turn to quail. Aided by aerial reconnaissance along with improved shipborne radar and sonar, the naval escorts began to scour the submarines from the sea. Forty-three died in May of 1943 alone—nearly twice the rate at which they could be replaced. When Dönitz radioed to one U-boat commander after another, "Report position and situation," he more and more often waited in vain for a reply. In the Happy Time of 1942 a U-boat had enjoyed an operational life of more than a year. Now the average U-boat survived less than three months. Dönitz's orders to sail had become virtual death sentences. Overall, the German submarine service lost more than 25,000 crew members to death and another 5,000 to capture: a 75 percent casualty rate that exceeded the losses of any other service arm in any nation. Faced with such relentless winnowing of his ranks, Dönitz ordered all but a handful of his U-boats out of the North Atlantic on May 24, 1943. "We had lost the Battle of

the Atlantic," he later wrote. In the next four months sixty-two convoys comprising 3,546 merchant vessels crossed the Atlantic without the loss of a single ship.

LEYTE GULF: THE LARGEST NAVAL BATTLE IN HISTORY

BY 1944 the enormous productive apparatus of the U.S. economy was pouring out war munitions in overwhelming volume. The abundance of resources made possible not only the invasion of Europe on D-Day, June 6, but two distinct offensives against Japan: an assault by MacArthur in the southwestern Pacific, up the northern New Guinea shore toward the Philippines, and a thrust by



William F. Halsey



Thomas C. Kinkaid

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NATIONAL ARCHIVES

Nimitz across the Central Pacific, through the Gilberts, the Marshalls, the Carolines, and the Marianas.

Underlying the Central Pacific drive was the Navy's old Orange Plan, which had envisioned a decisive battle against the Imperial Japanese Navy in the western Pacific. To that end the Navy assembled a stupendous flotilla whose fighting heart was composed of fourteen or more "Essex-class" carriers, each of them a nearly 900-foot-long floating airfield with a 3,000-man crew and embarking up to a hundred aircraft. Somewhat confusingly designated Task Force 38, or Third Fleet, when commanded by the impulsive, charismatic Admiral William F. "Bull" Halsey, and Task Force 58, or Fifth Fleet, when commanded by the methodical, self-effacing Admiral Spruance, this armada wielded several times the striking power of Nagumo's force that had attacked Pearl Harbor.

On June 19, 1944, Spruance led Task Force 58 to a stunning victory in the Philippine Sea, southwest of the Mariana Islands, over a Japanese carrier force led by Vice-Admiral Jisaburo Ozawa. Known to American fliers and sailors as "The Great Marianas Turkey Shoot," the battle cost the Japanese three fleet carriers, nearly 500 aircraft, and hundreds of irreplaceable pilots.

Nevertheless, some senior U.S. Navy commanders criticized Spruance for letting Ozawa escape with as many ships as he did, denying Spruance the right to claim that he had indeed fought the legendary decisive battle. The unsated yearn-

ing of both navies to fight that battle would have telling consequences four months later, as the Southwest Pacific and Central Pacific campaigns converged for the invasion of the Philippine Islands.

On October 20, 1944, the invasion convoys began unloading on the lightly defended beach at Leyte Gulf, in the Philippines. In a carefully arranged ritual, MacArthur walked down the ramp of a landing craft and waded ashore through the shallow surf, a moment captured in one of the war's most famous photographs. "People of the Philippines," MacArthur intoned into a waiting microphone, "I have returned. . . . The hour of your redemption is here. . . . Rally to me."

U.S. submarines had by now cut Japan's oil supply to a trickle. What little there was reached Japan from the Dutch

Kinkaid, was composed of several big gunships and eighteen escort carriers. The battleships and cruisers took up station off the eastern end of Surigao Strait. Kinkaid deployed his escort carriers in three groups of six, code-named Taffy 1, 2, and 3, off Samar Island on the east side of Leyte. Halsey's Third Fleet meanwhile held his big carriers off San Bernardino Strait to the north.

Six naval forces, four Japanese and two American, were converging on Leyte Gulf to fight the largest naval battle in history, a titanic clash spread over three days and 100,000 square miles of sea, engaging 282 ships and 200,000 sailors and airmen.

Nishimura's two battleships, one cruiser, and four destroyers arrived in the Mindanao Sea on October 24. Not



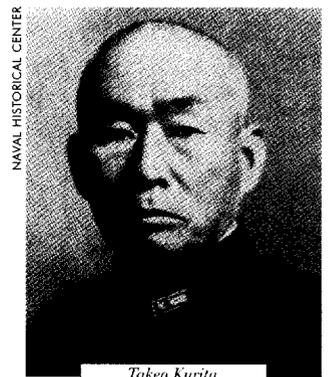
Jisaburo Ozawa



Shoji Nishimura



Kiyohide Shima



Takeo Kurita

East Indies behind a screen of islands that ran from the Philippines through Formosa and the Ryukyus. Japan had to defend the Philippines or risk seeing its lifeline to the south completely severed.

To conserve precious fuel, the Japanese navy had been forced to base nearly half its battle fleet at Lingga Roads, near Singapore and close to the East Indian oil fields. From there, and from two other fleet anchorages, three Japanese naval formations steamed toward Leyte to check the American landing. Vice-Admiral Shoji Nishimura's force left Brunei and Vice-Admiral Kiyohide Shima's column came down from the Ryukyus. The plan was to rendezvous in the Mindanao Sea and proceed together through Surigao Strait into Leyte Gulf. Vice-Admiral Takeo Kurita headed from Lingga Roads across the Palawan Passage and the Sibuyan Sea. He was to pass through San Bernardino Strait and descend on Leyte from the north just as the Nishimura-Shima force emerged out of Surigao from the west. To this already dauntingly intricate plan the Japanese added a further complication: Ozawa, his air strength reduced to just a handful of warplanes after the catastrophe in the Philippine Sea, would steam southward from Japan with his remaining aircraft carriers, using the largely planeless ships as sacrificial decoys to lure away at least part of the American force.

The Americans meanwhile brought two fleets of their own to Leyte. The Seventh Fleet, under Admiral Thomas C.

finding Shima, Nishimura proceeded on his own into Surigao Strait, through waters that Ferdinand Magellan had sailed in 1521. As darkness fell, American PT (patrol torpedo) boats harassed the Japanese column while it ploughed eastward, disrupting Nishimura's formation but inflicting little damage. Then five U.S. destroyers, withholding gunfire that would disclose their positions, raced down either side of the strait and loosed several volleys of torpedoes that knocked out one of the battleships and three of the destroyers. There followed a maneuver whose classic naval geometry Magellan himself would have appreciated. Arrayed in a battle line across the neck of the strait were Kinkaid's six battleships, five of them survivors of Pearl Harbor, together with four heavy and four light cruisers. Kinkaid had effortlessly "crossed the T"—the dream of every sea commander since the dawn of gun-bearing ships. Perpendicular to Kinkaid's six-, eight-, fourteen-, and sixteen-inch guns, Nishimura's truncated column lay all but naked under round after round of thundering American broadsides, while the forward-facing Japanese could bring to bear only a fraction of their ships' firepower. Firing by radar direction from a range of a dozen miles, the American battle line laid down a fearsome barrage. The Japanese formation disintegrated. The second battleship went down, the cruiser was crippled, and the lone surviving destroyer reversed course and withdrew. When the late-arriving Shima sailed into this chaotic melee

and collided with Nishimura's wallowing cruiser, he, too, decided to withdraw, but pursuing U.S. warships and planes sank three of his ships. All told, the Battle of Surigao Strait cost the Imperial Japanese Navy two battleships, three cruisers, and four destroyers. The Americans lost one PT boat, along with thirty-nine sailors killed and 114 wounded, most of them on the U.S. destroyer *Albert W. Grant*, which was caught in a murderous crossfire from both Japanese and American guns during the bedlam of the night battle.

In the pewter morning light U.S. rescue vessels crept into the strait to pick up the thousands of Japanese survivors. Most of the swimmers submerged themselves below the oil-stained surface as the Americans approached, choosing death by drowning over the shame of capture.

To the north, meanwhile, U.S. submarines had intercepted Kurita's formidable group of more than two dozen warships as they made their way across Palawan Passage on October 23. Several well-placed torpedo volleys damaged one cruiser and sank two others, including Kurita's flagship. Fished from the sea, Kurita transferred his flag to the *Yamato*. The *Yamato* and its sister ship, the *Musashi*, the biggest battleships in the world, mounted eighteen-inch guns that fired one-and-a-half-ton projectiles, far larger than anything any gun in the U.S. Navy could throw. Halsey's fliers caught Kurita again in the Sibuyan Sea on the following day and sank the supposedly impregnable *Musashi*. Land-based Japanese aircraft meanwhile attacked the Third Fleet and sent the carrier *Princeton* to the bottom.

The Americans had mauled Kurita but had not yet stopped him. Halsey was spoiling for a finish-fight. He drafted a contingency battle plan, signaling to Nimitz at Pearl Harbor that he intended to detach several ships to form a new "Task Force 34" that would stop Kurita at the mouth of San Bernardino Strait. But there was one thing wrong: Kurita's force was composed entirely of surface gunships. Where were the Japanese carriers, the great prize for which Halsey thirsted?

The answer was that they were to Halsey's north, doing their best to be discovered and tempt Halsey away from San Bernardino. When some of the Third Fleet's fliers reported at midday on October 24 that they had engaged planes with tailhooks, unmistakably identifying them as carrier-based aircraft, Halsey was off like a greyhound after a hare. Faced with the choice of protection or pursuit, and believing erroneously that he may have already inflicted enough damage on Kurita to stop him, Halsey scarcely hesitated. He scrapped the plan to create Task Force 34 and steamed away with his entire fleet to chase the Japanese carriers. He had swallowed Ozawa's bait, leaving the door of San Bernardino Strait wide open for Kurita.

Kurita steamed through San Bernardino unopposed shortly after midnight on October 25. His depleted but still powerful force bore down on the most northerly of Kinkaid's escort-carrier squadrons, Taffy 3. A colossal mismatch en-

sued—the *Yamato* and three other battleships, along with several heavy and light cruisers, against a handful of destroyers and six escort carriers never designed for full-scale battle at sea. Slow, thinly armored, undergunned, and mostly munitioned with ordnance for tactical air support, the baby flat-tops were sitting ducks. Great green, purple, and yellow geysers erupted among them, as Japanese shells, with their telltale dye-marked bursts, scattered the surprised American ships. Taffy 3's little carriers made smoke and dove into a rain squall for further concealment, while the U.S. destroyers brazenly charged the larger and more numerous Japanese ships. The destroyer *Johnston* took so many hits from the Japanese gun batteries that one crewman compared it to "a puppy being smacked by a truck." Eventually, he said, "we were in a position where all the gallantry and guts in the world could not save us," and the order "Abandon ship" came. A swimming survivor saw a Japanese officer salute as the *Johnston* slipped beneath the surface.

Meanwhile, Kinkaid and Nimitz were frantically signaling to Halsey for help. At 10:00 A.M. on October 25 a signalman handed Halsey a message from Nimitz that was destined to become notorious: "Where Is, Repeat, Where Is Task Force 34, The World Wonders?" The last phrase, "The World Wonders," was padding, the kind of verbiage, frequently nonsensical, that was routinely inserted in encrypted messages to foil enemy cryptographers. But the decoding officer on Halsey's flagship apparently believed that the end padding in Nimitz's signal was part of the message. He typed it onto the page that was handed to the admiral. The presumed insult unnerved Halsey. He threw his hat to the deck and began to sob. An aide shook him by the shoulders and said, "What the hell's the matter with you? Pull yourself together!"

The Third Fleet's carriers continued to press the attack on Ozawa, all four of whose carriers eventually went down, including the *Zuikaku*, the last survivor from the force that had lofted the planes that opened the war at Pearl Harbor. Halsey, however, headed back to Samar with his battleship group. He was too late to relieve Kinkaid, but it scarcely mattered. Kurita, perhaps rattled by his unplanned swim in Palawan Passage, had incredibly concluded that the little scratch force of baby flat-tops desperately trying to evade him off Samar was Halsey's powerful big-carrier Task Force 38. Ironically, at about the time that Halsey was reading Nimitz's radiogram, Kurita decided to break off the attack and head back to Lingga Roads.

The epic battle of Leyte Gulf was not quite over. Even as Kurita was withdrawing, the Japanese launched a fearsome new weapon against the Taffy groups: suicide attacks by land-based kamikaze warplanes. *Kamikaze* means "Divine Wind," in a reference to the typhoon that scattered Kublai Khan's invasion fleet as it headed for Japan in the thirteenth century. Kamikaze pilots prepared for their missions with elaborate ceremonials, including ritual prayer, the composi-

tion of farewell poems, and the presentation to each flier of a "thousand-stitch belt," a strip of cloth into which a thousand women had each sewn a stitch, symbolically uniting themselves with the pilot's ultimate sacrifice. Late in the morning of October 25 the first wave of kamikazes lashed out of the sky over Taffy 3. One headed straight for the escort carrier *St. Lô*. Disbelieving anti-aircraft gunners tried desperately to knock it down, to no avail. The plane crashed into the *St. Lô*'s flight deck and disgorged a bomb deep in the ship's interior. As sailors on nearby ships watched in horrified fascination, the *St. Lô* exploded, heeled over on its side, and sank with 114 men aboard. It was a grisly demonstration of the kind of resistance Japan was still prepared to offer.

The Battle of Leyte Gulf ended an era, but it did not end the war. The encounters at Surigao and Samar were the last of their kind. They closed an epoch of ship-to-ship gunnery duels, the standard form of naval warfare for centuries before 1944. No nation would ever again build a battleship; aircraft carriers had proved themselves the final arbiters of battle at sea. At Leyte Gulf the Japanese navy had suffered a crushing defeat, losing four carriers, three battleships, nine cruisers, a dozen destroyers, hundreds of aircraft, and thousands of sailors and pilots. But as the kamikaze raids spectacularly illustrated, Japan had not lost its will to fight.

THE WAR'S END

NOR had the United States. After brutal battles for Iwo Jima and Okinawa in the first half of 1945, battles that consumed the lives of almost 19,000 U.S. soldiers, sailors, and Marines, the Americans dropped an atomic bomb on Hiroshima on August 6. Eight days later the war was over.

The atomic bomb was of course the war's most revolutionary scientific invention. As it unlatched from its bomb bay on that fateful August morning, it was on its way to ending the Second World War even as it was opening a new chapter in the history of warfare. But the great nuclear blast that obliterated Hiroshima hardly represented a moral novelty by this date in the conflict. The moral rules that had long stayed warriors' hands from taking up weapons of mass destruction against civilian populations had long since been violently breached—in the Allied aerial attacks on European cities, and even more wantonly in the systematic firebombing of Japan.

On January 7, 1945, Air Force General Curtis LeMay had arrived on Guam to take charge of the 21st Bomber Command. He was a gruff, stocky man, one of the youngest generals in the Army. LeMay had led several "precision" bombing raids against military targets in Germany, but had by this time abandoned the idea of precision bombing in favor of terror attacks on civilians. "I'll tell you what war is about," he once said. "You've got to kill people, and when you've killed enough, they stop fighting."

LeMay deployed two intimidating new technologies against Japan's highly flammable cities, where most people lived in wooden houses. The first was a fiendishly efficient six-pound incendiary bomblet developed by Standard Oil chemists—the M-69 projectile, which spewed burning gelatinized gasoline that stuck to its targets and was virtually unextinguishable by conventional means. The second was the B-29 "Superfortress," an awesome specimen of American engineering prowess and mass-production techniques. LeMay had some 350 B-29s in the Marianas in January of 1945, and more were arriving constantly. They were nearly a hundred feet in length, with a 141-foot wingspan and a three-story-high tail section. They were powered by four 2,200-horsepower Wright eighteen-cylinder radial air-cooled magnesium-alloy engines, each fitted with two General Electric exhaust-driven turbo-superchargers. The B-29 carried a crew of eleven in its pressurized cabin and a bomb load of up to 20,000 pounds. It had an operational ceiling over 35,000 feet and a combat range of more than 4,000 miles. An onboard computerized central control system allowed for remote firing from its five defensive gun turrets.

LeMay set out at once to perfect the 21st Bomber Command's firebombing techniques. To enlarge bomb loads, he stripped all but the tail-turret guns from his B-29s. To avoid the recently discovered jet stream, which foiled some of his earliest raids on Japan, he trained his pilots in low-altitude attacks. He experimented with bombing patterns and with mixes of explosive and incendiary bomb loads. His goal was to create firestorms like the ones that had consumed Hamburg and Dresden, conflagrations so vast and intense that nothing could survive them—not mere fires but thermal hurricanes that killed by suffocation as well as by heat, as the flames sucked all available oxygen out of the atmosphere.

After practice runs on Kobe and on a section of Tokyo in February, LeMay launched 334 Superfortresses from the Marianas on the night of March 9. A few minutes after midnight they began to lay their clusters of M-69s over Tokyo, methodically crisscrossing the target zone to create concentric rings of fire that soon merged into a sea of flame. Rising thermal currents buffeted the mile-high B-29s and knocked them about like paper airplanes. When the raiders flew away, shortly before 4:00 A.M., they left behind them a million homeless Japanese and nearly 90,000 dead. The victims died from fire, asphyxiation, and falling buildings. Some boiled to death in superheated canals and ponds where they had sought refuge from the flames. In the next five months LeMay's bombers attacked sixty-six of Japan's largest cities, destroying 43 percent of their built-up areas. They demolished the homes of more than eight million people, killed as many as 700,000, and injured perhaps one million more. Hiroshima and Nagasaki survived to be atomic-bombed only because LeMay's superiors removed them from his target list. ☞