toes, flies and gnats will not only be annoying but will cause bodily harm. If you are not prepared to work under these and similar conditions, DO NOT APPLY."(38)

The lure of high wages more than compensated for such discomforts, and for the next twenty months crews pushed the line through unmapped territory. On February 16, 1944, seventeen months after the Japanese had evacuated Kiska, the CANOL project was completed at a cost of over $135 million. A newly built refinery at Whitehorse (actually a dismantled Texas refinery shipped north and reassembled) and some twenty pump stations in Canada and Alaska as well as some auxiliary lines brought fuel north to a now quiet military theater. Alaska Delegate Dimond and some in Congress labeled the project an "inexcusable" waste of money and manpower. The War Department's decision to discontinue operations in June 1945 did nothing to dissuade such critics. If nothing else, CANOL was an important, if expensive, lesson in northern engineering.(39)

One final project, although never completed, was given highest military priority in April 1942. The Corps of Engineers received orders from Washington to survey and pioneer a railroad from Fairbanks to the Bering Sea to facilitate the supply of lend-lease materials to Siberia. Major James Bush organized the effort and called together professors from the College of Agriculture and School of Mines, trappers, and civilian dog mushers in addition to Army personnel. These he organized into eight reconnaissance parties, each of which was responsible for mapping 150-200 miles along the most feasible route. They were self-dependent except for provisions that would be flown in by two support planes. Bush's parties set out at breakup, one of the most difficult times for overland travel. But the opening of navigation would make charting of the Yukon and its tributaries feasible.(40)

One party mapped from Tanana to the Kobuk River; another team went up the Alatna River to the Kobuk and half-way down to Selawik and Kotzebue; another team descended the remainder of the route to the Nome coast; finally, several parties explored between Nulato and the Seward Peninsula. Bush and his crews succeeded in finding a feasible route for a railroad across the mountains behind Unalakeet on Norton Sound to Nulato on the Yukon, and from there to link up with the Alaska Railroad at Fairbanks. The line would terminate at Port Clarence and the little village of Teller, which offered the only natural harbor on Alaska's western coast between Point Barrow and the Alaska Peninsula. The planned harbor facility would ship 10,000 tons of lend-lease materials a day to Siberia. However, the enormous expense and time necessary to construct the line from Fairbanks to Teller were deterrents. More important, by the summer of 1942 the German U-boat menace to Arctic convoys to Russia had diminished, lessening the urgency of getting supplies through to Vladivostok alone. Thus the railroad was scrapped. If it had been completed, a railroad to Tidewater servicing the Seward Peninsula would have had dramatic postwar economic impact on a remote region of Alaska.(41)

SPARRING IN THE NORTH PACIFIC

Quite suddenly in June 1942, Alaska ceased being simply a transfer point for lend-lease and an arctic training ground for bored soldiers reading about a war thousands of miles away. Early on the morning of June 3, Japanese carrier aircraft dove out of the fog and clouds to attack Dutch Harbor on Unalaska Island, 650 miles south-

west of Kodiak. The planes emptied their bomb racks and disappeared to the southwest, leaving stunned Alaskans and military personnel wondering what this shocking turn of events meant for the territory.(42) The immediate response was one of alarm and uncertainty.

Typical was the experience of Ernest N. Patty, a future president of the Agricultural College and School of Mines (now the University of Alaska), who had a luncheon date with an officer at Ladd Field on the day the Japanese first hit Dutch Harbor. As he recalled, "As soon as I arrived at the gate I knew from the tenseness and tight security that a military alert was in progress." Patty observed men placing aircraft markers on a huge map of Alaska in the plotting room; rifles were stacked along the walls and ammunition was distributed by an anxious-looking sergeant. "Outside, from time to time," Patty recalled, "an anti-aircraft gun would speak."(43) Not wanting to pry into military secrets, Patty nevertheless felt he had to know what was going on. An officer told the shocked professor that "the Japs are bombing Dutch Harbor right now . . . we don't know if they'll try to strike the interior bases or not . . . [but] you'd better not say anything about it when you get back to town." Soon, however, the "muckluck" telegraph was spreading word of the attack and, along with a worried university professor, other Fairbanks residents checked their maps to see just how close Dutch Harbor was.

Reports of the Japanese attack were wired north to Nome. Rumors quickly spread that the enemy fleet had vanished in the Bering Sea fog and was heading toward Norton Sound. Was Nome its next target? On St. Lawrence Island, where the Eskimos of Savoonga and Gambell lived in virtual isolation 200 miles southwest of Nome in the Bering Sea, Jesuit Father Bellarmine Lafortune noted in his diary, "Our radio reports that 300 Jap planes and three large boats are coming to tackle one of our large cities. We have to leave everything in the hands of God."(44)

Assisting Providence, Nome had been garrisoned since Pearl Harbor by two to three companies of the Alaska National Guard, which expected to be attacked almost every day. Trench lines for last-ditch defenses had been dug by nervous soldiers resigned to being overwhelmed on the beaches of the old gold rush town. For most of 1941 Nome was abustle with activity and experienced tremendous change. Airport construction and cargo off-loading had a dramatically inflationary and destabilizing impact. The Corps of Engineers paid longshoremen a dollar per hour at twelve hours per shift when the prevailing wage at the mines had been $5 to $6 per day. But until June 1942 there had been little urgency to the build-up. Suddenly all that changed.

At Elmendorf the Alaska Defense Command reacted immediately, and General Buckner ordered that every private plane be commandeered to help airlift units to Nome. Dubbed Operation Bingo, Buckner's airlift was a remarkable logistical feat. He "hijacked" forty-six commercial airlines and commandeered dozens of aircraft operated by the Alaska Ferrying Command for the effort. Within twenty-four hours nearly 2,400 troops, anti-aircraft guns, and thousands of tons of supplies were airlifted into the Seward Peninsula.(45) For the next few days a plane took off every ten minutes, carrying men and supplies. Thus the Nome airlift was one of the first military operations of its kind in the Second World War. There was, of course, a news blackout and, as a consequence, rumors in Anchorage were rife. Ironically the weather at Nome was so bad that a Russian lend-lease pilot overshot the runway and crashed his fighter into some gasoline drums, setting off a tremendous explosion

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and fire, and injuring several soldiers and civilians. At the very moment anxious troops were awaiting an airlift north, planes landed at Elmendorf Field with the injured from Nome. Immediately it was assumed that they had been wounded in combat, and that the Japanese were already on the beaches.(46)

The decision by the Japanese to attack Dutch Harbor was only part of a larger plan designed to end the war in the Pacific. The Midway strategy code-named Operation MI and calculated to precede thrusts at Samoa, Fiji, and New Caledonia was essentially defensive in conception. It was designed by Fleet Admiral Isoruku Yamamoto to protect the home islands from a surprise attack by the American Pacific Fleet. It was also Yamamoto's hope to lure Admiral Chester W. Nimitz into a decisive battle and, hopefully, to destroy American naval power in the western Pacific. As Yamamoto argued before the Navy General Staff, "The success of our strategy in the Pacific depends on our destroying the United States fleet, especially its carrier task forces." He concluded, "The proposed operation against Midway will draw out the enemy's carriers and destroy them in a decisive battle. Should the enemy avoid our challenge, we shall still gain by the advancing of our defensive perimeter to Midway and the western Aleutians without obstruction." There was considerable opposition to the plan within the naval General Staff and by the Army, but their resistance was overcome by the surprise raid of General James Doolittle's carrier-launched B-25s on Tokyo on April 18, 1942. Although the newspaper Nichi Nichi Shinbun had warned in March that Japan was likely to be attacked from American air bases in Alaska, Imperial Japanese Headquarters believed the raid had originated from Midway. On May 5 it approved an earlier directive of April 16 for the invasion of Midway and the Aleutian Islands. While there was some concern that these northern operations might elicit military retaliation from the Soviets, it was decided to proceed with a limited diversionary bombardment and occupation in the Aleutian chain, which was code-named Operation AL.(47)

Imperial Japanese Headquarters had intelligence of the newly constructed naval air and submarine base at Dutch Harbor and of the air field at Otter Point on Umnak, south of Dutch Harbor on the larger island of Unalaska. Because Dutch Harbor and other American bases that might be constructed in the Aleutians constituted a potential offensive threat, the Japanese wished to eliminate them, if possible. Additionally, an attempt would be made to occupy three islands in the western Aleutians: Adak in the Andreanof group; Kiska in the Rat group; and Attu in the Near Island group. The prospective Japanese garrisons would be separated by over 200 miles across treacherous air and sea space, and would be dangerously isolated. Still, on the basis of earlier successful operations in the Dutch East Indies and Philippines, the Aleutian strategy, if moderately fruitful, was judged to be a calculated military risk worth the gamble.

An expeditionary force consisting of the Japanese Fifth Fleet under Vice Admiral Boshiro Hosogaya, with a small carrier group commanded by Rear Admiral Kakuji Kakuta, would be supported by the Army's Hokkai or Northern Seas Detachment, numbering some 2,000 troops and commanded by Major Matsutashi Hozumi and 600 Maizuri (Japanese Marines). These forces assembled at Ominato in northern Honshu, while Hosogaya prepared to embark from the northern Kuriles near Paramushiro. The two groups commenced operations in stages between May 25 and May 27. By June 3 Kakuta's strike force lay undetected some 180 miles southwest of Dutch Harbor. Farther west the transports and covering ships of Hosogaya and Rear Admiral Sentaro Omori approached Attu and Kiska.

The Japanese Aleutian landing force consisted of the light cruisers Kiso, Tama, Abukuma, six destroyers, one minelayer, two oilers, one submarine tender, three transports, two seaplane tenders, and two supply ships. The attack force included the carriers Ryujo and Junyo, the heavy cruisers Takao and Maya, three destroyers, one fleet oiler and twenty-two submarines. Just before the Battle at Midway commenced, Admiral Yamamato dispatched the battleships Ise, Huyga, and Fuso, the carrier Zuiho, and the light cruisers Katagami and Oi Sendai north to intercept many American ships attempting to move between Midway and the Aleutians. They didn't rejoin the main fleet until after the battle but their absence was probably not crucial to the outcome.

On the early morning of June 3, the Japanese carriers Junyo and Ryujo launched against Dutch Harbor air strikes which proved moderately successful against surprised defenders. A second sortie on the 5th inflicted severe damage on the barracks at Fort Mears, destroyed the oil tank farm, shot up the radio station and hospital, sunk shipping and moored PBY reconnaissance planes in the harbor, and killed eighty-seven defenders. That same day Admiral Omori's invasion force entered Massacre Bay, Attu, and landed a 1,200 man-occupation force, which quickly captured the only settlement, the village of Chichagof, killing one missionary and capturing another. Shortly after midnight on Sunday the 7th, a force of 1,250 Japanese naval Marines and Army troops emerged from heavy fog and rain to wade ashore on Kiska, capturing within days eight sailors who had had the misfortune to be on the island operating a naval radio station. There had been no time to warn anyone of what was happening. The Rising Sun tugged defiantly on its halyard above American soil, the first time a foreign flag had done so since the War of 1812. There was little the Americans could have done.

Despite the fact that military cryptoanalysts had broken the Japanese naval codes just prior to the Midway campaign, and that Nimitz was forewarned of Yamamoto's plan, intelligence regarding Operation AL was less precise. Nonetheless, Nimitz ordered a scratch force of destroyers, cruisers, and submarines into the North Pacific to guard the Bering Strait, over which lend-lease supplies were being funneled to the Soviet Union and to protect the approaches to the Alaska mainland. This naval group, initially designated Task Force Eight and subsequently the North Pacific Force, was commanded by Rear Admiral Robert A. Theobold, who deployed his defensive screen south of the main naval base at Kodiak to await developments.(48) The Aleutian Defense Force consisted of the heavy cruiser Indianapolis (CA-35); the light cruisers Louisville (CL-28), Honolulu (CL-48), St. Louis (C-20), and Nashville (CL-43); four destroyers; one fleet oiler; and dozens of minesweepers and auxiliaries. The Americans were seriously outgunned. Theobold concluded that the Japanese might threaten the Dutch Harbor region, but discounted intelligence that confirmed Hosogaya and Kakuta's plan to occupy Attu and Kiska as well as to hit the eastern Aleutians. Thus it was that on June 3 there was no American naval force within 500 miles of Dutch Harbor and 1,100 miles from the island objectives. While there were air units from the 11th Fighter Squadron and the 36th Bombardment Squadron (P-40s, B-24s, and B-17s) only 40 miles south of Dutch Harbor, unpredictable conditions made their response time problematic. Indeed, there was no response to the first Japanese attack on June 3, although fighters from Cold Bay, 180 miles west of Dutch Harbor, tried in vain to reach the scene before the Japanese departed. On the 5th, Dutch Harbor defenses and air support were able to down a Zero fighter escort and bomber, and damage two other

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Lieutenant Commander James Sargent Russell (later four-star admiral and vice chief of naval operations, and subsequently supreme commander, Allied Forces Southern Europe) remembered that "when the Japanese attacked Dutch, my planes [PBYs] were spending 14 hours in the air looking for them. We knew they were coming, but didn't know where they'd hit us or exactly when." Encountering the worst weather he had seen in forty years of flying, Russell concluded in frustration that the "overall state of readiness in Alaska left something to be desired."(49)

The Japanese attained a foothold in the Aleutians at little cost through a combination of careful planning, skillful execution, the imponderables of bad weather, the general "fog" of war, and the perhaps overcautious tactical judgment of Admiral Theobold. Yet in fairness Theobold had reason not to commit Task Force Eight precipitously in the face of superior forces. As far as Buckner's responsibility was concerned, his aggressive forward basing of tactical 11th Air Force units was responsible for the energetic, if marginal, American counterattack on the 5th. Junior officers and men had done all that could have been expected--and more. Yet from the smoke at Dutch Harbor the belated recognition that Billy Mitchell and Anthony Dimond had been right was little solace to those who died there.(50)

From June 1942 until May 1943 the military's mission in Alaska was primarily dedicated to the expulsion of the Japanese from their Aleutian bases. Planning began almost immediately for an invasion of Kiska and Attu. General Buckner proceeded to construct advance air bases from which he could strike at the Japanese. Fort Morrow, built at Port Heiden, and Davis Field, built at Adak, were operational by August 1942. Atka Island was occupied by both the Army and the Navy, and installations were rushed to completion on Unmak and at Cold Bay, where Fort Randall dominated the barren landscape. From Adak regular B-17 and B-24 bombing runs were made on Japanese installations at Kiska and Attu by Army and naval air units.(51) Vice Admiral Thomas Cassin Kinkaid, who replaced Theobold in January 1943 as commander of Alaska's North Pacific Force, initiated a loose blockade of the Aleutians and spearheaded the occupation of Amchitka Island, only forty miles from Kiska. Slowly the Japanese garrisons were being cut off from their supply base at Paramushiro in the Kuriles.(52)

The initial Japanese advantages of surprise and local air and naval superiority were quickly reversed with the introduction of the twin engine P-38 Lightning and P-39 Aircobra fighters in August and September 1942, although nothing the Americans had could match the speed, firepower, and maneuverability of the Mitsubishi A6M Zero. However, fighter escorts soon gained the edge over GM 4 Bettys, Mavin flying boat medium bombers, and the fast Nakajima Rufe fighter. On August 4, 1942, at Nazan Bay, over Atka Island some 360 miles east of Kiska, a group of P-38s led by Colonel Earickson surprised a group of three Kawanishi 97 medium bombers and shot down two of them before the Japanese pilots knew what had hit them. It was the first victory for the untested P-38 in the war. B-24 Liberators and new B-17s of the 21st and 36th Bombardment Squadrons made their first sorties against Kiska on June 11, 1942 in a routine soon to be dubbed the "Kiska Express." Attu, 200 miles to the west of Kiska was a far reach for land-based aircraft from Umnak or even Adak; it was bombed less regularly as an alternative target.

Bomber squadrons were escorted by fighters to the extent possible from Umnak on the seven- to eight-hour long-distance runs before Adak and Amchitka became operational. This meant that P-36s and P-38s carried belly tanks for the outbound leg and returned on one throttled-down engine, with little fuel margin for action over the target, if intercepted. After operations switched to Adak, it was less than a two-hour sortie to Kiska and less physically demanding, if no less dangerous, for the tired crews. For them there was no rotation or relief. It was a common aphorism that the only way home was in a box. Recalled one veteran B-24 pilot, "The AA (anti-aircraft) fire over Kiska and Attu was the most concentrated of any in the world in 1942 except for Malta."(53) American bombers on every run would hit a wall of flak at the 8,000- to 12,000-foot level from well-positioned 75-mm, 25-mm, 20-mm, and 13-mm guns; on Kiska alone, over 70 AA batteries protected the approaches to the harbor. Inevitably American pilots found the Japanese ready for them, thanks to forward observers on the Rat, Little Kiska, and Segula islands, who alerted the garrison of approaching bombers. The Japanese also had a naval radar scanner high up Kiska Mountain, which allowed them to "see" out fifty miles to the east of Amchitka.

The combination of enemy air defenses and horrendous weather took their toll on the allied air offensive (elements of the 11th and 115th fighter squadrons and the 8th Bomber Squadron of the Royal Canadian Air Force augmented American strength). By the end of the campaign, the air war of attrition claimed losses of 471 combat aircraft, but only 56 were lost to enemy fire. The Japanese suffered proportionally much heavier losses totaling some 250 planes. Two thirds of the P-38 pilots who served in the Aleutians never returned.(54)

As the air war progressed, the Aleutians became a testing ground for new tactics and plane modifications that would later be used in the Pacific by the 5th Air Force and in Europe by the 8th Air Force. Among the most innovative of the American flyers was Colonel Earickson, who enhanced his reputation as the "Patton of the Aleutians," by becoming extremely proficient at the technique of skip bombing, which he perfected. He also introduced the practice of pattern bombing on the lead bombadier to concentrate maximum impact on targets. Another Alaska modification was the conversion of B-26s into flying gun platforms to compensate for the absence of fighter escort. The bombadier's position in the nose was removed and in its place were installed two 20-mm cannons and two 50 caliber machine guns, giving the slow B-26 much greater firepower.(55)

By July 1942 naval forces assembled by Admiral Theobold at Kodiak had advanced into the Aleutians and had made one aborted attempt to bombard shore installations at Kiska, but the weather forced their withdrawal. At this point American strength consisted of the St. Louis, Nashville, Honolulu, and Indianapolis--some in older destroyers--and a collection of fishing boats and ancillary craft dubiously known as the "Alaska Navy," under the command of Captain Ralph C. Parker. Command of shore-based operations was assumed by Rear Admiral John W. Reeves in June 1942; this command functioned separately from Theobold's North Pacific Force as an adjunct of the Seattle Naval District, further complicating command problems.

Kiska was finally bombarded on August 7, 1942 by elements of the North Pacific Force, which then were under the temporary command of Rear Admiral William W. Smith, who had replaced a disgruntled and ineffective Theobold on the orders of Nimitz. Attu was not the target of naval action until February 1943 when the defensive screen commanded by Rear Admiral Charles H. McMorris lobbed in

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tons of shells and, more important, intercepted and sunk supply ships from Paramushiro, thus forcing other ships to turn around. The last surface supply ship to reach Attu brought in desperately needed material on March 10. Thereafter, all supplies came in by submarine.

In June 1943 Admiral Kinkaid assumed command of the North Pacific Force. Fresh from battles in the eastern Solomons and Guadalcanal, he marked the beginning of aggressive naval preparations for the invasion of Attu and Kiska and a concerted effort to deprive the Japanese garrisons of vital logistic support. Under Kinkaid's direction an increasingly effective weapon was the submarine force consisting of eight fleet submarines, including the Triton, Tuna, Growler, and Grunion, which had already scored an impressive victory by sinking three Japanese destroyers in Kiska Harbor's Reynard Cove on July 4, 1942. It became more and more difficult for Japanese I-class submarines and surface ships to negotiate the approaches to Kiska and Attu without challenge.

For the men struggling to translate high-level decisions into the day-to-day campaign against Japan in the Aleutians, merely surviving the conditions of nature was a major personal victory. Pilots had to be innovative and constantly alert to sudden shifts in the weather. There were no navigational aids in the entire theater, and even if there had been, few pilots were trained to use them. The air war was strictly "seat-of-the-pants" flying. Flight charts were notoriously inaccurate and based on old Russian survey maps, and the standard Rand McNally maps were hopelessly mismarked. Because there were no radio ranges to fix on or guide by, pilots memorized every island and outcropping between Cold Bay and Attu, even coming to recognize wave patterns and surf action.(56) This meant flying often under a ceiling of 100 feet or less that at any time could, and did, sock in completely. Indeed, the pilots' rule about climbing above the weather was simply meaningless in the Aleutians; the key to survival was finding room below it. The weather, Billy J. Wheeler colorfully observed, went "up and down like a whore's drawers," and a pilot's skill in anticipating its whim was often the margin between life and death.(57)

At Umnak, Adak, Amchitka, Cold Bay, and Unalaska conditions were a living hell. Men and officers suffered together in constant rain, mud, fog, and wind. Recalled one veteran, "On the ground there was no rank; everyone was equally miserable." Men of the Alaska and Pacific Northwest-recruited 297th Infantry had a distinct advantage over less acclimated troops like those of the 176th Engineers from Texas or 4th Infantry National Guard units from southwestern states like Arizona and New Mexico. Seabee battalions trained and equipped for the tropics unceremoniously found themselves slogging through the tundra and mud of Adak and Amchitka.

Above-ground structures and aircraft remained in place only if they were anchored down by steel cables embedded in concrete. The wind blew constantly at forty to fifty knots and when a williwaw struck, it commonly exceeded ninety to 100 knots, often for days. One veteran pilot recalled sitting at the end of the runway at Amchitka intermittently for twenty-eight days, trying to take off but unable to do so because he could only see a few feet down the runway. He finally took a ship.(58) Service crews worked around the clock to keep combat planes airworthy with heroic tenacity surpassed only by the mind-numbing drudgery of the routine. Nothing worked the way it was intended to, and mechanics marveled that planes even got off the ground. Fortunately there were so many wrecked aircraft

that spare parts were always in plentiful supply! Even though the naval sealift was off-loading over four million tons of supplies daily at Adak alone by early 1943, men suffered from a constant shortage of food and fuel for their small coal stoves. C rations and Spam did little to ease their ordeal.

Morale problems were inevitable and not easily assuaged by plentiful bootleg or home-still booze and poker games, although both alcohol and money flowed like water. Recalled one veteran, those Aleutians were "full of Oakies and hillbillies from Tennessee and Kentucky. They had a whiskey still on every island after awhile and the 807th Engineers had stills going all the time making raisin-jack--anything. You couldn't sell anything that didn't have alcohol in it, and prices could go up to $100 a fifth--there was no other place to spend your money."(59)

Increasingly suicides, self-inflicted wounds, homosexuality, and a profound general depression alarmed Army Surgeon General inspectors as much as the high incidence of sickness, frostbite, gum and foot disease, which were rampant. Recalled one physician, "Meeting men for the first time, I could pick out the ones who'd been six months or more in the Chain. They looked through things. They had a peculiar stare . . . we called the Aleutian stare." In mock humor it was rumored that the straightjacket was to become regular Army issue, and the only consolation was that for the Japanese on Kiska and Attu it was worse.(60) For many Alaskans, however, the grim misery and death on the Aleutians was far removed from their daily lives.

THE HOME FRONT

As 1943 began, the territory settled into the reality of war--its routine and its unpredictability. "Alaska," Governor Gruening told members of the 16th Legislature, "is the Western Hemisphere's only fighting front, the only part of America which is in direct contact with the enemy. Challenging as is its present situation, our territory will play an even more important and decisive part in the days to come. Alaska, too, has a rendezvous with destiny."(61)

Indeed, the inexorable transition of Alaska was palpable anywhere one cared to look. The territory was benefiting from provisions of the Lanham Act and projects of the Federal Works Agency, that provided funds for the construction of hospitals, schools, health and care centers, fire stations, water works, sewage systems, streets, and electric power plants. This help was given to communities to help in the wartime expansion of services. The War Labor Board imposed wage freezes for Alaskan construction projects at October 1942 levels, although Executive Order 9328 provided for limited wage adjustments in support of the critical salmon industry and military construction projects.

Under authority of the War Manpower Administration, cooperation was enforced by labor-management committees to eliminate wasteful turnover and migration and to set labor priorities. Alaska was administratively lumped together with the Yukon, Northwest Territories, British Columbia, and Alberta, and the Alaska-Area War Manpower Committee was created to mediate disputes. In Seattle an Alaskan labor specialist expedited the recruitment of Alaska-bound workers, and during the height of wartime construction in 1943 men and women were placed on jobs as quickly as they arrived in employment offices in search of work.(62)

Still the shortages, practically all urban Ame capita rises in personal ir States into a binge of spe war boom stimulated price industrial or manufacturi experienced in the lowe sustained, stable economic blue-collar labor force, professional sector enjoy government expenditure brought to Alaska, many another boom and bust.

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For the first time mu tate communications and aircraft. The Alaska Aer with the Federal Air Warr remote parts of the ter which had begun to rev catapulted by the war ir panies--Wien Air and Reev invaluable logistical suppor for postwar commercial op ritory.

In short, Alaska was for large numbers of peo extent that frontier condi eclipsed by an environme enjoyed "outside." The co rendered less severe and whose values and expectati cessors, who had come int the old Alaska.

For tight-knit little c Juneau, whose combined p end of a familiar life, who by the seasons. Yet the for white Alaskans than f population, which was bare

The war's cultural im villages was uniformly obt traditional world of Northv further eroded and transf white economic and materia

During the fall of 19 with a hold full of ugruk into mukluks for the milit contract, keeping women

38. Sherman Forbes, "The CANOL," Alaska Life 7, no. 5 (May 1944): 21-26.

39. Richard Finnie, CANOL: The Sub-Arctic Pipeline and Refinery Project Constructed by Bechtel, Price-Callahan for the Corps of Engineers, 1942-44. Test and Documentary Photographs by Richard Finnie, San Francisco, CA (Ryder and Ingram, 1945).

40. James D. Bush, Reconnaissance for a Railroad or Highway West of Fairbanks, Report for the U.S. Corps of Engineers, USGS, 1969; and Lyman Woodman, "The Trans-Canada, Alaska and Western Railways, Proposals During World War II for Better Transportation in the North," Alaska Journal 4, no. 4 (1974): 194-202.

41. Tape H-84-25, "Colonel James Bush," as cited.

42. See Garfield, 1,000 Mile War, 24-44; "Remember Dutch Harbor," Newsweek (July 6, 1942): 23-24; "Battle for Alaska," Time (June 29, 1942): 14; "Battle for the Pacific," ibid. (June 15, 1942): 16-17; Lovelle Davison, "Bizarre Battleground-the Lonely Aleutians," National Geographic 82 (September, 1942): 316-317; John W. Fletcher, "No Sissy Bombing," Alaska Life 5, no. 9 (September, 1942): 25-26; and Ernest Gruening, "Alaska, Our Northwestern Outpost," National Geographic 82 (September, 1942): 298-308.

43. Ernest Patty, North Country Challenge (New York: David McKay, 1949), 185-86.

44. Diary entry, July 1942, in Louis Renner, S.J., Pioneer Missionary to the Bering Straits Eskimo: Bellarmine LaFortune, S.J. (Portland, OR: Binford and Mort, 1979), 140.

45. Garfield, 1,000 Mile War, 103.

46. Tape H-81-54, A. Loman interview.

47. For the Midway battle the best published sources are Samuel E. Morison, Coral Sea, Midway and Submarine Operations, May 1942-August 1942, vol. 4; History of the United States Navy in World War II (Boston, MA: Little, Brown, and Co., 1949), Chaps. I-VIII; Masanori Ito with Roger Pineau, The End of the Imperial Japanese Navy, tr. Y. Juroda and Roger Pineau (New York: W. W. Norton, 1962), 52-69; Walter Lord, Incredible Victory (New York: Harper, 1967); Thaddeus Taleja, Climax at Midway, The Battle that Doomed Japan (Annapolis, MD: Naval Institute Press, 1955); David Kahn, The Code Breakers (New York: MacMillan, 1967); and John Toland, The Rising Sun: The Decline and Fall of the Japanese Empire, 1936-1945, Vol. 1 (New York: Random House, 1977), 377-387. As quoted in Roger Pineau, "Admiral Isoroku Yamamoto," in Sir Edward Carver, ed., The War Lords (Boston, MA: Little, Brown, and Co., 1976), 359; and for the larger strategic issues Alex Kiralfy, "Japanese Naval Strategy," in Makers of Modern Strategy, Edward Meade Earl, ed. (Princeton, NJ: Princeton University Press, 1943), 452-458, 462-464, 478, 480-484; Clark G. Reynolds, "The Continental Strategy of Imperial Japan," UNSIP 109 (August, 1983): 65-70; and Asada Sadao, "The Japanese Navy and the Unites States," in Pearl Harbor as History: Japanese-American Relations, 1931-1941, Dorothy Borg and Shumpei Okamato, eds. (New York: Columbia University Press, 1973), 225-59. T. B. Kitteridge, "United States Defense Policy and Strategy, 1941," U.S. News and World Report (December 3, 1954): 53-63, 110-39; D. Clayton James, "American and Japanese Strategies in the Pacific War," in Makers of Modern Strategy from Machiavelli to the Nuclear Age, Peter Paret et al. (Princeton, NJ: Princeton University Press, 1986), 703-732.

48. Ironically, correspondent Stanley Johnson of the Chicago Tribune revealed on June 7, that the Navy had broken the Japanese naval codes and that "Dutch Harbor and Midway Island might be targets." Toland, Rising Sun, 427; and Chicago Tribune, June 7,

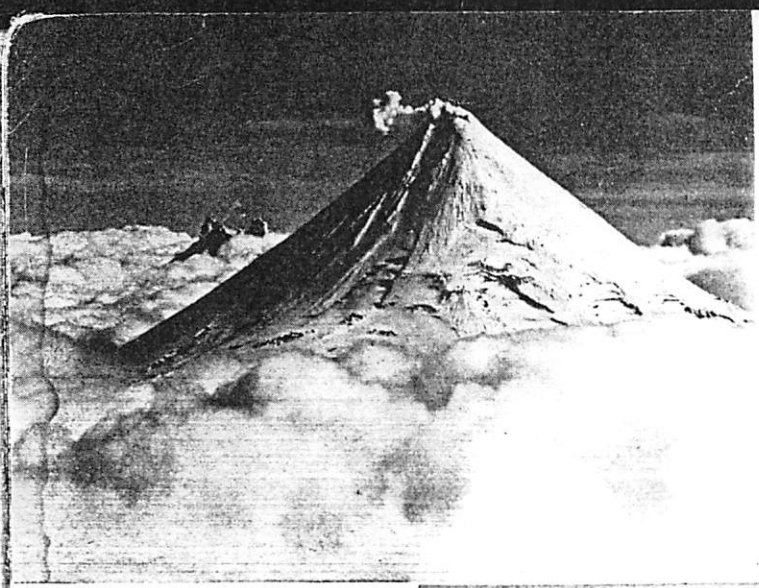


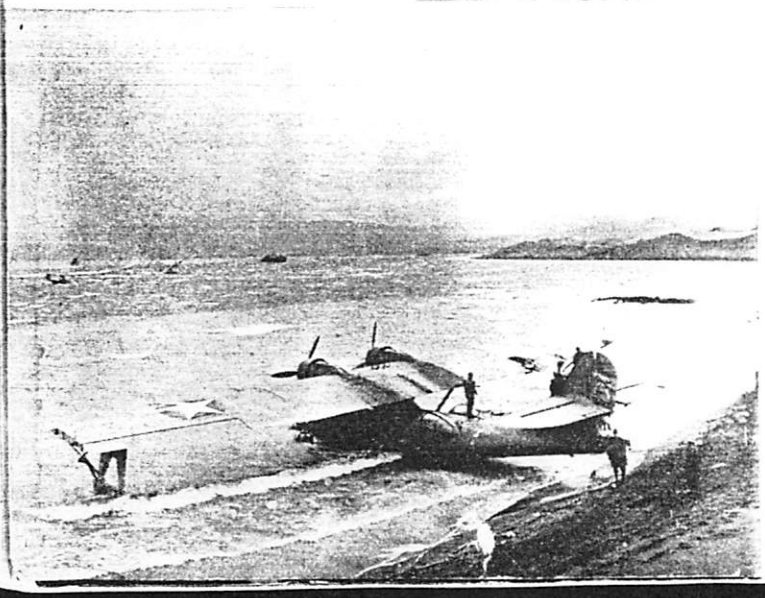
PLATE LXXIV—Why Indians call the Aleutians the "Birthplace of Bad Weather." The volcanic island chain forms a sieve-like barrier between the ice-cold Bering Sea and the warm Japanese current, and the result is almost continuous fog, and fierce local storms called "Williwaws."

(*left*) Once above the muck, the peaks of volcanoes provide perfect landmarks along the Aleutian chain, but there is always the uneasy thought that it is necessary to penetrate the cloud ceiling—or floor, in this case—for a landing.

PLATE LXXV—The Japs had l
Amchitka, but rejected it as an
site, because they found too man
ponds. However, it was only
from Kiska, and U. S. Army
and Seabees had their own for
making flying fields out of mo
we landed, unopposed, January

(*right*) The first boatloads of
supplies go over the side of t
Guard Transport ARTHUR MIDD
Constantine Harbor, Amchitka.
the day a williwaw blew in, an
transport dragged anchor, finall
ing.

(*right*) "Fly-fly" sweepers, man your brooms! Patrol bombers of the famed and daring Patwing (Patrol Wing) Four usually had to be cleared of a heavy blanket of snow before attempting their long, wearying searches for the enemy. This PBY is being readied for flight at Adak.



(*left*) Shot up in a tussle with the Japs, this PBY of Squadron VP-61 managed to return to its base at Adak, a miracle of survival considering the rough air conditions of Aleutian flying. These big twin-engine amphibious flying boats did a wonderful job, whether on patrol, on rescue missions, or in slugging it out with Jap planes with their machine guns.

(*right*) More fireworks go up fro
the tundra tent city during t
first Jap air raid on the new A
chitka beachhead. Enemy bom
exploded geyser-like in the harbo
Raids continued until the fight
strip was finished, February
1943. (*Paintings by Lt. Willia
F. Draper, USNR, Official Na
Combat Artist, who took part
the Amchitka campaign.*)

PLATE LXXII—The Aleutian diversionary raid brought one extra dividend for the Allies—a new model of a Jap Zero fighter practically intact. Previous enemy planes recovered had either been so badly water-damaged or smashed that they were of little use to Allied technicians.

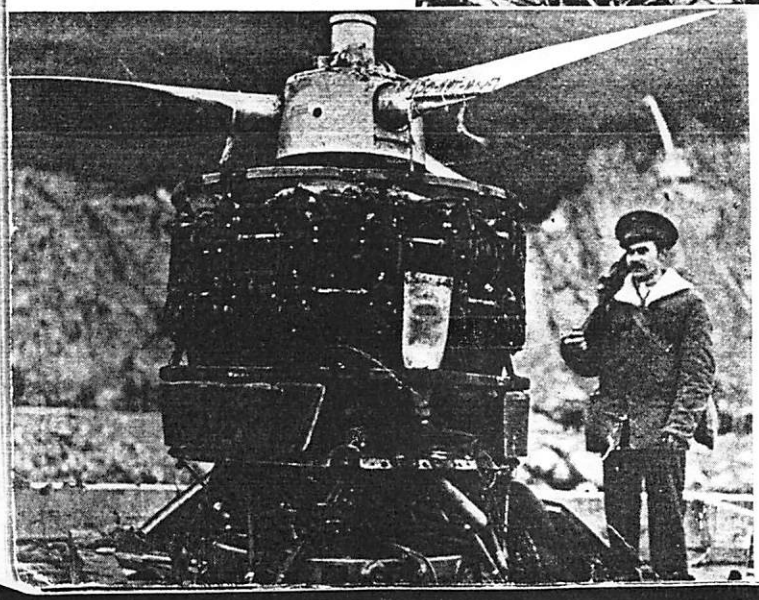
(*left*) When Jap flyers in the first attack on Dutch Harbor disappeared over the flanking mountains toward Cape Cheerful to the north, one of them tried an emergency landing on a muskeg flat, with the result shown.

PLATE LXXIII—(*right*) "Let It
the Seabees at Adak, Alaska, a
into practice their famed war slo
difficult we do at once; the impo
a little longer!"

(*center*) One of the strategi
stones in the pathway to Japan t
Aleutians was Adak, whose ma
field at Navytown, is here cover
characteristic mantle of snow.
are mostly PBY-5As (Catalinas)

(*lower*) If you are annoyed w
warm city cafeteria, just take a
chow line at Navytown, Adak,
freezing temperatures made me
able only for ice cream—which
have!

(*right*) End of the trail for the Jap pilot of the plane shown above. When the Zero's wheels struck the soft ground, the plane ground-looped, turned over, and broke the pilot's neck. The plane was relatively undamaged.



(*left*) Prized trophy of the Jap carrier-based attack on the Aleutians was this undamaged motor and propeller of one of the latest and fastest Zeros. With other parts of the plane, they were shipped to the United States, reassembled, and flown, divulging enemy secrets to our experts. Later the plane also helped to raise money in Allied War Bond drive exhibitions.

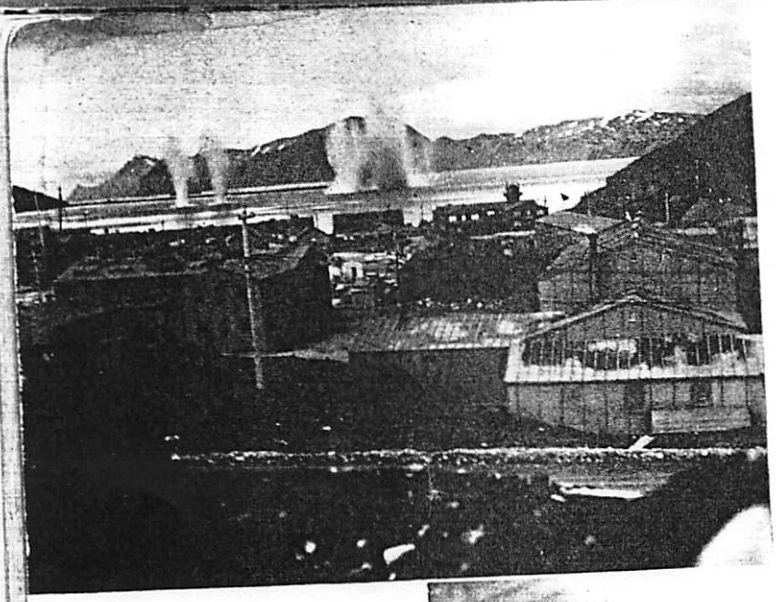
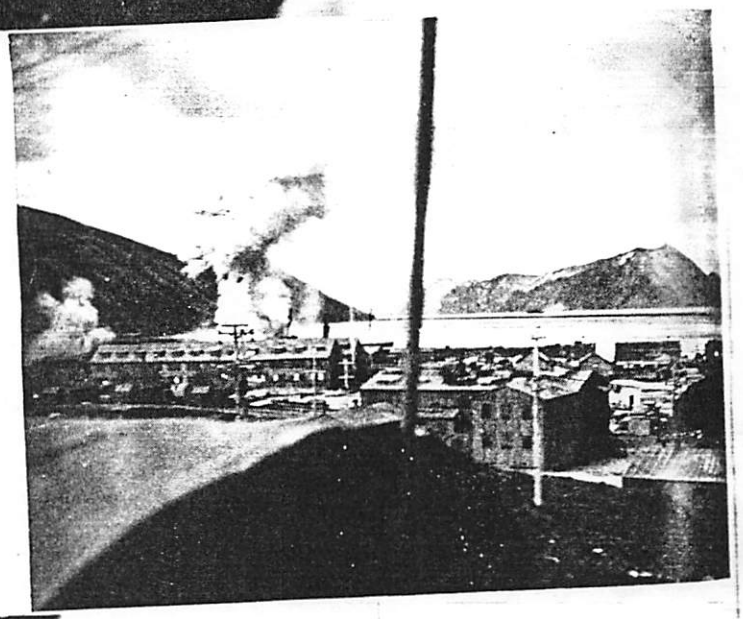


PLATE LXX—The beginning of an annoying but strategic campaign in the northern Pacific area. As a diversion to their main attack in the Battle of Midway, Jap carrier planes struck at Dutch Harbor, the Aleutians, and Jap troops later were landed at Kiska, thus placing the Allies on the defensive in an area where they soon expected to take the offensive.

(*left*) Enemy aerial bombs fall harmlessly in the water at Dutch Harbor during the first phase of the attack, June 4, 1942.



(*right*) A Jap bomber scores a direct hit on the old coastwise steamer NORTHWESTERN, then being used as quarters for civilian workmen building the base. Debris can be seen flying through the air, as the Army transport FILLMORE successfully maneuvers in the harbor to avoid enemy strafing and bombs.

(*left*) Wooden oil tanks, a Dutch Harbor landmark, go up in a terrific pillar of fire and smoke during the second phase of the attack. A Jap Zero plumped its bomb on them from an altitude of 1500 feet. This was the most spectacular damage of the day.

PLATE LXXI—Because bad w
vented U. S. Army fighters at
65 miles away, from taking off
ing Jap carrier planes at Du
had little to fear but ground
a result, many of their bombs
targets. Barracks at Fort Mea
a hangar, warehouses, a pier,
trucks and other equipment w
damaged.

(*upper right*) U. S. Army tru
Harbor, showing the effect
from Jap aerial machine-gun

(*center*) Wreckage of the b
NORTHWESTERN, burning af
bomb hit. She settled only a
the bottom at her moorings, h
presently was doing business a

(*lower*) First installment
Dutch Harbor came when
bombers attacked Jap trans
harbor of Kiska. Here on
sinks. Others were sunk in
Army and Navy aerial raids.

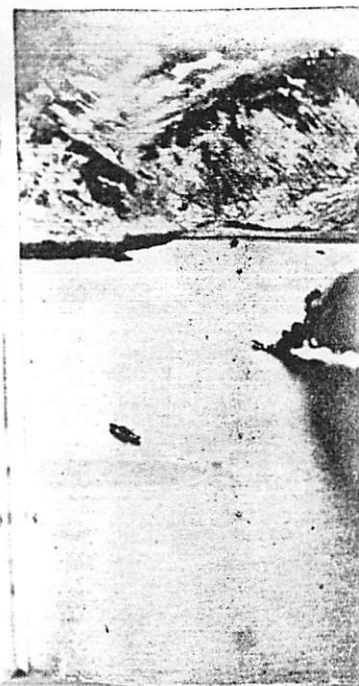


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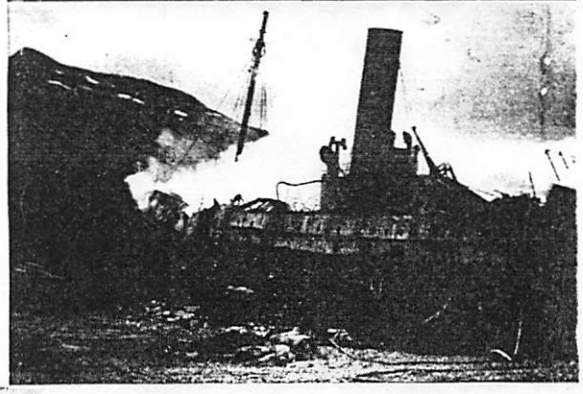
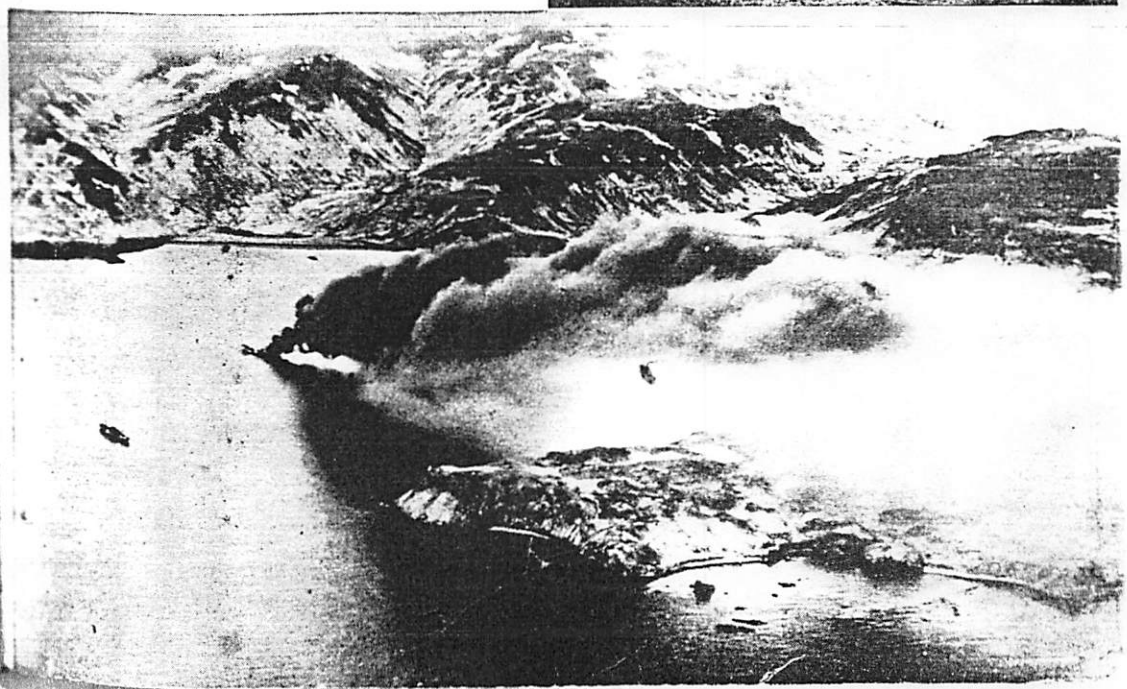
PLATE LXXI—Because bad weather prevented U. S. Army fighters at Fort Glenn, 65 miles away, from taking off, the attacking Jap carrier planes at Dutch Harbor had little to fear but ground defenses. As a result, many of their bombs easily found targets. Barracks at Fort Mears, oil tanks, a hangar, warehouses, a pier, and planes, trucks and other equipment were hit and damaged.

(*upper right*) U. S. Army truck at Dutch Harbor, showing the effect of shrapnel from Jap aerial machine-gun strafing.

(*center*) Wreckage of the barracks ship NORTHWESTERN, burning after a direct bomb hit. She settled only a few feet to the bottom at her moorings, however, and presently was doing business as usual.

(*lower*) First installment revenge for Dutch Harbor came when long-range bombers attacked Jap transports in the harbor of Kiska. Here one burns and sinks. Others were sunk in subsequent Army and Navy aerial raids.





The Aleutian Campaign had come west to climax. In a few hours the United States Infantry would execute the first amphibious island landing in its history. The American and Allied high commands expected it to be a routine ground action, neither noteworthy nor particularly bloody; after all, there weren't many enemy troops on Attu. It would probably be over within a few days.

That kind of careless optimism would be dashed very quickly. Before it ended, the Battle of Attu would become, in proportion to the numbers of opposing troops, the second most costly battle of the war in the Pacific.

* * *

The price of weatherbeaten Attu had been high. In proportion to the numbers of troops engaged, it would rank as the second most costly American battle in the Pacific Theater—second only to Iwo Jima. Total American casualties amounted to half again the number of Japanese troops on the island; the Japanese force suffered annihilation, almost to the last man.

Landing Force Attu had suffered 3829 casualties: killed, 549; wounded, 1148; severe cold injuries, 1200; disease (including exposure), 614; other casualties (including self-inflicted wounds, psychiatric breakdowns, drownings and accidents), 318 men.

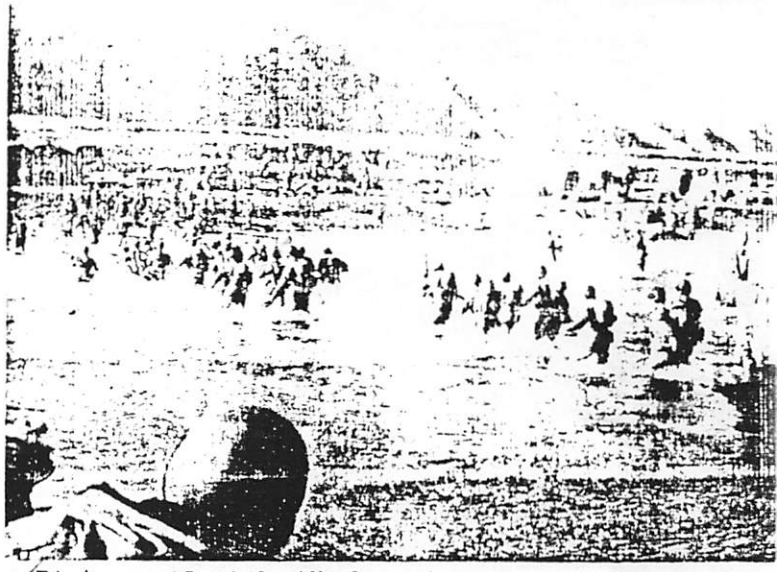
The largest single classification of agony—severe frostbite and trenchfoot—represented the first combat cold injuries suffered by American troops in the Second World War. To avoid making the same grisly mistakes in the forthcoming Italian campaign, Army doctors studied Attu veterans with close clinical attention, and submitted voluminous findings to the Surgeon General.

* * *

The Campaign in the grey and windy Aleutians was the United States' first offensive campaign of World War II—the first to begin, the first to be won. Its major events had included the first extensive aerial bombing campaign in American history; the first mass military airlift ever executed; the longest and last classic daylight surface battle in naval history; the first land-based American bomber attacks on the Japanese homeland; and, in the Battle of Attu, the U. S. Infantry's first amphibious island assault landings and the second most costly infantry battle of the Pacific war (in ratio to the size of the forces engaged).

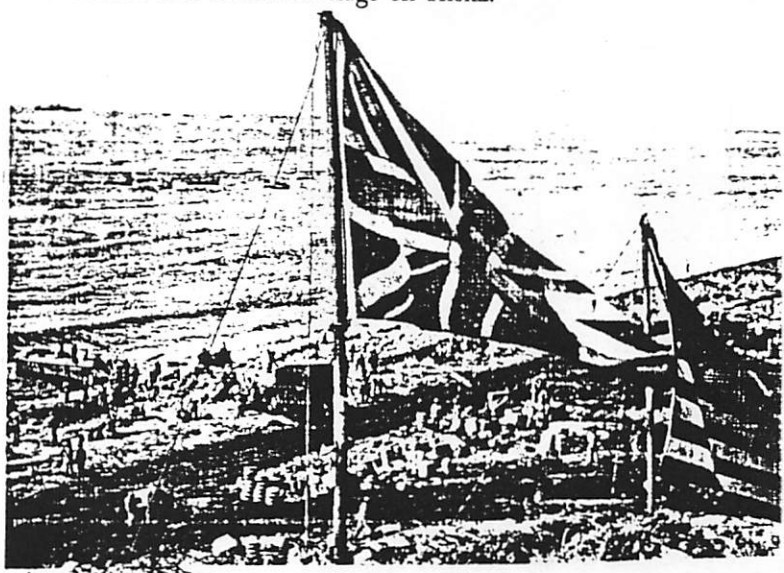
Attu did for the U. S. Army what the raid on Dieppe in August 1942 did for British-Canadian amphibious forces: by its very mistakes and failures it taught lessons which led to later successes in the Pacific leapfrogging campaign. If the Normandy Invasion was won on the blood-washed beaches of Dieppe, then at least some part of the war in the Central Pacific was won on the steep beaches and craggy mountains of Attu.

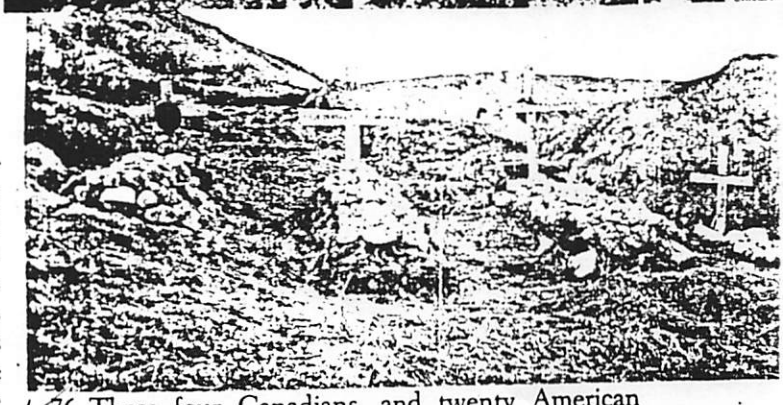
D-day was August 15. On the eve of the assault, the transports gathered off Kiska in a light fog. Soldiers sharpened bayonets, cleaned rifles, repacked field packs and studied maps—General Corlett sent a staff lieutenant on the run to find a set of colored pencils to mark his maps. Loudspeakers announced briefing hours. Before dawn, battleships and cruisers drummed vast broadsides onto the island. Minesweepers prowled into the harbor. On their transports, combat troops were awakened and served a steak dinner. On the unstable LSTs many were too nervous, or too seasick, to eat. It was assumed that by the end of the fight, one out of every five men in the first assault waves would be dead.



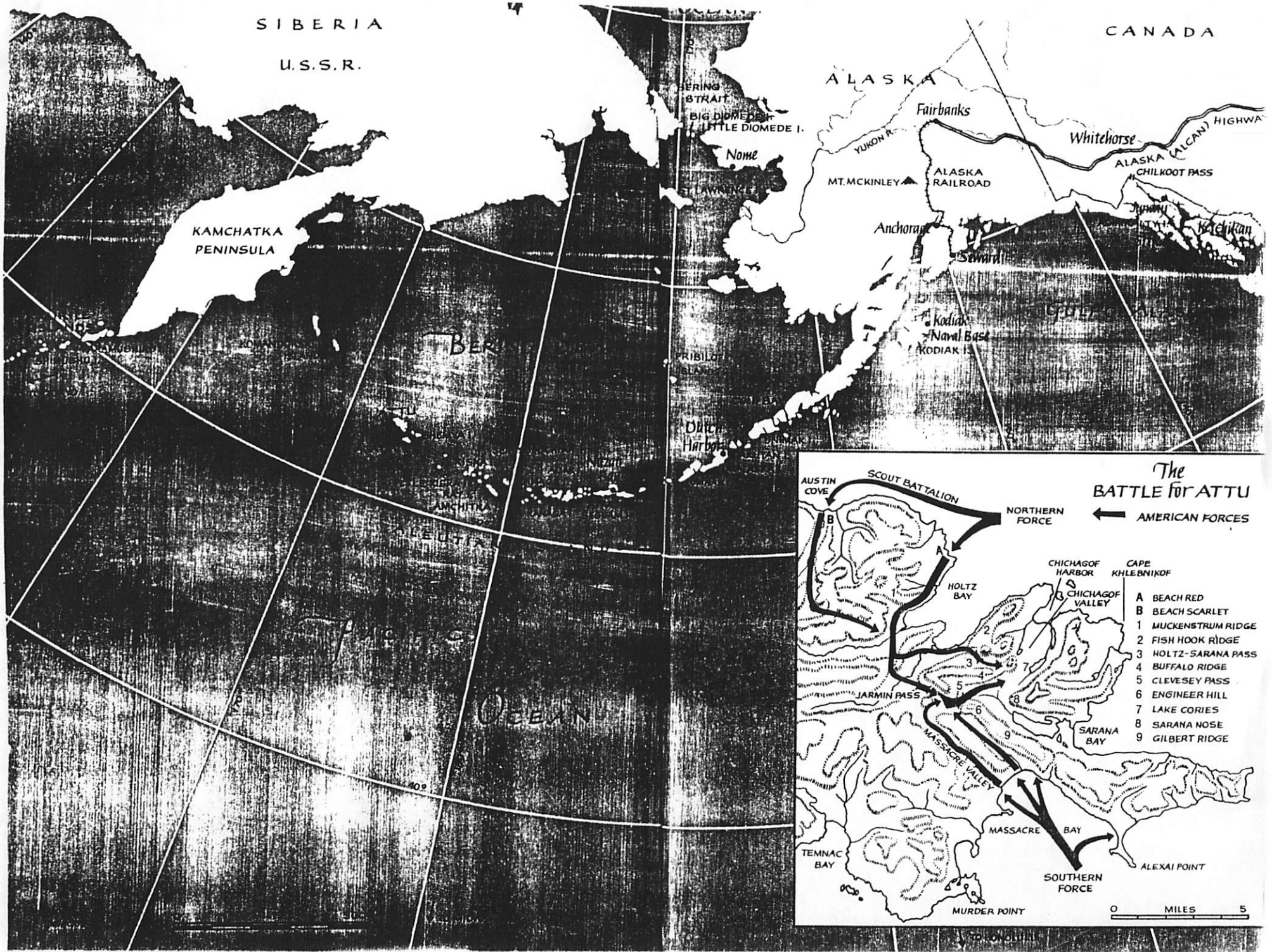
74. August 15, 1943: Allied assault waves hit Red Beach, Kiska.

75. Above the beach, Allied soldiers put up the Canadian and American flags on Kiska.





76. These four Canadians, and twenty American soldiers, were shot by mistake by their comrades in the Kiska fog.


SIBERIA
U.S.S.R.
CANADA
ALASKA
BERING STRAIT
BIG DIOMEDE I.
LITTLE DIOMEDE I.
Nome
Fairbanks
YUKON R.
Whitehorse
ALASKA (ALCAN) HIGHWAY
MT. McKINLEY
ALASKA RAILROAD
CHILKOOT PASS
KAMCHATKA PENINSULA
Anchorage
Seward
Ketchikan
Kodiak Naval Base
KODIAK I.
PRIBILOF
Dutch Harbor
ALEUTIAN
PACIFIC OCEAN
The BATTLE for ATTU
AMERICAN FORCES
AUSTIN COVE
SCOUT BATTALION
NORTHERN FORCE
HOLTZ BAY
CHICHAGOF HARBOR
CAPE KHLEBNIKOF
CHICHAGOF VALLEY
JARMIN PASS
SARANA BAY
MASSACRE VALLEY
MASSACRE BAY
TEMNAC BAY
SOUTHERN FORCE
ALEXAI POINT
MURDER POINT
A BEACH RED
B BEACH SCARLET
1 MUCKENSTRUM RIDGE
2 FISH HOOK RIDGE
3 HOLTZ-SARANA PASS
4 BUFFALO RIDGE
5 CLEVESEY PASS
6 ENGINEER HILL
7 LAKE CORIES
8 SARANA NOSE
9 GILBERT RIDGE
0 MILES 5