

PEARL HARBOR BETRAYED

THE TRUE STORY OF A MAN AND
A NATION UNDER ATTACK

MICHAEL GANNON



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ALSO BY MICHAEL GANNON

ABOUT THE AUTHOR

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To the memory
of Esteban,
who served in the Pacific

Betray *v.* To be disloyal to another. To prove false to another. To disappoint the expectations of another. To violate a trust.

Oxford English Dictionary

DISASTER

Friends back home used to ask about the Japs. "Hell, we could blow them out of the water in three weeks!" But here we are with our pants down and the striking force of our Pacific Fleet is settling on the bottom of East Loch, Pearl Harbor. Who wouldn't be ashamed?

Diary of 1st Lieutenant Cornelius C. Smith,
U.S. Marine Corps Reserve
Entry of 7 December 1941

A visitor to the navy yard at Pearl Harbor on Oahu Island, Territory of Hawaii, at sunrise, on Sunday, 7 December 1941 would have experienced one of the most dramatic daybreak scenes in the Pacific Ocean. On the south the yard bordered one of several channels of a large, cloverleaf-shaped body of water that, as morning twilight gave way at 0626 (6:26 A.M.) to light orange sunlight, presented still dark shades of blue and gray. A slight breeze rippled its surface. On Makalapa Heights to the immediate east across East Loch and on Aiea Heights in the distant northeast, the new light picked out lush green growth on purple slopes. Overhead, cottonball clouds from the trade winds floated beneath the brightening sky.

So far this was a scene that might be repeated at any Pacific island port. But if the visitor walked out onto the yard's Ten-Ten Dock, so-called because of its 1,010-yard length, his or her eyes would behold a parade of images unlike any to be seen elsewhere for 3,000 miles around. Visible at the base of Ten-Ten, in Dry Dock No. 1, were the upper hull and superstructure of an impressively huge, gray-spectral United States Navy battleship, USS *Pennsylvania* (BB-39), flagship of the Pacific Fleet. While walking out toward the pier's end, past, to port, the moored light cruiser USS *Helena* (CL-5) and the minelayer USS *Oglala* (CM-4) secured alongside her, the visitor would begin to discern ahead the outlines of seven other majestic, gray-bathed battleships. They were moored to individual concrete quays set in a line some two hundred yards off the southeast shore of a small inland island named Ford that rose in the center of the harbor.

Two of the battleships would be difficult to see at first because they were berthed inboard of other battleships at the same quay. Toward 0700, when waxing light made it possible, the visitor could make out the precise silhouettes of all those ships' stately hulls, their jutting guns, and fighting tops. It was the rare visitor who did not find the bloodstream quickening at such a sight. The pride of the Pacific Battle Force, the battleships were, in order of station, USS *California* (BB-44) nearest to the drydocked *Pennsylvania*; *Oklahoma* (BB-37) outboard and *Maryland* (BB-46) inboard; *West Virginia* (BB-48) outboard and *Tennessee* (BB-43) inboard; *Arizona* (BB-39); and *Nevada* (BB-36).

It was America's famed Battleship Row.

At an hour past dawn the battleships were beehives of activity, white-uniformed officers and sailors seen everywhere about their decks and tops. Well over half the officers and an average of 90 percent of the ships' enlisted complements were on board. Only a few men were ashore on other duties or liberty. The morning watches were completing their watch-keeping, cleaning, and polishing duties. They and the crewmen who manned the anti-aircraft (AA) guns—two machine guns were continuously manned around the clock with two cases of .50-caliber ammunition at hand, and other crews stood by two 5-inch AA guns with fifteen rounds of ammunition for each—prepared to be relieved by the forenoon watches at 0745. At exactly that minute the forenoon crews, having breakfasted, took their assigned stations, while the morning watches went below to chow down.

Bands and guards prepared for morning colors at 0800. Catholic and Protestant chaplains laid out their sacred vessels or their hymnals for services to be held on deck following colors. One could hear faintly, the bells of the Cathedral of Our Lady of Peace in nearby Honolulu calling worshipers to eight o'clock mass.

The Navy bands and Marine color guards paraded to their places on the main decks aft. At the stern flagstaffs seamen fastened American flags to the halyards, furled and ready to break. At the same time, other details prepared to hoist the Union Jacks—forty-eight stars on a blue field—on the bow staffs. Officers on the signal bridges looked keenly to *Pennsylvania*. When the flagship hoisted the Blue Peter, or "Prep" flag, at 0755, boatswains on that and all other ships of whatever type in the harbor piped the preparatory signal for the hoisting of colors and the playing of the national anthem. But during the interval of the following five minutes something went terribly wrong.

* * *

At the naval air station on Ford Island, Lieutenant Commander Logan C. Ramsey, operations officer of naval aviation Patrol Wing 2, watched with the staff duty officer in the command center as a Japanese aircraft made a shallow dive over the seaplane ramp and Hangar 6 at the south end of the island. The pilot should not have been interfering with the ceremonial silence of morning colors in the first place. In the second, he was "flathatting"—showing off at low altitude—in violation of flight rules. While Logan and the duty officer discussed the difficulty of getting the aircraft's fuselage number, a delayed-fuse bomb that the plane had dropped at 0757, which the two naval airmen had not seen fall, *exploded*. In Ramsey's words: "I told the staff duty officer, 'Never mind, it's a Jap.' I dashed across the hall into the radio room [and] ordered a broadcast in plain English on all frequencies, 'AIR RAID ON PEARL HARBOR. THIS IS NO DRILL.'"¹ The transmission time was 0758.

Quickly afterward, eight other green-painted dive-bombers could be seen gliding rather than diving from the northeast toward parked aircraft in the vicinity of Hangar 6. As they pulled out, as low as four hundred feet off the deck, naval personnel on the ground could plainly see red roundels on the undersides of their wings. They were Japanese all right! They had to have come from carriers. As the bombs exploded, thirty-three out of a total of seventy U.S. naval aircraft of all types were destroyed

damaged.

The signal tower in the yard repeated Logan's alert to ships in harbor at 0800. But by that time, mid-colors, when the hoarse klaxons sounded general quarters on all vessels, two ships in the harbor had already been struck by very-low-flying torpedo bombers, barely detectable against the horizon sixteen in number, which swooped in from the Pearl City peninsula to the northwest over that part of the water called West Channel. Their targets were warships other than battleships that were moored at quays along Ford's opposite, or northwest, side. The first six attackers to drop aerial torpedoes took aim at an antiquated target and training ship, USS *Utah* (AG-16), and at the light cruiser USS *Raleigh* (CL-7). Three of the missiles missed and ran aground in the mud off Ford. But two hit *Utah* on her port side and one struck the portside of *Raleigh*, moored in line ahead. *Raleigh* would survive, but *Utah* was mortally wounded. The torpedo hitting *Raleigh* blew a hole in her hull thirteen feet below the waterline in the area of frames 50–60. Inrushing water flooded two forward boiler rooms and the forward engine room. As she listed to port, a fleet tug, USS *Sunnadin* (ATO-28), came alongside to steady her. That and the energetic work of her crew in counterflooding below kept *Raleigh* from capsizing. She would be holed again by a dud bomb an hour and ten minutes later.

For *Utah* the end came quickly. Two torpedoes in quick succession punctured her hull at frames 55–61 and 69–72.² Within a matter of a few minutes, *Utah* listed 80 degrees to port, then capsized, the two layers of 6-by-12 timbers that protected her deck from dummy practice bombs rolling overside. Ordered to abandon ship, crewmen hustled out of portholes and ran up the starboard side to her keel as, at 0810, the old vessel went belly-up. Some men were trapped inside the overturned hull, which they banged on with hammers. Despite immediate efforts to rescue them, using cutting tools borrowed from the damaged *Raleigh*, only one trapped crewman, a fireman second class, was saved. The total number of deaths on *Utah* was fifty-eight. The wreck itself sank to the bottom, where it still rests.

Directly after those hits, five torpedo bombers from the same flight, crossing over Ford Island to the East Channel, made drops at 0801 against the light cruiser *Helena*, moored inboard of the minelayer *Oglala* at Ten-Ten Dock. *Helena* was probably selected for attack by error; she was temporarily occupying the berth previously held by the now drydocked flagship *Pennsylvania*. Against Japanese marksmanship was less than perfect as only one torpedo hit home. That successful missile, running at a depth of twenty feet, passed under the minelayer and exploded below the armor belt on *Helena*'s starboard side in the area of frames 69.5–80.5. Twenty men were killed instantly by the blast; thirteen more died in the fires and smoke resulting. But the remaining crew saved the ship. The same cannot be said for *Oglala*, whose thin portside plates were stove in by the same blast effect. To avoid flooding to remain afloat, she capsized, but not before two civilian contract tugs towed her clear of *Helena*.

The remaining five torpedo bombers of the northwest flight similarly crossed over Ford but, after passing the yard, swung around to join a larger fleet of twenty-four torpedo bombers that was coming in from the southeast. The target now was Battleship Row. In three groups of twelve, twelve, and five the attackers approached over Merry Point and the submarine base pier, making 160 knots at a

altitude over water of sixty-six feet. At the optimal distance from targets, the aircraft successfully dropped three torpedoes on *California*, twelve on *Oklahoma*, nine on *West Virginia*, and one on *Nevada*. None was dropped on *Maryland* or *Tennessee* because they were berthed inboard *Oklahoma* and *Virginia*, respectively. None was dropped on *Arizona*, which was moored at quay F with a repair ship, USS *Vestal* (AR-4), outboard, covering most of her 608-foot length. It is thought that a torpedo could have passed under *Vestal* as one had passed under *Oglala*, but the official Japanese history of the attack states that no such attempt was made, and, after the attack, U.S. Navy divers did not find evidence of torpedo damage.³ In no more than ten to twelve minutes the onerous torpedo attacks of the day were over. But that was more than enough time for the Japanese pilots to leave behind heavy losses of flesh and steel.

Nine of the twelve torpedoes launched against *Oklahoma* at berth F-5 hit their mark, the initial strikes opening holes portside about twenty feet below the water's surface at frames 64 and 47.5. The ship immediately took on water and began to list to port. Succeeding strikes were made at other frames from 42 to 70. As the ship's list increased, four of the last five torpedoes exploded high on the hull's armor belt, and the last, the most damaging of all, hit at the level of the main deck. *Oklahoma* was now listing 35 to 40 degrees.⁴ Damage to the forward generator compartment cut off power and light throughout the ship. Tumbling officers and men made their way about with hand lanterns and flashlights. As many as possible of the crew of 1,200 slid down the ship's side into the water. When, finally, the ship turned turtle, having rolled through an angle of about 135 degrees to port, many crewmen, trapped in interior compartments, suffocated or drowned. Thirty-two others were reached by civilian workers from the Yard who made an opening in the bottom of the hull with cutting torches and released those fortunate survivors around noon on the following day. Altogether, 415 men died on *Oklahoma*.

At the time of the attack the ship above the third deck was in Condition X-ray of material readiness. That is, she was in cruising condition, the lowest level of watertight integrity. All double bottoms and lower compartments were closed, but living compartments were open and intercommunicating passageways were open to permit free passage. On the third deck and below she had made additional closings as mandated by an intermediate level of readiness called Yoke. In the highest level of material readiness on board a ship, Condition Zed, all compartments, passageways, and access openings were closed except those necessary to fight the ship. We know that at the outset of the attack Boatswain Adolph Marcus Bothne passed the word on loudspeaker for general quarters and set Condition Zed.⁵ That condition apparently was set in some spaces—the ship's log was lost in the sinking—but the rapid flooding and capsizing of the ship prevented her personnel from making proper closures throughout.

Nine torpedoes also struck *West Virginia* at berth F-6, outboard of *Tennessee*, port side to starboard. The "Weavy," as she was affectionately known in the fleet, was luckier than *Oklahoma* in that all but one of the torpedoes dropped on her ran at a more shallow depth and thus expended their explosive strength on the armor belt. The one deep-running missile (twenty feet) struck the rudder at frame 145

At the date of this writing, Howard Huseman still remembers vividly those moments. An aviator radioman in shipborne Vought-Sikorsky OS2U Kingfisher observation planes, Huseman was getting ready to go into Honolulu on liberty, when the fire alarm and horn went off. He went up to the quarterdeck to find that one of the ship's two OS2Us had been blasted off its catapult and was barely hanging over the side; the other was on fire. General quarters sounded. His auxiliary station in drill was in the damage control center in the post office compartment on the port side, but he found no one there. He then went looking for a place where he could be of help. While he was searching, several torpedoes in quick succession blasted against the port side. He decided to go back to the post office compartment. It was gone!

Simultaneously, *West Virginia* was hit from above by dive-bombers. One bomb passed through the firetop and the boat deck before exploding near the port side on the main, or second deck. This bomb may have accounted for the disappearance of the post office compartment. The explosion led to a fierce powder and oil fire that extended to the foremast structure up to and including the bridge. A second bomb passed through the six-inch top of turret 3 but did not explode.

Huseman caught only a brief glimpse of the attacking aircraft. His chief concern was that the ship was sinking. But thanks to expert counterflooding by crewmen below, she sank on an even keel. As *West Virginia* reached bottom, her top deck still above water, Huseman took refuge on a gun turret until picked up by a motor launch and taken ashore. He recalls that the battleship's antiaircraft guns were in action only a few minutes after the first torpedo hit, and that, apparently, they gave a good account of themselves.⁷ One hundred and six men died on *West Virginia*.

Astern, though not directly because she was inboard of the repair ship *Vestal*, stood the proud 33,100-ton *Arizona*, constructed in 1915 as the second and last of the *Pennsylvania* class. Moored at quay F-7, headed down channel, *Arizona*'s bow was very close to *Tennessee*'s stern and her stern to *Nevada*'s bow, the distance in each case being two hundred feet. Not targeted by the torpedo bomber, she was still vulnerable to dive-bombers and to high-level (or horizontal) bombers that crisscrossed the sky above with 1,760-pound armor-piercing bombs. One-fourth of her AA battery was manned with ammunition available in ready boxes at the start of the attack.⁸ Eyewitnesses later reported that all X-ray doors and fittings were closed with very few exceptions. Many Yoke doors and fittings were also closed from the previous night. And many engineering spaces, including the shaft alleys, engine rooms, and firerooms, were in Condition Zed and locked. A gravity bomb attack on the ship was so sudden, however, that little time was allowed for setting Zed throughout the rest of the ship. Probably most of the third deck armored hatches were still open.

No fewer than eight bombs descended on *Arizona* during the middle of the torpedo launch against other vessels. (Bombs were also dropped on *West Virginia*, *Maryland*, and *Tennessee*, as well as on the repair ship *Vestal*, at the same time.) All fell between 0815 and 0820, causing damage of varying severity.⁹ In one major action a bomb hit and detonated close to the port leg of the tripod of the foremast structure, causing its collapse. But by far the most severe damage—cataclysmic by comparison with anything else that winged death brought that day—was caused by a bomb dropped on

the forecandle deck in the vicinity of either turret 1 or 2 that caused an intense fire that quickly engulfed the entire ship forward of the mainmast. Approximately *seven seconds* after the start of the fire—the time interval was determined by Navy analysts in 1944 on the basis of a motion picture film of the bomb hit and fire that ran at a rate of twenty-four frames per second—the ship forward of the mainmast erupted in a massive orange-black fireball that destroyed the ship forward of frame 70 and cast debris as far as *West Virginia, Tennessee, Nevada* astern, and Ford Island. Observers reported that the ship shuddered and jumped up in the water.

Arizona had on board her full allowance of smokeless powder arranged forward in six magazines to supply gun turrets 1 and 2. These surrounded 1,075 pounds of black powder in magazines on the centerline between frames 37 and 39. It was clear to the Navy analysts who in 1944 investigated the cause of *Arizona*'s horrific explosion that both the smokeless and black powder detonated. But it was difficult to detonate smokeless powder with fire—and time-consuming, taking certainly more than seven seconds—whereas the ignition of black powder almost always resulted in an instantaneous explosion. That fact led investigators to theorize that a modified 16-inch (1,760-pound) armor-piercing projectile used as a bomb by the Japanese high-level bombing aircraft penetrated the armor deck and ignited the black powder, which in turn detonated the smokeless powder. But the theory proved “improbable.”* “More probable” was that the fire passed down through the five armor hatches left open on the third deck, one of which was almost directly over the black powder magazine.

The analysts dismissed a popular myth that the ship blew up because a bomb passed down the stack. The myth originated with the observation by some, and with frames 46 through 208 of the film, that a jet of black smoke rose from the stack. But the navy yard at Pearl could find no damage to the insides of the stack. “The smoke issuing from the stack,” the analysts concluded, “was quite obviously the result of incomplete combustion rather than an explosion of fire.”¹⁰ As an officer on *Nevada* wrote thirty-one years later, *Arizona* would have been lucky if the bomb in question *had* gone down the stack. Wrote then Captain Joseph K. Taussig, Jr., USN (Ret.): “The stack of the *Arizona* was shaped like an inverted Y, with the uptakes angled radically from the top of the stack to the boiler rooms. A bomb dropping down the stack would have exploded in the ‘uptakes’ and in the spaces below.”¹¹

Still flying her big Sunday ensign from the stern, the twenty-six-year-old battleship slowly settled into the muck.

Four of her officers were awarded the Congressional Medal of Honor.

Altogether, 1,177 Navy and Marine personnel died on *Arizona*—nearly half the total number of fatal casualties suffered at Pearl Harbor that day. The number included her captain, Franklin V. Valkenburgh, and Rear Admiral Isaac C. Kidd, commander of Battleship Division 1, who was on the signal bridge. It was the largest fatal casualty list from any warship in the history of the U.S. Navy. Most of the dead are still entombed in the wrecked vessel, whose top deck is clearly seen from the arched white USS *Arizona* Memorial. Droplets of fuel oil still seep to the surface from her bunkers.

Two of the three torpedoes launched against *California* detonated twenty feet below the waterline where the ship's 13.5-inch armor plating gave way to thin shell plating. The explosions tore holes

thirty by eighteen feet at frames 53 and 97.5. Flooding of the hull was compounded by human error. Neither Yoke nor Zed had been set. Ten inner and outboard voids had been left open below the third deck for maintenance. Her watertight integrity compromised, *California* began listing to port. Time for counterflooding directed by a young ensign prevented her from capsizing, but salt water got into the fuel system and light and power flickered off. Then, at 0825, a bomb hit the AA ammunition magazine, taking the lives of about fifty men. It was followed shortly afterward by a second bomb that damaged the bow plates. The captain and crew made valiant efforts to douse fires, control flooding, and get up steam. *California* responded briefly. But her holes were too large. The water finally claimed her, though it was not until late Wednesday that her keel finally embedded itself in mud. Ninety-eight of her men were dead.¹²

In 1945 the Navy Department stated: "According to the best available analysis in the Navy Department, the USS *California* is the only ship that might have been saved from sinking by the closing of manhole covers that had been left open for maintenance."¹³

Oklahoma's sister ship *Nevada* was moored singly to quay F-8, at the end of Battleship Row. Though plainly exposed, she was targeted by just one of the torpedo bombers. The explosion ripped open a hole forty-eight by thirty-three feet twenty feet below the waterline well forward at frame 4. A severe dive-bombing attack beginning about 0825 made up for any additional torpedoes that might have been launched at her. One bomb hit near the foremast, wrecking the vertical area extending from the second deck to the bridge. Several bombs damaged the forecastle from side to side forward of turret 1 and down to the second deck. A bomb amidships sent fragments against the mainmast and stack, and caused many casualties to the 5-inch AA gun crews, who had been answering the Japanese since within four minutes of the torpedo explosion. Two near misses ruptured the hull on the port and starboard bows. While many of *Nevada's* compartments were flooded, her power plant was not harmed, and Lieutenant Commander Francis J. Thomas, USNR, the senior officer on board at the time, decided to stand out. Chief Boatswain Edwin J. Hill, who would receive the Medal of Honor posthumously for his action, leaped onto the mooring quay, cast off the lines while strafing fire from fighters encircled him, and swam back to the ship as she got under way. He would be killed by a bomb blast later as his ship made for the sea. The story of *Nevada's* gallant dash is told later, in chapter 6. Sixty of her men were killed that morning, and 109 were wounded, including Ensign Joe Taussig.¹⁴

Before the Japanese withdrew, four battleships, *Oklahoma*, *West Virginia*, *Arizona*, *California*, the target ship, *Utah*, a minelayer, *Oglala*, and an auxiliary, *Sotoyomo* (YT-9), would be in a capsized or sinking condition. Battleships *Pennsylvania*, which was in drydock, *Nevada*, *Maryland*, and *Tennessee* were damaged. Light cruisers *Raleigh*, *Helena*, and *Honolulu* (CL-48) were damaged. Destroyers *Cassin*, *Downes*, and *Shaw* were damaged. Repair ship *Vestal* and numerous small craft were damaged. Eighty naval aircraft were destroyed, 167 damaged. Naval airfields and installations at Ford Island, Kaneohe Bay, and Ewa were damaged. And those were just naval material losses. The United States Army aircraft, airfields, forts, and barracks on Oahu would also be heavily hit, as will be described in chapter 9. And the greatest losses would be human: 2,403 dead, 1,178 wounded.

Though totally surprised, the AA gunners on all ships except *Oklahoma*, whose men never had a chance, gave back what fire their weapons allowed. The overall Japanese commander of the attacking force, Vice Admiral Nagumo Chuichi, wrote later that “the enemy’s anti-aircraft fire reaction had been so prompt as virtually to nullify the advantage of surprise.” *West Virginia* returned fire “immediately with ready machine guns, and in fewer than five minutes with all guns. No log remains to say what gun action took place on *Arizona*, but her two ready 5-inch 25 AA guns could have commenced firing within one minute, and the remaining guns of her AA battery within about five minutes. *California*’s ready machine guns at the conning tower, manned and armed, could have commenced firing upon first identification of the enemy; her machine guns in the foretop and maintop in three to four minutes; and her 5-inch 25 AA guns in about two minutes. *Nevada* estimated that both .50-caliber machine guns and 5-inch 25 AA guns opened fire within four minutes. Other estimates provided by commanding officers after the battle were: *Pennsylvania*, five to eight minutes, all batteries; *Tennessee*, three to five minutes from the sounding of the general alarm; and *Maryland*, from ten to fifteen minutes, all batteries.¹⁵ In the attack twenty-nine of the Japanese air fleet of 354 planes were shot down, most of them by Navy gunners.

The defeat fell hardest on the shoulders of Admiral Husband Edward Kimmel, commander in chief, United States Pacific Fleet (CINCPAC) and commander in chief, United States Fleet (CINCUS). Between receiving messages and giving orders, the fifty-eight-year-old Kentuckian watched the awful drama unfold from his second deck corner office at the submarine base. For over ten months since assuming command, he had trained this powerful fleet to maximum readiness and proficiency with whatever ships, aircraft, and weapons he was supplied. His officers and men were at concert pitch. They were ready to sail.

And now—how could *this* happen?

While he observed the losing battle, “his jaw set in stony anguish,” a witness wrote. Communications officer Commander Maurice “Germany” Curts at his side, a spent .50-caliber machine gun bullet shot through the window glass and cut his white jacket. A welt on his chest was as bad as that Kimmel suffered, but he said to Curts:

“It would have been merciful had it killed me.”¹⁶

TOO THIN A SHIELD

Or what king, going to encounter another king in war, will not sit down first and take counsel whether he is able with ten thousand to meet him who comes against him with twenty thousand?

Gospel of Luke 14:31

Oahu is the third largest of the eight major islands and 124 islets that compose the archipelago of Hawaii. Ranging 1,500 miles in a crescent from Kure Atoll in the west to the largest island, Hawaii, in the east, the volcanic mountaintops form what Mark Twain called “the loveliest fleet of islands that lies anchored in any ocean.” The U.S. Navy’s anchorage at Pearl Harbor is an indentation on the southern, or lee, side of Oahu, six statute miles west of the capital city, Honolulu. From the pearl oysters that once grew there the harbor took its original Hawaiian name, *Wai Momi*—“pearl waters.” The United States secured the site by treaty as a coaling and repair station in 1887. In 1908 it became a full-fledged naval station.

Providing ten square miles of navigable water thirty to forty-five feet deep, landlocked Pearl Harbor is entered from the south through a narrow coral-barred channel, which in 1911 was dredged to a depth of thirty-five feet. To the immediate south of the channel the winds are moderate, the seas are relatively smooth, and visibility is excellent. By contrast, the winds and seas to the north of Oahu are stronger and generally there is a weather belt characterized by low ceilings, squalls, rain, and low visibility. The harbor’s position in the North Pacific Ocean is 2,091 nautical miles (a nautical mile being approximately 1 $\frac{1}{6}$ land miles) west to southwest of San Francisco, 4,685 nautical miles northwest of Panama, 4,767 nautical miles east of Manila in the Philippines, and 3,430 nautical miles southeast of Tokyo, Japan.

In 1941, the principal warships of the U.S. Pacific Fleet, battleships, carriers, and cruisers, were berthed to the northwest and southeast of Ford Island, which rises in the center of the harbor water. Smaller warships and auxiliary vessels were anchored in adjacent districts. Carrier-based aircraft and patrol bomber seaplanes occupied parking aprons and hangars on Ford Island itself, site of the fleet air base. To the southeast side of the harbor stood the naval station’s administrative offices, submarine base, torpedo boat piers, signal tower, magazine wharf, dry docks, repair basin, tank farms for storage of fuel oil, hospital, and other facilities—the “Navy behind the Navy.” Immediately south of the naval station was a large U.S. Army Air Corps base named Hickam Field. Two other Air Corps bases, Bellows and Wheeler, were within twenty miles, to the east and northwest, respectively. A Marine Corps air station was at Ewa, a short distance west of the harbor. And the Navy operated a new a

station for patrol aircraft (flying boats) at Kaneohe Bay on the eastern shore of Oahu. U.S. Army ground forces, some 58,000 strong, were stationed at Fort Shafter, Schofield Barracks, and scattered forts and camps throughout the island. “The Hawaiian Department is the best equipped of all overseas departments,” declared Secretary of War Henry L. Stimson on 7 February 1941.¹ Some journalists spoke of Oahu as the “Gibraltar of the Pacific.” And, on 14 June of the same year, *Collier* magazine, writing about “Oahu, the fortress of the Hawaiian Archipelago,” stated in a subhead that “The Navy Isn’t Worrying,” and titled its piece “Impregnable Pearl Harbor.”²

But the Navy *was* worrying. And Pearl Harbor was *not* impregnable. Reason: the Army, which was officially charged with the defense of the fleet and naval station at Pearl, was, in the Navy’s view, woefully unequipped to perform that task. Rear Admiral Claude C. Bloch, the Commandant of the 14th Naval District, acting as Naval Base Defense Officer, was charged with the employment of such naval units as Commander in Chief Kimmel could make available for the purpose of *assisting* the Army in its defense of the fleet. But by joint agreement between the War and Navy Departments, and by provision of the Navy’s war plan (WPL-46), protection of the fleet was the core reason for the Army’s considerable presence on Oahu.³ Army Chief of Staff George C. Marshall made the point forcefully when he wrote to the newly installed commanding general of the Hawaiian Department, Lieutenant General Walter C. Short, on 7 February 1941: “The fullest protection for the Fleet is *the* rather than *a* [Marshall’s emphases] major consideration for us.”⁴

Six days before assuming command of the Pacific Fleet on 1 February 1941, Kimmel joined his name to that of outgoing commander in chief Admiral James O. Richardson in pointing out to Admiral Harold A. Stark, Chief of Naval Operations in Washington, that “the existing deficiencies in the defenses of Oahu and in the Local Defense Forces of the Fourteenth Naval District impose a heavy burden on the Fleet for purely defensive purposes.” The most glaring of those deficiencies were: (1) the small number and obsolescent condition of land-based aircraft, requiring constant use of fleet planes for local patrol; and (2) the “critical inadequacy of A.A. guns available for the defense of Pearl Harbor, necessitating constant manning of ships’ A.A. guns while in port.”⁵ On his own, Kimmel tackled the same subject two days later, noting that, after a hurried survey of the situation, he had become all the more concerned about the absence of means for “defending this base.”⁶ Kimmel could call attention to Navy General Order 142, Paragraph 42: “The Fleet must have no anxiety in regard to the security of its base.”⁷

In Admiral Stark, Kimmel had a ready and willing ear. On the previous 22 November Stark had written to Richardson: “Since the Taranto incident [a British carrier-borne air attack on warships in the Italian anchorage at Taranto on 12 November] my concern for the safety of the Fleet in Pearl Harbor, already great, has become even greater.”⁸ The CNO showed Kimmel’s communication to Marshall, who, on 7 February, confided the Navy’s concerns to General Short at Fort Shafter: “Of course the facts are as he [Kimmel] represents them.... What Kimmel does not realize is that we are tragically lacking in this matériel throughout the Army, and that Hawaii is on a far better basis than any other command in the Army.... You should make clear to Admiral Kimmel that we are doing

everything that is humanly possible to build up the Army defenses of the Naval overseas installation but we cannot perform a miracle.”⁹ Stark probably heard the same from Marshall. We do know that he heard the same from Secretary Stimson, who stated that the Hawaiian Department “continues to hold high priority for the completion of its projected defenses because of the importance of giving full protection to the Fleet.”¹⁰ On 10 February Stark urged Kimmel, “in view of the inadequacy of the Army defenses,” to continue his faithful acceptance of “the responsibility which must rest upon the fleet for its own protection while in Pearl Harbor,” despite the fact that ships’ guns were not equal to an attacker’s threat, and without respect to the fact that such constant vigilance took away from fleet training and readiness.¹¹ By 18 February Kimmel had the very feelings of anxiety that General Order 142 had been crafted to prevent: “I feel that a surprise attack (submarine, air or combined) on Pearl Harbor is a possibility. We are taking immediate practical steps to minimize the damage inflicted and to ensure that the attacking force will pay.”¹² He made no claim to future ability to *repel* an attack with the forces at his disposal. In August 1944, he would elaborate on his “feelings”:

I felt that the most probable form of attack in the Hawaiian area was submarine attack. I felt that the bombing attack by airplanes was probably second in order of probability. I felt also that the danger of torpedo plane attack in Pearl Harbor was nil because I believed that torpedoes would not run in the shallow water in that harbor. The maximum depth at any point was on the order of 45 feet with the prevailing depth in the deepest part, 40 feet. I felt that the probability of surface gunnery attack or bombardment was of a very low order of priority, but the probability of mining was considered of a high order of priority.¹³

On 5 February, Major General Walter Campbell Short arrived at Honolulu Harbor aboard the liner *Matsonia*. Twenty-four bombers from the Eighteenth Bombardment Wing at Hickam Field roared overhead in welcome to the officer who would relieve Lieutenant General Charles D. Herron, commanding general of the Hawaiian Department. After greetings at the dock from Herron, the lean, five-foot-ten-inch, somber-faced Short took up temporary residence at Admiral Richardson’s house in Honolulu. There he was promptly visited by Admiral Kimmel, in civilian clothes, who welcomed him to the islands and offered him the Navy’s full cooperation in every detail of his assignment. “He responded wholeheartedly,” Kimmel would say later, “and I had a real regard for him before I had known him for a very long time.” On 7 February, in ceremonies conducted on the parade ground at Fort Shafter, fifteen minutes by car to the east of Pearl Harbor, Herron formally passed command to Short, who, later the same day, received a third star representing temporary advancement to lieutenant general.

Two years older than Kimmel, Short was born, the son of a physician, in Fillmore, Illinois, on 3 March 1880. He was graduated Phi Beta Kappa and Distinguished Military Graduate from the University of Illinois in 1902. In February of the same year he received a Regular Army commission as a second lieutenant of infantry. During the next eleven years he served successively at posts in Texas, the Philippines, Nebraska, Alaska, and San Francisco, where in 1913 he entered the School of Musketry. An expert pistol shot, he won the U.S. National Match in 1909 and placed second in 1911. When in 1915 the School of Musketry was moved to Fort Sill, Oklahoma, he went with it, and in that state he met and married Florence Isabel Dean, of Oklahoma City.

In June 1917, Short sailed for France with the American Expeditionary Force of World War I and was sent at once to the British and French fronts. His duties were primarily in training commands including machine gun instruction. Rising to temporary rank of colonel, he remained in Europe following the Armistice until July 1919. Reverting to major on his return, he attended the School of the Line (later Command and General Staff School) at Fort Leavenworth, Kansas. He also attended the Army War College, graduating in 1925. In 1936 he succeeded Brigadier General George C. Marshall as assistant commandant of the Infantry School at Fort Benning, Georgia. Promoted to brigadier general in 1937, he was given command of the 2nd Brigade of the 1st Division, and, in the following year, promoted to major general, he was assigned the division command. In 1940, General Marshall then chief of staff, sent him to Fort Jackson, South Carolina, to organize the I Corps. And from there in December of that year, Marshall selected Short to head the Hawaiian Department.

Though Short had never shirked an Army assignment, this one he was reluctant to accept, since his father-in-law was seriously ill, and he thought he should stay nearby. “But [Marshall] considered it important and ordered me [to Oahu],” Short said. In the first week of January 1941, Short conferred with the War Department with Marshall, Brigadier General Leonard T. Gerow, chief of the War Plans Division, and Colonel Carl A. Spaatz, of the Air Corps. He learned that, in addition to his primary responsibility to defend the fleet and the naval base, he was to hold Oahu against any attempt to invade, prevent sabotage, protect the other U.S. islands as far west as Wake, and aggressively train ground troops and air crews for the Pacific war that seemed increasingly predictable. Short’s assessment of the situation was that the Hawaiian Department was amply prepared against submarine attack and against civilian sabotage, but that it was dangerously vulnerable to air attack by heavy bombers and torpedo bombers.¹⁴

Over the next two months, Short and Kimmel worked hand in glove to develop a joint defensive strategy with the means at hand. Each found the other in “complete agreement” on the broad steps that should be taken, while Rear Admiral Bloch worked with Short on the fine details—Bloch, because he was not Kimmel, was Short’s opposite number. “I saw General Short frequently,” Kimmel said,

because I made it a point to see him. I think he also made it a point to see me. We conferred officially on many occasions, and at practically every official conference, Admiral Bloch was present, because Admiral Bloch was the officer in Hawaii who was charged with dealing with the Army, and at no time did I wish to by-pass him. I think I kept Admiral Bloch thoroughly informed of every dealing I had with General Short. I played golf with General Short at a little 9-hole golf course which he had established near his headquarters at Fort Shafter.¹⁵

Because it was later charged in a government investigation (Roberts Commission, 1942), and by certain members of Congress, that Kimmel and Short were estranged from each other in their official and social relations during the eleven months they held their commands—Harry S. Truman, for example, U.S. senator from Missouri and Democratic vice presidential nominee, asserted in *Collier’s* magazine (26 August 1944) that the “root cause” of the American defeat at Pearl Harbor was the lack of cooperation between Kimmel and Short, who, Truman insinuated, were not “on speaking terms”—it is instructive also to have Short’s appreciation of their association, given in 1944:

I would say that [our relations] were extremely friendly, cordial, and cooperative. We were on a very friendly basis personally, as well as officially. We played golf together about every other Sunday, and the Sundays we didn't play golf, very frequently Admiral Kimmel dropped in to see me in the morning; because his family was away he came to my quarters more than I went to his....¹⁶

By 28 March, Short and Bloch completed a final draft of what was called the “Joint Coastal Frontier Defense Plan, Hawaiian Department and Fourteenth Naval District.” The Coastal Frontier was defined as including Oahu and the other major islands of the Hawaiian chain; also, Midway, Johnston, Palmyra, Canton, and Wake Islands. Because the agreements contained in the plan were to take effect “at once”—Short and Bloch signed the plan on 2 April—and because this was the plan that was to go into force on 7 December following, its principal paragraphs bear examination. First considered was the appearance in Coastal Frontier waters of hostile surface vessels. Joint air attacks made upon such warships were to be executed under the tactical command of the Navy. The Army would give the Navy use of its bomber aircraft, Boeing B-17D Flying Fortresses and obsolete Douglas B-18 Bolo medium bombers—the model was six years old and the planes themselves were five years old. The number was to be the maximum practicable. After one or repeated attacks, as required, the bombardment aircraft would revert to Army control.

In the event of an enemy air attack over and in the immediate vicinity of Oahu, defensive anti-air operations, anti-aircraft, and gas defenses were to be executed under the tactical command of the Army. The Naval Base Defense Officer (Bloch) would release to Army control as much Navy fighter strength as was practicable. After “repeated patrols or combat or for maintenance of the required alert status,” Navy fighters would revert to Navy control. In another key provision, the plan placed responsibility with the Navy for long-range aerial reconnaissance of the ocean approaches to Oahu. Utilizing the Navy’s twin-engine Consolidated PBY-3 and PBY-5 Catalina patrol bombers (flying on land boats), Bloch would be the responsible officer for instituting distant air searches. If called upon, the Army would place such bomber strength as was available under Bloch’s command to supplement the Navy’s distant patrol assets.

To ensure prompt exchange of information about both hostile and friendly aircraft, Army and Navy communications personnel were to install and operate common communications equipment, such as page printer teletype machines connected to the same landline circuit; and to utilize joint radio circuits on 219 and 2,550 kilocycles for voice communication. The plan anticipated that, at some future date in the year, Aircraft Warning Service radar would be supplied to the Hawaiian Department. Until such time, the Army would operate what, admittedly, was a primitive Anti-aircraft Intelligence Service (AAIS), employing visual recognition of incoming enemy aircraft and radio broadcast of warnings on 900 kilocycles. Four further major points were addressed in the plan: (1) the Marine Corps anti-aircraft units on Oahu would be under the tactical control of the Army; (2) the possible use of balloon barrages over Pearl Harbor would be investigated; (3) smoke screens would *not* be employed over Pearl Harbor and Hickam Field, since they would hinder one’s own surface and air operations; and (4) a joint harbor control post would be established for the defense of Pearl and

Honolulu Harbors.¹⁷ A slightly more detailed plan for the Hawaiian Islands proper was signed and issued on 11 April.¹⁸

In an important addendum, dated 31 March, the air defense officers of the two services, Major General Frederick L. Martin, for the Army Air Corps, and Rear Admiral Patrick N. L. Bellinger, for the Navy, signed off on a report that cannily predicted that a surprise attack on Oahu would likely be launched at dawn, prior to a declaration of war, and from a distance inside three hundred nautical miles. Martin was Commanding Officer, Hawaiian Air Force; Bellinger, among various other offices, was Commander, Naval Base Air Force and Commander, Patrol Wing Two. Their prescient monitoring could well be stapled to a dispatch dated the next day, 1 April, from Naval Operations (OpNav) in Washington to all naval districts, including the Fourteenth, advising that “Axis Powers often begin activities in a particular field on Saturdays and Sundays or on national holidays of the countries concerned....”¹⁹

The Martin-Bellinger estimate considered that in the past Orange (the code name for Japan in the war plans of the period) had never made a declaration of war before launching hostile actions; that Orange might send into the Hawaiian area one or more submarine squadrons and/or a fast carrier raiding force to make a sudden attack with no prior warning to Pearl Harbor from U.S. intelligence and that the damage to ships and naval installations resulting from such an attack might prevent effective offensive action by the U.S. Navy in the western Pacific for a long period of time. The best information available was that Orange possessed eight carriers (she had ten) that embarked from 20 to 60 aircraft (in fact, 27 to 104). The 1939 edition of *Jane’s Fighting Ships*, the latest then available at Pearl, listed forty Orange submarines that were capable of projection into Hawaiian waters. (Nothing was known about the existence of Orange’s midget submarines, which would number twenty by the following December.)

The best first means of defense against a carrier striking force was its detection by long-range reconnaissance aircraft, such as the PBY-3 and PBY-5 Catalinas, which had a theoretical range of seven hundred and eight hundred nautical miles, respectively. But, stated the estimate,

The aircraft at present available in Hawaii are inadequate to maintain, for any extended period, from bases on Oahu, a patrol extensive enough to insure that an air attack from an Orange carrier cannot arrive over Oahu as a complete surprise.... In a dawn air attack there is a high probability that it could be delivered as a complete surprise in spite of any patrols we might be using and that it might find us in a condition of readiness under which pursuit would be slow to start, also it might be successful as a diversion to draw attention away from a second attacking force.²⁰

Only within “narrow time limits”—a matter of four or five days, Bellinger would later define it—could the available patrol aircraft fly seaward through 360 degrees to a distance of the seven to eight hundred nautical miles required to prevent a carrier from launching an attack without prior detection. Rear Admiral Richmond Kelly Turner, Director of War Plans at the Navy Department (Main Navy) concurred in that assessment—it being understood in Washington as well as in Hawaii that only a search of *all* sectors of approach to an island base deserved the name. In support of that principle, Admiral Chester W. Nimitz, who would succeed Kimmel as CINCPAC, observed on 7 January 1942

that “It cannot be assumed that any direction of approach may safely be left unguarded.... Neglect any sector is apt soon to be known.”²² But a full-compass sweep of 360 degrees to the maximum range of scout planes could not then be mounted with the aircraft available; neither would it be possible for a period beyond several days, as will be seen, in the following November-December. And the Army Air Corps’ assets were of minimal assistance in that regard. The comparatively short-legged B-17 medium bombers could not make the 700 to 800 mile distance (and return), and the B-17 Flying Fortresses, which could, were always so meager in number that they could cover only a few degrees of arc.

Furthermore, both services were heavily pressed by expansion training: the Army’s bomber aircraft were consumed by crew training for the Philippine Air Force, and the Navy’s PBYs were also totally engaged in crew training. Part of that PBY training was for crews manning new aircraft on the mainland. And part was for manning patrol wings of the fleet, with which they would be employed on offensive combat assignments stipulated in war plan WPPac-46 (effective 7 September), which included within thirteen days after the opening of hostilities a raid by Navy surface and air striking forces against Japanese bases in the Marshall Islands. Kimmel would be promised an additional one hundred PBYs, but they never arrived—they were allocated to Great Britain instead—with the result that long-range aerial reconnaissance, absent a full-fledged alert from Washington, could not be ordered as a routine procedure.

In the event of an air attack against the fleet and/or ground installations, the Martin-Bellinger estimate advised the immediate dispatch of all aircraft suitable for aerial combat both to intercept the attackers and to follow them back to their carriers. But under the present conditions, without the advance warning that long-range scout aircraft and radar could provide, the estimate acknowledged that no pursuit (fighter) planes could be dispatched “until an attack is known to be imminent or has occurred.” It therefore recommended that interservice air task forces should be organized right away that missions be assigned, and that conditions of readiness be defined so that immediate action could be taken when one of the visualized emergencies arose. Among the contingencies was a submarine attack, conducted either singly or in concert with an air attack, off the harbor channel entrance or the fleet operating area to southward. In that event, shore-based antisubmarine aircraft would conduct patrols and take offensive action against surfaced or diving submarines in close communication with Navy destroyers.

Once his Hawaiian Department staff was assembled, General Short set about strengthening Army defensive forces. It would be a ten-month effort, and one that seems to have encountered more than its regulation share of impediments, since, repeatedly, the War Department refused to supply Short with expressed needs, either for alleged budgetary reasons or because the War Plans Division differed with Short’s understanding of Oahu’s vulnerability to air attack. The blame for the latter failure cannot be traced to any misconceptions by General Marshall himself: the Chief of Staff worried aloud frequently about the possibility of “a surprise or trick attack” against Oahu;²³ and in his letters to Short he expressed his pleasure at reading of the latter’s progress “with regard to defense from air attack

which he called “a matter of first priority.”²⁴ But below the Chief’s level, deputies and assistants were not as understanding or supportive. A representative example of that disparity is provided by Short’s identification of his number two priority (“Cooperation with the Navy” being number one) as “Dispersion and Protection of Aircraft,” which he proposed to the War Department on 19 February 1941 and again on 15 March. Calling attention to the vulnerability to attack of aircraft at the Army Airfields at Hickam and Wheeler Fields, as well as at the Ford Island navy field—“On all fields the planes have been kept lined up on the field where they would suffer terrific loss [in the light of future events a prophetic prediction]”—he sought money and engineer troops to build dispersal landing strips away from the main bases and to erect protective bunkers, or revetments, for those aircraft that could not be dispersed.²⁵ For his part, Marshall judged Short’s plan to be “sound,” and he answered that, as soon as Short submitted sufficient details to support the expenditures, “funds for these purposes will be included in estimates.”²⁶ But once the proposal fell into the maw of deputies and assistants below Marshall’s pay grade it met opposition and delay; one staffer, Brigadier General Harry J. Maloney, Acting Assistant Chief of Staff, wrote, “War Plans Division believes: That the danger of sustained attack against air fields in Hawaii from carrier based aviation is not serious.”²⁷ Eventually, on 1 September, the War Department promised \$1,358,000 for the work, but with the proviso that the funds would not become available until 1 January 1942.²⁸

Other examples abound. In February 1941, with Marshall’s concurrence on 13 March, the Army assumed responsibility for defending the new naval air station and its three squadrons of PB4Y patrol aircraft at Kaneohe Bay. On 14 April Short asked for procurement of a 12-inch gun battery and a 100-man strength garrison of 2,300 men to make that defense possible. His request did not receive a favorable response. Not only air defense but urgent aviation training required the construction of ten additional airfields. No funds were forthcoming. Aircraft Warning Service (AWS) radar was, Short said, “the most important single project in the department.” At present, aircraft could be visually and soundly detected at a maximum distance of four to five miles; with radar that would increase to 120 miles. Short was authorized to receive three fixed and six mobile stations. He asked the War Department that Oahu be given top priority (A1-f) in receiving the permanently placed stations. But no such installation was in place by 7 December.²⁹ Short had wanted to install one of the fixed AWS stations on the 10,000-foot summit of Haleakala crater on the island of Maui, seventy-six nautical miles east-southeast of Oahu, which commanded the eastern and southern approaches to Oahu. But the crater formed part of a national park, and the National Park Service, of the Department of the Interior, insisted on employing its usual long process of vetting the architecture and building plans for appropriateness, as it also insisted that the AWS station when erected not “materially alter the natural appearance of the reservation.” A fuming Short thought that “the seriousness of this situation has not yet been appreciated in the War Department,” and that, in view of the Pacific theater emergency, “a quibbling over details should be stopped at once.” But Major General William Bryden, Deputy Chief of Staff, told Short: “It is not believed that it would be advisable to attempt to alter the informal decisions of the Department of the Interior by carrying this matter to higher authority, or to prolong

the discussion through official channels.”³⁰

Recognizing that the aircraft repair facilities of the air depot at Hickam Field would be among the first installations targeted in a surprise attack (as it was), Short sought funds to bombproof it by moving it underground. He was denied. He recommended that funds be allocated to construct splinterproof protective shelters for antiaircraft and mobile seacoast (artillery) batteries and was denied. He requested funds to camouflage batteries at four forts and was denied. He asked for an increase in enlisted men of an antiaircraft regiment (251st Coast Artillery) and was denied. He asked that his overall garrison strength be increased from 58,000 to 71,500 and was denied.³¹

On the credit side, Short did receive the antiaircraft armament promised by Secretary Stimson, which brought his AA strength up to 98 3-inch guns, 120 37-mm guns, and 308 .50-caliber machine guns. Grateful as he was for the increase, Short knew that these weapons were relatively useless against fast modern aircraft, particularly bombers and strafers flying at 200 feet or lower. And he did not receive thirty-one obsolete Curtiss P-36A pursuit planes promised him by Stimson on 7 February, as well as fifty new Curtiss P-40B Warhawk pursuits with liquid-cooled Allison engines, leakproof tanks, and pilot-protecting armor. The P-40B gave him a sporting chance against the much-touted Japanese Zero, or Zeke. Little would he think before it happened that, on 27 November, just eleven days before the Japanese attack, the War and Navy Departments would suggest sending 50 percent of his P-40 strength to Wake and Midway Islands—which would indicate to both Short and Kimmel that the intelligence services of the two departments did not consider a strike against Oahu to be imminent or likely. (Meanwhile, two hundred P-40s were being shipped to Russia.)³²

Throughout, Short seems to have kept his composure. Though he called the Adjutant General to attention to his rebuffs from Washington,³³ on 14 April he wrote to Marshall: “Everything is going along extremely well, although there is a great deal to be done as rapidly as possible. The Navy has felt very much encouraged by the increase in our Air and Antiaircraft defense.”³⁴ All during the spring, summer, and fall that followed he drove his men hard with infantry and artillery field exercises. With Bloch he conducted combined Army-Navy air exercises and air raid drills. With Kimmel he directed air and naval maneuvers hundreds of miles out to sea, in which Army bombers located and “bombed” the Navy’s carriers. Nor was he unmindful that the Japanese might attempt landings on Oahu. With Kimmel’s ships to simulate enemy warships and transports, Short had his 27th Infantry Division, representing the enemy landing force, come ashore simultaneously at widely dispersed beaches on the island, while his artillery and remaining infantry practiced repelling the invaders.³⁵ Hard, provident, conscientious work seems to have characterized Short’s months of Hawaiian Army command. At no point in the record does the picture emerge of a derelict officer. He approached 7 December steadfast in his labors and faithful in his charge.

* * *

The purposes of a harbor and a fleet base were to provide upkeep, repair, refueling, and replenishing of ships as well as rest and recreation for crews after strenuous operations at sea. Just as ships could

not be kept in continuous operation, so crews could not be kept at peak efficiency in peacetime without regularly scheduled days in port. And since harbors were normally viewed as havens from peril on the sea, it probably was thought by most American citizens who knew anything about Pearl Harbor from *Collier's* or other such sources that the Pacific Fleet when at Pearl was safe as bears snuggled in their den. But this harbor presented some peculiar and alarming exposures to danger. While its lochs provided ten square miles of anchorage, the 140-odd warships and other vessels that ordinarily occupied that space were moored in such congestion that, for an attacking air fleet, it would be somewhat like shooting fish in a barrel.³⁶ The single, narrow entrance channel, through which all ships must pass, exposed individual ships in slow line ahead to torpedo attack by submarines. Too, if a ship or other obstruction sunk in the channel would block all other ships from entry or sortie. Again because of the single channel, should a warning come of approaching enemy warships, two to three hours would be required for the fleet to sortie. Magnetic and other mines might be laid in the sea approaches to the channel. And, finally, among the major dangers in Kimmel's estimation, the topography of the land surrounding the harbor, e.g., the generally accessible Aiea Heights, made it readily possible for enemy agents from the large Japanese population of the island to keep watch on the berthing and movement of ships. But as long as the President insisted on maintaining the fleet at Hawaii, Pearl Harbor had to be its home. The only suitable alternative, deep-water Lahaina Roads, on Maui, was ruled out by Richardson and Kimmel because of its "extreme vulnerability" to submarine attack.³⁷

Since the Army alone, even when reinforced by the matériel promised it by Secretary Stimson, and even, for that matter, when shored up by the Local Defense Forces of the Fourteenth Naval District, could not offer a convincing defense of the fleet and harbor against air attack, it fell to Admiral Kimmel's fleet, with its AA guns and carrier aircraft, to make up the difference, if it could. Kimmel did not think it could, fully, and he regretted that he had to try, because constant attention to defense watches in port drew energy and time from the fleet's primary responsibility under war plan WPL-4, which was to train officers and men for far-flung offensive actions in the Central and South Pacific. *Maximum* security effort in port would have made training impossible altogether; it would paralyze the fleet in place; in fact, it would call into question the reasons for having a fleet at all. With adequate personnel and matériel it would be possible to maintain a state of alert for some period of time, but Kimmel did not have (and never would have) sufficient numbers of either. And, even with them, he would have had to consider the deleterious psychological effects on personnel of long periods of peacetime watch standing. His only option was to *balance* security needs, training requirements, and crew rest. In port that delicate balance lay between rest, in order to bring fresh crews into battle, and reasonable provisions for security against surprise attack. That equilibrium had to be carefully maintained, lest the fleet be worn out on the one hand or caught unawares on the other.

It would have been helpful if Kimmel could have delegated the Navy's defense mission entirely to Bloch, but Bloch's resources were grossly inadequate, and the fleet itself had to become directly engaged, with the result that, unlike Short, Kimmel had to prepare simultaneously for both offensive

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