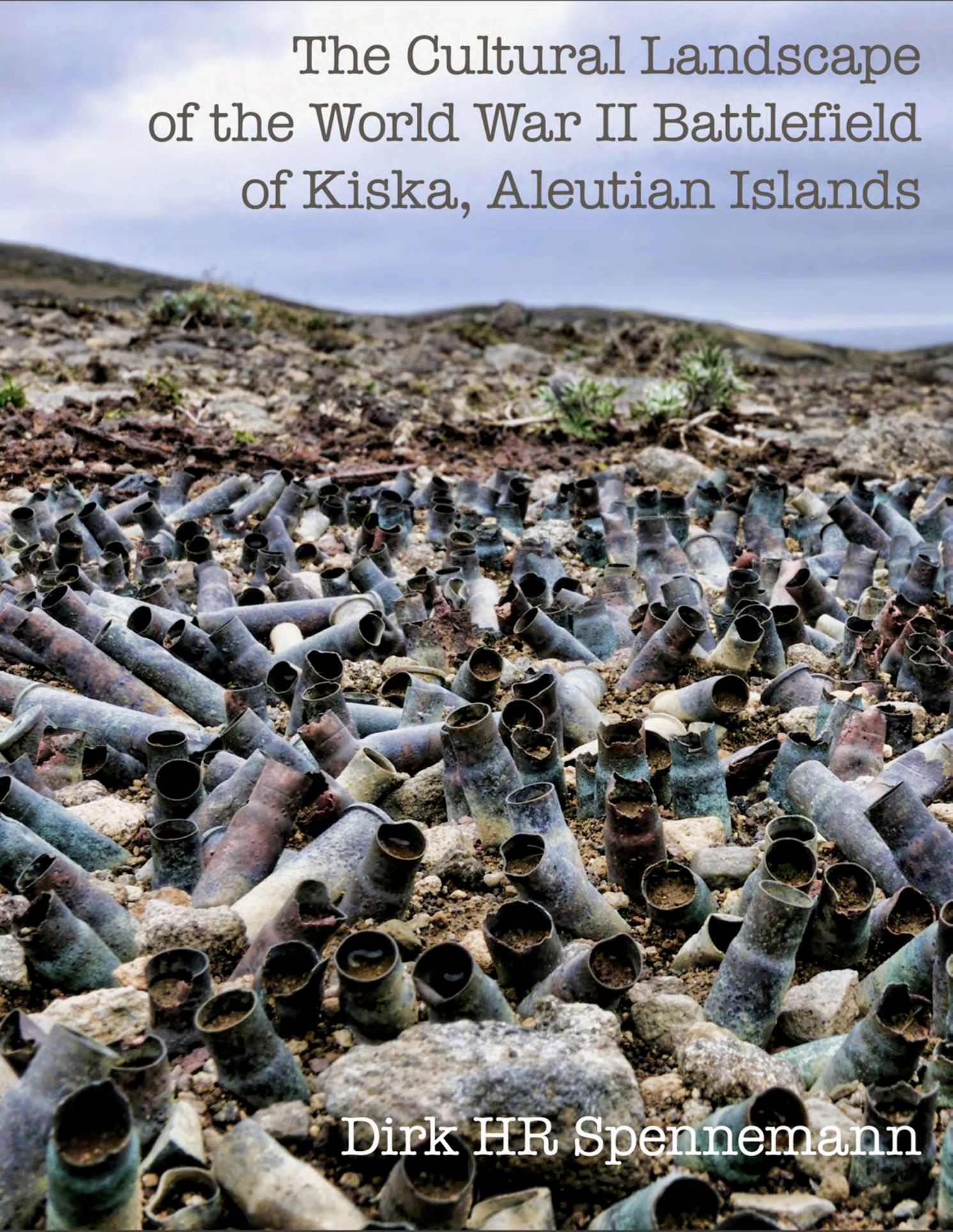
The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands



Dirk HR Spennemann

United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, D.C. 20240

DEC 6 2011

Dear History Enthusiast:

We are pleased to provide this copy of *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands*, a book written by Dr. Dirk Spennemann of Charles Sturt University on behalf of the National Park Service.

Rarely do we see such an outstanding report with its in-depth focus on the development of a battlefield as a cultural landscape. As a nationwide leader in historic preservation, the National Park Service encourages the documentation of our significant historic places. Kiska was designated a National Historic Landmark (listed as "Japanese Occupation Site) in 1985, along with several other WWII sites in Alaska and is included as part of the World War II Valor in the Pacific Monument, proclaimed in 2008.

Today, Kiska Island is managed by the Alaska Maritime National Wildlife Refuge, and since it is among the remote Aleutian Islands, which offer limited and costly transportation options, there has been little opportunity for on-site documentation. Also, because of its remote location, the battlefield landscape is remarkably well preserved. The American Battlefield Protection Program, however, provided a grant award that was needed to relook at Kiska through the battlefield lens.

While not intended as a definitive history about WWII Kiska, the strength of this scholarly report adds greatly to the existing body of knowledge about Kiska—especially on Japanese base development, as well as to document and analyze an *aerial* battlefield, while maintaining a focus on the battlefield landscape. The detail and complexity that characterizes the narrative is intentional; it makes the report valuable as a reference document for future researchers, for management decision-making, as well as an in-depth source from which interpretive and educational products will benefit.

The author of this study, Dirk Spennemann, received his M.A. in Archaeology at the University of Frankfort and his Ph.D. from the Australian National University. For some 20 years, Dr. Spennemann has been teaching Cultural Heritage Management with the Institute for Land, Water and Society, Charles Sturt University at Albury, Australia. Prior to this appointment, Dr. Spennemann served as Chief Archaeologist for the Republic of the Marshall Islands where he conducted several studies and published works associated with World War II Pacific sites. This included collaborative works with the National Park Service's Pacific West Region. Dr. Spennemann's expertise with WWII heritage resources in the South Pacific, led to his interest in conducting the condition assessment on the WWII Japanese guns on Kiska in a joint project for the National Park Service and the U.S. Fish and Wildlife Service in 2007.

Historians always value additional research, and World War II in Alaska provides some of the most compelling experiences and stories of the war. We hope this study will encourage other scholars to add to our understanding about WWII in Alaska and the broader Pacific Theatre.

This project was a unique effort made possible with a grant from the National Park Service's American Battlefield Protection Program to Alaska Region's National Historic Landmarks Program. A cooperative agreement with the National History Day in Alaska Program enabled the National Park Service to obtain the scholarly services of Dr. Spennemann and Charles Sturt University, Albury, Australia. Additional assistance was provided from the U. S. Fish and Wildlife Service Refuge and Regional Office as well as the National Park Service's Aleutian WWII National Historic Area Program. Funding for publication of the report was provided by Alaska Region's Cultural Resources Advisory Council and the Alaska Regional Office's Cultural Resources Team.

If you have any questions or would like additional copies of this report, please contact Ted Birkedal, Cultural Resources Team Manager, Alaska Regional Office at: (907) 644-3456; e-mail: ted_birkedal@nps.gov.

We hope you enjoy this remarkable study.

Sincerely,

Robert K. Sutton, Ph.D.
Chief Historian, National Park Service

The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands

Findings of a Cultural Heritage Survey, Carried out in June 2009

by

Dirk HR Spennemann

Albury
August 2011

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National Park Service
Heritage Preservation Services
American Battlefield Protection Program
1201 Eye Street NW, 2255
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This study would not have been possible without the unwavering support by Dr. Ted Birkedal and Janet Clemens (both NPS, AK).

Terms, Abbreviations & Acronyms

A6M2-N—IJN classification for the Nakajima-built Type 2 sea-plane fighter
A-24—Douglas A-24 SBD Dauntless
A-29—Lockheed A-29 Hudson
A-26—Douglas A-26 Invader
AA—Anti-aircraft (Gun)
a/c—aircraft
ACL—Auxillary Cruiser (Light) (hull classification / ship type)
ADA88—Americans with Disabilities Act 1988
AG—Miscellaneous auxiliary (hull classification / ship type)
Airacobra—*see* P-39
AK—Alaska
AMM2c—Aviation Machinists Mate 2nd class
AMNWR—Alaska Maritime National Wildlife Refuge
ANCSA—Alaska Native Claims Settlement Act
AO—Oiler (hull classification / ship type)
AP—Armor Piercing Shell
AP—Transport (hull classification / ship type)
APA—Attack Transport (hull classification / ship type)
APD—High Speed Transport (usually a converted DD) (hull classification / ship type)
APV—Aircraft Transport (hull classification / ship type)
APT—Armor Piercing Shell with Tracer
ATV—All Terrain Vehicle
AV—Seaplane Tender (hull classification / ship type)
B-17—Boeing Flying Fortress, a four engine, long-range bomber
B-24—Consolidated B-24 Liberator, a four engine long-range bomber (USA)
B-25—North American B-25 Mitchell, a two-engine medium range bomber (USA)
B-26—Martin B-26 Marauder, a two-engine medium range bomber (USA)
BG—Bombardment Group (USAAF)
BIA—Bureau of Indian Affairs, Department of the Interior
BS—Bombardment Squadron (USAAF)
Buntai—Japanese organizational term for sections of a squadron which operated different types of aircraft (ie. Suisen Buntai).
Buntaichō—(sub-) squadron leader
CAP—Combat Air Patrol
Catalina—*see* Consolidated PBY Catalina
CB—Construction Battalion
CD—Coastal Defense (Gun)
CG—Composite Group (USAAF)
Chūtai—Japanese organizational term for a tactical formation consisting of nine aircraft.
CiC—Commander in Chief
CofS—Chief of Staff
CSU—Charles Sturt University
CV—Aircraft carrier (hull classification / ship type)
Dave—Allied code name for the Nakajima E8N2 Type 95
DD—Destroyer (hull classification / ship type)
DesRon—Destroyer Squadron
DP—dual purpose (anti-aircraft and coastal defense) (gun)
E13A1—IJN classification for the Aichi/Watanabe Type 0 reconnaissance plane
Ens(Sp.Duty)—(Japanese: 'Tokumu'), a commissioned officer in the IJN who started his career from a plain sailor.
EOD—Explosive Ordnance Disposal (Removal)
EPA—Environmental Protection Agency (U.S.)
F-5—Lockheed Photo Lightening, a photo-reconnaissance version of the P-38
F1M2—IJN classification for the Mitsubishi Type 0 observation plane
FA—Field Artillery
FAW—Fleet Air Wing
FG—Fighter Group (USAAF)
Float Plane—a seaplane where aircraft hull is kept out of the water by pontoons

Flying Boat—a seaplane where the hull is partially submerged when the plane rests in the water
Flying Fortress—*see* B-17
FS—Fighter Squadron (USAAF)
GMT—Greenwich Mean Time (using the Universal Time Code)
HE—High Explosive Shell
HET—High Explosive Shell with Tracer
HETSD—High Explosive Shell, with tracer, self destroying
HIJMS—His Imperial Japanese Majesty Ship
Hikōkitai—Japanese term carrier-based air group
Hikōtaicho—Squadron leader
Hinomaru—('disk of the sun') the red circle in the Japanese flag and used as national identifier on the fuselage of aircraft
Hudson—*see* A-29
I&T—Incendiary and Tracer shell;
IJA—Imperial Japanese Army
IJN—Imperial Japanese Navy
ILWS—Institute for Land, Water and Society, CSU
ITSD—Incendiary and Tracer shell, self destroying
Jake—Allied code name for the Aichi/Watanabe E13A1 Type 0 reconnaissance plane
Kankoh—Japanese term for the Nakajima B5N carrier comber (actually: Kyū-nana Kanjoh Kohgeki-ki, contracted to *Kankoh*).
Kantai—Japanese organizational term for (naval) Fleet
KIA—Killed In Action
kt/kts—knot/s (speed of ships, ie 1 nm/h)
KOCOA—Key Terrain, Observation, Concealment, Approach (methodology)
Kōdōchōsho—Japanese term for the operational log of air groups
Kōkūkantai—Japanese organizational term for Air Fleet
Kōkūtai—Japanese organizational term for Air Group
Kū—Japanese abbreviation of Kōkūtai
LB-30—Consolidated LB-30 Liberator, a B-24 model, produced for the UK under lend lease program, but retained by the U.S. after Pearl Harbor
LCM—Landing Craft Mechanized
LCPL—Landing Craft Personnel (Large)
LCVP—Landing Craft, Vehicle, Personnel
Liberator—*see* B-24
LST—Landing Ship Tank
LVT—Landing Vehicle Tracked
Marauder—*see* B-26
Mavis—Allied code name for the Kawanishi H6K4 flying boat
MG—Machine Gun
MIA—Missing in Action
NAAF—Naval Auxiliary Air Facility
NARA—National Archives and Records Administration, College Park, MD
NARA-AK—National Archives and Records Administration, Regional Archives, Anchorage, AK
nm—nautical mile (=1.1508 statute miles)
R.C.O.C.—Royal Canadian Ordnance Corps
R.C.A.S.C.—Royal Canadian Army Service Corps
R.C.D.C.—Royal Canadian Dental Corps
NASM—National Air and Space Museum, Washington, DC
NCB—Navy Construction Battalion
NHL—National Historic Landmark
NHPA—National Historic Preservation Act 1966 (as amended 1992)
NIDS—National Institute of Defense Studies (Tokyo, Japan)
NM—National Historic Monument
NPS—National Park Service, U.S. Department of the Interior
NPS-AKRO—National Park Service, Alaska Regional Office, Anchorage, AK.
OSHA—Occupational Heath and Safety Act.
P-36—Curtiss P-36 Hawk, single engine fighter (USA)
P-38—Lockheed P-38 Lightening, a twin engine, twin tail fighter (USAAF)
P-39—Bell P-39 Airacobra, single engine fighter (USA)
P-40—Curtiss P-40 Warhawk, single engine fighter (USA)
P-43—Republic P-43 Lancer, single (radial) engine fighter (USA), often used for photo-reconnaissance
PatWing—Patrol Wing (USN)
PBY—Consolidated PBY Catalina, a two-engine flying boat for long-range

reconnaissance and anti-submarine patrol bombing (U.S.A.)
PBY—U.S. Navy patrol bomber, the Consolidated 'Catalina' Flying Boat.
PC—Submarine Chaser Patrol Craft (hull classification / ship type)
Pete—Allied code name for the Mitsubishi F1M2 Type 0.
PG—gunboat (hull classification / ship type)
PO—Petty Officer (followed by rank: PO1c= petty officer first class; PO2c=second class)
POW—Prisoner of War
RAdm—Rear Admiral
R.C.A.—Royal Canadian Artillery
R.C.A.M.C—Royal Canadian Army Medical Corps
R.C.E.—Royal Canadian Engineers
RC Sigs—Royal Canadian Signals
Reikan—Japanese term for the Mitsubishi F1M2 reconnaissance plane (actually: Reishiki Suijoh Kansoku-ki, contracted to *Reikan*)
Reisen—Japanese term for the Mitsubishi A6M2 carrier fighter, the 'Zero' (actually: Reishiki Kanjo Sento-ki, contracted to *Reisen*)
Rufe—Allied code name for the Nakajima A6M2-N Type 2 sea plane fighter
Sea Plane—generic term for planes landing on water (*see* float plane, *see* flying boat*)*
Seabees—Colloquial appellation of the NCB
Sentōshōhō—Japanese term for the operational log of naval vessels
Shōtai—Japanese organizational term for flight (within a squadron)
SNLF—Special Naval Landing Force (Japanese)
SOPA—Senior Officer Present Afloat
SS—Submarine (hull classification / ship type)
SubDiv—Submarine Division (part of a squadron)
SubRon—Submarine Squadron
Suisen—Japanese term for the Nakajima A6M2-N float-plane fighter (actually: Nishiki Suijo Sento-ki, contracted to *Suisen*)
Suitei—Japanese term for the Aichi E13A reconnaissance seaplane (actually: Reishiki Sanza Suijo Teisatsu-ki, contracted to *Suitei*)
Taitei—Japanese term for the Kawanishi H6K flying boat (actually: Kyū-nana Shiki Hikoh-tei, expressed as *Taitei*, 'large boat')
TROM—Tabular Record of Movement
UAA—University of Alaska at Anchorage
UAF—University of Alaska at Fairbanks
UK—United Kingdom (of Great Britain and Northern Ireland)
USAAF—United States Army Air Force
USAF—United States Air Force
USCoE—U.S. Army Corps of Engineers
USFWS—United States Fish and Wildlife Service
USAT—United States Army Transport
USN—United States Navy
USRC—United States Revenue Cutter
USS—United States Ship
USSR—Union of Soviet Socialist Republics
UXO—Unexploded Ordnance
VAdm—Vice Admiral
VPNM—World War II Valor in the Pacific National Monument
WO—Warrant Officer
Yobi—Japanese term for a commissioned officer who started his career after graduating from university or college
Zero—Allied code name for the Mitsubishi A6M2 Type 0 fighter

ABSTRACT

In June 1942 the Japanese attacked the Aleutian Islands of Alaska, as part of a major strategic offensive in the Pacific. While their main objective, the destruction of the U.S. carriers and the establishment of a seaplane base on Midway Atoll, failed the Aleutian part of the operation succeeded. The Japanese established two bases, one on Attu and one on Kiska, at the western end of the chain. Of the two, Kiska became the better developed, serving as a base for seaplane and midget submarine patrols. For over a year, Kiska was subjected to regular aerial bombardment and occasional naval shelling by U.S. forces that attempted to dislodge the Japanese. Following the re-conquest of Attu by U.S. forces and the subsequent evacuation of the Japanese garrison of Kiska, U.S. and Canadian forces re-occupied Kiska unopposed. To deny the Japanese an opportunity of return, and to potentially use Kiska as a staging point for further operations, the U.S. forces developed a base on Kiska. That garrison was closed after the end of the war. Since the end of the war Kiska is uninhabited.

To recognize the significance of the battlefield to the American people, a large part of Kiska was declared a National Historic Landmark in 1985. Kiska's WWII importance was more recently affirmed with its inclusion in the WWII Valor in the Pacific National Monument designation of 2008.

Today the island exhibits extensive traces of the war effort, reflecting not only defensive and offensive aspects of the war action but also evidence of the Japanese and the U.S./Canadian base developments. The survey carried out in 2009 and subsequent analysis identified a range of tangible landscape patterns that exemplify the Battle for Kiska and that circumscribe the nature of a twentieth-century battlefield where majority of battle was engagement between attacking U.S. bombers and fighter planes and the Japanese trying to fend off these attacks with anti-aircraft fire and seaplane fighters.

Because Kiska had been essentially uninhabited for over a century before the outbreak of World War II, and because the island has been a (uninhabited) wildlife refuge since the war, these remains and landscape patterns are extremely well preserved. Kiska forms a cultural landscape with a high level of integrity that is arguably unique on a global scale.

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

EXECUTIVE SUMMARY

The *aim of this document* is to assess the nature and values of the cultural landscape of the Kiska World War II battlefield and to report on the findings of a cultural landscape survey carried out in June 2009. This study provides an assessment of the cultural landscape based on a comparison of the historic context with the actual remains encountered on the ground.

Administrative Parameters (p. 6)

Today Kiska Island forms part of the Alaska Maritime National Wildlife Refuge (AMNWR), administered by the U.S. Fish and Wildlife Service (USFWS) on behalf of the Department of the Interior. The authority for all land management decisions on Kiska rests with the AMNWR.

Legally, since 1941 Kiska Island remains a designated Naval Defensive Sea Area and Airspace Reservation, but the restrictions imposed under this Executive Order "have been suspended subject to reinstatement without notice at any time that the interests of national defense may require such action."

On 4 February 1985, Kiska was designated a National Historic Landmark (NHL), protecting 49,800 acres of central Kiska The Alaska Regional Office of the U.S. National Park Service provides oversight over the NHL program and assesses all Federal undertakings affecting a NHL for any negative impact that that action may have. In 2004 the Kiska NHL was determined to be 'threatened' from vandalism and looting.

On 5 December 2008 parts of the Kiska Battlefield, comprising 2,345 acres in five contiguous units, were included in the WW II Valor in the Pacific National Monument.

Project Location and Logistics (p. 7)

Kiska Island (51°58'N 177°29'E) forms part of the Rat Island Group, Western Aleutian Islands, Alaska, USA. The project site comprises Kiska Harbor, in particular North Head, the Main Camp Area and part of South Head, as well as parts of Gertrude Cove, Kiska Island.

Supported by the USFWS research vessel MV *Tiĝlax*, Captain Billy Pepper, the survey was carried out between 5 and 10 June 2009. The research team consisted Janet Clemens (NHL Historian, NPS, AK); Debra Corbett (Regional Archaeologist, USFWS, AK); Kim Fleming (graduate intern, USFWS, AK); Richard Galloway (graduate intern, USFWS, AK); Janis Kozlowski (Affiliated Areas Program Manager, NPS, AK) and the author.

2. Pre-Conditions (p. 13)

Based on archaeological dates for other islands of the Rat Island Group, it can be surmised that Aleut people had occupied Kiska Island for at least 4,500 years. Archaeological surveys have located a number of sites on Kiska and Little Kiska. When considering the settlement locations on other islands, we can assume that the Kiska Beach area would have been the location of one of the Aleut settlements.

Russian period (p. 13)

The Russian navigator Vitus Bering and his crew discovered Kiska for European eyes on 25 October 1741 naming it St. Markiana. The first Russian fur hunting parties followed soon after. Kiska seems have been visited by Russian vessels during the 1750s and 1760s. In 1780 the Russian Government formally asserted territorial ownership over the Aleutians by having metal crests placed on several islands. Administratively the various Russian trading interests were aggregated in 1799 when the Russian-America Company was formed and given jurisdiction over the Aleutians.

It would appear that Kiska was permanently inhabited until the 1790s, but thereafter the picture becomes quite confused. In the early 1790s most people of the Rat Islands were relocated to Atka. While partial resettlement occurred in the 1810s, it is unclear whether anyone moved back to Kiska on a permanent basis. Aleuts from Atka released Arctic foxes on Kiska in 1835 for free-range breeding and subsequent (seasonal) trapping.

Early U.S. administration (p. 16)

After the sale of Alaska to the United States in 1867, Kiska was temporarily placed under the control of the U.S. Army. Kiska continued to be regularly visited on seasonal basis by fox trappers and sea otter hunters. The first systematic assessment of Kiska was carried out in 1873, suggesting that Kiska Harbor was suitable as a station for the Trans-Pacific (Canada-Japan) cable. From 1877 U.S. revenue cutters occasionally visited Kiska during the summer months monitoring the sealing and sea otter hunting parties.

As the U.S. Navy required bases to protect the America's new (1898) overseas possessions in the Philippines and the Pacific, Kiska was preemptively declared a Naval Reservation in 1903 Even though the Imperial Japanese Navy's (IJN) defeat of the Russian Fleet at Tsushima in 1905 redrew the strategic map of the Pacific, a realistic assessment showed that Kiska was not suitable for coaling the U.S. Pacific Fleet.

On 3 March 1913 the 'Aleutian Islands Reservation,' which included Kiska, was established as a national reservation for native birds, fur farming, reindeer herding, and development of the fisheries. From then until the outbreak of World War II the U.S. Bureau of Fisheries regulated all fox trapping and other commercial activities.

Kiska after World War I (p. 20)

The Washington Arms Limitations Treaty of 1922 stipulated that the Aleutians could not be fortified as military bases. For the next decade Kiska was seen of little strategic relevance in U.S. war plans envisaging a conflict with Japan (War Plan Orange). In 1933 the Empire of Japan announced her withdrawal from the League of Nations (effective 1935) and 1934 also announced that she would not be renewing the Washington Naval Arms Limitation treaty (effective 1936). In response, and in preparation of future

development, the U.S. Navy carried out a systematic survey of the Aleutian Islands in the summers of 1934 and 1935.

In 1936/7, when the U.S. Navy built the weather station at Kiska Beach to provide climatological data. Between 1939 and the outbreak of the Pacific War, the U.S. defense posture in Alaska was gradually developed and strengthened. While the Western Aleutians, being closest to Japan, were an area of concern, a higher priority were the bases the U.S. Navy was building at Sitka, Kodiak and at Dutch Harbor. The U.S. had general plans for Kiska, and in February 1941 had the island and airspace declared closed by Presidential Executive Order.

Japanese Intelligence Gathering (p. 31)

The Washington Arms Limitations Treaty soon gave rise to a climate of suspicion and mutual distrust between Japan and the USA as the Treaty's non-fortification provisions of the could not be independently verified. Thus any Japanese in Alaskan waters were, rightly or wrongly, interpreted as intelligence gathering missions.

The Japanese had been fishing in the waters between the Western Aleutians and the Kurile Islands since the late nineteenth century. This changed dramatically in the 1930s when Japanese crab cannery ships started operating in Eastern Aleutians and fisheries research vessels visited a number of Aleutian islands, presumably collecting oceanographic and climatological data, which were valuable for naval operations.

The Japanese aviator Yoshihara Seiji's attempts to cross the Pacific Ocean by sea-plane from Tokyo to San Francisco by way of the Aleutians necessitated ground support crews at refueling stops on various Aleutian islands. Their activities in depth sounding possible touch down areas aroused deep suspicions, as did their extended stay on the islands (because Yoshihara crashed twice and eventually had to abandon the attempt).

Despite all of this activity, the Japanese intelligence of Kiska Harbor, at least in the planning stages of the attack, seems to have been *extremely* limited. A Japanese intelligence map of Kiska Harbor prior to the attacks only shows publicly available data. Real intelligence had to be acquired through periscope surveys by submarines as well as by seaplane reconnaissance missions in the weeks before the landings.

3. Kiska during World War II (p. 55)

This chapter sets out the historic context against which the resources encountered in Kiska need to be interpreted.

On 7 December 1941 the Empire of Japan carried out a surprise aircraft carrier strike on the U.S. naval base of Pearl Harbor, Hawai'i. Rapid advances by forces saw the Japanese occupation of large sections of the Western Pacific as well as attacks on Australia and Sri Lanka. Even though U.S. counter strikes in February 1942 were largely ineffectual, the Japanese were acutely aware that the U.S. fast carriers posed a serious threat.

Kiska and the Battle of Midway (p. 57)

The Japanese Combined Fleet staff predicted that the U.S. would eventually attempt to strike the Japanese home islands. To counteract this, as early as mid-March 1942 the IJN began planning for the occupation of Midway Atoll from which aircraft could control a sizeable sector of the central Pacific. It was also hoped that the Midway operation would

lure the U.S. carrier fleet into battle where it would be trapped between two carrier forces and annihilated, thus forcing the USA to a negotiated peace. The Doolittle raid of 18 April 1942 gave added urgency as it proved to planners that the North Pacific posed an area of vulnerability which U.S. carrier forces could exploit. It acted as the catalyst that ensured that the Aleutians part of the Midway operation was carried out.

Strategic importance of the Aleutians (p. 58)

While there can be no doubt that the Midway operation was the main objective, the Aleutian component was not a diversion, but an integral, and essential, part of the entire Japanese defense strategy. The occupation of one or more Aleutian island was of strategic importance to the Japanese planning as it i) would provide a northern anchor to this new Japanese defense perimeter against the U.S. carriers; ii) provided a base from which to repel a possible U.S. invasion of the Japanese homeland via the Aleutian and the Kurile Islands; and iii) could serve as base from which to block the U.S. supplying arms to the Soviet Union, should the USSR join the war against Japan.

The Battle of Midway and the Aleutian Campaign (p. 61)

This study is not the place to revisit the genesis, execution and subsequent failure of the overall Japanese Midway Operation. As has been noted by a number of historians, what had started been a simple and elegant plan of trapping the U.S. carriers morphed not only into the largest, but also the single most complex naval operation in the entire Pacific War, involving the coordination of nearly 200 vessels. A system failure at some point was almost inevitable.

The Battle of Midway commenced on 4 June 1942 with the Japanese critically blindsided and unaware of the presence of the U.S. carriers to the northeast. The battle resulted in a defeat for the Japanese, who lost all four of their carriers in return only one U.S. carrier (the *Yorktown*). Being unable to locate and engage the U.S. carriers with his capital ships, Yamamoto abandoned the Midway landing and ordered the invasion fleet to return to Japan.

While Midway ended in disaster, the Aleutian part of the operation was a qualified success. On 3 June 1942 the Japanese carriers launched air strikes against the U.S. naval base at Dutch Harbor, Unalaska as well as Fort Mears, but overall damage was small. Limited intelligence by the Japanese meant that the Japanese were unaware of the recently constructed airfield on Umnak, some 80 miles to the southwest, thus missing the most critical target in the region.

Withdrawing from Dutch Harbor the Japanese carriers provided a screen for the successful and unopposed landings on Kiska (7 June) and Attu (8 June).

The Japanese occupation of Kiska and Attu is often referred to as the first enemy occupation of U.S. soil since the war of 1812. This common misconception conveniently overlooks that prior to the Aleutian Campaign, Japan had already occupied Guam (on the day of the attack on Pearl Harbor), as well as Wake Island (on 23 December 41), both territories of the U.S.A.—as well as Japanese occupation of the Philippines, then a Commonwealth of the U.S.A.

Japanese Landings and the Kiska Blitz (p. 67)

On 7 June 1942 some 550 Marines of the Japanese Maizuru No. 3 Special Landing Party went ashore at Reynard Cove and walked overland across North Head to Kiska Bay where they took half of the U.S. personnel staffing the weather station as prisoners. The

other half escaped, with the final holdout, William Charles House, surrendering after almost 50 days on the run.

Landing construction equipment as well as 700 laborers, the Japanese lost no time in establishing a seaplane base on Kiska. That base was functional the day after the landings when six large Kawanishi H6K Mavis long-range flying boats were based in Kiska Harbor.

The Kiska Blitz (p. 73)

It seems that the U.S. first knew of the landing when the Kiska weather radio fell silent. Following a PBY mission ascertaining the presence of the Japanese, the U.S. response to the Japanese landings on Kiska was swift. Between 10 and 12 June long-range Consolidated PBY 'Catalina flying boats then stationed at Nazan Bay, Atka, carried out a continuous run of shuttle bombing on Kiska. On 11 June 1942 the first long-range bombing runs commenced, when B-24s five B-17s took off from Cold Bay and, having refueled and loaded bombs at Umnak Island, attacked installations and shipping targets in Kiska Harbor. Japanese anti-aircraft fire downed one of the B-24s. In retaliation, Kawanishi H6K flying boats from Kiska carried out a bombing run of Nazan Bay, Atka Island on June 14th, but merely bombed the village which had been burnt to the ground a day earlier by retreating U.S. Forces. Foggy weather from June 15th to 18th brought about a lull in bombing runs and allowed both sides to take stock. To the U.S. forces the "Kiska Blitz" had proven that long-range aerial bombardment alone could not drive the Japanese from the Aleutians. Thus a number of bases had to be developed closer to bring Kiska and Attu to bring the Japanese bases within range of U.S. medium bombers that could be escorted by fighters. Long-range bombing would continue to slow or delay the Japanese base development.

Equipment for Midway is routed to Kiska (p. 79)

The development of Kiska received a major boost on 15 June 1942 with the arrival of a convoy with war material that had been destined for the base on Midway. In addition to heavy AA and 6-inch coastal defense guns and troops, the convoy brought fourteen Mitsubishi F1M2 'Pete' (Japanese: *Reikan*) which immediately commenced to fly combat air patrols over Kiska. American submarine USS *Growler* (SS-215) caused carnage among that convoy off Kiska, sinking the destroyer IJN *Arare* and damaged IJN *Shiranuhi* and IJN *Kasumi.* While all transports came through unharmed, U.S. bombers sank the oiler *Nissan Maru* in Kiska Harbor on 18 June. For the rest of June U.S. planes continued their bombing missions, harassed by Japanese *Reikan* as they came over Kiska. Overall, the medium- and high altitude bombing had little effect on Japanese developments.

As Kiska Harbor could not be relied on as a safe place, the Japanese kept critical supply ships at Attu or Agattu and entered Kiska either in heavy fog or under the cover of darkness. On 2 July of seven B-24s and one B-17 surprised the Japanese ships anchored off Agattu which escaped serious damage. This bombing raid served notice that Attu was also in reach of U.S. bombers.

On 5 July 1942 the seaplane and midget submarine tender *Chiyoda* delivered six midget submarines, six Nakajima A6M2-N 'Rufe' (Japanese: *Suisen*) single-seat float fighters. The introduction of a brand new, front-line fighter to the Aleutians, less than four weeks after it entered service in the tropics underlines the significance of Kiska to Japanese planning. Over subsequent days *Suisen* caused several losses among U.S.

bombers. At the same time Kawanishi flying boats flew long-range sector patrols (against shipping) and occasionally attacked U.S. units afloat in Kuluk and Nazan Bays, Atka. In response, the U.S. P-38, then based at Umnak, provided fighter cover.

A Naval Interlude: Task Group 8.6 shells Kiska (p. 85)

The U.S. Navy had been keen to wreak destruction on Kiska through naval gunfire. On 7 August Kiska Harbor was shelled by a U.S. naval task force, comprising the heavy cruisers *Indianapolis* and *Louisville*, light cruisers *Nashville, Honolulu* and *St. Louis*, four destroyers and a fast minesweeper. The naval task force fired about 6,800 rounds, controlled by spotter planes launched from the cruisers. Japanese *Suisen* engaged the spotting planes (one shot down), making the cruisers' gunfire highly inaccurate. The gunfire serendipitously hit the Kawanishi H6K Mavis flying boats anchored off the seaplane base, sinking one of the planes and damaging two of them beyond repair.

Business as Usual (p. 86)

As U.S. bombing runs continued, the Japanese replaced their aircraft losses (mainly due to weather). While the *Suisen* harassed the bombers, they were unable to establish air superiority over Kiska. Thus on 17 August 1942 the remaining Kawanishi H6K4 flying boats were removed from the Aleutians. After their withdrawal of the flying boats Kiska lacked any true medium-range patrol capability, as well as any real offensive air capability.

Japanese Submarine Activity (p. 88)

The convoy of ships destined for Midway Atoll also brought the six Type A (Ko-hyoteki class) midget submarines and personnel initially earmarked for a base on Kure Atoll. That submarine base was now being established on the flat area between South Head and the Promontory towards Trout Lagoon. Overall these submarines had little effect.

As of mid August 1942 the base also supported five fleet submarines (RO-class) to provide patrols and protection against naval units. One mission, against the seaplane tender USS *Casco* and a destroyer in Nazan Bay at Atka Island, ended in the loss of one submarine (*RO-61*). *RO-65* was caught in a U.S. air raid on 4 November 1942 and sank. As the local war patrols had no great effect the submarines were withdrawn.

The IJA arrives (p. 92)

The shelling by the U.S. task group signaled to the Japanese planners that the U.S. might attempt an assault on Kiska. To strengthen the Kiska garrison, the IJA moved its 1,200 troops from Attu to Gertrude Cove (completed on 15 September 1942). The abandonment of Attu did not go unnoticed by the U.S. forces, but the U.S. was not yet ready to capitalize on the situation. After about six weeks, the Japanese reoccupied Attu with a new IJA contingent.

Closing the Range: Bombing from Adak (p. 95)

On 30 August 1942 the U.S. forces began to convert Adak Island, only 250 miles east of Kiska, into an advanced U.S. Navy and U.S. Army Air Force Base. By draining a coastal lagoon, the Adak airfield was fully operational ten days after the initial landings. While the move of the IJA from Attu to Kiska, which occurred at the same time, is an example of historical synchronicity, but not causality, the Japanese decision to re-occupy Attu in

late October 1942 as well as the aborted attempt to occupy Shemya, needs to be seen in the context of the U.S. development of the Adak base

THE AIR WAR FROM ADAK (P. 97)

From Adak all bombers could be accompanied by fighters, which could suppress both air opposition, and anti aircraft fire, thus clearing the way for the bombers. Given the drag caused by the large central float, the *Suisen* severely lacked in performance and was little match against the American P-38 and P-40 fighters. Japanese fighter strength was systematically whittled down. In the absence of fighters to intercept the U.S. bombers, it appears that the Japanese used their scout and reconnaissance planes to establish the altitude of the attacking bombers and then throw up box patterned anti-aircraft fire with altitude set fuses.

Winter weather in late October brought reprieve for the Japanese garrison as it U.S. fighter operations against Kiska to a halt. Fighter missions were stopped on 29 October and did not resume until the spring of 1943. The winter of 1942/43 saw an air war of attrition determined by the casualties the U.S. forces could inflict and the speed and frequency with which the Japanese could replace their downed aircraft and their pilots. In the final equation, the Japanese losses of planes far outweighed their ability to bring in replacement aircraft and crews. As elsewhere in the Pacific War, losses of skilled pilots were much harder to make up than losses of aircraft.

The end game: Bombing from Amchitka (p. 106)

On 13 January 1943 U.S. forces landed on Amchitka, some 80 miles from Kiska, and began the construction of an airfield. Once operational on 16 February served as a base from which to provide effective fighter cover over Kiska. The long-range attacks from Adak had already significantly disrupted the Japanese supply efforts. According to a Japanese source, they were two months behind schedule in early February 1943. The base on Amchitka almost next door to Kiska effectively negated any Japanese opportunities at reinforcements and supplies via surface shipping. The Navy Transport *Awata Maru,* arriving on 22 February, was the last surface ship to reach Kiska.

The U.S. forces noted that March 16th marked the last day of any sizeable Japanese air opposition against attacking U.S. planes. It seems that the Japanese still had planes in hand, but chose not to use them. Moreover, the Battle of the Komandorski Islands on 27 March 1943 signaled that future supply transports to Attu and Kiska were in peril. The increased U.S. air cover over Attu meant that the Japanese could no longer use surface vessels to reinforce either Attu and that all shipment had to occur via submarine.

Lacking numbers and punch, the Japanese opposition with the Suisen had always been tokenistic in the form of harassment and largely ineffective. A continuation was a waste of materiel and especially of personnel. As a consequence, all pilots as well as all other highly skilled personnel were evacuated by submarine in early April.

In the Vice: The U.S. retake Attu (p. 113)

On May 11 U.S. forces landed on Attu and began the re-conquest of the island which lasted until 30 May. The invasion, which took three weeks, was the second most costly U.S. assault in the Pacific, with 1,481 U.S. fatalities and another 3,416 casualties. Once Attu was in conquered, the U.S. forces lost no time in developing an airfield.

Japanese evacuation of Kiska (p. 114)

The U.S. landings on Attu totally changed the balance of power in the Aleutians. An U.S. airfield on Attu would effectively negate *any* hopes that the Japanese may have held of supplying the Kiska garrison. Also, a U.S. assault on Kiska was now merely a matter of time.

As Kiska had become essentially untenable, the Japanese strategists decided on 21 May, while the Battle for Attu was sill raging, to evacuate the island Kiska by submarines. Losses of submarines were too high and in late June plans were drawn up to evacuate by a surface mission under the cover of fog. The third attempt succeeded. On 28 July eleven ships reached Kiska and were gone in within less than hour, having successfully embarked the remaining 5,183 Imperial Japanese Army and Navy personnel. Major equipment and supplies had to be left behind and for the most part had been made unusable. An additional 870 troops, in particular wounded and specialists such as aviators and submariners, had already been evacuated via submarines.

The U.S. forces were wholly unaware that the enemy had slipped through their net. Even though signs mounted that the Japanese had left Kiska, U.S. planners that they had entrenched themselves in the hills, as they had on Attu, and that they were all lying low.

As the evidence mounted, it was seen as too late to reverse the decision to launch an assault.

U.S. / Canadian occupation of Kiska (p. 119)

Given that Kiska was effectively bypassed and cut off from Japanese supplies, a good case could have made to just leave the Japanese there and to move one with the war. Indeed, this bypass of Japanese garrisons became the pattern in the Central Pacific in early 1944. The strategic concept of bypassing key Japanese bases, however, had not been developed by mid 1943. In addition, the U.S. invasion of Kiska has to be seen also a political exercise. It would have been difficult for the U.S. decision makers to justify the continued presence of an enemy occupation force no mater how harmless and inconsequential, on U.S. soil.

Planning and Preparations (p. 120)

By April 1943 plans were being drawn up to also retake Kiska. In May 1943 the Canadians were invited to participate as "the presence of Japanese in the Aleutians could be considered a threat to continental security" Canada formally agreed to her participation on 3 June 1943. The Allied invasion is significant as it was the first time that Canadian forces were involved in joint large-scale combat operations with U.S. forces.

Immediately after arrival on Adak in mid July both forces started familiarization training under Aleutian conditions; a final training exercise, a rehearsal amphibious assault was carried out on Great Sitkin on 3-7 August.

In preparation to the landings, Kiska was subjected to intense aerial bombardment and naval shelling. For the first time the U.S. also employed dive bombers which had a much higher accuracy—albeit against positions that were no longer defended as Kiska was unoccupied at that stage.

LANDINGS (P. 123)

The invasion force put the first troops, comprising the combined US-Canadian Special Service Force, ashore by rubber boats in the morning of August 15th with the major landings occurring as scheduled. Setting aside the appalling issue of friendly fire casualties, the troops swiftly moved across Kiska and took possession. Even though by the end of the first day it had become quite evident that the island was deserted, the landings on the northern beach on day 2 went ahead as planned.

GARRISON (P. 126)

While some U.S. and Canadian forces were based on Kiska as a garrison, the draw down of some troops occurred as soon as feasible. The joint US-Canadian 1st Special Service Force, a crack force that was required for other operations, returned immediately to the U.S. mainland. The bulk of U.S. forces had been withdrawn by December 1943, and by January 1944 the last of the Canadians had left. The Navy Auxiliary Air Facility, which had been established at the location of the former submarine base, was decommissioned on 3 September 1944. The garrison on Kiska had been reduced to a token force until end of the war.

KISKA AFTER WORLD WAR II (P. 130)

After the war, private parties tried to pick up where they had left off at the outbreak of the war. Fox trapping temporarily resumed, business was no longer profitable and was given up in the late 1940s.

The US. Military engaged in limited clean-up activities, mainly by proxy. It permitted private operators to salvage some of the Japanese vessels as well as material 'on wheels' that could be easily removed and higher value non-ferrous metals.

The U.S. military retained use rights over Kiska until 1955 when the enforcement of Naval Defensive Sea Area and Airspace Reservation was set in abeyance (but never revoked) and Kiska was handed back to the Aleutian Islands National Wildlife Refuge. In subsequent years, the US FWS undertook a long series of biological research projects on Kiska, mainly focusing on sea bird research (including the eradication of foxes).

4. Japanese Development of Kiska (p. 171)

From the moment the Japanese forces landed on Kiska on 6 June 1942, the Japanese developed Kiska into a base from which to operate seaplanes and submarines. The majority of the construction was completed by late October 1942 and with the exception of the airfield on North Head, no new major construction projects were started during and after the winter of 1942/43. Small-scale construction continued until about a week before their evacuation on 28 July 1943, especially the development of additional (alternative) defense positions; personnel positions, such as trenches and foxholes; concealed and underground gun positions; as well as an extension of the road network.

THE AVAILABLE DATA (P. 171)

The data available for the analysis are derived from a range sources: i) U.S. Intelligence reports drawn up as a result of bombing strikes and photographic intelligence; ii) extant aerial photographs; iii) the final target map drawn up for use during the U.S./Canadian assault on Kiska; iv) Japanese documents; and v) photographs taken during the Japanese occupation of Kiska; vi) photographs of Japanese installations taken after the occupation

of Kiska by U.S. forces; and, vii) interrogations of Japanese officers after World War II. In addition, a small number of captured Japanese documents exist.

The various datasets are not complete, however. For example, we have aerial photographs but do not have the interpretation reports that are based on these, or we have the interpretation reports, but no photos.

Overall patterns of build-up on Kiska (p. 179)

The overall pattern of build-up of the Japanese presence on Kiska occurred in four stages:

i) landing and initial occupation;

ii) base expansion with materiel and personnel initially destined for Midway;

iii) strengthening of the base by relocating the IJA garrison from Attu; and

iv) deepening the defense system and improving infrastructure

Given that two arms of the Japanese military were present on Kiska, the island had to be split into areas of responsibility. The Imperial Japanese Navy (IJN) controlled, the installations in Kiska Harbor, as well as the areas needed to protect these assets, while the Imperial Japanese Army (IJA) had a garrison on Gertrude Cove, situated there to deny the U.S. forces a strategic landing beach, and control over other landing beaches and the inland areas.

The Beginnings of a Base (p. 180)

Immediately after the landings, the Japanese set up a seaplane base along the beach in the northwestern sector of Kiska harbor, right next to the U.S. weather station. That base development comprised shore installations, namely tents, fuel and material dumps and some personnel trenches. To provide a protective umbrella right over the centre of the fledgling base the Japanese forces set up two antiaircraft (four 13.2mm light AA and four Type 88 75mm medium AA) and one coastal defense gun battery (four 4.7-inch guns of mixed Japanese and British manufacture). By 18 June at least 15 storage buildings and 35 revetted / store buildings had been constructed in a dispersed fashion.

The base received a major boost when material that had been *en route* to Midway was re-routed to Kiska. On July 6th a convoy brought two 6-inch coastal defense batteries, two under-strength heavy anti-aircraft gun batteries (comprising each two instead of three 120mm dual-purpose guns); several medium AA (25mm and 75mm) as well as smaller weapons. The guns were set up as one four-gun battery on North Head, thereby covering the most likely enemy approaches to the base. The two six-inch coastal defense gun batteries were emplaced commanding the entrance to the harbor, one on North Head and one on the rise in the western part of Little Kiska. The additional AA guns were distributed as needed.

In September the garrison was moved from Attu to Gertrude Cove in the south of Kiska where it set up defensive positions. In November 1942 the IJA garrison was strengthened with additional anti-aircraft; one battery was set up at Gertrude Cove and one inland in an area west of Kiska Harbor.

An intelligence assessment after Kiska had be re-occupied by U.S. forces found 10 heavy and 6 light coastal guns; 4 heavy, 47 medium and 28 light antiaircraft guns, as well 20 pieces of mobile artillery and 3 light tanks.

ROADS (P. 182)

Given the dispersed nature of the Japanese presence on Kiska, it was imperative that a network of roads be established as soon as feasible. In the absence of heavy equipment all construction as carried out by hand and with light trucks. Until roads were in place, all communication had to occur on foot trails and via in-shore transport using boats and barges. The first road to be built connected the main camp area at Kiska Beach with the defense systems on North Head. This was followed by a road connecting the Main Camp area with to the submarine base (completed in May 1943). In February 1943 the Japanese started a road connecting the IJA garrison at Gertrude Cove with the IJN base at Kiska Harbor (never completed).

Base Development (by major area)

The nature of the Japanese base development suggests that the IJN meant to stay. If a short- or medium-term occupation had been intended, then the development of tent cities would have sufficed.

MAIN CAMP (IJN) (P. 187)

The initial concentration of IJN activity was at the most protected part of the harbor, near the U.S. weather station (labeled 'Main Camp' by U.S. intelligence). By early February 1943, the infrastructure at Main Camp comprised two radio stations, an electric power station, two RADAR sets, supply dumps, a dam to safeguard water supply (potable and for fire suppression), food gardens, recreation spaces (volleyball field) and large Shinto Shrine. The recorded peak of development was in late February 1943 when some 266 structures had been erected, which would have housed 2,000-3,000 soldiers.

Photographic evidence shows that by the end of September 1942 a wooden sea plane ramp had been erected, as well as a slipway leading to a hangar and fuel dumps. By early February, the base comprised the ramp, two completed hangars and a third hangar under construction. By the end of April 1943 concentrated air attacks and storms had destroyed the southern hangar and the seaplane ramp leading to it. No attempts were made to repair the ramp as float operations had come to an end.

NORTH HEAD (IJN) (P. 213)

North Head forms a very prominent, broad peninsula jutting out from Kiska Island and enveloping Kiska Harbor from the north—an ideal location to site anti-aircraft and coastal defense batteries. The Japanese defense planners installed two coast defense batteries, one heavy, two medium, and one light AA battery as well as scattered light AA. By November 1942 most were in place. Personnel facilities on North Head were limited to what was required to service the gun batteries.

It would appear that the construction of the 2600 ft x 330 ft airfield on North Head commenced sometime in late December 1942 six months after the landings and in the middle of winter. The construction of the airfield was hampered by the lack of heavy earth moving equipment as most of the heavy construction equipment and the associated engineer battalion had been lost at seas when the transport *Montreal Maru* was sunk 5 January 1943. The work had to be done largely by hand, using picks and shovels and handcarts to move dirt and fill over a narrow gauge steel tracks. Despite these setbacks the Japanese completed the strip, to a total length of 2,675 feet, not counting small overruns at either end. A taxiway connecting the end of the runway, as well as the three

revetments, had also been built by the time Kiska was evacuated. Lack of aircraft fuel, ammunition and maintenance gear meant that the strip was never put in operation.

Submarine base (IJN) (p. 235)

The submarine base was established on the flat area between South Head and the promontory towards Trout Lagoon. The onshore developments comprised a slipway cut through the strand wall on the beach, a workshop and maintenance shed and a set of launch rails. In addition some forty buildings and tents supported the personnel. The entire base was completed by October 1942. Intelligence assessments showed that by early May 1943 all operations of the midget submarines essentially ceased.

The base itself was defended by two coastal defense guns (salvaged from a wrecked transport ship) as well MG positions and personnel trenches. It was further protected by a 75mm AA battery situated on South Head and a 25mm AA battery at Mercy Point.

South Head (IJN) (p. 240)

As South Head was not the location that protruded out furthest on the south side of the harbor (which was Little Kiska), it was only suitable for the emplacement of anti-aircraft. Only when the Japanese garrison prepared to counter a possible invasion did South Head attain some level of significance as the southern coast of the peninsula is lined with a number of small coves which would allow for a landing of small parties of amphibious forces.

Little Kiska (IJN)(p. 244)

Little Kiska, a small island located less than a mile from the tip of South Head commands the entrance to Kiska Harbor. The second 6-inch coastal defense battery was sited on a rise near the western end of the island. Additional developments were five light AA as protection and a few buildings for the personnel.

Gertrude Cove (IJA) (p. 250)

The IJA troops transferred from Attu to Kiska in September 1942 set up their main encampment at Gertrude Cove. By early November 1942 the development was more or less at peak strength and all AA had been emplaced. Unlike the IJN which seems to have been more set in its (defensive) ways, the IJA seems to have been very busy setting up a range of alternative positions for field guns and AA, most of which were never filled.

Inland Areas (IJA) (p. 252)

During the later stages of the occupation, the Japanese began to establish smaller defense systems and observation posts in most parts of Southern Kiska. The only substantive development was an IJA operated 75 mm AA position in the northern central area, covering the northwestern approaches to the main camp area.

5. U.S. and Canadian Development (p. 275)

U.S. strategists had drawn up a range of plans for the future of Kiska once the island was secured. Above all, a garrison of U.S. Army troops would ensure that Kiska remained in U.S. hands. As the U.S.AAF maintained a fully operational airbase at Amchitka, and as the development of an airfield on Attu was well under way, there was no need to develop a Kiska into a fully-fledged air base as well. It sufficed to complete the Japanese on North

Head as an emergency strip. Kiska, being a good day's sail closer to Japan than Adak, had the potential to be developed into a major staging base for any future military operations down the Aleutian Chain.

U.S. Infrastructure (p. 277)

As with all other base developments executed by the U.S. forces, the primary objective was to establish as rapidly as possible the infrastructure required for the seamless functioning of the base. Working 24 hours a day, under floodlights at night, the 38th Navy Construction Battalion (NCB) built a road network suitable of handling the heavier U.S. trucks; a telephone system; a power system and a pier and loading dock facility.

All U.S. and Canadian facilities were clustered around Kiska Harbor with only a token presence at Gertrude Cove. By the time the U.S. Army garrison and airfield on Kiska were completely developed, a total of 2,161 structures had been erected, ranging from piers and radar installations, to cinemas, machine shops, barracks and latrines.

The Japanese withdrawal handed the landing U.S. forces an operational road network as well as a system of utility poles. The U.S. forces strengthened (and extended) the existing Japanese road network on account of the heavier U.S. trucks. Reusing most of the existing Japanese utility poles in place and resiting a few, the NCB had the power and communications system up and running in less than week.

PIER AND LOADING DOCK FACILITY (P. 282)

The single most significant infrastructure development and overall highest priority was the construction of the piers. Initially five docks and had been envisaged, as well as the associated warehouses each of which was to be capable of handling half the perishable cargo of a Liberty ship. However in September 1943, as result of a reassessment of the nature of the U.S. presence in the Aleutians, the plans for Kiska was substantially downgraded. In the event, only one wharf was completed and the second, construction of which had commenced, was terminated (resulting in a short pier). To cater for the eventuality that additional ships had to be accommodated, fixed anchorages were developed in Kiska Harbor, with moored pontoons.

U.S. base at Main camp and North Head ('Army Town') (p. 287)

The main occupation area of the U.S. Army, colloquially called 'Army Town', was the Main Camp Area as well as North Head. The early days of the occupation were characterized by makeshift accommodation among Japanese war debris while essential supplies and equipment were being landed. Cleared Japanese war debris was soon dumped at in the bay or at sea.

The core of the U.S. base was located just inland of the beach at Kiska Harbor. Soon after landing, a city of pyramid tents spread over the area with the residential (summer) tents in the slopes and rises near the harbor and storage tents near the beach. Over time Quonset huts and formal locations of winterized tents replaced these.

In addition Army Town contained critical amenity infrastructure required for the functioning of a base, such as post offices for each of the service branches, phone exchange, a barber, a PX ('post exchange') as well as ball fields and a cinema.

The Canadian Camp (p. 296)

The Canadian Camp was located to the northwest of the U.S. camp area. No detailed map or images could be sourced from the standard sources accessible during the preparation of this report.

U.S. Navy base at former Japanese Sub-Base ('Navy Town') (p. 296)

The Naval Auxiliary Air Facility Kiska, based at the location of the Japanese Sub-Base was commissioned on 11 September 1943 and by 13 November 1943 the vast majority of the construction was completed. It consisted of net defenses, seaplane anchorage, a small pier and harbor facilities, in particular a seaplane ramp covered with pierced steel plank (30x 150 feet), a parking area of 10,000 sq feet and three moorings in Kiska Harbor. In addition, 'Navy Town' comprised 42 individual structures (including a cinema) and 61 winterized tents.

Little Kiska (p. 299)

The U.S. forces used a rise on the easternmost point merely as a look out post. The position was supported by a power station and facilities for personnel, comprising seven barracks buildings, officer's quarters, orderly room as well as mess hall, showers, latrines and pump house.

U.S. Defenses (p. 299305)

To defend the base on Kiska, a wide array of facilities was erected, ranging from submarine nets to RADAR and a number of anti-aircraft positions. Given the U.S. air superiority in the region as well as the plethora of submarine patrols, the U.S. defense system of Kiska could eschew the installation of coastal defense guns and concentrate their efforts on anti-aircraft weapons.

Nonetheless, as the U.S. forces had shipped and landed a number of medium artillery weapons (mainly 75mm Mountain howitzers) for the anticipated battle for the island, these were also, at least temporarily, emplaced.

Clean-up and War Booty (p. 305)

After the U.S. occupation, some of the Japanese equipment captured on Kiska was sent for evaluation to a range of establishments: gas masks, acid grenades and smoke grenades were sent to Seattle, while incendiary bombs were sent to San Francisco. A selection of heavier guns (2x 6-inch, 2x 4.7-inch, 1x120mm DP) were sent to the Naval Gun Factory of the Navy Yard in Washington DC. Some of the 3-inch coastal defense guns were removed as war booty. One of these ended up in Canada.

6. Military Terrain Analysis (p. 317)

The U.S. military, in keeping most armed forces, has a developed a formalized approach for this. Like with many planning concepts impressed on the common soldier, the U.S. military uses a mnemonic acronym for military terrain analysis: *KOCOA*. It encapsulates the analysis of:

Key Terrain/Decisive Terrain
Observation and Fields of Fire
Concealment and Cover
Obstacles
Avenues of Approach/Withdrawal.

The NPS American Battlefield Protection Program has adopted KOCOA as a suitable tool for analyzing a historic battlefield. In principle, it needs to be understood that in a military setting, KOCOA is an analysis tool aimed *at assessing the suitability of the terrain for the movement of friendly and enemy forces.* In the historic preservation setting, KOCOA is an analysis tool aimed at *hindcasting a battle commander's view of the battlefield*, in the hope of being able to reconcile the actual battlefield with the historic accounts of the battle.

The NPS site managers and consultants, as well as other researchers, have used KOCOA successfully to analyze historic battlefields and the manifestation in the cultural landscape they created and in which they are embedded. However, common to all historic battlefields analyzed with KOCOA, is that they were terrestrial battles only, on occasion augmented by naval action bombarding shore installations. The aerial dimension to active warfare was a later development—but one that plays an integral role in the understanding of the Kiska Battlefield.

Limitations of KOCOA (p. 319)

While KOCOA is a suitable tool to examine a battlefield location, it is not a tool that can be applied uncritically to any situation. Critical in the understanding of KOCOA is that the methodology is primarily suited for land-based combat between two opposing forces. KOCOA is *inherently unsuited* for open sea naval warfare as well as for purely aerial warfare. KOCOA is also of limited use in a situation where an opposing force holds an environmentally circumscribed terrain, such as an island, but where no actual person-to-person ground combat occurred.

Yet this is case for many Japanese bases in the Pacific which were subjected to aerial, and on occasion naval, bombardment, but where no actual assault took place. In these cases, a largely stationary military force was exposed to and had to react to highly mobile aerial warfare, where the enemy could from any direction.

Applicability of KOCOA to Kiska (p. 320)

Kiska is unusual among the island settings as, as an amphibious assault indeed occurred, but that the US/Canadian forces found the island abandoned. Thus, in the case of Kiska, we essentially have to be concerned with the pre-invasion period, and how military terrain analysis can aid in the interpretation of the battlefield.

What is the Kiska Battlefield? (p. 320)

As mentioned repeatedly, there was no direct land battle between the Japanese and the US/Canadian forces on Kiska; rather, it was a prolonged, 14-months engagement trying, by means of air attacks, to dislodge the Japanese after they had gained their foothold. As the 1944 U.S. Intelligence Assessment noted "[t]he fourteen-month battle for Kiska was largely an engagement between the Eleventh Air Force and Japanese AA fire."

Disentangling the various threads of the background history (Chapter 3) allowed identification of significant components through the use of an analytical matrix:

	Japanese	U.S. / Canadian
Phase I: Preparing for War		Meteorological Station
	Attack Preparations	
Phase II: Attack Phase	Invasion	
		Kiska Blitz
Phase III: Occupation Period	Japanese develop Naval Installations in Kiska Harbor	
		Systematic bombing of mainly IJN targets
	Japanese develop Army garrison at Gertrude Cove	Systematic bombing of IJA targets mainly in pre-retaking phase.
Phase IV: Retaking	Japanese evacuate Kiska after Attu was retaken by U.S. forces	
		U.S./Canadian forces landing unopposed
Phase V: Garrisoning		U.S./Canadian forces dig in
Phase VI: Abandonment		Canadian withdrawal U.S. withdrawal

Applying KOCOA to the Kiska situation (p. 321).

The remainder of this chapter applies the theory of KOCOA to the Kiska situation and examines in some depth the choices faced by the Japanese commanders when attacking Kiska; their choice of places to position their guns as a protective umbrella for their assets and their choices in counteracting the threats posed by the U.S. attacks. Some of the arcs of fire of the AA guns are reconstructed in three dimensions. Likewise, the chapter examines the attack options available to the U.S. forces.

In the context of a standard NPS planning approach, the KOCOA process results in one or more maps summarizing the findings. In the case of a World War II battlefield dominated by aerial warfare, this is more difficult as the boundaries, at least on the attacking side, are more fluid. The data are summarized, to the extent feasible, in a series of maps showing the Japanese key assets, and the primary protective umbrella; the Japanese occupation areas and support systems; as well defenses against surface attacks. Additional maps show the U.S./Canadian key assets and garrisoning.

7. Geographical Realities & Survey (p. 359)

The survey strategy for Kiska must not only take into account the strategic land-use considerations developed as part of the KOCOA analysis, but also needs to consider the geographical realities of Kiska (uninhabited, remote).

GEOGRAPHY (P. 359)

Topographically, the Kiska can be divided into the three parts: the 4,000 foot high conical volcano in the north; a north-central section of nearly or completely isolated plateaus with elevations of up to 1,200 feet; and a southern more eroded landscape with peaks rising up to 1,800 feet. Most of the study central area is covered by erosion products of volcanic breccias, with particle size ranging from coarse sand interspersed with fist-sized rubble to heavy gravel.

Climatology (p. 360)

The Aleutians have received a reputation as having one of the world's worst climates. Regarded as one of the cloudiest regions of the Northern Hemisphere, the Aleutian Chain experiences broken to overcast conditions for more than 90% of the time.

Simplistically we can state that average summer day on Kiska is wet, windy and cold. The weather defined by low-lying fog/clouds driven by winds of variable speed. On a practical survey level, high-level fogs imply a reasonable level of visibility to navigate and conduct survey and documentation. Low-level fog implies variable visibility ranging from very low (less than 30 feet) to high (2-3 miles).

Vegetation (p. 363)

The island is covered with a poorly drained blanket of tundra vegetation. Trees and major shrubs are absent. The vegetation is at its lowest just after snow melt, when it forms an ankle-deep yellow-brown mat and at its highest in late August, when it can reach above knee height. This directly affects the visibility of objects. At the height of vegetation growth all but very large objects are hidden from view.

Survey Methodology 2009 (p. 366)[1]

A list of a types of sites that could be expected on Kiska was be culled from the historic data as set out in chapters 2-4 as well as prior surveys.

Representative Sampling (p. 369)

The requirement was to undertake a survey that provided information suitable for the development of a cultural landscape management plan of the Kiska NHL. That entailed that the methodological approach taken for the fieldwork had to be a landscape-based assessment. Given these constraints of time, locality and access, support etc, it was clear from the start that a holistic survey of the area was illusory. Thus it was decided to carry out a representative sampling that drew on pre-knowledge of the area and the known overall spatial patterning of sites. The areas to be surveyed were prioritized based on a matrix that compared the known existence of sites (and the state knowledge about them) with the key phases of the Battle for Kiska.

Subject to weather conditions each morning, areas were selected for survey based on the prioritization. Three teams of two carried out the survey, each allocated a grid section. Given the quality of available satellite imagery, all sites and ancillary information were plotted directly on laminated sections of satellite imagery.

8. Findings of the Survey (p. 379)

As far as the Japanese developments are concerned, the following features survived later modification by U.S. forces: shrines; tent and barracks bases; heating systems for tents; plane wrecks; shipwrecks; submarine wrecks; truck wrecks; gun batteries; gun

[1] The methodology for the survey was developed in a series of discussions between the author and Janet Clemens (NHL Historian, NPS, AKRO).—The total complement of survey staff was limited to six. The participants were: Janet Clemens (NHL Historian, NPS, AK); Debra Corbett (Regional Archaeologist, USFWS); Kim Fleming (graduate intern, USFWS, AK); Richard Galloway (graduate intern, USFWS, AK); Janis Kozlowski (Affiliated Areas Program Manager, NPS, AK); and Prof. Dr. Dirk HR Spennemann (ILWS, CSU). In addition, Jeff Williams (biologist, USFWS, AK) and Deborah Rudis (Environmental Contaminants Biologist, USFWS, AK) kindly agreed to look at some heritage sites while carrying out their own biological surveys.

emplacements; guns; roads; underground shelters; concrete-reinforced underground structures; caves; fire suppression system; unexploded ordnance; unexploded small arms ammunition; telephone lines.

A number of features were developed by the Japanese and reused / improved by U.S. forces:; utility poles; roads; airfield.

As far as the U.S. and Canadian sites were concerned, we need to consider: Quonset huts; bases for Quonset huts; foundations for wooden buildings; tents and tent bases; heating systems for tents; water supply infrastructure; wooden cargo palettes, left by the U.S. forces at Gertrude Cove; truck wrecks; vehicle wrecks; piles of rifle cartridges; walkways and boardwalks; steel matting as runway reinforcements; piers; bridges; plane wrecks; unexploded naval ordnance; bomb craters.

Additional developments encountered were: memorials; signage.

9. Battlefield Patterns (p. 397)

In order to understand the landscape of any given battlefield from a cultural heritage management perspective, it is important to identify those elements of the landscape that best exemplify the nature and course of the battle. In standard heritage management practice, individual sites are ascribed a level of significance based on which various management actions may be balanced against, in case of competing objectives or limited funding. While in the case of Kiska it is possible to identify several areas that have a greater significance than others, it must be clearly understood that *all* elements of the Kiska battlefield are contributing features, and that all elements, taken together, make up a unique heritage site. Any management action that only focuses on those elements of the battlefield landscape that have been ascribed a higher level of significance, while either neglecting, or, actively condoning the loss of lesser elements, will result in the diminishment of this unique heritage asset.

It is important to understand that the battlefield is comprised not only of the large structures, such as the guns in their emplacements, the submarine wreck, the tent bases or the piers, but also of the seemingly lesser components, such as the bomb craters and the abandoned truck wrecks, all the way down to the smaller and seemingly peripheral items, such as the unexploded ammunition, the discarded fuel drums and the telephone wires running on the ground.

Taphonomic Considerations (p. 397)

It is safe to assert that Kiska had no occupation (and concomitant structure development) immediately before the Japanese landings of 6 June 1942: the resident population of Kiska had been removed by the Russians in the early nineteenth century, and all subsequent land use of Kiska was both seasonal and very small-scale. Likewise, following the withdrawal of the last U.S. garrison troops in August 1945, Kiska remained uninhabited ever since.

Setting aside the prehistoric and the very few Russian-contact period Aleut sites that will exist (unless removed by the events of Word War II), then the island of Kiska represents a cultural landscape that is essentially *a battlefield landscape pure and simple*. Hence, every structure and object encountered on that landscape contributes to the overall cultural value of the site. Conversely, the removal of any object will detract from the cultural value the landscape does represent.

A certain amount of material was removed through management action ('clean up') as well as through illegal acquisition between the end of the war and today. This is considered minor.

Thus, even though the current cultural landscape of the Kiska battlefield does not represent a *pristine* battlefield landscape, the place retains a very high level of integrity (for discussion see chapter 10, p. 455). Moreover, several constituent features individually, as well as the individual objects and remains collectively make up a WWII battlefield landscape that is genuinely unique on a global scale (see Statement of Significance, p. xxxvi).

Battlefield Patterns: The Aerial War against Shipping (p. 399)

The top priority for U.S bombers in the early days had to be the sinking the Japanese naval units followed by the transport ships. In this the U.S. was marginally successful. Unlike with the bombing against land-based targets for which ample evidence of bomb carters can be drawn on, the evidence of the U.S. bombing effort against shipping is limited to vessels actually hit and sunk or damaged beyond repair. A fair number of unexploded bombs, as well as fragments of exploded bombs will be present on the bottom of Kiska Harbor.

Not counting the Japanese submarines, in total four ships were sunk or damaged and run aground in Kiska Harbor (*Kano Maru*, *Nissan Maru*, *Nozima Maru*, *Urajio Maru*) and one at Gertrude Cove (*Borneo Maru).* In addition, the destroyer IJNS *Arare* and the Subchasers CH-25 and CH-27 were sunk outside Kiska Harbor. After the end of the war, attempts were made to salvage some of the ships for their scrap metal value. The *Kano Maru* was patched up, refloated and successfully towed to Japan to be broken up, as was the stern section of the *Nozima Maru*. Today, two of the five wrecks, as well as the bow section of another remain, at least in part, above the surface and form visual reminders of the air war against shipping. The wreck of the *Nissan Maru* has been located and documented by U.S. NPS divers in 1989.

The extant above-water remains of the Japanese supply ships in Kiska Harbor and Gertrude Cove form an integral, and highly visible part of the cultural landscape of Kiska. They form a stark reminder of the U.S. war on shipping that crippled the development of the Japanese base on Kiska and eventually made the Japanese presence in the Aleutians untenable.

The study describes two examples, the *Borneo Maru* at Gertrude Cove and the *Nozima Maru* at Kiska Harbor.

Battlefield Patterns: Aerial Warfare against gun positions (p. 410)

Aerial bombing on Kiska consisted of level bombing by medium and heavy bombers. The greater the height from which the bombs were dropped, the greater the inaccuracy in bombing. The environment of Kiska bears evidence of these bombing runs. Then, as now, the bomb craters show up on aerial images. The study in more detail at the manifestations of three such patterns: the manifestation of dead-reckoning bombing; the bombing of a gun battery and the bombing of a defensive strong point. On the ground these bomb craters are visible, especially in low-lying terrain, where they fill with water and on slopes, where wind erosion may have prevented them from being renegotiated with tundra.

Battlefield Patterns: Aerial Warfare against base infrastructure (p. 420)

The U.S. aerial warfare against base infrastructure followed the same patterns as that against specific gun emplacements. However, the greater area covered by the Japanese Main Camp area, as well as the greater area covered by the IJA garrison at Gertrude Cove meant that near misses against one target may have impact on another. In addition, the damage was also psychological, in the form of harassment and fear.

The Main Camp area at Kiska Harbor has been substantially modified by subsequent U.S. occupation, so that it is difficult to assess the effect of the U.S. bombing there. It is a palimpsest that is difficult to decipher given the extensive earth moving by the U.S. forces after the re-occupation of Kiska.

Battlefield Patterns: Defending Against Aerial Attack (p. 422)

The Japanese preparation for, as well as response to, the U.S. aerial bombing was to deploy anti-aircraft guns. The logic for their placement has been discussed in Chapter 5 (KOCOA). These guns were emplaced in batteries, commonly of four (in case of the 75mm Type 88 AA and 120mm DP). The study describes the pattern of gun emplacements as well as the use of dummy positions.

In addition, to prevent damage to critical infrastructure and to personnel, the Japanese quickly resorted to the construction of underground facilities, that were concealed from aerial observation. While U.S. intelligence noted the presence of underground facilities (by the entrances), the exact nature, use and extent of these facilities was unknown.

Several of these tunnels and underground facilities have been examined during the survey work in 2009. A limited amount of historic imagery exists, as well as U.S. intelligence mapping of the most extensive of these, the underground hospital. The risk of collapse of these features caused serious safety concerns and thus prevented a more thorough investigation.

Battlefield Patterns: Defending Against Seaborne Attack (p. 428)

The defenses against sea-borne attack (on Kiska) were developed only by the Japanese as the U.S. effectively controlled the sea-lanes by the time the island was re-occupied. The Japanese set up three coastal defense batteries. The first, a 4.7-inch battery of four guns was set up on North Head. After the shipment of guns originally destined for Midway arrived in July 1942, two additional batteries of 6-inch guns were set up, one on North Head and one on Little Kiska.

The study examines the siting of the gun batteries and the resulting fields of fire. It could be shown that in the case of North Head, the 6-inch battery was set up at a location from which the battery's fire could also cover some of the potential landing beaches to the north, while the 4.7-inch battery covered the entrance to Kiska Harbor as well as the approaches to Salmon Lagoon and Reynard Cove combined with the 120mm Dual Purpose gun battery set up to the south of the 6-inch battery, the eastern edge of North Head was dedicated to coastal and aerial defense.

Battlefield Patterns: The Midget Submarine Base (p. 432)

The only part of the offensive power of the Kiska Base that is still extant is the midget submarine base. The deep excavation made for the slipway of the marine railway is still well preserved, even though its slopes are gradually loosing the steep contours. Part of the submarine, especially its port forward section, has become buried in sediment. This will cause a differential decay with the buried section corroding differently from the rest of the hull exposed to rain and mist.

In addition to the main slip way as the most prominent feature, the extant remains of the base consisted of 3-inch coastal defense gun in it's emplacement and a number of structures, including subsurface storage.

Battlefield Patterns: Manifestations of Garrisoning (p. 435)

Both the Japanese and the U.S. forces established garrisons on Kiska The study looked at representative samples of some of these, esp. the Canadian Camp.

The Canadian troops set up their camp areas to the southwest of the U.S. Army area, further up the valley from the Main Camp area. In the anticipation of being provided with Quonset huts, the Canadians dug revetments already sized for Quonset or Pacific huts, and then sited two Pyramid tents in them. Since they withdrew from Kiska before they were supplied with the huts, they remained in tents for the duration of the occupation (about four months). During the survey, some revetments were encountered, where the wooden tent stakes for the Pyramid tents were still *in situ* , outlining the tent spaces. Copper or bronze pipes, made up from one-foot long sections, supplied some of the revetments with running water.

Overall, the landscape of the Canadian Camp is delineated by an abundance of such double-tent revetments, with the entry commonly in the center of the down slope side to ensure proper drainage. Most of the revetments are situated on a slight slope to ensure drainage and are aligned with the contours. The base of each revetment has been slightly dug into the underlying volcanic ash, with the cutout sections of the tundra and the soils piled up as berms around the revetment.

Battlefield Patterns: Manifestations of Clean-Up (p. 438)

The final phase of many battles is the clean up, reverting the battlefield location to a semblance of the condition prior to the war. In the case of Kiska, the departed Japanese garrison was replaced by a U.S. garrison, which brought in new materiel and set up their own installations. As a result of the rapid evacuation by the Japanese, when most of the equipment was abandoned, much of the build up of the Japanese occupation period still remains. The incoming U.S. forces built up their own base. When that was closed, an orderly withdrawal occurred, which entailed, *inter alia*, the systematic dismantling of the U.S. installation and shipment of salvageable items to other bases, such as Adak, for reuse. Two examples, the Japanese Material Dump at Gertrude Cove and the U.S. clean up at base abandonment, exemplify these terminal patterns of the battlefield

10. Significance of the Kiska Battlefield (p. 455)

All good management of cultural resources is based on assessment of their cultural significance. The Kiska Battlefield was declared a National Historic Landmark in 1985. A portion of the battlefield was incorporated into the World War II Valor in the Pacific National Monument in 2008. For these two designations to occur, statements of significance were developed, which could be drawn on as pre-existing documents

Integrity (p. 456)

The cultural significance of the Kiska Battlefield is determined by a number of components, such as relevance to the historic context, presence, preservation and rarity of constituent elements and similar aspects. The key element to be considered is integrity, which according to the Secretary of the Interior's Standards is defined as ...the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period.

The study found that the Kiska Battlefield retains a high integrity of setting. Because Kiska was effectively uninhabited for over 100 years before World War II, the battlefield is superimposed on a cultural landscape that shows very little evidence of pre-existing occupation. The few Aleut sites that have been found do in no way deflect attention from the World War II developments. Because Kiska has been uninhabited since the end of World War II, there are no major intrusive elements or modern construction. Likewise, with the exception of small-scale landslips, the environmental setting has undergone no discernible change. Unlike other battlefields, where re-growth of vegetation can alter the feeling of the setting, the landscape of Kiska today looks exactly like the landscape visible on photographs taken during World War II.

This lack of development and lack of environmental change is unique in regard to battlefields nationwide. Globally, only the North African Battlefield of World War II is somewhat comparable, where parts of the battlefield have no seen any major modification.

Statement of Significance (p. 463)

The cultural landscape of the Kiska Battlefield is deemed to be significant on a global level. The World War II landscape of Kiska is *historically* significant as it is:

i) integrally associated with the Battle of Midway, generally acknowledged as the turning point of the Pacific War;

ii) the furthest point of the Japanese WWII expansion to both the north and east;

iii) the only military base in the Pacific voluntarily abandoned by the Japanese; and

iv) a battlefield where all military action was confined to an air war.

As the *sole battlefield* of World War II *without any elements of prior or later occupation* modifying the battlefield experience, the Kiska Battlefield:

v) preserves *all* actions by both attackers and defenders including the wreckage of both Japanese and US aircraft, the bombs they dropped and the guns that were used to shoot some of them down;

vi) preserves *demonstrable* evidence of the ferocity and relative accuracy of U.S. bombing efforts;

vii) contains the sole Japanese midget submarine globally still *in situ*;

viii) possesses Japanese air and coastal defense installations *in situ* that are unparalleled in their condition and state of preservation;

ix) represents a palimpsest of both initial Japanese and later U.S./Canadian garrisoning, which is *illustrative* of differences in the use of the same military terrain;

x) has environmental conditions that are conducive to the preservation of organic materials, including wooden stakes and tent canvas providing *in situ* evidence that is *illustrative* of the micro-spatial lay-out of the US/Canadian occupation; and

xi) contains British-made guns installed by the Japanese that are both associated with the Battle of Tsushima which changed the global power relations on the pre-World War I Pacific; and with the Washington Naval Limitation Treaty of 1922, as the first ever multi-nationally agreed upon arms reduction treaty.

11. Future Work (p. 465)

The study identified a number of issues of importance that benefit from further work and research.

- The available data are not evenly distributed. The Japanese and Canadian primary (archives) data, in particular, are limited. Future work should focus on acquiring these.
- While the Kiska Battlefield deemed of global significance, the battlefield cannot be seen without the context of other places in the Aleutians that form part of the wider narrative. Some of these sites form part of the World War II Valor in the Pacific National Monument (VPNM). Those which currently do not form part of the VPNM should be included in a holistic management approach.
- Some of the cultural resources encountered on Kiska contain environmental contaminants. Any possible environmental clean up represents a Federal undertaking and is thus subject to the provisions of the National Historic Preservation Act and associated regulations. This may not be sufficient protection for the preservation of significant cultural resources and management options other than clean-up need to be investigated.
- A good example is the Japanese midget submarine at Trout Lagoon, which has a World-level significance as the only Japanese midget submarine to be on land and still *in situ,* contains a large number of lead batteries originally used for propulsion. Any move to 'clean-up' the island of such contaminants will lead to the irreversible loss of the historic resource. Thus alternative containment options need to be considered.

1. Introduction

In June 1942 the Japanese attacked the Aleutian Islands of Alaska, as part of a major strategic offensive in the Pacific. While their main objective, the destruction of the U.S. carriers and the establishment of a seaplane base on Midway Atoll, failed the Aleutian part of the operation succeeded. The Japanese established two bases, one on Attu and one on Kiska, at the western end of the chain. Of the two, Kiska became the more well-developed, serving as a base for seaplane and midget submarine patrols. For over a year, Kiska was subjected to regular aerial bombardment and occasional naval shelling by U.S. forces who attempted to dislodge the Japanese. Following the re-conquest of Attu by U.S. forces and the subsequent evacuation of the Japanese garrison of Kiska, U.S. and Canadian forces re-occupied Kiska unopposed. To deny the Japanese an opportunity of return, and to potentially use Kiska as a staging point for further operations, the U.S. forces developed a base on Kiska. That garrison was closed after the end of the war. Since the end of the war Kiska has been uninhabited.

Because Kiska had been essentially uninhabited for over a century before the outbreak of World War II, and because the island has been a (uninhabited) wildlife refuge since the war, the remains of the World War II developments are extremely well preserved. Kiska forms a cultural landscape with a high level of integrity that is arguably unique on a global scale. Yet, a focused survey of this battlefield landscape had never been done. To this end, the National Historic Landmarks Program, U.S. National Park Service, Alaska Region, implemented an American Battlefield Protection Program grant to assess the cultural landscape values of the Kiska World War II Battlefield.

Objectives of this report

The aim of this document is to assess the nature and values of the cultural landscape of the Kiska World War II battlefield and to report on the findings of a cultural landscape survey. It provides an assessment of the cultural landscape based on a comparison of the historic context with the actual remains encountered on the ground.

Although well referenced, this study is *not* a definitive treatise on World War II on Kiska, let alone the Aleutians. In the absence of an existing context document, the background presented here has been amply documented. To make the study more accessible for a general reader not interested in minutiae, most of the required detail and source identification has been provided as detailed endnotes printed at the end of each chapter, rather than cluttering the pages with footnotes.

Structure of the report

Clearly, any cultural landscape is a palimpsest, made up of an initial human modification of a natural landscape with subsequent events successively modifying or erasing the traces of prior occupation periods. In order to understand the cultural landscape of the Kiska World War II battlefield, this study will first summarize, in broad-brush terms, what is known about human occupation and landscape modification in the period leading up to World War II in the Pacific (chapter 2).

This document will set out the historic context for the role Kiska played during World War II (chapter 3, p. 55). Given the objectives of the study, the contextual history is not an in-depth historical thesis of the strategic and operation history of World War II in the Aleutians, but rather is geared towards understanding how the cultural landscape of Kiska developed. This is followed by an examination of the available historic data on the physical development of the Japanese base on the island (chapter 4, p. 171), as well as the subsequent occupation by U.S. and Canadian forces (chapter 5, p. 275). These three chapters, which are liberally illustrated to provide both factual as well as visual context, form the basis on which a Military Terrain Analysis (KOCOA) of the Kiska Battlefield could be developed (chapter 6, p. 317).

A narrative of the geographical realities of Kiska, and survey methodology espoused, (chapter 7, p. 359) with a summary of the types of sites and illustrations of representative examples (chapter 8, p. 379) provides the foundation for an examination of patterns of the Kiska Battlefield as they manifest themselves in the cultural landscape (chapter 9, p. 397).

The report is rounded out by an examination of the significance of the Kiska Battlefield (chapter 10, p. 455) as well as an outline of future work and research that seems indicated (chapter 11, p. 465).

Fig. 1. Locations of the major islands in the vicinity of Kiska

Location

Kiska Island (51°58'N 177°29'E) forms part of the Rat Island Group, Western Aleutian Islands, Alaska, U.S.A. (Fig. 1). The project site comprises Kiska Harbor, in particular North Head, the Main Camp Area and part of South Head, as well as parts of Gertrude Cove, Kiska Island. The locations mentioned in this study are set out in Fig. 2

State of Resource Base

The primary sources are archival documents such as aerial photography and World War II intelligence sources, as well as post-World War II interrogations and photography. These data are both patchy and widely scattered.[1] Particularly in recent years, the World War II history of the Aleutian Campaign has attracted considerable scholarly and well as public attention, generally told from the perspective of the U.S.A. To be mentioned, *inter alia*, are the histories by Garfield,[2] Goldstein & Dillon,[3] Perras,[4] and the USAAF history by Cloe;[5] the studies by Dickrell,[6] Coyle,[7] and Hays;[8] the compilations by Chandonnet,[9] Feinberg,[10] and Rearden;[11] the published recollections of soldiers and airmen;[12] pictorial volumes by Cohen[13] and others;[14] as well as the official histories compiled for the U.S. Navy,[15] U.S. Army,[16] U.S. Army Air Force,[17] and for the Canadian forces.[18] In addition, there are several war chronologies, both for the Aleutians in general,[19] and for the USAAF's air war in particular.[20] Finally, there are a number of National Park Service[21] and Fish and Wildlife Service[22] publications that address World War II in the Aleutians for a wider public.

By comparison, the Japanese side of the story has been largely absent, primarily due to the relative inaccessibility of sources, especially in languages other than English.[23] Several Japanese language studies exist, such as the official compilative war history[24] and a collection of reminiscences of returned soldiers,[25] as well as individual accounts.[26] Few have been translated. Detailed records of Japanese ship movements and fleet composition are provided in an on-line resource.[27]

At the commencement of this study, there was no concise historic context document that could be drawn on in a fashion that was suitable for an analysis of the cultural landscape. Selected aspects of the physical development of the Japanese and the US bases had been illustrated in the pictorial volumes,[28] but a detailed and comprehensive discussion of the development and final make-up of the bases was lacking.

Much of the previous work on Kiska had focused on the prehistoric occupation, starting as early as 1937,[29] and then throughout the 1980s and 1990s.[30]

Previous work related to the World War II era cultural resources on Kiska consisted of a desktop study of possible remains carried out as part of a debris removal and cleanup study by the U.S. Army Corps of Engineers in 1977.[31] A reconnaissance survey of heritage places was carried out by Susan Morton and Chuck Diters in September1989 on occasion of the submerged cultural resources survey carried by the NPS;[32] while a draft report exists on the submerged cultural resources,[33] the observations on the above surface sites were never fully written up.[34]

The first and only substantive study was a reconnaissance survey of cultural resources conducted by Charles Mobley[35] as part of a Corps of Engineers Assessment of Environmental Contaminants in 1995. This study focuses on the Japanese sites on Kiska, Little Kiska and Semisopochnoi. While that study was, by necessity as an adjunct to the USCoE work, unsystematic, it forms the only reliable baseline study for the assessment of decay and site modification.

Fig. 2. Kiska Island. Locations of the major geographical features mentioned in the text. The nomenclature of the various locations is a mixture of three sources of geographical names: those allocated by the surveys of 1903/04 that drew on natural history names (Salmon Lagoon Trout Lagoon, Clam Lake) and then again in 1934/5, drawing on names with explorer associations (e.g. Sirius Point, Sredni Pt, Vega Point), and the various code names by the forces as they prepared for the lead up to the invasions (using the M-Grid, e.g. Navy Cove, Nazi Creek, etc).

An assessment of the conservation status of the Japanese guns on Kiska was undertaken in 2007, with fieldwork carried out on Kiska Island between 3 and 7 August 2007.[36] During the survey period as many gun positions as possible were located, their constituent guns recorded and their state of preservation documented through textual description and extensive photography. A series of four detailed studies of the preservation conditions were drawn up for the major gun batteries[37] and all data were compiled into a comprehensive conservation management plan which discussed the practicalities and costs of a range of conservation options.[38]

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

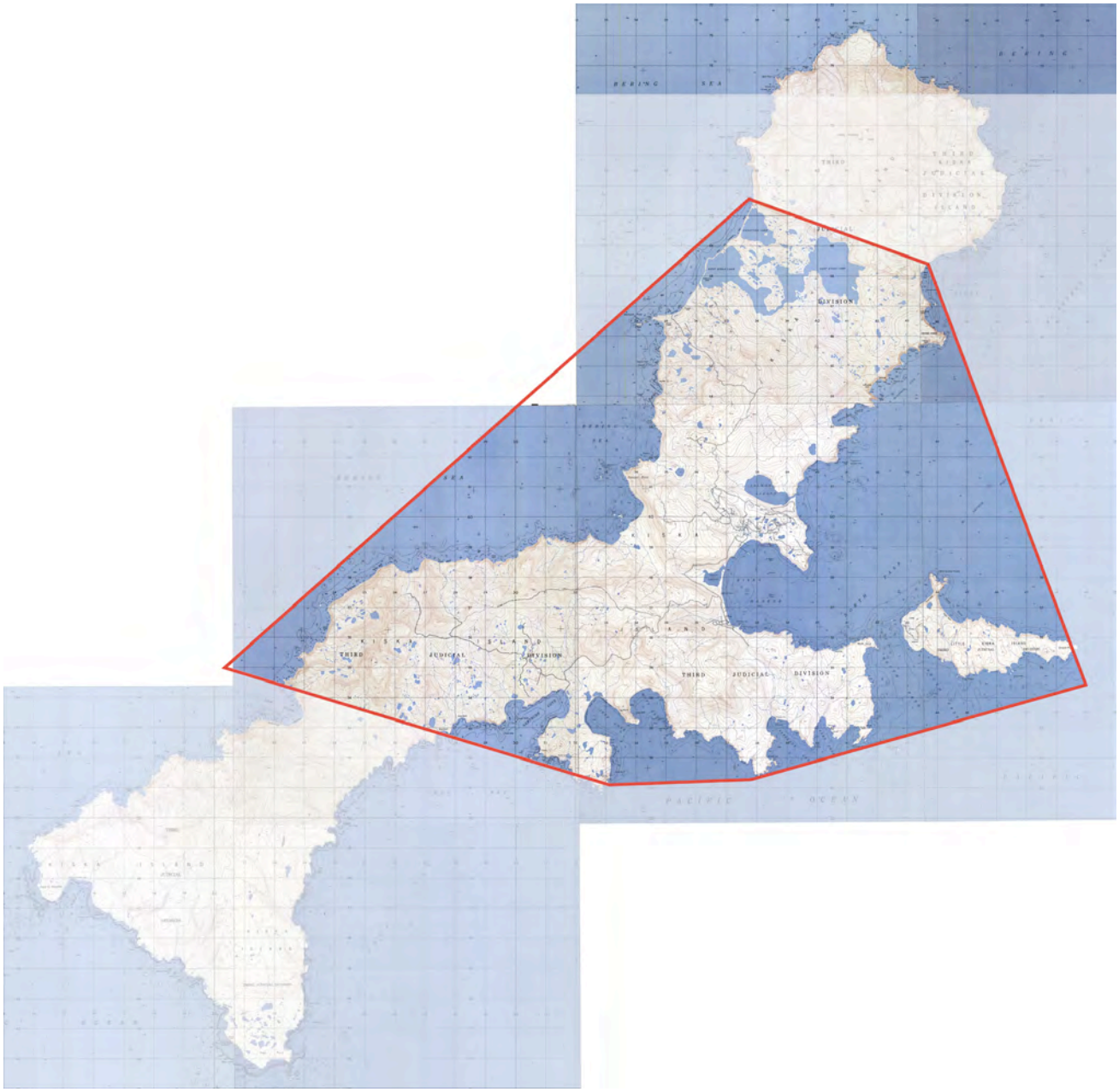

Fig. 3. The boundaries of the Japanese Occupation Site NHL, Kiska.[39]

Subsequent to the fieldwork for the 2009 survey discussed in this report, two ancillary reports were drawn up. The wreck of a Mitsubishi F1M2 floatplane encountered at Salmon Lagoon during the 2009 survey warranted a more in-depth discussion than could be provided within the purview of this present document.[40] Potential concerns for visitor impact led to an examination of the nature and extent of the market for Japanese aviation memorabilia,[41] which followed a previous examination of the carrying capacity of the All Terrain Vehicles (ATV) as the preferred mode of personal (and gear) transport on the tundra.[42]

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

Legal Status and Heritage Listings

Today Kiska Island forms part of the Alaska Maritime National Wildlife Refuge (AMNWR) established through a merger of the Aleutian Islands Refuge with various other refuges as part of the Alaska National Interest Lands Conservation Act of 1980.[43] The AMNWR is administered on behalf of the Department of the Interior in their capacity as Federal land managers by the U.S. Fish and Wildlife Service (USFWS). The authority for all land management decisions on Kiska rests with the AMNWR, including the approval of all research on the island as well as all organized access (e.g. cruise ships).

Legally, since 1941 Kiska Island remains a designated Naval Defensive Sea Area and Airspace Reservation,[44] but the restrictions imposed under this Executive Order "have been suspended subject to reinstatement without notice at any time that the interests of national defense may require such action."[45]

Heritage Listings

As a World War II battle site, Kiska was designated a National Historic Landmark on 4 February 1985.[46] The area protected covers 49,800 acres of central Kiska (Fig. 3).[47] The Alaska Regional Office of the U.S. National Park Service provides oversight over the National Historic Landmarks (NHL) program and assesses all Federal undertaking affecting a NHL for any negative impact that an action may have. In 2004 the Kiska NHL was determined to be 'threatened' from vandalism and looting.[48]

On 5 December 2008 parts of the Kiska Battlefield, comprising 2,345 acres in five contiguous units, were included in the 'WW II Valor in the Pacific National Monument.' (Fig. 4)[49]

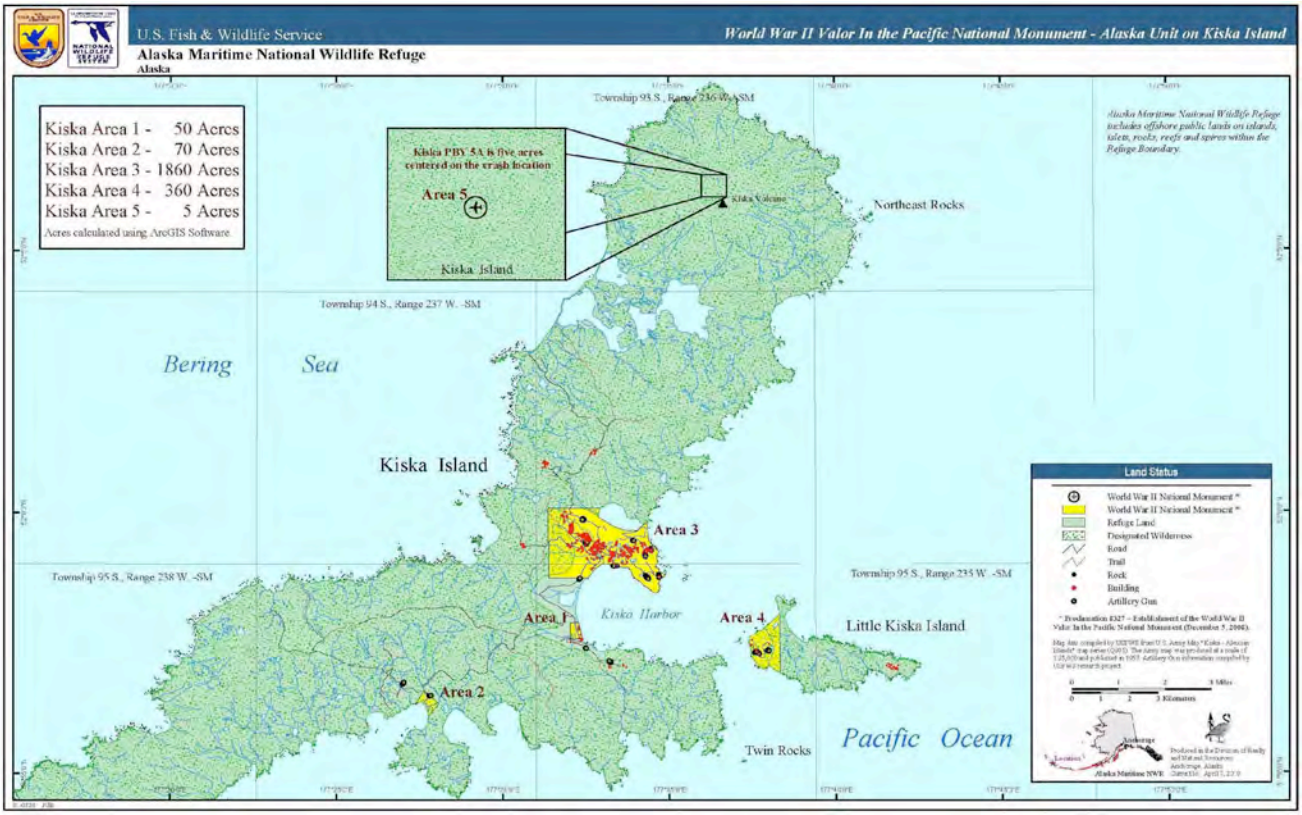

Fig. 4. Parts of the Kiska World War II battlefield protected as part of the World War II Valor in the Pacific National Monument.[50]

Practicalities

Given the remoteness of the island, the lack of regular transport connections (see Chapter 6, p. 317), and the fact that the Alaska Maritime National Wildlife Refuge is the land manager for Kiska, the survey was made possible by the USFWS research vessel MV *Tiĝlax*, and its crew led by Captain Billy Pepper.[51] The operational schedule of the USFWS activities in the AMNWR determined the timing and duration of the Kiska investigations. The survey was carried out between 5 and 10 June 2009.

The research team consisted Janet Clemens (NHL Historian, NPS, AK); Debra Corbett (Regional Archaeologist, USFWS, AK); Kim Fleming (graduate intern, USFWS, AK); Richard Galloway (graduate intern, USFWS, AK); Janis Kozlowski (Affiliated Areas Program Manager, NPS, AK) and the author.

Fig. 5. MV *Tiĝlax* at anchor in Kiska Harbor. John Faris is bringing a Zodiac ashore.[52]

Photo © Dirk R Spennemann, 2009)

Conventions

A number of conventions have been followed in this report:

xii) All dates are those of the U.S. Alaskan time zone, which needs to be taken into account when considering Japanese sources (which are based on Tokyo time).

xiii) All measurements are expressed in the Imperial system (miles, yards, inches), unless reference is made to Japanese gun classification, which uses the metric system.

xiv) All Japanese names are expressed in the Japanese name order, which sets the family name before the given name.

xv) The generic term'sea-plane' is frequently used when referring to Japanese aircraft in the Aleutians as that term covers both flying boats (such as the Kawanishi H6K 'Mavis') and floatplanes (such a the Nakajima A6M2-N 'Rufe').[53]

A listing of abbreviations, acronyms and terms specific to the study has been provided in the beginning of the report (p. ix).

1. They are held, *inter alia*, at National Archives and Records Administration, held various locations.—National Air and Space Museum, Washington, D.C—National Institute of Defense Studies Archives, Tokyo.—Australian War Memorial, Canberra.—Alaska Maritime National Wildlife Refuge, Homer, AK.—NHL files, U.S. National Park Service, Alaska Regional Office, Anchorage.—Additionally much imagery is held in private hand by veterans and collectors.

2. Garfield, Brian (1969) *The Thousand Mile War*. Garden City: Doubleday.

3. Goldstein, Donald M.; Katherine V. Dillon (1992). *The Williwaw War: The Arkansas National Guard in the Aleutians in World War*. Fayettville: University of Arkansas Press

4. Perras, Galen Roger (2003). *Stepping Stones to Nowhere, The Aleutian Islands, Alaska, and American Military Strategy, 1867–1945*. Vancouver: University of British Columbia Press.

5. Cloe, John Haile (1991) *The Aleutian Warriors. A history of the 11th Air Force & Fleet Air Wing 4.* Missoula: Pictorial Histories.

6. Dickrell, Jeff (2002) *Center of the Storm The Bombing of Dutch Harbor and the Experience of Patrol Wing Four in the Aleutians, Summer 1942*. Missoula, Mont.: Pictorial Histories Pub. Co., Inc. [not seen].

7. Coyle, Brendan (2002) *War on our doorstep: the unknown campaign on North America's West Coast*. Surrey, B.C., Canada: Heritage House.

8. Hays, Otis (2004). *Alaska's Hidden Wars: Secret Campaigns on the North Pacific Rim*. University of Alaska Press.

9. Chandonnet, Fern, editor. (2008) *Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993*. (reprint of the 1995 edition originally published by Alaska at War Committee). Fairbanks, University of Alaska Press.

10. Feinberg, Leonard (1992). *Where the Williwaw Blows: The Aleutian Islands*. World War II. Pilgrims' Process.

11. Rearden, Jim (2005) *Forgotten Warriors of the Aleutian Campaign*. Missoula, Montana: Pictorial Histories Publishing Company.

12. e.g. Corey Ford, *Short Cut To Tokyo The Battle For The Aleutians*. New York: Charles Scribners & Sons.—Drake, Nelson H. (1943) Fireplace. In: Ford, Short Cut To Tokyo, *op. cit*. Pp. 56–70.—Flint, Knute (1943) Mercy Pilot. In: Ford, Short Cut To Tokyo, *op. cit*. Pp. 81–70.—Gardner, L.O. (1943) Baptism of Fire. In: Short Cut To Tokyo, *op. cit*. Pp. 71–80.—Rearden, Jim (2005) *Forgotten Warriors of the Aleutian Campaign*. Missoula, Montana: Pictorial Histories Publishing Company.—Clubb, Merrel (2005) *A life disturbed: my Pacific war revisited*. Seattle: University of Washington Press.—Carrigan, Paul E. (2002) *The flying, fighting weathermen of Patrol Wing Four, 1941-1945, U.S. Navy: Kodiak, Dutch Harbor, Umnak, Cold Bay, Adak, Amchitka, Kiska, Shemya,. Attu and The Empire Express to Paramushiro*. [Forked River, N.J.]: Regal-Lith Printers [not seen].

13. Cohen, Stan B. (1981) *The Forgotten War: A Pictorial History of World War II in Alaska and Northwestern Canada. Volume One*. Missoula, Montana: Pictorial Histories Publishing Company.—Cohen, Stan B. (1986) *The Forgotten War: A Pictorial History of World War II in Alaska and Northwestern Canada. Volume Two*. Missoula, Montana: Pictorial Histories Publishing Company.—Cohen, Stan B. (1992) *The Forgotten War: A Pictorial History of World War II in Alaska and Northwestern Canada. Volume Three*. Missoula, Montana: Pictorial Histories Publishing Company.—Cohen, Stan B. (1993) *The Forgotten War: A Pictorial History of World War II in Alaska and Northwestern Canada. Volume Four*. Missoula, Montana: Pictorial Histories Publishing Company.

14. Earhart, David C. (2008) *Certain victor: images of World War II in the Japanese media*. Armonk, N.Y.: M.E. Sharpe.

15. Morison, Samuel Eliot (1951). *Aleutians, Gilberts and Marshalls, June 1942 – April 1944, vol. 7 of History of United States Naval Operations in World War II*. Boston: Little, Brown & Co.—Morison, Samuel Eliot (1949). Coral Sea, Midway and Submarine Actions, May 1942 – August 1942. *History of United States Naval Operations in World War II*, vol. 4. Boston: Little, Brown & Co.—Naval

Historical Center (1993) *United States Navy Combat Narrative. The Aleutians Campaign June 1942--August 1943*. Washington, DC: Naval Historical Center, Department of the Navy

16. MacGarrigle, George L. (1972) *Aleutian Islands. The U.S. Army Campaigns of World War II.* United States Army Center of Military History. CMH Pub 72-6.—Conn, Stetson, Engelman, Rose C., and Fairchild, Byron (2000) *United States Army in World War II. The Western Hemisphere. Guarding the United States and Its Outposts*. Washington, D.C.: Center of Military History, United States Army.

17. Coles, Harry L. (1950) The Aleutians Campaign. in: Craven, Wesley Frank, and Cate, James Lea (eds.) *Army Air Forces in World War II Vol. IV The Pacific: Guadalcanal to Saipan. August 1942 to July 1944*. Washington DC: Government Printing Office. Pp. 359-404.

18. Stacey, C.P. (1955) *Official History of the Canadian Army In the Second World War. Volume: Six Years of War The Army in Canada, Britain and the Pacific*. Ottawa: Queen's Printer

19. Hutchinson, Kevin Don (1994) World War in the North Pacific. Chronology and Fact Book. Westport, CT: Greenwood Press.

20. Office of Air Force History (1973) *The Army Air Forces in World War II: Combat Chronology, 1941-1945*. Washington, DC: Office of Air Force History, Headquarters USAF.—11th Air Force History Office (2007-08), "Remembering Our Heritage" [Weekly Chronologies of events pertaining to Air Force History in Alaska, starting 1 January 2007, current to April 2, 2008]. Office of History, Elmendorf AFB, Anchorage, AK [Available through Alaska Wing, Commerative Air Force www.alaskawingcaf.org/ alaska_heritage.htm].

21. NPS (1992) *World War II in the Aleutians. Alternatives for Preservation and Interpretation of Historic Resources at Dutch Harbor Naval Operating Base and Fort Mears, U.S. Army, National Historic Landmark, Unalaska, Alaska*. Anchorage, AK: National Park Service, Alaska Regional Office.—Burckhardt, Carol & Cook Linda (n.d.) *World War II National Historic Landmarks: The Aleutian Campaign*. [Anchorage, AK: U.S. National Park Service].—U.S. National Park Service, Alaska Support Office (2000) *World War II in Alaska. A Resource Guide for Teachers and Students*. Anchorage, AK: Alaska Support Office, U.S. National Park Service.

22. U.S. Fish and Wildlife Service, Alaska Region (2011) *Battle for the Aleutians. A Brief Illustrated History*. [Anchorage, AK: U.S. Fish and Wildlife Service, Alaska Region].

23. An exception are the interrogation reports: United States Strategic Bombing Survey (1946) United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. Washington, DC: United States Government Printing Office.

24. Bōei Kenshū jo Senshishitsu (1969) 北東方面海軍作戦 [*Hokutō hōmen kaigun sakusen /*Naval Operations in the Northeast Area] 防衛庁防衛研修所戦史室 [*Bōeichō Bōei Kenshū jo Senshishitsu cho /*Military History Office, Defense College, National Defense Agency]. Tōkyō: Asagumo Shinbunsha.

25. Kisuka-kai (1980) *Kisuka Senki*. Tokyo: Hara Shobō.

26. Kobayashi, Shin'ichirō (1963) Kiri no kotō: Kisuka Senki [The Isolated Island in the Fog: Commentaries on the war in Kiska] Aichi, Japan: self published.

27. The site www.combinedfleet.com provides in-depth tabular records of movements of Japanese naval units, compiled from both primary archival sources as well as wealth of Japanese-language secondary sources.—While it is easy to undermine the credibility of such web-based publications by labeling 'them vanity' publications, the fact is that can be assessed just as any other secondary source. In the case of www.combinedfleet.com it should be noted that most of their pages are geared at providing primary, factual data with no or only very limited interpretive analysis. The current author deems the data provided as reliable, certainly for the purposes of this study. While it would have been desirable to track down every cited ship movement to a primary archival source in the Japanese Navy archives etc, this was impossible both due language barriers and time constraints.

28. Most previously published images of Japanese origin could not reproduced in the present study. Although they had been published with attributions that suggested public domain status, their actual copyright status is in fact uncertain.

29. Friedmann, Herbert (1937) Bird bones from archeological sites in Alaska. *Journal of the Washington Academy of Sciences* vol. 27 (10), pp.431-438.—Hrdlicka, Ales (1945) *The Aleutian and Commander Islands and their Inhabitants*. Philadelphia: Wistar Institute.

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pp. 100-117.—U.S. Bureau of Indian Affairs (1989) *Report of investigation for Shemya Island, by Debra Corbett and Terrence Fifield. The Aleut Corporation, BLM AA-11923, AA-11924, AA-11925, AA-11926*. U.S. Bureau of Indian Affairs, Alaska Native Claims Settlement Act Office.—U.S. Bureau of Indian Affairs (n.d.) *Radiocarbon dates for sites AA-11960, 11967, 12011, 12013*. U.S. Bureau of Indian Affairs, Alaska Native Claims Settlement Act Office.

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[32]. Lenihan, Dan (1992) Aleutian Affairs. Archaeologists return to Japan's World War beachhead in Alaska. *Natural History* May 1992, pp. 51-60

[33]. Murphy, Larry E. (1990) Contributions to Kiska Harbor Survey 1989: Preliminary Report. Draft. NHL files, US National Park Service, Anchorage.—see also NHL file Kiska, NPS-AKRO.—Murphy, Larry E. and Lenihan, Daniel J. (1995) Recent Archaeological Investigations of World War II Material in Kiska Harbor, Aleutian Islands. in: Fern Chandonnet (ed). *Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993.* Anchorage, AK: Alaska at War Committee. Pp. 353–357

[34]. Unpublished notes, no formal report. NHL file Kiska, NPS-AKRO.—The visit is commented on by Diters in this paper: Diters, Charles E. (1995) Attu and Kiska, 2043: How much of the Past can the Present save for the Future? in: Fern Chandonnet (ed). *Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993.* Anchorage, AK: Alaska at War Committee. Pp. 359–363

[35]. Mobley, Charles (1996) *Cultural Resource Investigations at Kiska, Little Kiska, and Semisopochnoi, Aleutian Islands*. Report prepared by Charles M. Mobley & Associates, Anchorage, Alaska, under contract to Dames & Moore, Anchorage, Alaska for the U.S. Army Corps of Engineers, Alaska District

[36]. Not counting the ship time to and from Adak I. aboard MV *Tiglax*. In addition to the author, the team in 2007 comprised of Bruce Greenwood (U.S. National Park Service, Anchorage, AK); Debra Corbett (U.S. Fish and Wildlife Service, Anchorage, AK); and Kent Sundseth (U.S. Fish and Wildlife Service, Homer, AK). Michael Hawfield (Museums Alaska, Homer, AK), Deborah Rudis (U.S. Fish and Wildlife Service, Juneau, AK) and Philip Johnson (U.S. Fish and Wildlife Service, Anchorage, AK) also participated in some activities and provided valuable observations.

[37]. Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska Island, Aleutians, Alaska. The 4.7-inch Battery on North Head, Kiska Island. (Report Kiska #2) Documentation and Condition Report*. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.—Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska Island, Aleutians, Alaska. 120mm dual-purpose Gun Battery on North Head, Kiska Island. (Report Kiska #3) Documentation and Condition Report*. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.—Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. The 6-inch Gun Battery on Little Kiska Island. (Report Kiska #4) Documentation and Condition Report*. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.—Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. The 6-inch Gun Battery on North Head, Kiska Island. (Report Kiska #5) Documentation and Condition Report*. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[38]. Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan*. (Report Kiska #1) Study prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[39]. National Register Number: 85002732. <www.nps.gov/akso/CR/akrcultural/CulturalMain/2ndLevel/NHL/NHLJapaneseOcc.htm>. The base map has been sourced from Army Map Service (1957) Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheets 1824 IV NE, NW, SE and SW, Edition 1-AMS. Map drawn up 1953. Printed October 1957. Washington, DC: Army Map Service, Corps of Engineers

[40]. Spennemann, Dirk HR. (2009) *The Remains of a Japanese Plane at Salmon Lagoon, Kiska Island, Aleutian Chain, Alaska. Identification and Condition Assessment*. Report prepared for the U.S. National Park Service and the U.S. Fish and Wildlife Service, Alaska. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

[41]. Given that a number of plane wrecks were encountered during the survey, and given the remoteness of Kiska with the concomitant problems of surveillance and law enforcement, it was desirable to carry out a rapid survey to assess the nature and extent of the market for Japanese aviation memorabilia.—Spennemann, Dirk HR. (2009) *The Market for Japanese WW II Aircraft Memorabilia. A Rapid Appraisal of On-line Auctions in June and Jul 2009*. Report prepared for the U.S. National Park Service and the U.S. Fish and Wildlife Service, Alaska. Albury, NSW: Heritage Futures International.

[42]. Spennemann, Dirk HR and Sutherland, Gaye (2007) *Potential Theft of Heavy Artefacts. An Examination of the Carrying Capacity of All Terrain Vehicles*. Report prepared for the U.S. Fish and Wildlife Service, Alaska, Albury: Heritage Futures International.

[43]. "An Act to provide for the designation and conservation of certain public lands in the State of Alaska, including the designation of units of the National Park, National Wildlife Refuge, National Forest, National Wild and Scenic Rivers, and National Wilderness Preservation Systems, and for other purposes." Public Law 96-487-Dec. 2, 1980. 94 STAT. 2371 (on-line text: <alaska.fws.gov/ asm/ anilca/toc.html>.).

[44]. Executive Order nº 8680 "Establishing naval defensive sea areas around and naval airspace reservations over the islands of Kiska and Unalaska." Signed by President Frank Delano Roosevelt on 14 February 1941. *Federal Register* vol. 6, 1941 p. 1014.—The text in relation to the specific of the high-water mark was amended by Executive Order nº 8729 of April 2, 1941 (*Federal Register* vol. 6, 1941 p. 1791).—These Executive Orders were never rescinded.

[45]. National Oceanic and Atmospheric Administration (2010) *United States Coast Pilot 9: Pacific and Arctic Coasts Alaska: Cape Spencer to Beaufort Sea*. 28th Edition. National Oceanic and Atmospheric Administration, U.S. Department of Commerce. Washington, D.C.: U.S. Government Printer. P. 421.—In this context it is worth noting that it appears as if Executive Order 1613 closing Kiska Harbor to Foreign Shipping, is also still in effect as it has never been rescinded—but enforcement has either been suspended or the fact has been overlooked (Executive Order 1613 Harbors Not Subject to Entry, signed by President William H. Taft on March 23 September 1912.—Bureau of Insular Affairs (1914) *Acts of Congress, Treaties, proclamations, Decisions of the Supreme Court of the United States and the opinions of the Attorney General relating to Noncontiguous Territory, Cuba and Santo Domingo, and to Military matters*. Washington: Government Printing Office. pp. 545-546.)

[46]. National Register Number: 85002732. <www.nps.gov/akso/CR/akrcultural/CulturalMain/ 2ndLevel/NHL/ NHLJapaneseOcc.htm>.—The base map is a composite of several map sheets: Army Map Service (1957) Topographic Map 1:25,000. Kiska. Series Q801, Sheet 1824 IV, Edition 1-AMS. Map drawn up 1953. Printed October 1957. Washington, DC: Army Map Service, Corps of Engineers. Map sheets: C1-NW, C2-NE, C2-NW, C2-SW, C3-SE and D1-SW

[47]. The Kiska NHL is bounded by the following six points on the UTM grid: Kiska A 60 543600/5768500; B 60 549000/5754400; C 60 537900/5751300; D 60 533000/5751100; E 60 520200/5755100; F 60 537800/5770400.—The boundaries are described as: "Starting at a point where an unnamed stream drains from the north into Sredni Bight, then in a straight line south southeast east to Orient Point at the east end of Little Kiska Island, then extending that line.75 mile beyond so as to include all of Little Kiska Island, then a straight line west southwest to the tip of Hatchet Point, then in a straight line west to the tip of Bukhti Point, then in a straight line west northwest to a point of land on the northeast corner of Lief Cove, then extending that line 1.25 miles to a point in the ocean, then a straight line northeast to the ocean shore at the north end of Christine Lake, then in a straight line east southeast to the point of beginning. These boundaries include all the principal places of Japanese occupation on Kiska, as well as the Allies' 1943 invasion beaches."

[48]. <tps.cr.nps.gov/nhl/detail.cfm?ResourceId =1912&ResourceType=Site.

[49]. Proclamation: Establishment of the World War II Valor in the Pacific National Monument: A Proclamation by the President of the United States of America. 5 December 2008. http://home.nps.gov/pwr/customcf/apps/ww2ip/dsp_proclamation.cfm.—Foundation document for the Alaska Unit: World War II Valor in the Pacific National Monument. Alaska Unit. Foundation Statement. September 2010. U.S. Fish and Wildlife Service and U.S. National Park Service. http://alaskamaritime.fws.gov/pdf/valor.pdf.

[50]. World War II Valor in the Pacific National Monument. Alaska Unit. Foundation Statement. September 2010. U.S. Fish and Wildlife Service and US National Park Service. http://alaskamaritime.fws.gov/pdf/valor.pdf.

[51]. Without the support of the *Tiĝlax* crew the survey would have not been possible at all. The crew was comprised of: Billy Pepper (Captain), Dan Erickson (First Mate/Relief Captain), Eric Nelson (Engineer), John Faris (Deckhand/Relief First Mate), Andy Velsko (Deckhand) and Bob Ward (Cook). Scientific team leader on the cruise was Jeff Williams (Biologist).—Their operational support (beyond the call of duty) and hospitality is most gratefully acknowledged.

[52]. Photograph Dirk HR Spennemann.

[53]. *Floatplanes* are aircraft where the wheeled landing gear has been replaced by floats, either by two pontoons, or by a single pontoon under the fuselage with two stabilizing wing floats. *Flying boats* are aircraft where the main fuselage (hull) is partially immersed in water and where wing floats act as stabilizers.

2. PRE-CONDITIONS

This chapter will set out the pre-World War II historic context against which any World War II sites encountered in Kiska need to be interpreted.

Pre-historic Period

Based on archaeological dates for other islands of the Rat Island Group, it can be surmised that Kiska Island had been occupied by Aleut people for at least 4,500 years,[1] with younger sites documented for Little Kiska. The sites are commonly house pits, collapsed sod houses and middens, located on elevated, soft ground near beaches and lagoons suitable for fishing. When considering the settlement locations on Adak,[2] and the evidence on Attu and Agattu,[3] we can assume that the Kiska Beach area would have been the location of one of the Aleut settlements. There are very few images available that show the area before the war-time modification (Fig. 12, Fig. 16), some images show what looks like house pits (Fig. 13).

The first archaeological survey was carried out by William H. Dall in 1873, who noted "modern village site ... at the west end of the harbor."[4] In 1936 Aleš Hrdlička excavated prehistoric sites on Little Kiska and on the west coast of the Kiska, as well as a Russian-era contact period site at Kiska Harbor.[5] The exact location of the latter excavations is unclear.[6]

Russian period

The Russian navigator Vitus Bering and his crew discovered Kiska for European eyes during the Great Northern Expedition (1735-1742). On his way back to Russia from an exploration of part of the Alaskan coastline, Bering sighted the island on 25 October 1741[7] but did not attempt to land and rounded the island to the south. Describing it as "high, rocky, treeless and covered with snow,"[8] Bering named it St. Markiana.[9] The first Russian fur hunting parties, extending their range from the Komandorski Islands, followed soon after (1745–47).[10] Most early Russian travel narratives of the region concentrate on the eastern Aleutians,[11] and mention the Rat Islands only in passing.[12] Subsequent Russian navigators investigated the commercial opportunities of the area and eventually established fur trading opportunities on some of the islands[13] with the introduction of fox breeding stock to various islands as early as 1750.[14] To develop the fur industry, the Russians relied first on their own crews and soon after almost exclusively on Aleut labor. Generally, Russian commentary on Kiska is extremely limited, as most accounts that deal with the area, comment on Attu as well as Atka, and also

Adak, and to a lesser degree on Amchitka. In the light of the general lack of prominence, we can infer that Kiska was not a center of population or of a significantly powerful polity.

In early September 1758 the vessel *Sv. Kapitan*, under Captain Stepan Kozhernikov, was shipwrecked off Kiska and attacked by a group of Aleuts in a *baidarka*, but managed to fight them off. Whether that *baidarka* came from Kiska of Amchitka is unclear. The crew landed and set up camp on Kiska, living off mollusks and the carcass of a whale that had stranded there.[15] On 23 April 1759 they left in a craft made from driftwood, only to be stranded again, this time on Shemya.[16] There is no reference where on Kiska they stayed or to any communities living on Kiska.

On 1761/63 the vessel *Sv. Ioann Ustiuzhskii,* Captain Aleksei Vorob'ev, operated in the area[17] including Kiska which is described as inhabited in 1761.[18] Additional vessels operated in the same area at that time, such as the *Sv. Vladimir*, Captain Dimitrii Pan'kov,[19] which may have spent the winter 1762/63 on Kiska,[20] and the *Sv. Andreian i Sv. Nataliia*, Captain Andreian Tolstykh.[21]

Fig. 6. One of the earliest cartographic depictions of Kiska. Section of a 1775 map showing the location of Kiska (on this map called 'Isle St. Stephen').[22]

In 1780 the Russian Government formally asserted territorial ownership over the Aleutians by having metal crests placed on several islands.[23] Administratively the various Russian trading interests were aggregated in 1799 when the Russian-America Company was formed and given jurisdiction over the Aleutians. Kiska became part of the Atka Department, with headquarters at Okhotsk.[24] By 1823 that administrative arrangement had become too unwieldy, and a formal Atka District was established with seat in Sitka.[25] Despite these formalities, little change occurred in the Rat Islands, where no formal administrative presence existed.

Population Movements

It would appear that until the 1790s Kiska was permanently inhabited, but thereafter the picture becomes quite confused. In the early 1790s some of the Russians pursued a policy of concentrating the Aleut populations on selected islands, which effectively implied the depopulation of much of Amchitka and the Rat Islands to Atka, some 350 miles east of Kiska..[26]

Partial resettlement occurred when some of the local population moved back, first in about 1810 to Attu,[27] and then in 1812 to Amchitka.[28] While Kiska was visited from Amchitka,[29] it is unclear whether anyone moved back to Kiska on a permanent basis. While Kiska is not included in an 1827 listing of inhabited islands,[30] it would appear that the island was visited by hunters from Amchitka who came with their families, presumably for seasonal stays.[31] A seven-day visit in mid-July 1828 makes no reference to any settlement on the island.[32] By 1832 any Aleuts remaining on Amchitka from the 1812 resettlement were once again, and now permanently, relocated to Atka.[33] Some members of the Aleut community on Atka retained usage rights over Kiska and frequently, but only seasonally, visited the island to hunt sea otters. In 1835 Arctic foxes were released in Kiska for free-range breeding and subsequent trapping them for fur.[34]

In addition to the Kiska-Atka connection, there is mention of some Kiska residents having permanently relocated to Attu sometime before 1828.[35] As there is no reference to any further connection between Attu and Kiska, it would appear that none of the Kiska people on Attu retained any usage rights or claims over Kiska. The relocation from Kiska to Attu is not dated by Khlebnikov, but it could well be that these people were in fact those that had been removed from Kiska in the early 1790s and then returned to Attu in 1810.

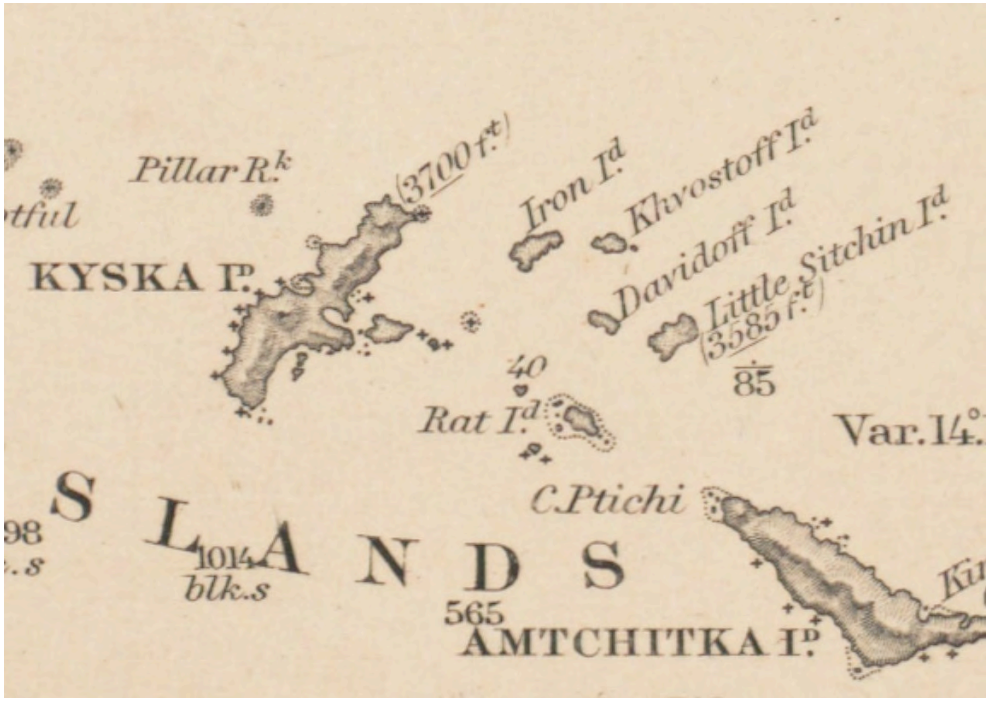

Fig. 7. The first U.S. Map of Kiska produced as a result of the North Pacific Surveying Expedition in 1855.[36]

Maps and Imagery

As far as can be ascertained, there are no Russian views that show Kiska—the island was never significant enough to warrant depiction as a copper engraving. Kiska Harbor is on

record in 1812 as being "good and spacious,[37] and according to Aleut informants in 1827 was regarded as the best harbor in the Aleutians.[38]

U.S. administration

As early as 1853, the U.S. had evinced an interest in the Aleutians, even though at the time they were still part of the Russia Empire. As part of the North Pacific Survey Expedition the USS *Fennimore Cooper* conducted a survey, looking for suitable harbors as locations for coal depots. The majority of the time was spent at Adak, but also at Atka, Tanaga and Attu.[39] A map of the Aleutians was published in due course (Fig. 7).

After the sale of the Russian Interests in Alaska and other parts of continental North America to the United States on 30 March 1867,[40] Kiska was temporarily placed under the control of the U.S. Army. The first systematic assessment of Kiska was carried out in 1873. William H. Dall, aboard the survey cutter *Yukon,*[41] conducted a geodetic survey, established an astro-block,[42] and conducted soundings in the harbor,[43] carried out archaeological excavations,[44] and made a variety of biological observations.[45] As a result of the findings, the U.S. government temporarily considered Kiska harbor as "the landing-station of the Japanese cable" and found that "after the examination of the other harbors [in the Aleutians, Kiska] appears to be the only one that meets all the requirements.[46] At the time, Kiska was found to be uninhabited.

In 1877 Alaska, and hence Kiska, became the responsibility of the Treasury Department. From then on, the island was occasionally visited during the summer months by the revenue cutters that patrolled these waters to keep an eye on the sealing and sea otter hunting parties. Effectively little changed, however, and Kiska continued to be regularly visited by fox trappers and sea otter hunters, who resided there temporarily during the trapping operations. The Alaska Commercial Company, using Aleuts from Atka who laid claim to Kiska, conducted out seasonal otter hunts every three or four years.[47] Hunting parties from Atka are on record for the 1878-79,[48] and 1888-90.[49] In the 1890s hunting on Kiska was abandoned as no 'profitable hunting remained."[50]

George Wardman, United States Treasury Agent at the Seal Islands, visited Kiska in 1879 and encountered 25 sea otter hunters from Atka, living with their families in a settlement of 20 to 25 *barabara* (Aleut sod houses) as well as a *barabara* serving as a church "in the sand ridge overlooking Kyshka harbor."[51] Nearby, three crosses marked the graves of sea otter hunters who had drowned the year before.[52]

Proposal to develop Kiska into a naval base

Geographically, Adak is located roughly in the middle of the great circle route between San Francisco and Shanghai. Initially Adak had been the focus of attention, both of the 1853-55 North Pacific Survey Expedition and of the 1874 work by Dall, who confirmed that it had a good harbor. Yet, as a result of that survey, Kiska supplanted all other islands in the minds of the planners looking for a landing and relay station of the planned trans-Pacific (Japan) cable.[53] Even though the cable did not eventuate as the Atlantic Cable could carry the traffic volume at the time, Kiska seems to have remained in the consciousness of the planners. The cable plans were revisited in the late 1880s.[54]

The U.S. expansion into the Pacific and the annexation of Wake Island,[55] Guam,[56] and the Philippines during the Spanish-American War of 1898 necessitated a

fundamental change in U.S. naval policy. To secure these new possessions, the U.S. Navy required bases and especially coaling stations. As a result, Pearl Harbor was developed into a naval base, while a number of naval reservations were established at what appeared to be strategic harbors.[57]

Table 1. Chronology of Administrative Actions regarding Kiska Island, Aleutians until the end of the nineteenth century

Date	Event	End-Note
25 Oct 1741	Vitus Bering discovers Kiska for European eyes and names it St. Markiana	58
1780	The Russian Government has metal crests placed on several islands to formally declare them Russian territory	59
1790	The Russians concentrate Aleuts from the Rat Islands on Atka	60
1799	Russian-America Company formed, has jurisdiction over the Aleutians; Kiska part of the Atka Department, with headquarters on Okhotsk	61
1823	Atkha District of the Russian-America Company established with seat in Sitka	62
1832 ?	The Russians relocate all Aleuts from Kiska to Atka	63
1835	Arctic Foxes are released on Kiska	64
1855	North Pacific Survey Expedition by USS *Fennimore Cooper* maps Kiska	65
30 Mar 1867	United States of America purchase Kiska (as part of Alaska) from Imperial Russia	66
18 Oct 1867	U.S. Army assumes control of Alaska (flag raised at Sitka)	
early May 1873	U.S. Coast and Geodetic Survey of Kiska Harbor area by William H. Dall with cutter *Yukon* W.H. Dall conducts archaeological excavations on Kiska	67
14 Jun1877	U.S. Army relinquishes control of Alaska to the Treasury Department	
25 Jun 1879	Visit by USRC *Richard Rush*	68
1879	U.S. Navy assumes control of Alaska	
1884	Alaska becomes a District and is placed under civilian administration	
1899	United States Board on Geographic Names fixes spelling as KISKA[69]	70

Kiska came first to public consciousness among many Americans in the course of the 1898 Senate debate on the appropriation for expenditure required to develop Pearl Harbor as a naval base. Beguiled by the information that the island had a safe harbor, was seemingly geographically closer to the Philippines than Hawai'i,[71] *and* was already owned by the United States, while Hawai'i at that point was not, some politicians raised the option of developing a naval base on Kiska.[72] While the politicians were happily ignorant of the meteorological realities in the Western Aleutians, the U.S. Navy too, had to work from insufficient data.

Following a brief assessment of Kiska in 1901,[73] a study by the U.S. Naval War College recommended in 1902 to establish a small coal depot in the Aleutians to service limited operations on the Great Circle route to the Far East.[74] As Kiska Harbor was an option for coaling the U.S. Pacific Fleet, a small Naval Reservation was declared in Kiska Harbor in 1902,[75] only to be followed one year later by a declaration covering all of Kiska and Little Kiska.[76]

In 1904 Kiska became a household name in the United States in military circles, as in January that year the Secretary of the Navy, William H. Moody, submitted to Congress proposals to develop naval stations at Subic Bay on Luzon, Philippines, and on Kiska. The latter was to be developed into a major, and well-defended coaling station. A

budget of $1,500,000 was proposed, with the major expenditure on "heavy disappearing guns and coastal artillery" as the "harbor is said to be an excellent one."[77] To collect better information on the conditions and to provide detailed mapping,[78] the Navy sent the gunboat USS *Petrel* accompanied by the collier *Saturn* to survey the area in May 1904.[79] Two prefabricated ('portable') houses, each 12' x 22' and 7' high, were erected and slipway for a scow built by the crew of USS *Petrel*.[80] It appears that the U.S. Navy also sent the Pacific squadron into Kiska waters both as a fact-finding mission and as a practical exercise to assess the suitability of the harbor to accommodate several vessels at the same time.[81] In a simultaneous measure, Kiska was closed to all foreign warships in May 1904.[82]

In the informal war games and war plans after the Spanish-American War Japan did not figure as an enemy of note.[83] That totally changed after the Imperial Japanese Navy (IJN) defeated the Russian Fleet at Tsushima, and after the Imperial Japanese Army (IJA) took Port Arthur. The defeat of Russia redrew the strategic map of the Pacific and the Aleutians were again seen as relevant to the defense of the U.S.A.[84]

A war scare at that time was exacerbated by Japanese seal poaching activities in the Aleutians,[85] causing some concern in both 1906[86] and 1907.[87] Both led to renewed calls for a U.S. naval presence in the western Aleutians.[88] Not surprisingly, then, by 1906 the establishment of a coaling station on Kiska was back in discussion,[89] and the review of U.S. coast defenses by the Taft Board in 1906 reflected the changed attitude and recommended that Kiska be fortified.[90] Yet, when the war scare had abated and rational thought prevailed, Kiska was no longer a tenable proposition: the reports provided by the U.S. Navy were far too unfavorable and thus any plans for Kiska were shelved.[91] Concurrent with these developments, the Aleutians seem to have attracted the interests of ranchers.[92] Faced by numerous inquiries regarding the grazing conditions in the Aleutians, the Alaska Agricultural Experiment Station recommended that a survey of fodder plants be undertaken, hoping to "secure one of the navy launches, used in connection with the building of the coaling station on Kiska."[93]

The debate on a naval station on Kiska notwithstanding, life in the Aleutians continued along familiar paths. Kiska was still visited on regular seasonal trips to hunt sea otters and trap foxes. By now, however, the hunters preferred European-style cabins over the traditional *barabaras*: two new buildings were noted on Kiska Beach when the revenue cutter USS *Tahoma* inspected Kiska in September 1910.[94]

Kiska still raised its specter in naval thinking as late as 1911. An assessment by the naval strategist Alfred Thayer Mahan argued that concentrating the U.S. Fleet at Kiska, the simple fact of a "fleet-in-being", would exert pressure on Japan and allow the U.S. to react to various threats posed by the Japanese fleet.[95] Subsequent naval war-gaming by the U.S. as part of the development of War Plan Orange,[96] showed that while control of the North Pacific was an important element in the U.S. defense posture against Japan,[97] Kiska Harbor was limited, the Aleutians were far from Japan's main sea lanes and strategic targets, and the weather conditions in the western Aleutians were not conducive to a large naval presence there.[98] The Japanese had come to the same conclusion.[99]

While the Navy walked away from the idea of developing a physical presence on Kiska at this point in time, it made sure that Kiska could not—at least not legally—be surveyed by a foreign power. On 23 September 1912 President Taft excluded by Executive Order all foreign vessels from Kiska Harbor.[100] That placed Kiska on the same level of significance as Guantanamo Bay on Cuba, Pearl Harbor, Guam and Subic Bay in the Philippines.

More or less at the same time another government agency was to enter the scene: the U.S. Department of Fisheries, which had previously made only one voyage to the Aleutians—and which seems to have excluded the Rat Islands from its sampling regime.[101]

Table 2. Chronology of Administrative Actions regarding Kiska Island, Aleutians from 1900 until the end of World War I.

Date	Event	Note
1901	USS *Concord* assesses Kiska Harbor	102
25 Nov 1901	parts of Kiska for (temporarily) withdrawn for Naval purposes	103
13 Jun 1902	600 acres on Kiska set aside as Naval Reservation at western shore of Kiska Harbor	104
16 Jun 1902	The area at western shore of Kiska Harbor set aside as Naval Reservation is reduced to 20 acres	105
9 Dec 1903	Kiska I., Little Kiska and all adjacent rocks set aside as Naval Reservation	106
Jul 1903	U.S. cruiser squadron surveys Adak and Kiska for military potential	107
2 May 1904	Kiska Harbor closed to foreign naval vessels	108
Jul 1904	Bureau of Fisheries Assessment with biological survey by J.H.Egbert	109
1904	Geologic Survey investigates Kiska for building materials	110
May/June 1904	Oceanographic Survey of Kiska Harbor and Geodetic survey of coaling station area by USS *Petrel* (with collier *Saturn*). Two portable houses and slipway for scow built by crew of USS Petrel, but projected coal depot is not established	111
1906	Ornithological research by AH Clark	112
15 Sep 1910	Revenue cutter USS *Tahoma* visits, finds wharf washed away, notes two buildings	113
mid June 1911	Revenue cutter USS *Tahoma* visits Bird Survey by AC Bent, RH Beck, A Wetmore and FB McKechnie Botanical collections by A Wetmore	114
23 Sep 1912	Kiska closed to foreign shipping except with permission of the US Navy	115
3 Mar 1913	Aleutian Islands Reservation established "as a preserve and breeding ground for native birds, for the propagation of reindeer and fur-bearing animals, and for the encouragement and development of the fisheries."	116
15 March 1914	Regulations for the Administration of the Aleutian Islands Reservation (Joint Regulation by the Department of Agriculture and the Department of Commerce)	117
June 1915	The U.S. Navy (Coast Guard) erected a building to house a shore party for Patrol Vessels to protect seal herds and sea otters.	118

Aleutian Islands Reservation'

On 3 March 1913 the 'Aleutian Islands Reservation' as a national reservation for native birds, fur farming, reindeer herding, and development of the fisheries."[119] Even though Executive Order nº 241 of 1903, declaring all of Kiska a naval reservation, had not been revoked,[120] the U.S. Navy does not seem to have objected officially to the declaration of the reservation or to the U.S. Bureau of Fisheries' role in enforcing administering it.[121] It would appear that the establishment of the refuge was not in conflict with the naval reservation, but that any commercial use of the island, even though nominally administered by the U.S. Department of Agriculture, required acquiescence by the U.S. Navy. The reservation, however, also did not imply that the U.S. Navy had relinquished any interest in establishing a base on Kiska at a future point in time: military use and the establishment of navigational aids (lighthouses) was specifically permitted. Indeed, the

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U.S. Navy remained concerned that knowledge about the potential of Kiska Harbor was to be contained. Thus, Executive Order 1613 remained in force[122] and Kiska continued to be closed to foreign shipping.[123]

Fishing permits in the refuge were encouraged, including the erection of a cannery on Unalaska in 1916.[124] While no fishing permits were issued for specifically for Kiska, fishing permits are on record for Attu issued in 1915[125] and 1918.[126] In 1920 the U.S. Bureau of Biological Survey was given responsibility of administering the fox industry in the Aleutians and enforcing fur seal laws.[127]

The first structural presence of the U.S. administration occurred in 1915[128] when the U.S. Revenue Service sent the cutter *Tahoma* to erect a small building to accommodate a shore party for patrol vessels to protect seal herds and sea otters.[129] Not all the station could be completed in time, as there was not enough high grass that could be harvested for the floors.[130]

Kiska after World War I

In the years following World War I, repeated requests were made by private citizens to raise foxes on the island (Table 2). At present no comprehensive history of the inter-war period has been compiled. What can be readily culled from archival and other sources is compiled in Table 2. From 1913 onwards the U.S. Bureau of Fisheries carried out cruises in the Western Aleutians and "stopping at such places as were necessary for rendering assistance for vessels in distress", but without specific mention of Kiska.[131] Between the end of World War I and the mid-1930s, Kiska remained the realm of fox trappers, using their own huts (Fig. 8) as well, presumably, as the facilities set up by the U.S. Navy.

Fox furs became fashionable just prior to World War I and demand rose dramatically. Concomitantly leases of lands for fox farming and trapping increased.[132] Kiska was no exception. Circumstantial evidence, derived from requests by naval personnel in 1919 to raise foxes and sheep for personal profit,[133] may suggest that at least some of the buildings were believed to have persisted in some form or the other.[134] By 1920 a pile driver barge with copper bottom and a stack of, by then rotted, pilings for a pier were noted during a brief visit.[135]

By the mid-1930s, a wooden cabin, occasionally used by a fox trapper, was present at Kiska Harbor.[136] That cabin was most probably owned by Henry Winkel and George Keeser who held a fox-trapping lease on Kiska from 1924-1937[137] and continued to be used when in 1937 the Winkel/Keeser lease was transferred to the Kiska Ranching Company (founded in 1934).[138] The latter company's fox trapping operations continued until 1942.[139] By 1937 Winkel and George Keeser had erected three cabins on Kiska, with a value of $2,500.[140] One of these cabins still existed in 1942 and is shown in the background of images of the U.S. weather station (Fig. 18-Fig. 19).

In addition, the Aleutian Fur Company, held leases on Little Kiska, Semichi, Rat, Little Sitkin and Semisopochnoi Islands.[141] Little Kiska was stocked with Arctic Foxes in 1924[142] and we can assume the presence of temporary accommodation for the seasonal trapper(s).

A map drawn up in 1958, but based on information culled from earlier maps, shows several cabins on Kiska: one at Corvie Bay in the Southeast of Kiska, one or more on South Head, in the central north of the island, and several at Kiska Beach.[143] Based on oral interviews describing the fox trapping operations in the western Aleutians,[144] we know that traditional structures, *barabaras*, were still widely used. It can be assumed that

the same would have occurred on Kiska (see Fig. 9), and that, therefore, additional fox trapping locations existed.

Fig. 8. Location of fox rapping cabins between 1920 and 1941.[145]

Fig. 9. A *barabara* hut, , constructed from tundra sod, reputedly on Kiska, photographed by Exing Galloway the 1937 Biological Survey Expedition.[146]

Note what appears to be a village site on the knoll opposite the body of water. The location of the photograph has not been identified.[147]

Military Concerns

For almost two decades after World War I all remained quiet at the military front, at least as far as the western Aleutians were concerned. The Washington Naval Arms Limitation Treaty of 1922, which regulated naval developments in the Pacific until Japan's withdrawal from the League of Nations in 1935,[148] stipulated that the Aleutians could not be fortified as military bases.[149] Despite that, the establishment of limited naval

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bases on the Aleutians to support light naval forces in the North Pacific, and to aid in a defense of Alaska,[150] continued to occupy the minds of some naval strategists,[151] but was no longer seen as a relevant option by the U.S. Navy war planners.[152] Common to all strategic approaches of the time was that the Aleutians were regarded only as a supporting flank of naval activity in the Central Pacific, even though the Aleutians were considered likely targets of small scale raids.[153]

In the mid 1920s General William Mitchell argued the value of the Aleutians as a base for bombers in an air war against Japan.[154] While he seemed cognizant of the limitations posed by the climate, he seems to have underestimated its severity. In the event, however, Mitchell's suggestions were not taken up nor did they find their way into the war plans. Nonetheless, in 1930 the airspace over Kiska, as well as other parts of the Aleutians, was closed to civilian aircraft.[155] Even though Kiska could not be developed into a base, it seems that the U.S. Navy was concerned about potential intelligence missions, presumably by Japan (see p. xvii).[156] The early 1930s saw the commencement of systematic scientific research in the region, manly focused on botanical and faunal research.

Fig. 10. Three seaplanes associated with the 1934 Aleutian Survey Expedition at Kiska Beach.[157]

Fig. 11. The shore establishment at Kiska in 1934 (detail of Fig. 10).[158]

Fig. 12. USS *Quail* and USS *Kingfisher* of the Aleutian Survey Expedition at Attu, mid June 1934[159] Image taken by one of the seaplane shown in Fig. 10.

Fig. 13. Evidence of possible Aleut house pits on a sand spit at Kiska Beach, photographed on 22 May 1942[160] seen from the southwest. (contrast-enhanced detail of Fig. 16).

In the summers of 1934 and 1935 the U.S. Navy carried out a systematic survey of the Aleutian Islands, using a number of vessels. In many cases the islands visited in 1934 were also revisited in 1935. One Kiska expedition charted the anchorages, carried out limited soundings and set up a geodetic survey datum near the existing development,[161] from which a geodetic survey of (parts of) the islands could commence. Limited geological surveys complemented the survey effort. At about this time some of the features on Kiska were named, such as Trout Lagoon and Salmon Lagoon. The 1934 expedition was accompanied, for part of the period, by three seaplanes (Fig. 10), which provided for aerial photography.[162] Both the 1934 and 1935 survey expeditions were well publicized, with the philatelic community eager to obtain philatelic cancels of U.S. outposts that had no standard postal services (Fig. 14, Fig. 15). These surveys were augmented by botanical and faunal studies carried out by the U.S. Bureau of Biological Survey.[163] In subsequent years the survey effort was continued, but on a smaller scale and much less publicized.

The novelist and journalist Corey Ford visited Kiska in 1934[164] where he noted 'two trappers cabins, bleak and dirty, a homemade mandolin made of a cigar box and wire the only human touch."[165]

Table 3. Chronology of Administrative Actions regarding Kiska Island, Aleutians from the end of Word War I until Pearl Harbor (7 Dec 1941)[166]

Date	Event	Note
4 Feb 1919	Permit to A.B. Somerville to raise (blue) foxes on Kiska	167
29 Apr 1919	Approval to Ensign Volney USNRA to graze sheep on Kiska	168
12 May 1919	Application by Ensign Volney USNRA to raise foxes on Kiska	169
6 Feb 1922	Washington Naval Arms Limitation Treaty specifies that the Aleutians cannot be fortified	170
17 Feb 1922	Alaska Peninsula Fisheries Reservation created by Executive Order	171
30 Apr 1922	Regulations for the Administration of the Alaska Peninsula Fisheries Reservation	172
1 Jun 1923	Application by WE Bolsham to raise foxes on Kiska	173
9 Oct 1923	Permit to Henry Winkle to raise (blue) foxes on Kiska and to establish a reindeer farm	174
25 Oct 1923	Regulations for the Administration of the Alaska Peninsula Fisheries Reservation (revised)	175
14 Nov 1923	U.S. Navy willing to make the shore station available to commercial interests	176
3 Apr 1924	A.B. Somerville relinquishes the permit of 4 Feb 1919 to raise foxes on Kiska	177
11 Apr 1924	Aleutian Fur Company requests transfer of A.B. Somerville's permit as they were the commercial successors to Somerville's operations	178
7 June 1924	Alaska Peninsula Fisheries Reservation revoked by Executive Order	179
17 Feb 1930	Kiska Airspace closed to Civilian Aircraft	180
1932	Botanical research by E Hulten	181
1932	Offshore survey and preliminary geological survey by USS *Gannett*	182
27 Mar 1933	Japan gives notice of its withdrawal from the League of Nations (effective 1935)	183
1933	Geodetic survey by U.S. Navy	184
1934	U.S. Navy seaplane expedition to Aleutians lands at Kiska	185
22 Jul 1934	Hydrographic survey by USS *Gannett* and USS *Kingfisher*	186
15 Aug 1934	Sea Otter Survey by Douglas Gray	187
1934	USGS geologist SR Capps conducts geological reconnaissance survey	188
29 Dec 1934	Japan gives notice that it intends to terminate the Washington Naval Treaty of 1922	189
5 May 1935	USS *Oglala*, USS *Quail*, USS *Kingfisher* and USS *Tanager* visit as part of the Aleutian Survey Expedition	190
1935	U.S. Navy Weather Station reputedly erected at Main Beach, Kiska Harbor	191
27 Mar 1935	Japan ceased to be part of the League of Nations	192
7-27 Jul 1936	USGS *Shoshone* Archaeological research by A Hrdlička (incl. excavation on Little Kiska)	193
25-Jul 1936 –?	USS *Brown Bear* Botanical research by IW Hutchinson Fauna research by CJ Murie, CS Williams, HW Jewell, and HD Gray	194
6 Feb 1936	The Washington Naval Arms Limitation Treaty expires	
1937, June	Fox trapping lease transferred to the Kiska Ranching Company	195

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

Table 3. Chronology of Administrative Actions regarding Kiska Island, Aleutians from the end of Word War I until Pearl Harbor (7 Dec 1941)[166]

Date	Event	Note
1937	U.S. Navy Weather Station operating at Main Beach, Kiska Harbor	196
3-6 Jun 1937	USS *Brown Bear* Fauna research by CJ Murie, VB Scheffer, JB Steenis and HD Gray	197
19 Aug 1938	USS *Brown Bear* Fauna research by VB Scheffer	198
1940	USS *Brown Bear* Ornithological research by Ira N. Gabrielson	199
25 Jul 1940	Aleutian Islands Reservation renamed as Aleutian Islands National Wildlife Refuge	200
14 Feb 1941	"Kiska Island Naval Defensive Sea Area" and "Kiska Island Naval Airspace Reservation" declared extending to the 3-mile zone	201
7 Apr 1941	Naval Sea and Air Space reservation	202
24-27 Jul 1941	Mooring for seaplane operations laid by USS *Williamson*	203
20 Aug 1941	Survey for temporary Aerological Station being carried out	204
23 Oct 1941	Temporary Aerological Station being built	205

The Metereological Station

All actions taken by the United States in the Aleutians in the inter war years need to be seen through the lens of the stipulations of the Washington Naval Arms Limitation Treaty. The United States Navy was both keen to avoid any activity that could be interpreted as violating the letter or the spirit of the treaty, and, at the same time, saw the Aleutians as a low priority area.

Yet the U.S. Navy maintained a proxy presence in the area through the patrols maintained by the U.S. Fish Commission that was *inter alia* responsible for the management of the fur seal and sea otter populations in the region and for the enforcement of the protection of the species in the Aleutian Islands Reservation since 1913.[206] The Annual Reports and Bulletins of the U.S. Fish Commission are silent on matters of law enforcement or general survey;[207] no scientific research seems to have been carried out in the Aleutian Islands after they had been declared a reservation.[208]

The situation changed dramatically on 24 February 1933, when the Empire of Japan announced in Geneva that it would be withdrawing from the League of Nations.[209] Once the two-year notification period had expired, Japan was no longer bound by any conventions passed by the League. While in late 1933 Japan was still, at least outwardly, committed to the Washington Naval Arms Limitation Treaty, the writing was on the wall. With her withdrawal from the League of Nations over her expansionist policies in Manchuria, it was only a matter of time until Japan would renege on the treaty. Indeed, by the end of 1934 Japan also formally announced that she would not be renewing the Washington Naval Arms Limitation treaty.[210] That in particular, not only meant that the Japanese would be developing a stringer navy, but also that they would no longer be bound by any non-fortification clauses.

The 1934 Aleutian Islands Survey Expedition needs to be seen in that context: The U.S. Navy was in urgent need of detailed and up-to-date geographic and oceanographic intelligence about the central and western Aleutians.

Fig. 14. Philatelic Cover of the 1934 Aleutian Survey Expedition, cancelled by U.S.S. *Gannet* at Kiska 12 July 1934.[211]

Fig. 15. Philatelic Cover of the 1935 Aleutian Survey Expedition, cancelled by U.S.S. *Kingfisher* at Attu 24 May 1935.[212]

In the second part of the 1930s the Alaska Game Commission vessel USS *Brown Bear* made a number of voyages to the region, supporting biological and archaeological research (see Table 2).

In addition to detailed knowledge on the hydrography of the region, the U.S. Navy required knowledge of the weather, not only the overall patterns and the conditions naval and other forces might encounter there, but also up-to-date information on the actual weather, especially as the fronts moved from west to east. A weather station on Kiska was an important consideration. It should be noted that despite the conditions of the Washington Naval Arms Limitation Treaty the U.S. could have established a weather station on Kiska at any time, as that was not a 'fortification' *per se*—but that, at least for the sake of appearance, the personnel would have to have been civilian. By 1936/7, when the U.S. built the weather station[213] at Kiska Beach,[214] that requirement no longer existed and the U.S. could—and did—place Naval personnel on Kiska (Fig. 22).

By 1942 the Station is described in a U.S. intelligence report thus:

> "the...group of buildings comprised the U.S. aerology and radio installations on the island. The westernmost building of the group of three built there, housed the radio and aerology equipment. The opposite building comprised the mess hall, pantry and galley. These two buildings measure about 55 x 21 feet. Behind the mess hall is a Quonset hut (36 x 16ft) which was presumably used for storage

purposes. A motor generator building lies behind and between the mess hall and aerology buildings. Walks connect all installations in the group.

Just off the beach, and approximately east of the end of the walk from the aerology building lies an old beached barge, some 55 x 20 feet. This barge and four buildings (possibly two of which remain) were on the island when the H.O. Survey Photographs were taken in 1935. These buildings comprised a central weather station and 3 trappers' huts."[215]

The appearance of the station shortly before the Japanese invasion is depicted on two photographs taken on 22 May 1942 (Fig. 16, Fig. 17).

Fig. 16. U.S. weather station on Kiska on 22 May 1942[216] seen from the southwest[217]

Fig. 17. Kiska Beach and the U.S. weather station on 22 May 1942[218] as seen from the north.[219]

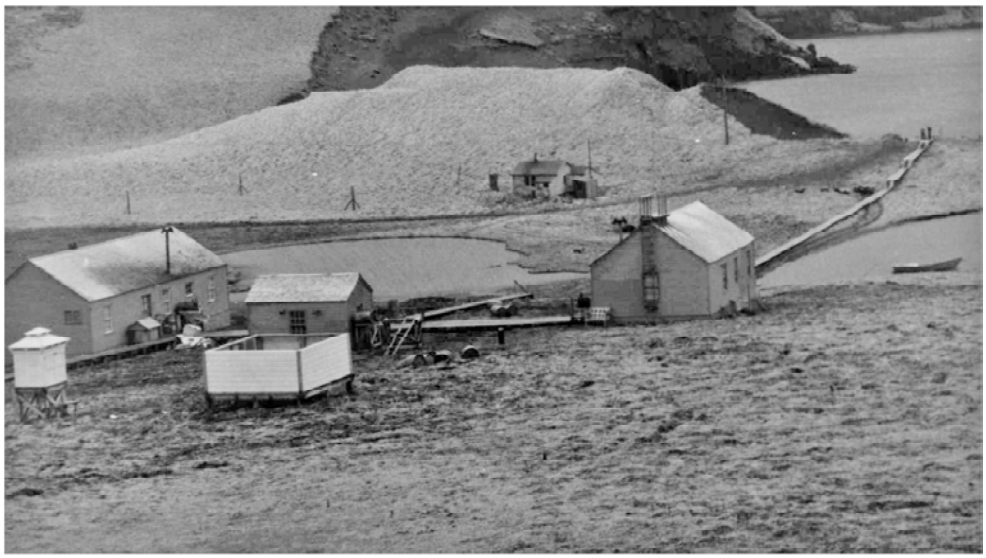

Fig. 18. U.S. weather station on Kiska on 22 May 1942[220] seen from the southwest from the meteorological instrumentation boxes. A trapper's hut can be seen in the background at the foot of the small rise. Note the three posts of the left of that building, which appear to be drying/curing racks for pelts (Detail of Fig. 16).

Fig. 19. U.S. weather station on Kiska on 22 May 1942[221] seen from the north. A trapper's hut can be seen in the background at the foot of the small rise (Detail of Fig. 17). The two meteorological instrumentation boxes (viewpoint of image Fig. 17) can be seen in the right background.

Between 1939 and the outbreak of the Pacific War, the U.S. defense posture in Alaska was gradually developed and strengthened. In the face of Alaska being a low priority area on the scale of national defense, with concomitant low budget priority, Brigadier General Simon Bolivar Buckner pushed through a program of proactive base development. By necessity, that was at first focused on the Alaskan mainland itself and then on areas of the Aleutians that were closer to the mainland.

Being closest to Japan, the Western Aleutians were an area of concern, but of low priority given the levels of funding allocated. As part of a defense scheme for the Aleutians, the U.S. Navy was building bases at Sitka, Kodiak and at Dutch Harbor. It was public knowledge in early 1941 that the Navy also planned a base for Kiska:[222] by Presidential Executive Order of 14 February 1941 Kiska Island and all waters up to the (international) three-mile limit were declared as the 'Kiska Island Naval Defensive Sea Area' and closed to everybody, unless on "public vessels of the United States." At the same time a 'Kiska Island Naval Airspace Reservation' excluded all aircraft from the same area.[223] The same Executive Order established similar areas over Unalaska. That fact that none of the other islands in the Aleutians were similarly covered, shows the prominence that the U.S. Navy afforded Kiska in U.S. military defense posture.[224]

From the available evidence it would appear that Buckner intended to prioritize the Western Aleutians for military development in 1942, but the events of Pearl Harbor overtook this.

Buckner went on at least one personal inspection tour to Kiska in May 1942.[225] That tour was a combination of two U.S.Navy PBY as well as the sea-plane tender U.S.S. *Casco* (AVP-12), which had been dispatched to replace some of the radio operators on Kiska, to evacuate the Aleuts from Attu and to place a ten-man strong weather contingent on Attu.[226] Bad weather delayed his departure from Kiska. He eventually left on 1 June 1942, five days before the Japanese assault on Kiska.[227] Given that the U.S. had broken the Japanese cipher[228] and was able to read much of the Japanese Navy radio traffic, and given that U.S. had advance warning that an attack on the Aleutians in early June was very probable, such a personal inspection tour can only be seen as reckless—unless Buckner was not included in the high-level officers privy to the results of Purple.[229] Yet such bravado seems to have been in his character[230]

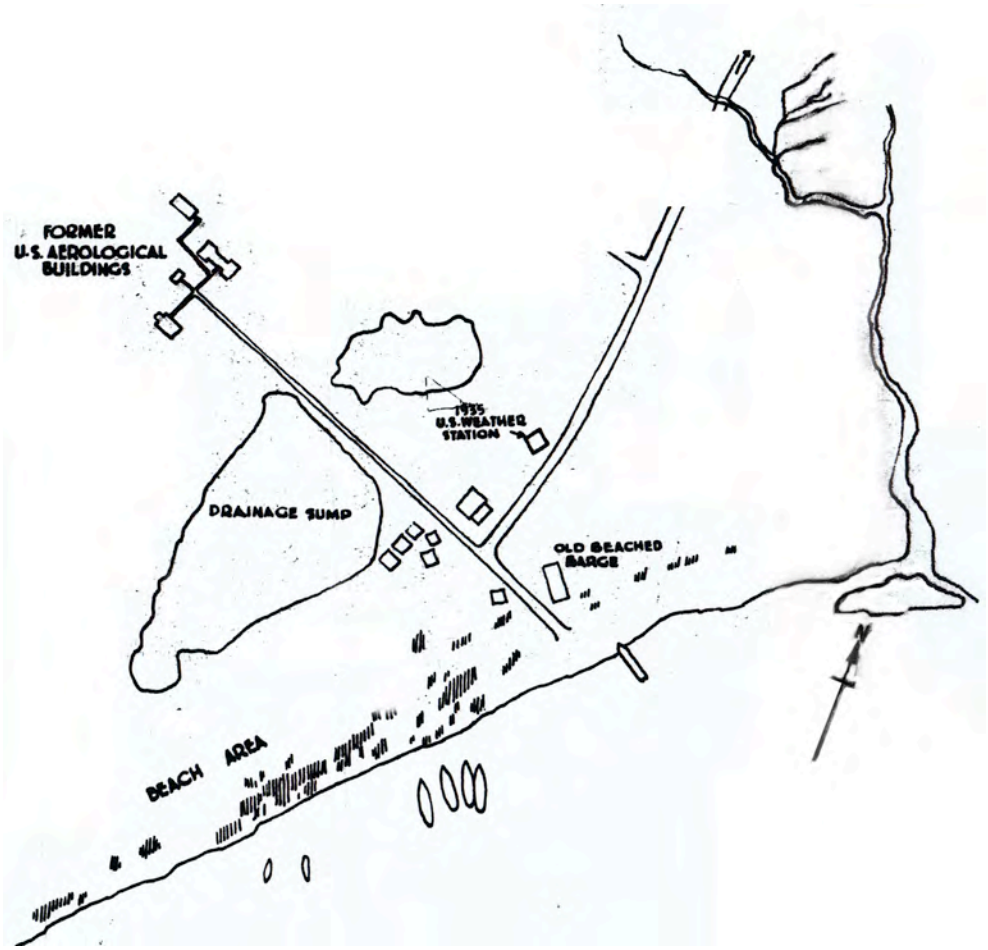

Fig. 20. The area of the U.S. Aerological Station in June 1942.[231]

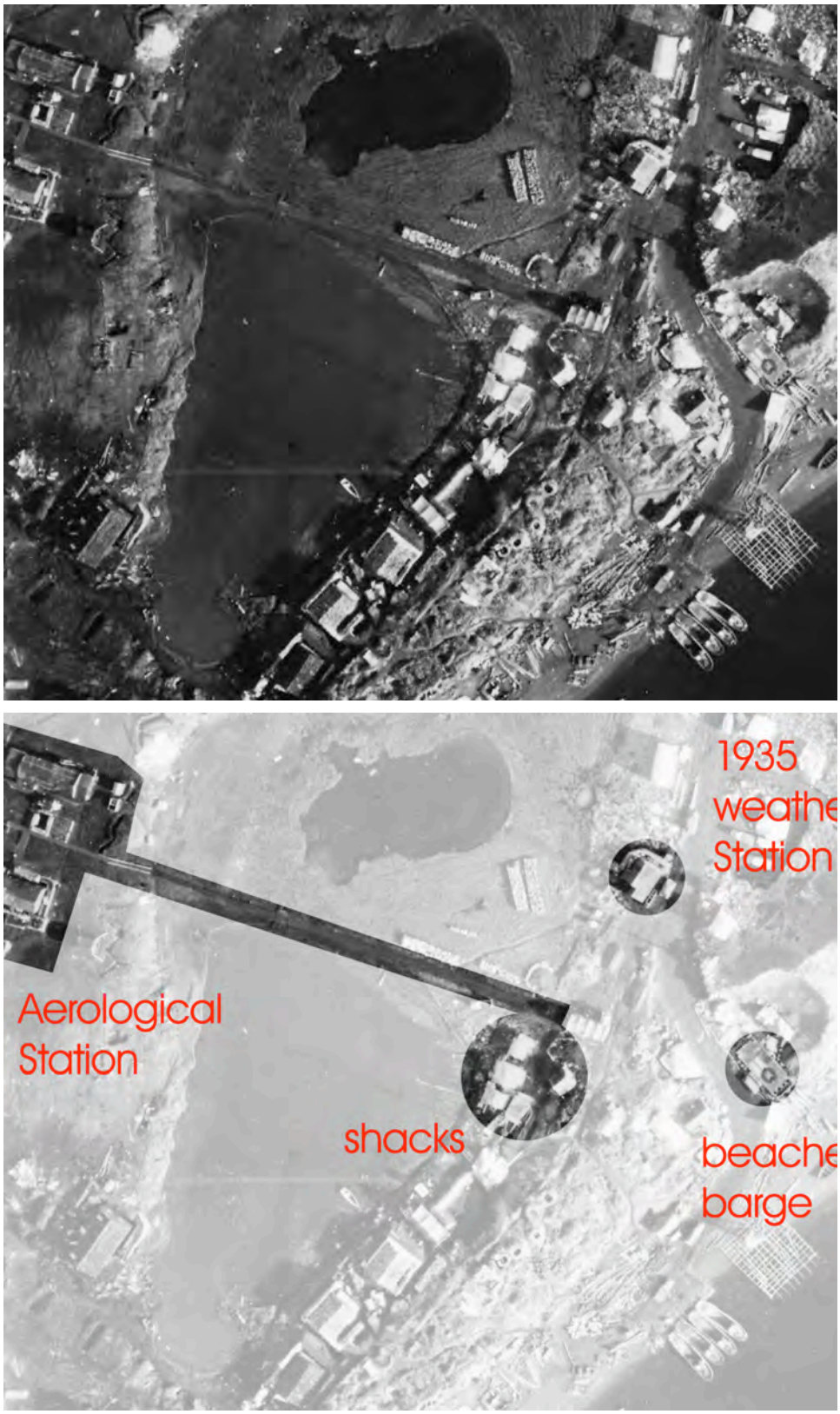

Fig. 21. The area of the U.S. weather station on 28 September 1942. The U.S. buildings are still recognizable at that stage. Top: section of aerial photograph;[232] bottom: interpretation.

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Fig. 22. The staff of the U.S. weather station on Kiska with visitors from U.S.S. *Casco*.[233]

Front row from left: John C. McCandless, Robert Christensen, Walter M. Winfrey (with dog Explosion), Gilbert T.Palmer, Wilfred I. Gaffey. Back row from left: James L. Turner, Rolland L. Coffield, William C. House, Lieutenant Mulla, LeThayer L. Ecckles, Lou Yagonelli, Madison L. Courtnay.[234]

Japanese Intelligence Gathering

In the preceding pages repeated reference has been made to the presence of Japanese sealing, whaling and fishing vessels in the general area between the Kuriles, Kamchatka and the Aleutians. Many authors have taken these activities as evidence that the Japanese carried out intelligence gathering missions.[235] In particular, publications that appeared during and immediately after the war abound with references to Japanese spy missions to the Aleutians.[236] Given the relevance of prior knowledge on the selection of islands to be occupied, it is appropriate to briefly examine what is known about the Japanese actions.

To place this in context, we need to consider that one of the offshoots of the Washington Naval Arms Limitation Treaty of 1922 was the problem of independent verification of a treaty party's adherence to the terms they had agreed on. In Japan-held Micronesia this manifested itself in the bizarre Ellis affair of 1922[237] and in continued U.S. suspicion of Japanese non-compliance.[238] That suspicion by U.S. military planners also had a reverse effect: if the U.S. war planners did not know for sure what was going on in Micronesia, then, *ergo*, the Japanese must also have been worrying about U.S. intentions and actions in the Aleutians—and hence it could almost be taken as a certainty that they would send out spy missions.

The Japanese can be forgiven for any suspicions they may have harbored. After all, the U.S. had closed Kiska to foreign shipping in 1912, a provision that had never been repealed even after the Washington Naval Arms Limitation Treaty. The 1924 round-the-world flight in four Douglas World Cruisers,[239] which flew through the Aleutians highlighted the U.S. capabilities with operating floatplanes in the area.[240] Any suspicions the Japanese Navy may have held were reinforced in February 1930 when the airspace over Kiska was closed to foreign aircraft. After all, why would any nation do so, unless they wished to hide illicit military construction activity?[241] These fears would have been

confirmed in the minds of the Japanese military planners once the radio transmitter of the weather station started broadcasting on Kiska in 1935 (or 1937).

It is this intelligence climate of suspicion and mutual distrust against which we need to interpret the Japanese activities in the Bering Sea and the reception they received in the press and book publications of the day.

The Japanese had maintained a presence in the waters between the Western Aleutians and the Kurile Islands since the late nineteenth century.[242] While Japanese fur seal poachers had been particularly active in the first decade of the twentieth century,[243] the next twenty years saw a relative lull in Japanese activities in the Aleutians and the eastern part of the Bering Sea. This changed dramatically in the 1930s. Japanese crab cannery ships are mentioned as operating in the vicinity of Amak Island of the Eastern Aleutians in 1930–1937.[244] In addition, fisheries research and training vessels were active in the waters in 1933–1937.[245] Given the vicinity of population centers, these movements of these vessels were reasonably well monitored and would have collected little intelligence apart from oceanographic and climatological data, which were of course valuable for naval operations.[246]

Of greater interest here are the activities of the scouting ship *Hakuhō Maru* (白鳳丸) operated by the Japanese Department of Agriculture and Forestry, which in 1933 made a cruise along the Aleutians with the reputed purpose of investigating the migration route of fur seals.[247] The ship returned in 1934, when she stayed for a few days in June at Attu[248] and possibly canvassed other islands before going on to the Pribilofs. The *Hakuhō Maru* returned again in 1938 for the same purpose, cruising "in the vicinity of the Aleutian Islands" in May and making landfall at least at Atka on 29 May, departing back to Japan on 1 June with reputed engine trouble.[249] In all cases, the vessel's route and exact activities would have gone largely unobserved.[250]

The Good-Will Flight of 1931

One of the many stories cited about the 'wily nips' in the Aleutians is the on-again, off-again goodwill flight of 1931 which was classed by several authors as a major spy mission. To support a Japanese flyer, so the story went, the Japanese government had dropped off shore parties, which engaged in intelligence gathering. Of particular concern was their purported use of a 'fishing tackle' which was actually a standard sounding line with lead. weight[251] The story of that spy mission gain currency in the press soon after the Japanese attack on Dutch Harbor.[252] Given the plethora of Japanese spy stories and rumors that had been circulating in the Aleutians and Alaska in the pre- and post war years,[253] we need to consider the veracity of the event.

The early 1930s were a period when several trans-Oceanic flights were attempted, both for the record books and to open up commercial routes *Hochi Shimbun* (報知新聞), a major Tokyo newspaper, agreed to support the Japanese aviator Yoshihara Seiji,[254] who aimed at being the first to cross the Pacific Ocean by flying from Tokyo to San Francisco.[255] But unlike other attempts in the early 1930s, who had planned routes far north over Beringia via Nome, Yoshihara planned to fly the more southern route over the Aleutians.[256] To support his flight, the newspaper had chartered the *Kokusai Maru*[257](to place support crews and gasoline caches along the planned route.[258] At present the exact locations of most caches are unclear,[259] but we know that at least Attu, Amchitka, Atka, Umnak and Dutch Harbor,[260] and possibly Kanaga were covered.[261]

Yoshihara started his flight at Tokyo on 4 May 1931, but never completed the flight, having crashed with both his original aircraft (on 18 May)[262] and his replacement plane (on 7 July).[263] His bid for a third attempt was preempted by aviators Donald Moyle and Cecil Allen who completed the first flight from Japan to the U.S. on 18 September.[264] After Yoshihara's second plane had crashed, the newspaper *Hochi Shimbun*, which had bought and supplied both planes, abandoned the attempt and ordered the chartered *Kokusai Maru* back to Japan; the ship departed Dutch Harbor on 4 August, having spent three months in the Aleutians.[265]

It was the on-again-off-again nature of the Yoshihara attempt,[266] coupled with the fact that ground crews had been employed, that sparked the claims of spy missions—claims which did not eventuate much later.[267] It seems that the fear of spy missions stands in direct relation to the heightened anxiety following Japan announcing her departure from the League of Nations in 1933 and her refusal to renew the Washington Naval Arms Limitation Treaty in 1934.[268]

So, how much detailed intelligence did the Japanese gather, and how much would that have benefitted the IJN? What seemed to have caused the main concern to the observer, in retrospect, was that the use of a sounding line as fishing tackle. Given the language barriers that can be assumed to have existed,[269] onlookers would have tried to make sense of the Japanese activities. If we consider that the plane used was a seaplane which required a safe landing and take-off areas in uncharted coastal waters, the use of a sounding line to work out depth of water and underwater obstacles in some inshore areas is perfectly legitimate and appropriate. And it is possible that the crew of the *Kokusai Maru* may have been debriefed by the IJN after the return from the trip.[270]

State of Japanese Intelligence on Kiska

So, what did the Japanese actually know about Kiska? The truth, as unpalatable as it may be to conspiracy theorists, is that, despite all of this activity, the Japanese intelligence of Kiska Harbor, at least in the planning stages of the attack, seems to have been *extremely* limited. An intelligence map of Kiska Harbor only shows the location of the weather station, mentions that Kiska Harbor could be used for ships, and that the pass between Kiska and Little Kiska was fouled and could not be used by larger vessels.[271] There are no other data.[272] These had to be acquired through periscope surveys by submarines as well as by seaplane reconnaissance missions in the weeks before the landings.

1. The oldest dates from the Rat Islands come from four sites on Amchitka Island, where nine dates cluster between 4,700 and 4,300 BP. These dates suggest that early occupation of Amchitka was roughly contemporaneous with the Central Aleutians Islands. Corbett, Debra, Christine Lefèvre, Thomas J. Corbett, Dixie West and Douglas Siegel-Causey (1997) Excavations at KIS-008, Buldir Island: evaluation and potential. *Arctic Anthropology* 34(2):100-117.—U.S. Bureau of Indian Affairs (1989) *Report of investigation for Shemya Island, by Debra Corbett and Terrence Fifield. The Aleut Corporation, BLM AA-11923, AA-11924, AA-11925, AA-11926*. U.S. Bureau of Indian Affairs, Alaska Native Claims Settlement Act Office.—U.S. Bureau of Indian Affairs (n.d.) *Radiocarbon dates for sites AA-11960, 11967, 12011, 12013*. U.S. Bureau of Indian Affairs, Alaska Native Claims Settlement Act Office.—McCartney, Allen P. (1977) Prehistoric Human Occupation of the Rat Islands. In: Merritt, M.L. and R.G. Fuller, (eds.)*The environment of Amchitka Island, Alaska*. Technical Information Center, U.S. Dept. of Commerce. Pp. 59-114.

2. Pers. comm. Debra Corbett, occasion of field visit to Clam Lagoon, Adak, July 2007.

3. Based on historic images shot during WWII showing a landscape unmodified by war action.

4. "Kyska Island.—On the south shore of Kyska harbor, near a small portage, is a rather modern shell-heap. A modern village site exists at the west end of the harbor, and one, quite extensive, in the bay on the west side of the island, opposite the harbor. Little Kyska Island.—Afforded no evidences of shell-heaps.": Dall, W.H. (1877) On succession in the shell-heaps of the Aleutian Islands. *Contributions to North American Ethnology Vol*. I. U.S. Geographical and Geological Survey of the Rocky Mountain Region. Washington: Government Printing Office. Pp. 41-92; quote p. 44.

5. Hrdlička, Aleš (1937) Archaeological Explorations on Kodiak and the Aleutian Islands. *Explorations and Field-Work of the Smithsonian Institution in 1936*, pp. 57–62.

6. Current archaeologists (pers. comm. Debra Corbett, USFWS) assume that this site was located to the south of Trout Lagoon, the area modified by the development of the Japanese submarine base and later U.S. Navy facility there.

7. Yushin, Kharlam (1922) The Logbook of Bering's Vessel the St. Peter and of her successor the hooker St. Peter. In: F.A. Golder, *Bering's Voyages. An Account of the Efforts of the Russians to Determine the Relation of Asia and America. Vol. I The Log Books and Official Reports of the First and Second Expeditions 1725-1730 and 1733-1742*. New York: American Geographical Society. P. 198.—Waxel, Sven (1922) Report on the Voyage of the St. Peter. In: F.A. Golder, *Bering's Voyages. An Account of the Efforts of the Russians to Determine the Relation of Asia and America. Vol. I The Log Books and Official Reports of the First and Second Expeditions 1725-1730 and 1733-1742*. New York: American Geographical Society. Pp. 275.—Steller, Georg Wilhelm (1988) *Journal of a Voyage with Bering, 1741-1742*. Translated by M. Engle and O. W. Frost. Stanford: Stanford University Press. p. 119.—Steller, Georg Wilhelm (1988) *Journal of a Voyage with Bering, 1741-1742*. Translated by M. Engle and O. W. Frost. Stanford: Stanford University Press. p. 119.—Dall, William Healy (1891) *Early Expeditions to the Region of Bering Sea and Strait: From the Reports and Journals of Vitus Ivanovich Bering*. U.S. Coast and Geodetic Survey, U.S. Coast and Geodetic Survey. Appendix N°19 to the Report for 1890. Washington, D.C.: Government Printing Office.

8. Khitrov in: Yushin, Logbook of Bering's Vessel the St. Peter *op. cit.* p. 199 fn 110.

9. Sources as early 1857 (see Golder's note in Yushin, Logbook of Bering's Vessel the St. Peter *op. cit.* p. 199 fn 110) confuse Amchitka with Kiska, thus calling Amchitka "St. Markiana" and Kiska "St. Stephen" (the name actually bestowed on Buldir). This has been repeated on maps and in secondary sources and public accounts (e.g. Ford, Corey (1943) *Short Cut To Tokyo. The Battle For The Aleutians*. New York: Charles Scribners & Sons. P. 97).

10. Black, Lydia T. (1984) *Atka: An Ethnohistory of the Western Aleutians*. Kingston: Limestone Press. Pp. 72-73.

11. e.g. Stählin,J. von. (1774) *An Account of the New Northern Archipelago, lately discovered by the Russians in the Seas of Kamtschatka and Anadir*. London: C. Heydinger. P. 32 ff.—See critique as to reliability by Pallas (1790; see: Masterson James R. and Brower, Helen [1948] *Bering's Successors 1745–1780. contributions of Peter Simon Pallas to the history of Russian exploration towards Alaska*. Seattle, WA: University of Washington Press, p. 30), and also Black (Atka *op. cit.*)

12. By 1761 the Rat Islands were called *Ostrove Aleutskie Dal'nie* (the far/distant Aleutian Islands). Pallas, Peter Simon (1790) O Rossiiskikj oktryiiakh no moriakh mezdhu Asieiu i Amerikoiu. In: SOBRANIE SOCHINENII VYBRANNYKY IZ MESIATSESLOVOV NAKAZNYE GODY,

vol. 4, pp. 261-392. [not seen, cited after Black, Atka *op. cit.* p. 47].—Sarychev was the area (between Attu and Amchitka) in mid June 1790, early June 1791 and July 1792. Kiska was seen on 6 June 1791 and described as mountainous with the east side "more level than the west, having a flat shore": Sarytschew, Gawrila (1806) *Gawrila Sarytschew's Russich-Kaiserlichem Kontre-Admirals und Ritters achtjährige Reise im nordœstlichen Sibirien, auf dem Eismeere und dem nordœstlichen Ozean*. Zweiter Theil. Leizpig: Wilhelm Rein und Comp. P. 2, 74, 173.—Sarychev, Gawrila (1807) *Account of a voyage of discovery to the north-east of Siberia, the Frozen Ocean and the North East Asia*. Vol. 2. London: Printed for Richard Phillips. P. 3; 36-36, 74.—As the Captains of Russian fur-hunting parties were not given to write public accounts of their actions, we have to infer much of their presence in Kiska waters from the few data that are known about their movements into the Central Aleutians (which would have led them past or through the Rat Islands. Black, Atka *op. cit.* p. 75.—This is not the place to engage in a detailed discussion of the relative merits and veracity of some of the sources. This has been dealt with fairly early on by Moser and more recently by Black:, Johann Jacob (1784) *Nord-America nach den Friedenschlüssen vom Jaht 1783. Nebst 1. einem Vorbericht von America überhaupt., 2. Einigen Charten, und 3. einem hinlänglichen Register*. Erster Theil. Leipzig, Johann Friedrich Junius. P. 230ff.

13. Barratt, Glynn (1981) Russia in Pacific Waters 1715–1825. A Survey of Russia's Naval Presence in the North and South Pacific. Vancouver: University of British Columbia Press.

14. A breeding pair were for example introduced to Attu in 1750: Black, Atka *op. cit.* p. 75.

15. One of the Russian vessels stranded on a reef off Kiska: "Kiska Is., 1758, Sept. 5th or 6th, Russian ship Sv. Kapiton, length 17 arshin, wrecked off Kiska. Sv *Kapiton* was built in 1750/51 on Bering Island from the wreckage of *Sv.Pekup i Zonat*. (Black, Lydia T. (1983), Record of Maritime Disasters in Russian America, Part One: 1741–1799. *Proceedings of the Alaskan Marine Archaeology Workshop*. Sitka May 17-19, 1983 [not seen]). Ship driven onto reef near island. Crew reached shore but 17 died while on island. The rest made way to Shemya Is. where they were rescued by *Sv. Petr i Pavel* in 1761." Source: Nelson, Eric (2007) Shipwrecks on Alaska Maritime National Wildlife Refuge. <www.amnwr.com/ShipwreckList.htm>.

16. Black, Atka *op. cit.* p. 82.—Makarova claims that the crew of the *Kapitan* was taken off Kiska by the *Nikolai* in 1758 and that Kiska was inhabited (Makarova, Raisa V. (1975) *Russians on the Pacific 1743-1799*. Kingston, Limestone Press. P. 55; 241 fn 16). There is no mention of this in Black. It is possible that Makarova confuses Kiska with Shemya.—Makarova (p. 210) also attributed the discovery of Kiska to Captain Kozhernikov of the *Kapitan*.

17. Black, Atka *op. cit.* p.83.—Efimov, A.V (1948) *IZ ISTORII RUSSKIKH EKSPEDITSII NA TIKHOM OKEANE. PERVIA POLOVINA XVIII VEKA*. Moscow: Ministerstvo voemmykh del. [not seen, translation cited after Black, Atka *op.cit.* p. 187].

18. Black, Atka *op. cit.* p. 83.—Makarova, Russians on the Pacific *op. cit.* p. 60.

19. Black, Atka *op. cit.* p. 83.

20. Makarova, Russians on the Pacific *op. cit.* p. 54-55 claims that the *Vladmir*'spent the winter of the following year [i.e. 1762/63] on the island of Kyska, from whence in the fall of 1763 it returned to Kamchatka with a rich fur cargo." Black (Atka *op. cit.* p. 83 fn 13) raises doubt on some of these statements.

21. Black, Atka *op. cit.* pp. 87-88.

22. Jefferys, Thomas (1775) *The Russian Discoveries, from the Map Published by the Imperial Academy of St. Petersburg*. London, Printed for Robt. Sayer, Map & Printseller, No. 53 in Fleet Street. Published as the Act directs March 2d, 1775. Contained in: *The American Atlas: Or, A Geographical Description Of The Whole Continent Of America* ... Engraved On Forty-Eight Copper Plates. London: Printed R. Sayer and J. Bennett, 1776. (reproduced from WikiCommons: commons.wikimedia.org/wiki/File:Jefferys_-_The_Russian_Discoveries.jpg>.

23. Black, Atka, *op. ct.* p. 187.

24. Black, Atka, *op. ct.* p. 46.

25. Black, Atka, *op. ct.* p. 46.—did not have any effective on the ground relevance until about 1825/27,

26. Attributed to Maksim Lazarev: Khlebnikov, Kiril Timofeevich (1994) *Notes on Russian America Parts II-V*: *Kad'iak, Unalashka, Atkha, the Pribylovs*. Limestone Press, Kingston, Ontario, and Fairbanks, Alaska, p. 212.—Black, Atka *op. cit.* p. 94; 96.—The stated reasons for removal vary (either having otter population recover or because of low subsistence conditions on Amchitka) and do not concern us in the context of this study.—see Vasil'ev, Ivan (1812) Vypiski iz puteshestvennogo zhurnala Shturmana Vasil'eva, na sudne Finliandiia 1811-1812 g. v. Aleutskikh

ostrovakh. [not seen, translation cited after Black, Atka *op. cit.* p. 158.—A secondary source drawn up by the USFWS as a legal notice indicates that for a few years, Kiska became the resettlement area for all Aleuts from the Rat Islands Group and that by 1832 the last of the of 1812 returnees to Amchitka were again resettled on Atka: 'Notice of completion of an inventory of human remains removed from Amchitka Island and in the possession of the U.S. Department of the Interior.' U.S. Fish and Wildlife Service, Region 7, Anchorage, AK. *Federal Register* vol 68, nº 230, 1 Dec 2003, p. 67205; <www.nps.gov/ history/nagpra/ fed_notices/nagpradir/nic0731.html>.

[27]. Black, Atka *op. cit.* p. 98.

[28]. Black, Atka *op. cit.* p. 98;

[29]. Vasil'ev (1812 in Black, Atka *op. cit.* p. 158) mentions that some of the Aleuts on return to Amchitka went "to look for their compatriots who left Amchitka for Kiska in 6 baidarkas, that is the entire population of the Rat Chain." The actual meaning of this section is quite opaque. Did some or all Amchitkans get move first to Kiska and from there to Atka? Or did some leave to Kiska while others were relocated in the 1790s to Atka? Black, who is otherwise quite discerning about inconsistencies in the accounts, is silent on the matter.

[30]. Khlebnikov, Notes on Russian America *op. cit.* p. 221.

[31]. *ibid.*

[32]. Extracts of Journal by A. Ingerstrom and notes by I.Sizov, extracted by Khlebnikov, Notes on Russian America *op. cit.* p. 256, 259-260.—The text is manly concerned with navigational details of Kiska Harbor. According to Sizov, "no fish have been seen in the streams on this island, and there are few sea birds on the cliffs. Of land birds, there are quantities of ptarmigan and a few geese and ducks."

[33]. Notice of completion of an inventory of human remains removed from Amchitka Island, *op. cit*.

[34]. Ashbrook, R G. and Walker, P. (1925) Blue fox farming in Alaska. *U.S. Department of Agriculture Bulletin* 1350. Washington, D.C. Department of Agriculture. P. 4.

[35]. Khlebnikov, Notes on Russian America *op. cit.* p. 379.

[36]. United States Hydrographic Office (1856) [Map of] Behring's Sea and Arctic Ocean: from surveys of the U.S. North Pacific Surveying Expedition in 1855, Commander John Rodgers U.S.N. commanding and from Russian and English authorities. Washington, D.C.: United States Hydrographic Office.—Small section of the map image (less than 0.5% of map area) cropped from Harvard Map Collection digital maps. Digital object: http://ids.lib.harvard.edu/ids/view/11114251?buttons=y.

[37]. Khlebnikov, Notes on Russian America *op. cit.* p. 213; 260.

[38]. Khlebnikov, Notes on Russian America *op. cit.* p. 227.

[39]. Ponko, Vincent (1983) The Navy and the Aleutians before World War II: the story of a flirtation. *The Alaska Journal* vol. 13(2), pp. 128-131.—Perras, Galen Roger (2003). *Stepping Stones to Nowhere, The Aleutian Islands, Alaska, and American Military Strategy, 1867–1945*. Vancouver: University of British Columbia Press. P. 7.

[40]. Treaty concerning the Cession of the Russian Possessions in North America by his Majesty the Emperor of all the Russias to the United States of America; Concluded March 30, 1867; Ratified by the United States May 28, 1867; Exchanged June 20, 1867; Proclaimed by the United States June 20, 1867. <memory.loc.gov/cgi-bin/ampage?collId=llsl &fileName=015/llsl015.db &recNum=572.

[41]. Anon. (1874) W.H. Dall's Forschungen in den Aleutischen Inseln, 1873. *Petermann's Geographische Mitteilungen* vol. 20, pp. 151-152.

[42]. N 51°59' E 177°30'.—Schott, Charles A. (1897) Terrestrial Magnetism. Distribution of the Magnetic Declination in the United States for the epoch January 1, 1900. Appendix nº 1—Report for 1896. Treasury Department, U.S. Coast and Geodetic Survey. Washington: Government Printing Office, p. 152—In 1903 fixed as N 51°59'04" E 177°30'00": Bowditch, Nathaniel (1903) The American Practical Navigator, being an Epitome of Navigation and Nautical Astronomy. Hydrographic Office No. 9 Washington: Government Printing Office. P. 195.

[43]. United States Coast Survey (1875) *Chart of Kyska Harbor, Great Kyska Island, Aleutian Islands. Issued July 1875*. [Washington D.C.]: United States Coast Survey.

[44]. Dall, On succession in the shell-heaps of the Aleutian Islands *op. cit*.

[45]. His observations were widely cited in the natural history literature: e.g.: Nelson, E.W. (1883) Birds of the Bering Sea and the Arctic Ocean. In: *Cruise of the Revenue-Steamer Corwin in Alaska and the N. W. Arctic Ocean in 1881. Notes and Memoranda: Medical and Anthropological; Botanical; Ornithological*. 47th Congress, 2d Session. I Executive Document No. 105. Washington: Government Printing Office. Pp. 56–120, esp. p. 94; 97.

[46]. The cable was projected to run between Barclay Sound, Vancouver Island, British Columbia, Canada, and Akishi Bay Bay, Yezo, Japan.—Daly, Charles P. (1874) Annual Address. Subject: The Geographical Work of the World in 1873. *Journal of the American Geographical Society of New York* vol. 5, pp. 49-94; quote p. 61.—See also: Proposed Cable between America and Japan. *Otago Witness* (Otago, NZ.) issue 1163, 14 March 1874, Page 21.

[47]. On record for 1879: Bailey, George W. (1880) *Report upon Alaska and its people, giving statistics as to the numbers, location, pursuits, and social condition of the inhabitants, the climate, productions, and general resources of the country, and of the commerce, ocean currents, etc. 1879*. (46th Cong., 2d sess., Senate ex. doc. 132). Washington: Government Printing Office. P. 14-15—Bailey was the commander of the US Revenue Cutter Richard Rush.

[48]. Wardman, George (1884) *A trip to Alaska: a narrative of what was seen and heard during a summer cruise in Alaskan waters*. San Francisco: Samuel Carson & Company. Pp. 132 ff.

[49]. United States Census Office (1893) *Report on Population and Resources of Alaska at the eleventh census, 1890*. Census Office, Department of the Interior. Washington, DC: U.S. Government Printing Office. P. 82.

[50]. Spencer, David; Naske, Claus N. and Carnahan, John (1979) *National Wildlife Refuges of Alaska: A Historical Perspective*. Anchorage, AK: Arctic Environmental Information And Data Center. P. 34.

[51]. The hunters had come over in May. Some *barabara* faced the harbor, while others on the same sand ridge, faced inland: Wardman, A trip to Alaska *op. cit*. pp. 132 ff.

[52]. Wardman, A trip to Alaska *op. cit.* p. 137.—Cloe reproduces a photograph of a Russian Orthodox Cemetery which he attributed to to Kiska. (Cloe, John Haile [1991] *The Aleutian Warriors. A history of the 11th Air Force & Fleet Air Wing 4.* Missoula: Pictorial Histories. p. 321). The grave surrounds are very elaborate and more likely that the image shows the cemetery on Attu. Further, none of the images showing the sand ridge in the mid 1930s show the cemetery. Also, none of the veterans' images from Kiska show the cemetery—which would have been a interesting feature (for example see the extensive photography by Sam Maloof).

[53]. See Dall, William H. (1874) Explorations in the Aleutian Islands and Their Vicinity. *Journal of the American Geographical Society of New York*, vol. 5 pp. 243-245.—Anon. (1874) W.H. Dall's Forschungen in den Aleutischen Inseln, 1873. *Petermann's Geographische Mitteilungen* vol. 20, pp. 151-152.

[54]. Hull, Commander (1889) Nautical Report on the Proposed Route of the Cable. *Journals and Printed Papers of the Federal Council of Australasia. Anno 52 Victoriae, 1889*. Vol. III. Hobart, Tas.: William Thomas Strutt, Government Printer. Pp. 54-56.

[55]. Spennemann, Dirk H.R. (1998) The annexation of Eneen-kio (Wake Island, Central Pacific Ocean) by the United States of America *Journal of Pacific History* 38(2), pp. 239-247.

[56]. Carano, Paul and Sanchez, Pedro (1964) *The Complete History of Guam*, Seventh Printing. Rutland, VT and Tokyo, Japan: Charles E. Tuttle.

[57]. Even though policing them proved difficult as can be demonstrated by the activities of Japanese feather collectors in the Pacific (eg French Frigate Shoals, Midway, Wake): Spennemann, Dirk H.R. (1998 [1999]) Excessive harvesting of Pacific seabird populations at the turn of the 20th century *Marine Ornithology* 26: 49-57.—Spennemann, Dirk H.R. (2000) Japanese economic exploitation of Central Pacific Atoll seabird populations 1898-1915 *Pacific Studies* Vol. 21(1/2), 1998 (2000), pp.1-41.

[58]. Yushin, The Logbook of Bering's Vessel the St. Peter, *op. cit.*—Waxel, Report on the Voyage of the St. Peter, *op. cit.*

[59]. Black, Atka, *op. ct.* p. 187.

[60]. Notice of completion of an inventory of human remains removed from Amchitka Island *op. cit.*

[61]. Black, Atka, *op. ct.* p. 46.

[62]. Black, Atka, *op. ct.* p. 46.—This did not have any effective on the ground relevance until about 1825/27.

63. Notice of completion of an inventory of human remains removed from Amchitka Island *op. cit.*

64. Huston, A geographical analysis of the fur farming industry in Alaska, *op. cit.*

65. United States Hydrographic Office (1856) [Map of] Behring's Sea and Arctic Ocean: from surveys of the U.S. North Pacific Surveying Expedition in 1855, Commander John Rodgers U.S.N. commanding and from Russian and English authorities. Washington, D.C.: United States Hydrographic Office.

66. Treaty concerning the Cession of the Russian Possessions in North America by his Majesty the Emperor of all the Russias to the United States of America; Concluded March 30, 1867; Ratified by the United States May 28, 1867; Exchanged June 20, 1867; Proclaimed by the United States June 20, 1867.<memory.loc.gov/cgi-bin/ampage? collId=llsl&fileName=015/llsl015.db&recNum=572.

67. Annotation to Map 'Kiska Harbor & Vicinity.' Sheet 3 of 4. Compiled by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Produced by 29th Engineers Production Plant, Portland, Oregon. Edition of July 1943.—Daly, The Geographical Work of the World in 1873, *op cit.* p. 61.—Schott, Terrestrial Magnetism, *op. cit.* p. 152.—For the archaeology see: Dall, On succession in the shell-heaps of the Aleutian Islands. *op. cit.*—Dall, Explorations in the Aleutian Islands and Their Vicinity. *op. cit.*—Anon., Dall's Forschungen *op. cit.*

68. Bailey, Report upon Alaska and its people *op. cit.,* pp. 14-15.—Wardman, A trip to Alaska *op. cit.*

69. A previous and common, alternative spelling had also been 'Kyska.' In addition the island had been addressed, on occasion as 'St Stephen.' Other spellings are Kyshka, "Kisiika, Kyska, Kiiska, Kysa, etc., and often Great or Big Kiska to distinguish it from Little Kiska, near by" Baker, Marcus (1902) *Geographic dictionary of Alaska*. United States Geological Survey. Washington: Government Printing Office. P. 242.—See also: *First Report of the United States Board on Geographic Names 1890-1891*. Washington: Government Printing Office, p. 21.

70. United States Board on Geographic Names (1892) First Report of the United States Board on Geographic Names 1890-1891. Washington: Government Printing Office, p. 77.—Second report of the United States Board on Geographic Names. 1890-1899. 56th Congress, 1st session. House of Representatives. Document -- no. 472. Washington, DC: Govt. Print. Office, 1900. p. 77.

71. An error of map interpretation and navigation.

72. 'The Fight Against Hawaii; Anti-Annexationists Continue Their Attack Upon the Newlands Resolution.' *New York Times* 24 June 1898.—'Pearl Harbor Appropriation. Senate Votes $40,000 for a Purchase of Land in Hawaii and $105,000 for Dredging' *New York Times* 30 June 1898.

73. By USS *Concord*: Ponko, The Navy and the Aleutians before World War II, *op. cit.*

74. Braisted, William R. (1958) *The United States Navy in the Pacific 1897-1909*. Austin, TX: University of Texas Press, p. 135.

75. Executive Order 13 June 1902.—JAG 2 200 17. National Archives and Records Administration RG 71/1001/14 Kiska I.

76. Executive Order nº 241, dated 9 Dec 1903.—JAG 2 200 17. NARA RG 71/1001/14 Kiska.

77. 'North Pacific Naval Station. The General Board recommends on in the Aleutian Islands. *The Sun* (New York) 26 February 1904, p. 3, col. 2—'A Subig [sic] Bay Naval Station.' *New York Times*. January 30, 1904, p. 5.

78. The completion of the survey and the production of a map was announced on 27 July ('Will coal in North. American Navy to have Station in Aleutian Islands.' *The Saint Paul Globe*. (St. Paul, MN] 28 July 1904, p. 4, col. 6).

79. Clark, Walter E (1904) Coaling Station promises much. United States may be connected by continuous cable with the Orient. *The Saint Paul Globe*. (St. Paul, MN) 26 February 1904, p. 4, col. 7—'Naval Station on Aleutian Island.' *New York Times* 10 April 1904.—Clark, Walter E (1904) Will establish coaling station. United States is to have the largest of its kind in the Pacific. *The Saint Paul Globe*. (St. Paul, MN) 10 April 1904, p. 1, col. 1.—An Aleutian Naval Base. Kiska Island, where the coal depot is proposed. *The Sun* (New York) 1 May 1904, p. 1 col. 1.

80. Commander USS *Petrel* to Secretary of the Navy, dated Navy Yard Mare Island, 10 October 1904. Copy on file NHL file Kiska, U.S. NPS Anchorage.—'Naval Station on Aleutian Island.' *New York Times* 10 April 1904.—Clark, Walter E (1904) Locates Largest Coaling Station. Lieut. Commander Sherman describes his operations at Kiska Island. *The Saint Paul Globe*. (St. Paul, MN) 8 August 1904, p. 3, col. 2.—In addition, some garden had been planted (Clark, Locates Largest Coaling Station *op. cit).*—Size of houses mentioned in: JH Quinan, Captain United States Revenue Cutter

Service *Tahoma*, to Captain DP Foley, Commanding Officer Bering Sea Fleet USRCS, Unalaka, dated Unalaska 21 September 1910. NARA RG 80 Box 668 Folder 1704—Third endorsement, Chief Constructor USN Chief of Bureau of Construction and Repair nº 14437-A.1&2 Dated November 25, 1910. NARA RG 80 Box 668 Folder 1704.

[81]. Aleutian Naval base is where squadron is going. *Hawaiian Gazette* (Honolulu, HI) 717 May 1904, p. 3 col. 1-4.—Pacific squadron off to Kiska. *Hawaiian Gazette* (Honolulu, HI) 7 June 1904, p. 3 col. 2-4—Ponko, The Navy and the Aleutians before World War II, *op. cit.* gives a 1903 for this.

[82]. Foreign Warships cannot enter Pearl Harbor.' *Hawaiian Gazette* 17 May 1904, p. 6 col. 1-2.

[83]. Miller, Edward S. (1991) *War Plan Orange: The U.S. Strategy to Defeat Japan, 1897-1945*. Annapolis MD: Naval Institute Press.

[84]. As early as 1901 Cushman Davis had noted the rise of Japan as a power and commented on the strategic value of the Aleutians: "The Aleutian Group is islands stretches like the curved and sharpened blade of a scimitar, and impends over Japan." Davis, Cushman Kellogg (1901) *A treatise on international law including American diplomacy*. St. Paul, MN: Keefe-Davidson Law Book Company, p. 132.

[85]. The increased Japanese presence in Aleutian waters, first for fur seals, and later for whales and pelagic fish, was a direct result of a program by the Japanese government in 1898 and again in 1905 to subsidize pelagic fisheries (Kitahara, T. (1910) The fisheries of Japan considered from a Geographical Standpoint. *Bulletin of the Bureau of Fisheries* vol. 28, 1908, pt 1. Department of Commerce and Labor. Washington: Government Printing Office. Pp. 375-379).

[86]. Braisted, William R. (1958) *The United States Navy in the Pacific 1897-1909*. Austin, TX: University of Texas Press, p. 188.

[87]. Jaggar, Jr, Thomas A. (1908) Journal of the Technology Expedition to the Aleutian Islands, 1907. *The Technology Review* vol. 10(1), pp. 1–37; p. 15.

[88]. The U.S. had reasons for concern as Japanese businesses has a track record of poaching on small uninhabited islands throughout the Pacific: e.g. Spennemann, Dirk HR (1998) Excessive harvesting of Pacific seabird populations at the turn of the 20th century *Marine Ornithology* 26: 49-57.; Spennemann, Dirk HR (2000) Japanese economic exploitation of Central Pacific Atoll seabird populations 1898-1915 *Pacific Studies* Vol. 21(1/2), 1998 (2000), pp.1-41.—Such a concern was borne out by events in 1911, when as the Japanese sealers forcefully raided the seal colonies in the Komandorskis in 1911 despite the presence of Russian personnel: Stejneger, Leonhard (1926) Fur Seal Industry of the Commander Islands 1897-1922. *Bulletin of the United States Bureau of Fisheries* vol. 41, 1925. Department of Commerce. Washington: Government Printing Office. Pp. 289–332.

[89],. 'Roosevelt Makes Plea For Better Defenses.' *New York Times* 6 March 1906.

[90]. U.S. Congress. Senate. Coast Defenses of the United States and Insular Possessions. Senate Executive Document 248. 59th Congress, First Session, 1906.—Lewis, Emanuel Raymond (1979) *Seacoast fortifications of the United States*. Missoula: Pictorial Histories.—This was a change in policy, for when in 1886 the Endicott Board reported on the U.S. needs for naval stations and their defenses, Kiska had not been included: U.S. Congress, House of Representatives. Report of the Board on Fortifications and Other Defenses Appointed by the President of the United States under the provisions of the Act of Congress approved March 3, 1885. House of Representatives Executive Document 49, 49th Congress, 1st Session, 1886.

[91]. But Pearl Harbor and Subic Bay, as well as Guantanamo and the Canal Zone were pursued.

[92]. Over the subsequent years a number of grazing permits were issued by the Department of Agriculture, manly in the eastern part of the Aleutian Islands Reservation (which was established in 1913, see below).

[93]. Annual Report of the Alaska Agricultural Experiment Stations. In: U. S. Department Of Agriculture. *Annual Report Of The Office Of Experiment Stations For The Year Ended June 30, 1904*. Washington: Government Printing Office, 1905. p. 268.

[94]. JH Quinan, Captain United States Revenue Cutter Service *Tahoma*, to Captain DP Foley, Commanding Officer Bering Sea Fleet USRCS, Unalaka, dated Unalaska 21 September 1910. NARA RG 80 Box 668 Folder 1704—Third endorsement, Chief Constructor USN Chief of Bureau of Construction and Repair nº 14437-A.1&2 Dated November 25, 1910. NARA RG 80 Box 668 Folder 1704.

[95]. Braisted, William R. (1971) *The United States Navy in the Pacific 1909-1922*. Austin, TX: University of Texas Press, pp. 37-38.

[96]. Warplan Orange was one a range of U.S. Navy war plan in the color series. Orange saw a conflict between the U.S. and Japan without either side receiving assistance from any of the other naval powers. For details on the plan development and it various incarnations and revisions until 1941, see Miller, War Plan Orange, *op. cit.*

[97]. Miller, War Plan Orange *op. cit.* p. 100.

[98]. Braisted, United States Navy in the Pacific 1909-1922 *op. cit.*, p.33.—Miller, War Plan Orange *op cit*. p. 93.—Mahan was still of the view in 1914, but again the northern route was rejeted in a war game.

[99]. See Admiral Suetsugu Nobumasa's article in *Keizai Joho, Seokeihen* 1941. Cited in: Gayn, Mark, J. (1941) *The Fight for the Pacific*. London: The Bodley Head. P. 352.

[100]. Executive Order 1613 'Harbor Subject to Entry' signed by President William H. Taft on March 23 September 1912,

[101]. In 1906 the U.S. Fisheries steamer *Albatross* sampled Unalaska and Atka, as well as Attu ad Agattu, but bypassed the islands inbetween: Gilbert, Charles H and Burke, Charles V (1912) Fishes from Bering Sea and Kamchatka. *Bulletin of the Bureau of Fisheries* vol. 30, 1910. Department of Commerce and Labor. Washington: Government Printing Office. Pp. 35–96.

[102]. Ponko, The Navy and the Aleutians before World War II, *op. cit.*

[103]. Secretarial order, by the Secretary of Interior. (pers. comm. Debra Corbett, based on her consulting FWS property files held at FWS Anchorage Office).

[104]. Secretarial Order 13 June 1902.—JAG 2 200 17. National Archives and Records Administration RG 71/1001/14 Kiska I.

[105]. Secretarial order, by the Secretary of Interior. Doc ID # EO 0019020613. (pers. comm. Debra Corbett, based on her consulting FWS property files held at FWS Anchorage Office).

[106]. Executive Order nº 241 "Reserving All Lands on Certain Alaska Islands, including Kiska Island, Little Kiska Island, and Adjacent Islets For Naval Purposes" signed by President Theodore Roosevelt dated 9 December 1903.—JAG 2 200 17. NARA RG 71/1001/14 Kiska I.

[107]. Cruisers USS *New York* (Adm. Henry Glass), USS *Marblehead* and USS *Fortune* survey Adak and Kiska, the latter for the establishment of a coaling station. (<www.history.navy.mil/danfs/a3/admiral_glass.htm>. <accessed 22 October 2010>).

[108]. 'Foreign Warships cannot enter Pearl Harbor.' *Hawaiian Gazette* 17 May 194, p. 6 col. 1-2.

[109]. National Archives and Records Administration, Records of the U.S. Fish and Wildlife Service [USFWS (Record Group 22) General Records of the U.S. Fish Commission and the Bureau of Fisheries 1870-1940. 22.3.4 Miscellaneous records. Coastal and inland areas of Kiska Harbor, AK, 1904 (MFK, 76 images).—Murie, Olaus J. B. (1959) Fauna of the Aleutian Islands and Alaska Peninsula. *Bureau of Sport Fisheries and Wildlife, North American Fauna Series* 61. Washington: Bureau of Sport Fisheries and Wildlife. P. 79.

[110]. Commander USS *Petrel* to Secretary of the Navy, dated Navy Yard Mare Island, 10 October 1904. Copy on file NHL file Kiska, U.S. NPS Anchorage.—Coats, R. R., Nelson, W. H., Lewis, R. G., and Powers, H. A. (1961) Geologic reconnaissance of Kiska Island, Aleutian Islands, Alaska: in Investigations of Alaskan volcanoes, *U.S. Geological Survey Bulletin* 1028-R, p. 563-581.

[111]. Commander USS *Petrel* to Secretary of the Navy, dated Navy Yard Mare Island, 10 October 1904. Copy on file NHL file Kiska, U.S. NPS Anchorage.—'Naval Station on Aleutian Island.' *New York Times* 10 April 1904.—Coats, R. R., Nelson, W. H., Lewis, R. G., and Powers, H. A. (1961) Geologic reconnaissance of Kiska Island, Aleutian Islands, Alaska: in Investigations of Alaskan volcanoes, *U.S. Geological Survey Bulletin* 1028-R, p. 563-581.

[112]. Clark, A.H (1911) The Birds Collected and Observed During the Cruise of the United States Fisheries Steamer Albatross in the North Pacific Ocean, and in the Bering, Okhotsk, Japan and Eastern Seas in 1906. *Proceedings of the U.S. Natural Museum* 38 (1727), pp. 25-74

[113]. Two portable houses 12' x 22' by 7' high in good condition.—JH Quinan, Captain United States Revenue Cutter Service *Tahoma*, to Captain DP Foley, Commanding Officer Bering Sea Fleet USRCS, Unalaka, dated Unalaska 21 September 1910. NARA RG 80 Box 668 Folder 1704—Third endorsement, Chief Constructor USN Chief of Bureau of Construction and Repair nº 14437-A.1&2 Dated November 25, 1910. NARA RG 80 Box 668 Folder 1704.

[114]. Aboard the revenue cutter *Tahoma*: Bent on Birds of the Aleutian Islands. *Auk* v 29 n. 2, 1912, pp.260-261.—Fuller, R.G. (1977) Previous Scientific Observations 1867–1967. In: Merritt, M.L. and R.G. Fuller, (eds.) *The environment of Amchitka Island, Alaska*. Technical Information Center, U.S. Dept. of Commerce. Pp. 146-147.

[115]. Executive Order 1613 signed by President William H. Taft on March 23 September 1912.—Bureau of Insular Affairs (1914) Acts of Congress, Treaties, proclamations, Decisions of the Supreme Court of the United States and the opinions of the Attorney General relating to Noncontiguous Territory, Cuba and Santo Domingo, and to Military matters. Washington: Government Printing Office. pp. 545-546.—Remained in force, see stipulation in Coast Pilot of 1916: United States Coast and Geodetic Survey(1916) *United States Coast Pilot 9: Alaska Part II: Yakuat Bay to Arctic Ocean*. First Edition. United States Coast and Geodetic Survey, U.S. Department of Commerce. Washington, D.C.: U.S. Government Printer, p. 222.—Ditto in 1926: United States Coast and Geodetic Survey (1926) *United States Coast Pilot 9: Alaska Part II: Yakuat Bay to Arctic Ocean*. Second Edition. United States Coast and Geodetic Survey, U.S. Department of Commerce. Washington, D.C.: U.S. Government Printer, p. 256.

[116]. Executive Order 1733 signed by President William H. Taft on March 3, 1913. The order provides *inter alia* that "Jurisdiction over the wild birds and game and the propagation of reindeer and fur-bearing animals is hereby placed with the Department of Agriculture, and jurisdiction over the fisheries, seals, sea otter, cetaceans, and other aquatic species is placed with the Department of Commerce and Labor" and that "The establishment of this reservation shall not interfere with the use of the islands for lighthouse, military, or naval purposes."—See also: Evermann, Barton Warren (1914) Alaska Fisheries and Fur Industries in 1913. Bureau of Fisheries Document 797, issued August 29, 1914. In: Hugh M. Smith, (1914) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1914.* Washington: Government Printing Office. Pp. 17–18; and moves by some Senators to have the EO rescinded: *ibid*. p. 40.

[117]. Regulations for the Administration of the Aleutian Islands Reservation promulgated February 28, 1914, effective March 15, 1914. For text see: Hugh M. Smith, (1915) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1914.* Washington: Government Printing Office. Pp. 76-77.—Bower, Ward T. & Aller, Henry D. Alaska (1915) Fisheries and Fur Industries in 1914. Bureau of Fisheries Document 819, issued September 23, 1915. In: Hugh M. Smith, (1919) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1914.* Washington: Government Printing Office. Pp. 14-15.

[118]. NARA RG 71/1001/14 Kiska I.—*Annual Report of the United States Coast Guard*. Annual Report For The Fiscal Year Ended June 30, 1915. Washington, DC: Government Printing Office, 1915, p. 105.—The Annual Reports of the U.S. Commissioner of Fisheries are silent on the matter.

[119]. Executive Order 1733 on March 3, 1913.

[120]. Executive Order nº 17041, dated 9 Dec 1903.—JAG 2 200 17. NARA RG 71/1001/14 Kiska.

[121]. For the practicalities of administration see the Joint Regulation by the Department of Agriculture and the Department of Commerce "Administration of the Aleutian Islands Reservation" promulgated February 28, 1914.—See also the realignment of authorities regarding fur-bearing animals between the Department of Commerce (for marine) and Department of Agriculture (for terrestrial): Houston, D.F. (1916) Report of the Secretary of Agriculture. In: *Annual Reports of the Department of Agriculture for the Year ended June 30, 1915*. Washington, D.C.: Government Printing Office. p. 36

[122]. It appears that Executive Order 1613 was never revoked.

[123]. United States Coast and Geodetic Survey (1916) *United States Coast Pilot 9: Alaska Part II: Yakuat Bay to Arctic Ocean*. First Edition. Hydrographic Office, Publication no. 139. United States Coast and Geodetic Survey, Washington, U. S. Govt. Printer, 1916, p. 222.

[124]. Bower, Ward T. & Aller, Henry D. (1919) Alaska Fisheries and Fur Industries in 1917. Bureau of Fisheries Document 847, issued December 28, 1918. In: Hugh M. Smith, (1919) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1917.* Washington: Government Printing Office. Appendix II P. 19.

[125]. A.B. Sommerville of Unalaska to fish for salmon and atka mackarel; details see: Bower, Ward T. (1920) Alaska Fisheries and Fur Industries in 1918. Bureau of Fisheries Document 872, issued December 8, 1919. In: Hugh M. Smith, (1920) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1918.* Washington: Government Printing Office. Page 25.

[126]. A.C. Goss for commercial fishery (but erection of cannery prohibited): Bower, Alaska Fisheries and Fur Industries in 1918, *op. cit.*

[127]. Murie, Fauna of the Aleutian Islands and Alaska Peninsula *op. cit.* p. 1.

[128]. The following reference to a radio station burning down on Kiska in 1913 is erroneous: USS Buffalo -- 1914 Alaskan Radio Expedition <http://www.ibiblio.org/hyperwar/OnlineLibrary/photos/sh-usn/usnsh-b/ad8-c.htm> .

[129]. NARA RG 71/1001/14 Kiska I.—*Annual Report of the United States Coast Guard*. Annual Report For The Fiscal Year Ended June 30, 1915. Washington, DC: Government Printing Office, 1915. Pp. 90; 105-106.—Not mentioned in the Annual Report of the United States Commissioner of Fisheries for the same reporting period, even though, under the Regulations for the Administration of the Aleutian Islands Reserve the Department of Commerce had jurisdiction in that area: Bower, Ward T. & Aller, Henry D. (1917) Alaska Fisheries and Fur Industries in 1915. Bureau of Fisheries Document 834, issued January 6, 1917. In: Hugh M. Smith, (1917) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1915.* Washington: Government Printing Office.

[130]. Annual Report of the United States Coast Guard. 1915, p. 106.

[131]. Overall the records published by the United States Bureau of Fisheries are patchy: USCG cutter *Unalga*, mid June 1917, the *Alqonquin*, mid-June-Mid-July 1923, and the *Northland*, in the summers 1931, and 1932, and 1934 are known to have gone as far as Attu. In subsequent years several vessels went to the area without specific islands being named. (Bower, Alaska Fisheries and Fur Industries in 1917, *op. cit*., p. 90.—Bower, Alaska Fisheries and Fur Industries in 1924, *op. cit*., p. 131—Bower, Alaska Fisheries and Fur Industries in 1931, *op. cit*., p. 99.—Bower, Alaska Fisheries and Fur Industries in 1932, *op. cit*., p. 88.—Bower, Alaska Fisheries and Fur Industries in 1934, *op. cit*., p. 66).—For additional visits the see the Aleutian Survey Expeditions of 1933 to 1935.

[132]. Bailey, Introduction of Foxes to Alaskan Islands, *op. cit.*

[133]. NARA RG 71/1001/14 Kiska I.

[134]. In 1922 the Bureau of Biological Survey noted that "natives are encouraged to use all suitable islands for the propagation of foxes." Permits were free to Aleuts, while others could obtain them at a nominal fee. Seventeen new permits were issued in 1922 bringing the number of permits were in force in the Aleutian Islands Reservation to 56. (Nelson, E.W. [1923[Report of the Chief of the Bureau of Biological Survey. In: *Annual Reports of the Department of Agriculture for the Year ended June 30, 1922*. Washington, D.C.: Government Printing Office, p. 355).

[135]. Based on oral history by Henry Swanson of Unalaska, AK, who in 1922 operated and held a share in a fox trapping enterprise on Adak: Swanson, Henry (1984) Taped Interview. Interviewers: Debra Corbett, Fred Harden, Mark Brosig. [Transcribed by Matt O'Leary, August 1999]. Interview conducted at Unalaska, AK on 26 June 1984. Tape 84UNL004. On file Alaska Native Claims Settlement Act Office, U.S. Bureau of Indian Affairs, Anchorage, AK.

[136]. Hutchinson, Isobel W. (1937) *Stepping Stones from Alaska to Asia*. London: Blackie & Sons. p. 160.

[137]. Henry Winkel (Winkle) had successfully applied 9 October 1923 to raise blue foxes and to establish a reindeer farm on Kiska (NARA RG 71/1001/14 Kiska I).—See also: Synopsis of Reports and General Information. August 1938. U.S. Government Reservations in Alaska. Wildlife Refuges in Alaska, Administered by the Bureau of Biological Survey, U.S. Department of Agriculture. Typescript. On file Alaska Native Claims Settlement Act Office, U.S. Bureau of Indian Affairs, Anchorage, AK. That report provides the following information: For production on Kiska, lease by Henry Winkel and George Keeser

Year	Fee ($)	Blue Released	Foxes Trapped	Value ($)	Notes
1924	nil				A
1925	nil				A
1926	nil	6 blue			
1927	nil				B
1928	nil				C
1929	nil	7 blue			C
1930	12.50				C
1931	25				C
1932	25				B
1933	25		500	13,000	
1934	25		255	12,750	
1935	25		572	18,000	
1936	25		362	11,000	
Total	162.50		1689	54,650	

Notes: A-attempted to stock; B-no report filed; C–not trapped.

[138]. 'Articles of Incorporation of the Kiska Ranching Company. Dated Seattle 18 July 1933, and filed for the Record on 24 July 1933. (Domestic Corporations Volume XIV, Pp 105-110. File Kiska Ranching Co. files 930-D OS171, OS 851, D OS854.—The Kiska Ranching Company was owned by George and Anna Keeser of Roma, N.Y. and Sergius Golley of Atka, AK.—A check of the U.S. Social Security Death Index found the following details on the owners: George Keeser, resident of Rome, NY (*29 Apr 1884 † 1 Dec 1970 Teaneck, NJ; SSN 157-12-2849).—Anna Keeser, resident of Rome, NY (*9Feb 1897 † 1 Dec 1974 Ridgefield Park, NJ; SSN 532-16-2102).—Sergius Golley resident of Atka (*20 Oct 1893 † 3 Apr 1982 SSN 574-05-1591).—A occupancy permit (nº 405) for Kiska states the following address: Kiska Ranching Company, 204 Arlington Avenue, Jersey City, N.J. (in: Synopsis of Reports and General Information. August 1938. U.S. Government Reservations in Alaska. Wildlife Refuges in Alaska, Administered by the Bureau of Biological Survey, U.S. Department of Agriculture. Typescript. On file Alaska Native Claims Settlement Act Office, U.S. Bureau of Indian Affairs, Anchorage, AK).

[139]. The individual reports no longer seem to exist, but a ledger entry setting out which reports were once filed can be found: File Kiska Ranching Co., Microfiche NARA-AK Domestic Corporation Docket, District Court, Division #3, Alaska, Docket nº 476-D.—The kind support in procuring a scan of the data listing by Abby Focht (Alaska State Archives, Juneau) and Deborah Rudis (FWS, Juneau) is gratefully acknowledged.

[140]. Synopsis of Reports and General Information *op. cit.*

[141]. The Little Kiska lease is not mentioned in: Gray, H.D. (1937) Observations on the Aleutian Islands. Report dated Juneau, 12 November 1937. in: Synopsis of Reports and General Information. August 1938. U.S. Government Reservations in Alaska. Wildlife Refuges in Alaska, Administered by the Bureau of Biological Survey, U.S. Department of Agriculture. Typescript. On file Alaska Native Claims Settlement Act Office, U.S. Bureau of Indian Affairs, Anchorage, AK.—On the other, we know that an A.B. Somerville held a permit to raise foxes on Kiska since 4 February 1919; that Somerville relinquished his lease on 3 April 1924, and that on 11 April 1924 the Aleutian Fur Co requested transfer of A.B. Somerville's permit as they were they commercial successors to Somerville's operations.—The Aleutian Fur Company was owned by Fred Schroeder and Christian T. Pedersen, both frequently residing on Attu. Fred Schroeder ran a store on Attu. See *inter alia*: Christian Theodore Pedersen (1877-1969). Papers; 1920-1966. Historical manuscripts collection, Archives and Special Collections at the UAA-APU Consortium Library, Anchorage, AK (<consortiumlibrary.org/archives/CollectionsList/ CollectionDescriptions/hmc-0197cd.html>).

[142]. Anonymous. 1924. U.S. Department of Agriculture, Bureau of Biological Survey. Fur farms of Alaska in operation March 31, 1924. Juneau, Alaska. 11 pp [not seen], cited after Bailey, Introduction of Foxes to Alaskan Islands, *op. cit.* p. 14.

[143]. U.S. Geological Survey (1958) Kiska, Alaska [Map 1:250,000]. N5115-E17600/60x120. 1951. Fairbanks, AK; Denver, CO and Washington D.C: U.S. Geological Survey.—The Cabin is shown as 'Hut' on Army Map Service (1957) Topographic Map 1:25,000. Kiska C2-SW. Series Q801, Sheet 1824 IV, Edition 1-AMS. Map drawn up 1953. Printed October 1957. Washington, DC: Army Map Service, Corps of Engineers.—A recent, interpretive map compiles data on fox trapping in the Aleutians from the creation of the Aleutian Islands Reservation in 1913 until 1938. It lists "H. Winkel, Keezer, 1924-1936; Kisk[a] Ranching Company, 1937; Aleutian Fur Company 1924-" and provides three locations: at Corvie Bay and Kiska Harbor and Kiska and at Navy Cove on Little Kiska. O'Leary, Matthew (1992) *Fox Trapping in the Aleutians, 1913–1938*. Map on file Alaska Native Claims Settlement Act Office, U.S. Bureau of Indian Affairs, Anchorage, AK.

[144]. e.g. Prokopeuff, Dan[iel] (1988) Taped Interview. Interviewers: Debra Corbett and Mary Ellen Fogarty. [Transcribed by Debra Corbett]. Interview conducted at Anchorage, AK on 25 January 1988. Tapes 88 ALT 02 and 88 ALT 03. On file Alaska Native Claims Settlement Act Office, U.S. Bureau of Indian Affairs, Anchorage, AK.—Petrivelli, Alice (1988) Taped Interview. Interviewers: Debra Corbett and Mary Ellen Fogarty. [Transcribed by Debra Corbett]. Interview conducted at Anchorage, AK on 21 January 1988. Tapes 88 ALT IN01. On file Alaska Native Claims Settlement Act Office, U.S. Bureau of Indian Affairs, Anchorage, AK.

[145]. Sources see text. Base map: Army Map Service (1957) Topographic Map 1:25,000. Kiska. Series Q801, Sheet 1824 IV, Edition 1-AMS. Map drawn up 1953. Printed October 1957. Washington, DC: Army Map Service, Corps of Engineers. Composite (cropped) derived from map sheets: C1-NW, C2-NE, C2-NW, C2-SW, C3-SE and D1-SW.

[146]. U.S. Navy image press release, wire photo released 16 June 1942. Print in the author's possession.—The image is also reproduced in Clark, Austin H. (1945) Animal Life of the Aleutian Islands. In: Henry B. Collins, Jr., Austin H. Clark, and Egbert H. Walker, *The Aleutian islands: their people and natural history*. Smithsonian Institution. War Background Studies, no. 21. Washington, D.C.:

Smithsonian Institution. Pp. 31-62. Opposite p 37—In that source it is attributed to Ewing Galloway as photographer.

147. Given the overall topography might be Reynard Cove that is shown, with the barabara at the southern shore.

148. Announced in 1933, effective 1935.

149. See Article 19 §1.—Conference on the Limitation of Armament, Washington, November 12 1921-February 6, 1922. Treaty Between the United States of America, the British Empire, France, Italy, and Japan, Signed at Washington, February 6, 1922. Treaty Series NO. 671. Papers Relating to the Foreign Relations of the United States: 1922, Vol. 1, pp. 247-266.—For a discussion on the negations to include or exclude the Aleutians see: Sprout, Harld & Sprout, Margaret (1943), *Toward a New Order of Sea Power. American Naval Policy and the World Scene*, 1918-1922. Princeton: Princeton University Press pp, 243-251.

150. Which was seen as a strategically valuable possession due its mineral resources and the fisheries: see for example Bywater, Hector C. (1921) *Sea-Power in the Pacific A Study of the American-Japanese Naval Problem*. Boston: Houghton Mifflin Company, p. 269-70.

151. See for example Hector Bywater's prescient war study which proved a template for much of the Japanese strategy in the opening days of the World War II in the Pacific: Bywater, Hector C (1923) *The Great Pacific War. A history of the American-Japanese Campaign of 1931-33.* Boston: Houghton Mifflin Company, p. 105.—See also Bywater,'sea-Power in the Pacific' op *cit*, p. 259.—But Bywater, who had been an authority on pre-War War I warships (together wth Fred T. Jane), was deeply steeped in Mahan's thinking.

152. Miller, War Plan Orange *op. cit*. pp. 92-93; 104.

153. Bywater, 'Sea-Power in the Pacific' *op. cit.*, p. 259.—In his novel, Bywater devised a Japanese aircraft carried raid on the U.S. naval presence at Dutch Harbor (Bywater, 'The Great Pacific War' *op. cit*., p. 217).

154. Allard, Dean C. (1995) The North Pacific Campaign in Perspective. in: Fern Chandonnet (ed). Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993. Anchorage, AK: Alaska at War Committee. Pp. 3-11.

155. NARA document (unreferenced) in NPS-AKRO NHL file 'Kiska'.

156. In the Pacific, the main war scenario played out was Warplan Orange, which saw a conflict with Japan.

157. U.S. Navy image. Reproduced here after Cohen, Stan B. (1993) *The Forgotten War: A Pictorial History of World War II in Alaska and Northwestern Canada. Volume Four*. Missoula, Montana: Pictorial Histories Publishing Company. P. 401.

158. U.S. Navy image, reproduced after Cohen, The Forgotten War vol. 4, *op. cit*. p. 401.

159. U.S. Navy press release, wire photo released 14 May 1943. Print in the author's possession.

160. U.S. Navy image, take by Fleet Air Wing 4 / 2195 NAVEAR-452A on 22 May 1942 (NARA RG80-G296655).

161. 'Astro-blocks.'

162. Aerial images of Attu taken on these flights in 1934 have been published during World War II as part of the US Navy's public information campaign.

163. Murie, Fauna of the Aleutian Islands and Alaska Peninsula *op. cit*

164. Ford, Corey and McBain, Alastair (1935) Hook, Line and Sinker. Colliers Magazine 9 March 1935 [not seen].

165. Ford, Short Cut To Tokyo *op. cit.* p. 100-101.—In that text he mentions the location as Salmon Lagoon. Elsewhere in the same book (p. 26) it is evident that he mistakes the small water body behind the strand wall on Kiska beach as Salmon Lagoon.

166. Table derived from (and with addition to) Appendix I: Administrative and resource management actions related to Kiska Island, Aleutians: a Synoptic Chronology. In: Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan.* Dec 2008. (Report Kiska #1). Study prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[167]. NARA RG 71/1001/14 Kiska I.—A.B. Somerville is on record as a resident on Unalaska on 5 March 1915 as a the Department of Fisheries issued him with a permit to fish for red salmon in the vicinity of Attu (Bower, Ward T. & Aller, Henry D. Alaska Fisheries and Fur Industries in 1915. Bureau of Fisheries Document 834, issued January 6, 1917. In: Hugh M. Smith, [1917] *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1915.* Washington: Government Printing Office. Page 17.—Extended on 7 September 1915 to include Atka mackarel: Bower, Ward T. (1920) Alaska Fisheries and Fur Industries in 1916. Bureau of Fisheries Document 872, issued December 8, 1919. In: Hugh M. Smith, (1920) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1918.* Washington: Government Printing Office. Page 25.—Somerville is also on record as having operated fox ranches (at unspecified locations) in the Aleutian Islands Reservation since 1912, with the first 'harvest' in 1918: Bower, Alaska Fisheries and Fur Industries in 1918, *op. cit.* p. 73.

[168]. Dated Washington 29 Apr 1919 NARA RG 71/1001/14 Kiska I.—Not listed in Bower, Ward T. (1921) Alaska Fisheries and Fur Industries in 1919. Bureau of Fisheries Document 891, issued December 11, 1920. In: Hugh M. Smith, (1921) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1919.* Washington: Government Printing Office.

[169]. NARA RG 71/1001/14 Kiska I.—Not listed in Bower, Alaska Fisheries and Fur Industries in 1919, *op. cit.*

[170]. See Article 19 §1.—Conference on the Limitation of Armament, Washington, November 12 1921-February 6, 1922. Treaty Between the United States of America, the British Empire, France, Italy, and Japan, Signed at Washington, February 6, 1922. Treaty Series NO. 671. Papers Relating to the Foreign Relations of the United States: 1922, Vol. 1, pp. 247-266.

[171]. Executive Order February 17, 1922.—For text see: Bower, Ward T. (1923) Alaska Fisheries and Fur Industries in 1922. Bureau of Fisheries Document 933, issued December 4, 1922. In: O'Malley, Henry (1923) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1922.* Washington: Government Printing Office. P. 40.—The waters of the Aleutian Islands Reservation are subsumed under this new reservation (with regard to fisheries) as the Aleutian Islands District.

[172]. For partial text (as related to fisheries) see: Bower, Ward T. (1923) Alaska Fisheries and Fur Industries in 1920. Bureau of Fisheries Document 933, issued December 4, 1922. In: O'Malley, Henry (1923) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1922.* Washington: Government Printing Office. P. 15.

[173]. Minutes of Secretary's Council of 1 Jun 1923. NARA RG 71/1001/14 Kiska I.

[174]. NARA RG 71/1001/14 Kiska I.

[175]. Bower, Ward T. (1925) Alaska Fisheries and Fur Industries in 1924. Bureau of Fisheries Document 973, issued April 25, 1925. In: O'Malley, Henry (1925) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1924.* Washington: Government Printing Office. P. 52.

[176]. NARA RG 71/1001/14 Kiska I.

[177]. NARA RG 71/1001/14 Kiska I.

[178]. NARA RG 71/1001/14 Kiska I.

[179]. Executive Order nº signed by President Calvin Coolidge on 7 June 1924.—Text see Bower, Ward T. (1926) Alaska Fisheries and Fur Industries in 1925. Bureau of Fisheries Document 992, issued December 12, 1925. In: O'Malley, Henry (1926) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1925.* Washington: Government Printing Office p. 70.—The provisions of Executive Order 1733 setting up the Aleutian Islands Reservations are mentioned specifically as being unaffected by this revocation.

[180]. NARA document (unreferenced) in NPS-AKRO NHL file 'Kiska'.

[181]. Hulten, Eric (1960) *Flora of the Aleutian Islands*. New York: J. Cramer Hafner Pub. Co.

[182]. Murie, Fauna of the Aleutian Islands and Alaska Peninsula, *op. cit.* p. 5.—Spencer, *et al*., National Wildlife Refuges of Alaska, *op. cit.* p. 68.—Ponko, The Navy and the Aleutians before World War II, *op. cit.*

[183]. Burns, Josephine Joan (1935) Conditions of Withdrawal from the League of Nations. *The American Journal of International Law* vol. 29(1), pp. 40-50.

184. Annotation to Map 'Kiska Harbor & Vicinity. Sheet 3 of 4. Compiled by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Produced by 29th Engineers Production Plant, Portland, Oregon. Edition of July 1943.

185. see image in: Cloe, John Haile (1991) *The Aleutian Warriors. A history of the 11th Air Force & Fleet Air Wing 4.* Missoula: Pictorial Histories. p. 48.—Ponko, The Navy and the Aleutians before World War II, *op. cit.*

186. Mentioned in: Capps, SR (1934) Notes on the geology of the Alaska Peninsula and Aleutian Islands. *U.S. Geological Survey Bulletin* 857-D, pp. 141–153.—Commemorative Covers of USS *Gannet* and USS *Kingfisher* with Kiska Cancel (in the possession of the author)

187. Ford, Short Cut to Tokyo *op. cit.* p. 100.

188. As part of the Hydrographic Survey aboard USS *Gannett*: Capps, SR (1934) Notes on the geology of the Alaska Peninsula and Aleutian Islands. *U.S. Geological Survey Bulletin* 857-D, pp. 141–153.

189. Statement by the Secretary of State, December 29, 1934. In: U.S. Department of State (1943) *Peace and War. United States Foreign Policy* 1931-1941. Washington DC: Government Printing Office. P. 244-245.

190. Commemorative Covers are known with various Rat Island cancels.

191. The 1935 date is mentioned on an interpretation of an aerial photographs showing the beginnings of the Japanese base on Kiska (Photographic Interpretation Kiska Island, Aleutian Islands. Prepared by staff, Photographic Interpretation School 13 July 1942. Photographic Interpretation School, Naval Air Station Anacostia, DC. [based on sortie Patwing Four Photographic Reconnaissance of 18 June 1942]. NARA RG165 Entry 77 Box 50 Folder Kiska Operation).—The station was apparently not present when the British botanist IW Hutchinson (*op cit*) visited the island in 1936.—Reported as existing in 1937: U.S. Navy, Bureau of Yards and Docks (1937) *Federal Owned Real Estate under Control of the Navy Department*. U.S. Government Printing Office, Washington DC. p. 7.

192. Burns, Conditions of Withdrawal from the League of Nations, *op. cit.*

193. Hrdlička, Archaeological Explorations on Kodiak and the Aleutian Islands., *op. cit.*—Hrdlička, Aleš (1945) *The Aleutian and Commander Islands and their Inhabitants. Philadelphia: Wistar Institute.*—Friedmann, Herbert (1937) Bird bones from archeological sites in Alaska. *Journal of the Washington Academy of Sciences* vol. 27 (10), pp.431-438.—Frank H. H. Roberts (1944) Charles R. Scoggin, 1914-1944. *American Antiquity*, Vol. 10, No. 2 (Oct., 1944), pp. 198-201.

194. Hrdlička, Archaeological Explorations on Kodiak and the Aleutian Islands., *op. cit.*—Hutchinson, Isobel Wylie (1937) Stepping Stones from Alaska to Asia. London: Blackie and Sons, Ltd.—Murie, Fauna of the Aleutian Islands and Alaska Peninsula *op. cit.*—See also: 'Observations in Aleutian Islands.' John Meckerling Colonel G2 to Assistant Chief of Staff G2 War Department, Washington DC dated 11 October 1942. NARA RG165 Entry 77 Box 33 Alaska Folder 1000 Alaska-Observations of Aleutians.

195. Annual reports of the Kiska Ranching Company.

196. Reported as existing in 1937: U.S. Navy, Bureau of Yards and Docks (1937) *Federal Owned Real Estate under Control of the Navy Department*. U.S. Government Printing Office, Washington DC. p. 7.

197. Murie, Fauna of the Aleutian Islands and Alaska Peninsula, *op. cit.*—See also: 'Observations in Aleutian Islands.' John Meckerling Colonel G2 to Assistant Chief of Staff G2 War Department, Washington DC dated 11 October 1942. NARA RG165 Entry 77 Box 33 Alaska Folder 1000 Alaska-Observations of Aleutians.

198. Scheffer, Victor B. (1959) Invertebrates and Fishes Collected in the Aleutians, 1936-38. *Bureau of Sport Fisheries and Wildlife, North American Fauna Series* 61. Washington: Bureau of Sport Fisheries and Wildlife. Pp. 365–404.

199. Fuller, Previous Scientific Observations 1867–1967, *op. cit.,* p. 151.

200. Proclamation nº 2416 'Changing the Names of Certain Federal Wildlife Refuges' Signed b Franklin D Roosevelt 25 July 1940. Published in *Federal Register* vol. 5, p. 2677.

201. Executive Order nº 8680 "Establishing naval defensive sea areas around and naval airspace reservations over the islands of Kiska and Unalaska." Signed by President Frank Delano Roosevelt on 14 February 1941. *Federal Register* vol. 6, 1941 p. 1014.—The text in relation to the specific of the high-water mark was amended by Executive Order nº 8729 of April 2, 1941 (*Federal Register*

vol. 6, 1941 p. 1791).—Today, the restrictions imposed under this executive order 'have been suspended subject to reinstatement without notice at any time that the interests of national defense may require such action': National Oceanic and Atmospheric Administration (2010) *United States Coast Pilot 9: Pacific and Arctic Coasts Alaska: Cape Spencer to Beaufort Sea*. 28th Edition. National Oceanic and Atmospheric Administration, U.S. Department of Commerce. Washington, D.C.: U.S. Government Printer. P. 421.

202. Navy Dept General Order nº 146. In: 'Report of all land on the Aleutian Islands occupied for Naval purposes during the present war (1941–30 April 1945) with recommendations for prospective withdrawal of this land by the Navy Department.' NARA CP Record Group 71, E 110 Box 9 File 72-99-AI-1.

203. United States Fleet Aircraft Scouting Force Patrol Wing Four, Prospective Movements - Patrol Wing FourUnits. H. E. Regan,Commander Patrol Wing Four to CO NAS Sitka; CO NAS Kodiak; Resident OiC NAS Dutch Harbor, 27 Jun 1941.—Operation Order 3-41 Serial 0171, United States Pacific Fleet, Aircraft Scouting Force, Patrol Wing Four, Aleutian Reconnaissance Group, LtCdr J.P. Heath, USS *Gillis*. Order dated Seattle 7 July 1941. <www.kadiak.org/navy/1944history_a.txt).

204. NARA RG 181/62A 140/5 file H4 11.

205. NARA RG 181/62A 140/5 file H4 11.

206. Executive Order 1733 of March 1913.

207. Examined were the Annual Report of the [United States] Commissioner of Fisheries to the Secretary of Commerce 1913–1939 and the Bulletin of the United States Fish Commission vol. 16, 1896—vol. 54, 1954.

208. The vast majority of the fisheries research of the period is concerned with the salmon fishery as well as the issue of the seal management in the Pribilofs.

209. The formal withdrawal was filed on 27 March 1933 to take effect on 27 March 1935. (The Imperial Rescript Relating to Withdrawal from the League of Nations. Proclaimed on March 27, 1933. Text at: http://www.ibiblio.org/pha/policy/pre-war/330327a.html).

210. Statement by the Secretary of State, December 29, 1934. *Op. cit.*

211. Cover in the possession of the author.

212. Cover in the possession of the author.

213. The weather station is often referred to as 'aerological station,' 'aerology installation' or 'meteorological station.' All terms can be used interchangeable in the context of the Kiska Station. For ease of use the more general term 'weather station' has been adopted in the text.

214. There is some confusion as to when the weather station at Kiska Beach was actually established. An annotation on a 1942 intelligence map shows a "1935 U.S. Weather Station" (Photographic Interpretation Kiska Island, Aleutian Islands. Prepared by staff, Photographic Interpretation School 13 July 1942. Photographic Interpretation School, Naval Air Station Anacostia, DC. [based on sortie Patwing Four Photographic Reconnaissance of 18 June 1942]. NARA RG165 Entry 77 Box 50 Folder Kiska Operation). Yet that station is not mentioned by Ford in his account of 1935 (Ford, Short Cut to Tokyo *op. cit.*), nor s it mentioned when when the British botanist IW Hutchinson visited the island in mid 1936 (Hutchinson, Isobel Wylie (1937) *Stepping Stones from Alaska to Asia*. London: Blackie and Sons, Ltd).—It is reported as existing in 1937: U.S. Navy, Bureau of Yards and Docks (1937) *Federal Owned Real Estate under Control of the Navy Department*. U.S. Government Printing Office, Washington DC. p. 7.).

215. Photographic Interpretation Kiska Island, 13 July 1942. *Op. cit.*

216. USN Navy image, take by Fleet Air Wing 4 / 2195 NAVEAR-452A on 22 May 1942 (NARA RG80-G296655).

217. The ink inscription on the print does not reflect the geographical realities.

218. USN Navy image, take by Fleet Air Wing 4 / 2197 NAVEAR-452A on 22 May 1942 (NARA RG80-G296657).

219. The ink inscription on the print does not reflect the geographical realities.

220. USN Navy image, take by Fleet Air Wing 4 / 2195 NAVEAR-452A on 22 May 1942 (NARA RG80-G296655).

[221]. USN Navy image, take by Fleet Air Wing 4 / 2195 NAVEAR-452A on 22 May 1942 (NARA RG80-G296655).

[222]. Gayn, 'The Fight for the Pacific' *op. cit.* p. 361.

[223]. Executive Order nº 8680 "Establishing naval defensive sea areas around and naval airspace reservations over the islands of Kiska and Unalaska." Signed by President Frank Delano Roosevelt on 14 February 1941. *Federal Register* vol. 6, 1941 p. 1014.

[224]. On the same day President Roosevelt also signed Executive Order 8682, that established similar Naval Defensive Areas and Air Space Reservations around several atolls in the Central Pacific: Executive Order 8682 Establishing naval defensive sea areas around and naval airspace reservations over the islands of Palmyra, Johnston, Midway, Wake, and Kingman Reef. Signed by President Frank Delano Roosevelt on 14 February 1941. *Federal Register* vol. 6, 1941 p. 1015.

[225]. Including Attu, Amchitka and Atka.: Gilman, William (1944) *Our Hidden Front*. New York: Reynal and Hitchcock, Inc. P. 89.

[226]. The vessel could not put in at Attu, the Japanese landing overtook the U.S. plans: Breu, Mary (2009) *Last Letters from Attu. The True Story of Etta Jones, Alaska Pioneer and Japanese POW*. Anchorage: Alaska Northwest Books, P. 170.

[227]. 'Buckner Escaped Kiska 5 Days Ahead of Seizure.' *New York Times* May 12, 1943.

[228]. Parker, Frederick D. (1993) *A Priceless Advantage: U.S. Navy Communications Intelligence and the Battles of Coral Sea, Midway, and the Aleutians*. United States Cryptologic History Series IV World War II Volume 5. Washington, D.C.: Center For Cryptologic History, National Security Agency.

[229]. It is not clear to the writer to what extent Buckner was made aware of the fact that the U.S. had the ability to read the Japanese Navy cypher, and if, to what extent he had been briefed an what was brewing regarding Midway and the Aleutians.

[230]. General Simon Bolivar Buckner, Jr. (July 18, 1886 – June 18, 1945) seems to have been a risk taker. He was killed by enemy artillery fire during the final days of the Battle of Okinawa, making him the highest-ranking US military officer to have been killed by enemy action during WWII.

[231]. Edited drawing (Japanese developments erased) a section of the Main camp area as shown in the intelligence report of 18 June 1942. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, 18 June 1942. Photo Interpretation Section. Operational Intelligence Division, Directorate of Intelligence Section A-2, Headquarters Army Air Forces, Washington DC 8 July 1942.

[232]. Date of photograph: 28 September 1942. NARA 80-CF-7825-34183.

[233]. Image from NPS-AKRO website: U.S. National Park Service, Aleutian World War II National Historic Area – Aerographers. Last Updated: October 25, 2010 at 14:14 MST: http://www.nps.gov/aleu/photosmultimedia/aerographers.htm.—The USN image was published as an ACME wire service image nº 77.09.2576.a (released by USN on 22 September 1932). Original caption reads: "Ten of These U.S. Navy Men Are Jap Prisoners. In this photo, released today in Washington, twelve men of a U.S. Navy weather and radio station unit are shown in Kiska, where they were stationed before the Japs took the island. When U.S. forces recently recaptured Kiska, only the dog mascot was found. Two of the men in the picture were not on the island when it was captured by the Japs—the other ten are believed to be Jap prisoners. Left to right, front row: ship's cook John C. McCandless, of Oakmont, PA.; radioman Robert Christensen, Bremerton, Wash.; aerographer's mate Walter Monroe Winfrey, Cliffside Park, N.J.; seaman Gilbert F. Palmer, Evansville, Ind.; and Wilfred Ivan Gaffey, Coquille, Oregon. In the back row, left to right: aerographer's mate James Leroy Turner, Seattle, Wash.; chief pharmacist's mate Rolland L. Coffield, of Seattle, Wash.; aerographer's mate William Charles House, Esconbito, Calif.; Lt. Mulla, (not captured); gunner's mate LeThayer L. Eckles, Osborne, Kansas; photographer's mate Lou Yaconelli, (not captured), North Hollywood, Calif.; radioman Madison L. Courtenay, Jr., of Riverhead, L.I., N.Y. (Passed by censors.) Credit: ACME." (see: The Allison Collection of World War II Photographs. Gallery 70. <http://www.arkmilitaryheritage.com/exhibits/wwii/Gallery70.htm>).

[234]. Identification of crew from caption to ACME wire service image. There is ample confusion about the names and their spelling: Cloe, (Aleutian Warriors *op. cit.*) uses different names and spellings; NPS-AKRO website: USNPS, Aerographers. *op.cit*.

[235]. This was not limited to the Aleutians: In 1935 it was claimed that Japanese navy had used converted fishing trawlers to survey and reconnoitre Kiribati (then the Gilbert Islands) (*Pacific Islands Monthly* February 1935, p.5).

[236]. See for example: Collins, Jr., Henry B. (1945) The Islands and their People. In: Henry B. Collins, Jr., Austin H. Clark, and Egbert H.Walker, *The Aleutian islands: their people and natural history*. Smithsonian Institution. War Background Studies, no. 21. Washington, D.C.: Smithsonian Institution. P. 16.—Ford, Short Cut to Tokyo, *op. cit*.

[237]. Ballendorf, Dirk Anthony & Bartlett, Merrill (1997) *Pete Ellis: An Amphibious Warfare Prophet, 1880-1923*, Annapolis, Maryland, Naval Institute Press.

[238]. 'Foreigners unwelcome'. *Pacific Islands Monthly* Nov. 1933, p.36.—'The long design of Japan in the South Seas. Fortifications in the Marshall Group.' *Pacific Islands Monthly* June 1934, p.44; 'Japanese active. Report from the Northern Islands.' *Pacific Islands Monthly* February 1935, p.5; However, there were also a few moderate voices who attempted to counterbalance the hysteria: 'Japan in the Pacific. A little reasoning to offset sensation mongers'. *Pacific Islands Monthly* November 1933, p.27; "Japanese menace": Newspaper hysteria in Australia'. *Pacific Islands Monthly* January 1933, p.9.—Reports of all people visiting the area both intentionally, such as missionaries, and accidentally, such as Norwegian merchant Captain stranded in Jaluit Lagoon, were carefully scrutinised and compared with the official Japanese Annual Reports to the League of Nations. ('Japans Pacific Islands, Are they fortified? - Pertinent questions at Geneva'. *PIM* November 1934, p.53. The article queries the amount of money spent on harbour improvements). The observations on Japanese military activities and fortifications were not limited to Micronesia, but also covered the more northern areas, such as Okinawa and the Bonin Islands (*cf*. Japans fortifications in the Bonin islands, *Pacific Islands Monthly* August 1934, p.38).—Price, Willard H. (1936) *Rip-tide in the South Seas.* London: Heinemann.

[239]. The flight started in Seattle and flew westbound in the northern hemisphere. One of the planes crashed in Alaska the other sank in the Atlantic (both crews survived). The planes used were Douglas DT-2 torpedo planes that could be fitted with floats or wheels.—See U.S. Centennial of Flight Commission (n.d. [2003]) The Douglas World Cruiser - Around the World in 175 Days. <http://www.centennialofflight.gov/essay/Aerospace/Douglas_World_Trip/Aero27.htm>—For route in Aleutians (Dutch Harbor–Nazan, Atka–Attu) see: First Round-the-World Flight, Seattle to Attu, April 6-May 14, 1924. National Museum of the U.S. Air Force. <www.nationalmuseum.af.mil/ factsheets/factsheet.asp?id=775>.—Dutch Harbor to Nazan, Atka leg: First Round-the-World Flight, May 3, 1924 <www.nationalmuseum.af.mil/factsheets/factsheet.asp?id=976>.—Nazan, Atka to Attu leg: First Round-the-World Flight, May 9, 1924 <www.nationalmuseum.af.mil/ factsheets/factsheet.asp?id=988>.

[240]. The planes passed the northern edge of Kiska but did not fly over the harbor: First Round-the-World Flight, May 9, 1924, *op. cit.*

[241]. In the Mandated Islands of Micronesia Japan herself had engaged in ostensibly civilian development that had a military application: Okumiya, M. (1968) For sugar boats or submarines? *US Naval Institute Proceedings* August 1968, pp. 66-73.—Spennemann, Dirk H.R. and Sutherland, Gaye (2007) *Archaeological Survey of the Former Japanese Agricultural Research Station at Pwunso, Kolonia, Pohnpei State, Federated States of Micronesia*. Report prepared for the Historic Preservation Office of Pohnpei State, Federated States of Micronesia and the National Historic Preservation Office, Federated States of Micronesia. Final Report. ILWS Report N° 29. January 2007. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

[242]. Jaggar, Journal of the Technology Expedition *op.cit.*

[243]. There can be little doubt that Japanese fishermen, and the sealers in particular, had little regard for the niceties of international law, territorial integrity and land ownership as is evidenced by their poaching activities in the Pribelofs and by the military-style raid they carried out in the Komandorskis in 1910 (Stejneger, Leonhard [1926] Fur Seal Industry of the Commander Islands 1897-1922. *Bulletin of the United States Bureau of Fisheries* vol. 41, 1925. Department of Commerce. Washington: Government Printing Office. Pp. 289–332.).—It is highly unlikely, though, that these had been instigated by the IJN.

[244]. O'Malley, Henry (1933) *Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1932.* Washington: Government Printing Office. P. VII.—Bower, Ward T. (1936) Alaska Fisheries and Fur Industries in 1933. In: Bell, Frank T. (1936) *Report of the United States Commissioner of Fisheries for the Fiscal Year 1934.* Washington: Government Printing Office. P. 290.—Bower, Ward T. (1936) Alaska Fisheries and Fur Industries in 1934. Bureau of Fisheries. Issued September 1, 1932. In: Bell, Frank T. (1936) *Report of the United States Commissioner of Fisheries for the Fiscal Year 1935.* Washington: Government Printing Office. P. 51—Bower, Ward T. (1938) Alaska Fisheries and Fur Industries in 1935. In: Bell, Frank T. (1938) *Report of the United States Commissioner of Fisheries for the Fiscal Year 1936.* Washington: Government Printing Office, p. 46.—Bower, Ward T. (1939) Alaska Fisheries and Fur Industries in 1936. In: Bell, Frank T.

(1939) *Report of the United States Commissioner of Fisheries for the Fiscal Year 1937.* Washington: Government Printing Office. P. 281.—Bower, Ward T. (1940) Alaska Fisheries and Fur Industries in 1937. In: Bell, Frank T. (1940) *Report of the United States Commissioner of Fisheries for the Fiscal Year 1938.* Washington: Government Printing Office. P. 75.

245. Bower, Alaska Fisheries and Fur Industries in 1933 *op. cit* p. 290.—Bower, Alaska Fisheries and Fur Industries in 1934 *op. cit* p. 51.—Bower, Alaska Fisheries and Fur Industries in 1935 *op. cit* p. 46.—Bower, Alaska Fisheries and Fur Industries in 1936 *op. cit* p. 281.—Bower, Alaska Fisheries and Fur Industries in 1937 *op. cit* p. 75.

246. See also same point made by: United States Strategic Bombing Survey (1946) *The Campaigns of the Pacific War*. United States Strategic Bombing Survey (Pacific) Naval Analysis Division. Washington, DC: United States Government Printing Office. P. 79.—We can assume that the IJN would have collected information from the ship's logs and the crew

247. Bower, Alaska Fisheries and Fur Industries in 1933 *op. cit* p. 290.

248. Bower, Alaska Fisheries and Fur Industries in 1935 *op. cit* p. 46.

249. Bower, Alaska Fisheries and Fur Industries in 1939 *op. cit* p. 87.—It is an interesting quirk that during the war the *Hakuhō Maru* was requisitioned by the IJN and served as a minesweeper. It formed part of the Kiska Invasions force: Minesweeper Division 13 under the command of Capt. Mitsuka Toshio (see Appendix I).—Today the Japan Agency for Marine-Earth Science and Technology operates an oceanographic research vessel of the same name.

250. Yet, some notice was taken. In a side comment, Ford claims that in 1934 he and the Wildlife Agent Douglas Gray saw (on an unspecified island in the Western Aleutians) a recently shot sea otter and drag marks of a boat on a beach, which Gray attributed to Japanese poachers (Ford, Short Cut to Tokyo, *op. cit*. p. 111). Ford, when narrating his stay on Attu, recalled that Mike Holdikoff, chief of the Attu community, told him that a Japanese naval vessel had to come to Attu in 1933 and erected a cross on a hill above Attu harbor and took measurements of the area. According to Holdikoff (as narrated by Ford), the Japanese had claimed that the cross was to mark the grave of Japanese prince who had died on Attu. Holdikoff was surprised that they knew the exact location of a grave he did not know anything about without searching and when they Japanese left, he dug around the cross and, not locating any grave, took the cross down (Ford, Short Cut to Tokyo, *op. cit.* p. 123-124).

251. As Corey Ford wrote:

"way back in the thirties, as a gesture of friendship and international amity, a plane was to fly from Tokyo to Washington.[e]verybody thought it was a highly worthy cause; and when Tokyo politely asked permission to station a few observers on the Aleutian islands, just to wave the plane along its way, Washington gave immediate assent. Soon a Japanese warship dropped off the observers in little groups of three, at various strategic points along the Aleutians, and left them with a rowboat and some fishing tackle. Mike [Holdikoff of Attu] said it was a most unusual kind of fishing-tackle: nothing but a long string with a piece of lead on the end... It was about that time that the plane in Tokyo was about to have the most puzzling kind of trouble getting started on this flight. Tokyo was terribly embarrassed; something was wrong with the motors, please, the trip would have to be postponed another week or two, so, sorry, Washington would please understand. Again and again the summer the trip was unaccountably delayed, until at last Tokyo sent apologetic word that in view of the late season it would no longer be feasible to make the attempt. They were so sorry, they said, so very very sorry, and Washington said forget it, it was perfectly all right, and a couple of ambassadors were photographed shaking hands, and the following week the Japanese warship went back to the Aleutians and picked up all the little groups of observers and brought them home again. And that was all. Or almost all. The following year the cutter *Northland* was negotiating one of the narrow passes in the Aleutians, using the best available Coast Guard charts, swinging the lead and sounding her whistle to test the echo bouncing against the fog-bound cliffs, and making at best about four knots an hour. Behind her she heard a polite toot: "Excuse, please" and a Jap cruiser edged past her, doing some twenty knots, and slipped swiftly out of sight into the fog..."

Ford, 'Short cut to Tokyo' *op. cit* p. 125-126.

252. For example, the Hobart *Mercury* wrote: "The story is that, while waiting for the aeroplane, the Japanese went fishing. They fished in off places, and they used a curious tackle consisting of a long line ad a sounding lead. The information thus gathered would have been extremely useful if the Japanese sent a naval force in the direction of Alaska." (Frozen U.S. ourpost. Alaska's Strategic Importance in Pacific War. *The Mercury* [Hobart, Tasmania, Australia] Friday 5 June 1942 p 3, cols. 5-6.).—Similar claims were published in other newspapers, e.g.: 'Under Japanese Rule. What it would be Like.' *Cairns Post* (Queensland, Australia) 21 September 1942 p.2 col. 5.

253. Ford alluded to them (Ford, Short Cut to Tokyo, *op. cit*. p. 124).

[254]. In August 1930 he had flown Berlin-Tokyo in ten days, setting a record for light aircraft ('Airisms from the four winds.' *Flight* 5 September 1930, p. 1006).

[255]. The plans were made public in mid February 1931, and attracted substantial media attention: 'Japanese to fly Pacific; Yoshihara to Make Attempt About May, Reversing Americans' Route' *New York Times* February 12, 1931.—'S. Yoshihara Plans Flight Under Auspices of *Tokyo Hochi* Newspaper' *New York Times* 21 April 1931, p. 4.—In total twenty stops were planned between Japan and San Francisco.: 'Pacific Solo Flier Ends Second Jump; Yoshihara Covers 665 Miles of His Flight From Tokyo to the United States. Bound For San Francisco Young Japanese Expects to Reach Goal in Three Weeks With Twenty Stops' *New York Times* May 5, 1931.

[256]. Yoshihara used a Junkers A50ce Junior monoplane with a Armstrong-Siddeley 'Genet' engine, which had been fitted with floats ('Airisms from the four winds.' *Flight* 8 May 1931, p.409).—The plane, reg nº J-BECB was owned by the *Hochi Shimbun*.

[257]. In other sources sometimes spelled *Kokosai Maru*.

[258]. *Kokusai Maru* delivering gasoline supplies: 'Great Welcome is given Lindberghs at Petropavlovsk.' *The Owosso Argus-Press* Aug 17, 1931, p. 2 col. 3.—The newspaper *Hochi* offered the fuel depots to the Lindberghs after Yoshihara had crashed in his attempt: 'Japan enthusiastic over Lindbergh plans' *Reading Eagle* Jun 6, 1931, p. p col. 7.—In the event, the Lindberghs did not fly the Aleutian route, but made use of the cache at Muroton Bay (Simushir) in the Kuriles were eventually used by the Lindbergh's when they ran into trouble on their flight from Alaska to Japan (Aeronautics: Flights of the Week. *Time Magazine* Aug. 31, 1931).—The Yoshihara support ship, the *Kokusai Maru,* also came to the aid of the Lindberghs: 'Lindberghs alight in plane on Sea; Board Rescue Ship; Where Lindberghs are down for night' *New York Times* Aug 20, 1931.

[259]. Ford, Short Cut to Tokyo, *op. cit*. pp. 125-128. Ford mentions a Mr. H Kimura as the representative at Dutch Harbor (*op. cit*. p.128).—The Annual Report of the United States Commissioner of Fisheries confirms that "[t]he trawler *Kokusai Maru* was in the Bering Sea region for several weeks in 1931 and made stops at a number of places in connection with the good-will flight of Japanese aviators to this country."—O'Malley, Henry (1933) Report of the United States Commissioner of Fisheries for the Fiscal Year ended June 30, 1932. Washington: Government Printing Office. P. VII.

[260]. Funded by the *Hochi Shimbun, t*he Japanese botanist Kobayashi Yoshio spent three months at "Chichagof Harbor, Attu; Constantine Harbor, Amchitka; Nazan, Korovin Bay, Mt. Korovin, and also the Pacific side of Atka I.; Nikolski, Umnak I.; and Unalaska Bay, Unalaska I." as part of the ground crews of the Goodwill Flight: Tatewaki Misao, and Kobayashi Yoshio (1934) A Contribution to the Flora of the Aleutian Islands. *Journal of the Faculty of Agriculture of the Hokkaido Imperial University* vol. 36(Pt. 1), pp. 1-119, esp. p. 1.

In addition other papers derived from his collections list material from Agattu: Akiyama, S. (1933) Carices of the Aleutian Islands collected by Mr. Y. Kobayashi, Botanical Magazine Tokyo, vol. 47, pp. 67-69 [not seen] cited after: Merritt, M.L. (1977) History 1741-1967. In: Merritt, M.L. and R.G. Fuller, (eds.) *The environment of Amchitka Island, Alaska*. Technical Information Center, U.S. Dept. of Commerce. P. 147.—Okamura, K. (1933) On the Algae from Alaska collected by Y. Kobayashi. *Records of Oceanographic Works of Japan* vol. 5(1), pp. 85-97 [not seen] cited after: Lebednik, Phillip A. and Palmisano, John F. (1977) Ecology of Marine Algae. In: Merritt, M.L. and R.G. Fuller, (eds.) *The environment of Amchitka Island, Alaska*. Technical Information Center, U.S. Dept. of Commerce. Pp. 354.

In addition, Tatewaki and Kobayashi make reference to "sand banks formed by lava flow" on Kiska (*op. cit*. p. 2). While U.S.S *Gannett* carried out a preliminary geological survey in 1932, this information (if it was collected) was not published by 1934 when the Tatewaki and Kobayashi study appeared. Thus it is reasonable to assume that this was derived from Kobayashi or another member of that ground crew.

[261]. The Kanaga cache can be speculatively inferred from a reference in von Gronau's account of his 1932 flight across the Aleutians. While his own supply ship was delayed, had had access to fuel on Kanaga.: Gronau, Wolfgang von (1933) *Im Grönland-wal: dreimal über den Atlantik und einmal um die Welt*. Berlin: Verlag Reimar Hobbing.

[262]. The plane was a modified Junkers A50W reg nº J-BENB, owner *Hochi Shimbun*; see here for entry in aircraft crash database: ASN Wikibase Occurrence # 90021. The Aviation Safety Network Website. Last updated: 14 May 2011. <http://aviation-safety.net/wikibase/wiki.php?id=90021>. [Accessed 14 May 2011.]

[263]. Yoshihara started his flight at Tokyo on 4 May 1931, but soon encountered problems, damaging his plane on 14 May in the Kuriles. After a few days' delay Yoshihara took off for the Komandorski's

but crashed his plane into the sea on 18 May. He found a replacement plane, also funded by the *Hochi Shimbun* and ferried from Germany for the event—but when after a delay, he had the aircraft readied, it crashed on its trial flight on 7 July and had to be written off. Undaunted he tried to source another replacement plane, spurred on by a large cash prize. The final attempt was to be made in September 1931, but did not eventuate because Donald Moyle and Cecil Allen beat him to the post.—S. Yoshihara Takes-Off From Tokyo' *New York Times* 4 May 1931, p.4.—Aeronautics: Kite Crazy Seiji. *Time Magazine*, 11 May 1931.—'S. Yoshihara At Nemuro, Japan' *New York Times* 5 May 1931,p. 6; 'Japanese aviator ready for Kuriles' 6 May 1931, p. 4.—'S. Yoshihara Takes-Off From Nemuro' *New York Times* 7 May 1931, p. 2.—'S. Yoshihara Forced Back To Nemuro' *New York Times* 8 May 1931, p. 5.—'S. Yoshihara At Naibo Island of Iturup' *New York Times* 9 May 1931, p. 2.—'Yoshihara Damages Plane; Flight Delayed' *New York Times* 15 May 1931, p. 2.—Aeronautics: Lindberghiana. *Time Magazine* Monday, Jun. 15, 1931.—'S. Yoshihara To Resume Flight On June 26' *New York Times* 2 June 1931, p. 1.—'Second Plane Being Prepared For S. Yoshihara Crashes On Trial Flight' *New York Times* 7 July 1931, p. 4.—'Yoshihara Plans Resumption of Flight' *New York Times* 9 July 1931, p. 5.—'S Yoshirara plans another attempt' *New York Times* 22 August 1931, p. 4.—'Japanese Imperial Aviation Society Offers Prize of $50,000 For 1st Non-Stop Flight In Japanese Plane by Japanese Airman' *New York Times* 11 August 1931, p. 2.—The cash prize was claimed by Hugh Herndon and Clyde Pangborn who were the first to fly non-stop from Japan to USA, via the Aleutians, leaving Japan on 3 October 1931: 'Hop across Pacific nearly ended by ice on aeroplane, Hendon says.' *Pittsburgh Post-Gazette* -Oct 6, 1931, p. 2 col. 2-3.

[264]. Lured by the cash prize, aviators Donald Moyle and Cecil Allen attempted a non-stop flight from Japan to the U.S., leaving Tokyo September 8, 1931. Although having spent an unscheduled nine days being forced down on Navarin Island off Siberia, they arrived on 18 September in Nome.—The press and other publications of the day claimed that they had been forced down on an island in the western Aleutians, e.g. *Monthly Weather Review* September 1931, p. 364.—In fact, they had landed on Navarin: Tokyo Flyers prepare to hop again. Moyle and Allen ready to resume flight over Pacific. *Alton Evening Telegraph* (Alton, Il.) 17 September 1931, p. 1 col. 5-8.—'L'Odyssée des deux aviateurs Allen et Moyle' *L'Ouest-Éclair* (Paris) 23 September 1931 p. 3 col. 1.—'Pacific Fliers Tell of Flight with gale.' *Rochester Evening Journal and the Post Express* Sep 25, 1931, p. 26 col. 1.

[265]. It would appears that the *Kokusai Maru* spent the majority of the time at Unalaska: 'Japan, U.S. Hop Escort Ship sails for home.' *Rochester Evening Journal and the Post Express* Aug 4, 1931, p. 17 col. 4.

[266]. Yoshihara tried once more in 1932, this time flying from the U.S. to Japan, again via the Aleutians, but met with similar mishap. It is not clear whether the 1932 attempt was also enjoyed ground crew support or whether the fuel depots of 1931 were to be used without ground assistance.—'Japanese "Lindbergh" assembles plane for Seattle-Tokio Flight.' *The Southeast Missourian* May 19, 1932, p. 2 col. 2-4.—'Japanese ace hurt in crash.' Plane in which planned to span Pacific from Seattle total wreck, Belief.' *Pittsburgh Post-Gazette* May 17, 1932, p. 3 col. 4.

[267]. It would appear that there was not much suspicion about any other foreign flyer in the early 1930s. For example, the U.S. public—and government—seems to have been quite unconcerned about the trans-Pacific flight by the German Captain Wolfgang von Gronau. His September 1932 flight, which landed at Dutch Harbor, Kanaga and Attu, was actually supported by the U.S. Coast Guard, who provided him with fuel at both Dutch Harbor and, specifically delivered, at Attu.: Von Gronau's World Flight. *Flight* vol. 24(49), 1 December 1932, p.1150.—Von Gronau In Japan After 7-Hour Flight; German Flies Bering Sea From Attu, in the Aleutians, to Kakumabetsu Bay, Paramushiro Island, Japan. *New York Times* 2 September 1932.—'Seagoing Samaritans.' *Popular Mechanics vol.* 59(10) January 1933, pp 34-37.—Also Gronau, Im Grönland-wal, *op. cit.* pp. 115-117.

[268]. Japanese flyers did eventually embark on a goodwill flight, in 1939 again sponsored by a newspaper, using a Mitsubishi G3M2 'Nell" bomber modified to carry a crew of six. That flight, which departed Tokyo on 29 August 1939, flew the route Tokyo, Chitose, Nome, Fairbanks, White Horse, Seattle and onwards, completing he flight o 20 October 1939 after 55 days. That route followed the Asiatic coastline and then crossed to America via Beringia. It never came close to the Aleutians (see commemorative postcard with route map [wingnet.org/rtw/pix/R002WP15.JPG] as well as contemporary reports in mainstream U.S. newspapers.

[269]. It is safe to assume that none of the Japanese ground crew dropped off on the islands would have been able to speak fluent English—with the exception of the ship's captain and the group's leader at Dutch Harbor.

[270]. We know that the ground crews collected meteorological data for Attu and Atka for the periods 4 May to 4 August 1931: Tatewaki and Kobayashi, Contribution to the Flora of the Aleutian Islands, *op. cit.* pp. 3-4.

[271]. Archives of the National Institute for Defence Studies, Tokyo, File 北東 アリウシャン 21. That map image cannot be reproduced here for copyright reasons.—That information is essentially the same as that published (in text form) in: *United States Coast Pilot* 9, *op. cit.*, p. 222.

[272]. By comparison, a Japanese-prepared map of Dutch Harbor, included in the same document, is more elaborate by several orders of magnitude of detail provided.

3. KISKA DURING WORLD WAR II

This chapter will set out the historic context against which the resources encountered in Kiska need to be interpreted. Given that the objective of this study is the assessment of the cultural landscape of the Kiska Battlefield, the focus of this chapter will be on those elements of the historic context that have a bearing on the events that shaped that landscape.

Even though the chapter is very detailed and draws on an extensive range of primary sources, it must be stated from the outset, and unequivocally, that this chapter should not be confused with an in-depth, stand-alone scholarly history of World War II in the Aleutians. Thus secondary sources are drawn on where it was impossible or impractical to re-verify the widely scattered primary sources. At the same time, the cultural landscape assessment required considerable breath and depth. Every cultural landscape is a palimpsest where events modify or erase many, but rarely all, traces of previous events. Therefore, even though the focus of this study is the World War II landscape, it is necessary to outline in some detail the context of the earlier periods as they formed the landscape on which the World War II sites exist. Much of the data have been included in extensive endnotes, which can act as a resource base.

Given that the aim of the study is the assessment of the cultural landscape of Kiska, this chapter will be unashamedly Kiska-centric. Political and strategic military planning decisions are touched on but not expounded to the degree that a stand-alone study of the war in the Aleutians would warrant. The events of the air war are narrated in more detail, placing emphasis on the hitherto underrepresented Japanese side. That is not a reflection of the ideological stance of the author of this study, but is driven by the need to understand what happened on Kiska and in the skies above the island. The U.S actions that took place at their home bases at Cold Bay and Umnak and later on Adak and Amchitka are covered in similar depth only where directly relevant to events that shaped the landscape of Kiska. Other sources exist for that part of the history of the air war,[1] and there is no need to duplicate the effort of these authors.

A brief discussion of the history of Kiska prior to World War II sets the scene. This section outlines the extent of human habitation on Kiska before the war, as well as the U.S. plans for Kiska at the beginning of the nineteenth century. As will become evident, the newspaper coverage of these plans seems to have influence the Japanese understanding of the island. This section is followed by an examination of the strategic situation that led to the Japanese occupation of the island. A detailed history of the Japanese use of Kiska, as well as the U.S. attempts at ousting the Japanese by aerial and naval bombardment follows. The chapter concludes with a discussion of the U.S. landings and subsequent occupation until the end of the Pacific War.

The description and detailed discussion of the Japanese and U.S. construction activities and other physical modifications that occurred on Kiska are discussed in chapters 4 (p. 171) and 5 (p. 275) respectively.

Background to the Pacific War

On 7 December 1941[2] the Empire of Japan carried out a surprise aircraft carrier strike on the U.S. naval base of Pearl Harbor, Hawai'i. Prior to the outbreak of the War, Japan controlled all of Micronesia[3] with the exception of Guam and Wake Islands, both of which were U.S. possessions. Rapid advances by forces saw the Japanese occupation of large sections of the Western Pacific, with the fall of Guam (8 December 1941), Wake (23 December), Hong Kong (25 December); Singapore (15 February 1942); the Philippines (Bataan 13 February 1942; Corregidor 5 May); Dutch West Indies (now Indonesia; 9 March); and Rabaul (Australian Territory of New Guinea, 23 January 1942). In addition, Japanese carrier forces attacked Darwin in Australia (19 February 1942) as well as Ceylon (now Sri Lanka; 9 April 1942).

U.S. counter strikes in the southern Marshall Islands on 1 February 1942 and against Wake Island on 24 February were largely ineffectual and only highlighted to the Japanese any shortcomings in their defensive strategies which were soon rectified.[4] These U.S. Navy operations demonstrated to the Japanese that the U.S. fast carriers posed a threat to the Japanese—but a threat that appeared contained to the periphery of the Japanese interests. The U.S. raid on Marcus Island on 4 March highlighted that U.S. carriers could penetrate what was believed to be 'safe' Japanese waters. The Japanese Combined Fleet staff predicted that the U.S. would eventually attempt to strike the Japanese home islands. To counteract this, the Combined Fleet began preparatory plans for an occupation of and base development on Midway Atoll as early as mid-March 1942, culminating in preliminary plans by end of that month.[5] At the level of the Japanese Naval General Staff the Midway plans competed with the school of thought that wished to occupy New Guinea as well as parts of Australia to negate the Allies the opportunity to use these areas as a springboard from which to launch a counter offensive. The Imperial Japanese Army (IJA) too was keen to continue the southward advance.[6]

Fig. 23. Map of the North Pacific Area, showing the location of Kiska and other places mentioned in the text.[7]

This completely changed with the Doolittle Raid of 18 April 1942. A U.S. strike force sailed undetected within 650 nautical miles of Japan launching sixteen B-25 medium-range bombers from USS *Hornet*. The planes attacked Tokyo and other

Japanese centers. As the planes had to be launched earlier than desired, because the fleet had been spotted by Japanese picket boats, many B-25 could not fly to friendly areas in China as planned and some came down in Japanese-held areas. Two aircraft crews of the Doolittle raid were captured by the Japanese.[8],

Strategic Considerations

While the actual damage exacted by the Doolittle Raid was low, the raid proved to Japanese planners that the North Pacific posed an area of vulnerability which U.S. carrier forces could exploit. In addition, for a while a misconception existed among Japanese staff that the planes could have come from Midway,[9] or the Aleutians.[10] That gap could be closed by occupying Midway Atoll, at the northwestern end of the Hawaiian Chain, and by erecting a base on one of the Aleutian Islands. Combined with Wake Atoll, which had been in Japanese hands since late December 1941, these bases would allow for a barrier patrol and continual surveillance of the sealanes by sea/float planes and long-range flying boats as well as by submarines (Fig. 24).[11]

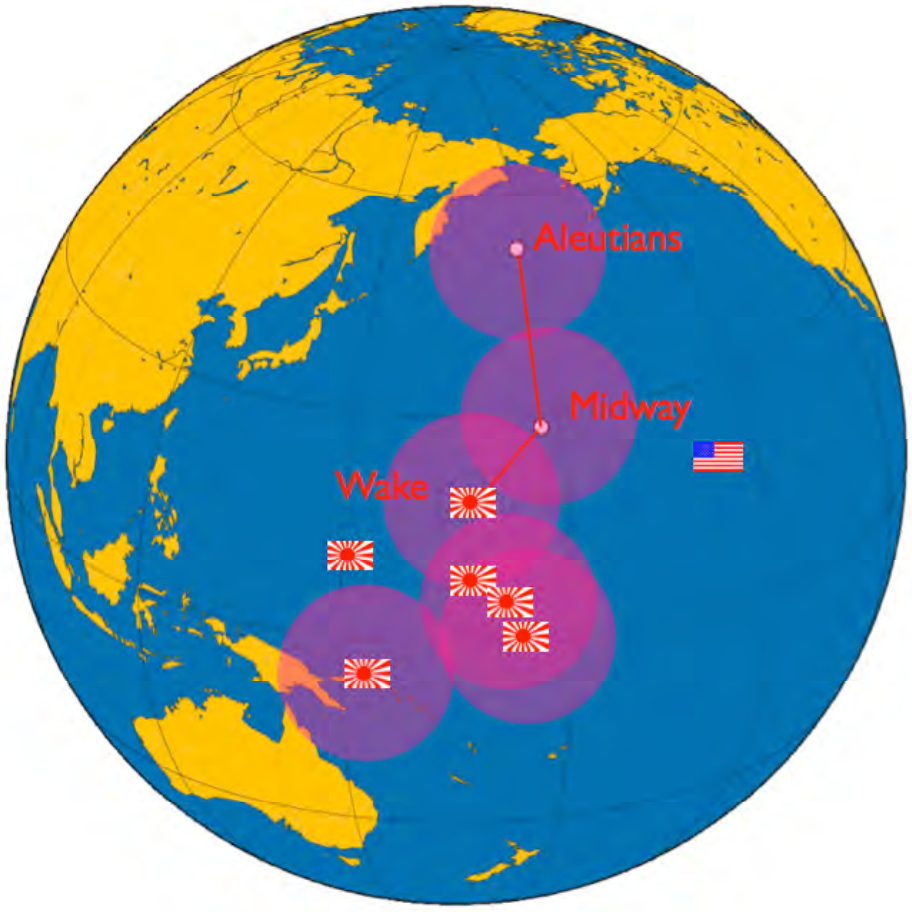


Fig. 24. Projection of the Western Pacific Ocean, centered on Wake Island as the northeastern-most Japanese base (as of early 1942), showing the strategic location of the Aleutians and Midway as part of a (schematic) flying boat patrol network, blocking the sea-lanes to Japan.

Common mythology has it that the Doolittle Raid was the cause of the Midway Operation, a comment that has been repeated many times over.[12] It is clear, however, that the situation is more complex. The need to expand the eastern defensive perimeter had been considered for some time.[13] At the start of the war an eastern defense perimeter had been conceptualized that ran from the Kuriles to Wake, Kiribati (the the Gilbert Islands) and then Rabaul.[14] In the face of the running success enjoyed by the Imperial Japanese Navy (IJN) as well as the IJA, that perimeter was later extended to include Midway and the Solomons, as well as the Aleutians.[15]

While the Doolittle raid may have been the catalyst that ensured that the Aleutians part of the Midway operation was carried out,[16] it was most certainly not the cause. The Midway operation had been in planning long before the Doolittle raid, and had two aims:[17]

- Midway was of utmost strategic importance to both the U.S. and especially to the Japanese. Control of Midway, after all, meant to control a sizeable sector of the airspace in the central Pacific and, if in Japanese hands, would serve as an anchor of the eastern defense perimeter. It also provided a base from which to carry out long-range missions against Pearl Harbor. [18]
- It was hoped that the Midway operation would lure the U.S. fleet into battle where it would be trapped between two carrier forces and annihilated, thus forcing the USA to a negotiated peace.

The Aleutian Operation—A diversion?

There is a commonly advanced argument that the Aleutians operation was a mere diversionary attack, aimed at confusing the U.S. command and timed to draw any U.S. carriers to the Aleutians and away from the Central Pacific area.[19] While that view was the canon for much of the post-war years[20] and was still *en courant* in the 1990s,[21] the diversion theory has lost some traction in recent years,[22] with the myth being exploded by Parshall and Tully's recent work *Shattered Sword.*[23]

While there can be no doubt that the Midway operation was the main game, the Aleutian component was an essential part of the entire Japanese defense strategy. That point was not lost on several contemporary commentators,[24] but was in subsequent years overlooked in the myth developing around the Battle of Midway. The diversion myth had been born, in part, by the interrogations of low-level IJN personnel that were not fully briefed on the higher strategic picture;[25] while statements by other, higher ranking staff were misinterpreted to conform with the flanking and diversion hypothesis.[26] The problem rests that two issues were conflated early on: a diversionary attack on Dutch Harbor to distract U.S. planners, and a *planned* occupation of one or more islands in the Aleutians.[27]

The idea that Aleutians operation was diversionary, makes no sense at all if we consider that Yamamoto detailed two of his six carriers, the *Ryūjō* and the *Junyō* to that operation. Given that his main objective was to take Midway and to lure the U.S. carriers into battle, every additional flight deck was going to strengthen his hand. After all, the *Ryūjō* and *Junyō* could have served as flight decks to attack Midway, while the four larger and faster fleet carriers could have been positioned to intercept the U.S. carriers. Why sacrifice strength for more diversion?[28]

Moreover, if this had been a mere diversion, then a single carrier would have sufficed to project air power and engage any enemy air forces in the Aleutians, coupled with a well composed battle fleet capable of wide-ranging shelling and onshore destruction. Moreover, in a diversion scenario there was no real need for any landings let alone occupation to occur. If landings were seen as desirable for the psychological impact, then all that was required was to land shock troops, cause mayhem with concomitant destruction/demolition of shore facilities and to withdraw before the enemy could react.[29]

Instead, the Japanese committed almost 6,000 troops to the occupation of Attu and Kiska. Indeed, Vice Admiral Fukudome, Chief of Staff to admiral Koga, CiC Combined Fleet after Yamamoto's death, made the point that Yamamoto believed that eastern

bases, such as Midway and the Aleutians, were "critical to an overall success of the IJN's plans."[30]

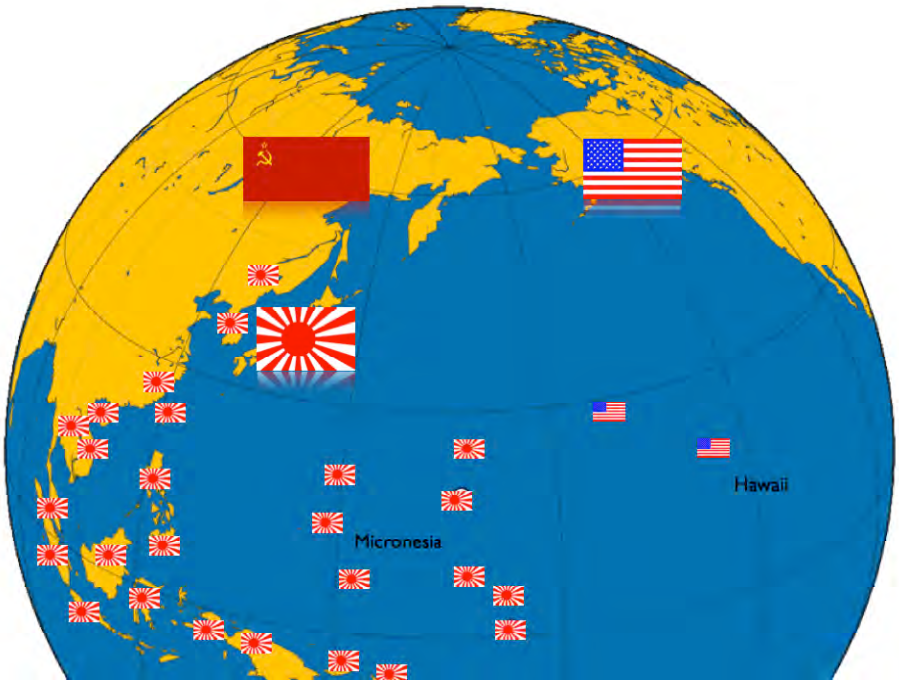


Fig. 25. Projection of the Western Pacific Ocean centered on Wake Islandshowing the Japanese and U.S. held islands.

To understand why the Aleutians were of strategic importance to the Japanese planning, we need to again consider the map of Northern Pacific region (Fig. 25). While the southwest and southern Pacific were firmly under Japanese control, they were exposed to the north. The Japanese planners had three main strategic concerns (in no particular order):[31]

xvi) the unpatrolled expanse of ocean north of Wake and south of the Aleutians permitted the fast U.S. carriers room to maneuver undetected, thus exposing the Micronesian possessions, as well as the Japanese homeland to carrier raids;

xvii) the U.S. might choose the islands of the Aleutians as a route to launch an invasion of the Japanese homeland via the Kurile Islands.

xviii) The U.S. might use the Aleutians as a supply route to the Soviet Union, should the USSR enter the war.

The Soviet threat

Let us start with the last aspect. The Japanese expansion in China during the 1930s brought Japanese armed forces to the Manchurian-Soviet border along the Khalkha River. Differing interpretations of the location of the border, coupled with a general expansionism on behalf of the Japanese, led in 1939 to the Battles of Khalkhin Gol.[32] Effective tank tactics by (then) General Zhukov saw an encirclement of the Japanese 23rd Infantry Division. Although unable to be relieved from the outside, the Japanese refused to surrender and almost 9,000 soldiers perished.[33] This incident made it abundantly clear to the Japanese that any further expansion to the north was not advisable and that the modern Soviet Army was a stronger foe than the Czarist forces had been in the Russo-Japanese War of 1904-1905. It incidentally also signaled that the 'Northern solution', to seize the Siberian oil fields, was not feasible, and that Japan had to source its oil from Indonesia, thus precipitating its seizure of French Indochina and Indonesia (then the Dutch East Indies).[34]

Significantly, though, it also implied that Japan had to ensure that the USSR remained neutral in any future conflict. Japan simply could not afford to fight a war on both fronts. To ensure neutrality, Japan signed the Japanese-Soviet Nonaggression Pact ('Neutrality Pact') with the Soviet Union on 13 April 1941.[35] And Japan went to great lengths to foster and maintain that neutrality, but was not oblivious to the fact that Stalin had his hands full in repelling the German onslaught. Even though Japan, Italy and Nazi Germany had signed the Tri-Partite Pact in September 1940 which stipulated military support, Japan scrupulously maintained its neutrality towards the USSR even after Nazi Germany attacked the Soviet Union on 11 June 1941.[36] The USA sold armaments to the Soviet Union to support its war against Nazi Germany, first against payment in gold and later (as of October 1941) via a formal lend lease agreement similar to that which the USA had signed with the United Kingdom. While most of the supplies were shipped in convoys across the North Atlantic to Murmansk, much of these supplies were shipped from the U.S. west coast across the North Pacific to Vladivostok.[37]

While it would have been reasonably easy to score a number of sinkings,[38] this would have antagonized the Soviet Union, especially as they flew the Soviet flag for the journey.[39] And the USSR's continued neutrality was essential to the unfettered conduct of the Japanese war effort at other fronts.[40]

However, *in the event* that the USSR should enter the war on the side of the USA and its Allies, Japan feared that the U.S. would use the Aleutians not only as a supply route to the Soviet Union but also to base patrol planes and submarines there necessary to safeguarding the convoys.[41] The possession of an island in the Aleutians would allow the Japanese to interdict such shipments[42] and project force onto any U.S. bases that might be developed at a later stage.[43]

The Aleutians as an Attack Route

In its strategic thinking, in case of a war, the Japanese Navy did not expect major retaliatory attacks by a U.S. fleet via the Aleutians, noting that although "it is the shortest course...it is foggy throughout the year and both naval and air operations on a large scale are impossible."[44] Land- and air-based approaches were a different matter.

The Japanese planners considered that the Aleutians could become one of the routes by which the U.S. could attack the Kurile Islands and from there the Japanese homeland, either by direct advance,[45] or via air raids.[46] This estimation shows the lack of knowledge as to the climatological and micro-geographical realities of the Aleutians. On the other hand we need to consider that certainly the IJA had different perspectives on cold and bad weather: the IJA had ample experience with this in Manchuria, and the both sections of IJA troops sent to Attu (in June and in October 1942) had been drawn from the 7th Division in Hokkaido, which was used to the general climate. The appalling levels of friendly fire casualties sustained by the US forces due to bad visibility notwithstanding, infantry forces were less affected by the Aleutian weather conditions. On the other hand, the IJN had to worry about its seaplanes crashing and its ships running aground.

Incidentally, relative ignorance about the local conditions was not limited to the Japanese. There were also voices in the U.S. that favored such a route, driven by pure geography. After all, from Attu it was a mere 650 nautical miles to the Kurile Islands. As early as March 1942, the U.S. did consider an attack on the Japanese Kurile Islands and the Japanese homeland from projected bases in China and Siberia. The Soviets, however, had at that time no interest in fighting a war on two fronts.[47] Thus U.S. planners focused their attentions to a possible attack route via bases in the Aleutians. Dutch Harbor was essential in the overall strategy, as it safeguarded access to the Bering Sea and thus secured

the lend lease 'pipeline' to the USSR.[48] The lack of developed staging points made such an attack route an unrealistic proposition, at least until the Japanese had occupied Attu and Kiska and the required staging bases had been built in order evict the Japanese from these two islands.

The Japanese High Command, finally having gained the environmental intelligence needed to assess the situation in the Aleutians correctly, concluded in a thorough review of the strategic situation in the entire Pacific in September 1942 that:

> In the Aleutian Islands, except from March to May and from September through October, weather conditions would prevent large-scale operations being undertaken. It appeared therefore, that the most likely place from which the enemy would counterattack was the Southeast Pacific.[49]

That notwithstanding, the IJA strengthened its defensive positions in the Kurile Islands and Hokkaido in early 1944.[50]

The Battle of Midway and the Aleutian Campaign

To the Commander of the Combined Fleet, Admiral Yamamoto, the presence of the fast U.S. Fleet carriers was a major concern. Their destruction would ensure, at least temporarily, the unfettered supremacy of the IJN in the Western and Central Pacific, would make Hawai'i, and thus Pearl Harbor, vulnerable to Japanese attacks, possibly even an invasion, and would allow Japan to project forces against shipping along the west coast of the USA. On a political front it was argued that stripping the USA of its effective means of defense might force the U.S. to a negotiated peace a settlement favorable to the Japanese interests.

Much has been written on the topic, and this is not the place to revisit the genesis, execution and subsequent failure of the overall Japanese Midway Operation.[51] Suffice to say, though, that while the removal of the threats posed by the U.S. carriers was the prime strategic objective, of equal importance to the Japanese Navy command was to establish a firm defensive eastern perimeter that consolidated the gains thus made. Given the limitations posed by transport shipping, naval units afloat, and the availability of garrison forces by both IJA and IJN, Yamamoto's Midway Operation had to compete with the IJA's continued objective to capture Port Moresby, which had temporarily been put on hold following the Battle of the Coral Sea, and the IJA's expansion plans in the Solomons. The rivalry between the IJA and the IJN is legendary, and it seems that considerable horse-trading went on in the planning stages to ensure the IJA's concurrence.[52] It has been argued that the Doolittle Raid on the Japanese homeland two weeks later was the tipping point in favor of the Midway Operation. As has been noted by a number of historians, what had once been a simple and elegant plan of trapping the U.S. carriers had become not only the largest, but also the single most complex naval operation in the entire Pacific War, involving the coordination of nearly 200 vessels. A system failure at some point was almost inevitable.

The following discussion will be geared towards the Aleutian Theater of Operations.

The Imperial High Command issued the actual order, Naval Order Number 18, on 5 May 1942 for the Aleutian-Midway Operation. As the Admiral Yamamoto, Commander of the Combined Fleet, was directed to execute the operation in coordination with the Imperial Army. The joint operations order stated:

Object of the Operation:

> Object of this operation is to capture or demolish points of strategic value on western Aleutian Islands in order to check the enemy's air and ship maneuvers in this area.
>
> Operational Policy:
>
> The Army and Navy, in close cooperation with each other, will invade Attu and Kiska Islands and will destroy enemy installations and equipment on Adak Island.
>
> Operational Outline:
>
> 1. The Army and Navy, in close cooperation with each other, will capture Adak Island and withdraw after having demolished enemy installations and equipment. Following capture of the island, the Army troops and Navy Special Landing Forces will capture Attu and Kiska Islands respectively. They shall hold these two islands until the coming winter.
>
> 2. The Navy will provide strong support for the invasion force and at the same time employ a carrier unit to raid Dutch Harbor for the main purpose of reducing enemy air strength prior to our landing.[53]

At the same time, the Imperial General Headquarters issued Army Order No. 628, which stated:

> Imperial General Headquarters plans to occupy the western Aleutian Islands. The North Seas Detachment commander will cooperate with the Navy forces in carrying out the occupation of Adak, Kiska and Attu Islands. After assembling at the point of rendezvous, the North Seas Detachment commander will be placed under the operational command of the 5th Fleet commander. Detailed directives will be issued by the Chief of the General Staff.[54]

It is critical to understand that U.S. intelligence had been able to intercept much of the communications traffic in the lead up to the Midway Operation and that code breaking efforts read much of the Japanese Naval cipher. Yamamoto's plan was so complex that it required lengthy transmissions and repeated communication, occasionally sent in less protected code. As a result of these efforts,[55] Admiral Nimitz (CiC Pacific Ocean Areas) was fully cognizant not only of the overall Japanese intentions but also of the general order of battle.[56]

The Battle of Midway

The Battle of Midway commenced on 4 June 1942 with planes attacking Midway itself, with the aim of neutralizing its air capability in advance of the landings. When the first wave fell short of achieving the objective, a second strike had to be prepared. At the same time, failures in the Japanese reconnaissance screening efforts (including the fatal delay in launching a reconnaissance plane in the cruiser *Tone*) left VAdm. Nagumo Chūichi (CiC First Mobile Force) critically blindsided and unaware of the presence of the U.S. carriers to the north-east. While Nagumo's force was recovering the planes from the Midway strike, U.S. carrier aircraft were on their way to attack the Japanese carriers. At the end of the battle, all four Japanese carriers were sunk at the expense of one U.S. carrier (the *Yorktown*). As a result of the destruction of the Japanese carrier force, and being unable to locate and engage the U.S. carriers with his capital ships, Yamamoto abandoned the Midway landing and ordered the invasion fleet to return to Japan.

That invasion fleet had consisted of a number of troop ships, as well as transports that brought the aircraft necessary to establish a sea plane base on Midway (aboard the *Chitose* and the *Kamikawa Maru*),[57] as well as a number of troops and boats necessary to establish a submarine base on Kure Atoll (aboard APD 35 *Tsuta;* Appendix I).[58] It is important to understand, for the development of Kiska, that the construction troops and cargo loaded on the transports of the invasion fleet had been committed to Midway and Kure, and that all gear had been de-accessioned in the respective warehouses. While the

cargo was no longer needed for Midway, it was already afloat and could, at short notice, be shipped to another location in need.

Dutch Harbor

While Yamamoto was commanding the Midway Invasion forces, the command of the Aleutian force (Second Task Force) was entrusted to VAdm. Hosogaya Moshirō. It was centered on the aircraft carriers *Ryūjō* and *Junyō*, and supported by the cruisers *Nachi, Maya and Takao*, as well as five destroyers and six supply ships (see Appendix I). The air arm of the force comprised 16 Mitsubishi A6M2 'Zero' fighters on the *Ryūjō* and another eight on the *Junyō.* The offensive complement consisted of 20 Nakajima Type 97 B5N 'Kate' torpedo planes /on the *Ryūjō* and 19 Aichi Type 99 D3A1 'Val' dive bombers.

The carriers of the Second Mobile Force of the Aleutian force reached a position approximately 180 miles southwest of Dutch Harbor, Unalaska, and on 3 June 1942 launched air strikes against the U.S. naval base as well as Fort Mears. Overall damage to the U.S. installations was small. Limited intelligence by the Japanese meant that they were unaware of the recently constructed airfield on Umnak, some 80 miles to the southwest, thus missing the most critical target in the region. U.S. fighters scrambled to search for the ships, but only engaged two Nakajima E8N 'Dave' seaplanes launched by the cruisers. The Japanese resumed their aerial attack on the following day, this time launching from about 100 miles out. Again the Japanese attacks had limited impact, destroying the tank farm, but leaving two navy vessels undamaged.[59] *En route* back to their carriers, the Japanese were intercepted by an air patrol of P-40 from Umnak. Final losses were four of the six U.S.AAF P-40 and a total of two Mitsubishi A6M2, two Aichi D3A1 and two Nakajima Type 97 B5N. One of the two Mitsubishi carried out an emergency landing on Akutan, killing the pilot. That plane, however, was largely undamaged and proved a major intelligence asset for the U.S. forces. The carriers were then withdrawn to a point 600 miles south of Kiska, where they met up with the carrier *Zuiho* and other vessels that had survived the Battle of Midway. Their task was to provide screening for the landings on Attu and Kiska, and intercept any U.S. carriers that might be sent to interfere with the Japanese landings.[60] All carriers of the task force moved as close as 250 miles south of Kiska and flew a number of reconnaissance patrol, extending as far as 100 miles north of Kiska. After 15 June they returned to Ominato.[61] Returning to the area, now in company with the carrier *Zuikako*, the Second Task Force patrolled south of Kiska until 7 July, expecting a U.S. counter offensive that never eventuated.[62]

Aware of the impending Japanese action in the first week in June due to the already mentioned break of the Japanese naval cipher, the U.S. Navy could position an interception force (Task Force 8), commanded by Admiral Robert A Theobald between the Aleutians and Midway. Aware of the attack on Dutch Harbor, Theobald searched in vain for the Japanese forces.

Adak

Adak, reconnoitered by Japanese submarine on 29 November 1941 (periscope survey by *I-26*),[63] by floatplanes of the *Kimikawa Maru* on 11 May 1942,[64] and 24 May 1942 (floatplane survey, *I-9*),[65] was initially included in the Japanese plans for the Aleutians. The role of Adak in Japanese planning is contested. According to Captain Ito Taisuke,

Adak had been chosen as the northern base for patrol planes as it provided the best anchorage.[66] According to other sources, Adak was to be taken by a joint landing of the Japanese Army and Navy units to provide a temporary defense in depth. Once Kiska and Attu had been successfully occupied, the Adak troops were to be withdrawn, falling back to Kiska (IJN) and Attu (IJA) respectively.[67] That plan was dropped, but information on the timing is conflicting; some sources claim it was dropped about two weeks before the operations commenced,[68] while another source notes that it was only dropped after the Battle of Midway had been lost[69] and the Adak occupation force was rerouted to Attu.[70]

While a seaplane and submarine base in the Aleutians had been an important aim of the Japanese, the strategic planning never seriously contemplated a move against the U.S. down the Aleutian Chain.[71]

Fig. 26. A Kawanishi E7K2 'Alf'", in Chichagof Harbor, Attu on the Cover of the Sekai Gahō (World Pictorial News) of 20 Aug 1942[72]. Note the fanciful coloration of the black-and-white image, the censoring of the tail-code and the placement of the Japanese sailor.

Fig. 27. Occupation of Attu, as depicted on the cover of the Japanese Weekly Pictorial News of 8 July 1942.[73]

The Aleutians post-Midway

Questions have been asked why the Japanese held on to the Aleutian conquests after the Midway operation had failed. After all, when the battle of Midway went against the Japanese, the overall strategy of control of the North Pacific was no longer viable.[74] Vice-Admiral Hosogaya Moshirō, Commander of the Fifth Fleet, convinced Tokyo that the Aleutian landings were to be carried out as planned[75] in order to occupy that area and to prevent U.S. advances down the Aleutian Chain towards Japan.[76] Both Attu and Kiska were to be occupied at least until the autumn of the year (given that the Aleutian winters were known to be bad).[77] That plan was later amended to allow for a prolonged

occupation,[78] and by July 1942 Japanese planners envisaged airfields on both Attu and Kiska.[79]

Arguments have been advanced that the Japanese government could exploit a successful occupation of Kiska and Attu in the domestic political arena.[80] After all, the occupation of parts of 'real' America (as opposed to Guam and Wake which too had been American soil) yielded much propaganda value. At the same time, the losses at Midway were kept secret (until after the war), not only from the general public, but also from the bulk of the military: only the highest echelons of the military were aware of them.[81]

Other arguments brought forward have been that the Japanese domestic economy was heavily reliant on fishing, and that the North Pacific waters had been significant fishing grounds for the Japanese fishing fleets. Control of the Aleutians would safeguard some of the food supply.[82] While this is correct to some degree,[83] we need to consider that Japan was solely not reliant on the North Pacific fishery, as all of the Mandated Territory of Micronesia (Japanese: *Nany'o*) has been a longstanding source of marine produce.

While all these are valid points, they would not have swayed the Japanese military planners to commit almost 6,000 troops for the sake of a propaganda mission.[84] Simply put, in the initial phases, Kiska seemed to provide the Japanese forces with a base from which to project some sea and air power. Japan's eastern defense perimeter may have had a gaping hole with the lack of Midway, but the northern anchor was secure.

As the occupation forces settled into their positions, Japanese planners received a more accurate picture of the topographical and climatological conditions of the area and thus could adjust their planning.[85] Moreover, as the campaign progressed, it became abundantly clear that the U.S. forces were committing substantial numbers of troops and materiel to the task of ousting the Japanese from Kiska and Attu. The U.S. commitment was several magnitudes larger than that of the Japanese. In the net result, even though the Aleutians were not a major theatre of war for the overall U.S. war effort, Japan tied down U.S. troops and resources (in terms of materiel, construction supplies, and shipping space) that could not be committed elsewhere. Strategically, that *was* a success story.

The Role of Attu

It had not escaped the U.S. planners that Attu was the most exposed of the Aleutians and the closest to any Japanese activity. Thus it had been intended to remove all civilians by the end of May 1942 and replace them with a ten-man weather detachment. That did not eventuate due to bad weather.[86] At the time of the Japanese invasion, the population of Attu amounted to 41 Aleuts and two Americans, the resident Bureau of Indian Affairs caretaker and schoolteacher C. Foster Jones and his wife Etta.

In executing Operation AQ, Japanese forces, commanded by Major Hosumi Masatochi, and spearheaded by the 103rd Regiment ('Hosumi Troop'), successfully landed unopposed at Holtz Bay, Attu on June 7, 1942, and then moved to Chichagof Harbor to occupy the village. The 301st Independent Infantry Battalion of about 1,100 men eventually established a base there. According to several sources, Foster and Etta Jones attempted suicide. While Foster Jones died, his wife Etta was saved by the Japanese[87] and sent for internment to Yokohama.[88] Relationships between the Japanese and the small Aleut community were amicable according to the Japanese officers concerned.[89] The Attu garrison was moved to Kiska in late August (move completed 16

September). At the same time, all Attuans were also evacuated aboard the *Osada Maru* and, via Kiska,[90] moved on to Japan.[91] Only a small Japanese naval communication unit remained behind on Attu,[92] presumably to staff a weather station and to act as a communications relay.

Fig. 28. A Nakajima A6M2-N 'Rufe' lying canopy down at the beach of Holtz Bay, Attu.[93]

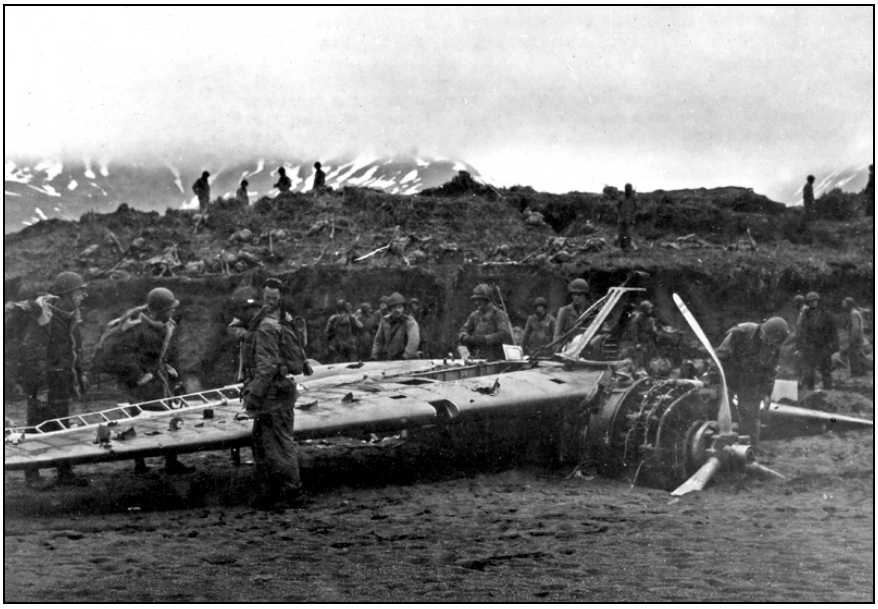


Fig. 29. The Nakajima A6M2-N 'Rufe' lying canopy down at the beach of Holtz Bay, Attu.

Six weeks after the 301st Independent Infantry Battalion had been moved to Kiska, the Japanese Command decided to resurrect Attu as a base, moving further troops of the 7th Division to Holtz Bay, under the command of Lt. Col. Hiroshi Yanekawa.[94] Starting off with 900 troops on 22 October 1942, the garrison finally reached almost 2,300 men. Interdiction by U.S. vessels commencing with the Battle of the Komandorskis on 26 March 1943 terminated further reinforcements, with the exception of submarines.[95]

The role of Attu needs to be considered when evaluating the effectiveness of the Japanese occupation of Kiska. Starting with the U.S. bombing in the first days of the Japanese occupation (the 'Kiska Blitz'), it had become apparent that Kiska Harbor, although quite a large and safe anchorage as far as the weather was concerned, could not be relied on by the Japanese forces as a safe place, since it was within range of long-range

bombers from Umnak. The heavy fog conditions added to the problems. Even in the early days, critical supply ships were kept at Attu or Agattu and entered Kiska either in heavy fog, presumably piloted in by small vessels, and under the cover of darkness. Later on, many aircraft replacement missions either launched their planes from positions several hundred miles southwest of Kiska, or delivered them to Attu from where they were flown to Kiska.

As long as Attu was in Japanese hands it provided a relatively safe haven for the replenishment of planes delivered from Japan and destined for Kiska. Additionally, the occasional fighter cover over Attu was provided by Nakajima A6M2-N flown in from Kiska,[96] and presumably temporarily stationed on Attu. Prisoner of War interrogations after the capture of Attu indicated that the temporary seaplane detachment on Attu consisted of a maximum of 20 planes, both reconnaissance and fighter planes (Nakajima A6M2-N). The attached personnel were limited to maintenance crews and pilots, who "were kept segregated from the other troops."[97] Moreover, the Japanese were constructing an airfield at Holtz Bay, with the aim of eventually placing there 48 Mitsubishi A6M2'Zero' fighters.[98] These planes could have been staged through Kiska Airfield for refueling and rearmament and would have constituted a serious threat to the U.S. air power in the area.

Beyond Attu and Kiska

In the early days of the Aleutian Campaign, U.S. fears of Japanese intentions were wide-ranging, at one point even fearing that the Japanese might try to occupy the Pribilofs.[99] As far as we know, the Japanese objectives beyond the occupation of Attu and Kiska were limited: we know that as early as June 1942, a Japanese destroyer squadron examined Shemya and Amchitka for the suitability of constructing airfields on these islands.[100] Neither eventuated.

Japanese Landings and the Kiska Blitz

The Japanese occupation of Kiska and Attu is often referred to as the first occupation of U.S. soil by an enemy since the war of 1812, and as such loomed large in public consciousness during the war. Perpetuated both by academic researchers[101] and in the arena of public interpretation,[102] this common misconception conveniently overlooks that prior to the Aleutian Campaign, Japan had already occupied Guam (on the day of the attack on Pearl Harbor), as well as Wake Island (on 23 December)[103]—both territories of the U.S.A., as well as the Philippines, then a Commonwealth of the U.S.A.

Why Kiska?

We need to ask, why the Japanese planner settled on an occupation of Kiska in favor of other islands. After all, Adak had a better harbor, better suited to neutralize Dutch Harbor, and closer to the Alaskan peninsula. Moreover, there was little difference between Kiska and Adak in the search radii of patrol planes and thus the areas of the North Pacific effectively covered.

We do not have in hand archival sources that spell out the rationale why Kiska was chosen over other locales. We do know, however, that Japanese planners had to base their decisions on what was publicly known about the area, drawing on nautical charts and pilots,[104] the media, and government as well as academic publications. It seems that

much of such information was taken at face value.[105] Moreover, planners would have been influenced by the fact that the U.S. had selected Kiska as the location of a naval base and set aside the island as a naval reservation in 1903;[106] had chosen to restrict the airspace above Kiska in 1930;[107] and had declared the "Kiska Island Naval Defensive Sea Area" and "Kiska Island Naval Airspace Reservation" in February 1941.[108] While this is admittedly speculative, we can assume that the Japanese planners reasoned that if the U.S. valued Kiska, then so should they.

Japanese Intelligence on Kiska

As was outlined earlier, we need to consider that Japanese intelligence of Kiska Harbor, at least in the planning stages of the attack, seems to have been *extremely* limited. To some extent, the Japanese could make up for this through submarine reconnaissance prior to the attack. We know that Kiska was reconnoitered with a periscopic survey by the Japanese submarine *I-26* on 28 November 1941.[109] On 11 May 1942 the seaplanecarrier *Kimikawa Maru* launched floatplanes some 150nm south of Kiska to carry out a brief photoreconnaissance of Kiska and Adak. While Adak was observable, Kiska was obscured by weather.[110] The required intelligence as to the strength of the U.S. presence on Kiska could finally be gained on 24 May 1942, this time by a floatplane flown from the submarine *I-9*.[111]

The Japanese planners had little information on the actual topography and climatology of the islands and misinformation abounded. For example, some planners believed that Kiska Harbor would freeze over in winter and thus be unsuitable for seaplaneoperations.[112] Thus it seems reasonable to assume that much of detailed planning of the Kiska base, it's layout and arrangement of defenses, fell to the local commander after the occupation of the island.

Japanese Landing and Arrest of U.S. Personnel

The Kiska Invasion force, under the command of Capt. Ono Takeji comprised two cruisers (*Kiso, Tama*), four destroyers *Hibiki, Akatsuki, Hokaze, Shiokaze*), three minesweepers, three transports and two troopships (see Appendix I) arrived off Kiska in the night of 5 June 1942. Insulted.[113]

Rather than carrying out the more common dawn attacks, the landing by the Japanese Naval Forces on Kiska occurred almost leisurely at 10 am on the 6th of June 1942.[114] Given the limited knowledge of the island, of course, a daytime landing was the safer, and more sensible proposition, especially as the U.S. presence, and hence anticipated opposition, was known to be minimal. The landing on Kiska was effected when the Japanese Maizuru No. 3 Special Landing Party of Commander Mukai Nifumi with 550 Marines went ashore at Reynard Cove and walked overland across North Head to Kiska Bay.[115] In total three columns approached the U.S. weather station, one from the north, one from the west and one from the southwest.[116] At the same time, a number of landing craft were rounding Kiska's North Head, possibly to block off any attempt by U.S. personnel to flee by boat.

At the time of the Japanese landings on Kiska the only inhabitants of the island were the ten U.S. personnel staffing the weather station located at Kiska Harbor (Fig. 22).[117] One was wounded[118] and the Japanese captured all except five men on the first day (Fig. 32). Ten days later, four others surrendered. They were transported to a POW camp in Japan around late June. The final U.S. personnel still at large on the island, William Charles House, finally surrendered on 29 July 1942 after almost 50 days on the run.[119]

Fig. 30. Japanese forces of the Maizuru No. 3 Special Landing Party overlooking the U.S. installations on Kiska Harbor during the attack, as depicted in the Japanese *Weekly Pictorial Report* of 8 July 1942[120]

Below:

Fig. 31. Japanese forces occupying Kiska, as depicted in the Japanese *Weekly Pictorial Report* of 8 July 1942.[121]

Fig. 32. Arrest of two men of the U.S. weather detachment, as depicted in the Japanese *Photographic Weekly Report (published by the Cabinet Information Bureau)* of 8 July 1942.[122] From left" John C. McCandless (cook), Rolland L. Coffield (pharmacist's mate), Japanese officer.[123]

The original Japanese caption accompanying the image reads "We interrogated two retreating enemy defenders, Caulfield and John. 'How many residents are there?' 'About ten, but not a single woman.' 'What company do you work for?' 'No company, the navy." 'Do you like the war?' 'No we hate it."[124]

Fig. 33. Japanese naming of parts of Kiska Island.[125]

According to a broadcast by Radio Tokyo on 24 and 25 June 1942, Kiska was renamed *Narukami To* by naval units.[126] According to the Dōmei News Agency of June 25, the name Narukami was derived from Narukamizumei (Thunder Month), one of the Japanese names for June.[127]

INSTANT BUILD-UP OF FORCES

The Japanese lost no time, bringing in the rest of the invasion fleet, landing the remainder of the Japanese Maizuru No. 3 Special Landing Party as well as the 700 laborers and construction equipment that had been brought on the *Kumagawa Maru.* The auxiliary cruisers *Asaka Maru* and *Awata Maru* had brought supplies. Tent camps were erected and gun positions set up (for details see Chapter 3, p. 55).

The overall build-up of the Japanese presence on Kiska occurred in four stages:

- Landing and initial occupation;
- base expansion with materiel and personnel initially destined for Midway and Kure Atolls
- strengthening of the base by relocating the IJA garrison from Attu to Gertrude Cove on Kiska
- deepening the defense system and improving infrastructure.

Air Cover and Reconnaissance

If we ignore PO2c Koga Tadayoshi's Mitsubishi A6M2'Zero" fighter which crash-landed on Akutan on 4 June 1942,[128] then the first Japanese plane to land in the Aleutians was a Kawanishi E7K2 'Alf.' The Alf was a spotter plane from the Japanese light cruiser *Abukuma.*, landing at Attu

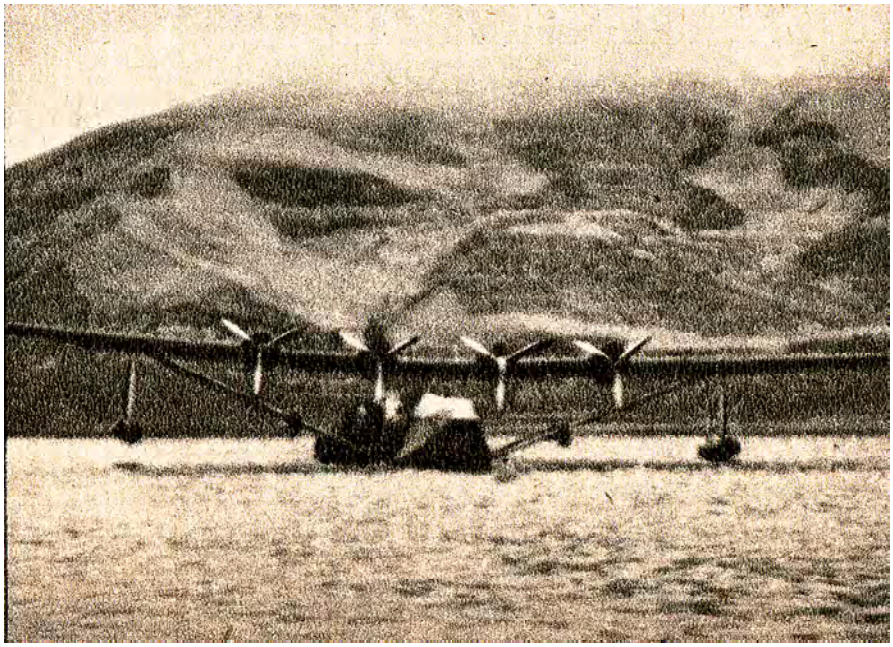
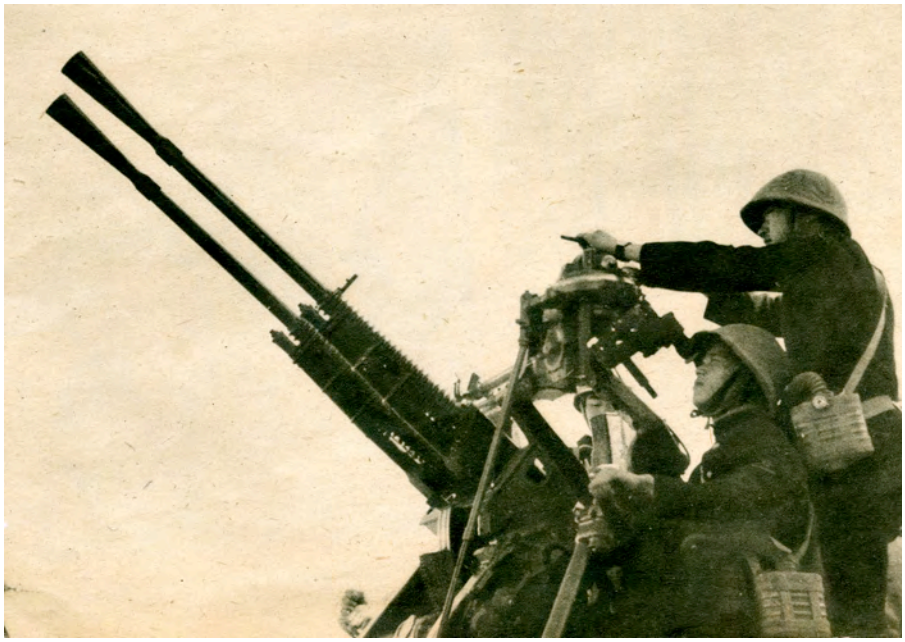


Fig. 34. Image of a Kawanishi flying boat in Kiska Harbor, as published in the Japanese Armed Forces' publication *Weekly Pictorial News, publicizing the Japanese landings on Kiska and Attu.*[129]

Fig. 35. Japanese destroyers at Kiska Harbor. Note the initial set up of tents along the beach.[130] The destroyers are IJN *Hibiki* and IJN *Akatsuki.*[131]

On the same day as the 'Alf' landed on Attu, a day after the Japanese landings on Kiska a detachment of the Tōkō Kūkūtai, nominally based at Yokohama but probably operating out of Paramushiro,[132] arrived with six Kawanishi H6K Type 97 "Mavis" flying boats[133] (henceforth 'Mavis', see Fig. 34).[134] The aircraft, under the command of Captain Sukemitsu Ito,[135] were based in Kiska Harbor to provide a long-range patrol capability.[136] On the same day, the seaplane carrier *Kimikawa Maru* arrived, offloading six Aichi/Watanabe D13A1 Type 0 'Jake' (*Reisui)* long-range reconnaissance planes.[137] Thus one day after the landings, the emerging Japanese base on Kiska effectively possessed a good medium- and long-range reconnaissance capability and well as some limited options for patrol bombing (using the Kawanishi flying boats).[138] At this time, however, there the Japanese had no strike or fighter capability on Kiska.

Fig. 36. Japanese 25mm Type 96 AA gun reputedly set up on Kiska.[139]



The search radius of the Kawanishi H6K Type 97 "Mavis" flying boats was 250 to 300 nautical miles, with an emphasis on the eastern and southeastern sector from which U.S. attacks were expected. Persistent fog, however, hampered the patrol flights. While the Kawanishi planes were theoretically capable of much greater search distances, the vagaries of weather over Kiska required a much greater safety margin on fuel than was the case in the South Pacific.[140]

Fuel for the flying boats, in the form of an initial shipment of 500 200-liter drums of aviation fuel, was provided by the transport *Kamitsu Maru,* which also carried out subsequent fuel transports from Paramushiro in the Kurile Islands,[141] as well as the oiler *Hishi Maru* Nº 2.[142] On 8 June the seaplane carrier *Kimikawa Maru* [143] arrived, offloading six *Reisui* [144] long-range reconnaissance planes.[145] Her planes had previously been used to reconnoiter Attu and Kiska on 11 May 1942, well in preparation of the attacks on Dutch Harbor. On 15 June 1942 another seaplane carrier, the *Kamikawa Maru,* arrived at Kiska, offloading her detachment of fourteen Mitsubishi F1M2 'Pete' which had initially been intended to be based on Midway Atoll.[146] She retained two Nakajima E8N2 'Dave' and two *Reisui,* which took up three-hour anti submarine and reconnaissance patrols.[147]

Both the *Kamikawa Maru* and the *Kimikawa Maru* remained in Kiska Harbor to support their planes until the vessels had to be withdrawn on 18 June due to persistent U.S. air raids.[148] Both vessels went first to Attu and then to Agattu,[149] but made frequent trips to Kiska from there, bringing in supplies and fuel while the seaplane base was under construction.[150] The *Kimikawa Maru* is on record as making almost nightly runs.[151] But even at Agattu they were not completely safe. A U.S. air raid on 3 July caused minor damage to both the *Kamikawa Maru* and the *Kimikawa Maru,* as well as the transport ship *Fujisan Maru.*[152] By the end of July the *Kamikawa Maru* was ordered to return to Japan and from there moved to the Solomons[153]

While not at Kiska, both sea plane tenders retained a small detachment of their own planes for protection and for other operations if so directed. As a result, the plane strength on Kiska would have fluctuated quite considerably during this period. The *Kimikawa Maru* retained six *Reisui* while the *Kamikawa Maru* retained two Nakajima E8N2 and two *Reisui.*[154]

Table 4. Overview Japanese aircraft types used in the Aleutian Campaign[155]

Manufacturer(s)	IJN Code	IJN Type	Year	Japanese	U.S. Code	Type	Crew
Aichi/Watanabe	D13A1	Type 0	1940	Reisui [156]	Jake	long-range recon floatplane	3
Kawanishi	E7K2	Type 94	1935	?[157]	Alf	spotter floatplane	3
Kawanishi	H6K	Type 97	1938	Taitei [158]	Mavis	long-range recon flying boat	9
Mitsubishi	A6M2	Type 0	1940	Reisen[159]	Zero/Zeke	fighter	1
Mitsubishi	F1M2	Type 0	1936	Reikan[160]	Pete	reconnaissance floatplane	2
Nakajima	B5N	Type 97	1937	Kankoh[161]	Kate	torpedo plane	3
Nakajima	A6M2-N	Type 2	1941	Suisen [162]	Rufe	floatplane fighter	1
Nakajima	E8N2	Type 95	1935	? [163]	Dave	spotter floatplane	2

The Kiska Blitz

It seems that the U.S. first knew of the Kiska landing when the radio fell silent.[164] Once a PBY mission had ascertained the presence of the Japanese, the U.S. response to the Japanese landings on Kiska was swift. Long-range Consolidated PBY 'Catalina flying boats, serviced by the sea-pane tender USS *Gillis* (AVD-12),[165] then stationed at Nazan Bay, Atka, carried out a continuous, 48-hour run of shuttle bombing on Kiska, starting on 10 June 1942.[166] These attacks concluded on 12 June, when U.S. forces withdrew and burnt the village and all installations in Atka to prevent them from potentially falling in Japanese hands.

Also on 11 June 1942 the first long-range bombing runs commenced, when five B-24s and five B-17s took off from Cold Bay and, having refueled and loaded bombs at Umnak Island, attacked installations and shipping targets in Kiska Harbor, with the Japanese destroyer *Hibiki* sustaining medium-level damage.[167] Japanese anti-aircraft fire downed one of the B-24s.[168] A Japanese news camera crew captured this event, as well as the attack by a PBY.[169] According to the U.S. Army Air Force combat chronology the other B-24s were pursued by four fighters back to Umnak where U.S. fighters drove them off.[170]

It is quite unclear, however, where these 'fighters' would have come from. At the time the Japanese invasion fleet was still in the harbor.[171] The light cruisers *Kiso* and *Tama* carried one float plane each,[172] presumably a Nakajima E8N2 or a Kawanishi E7K2 .[173] The above-mentioned newsreel shows footage of a single-engine twin-float biplane with the strut configuration of an E7K2. Moreover, the plane shooting the newsreel imagery while flying parallel to *Kiso* or the *Tama* shows that cruiser's floatplane on the catapult.[174] The presence of small seaplanes is somewhat supported by a U.S. photographic intelligence assessment of images taken on the same day. It noted four Kawanishi flying boats at anchor off the Main Camp area[175] and commented on "two indistinct objects at the water edge on the occupied shore [which were] believed to be small single motored seaplanes."[176] While two aircraft, which would have been spotter planes, are understandable, four planes, as claimed by U.S. aircrew, are not.

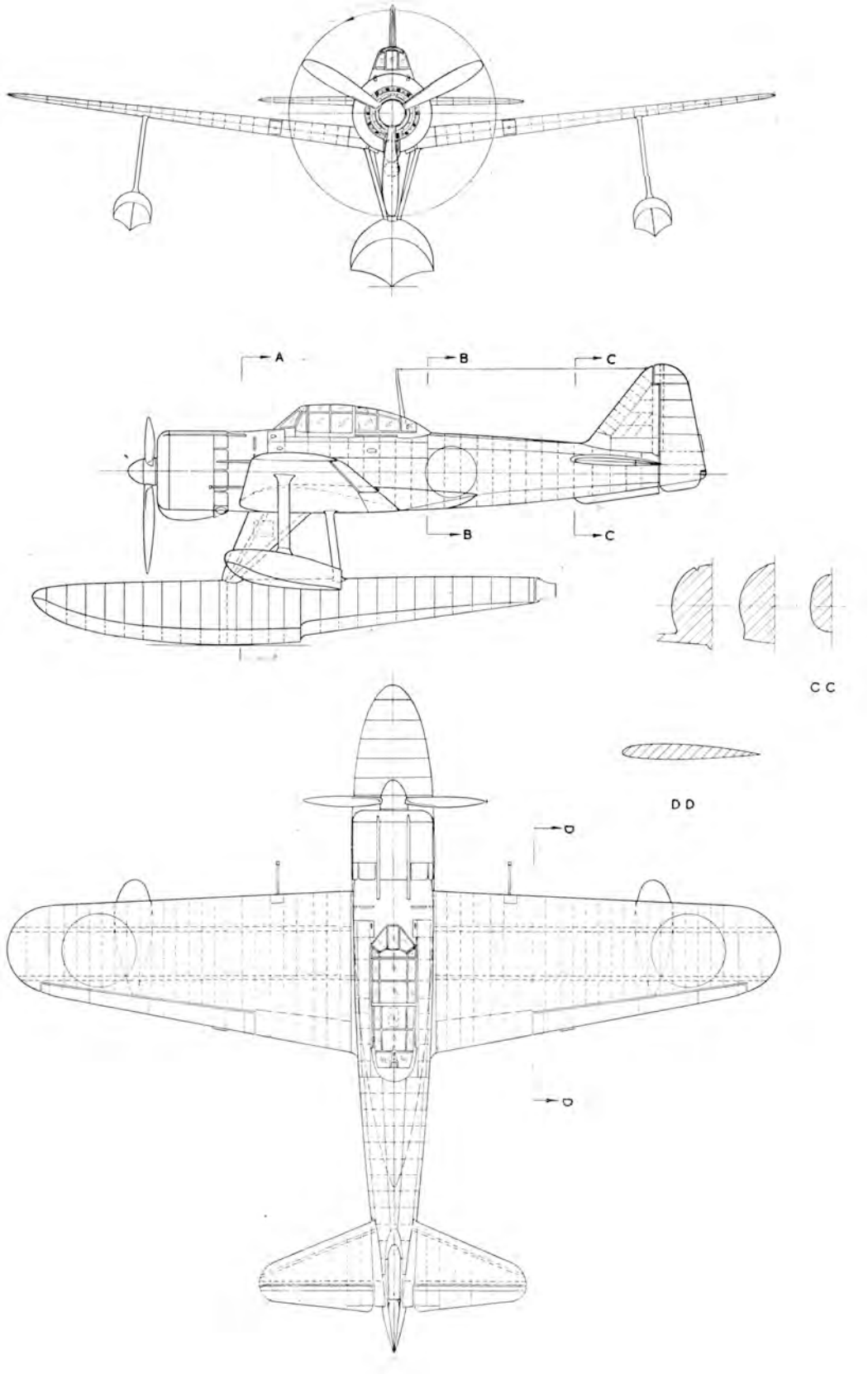


Fig. 37. Drawing of the Nakajima A6M2-N ('Rufe') fighter float plane.[177]

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

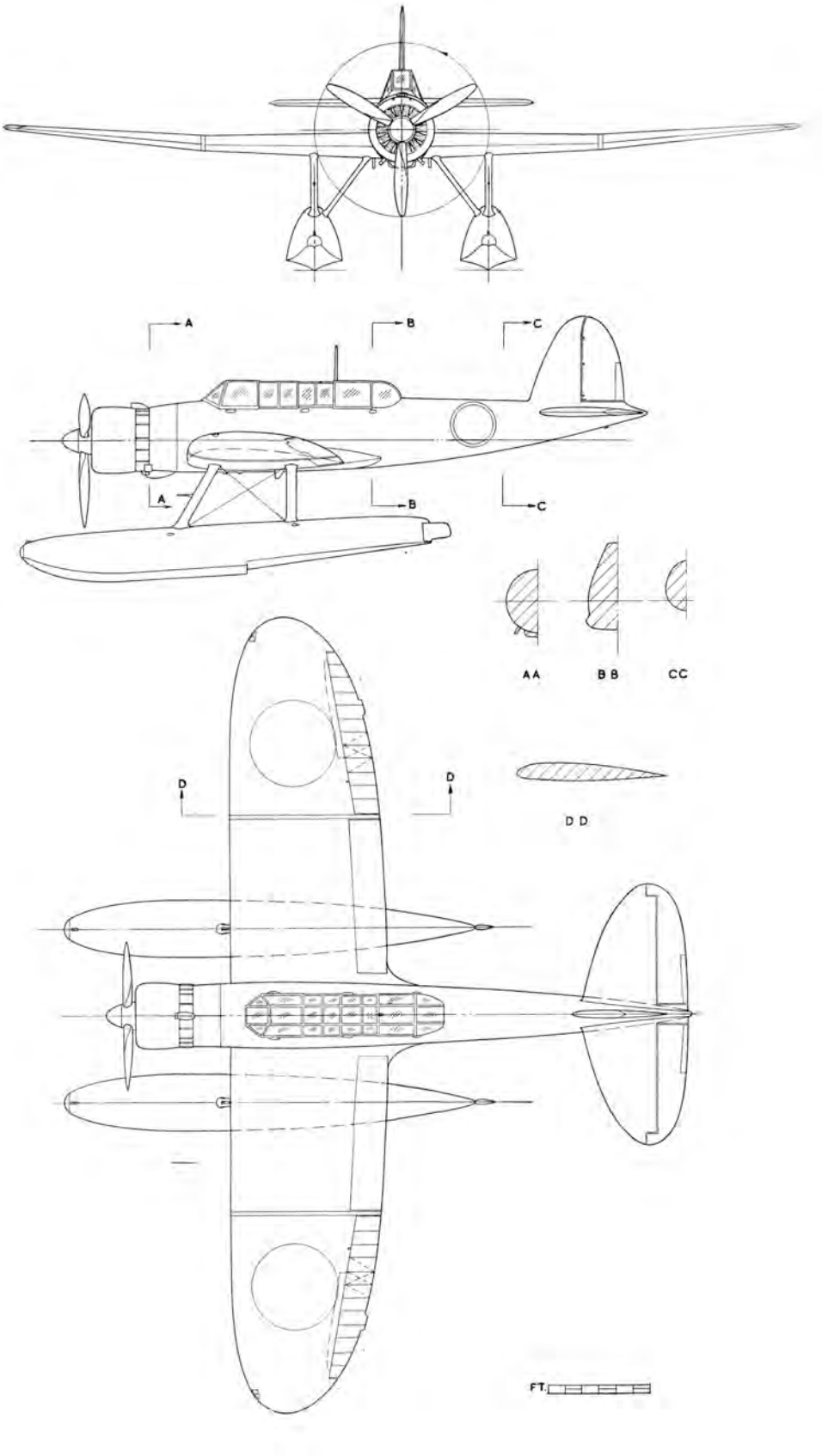


Fig. 38. Drawing of the Aichi E13A1 ('Jake') reconnaissance float plane.[178]

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

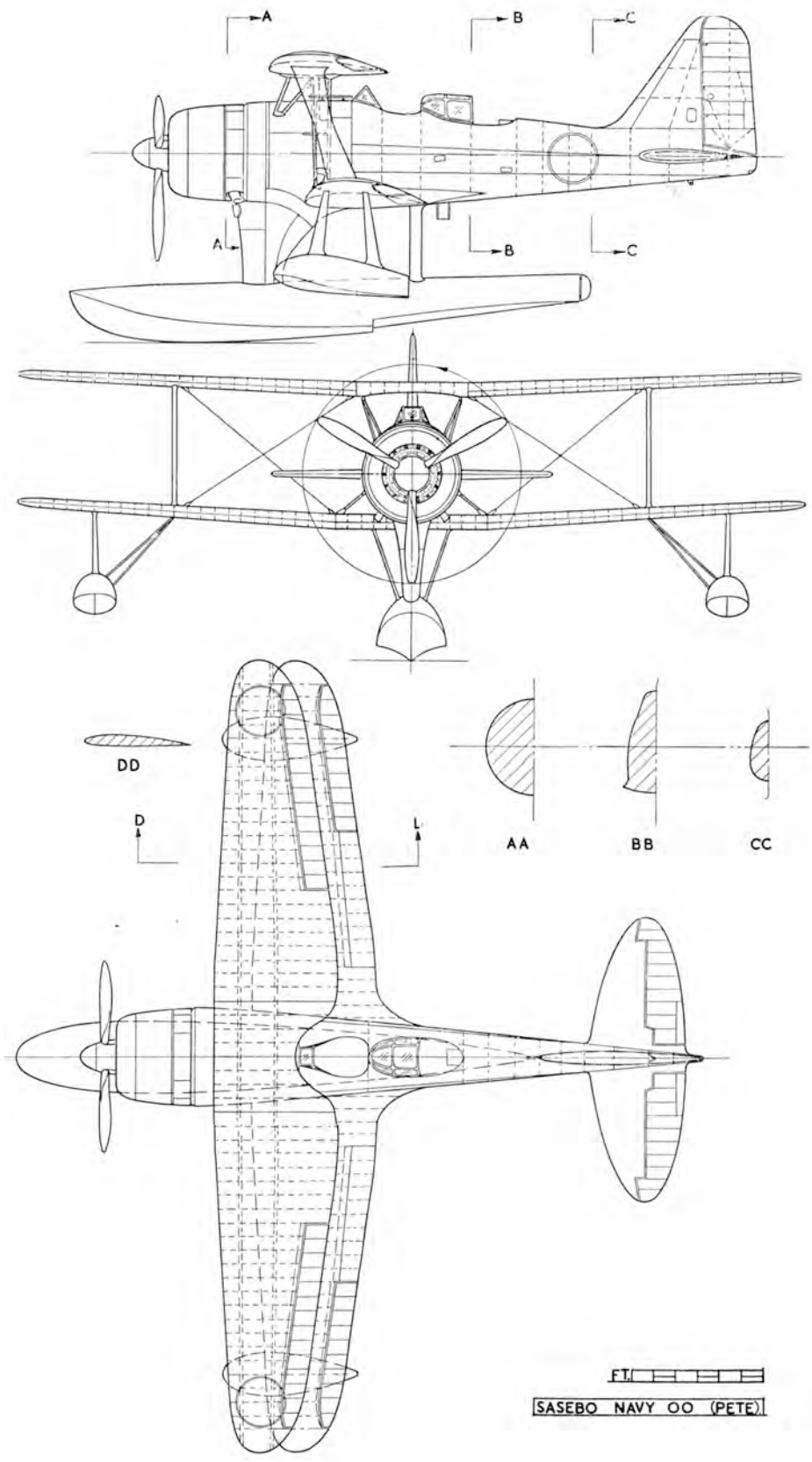


Fig. 39. Drawing of the Mitsubishi F1M2 ('Pete') reconnaissance float plane.[179]

The long-range attacks by U.S. bombers continued over the next three days.[180] On 14 June four B-17s and three B-24s continue to bomb shipping in Kiska Harbor from an

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altitude as low as 700 feet. Two cruisers were reported hit.[181] That attack was met by air opposition from scout planes launched from (one of) the Japanese cruisers. Two of the B-17s were heavily damaged, but made it back to Umnak. One of the scout planes was claimed shot down.[182]

In retaliation, Kawanishi H6K flying boats (*Taitei)* from Kiska carried out a bombing run of Nazan Bay, Atka Island on June 14th, having reconnoitered the area with a reconnaissance plane two days earlier. By the 14th, however, the U.S. seaplane tender USS *Gillis* had left and it appears that the Japanese flying boats merely bombed an already burnt-out village. Another bombing run occurred only a few days later, when the flying boats were attacked by U.S. fighters. One of the *Taitei* was lightly damaged.[183]

Foggy weather from June 15th to 18th brought about a lull in bombing runs and allowed both sides to take stock. To the U.S. forces the "Kiska Blitz" had proven that aerial bombardment alone could not drive the Japanese from the Aleutians. The distances were too great, with the U.S. crews flying at the extremes or personal endurance with many pilots flying 10 hours and more each day. Moreover, despite it being only early days of base development, the already concentrated anti-aircraft batteries on Kiska made all low- and medium-level bombing a hazardous undertaking.[184] Despite the U.S. attacks the Japanese were able to bring in supplies and deepen their defensive structure. As a result the U.S. strategy was altered. To bring Kiska and Attu within range of medium bombers that could be escorted by fighters a number of bases had to be developed that were much closer to the Japanese-held islands.

The photographic interpretation of Japanese positions became the single most significant intelligence tool available to the U.S. forces. It gave not only an insight into the capability of the Japanese to develop their base, and the threats that would emanate from there, but also allowed the USAAF to interpret the success of its bombing, both in terms of direct damage inflicted, and in terms of indirect impact, for example by the correlating the speed of base development with the extent of U.S. aircraft and submarines attempting to disrupt Japanese supplies being shipped to Kiska.

While very early reports express their frustration at the quality of the images provided by the aircrews,[185] in particular the fact that the images did not overlap sufficiently to allow for stereoscopic interpretation, this seems to have been overcome quickly through the use of dedicated photography planes.

Base Development in the face of long-range bombing

On 23 June the Imperial General Headquarters issued Directive Number 106 which called for the establishment of permanent defenses on Kiska and Attu.[186] While the construction on Kiska was well under way, that was, of course, limited to the supplies on the ships accompanying the initial landing force. The new directive brought with it the shipment of additional war materiel to Kiska.

Fig. 40. Japanese soldier fishing Arctic char (*Salvelinus alpinus*) on Kiska. Cover of Daitoa sensō gahō October 1942.[187]

Fig. 41. Japanese soldiers fishing Arctic char (*Salvelinus alpinus*) in a small stream on Kiska.[188]

Fig. 42. Japanese soldiers fishing Arctic char (*Salvelinus alpinus*) on Kiska.[189]

Equipment for Midway is routed to Kiska

The base received a major boost when material that had been enshipped to Midway was re-routed to Kiska. During the lull in bombing the seaplane carrier *Kamikawa Maru* arrived at Kiska on 15 June 1942, with her detachment of fourteen Mitsubishi F1M2 'Pete' (*Reikan*), two *Reisui* and two Nakajima E8N2. While Mitsubishi F1M2 had initially been intended to be based on Midway Atoll,[190] the Japanese defeat in the battle of Midway meant that the planes could be rerouted with ease—they were already loaded on a seaplane carrier and afloat in the middle of the Pacific. But there were not merely the planes that had been dispatched for Midway, but the material for an entire base. That rerouting was merely a strengthening of the seaplane base and in itself did not constitute the enlargement of the Kiska operations. Yet, their arrival on Kiska changed the equation of air power over the island. Although the *Reikan* was designed as an observation plane, it fulfilled a wide range of additional roles in the Pacific War, ranging from makeshift fighter to dive bomber. Immediately after their arrival, the *Reikan* began to fly combat air patrols over Kiska.

From research done on the movement of several warships, we know that the convoy comprised the warships *IJN Arare, IJN Kasumi, IJN Shiranuhi, IJN Inazuma, IJN Ikazuchi, IJN Chiyoda, IJN Abukuma* and an unspecified number of cargo ships, among them the *Argentina Maru* (Appendix 2). The convoy did include IJN *Chiyoda* which brought eight type A midget submarines. These mini-subs had initially been destined for the mini-submarine base to be built on Kure Atoll, but the plans had to be abandoned after Midway Atoll could not be taken.

We can compare the ships known to have been part of the convoy of 5 July with the 2nd Fleet Transport Group involved in the Midway operation (see Appendix I). Small discrepancies in the number of destroyers suggest that not all transports were rerouted to Kiska. Indeed, we know that the two torpedo boats that had been shipped by the fleet oiler AO *Nisshin*, and which had also been destined for Kure Atoll, were returned to Japan.[191] Clearly, the IJN was aware that the Aleutian waters were not conducive to operate small patrol boats.

The 2nd Fleet Transport Group had the following transports: AP *Argentina Maru*, AP *Azuma Maru*, AP *Brazil Maru*, AP *Goshu Maru No.2*, AP *Hokuriku Maru*, AP *Kano Maru*, AP *Keiyō Maru*, AP *Kirisima Maru*, AP *Kiyosumi Maru*, AP *Nankai Maru*, AP *Tōa Maru*, and AP *Zenyō Maru*. Future research may illuminate which of these ships came to Kiska and what they carried.

The American submarine USS *Growler* (SS-215),[192] commanded by Howard W. Gilmore, on its first war patrol and prowling off Kiska, caused carnage among that convoy, but as per doctrine, focused on the warships rather than the transports: IJN *Arare* was torpedoed and sank off Kiska Harbor entrance; IJN *Shiranuhi* was heavily damaged but could be braced in Kiska Harbor and towed back to Japan for repairs (by IJN *Kagero*). Likewise, IJN *Kasumi* was torpedoed with damage to the bow, which was cut off at Kiska and the vessel towed back to Japan for repairs (by IJN *Ikazuchi*).[193]

Given the threat of aerial attacks on the unloading supply ships, the discharge of cargo had to happen in a hurry. Thus it is not surprising that errors occurred. We can document one of them: the supply convoy arrived on 6 July 1942 and brought two batteries of 6-inch coastal defense guns. One of which was to be set up on North Head and the other on Little Kiska, thus protecting the mouth of Kiska Harbor. Such gun batteries are common as coastal defense installations guarding the Japanese bases in Micronesia and the Central Pacific.[194] While there is often a mixture of British- and Japanese-built guns on the island bases, the batteries themselves are either Japanese or

British, but never a mixture. This is necessitated by the fact that the British-and Japanese-built guns had slightly different firing performance characteristics. The analysis of the two 6-inch gun batteries on Kiska, however, showed that the battery on Little Kiska consisted of two British-built and one Japanese-built gun,[195] while the battery on North Head consisted of two Japanese-built and one British-built gun.[196] Clearly, this was not meant to happen. We can only surmise that when the mistake was discovered, it was not deemed worth the effort to swap them back. This is understandable given the weight of the six-inch gun barrels, in excess of ten tons, and given the lack of heavy cranes and equipment to shift them. The required manpower could be better used elsewhere. Moreover, there was always the risk that the Daihatsu launches shuttling the barrels across Kiska Harbor could be sunk by a U.S. air raid.

It is significant, in this context, to note that the entire material was routed to Kiska, and none of it sent to Attu. At first sight that seems to indicate that Kiska was given priority in base development and was seen as the primary locale—which is not surprising given its sheltered harbor which as suitable for both submarine and floatplane activities. Moreover, Kiska was closer to the U.S. and thus better located as a base for reconnaissance operations.

But, a cautionary note needs to be inserted here. In part the decision not to route the Midway materiel to Attu may also find its cause in the inter-service rivalry that riddled Japanese military planning: Attu was occupied by the IJA, while Kiska was run by the IJN. And all material enshipped en route to Midway, as well as the garrison destined for Midway, was controlled by the IJN.

Sustained Bombing Campaign from Umnak

On June 18th the U.S. bombing raids recommenced with one LB-30, three B-17s and four B-24s making a precision high-altitude attack on Kiska Harbor. The oiler *Nissan Maru* (日産丸)[197] was left burning and sinking (Fig. 46).[198] The crews claimed to have shot down two'scout planes'.[199] The intercepting Japanese floatplanes probably belonged to the *Kamikawa Maru* Hikōkitai because that day two of the *Kamikawa Maru's* Mitsubishi F1M2 Type 0 fired at a formation of B-17s. Japanese records show that the B-24s were attacked by three F1M2 originally delivered by the *Kamikawa Maru,* none of which were lost in the encounter.[200] It is possible, however, that one of *Kimikawa Maru's* aircraft was shot down.[201]

According to the combat chronology of U.S. Fleet Air Wing Four, Lt Jack Litsey's PBY from VP-41, conducting a reconnaissance and photography mission, was attacked by Japanese *Suisen* float fighter planes on 25 June 1942.[202] The Japanese pilots damaged the aircraft's starboard engine and killed AMM2c Austin W. Crosby before Lt Litsey could maneuver his PBY out of harm's way.[203] It would appear that the U.S. pilots had underestimated the maneuverability and the fighting power of an aggressively flown *Reikan,* even though it was only armed with three 7.7 mm (.303) machine guns.[204] The Japanese records show that a *Reikan,* flown by Ens (Sp.Duty) Shimura, with radioman PO2c Kashiyama engaged a single aircraft, expending 150 rounds of ammunition.[205] On the same day, the next CAP, flown by PO1c Hosono, with PO2c Togawa as radioman, intercepted a flight of four B-17s and two B-24s, claiming to have shot down two of the U.S. aircraft.

Fig. 43. Captured photograph found at Attu showing 452nd Kū personnel, the human element of the air war. The front and middle rows show eight men of the marine section dressed in rubber hip waders and gloves needed for handling the floatplanes in the icy waters, four ground crew and an airman. In the back row are three servicemen and nine airmen wearing the standard one-piece gabardine winter flight suit, leather flight gauntlets, fur-lined leather flight helmet and flight goggles with large curved lenses.[206]

On the following day, U.S. records show that Kiska Harbor was firebombed by five B-24s.[207] These were intercepted by a F1M2, flown by Ens (Sp.Duty) Shimura, who claimed to have engaged two and shot down both.[208] U.S. records again show no losses. Clearly, there was both unintentional misinterpretation of results as well as willful misrepresentation of air combat successes on both sides.

On 2 July, on the first Eleventh AAF mission against Attu, a force of seven B-24s and one B-17 surprised the Japanese ships anchored off Agattu. The *Fuji Maru,* the *Kamikawa Maru* and the *Kimikawa Maru* came under attack, but escaped serious damage. Nonetheless, the bridge of the *Kimikawa Maru* was hit, killing several soldiers.[209] One of the *Kamikawa Maru's* Nakajima 'Dave' reconnaissance planes flying combat air patrol (CAP) attacked one of the bombers but did not effect any damage.[210] This bombing raid served notice on the Japanese defenders that Attu was in reach of U.S. bombers, and also forced repositioning of the seaplane tenders *Kamikawa Maru* and *Kimikawa Maru.*

The Nakajima A6M2-N in Combat

The ongoing U.S. air attacks and the inability of the biplane floatplanes to actively engage the enemy required the Japanese to deploy more advanced aircraft to Kiska. It was not until July that *Suisen* were actually based on Kiska.[211] These planes were a floatplane adaptation of the famous Mitsubishi A6M2 'Zero' carrier fighter, designed as a stop-gap measure until a custom-designed floatplane fighter, the Kawanishi N1K1 'Rex" could enter service. Over time, a number of additional planes were sent to Kiska to replace the operational and environmental losses.

On 5 July 1942 the seaplane and midget submarine tender *Chiyoda* delivered six midget submarines,[212] six Type 2 *Suisen* single-seat float fighters, a 150-strong crew of the future midget submarine base, a detachment of the 12th Construction Battalion as well as

200-tons of cement.[213] The deployment of *Suisen* in early July 1942 to Kiska basically saw the introduction of a brand new, front-line fighter to the Aleutians, less than four weeks after it entered service in the tropics.[214] It is possible that additional planes (of unspecified model) may have been delivered by the sea plane tender *Kimikawa Maru* which had made a run for Ominato,[215] Japan, in late June to replenish, while the *Kamikawa Maru* remained to provide aerial patrol capabilities over Attu. In the first days of July both had repositioned themselves near Agattu for aerial patrols.[216]

A captured Japanese document, setting out the U.S. raids in tabulated form until mid October 1942, mentions the first engagement of *Suisen* float fighters for July 9th (Kiska date), when they responded to an unspecified U.S. air attack dropping bombs on a Japanese patrol barge.[217] In fact, according to the Kōdōchōsho of the Tōkō Kū, the first action occurred on 7 July (Kiska date), when the third combat air patrol of the day, flown by Ens.(Sp.Duty) Saito Kiyomi and his wingman, sighted a B-24D heading for Kiska at 11:45 local time[218] and rushed into air-combat, with no result.[219] On the same day one seaplane was claimed shot down by U.S. bombers flying a weather, bombing and photo mission to Kiska, Attu and Agattu.[220]

On the following day (9 July) six PBY of Patrol Air Wing Four attacked Kiska, bombing ships in the harbor and shore installations. Four A6M-N2 attacked the PBYs, whose crews claimed damage to two *Suisen,*[221] while the Japanese damaged two of the PBY s.[222] The Kōdōchōsho of the Tōkō Kū as well as the *Kamikawa Maru* Sentōshōhō are silent on the issue. The Kōdōchōsho of the Tōkō Kū does not make any reference to intercepts of PBYs in that period. Assuming that the U.S. data are correct, we have to presume that the *Suisen* reputedly attacking the PBY were in fact Mitsubishi F1M2 from the *Kimikawa Maru.*[223]

On July 11th, during the second combat air patrol of the day, a *Suisen* flown by PO2c Ōkawa Kaishi intercepted a single B-24D at 11:45 local time, claiming to have inflicted damage as the bomber was seen trailing smoke.[224] Oddly enough, in addition to the rounds of ammunition, the Japanese Shōtai also expended two 30-kg bombs.[225] While not explained, it would appear that the Japanese tried to bomb the U.S. bombers from above.

July 18th, 1942 shaped up as the biggest air raid on Kiska, causing the greatest response by the Japanese fighters. The fifth combat air patrol of the day, flown by Lt Yamada Kushichiro, intercepted three B-24Ds at 01:15 local time. Five minutes later two more Shōtai, led by Ens(Sp.Duty) Saito Kiyomi and by PO2c Ōkawa Kaishi scrambled to intercept as well. According to the Kōdōchōsho of the Tōkō Kū, all three Shōtai landed and took off again some 10 minutes later,[226] having been rearmed and refueled. If the times are accurate, and there is little evidence to doubt this, then this attests to the professionalism of the Japanese ground crews.[227] This is even more impressive if we consider that at that time the seaplane base was not finished and all refueling had to occur from barrels brought out on boats and small barges. On his second sortie Lt Yamada Kushichiro claimed to have shot down one B-24.[228] According to U.S. sources, three B-17Es of the 36th bomb squadron and seven B-24Ds of the 21st bomb squadron 30th bomb group had been on a mission sent to bomb and photograph the Japanese installations and shipping at Kiska.

At 14:45 the twelfth combat air patrol of the day intercepted two B-17s. Both CAP 13, Ens(Sp.Duty) Saito Kiyomi's Shōtai, and CAP 14, Lt Yamada Kushichiro's Shōtai, joined the fray, claiming to have shot down one B-17 each.[229] According to U.S. sources it would appear that the B-17s were making their bomb runs at 15,000 feet when the *Suisen* attacked. Taking evasive action, the B-17s broke formation. The Japanese pilots

concentrated on the leading B-17E, Capt Jack L. Marks' #41-9146, whose nº 3 engine burst into flames. Out of control, the B-17 crashed into the sea.[230]

Fig. 44. U.S. flight crews being briefed on an attack on Kiska.[231].

On 20 July the Japanese engaged in an offensive action, when three Kawanishi H6K bombed the U.S. seaplane tender USS *Gillis,* stationed in Kuluk Bay, Adak, albeit without inflicting damage.[232] This attack indicates that the Kawanishi of the Tōkō Kū continued to fly mid-range sector patrols at that time.

On the following day, PO2c Ōkawa Kaishi's Shōtai, flying the second combat air patrol of the day, intercepted two B-17Es at 08:15 local time, claiming to have damaged one.[233] Indeed, one of the three B-17s, piloted by Lt Frederick R. Ramputi,[234] was attacked head on by the Japanese *Suisen*, knocking out its nº 3 engine. The B-17 was able to safely return to and land at Cape Field, Umnak. His bombardier was wounded in the attack.

On 30 July 1942 Ens.(Sp.Duty) Saito Kiyomi's Shōtai, flying the seventh combat air patrol of the day, engaged three B-24s without results.[235] On the following day, a float fighter, probably an A6M2-N *Suisen* ditched near the freighter *Kano Maru,* which was drifting in fog about 20 miles north of Kiska.[236] The pilot was picked up by the subchaser CH-26,[237] while the *Kano Maru* winched the fighter aboard with her derrick.[238] On the following day USS *Grunion*, the same submarine that two weeks earlier had sunk two submarine chasers, torpedoed the *Kano Maru*.[239] The *Kano Maru* was damaged, receiving a hit in the starboard engine room. When the *Grunion* surfaced to finish off the freighter, it was fired upon by the 3-inch, World War I-vintage deck guns of the *Kano Maru* and hit the conning tower. The *Grunion* crash-dived and was lost with all hands.[240] The *Kano Maru* was run into Kiska Harbor and beached off South Head for emergency repairs. Attacked a week later by PBY's, the *Kano Maru* sank in shallow water.[241] It would appear, however, that the *Suisen* (as well as most of the ship's cargo) could be salvaged.[242]

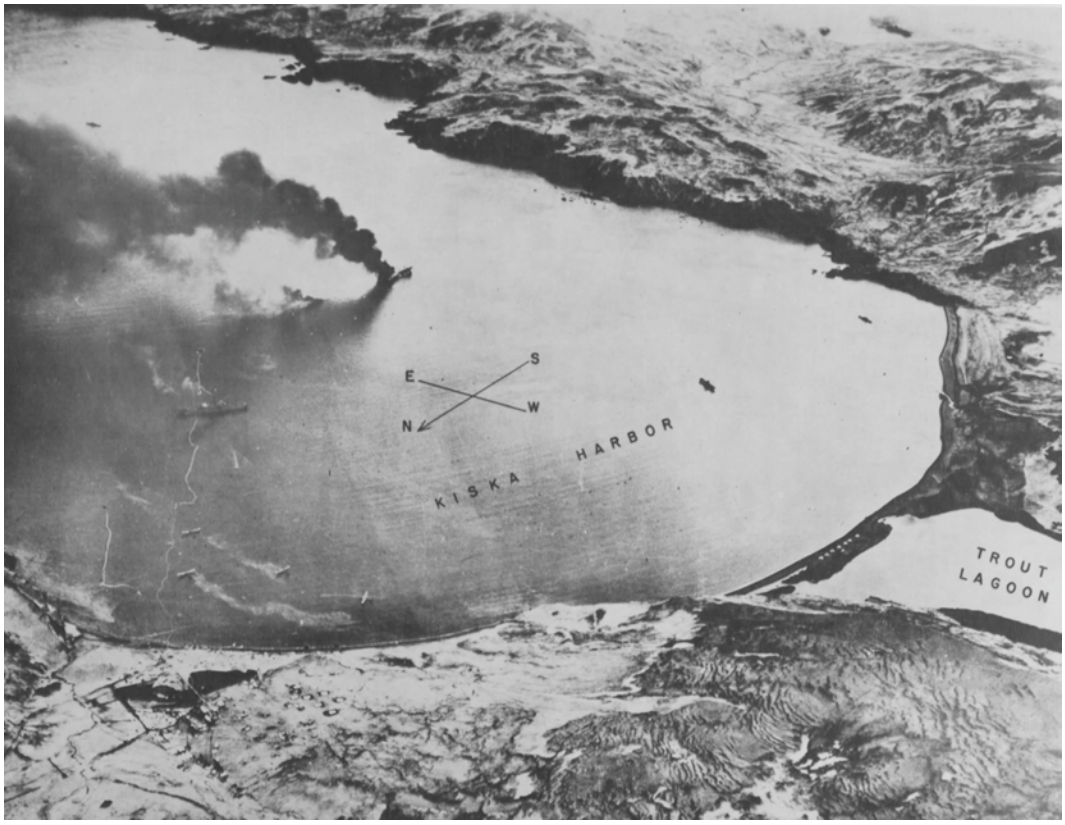


Fig. 45. Image of Kiska Harbor taken on possibly 20 June 1942, showing the *Nissan Maru* is burning and sinking by the stern after being hit by USAAF bombers. Below the smoke is another transport making steam (the *Kamitsu Maru* or the *Amagi Maru*) Note the seven dummy planes lined up on the sand spit of Trout Lagoon (see also Fig. 119).[243] Near the north-western shore of the Harbor are four of Tōkō Kū's Kawanishi Type 97 flying boats visible. The wake pattern suggests that they are taxiing, trying to get under way, taking off to the east.

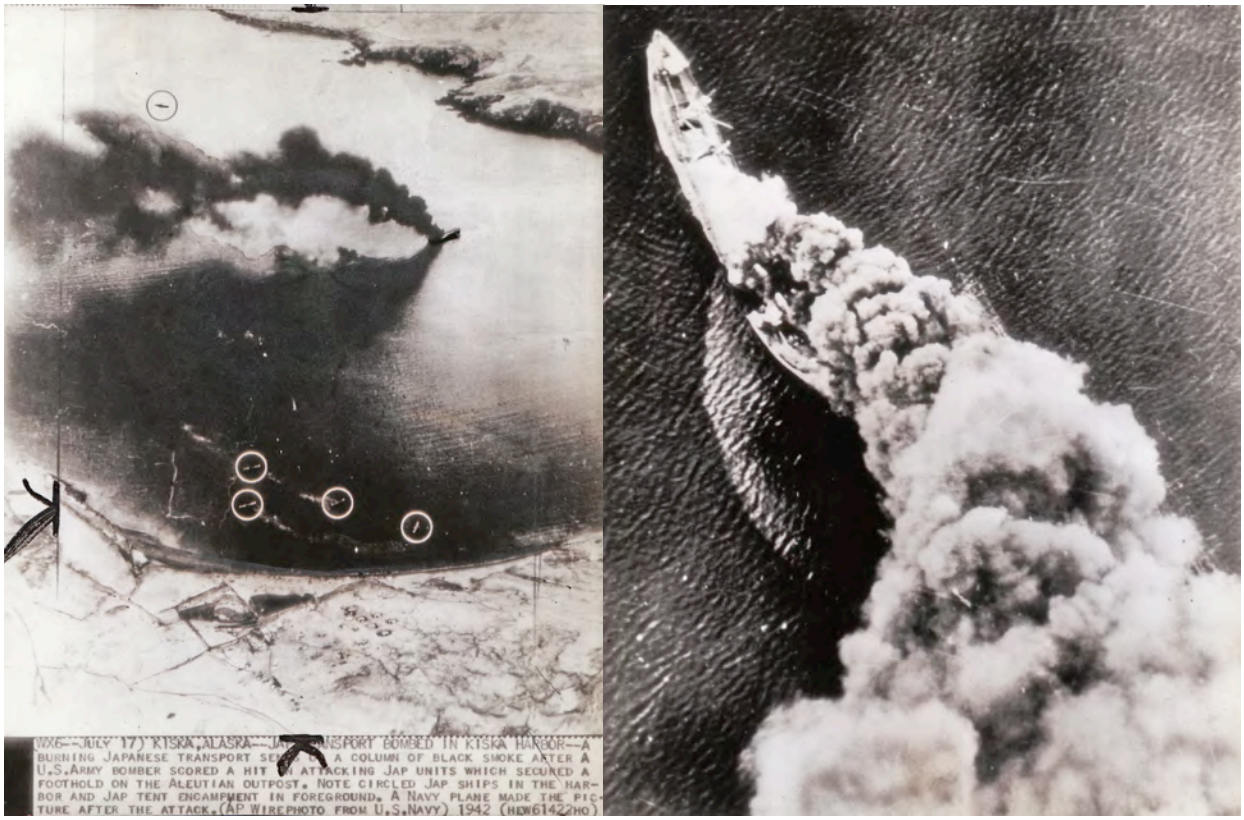


Fig. 46. The *Nissan Maru* is burning and sinking by the stern. Images released to the media on 17 July 1942.[244] Compare the left image with Fig. 45. Note the strategic cropping as well as war-time censors retouching to ensure the perception that all ships had been hit (the second transport visible in Fig. 45 has been blacked out),

Another long-range patrol and attack was carried out by the Tōkō Kū on 4 August, when her Kawanishi flying boats flew a bombing mission against at Nazan Bay, Atka, in order to disrupt the operations of the PBYs of VP-43 supported by the seaplane tender USS *Casco*. Records of the 54th Fighter Squadron, then based at Umnak, claim that Lieutenants Kenneth Ambrose and Stan Long scored the first P-38 victories of World War II by shooting down two Japanese flying boats near Atka Island.[245] This is contradicted by Japanese sources.[246]

The following day saw the first major reorganization of the air power on Kiska, when the 5th Kōkūtai was formed, placing all Japanese air units under a unified command.

A Naval Interlude: Task Group 8.6 shells Kiska

The Navy had been keen to wreak destruction on Kiska through naval gunfire. Even though Kiska Harbor was deep, the guns of heavy cruisers were able to reach the Main Camp area without having to enter the harbor. Naval Task Group 8.6 under the command of Rear Admiral William H. Smith sortied from Kodiak on 19 July, with the shore bombardment scheduled for 22 July. Bad visibility as well as the accidental ramming and collision of three of his own vessels required Smith to order the return to Kodiak. On his second sortie on 3 August, the weather obliged.

On 7 August Kiska Harbor was shelled by a U.S. naval task force, comprising the heavy cruisers USS *Indianapolis* and USS *Louisville*, light cruisers USS *Nashville,* USS *Honolulu* and USS *St. Louis*, four destroyers and a fast minesweeper. Rather than risking direct fire from shore batteries, the cruisers elected to fire across South Head. In total, the cruisers fired 631 8-inch and 3,534 6-inch shells and the destroyers fired 2,620 5-inch shells. To control their fire, the task force relied on a total of ten spotter planes two each launched from the five cruisers.[247] The U.S. spotting planes reported the presence of four engine flying boats, *Suisen* fighters and one 'large twin float observation type plane" (a *Reisui)*.[248] On three different occasions, Japanese *Suisen* float fighter pilots attacked the slow moving Curtiss SOC-1 Seagull biplanes, forcing their crews to duck into the overcast thus negating their spotting capabilities. As a result, the cruiser's gunfire was highly inaccurate. The U.S. claimed that a destroyer and two transports had been hit. Post-war interrogations of Japanese officials showed that these were vessels that had already been damaged in air raids and beached.[249] Of the floating units, only a small number of landing barges were destroyed.[250] The gun fire also more or less serendipitously hit the Kawanishi H6K Mavis flying boats anchored off the seaplane base. On occasion of a post World War II Interrogation Captain Ito Sukemitsu, commanding officer of the Tōkō Kūkūtai on Kiska, commented that naval shelling sank one of the planes and damaged two of them beyond repair.[251] U.S. photoreconnaissance, however, only saw one of the planes damaged ashore.[252] It is possible that either Captain Ito commingled, consciously or subconsciously, the loss of the two Mavis over Adak on the 4th of July with the effects of the U.S. naval shelling,[253] or that he referred to floatplanes other than the flying boats. Indeed, the Kōdōchōshō of the 5th Kōkūtai shows that one of the *Suisen* was also destroyed.[254]

Suisen fighters flown by Captain Kushichiro Yamada and PO2c Yoshikazu Sasaki shot down one of the two spotting planes launched by USS *Indianapolis*,.[255] While some *Suisen* drove the spotter planes away, three *Suisen* fighter pilots[256] directly attacked the task force. One strafed the destroyer USS *Case*, (DD-370) and dropped a bomb nearby. The crew of a *Taitei* flying boat circled overhead the cruiser squadron, dropping bombs through the overcast, although without success.[257] In addition, the *Taitei* dropped smoke

marker bombs that provided the shore batteries with direction and bearings of the U.S. task force.[258]

Since the cruisers' spotting planes could not be used effectively, the TG 8.6 was prevented from accurately assessing the damage as the bombardment progressed. Subsequent photography by USAAF planes showed that due to the lack of accurate fire control the overall effect of the shelling had been minimal. This convinced the U.S. forces that naval shelling was not likely to yield good results and that, in consequence, air bases needed to be developed closer to Kiska.[259]

Business as Usual

On the same day, three U.S. Navy PBYs of VP-34 faced a number of *Suisen*. The waist gunners of Lt Cdr Carrol B. Jones and of Lt (jg). Emil B. Hanson's aircraft were credited with shoot downs.[260] An examination of the Japanese records, however, shows that the *Suisen,* flown by PO2c Suketada Ōkawa and Sea2c Hashirō Narita, both of the 5th Kōkūtai escaped. It is surmised that the U.S. crews, seeing that the *Suisen* was trailing smoke, were fooled by the exhaust as the *Suisen* accelerated away to safety.[261] This incident nicely illustrates the complexity in arriving at accurate figures of aircraft losses exacted by the U.S. fighter and bomber crews. The number of *Suisen* in Kiska was augmented for the first time on 13 August 1942, when the seaplane tender *Kimikawa Maru,* escorted by the destroyer *Hokaze,* delivered a dozen *Suisen* to Kiska.[262]

On 17 August 1942 the remaining three Kawanishi H6K 4 flying boats were moved from Kiska due "to the difficulties of using them in the prevailing foggy weather and the swell in Kiska Harbor."[263] Doubtlessly, the inability to provide effective fighter cover must have played a role on the decision. On wonders, however, why the flying boats were removed altogether rather than being pulled back to Attu. With a base on Attu, staging the boats through Kiska for refueling and (re-)arming, would have been a possibility, still maintaining the medium range patrol capability. We can only assume that the Japanese air command wanted to preserve the aircraft for patrol duties in better climes, such as the South Pacific.[264] After the withdrawal of the flying boats the Japanese garrison on Kiska lacked any true medium-range patrol capability. More importantly, the Japanese now lacked any real offensive air capability. While *Suisen* and *Reisui* were used in harassment operations against U.S. installations on Adak and Amchitka, the float planes could not carry any sizeable bomb load. The first such harassment flight of two *Suisen* occurred on 28 August when they flew over Nazan Bay, Atka.[265]

Data from the Kōdōchōshō of the Tōkō Kū and the 5th Kōkūtai allow us to compile the times at which the Japanese flew CAP over Kiska (Fig. 47)—an important element when examining how the Japanese reaccted to the threat posed by the U.S bombers in the early months of the battle (until end of August 1942). While the arrival of the 5th Kōkūtai's *Suisen* implied an increased number of planes on Kiska, there were no clear patterns, except that the occasional pre-dawn patrol flown by the Mitsubishi F1M2 was not carried out by the *Suisen*. It is probable, though, that at least some reconnaissance was flown by the *Reisui* attached to the 5th Kōkūtai. When assessing the observable pattern of CAP, we also need to consider that the weather was highly variable and that it was inadvisable to fly in heavy fog or storms, unless absolutely necessary.

Given that U.S. bombers came from Umnak at that time, we can assume that the Japanese felt sufficiently safe in assuming that any attack on Kiska would not occur at least until one hour after dawn—or that they could scramble the Suisen fast enough to meet the threat.

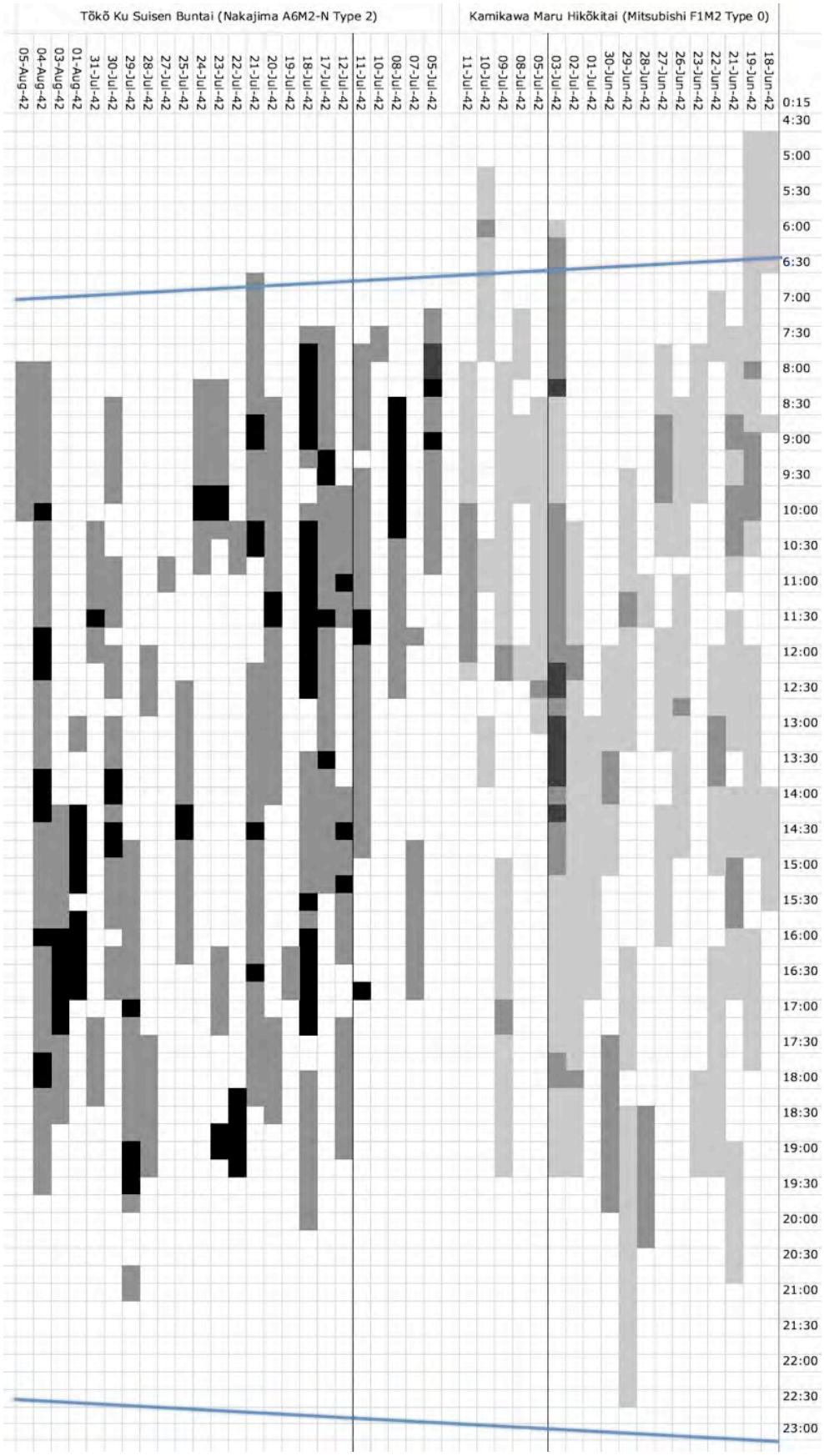


Fig. 47. Overview showing the times when combat air patrols were flown in 15-minute intervals.[266] The blue lines indicate sunrise and sunset times. For discussion see text.
Coding: Light grey: one aircraft; medium grey two aircraft; dark grey three aircraft; black four or more aircraft. Note that times and dates are local Kiska time.

Japanese Submarine Activity

When the convoy of ships carrying the equipment originally destined for Midway Atoll arrived in Kiska Harbor on 5 July, it also brought the equipment and personnel initially earmarked for a midget submarine base on Kure Atoll. IJN *Chiyoda*, a floatplane and midget submarine carrier, brought six Type A (Ko-hyoteki class) midget submarines, HA-28, HA-29, HA-31, HA-32, HA-33and HA-34,[267] as well as six *Suisen,* plus 150 personnel for the operation of the midget submarine base, a detachment of the 12th Construction Battalion and 200 tons of cement.[268]

The submarine base was established on the flat area between South Head and the Promontory towards Trout Lagoon.

Midget Submarines

On the same day that IJN *Chiyoda* arrived, the 12th Construction Battalion commenced the development of the midget submarine base.[269] Following the shelling of Kiska by the U.S. cruiser task force TG 8.6 on 8 August 1942 (p. xx), the submarines were dispersed. Three of the six midget submarines were constantly stationed at a mooring buoy in the harbor while others may have been either on the slip rails, or, after completion of the base facilities in October, in the shed. At about the same time, the midget submarine crews started their training and diving exercises in Kiska Harbor.

On 18 August 1942 the fleet submarine *RO-61* arrived. The larger submarine possessed better generators than had been available so far and thus provided the midget subs with electricity (to charge their batteries) while sub stayed at Kiska (see above).

Soon after, the submarine base became one of the targets of U.S. air raids. A combined bomber and fighter raid on 15 September 1942 saw the midget submarines moored in the harbor being strafed by P-38 and P-39. Damage was minimal.[270]

The first and only major resupply of the submarine base occurred on 26 and 27 February 1943. Fleet submarines *I-169* and *I-171* each delivered to Kiska one midget submarine from Kure Naval Yard.[271] The two subs also brought spare torpedoes and the personnel of the second Kiska Midget detachment under the command of Ensign Majima. Between the time the submarines departed Kure on 14 February and their arrival at Kiska ten days later, the strategic situation over Kiska had changed dramatically. With the U.S. airfield on Amchitka becoming operational, Kiska was in easy reach of medium range B-25 which could operate effectively at low to medium altitudes, especially when accompanied by fighters. As a result, surface shipping in Kiska Harbor was no longer safe. Until then losses among Japanese personnel had been quite low as the accuracy of U.S. bombing was low.[272] During a low-level attack on Kiska on 15 March, one member of the midget submarine base personnel was killed.[273] On 1 April 1943 the fleet submarine *I-169* departed Kiska for Yokosuka, carrying the pilots of the first Kiska Midget Detachment.[274] This was not the precursor to the evacuation, but a normal service rotation of the pilots.

A major air raid by P-40 fighters on 14 April 1943 caused major damage to the submarine operations. Midget submarines HA-29 and HA-34 were damaged beyond repair. In the following days, both were cannibalized for spare parts to repair HA-32. Ongoing air attacks as well as storms delayed the completion of the repairs.[275] Through a damaged section of the roof of the submarine shed, which was not repaired, photoreconnaissance aircraft could observe whether the three submarines on the slipway had been moved. Intelligence assessments showed that by early May 1943 the operations of the mini submarines essentially ceased.[276] Indeed, the ongoing threat from the U.S.

planes based on Amchitka forced the new Commander-in-Chief Fifth Fleet, Vice Admiral Kawase Shiro, to direct the redeployment of the midget submarines to Attu which was deemed safer. The landing of the U.S. forces in Attu on 11 May 1943 coincided with the arrival at Kiska of fleet submarine *I-31*, which had been tasked with transporting the midget submarine crews to Attu. On the news of the U.S. landing on Attu, *I-31*, embarked all submarine crew and key technical personnel and took them to Paramushiro, Kuriles. This effectively marks the end of any strategic or tactical capability the midget submarines may have possessed while based at Kiska. Also, the evacuation of the submarine crew predated the general evacuation order by more than a week. From then onwards, Japanese fleet submarines arrived with supplies and evacuated key personnel on the run home.[277]

In preparation for the general evacuation of Kiska, and given that the midget submarines had lost the strategic potential, the submarine base was the first facility to be destroyed. On 8 June 1943, the three remaining operational submarines were sunk, two with demolition charges and one using two Type 98 torpedo warheads. All three submarines that were on the slipway at the time (HA-29, HA-32, HA-34) were disabled with explosive charges. The buildings are left standing until late June, when they are burned down. All critical equipment, such as 20 Type 98 torpedoes, is taken out into the harbor and dumped overboard in deep(ish) water.[278]

Fig. 48. Imagery of the slipway of the submarine base after the U.S. landings on Kiska. In front is submarine HA34, which is still extant, while submarines HA-29 and HA-32 can be seen in the shed in the background. Also note the heavy winch at the submarine's bow.[279]

Note the roof of the maintenance shed is upright in this image.

Influence of the weather on the operations

Even though Kiska Harbor was sheltered, it still had considerable fetch which, as mentioned earlier, caused some problems to the seaplane activities. The operations of the midget submarines were likewise affected, compounded by human error. For example, during a heavy storm in December 1942, submarine HA-28, while tied up at the mooring buoy, was swamped through the open coning tower hatch and sank.[280] Another heavy storm on 3 April 1943 snapped the mooring lines of HA-31 and HA-33. Both drift from the buoy and were stranded on the beach just to the north of the submarine

base, becoming half buried in the sand due to the strong surf action. While HA-31 could eventually be refloated, HA-33 had to be written off.

Table 5. Midget Submarines stationed on Kiska [281]

Boat	Arrival	Brought by	Departure	Fate
HA-28	6 Jul 42	IJN *Chiyoda*	Dec 1942	swamped in storm and sank
HA-29	6 Jul 42	IJN *Chiyoda*	14 Apr 42	damaged in air raid on maintenance shed, beyond repair
HA-31	6 Jul 42	IJN *Chiyoda*	8 June 43	blown up in the harbor, prior to evacuation, sunk
HA-32	6 Jul 42	IJN *Chiyoda*	8 June 43	blown up on slipway prior to evacuation
HA-33	6 Jul 42	IJN *Chiyoda*	3 Apr 43	mooring lines snap in storm, stranded, damaged beyond repair
HA-34	6 Jul 42	IJN *Chiyoda*	14 Apr 42	damaged in air raid on maintenance shed, beyond repair
"Type A"	25 Feb 43	*I-169*	8 June 43	blown up in the harbor, prior to evacuation, sunk
"Type A"	26 Feb 43	*I-171*	8 June 43	blown up in the harbor, prior to evacuation, sunk

Just as much as the winter weather was not too kind to the seaplane, it also exerted maintenance stresses on the midget submarines. Again in December 1942 the submarines HA-31 and HA-33 became temporarily inoperable as a result of hull leaks and inadequate maintenance.

Fleet Submarines

As part of the Midway operation, the IJN sent SubRon 1 to the Aleutians,[282] but it saw little action.[283] In late June these boats were replaced by boats of SubRon 2.[284] They too saw little action. In contrast to the deployment of the then cutting edge *Suisen* float-plane fighters, the IJN submarine command decided that the Aleutians were not the primary battle ground of the war and thus by 20 July withdrew its newer and more capable I-class submarines, bar *I-6* which remained. *In lieu*, on 14 July 1942 the IJN reassigned SubDiv 26 and SubDiv 33, equipped with the older and slower RO-class boats,[285] to the Fifth Fleet[286] and temporarily based them at Kiska.

It is important to note that the IJN had developed the ability to set up seaplane and submarine bases at any location that provided shelter and a gently sloping and obstacle-free beach to pull up planes and equipment. All supplies and repair could be carried out by a seaplane or submarine tender or on the beach. Major repairs, which required heavy equipment, or dry-docking, necessitated a return to Japan. The U.S. had similar concepts, such as the USS *Casco* which supported the PBY in their initial retaliatory attacks on Kiska.

Five medium-sized RO-class submarines of SubDiv 26 (*RO-61* and *RO-62)*[287] and SubDiv 33 (*RO-63, RO-64,* and *RO-68*), arrived at Kiska Harbor between 4 and 6 August 1942, and soon began local patrols.[288] When TG 8.6 shelled Kiska on 7 August, the submarines *RO-61, -64, -68* and squadron lead boat, *I-6,* were anchored in the harbor. All crash-dived to escape damage and were immediately dispatched to seek out and attack the U.S. forces—to no avail.

When on 28 August 1942 a Kiska-based *Reisui* reconnaissance plane detected the seaplane tender USS *Casco* and a destroyer in Nazan Bay at Atka Island, Aleutians (but mistakenly identified the *Casco* as a light cruiser), *RO-61*, *-62* and *RO-64* sortied to intercept her. The day after, all three submarines arrived off Atka. LtCdr Tokutomi, the

CO of the northernmost *RO-61* was ordered to penetrate Nazan Bay to lure the Americans out. After sunset on 30 August 1942 *RO-61* slowly entered Nazan Bay, almost depleting her batteries, and fired three torpedoes at the *Casco* (still mistaken for a cruiser). The *Casco* was hit in the forward engine room, damaged severely and had to be beached to prevent sinking.[289] The next day, *RO-61* on the surface recharging her batteries, was caught off Atka by U.S. PBYs and, although damaged by depth charges crash-dived.[290] The destroyer USS *Reid* was guided in by the PBY which had marked the oil slick with smoke floats. The submarine was forced to the surface on the second depth charge run. When the surfaced submarine tried to attack with gunfire, 5–inch shells fired by the destroyer sank *RO-61*.[291]

RO-63, RO-64 and RO-68 carried out further local war patrols to no great effect. *All* departed for Japan on 24 September and were replaced by *RO-65* on the 26th and *RO-67* on the 28th of September. *RO-67*, which had arrived just in time for a U.S. air raid, was attacked and received near misses making her electric engines and the periscope inoperable. She returned to Japan for repairs on the same day. *RO-62* returned to Japan on 18 October. As the sole member of the fleet submarine force remaining on Kiska, *RO-65* was sunk during a U.S. air raid on 4 November 1942.[292] After that, no further fleet submarines were stationed at Kiska.

Even though the RO-boats were second-string oceangoing boats and inferior to the I-class submarines, they could have provided patrols further afield. As it was, all boats seem to have been used close to Kiska, and to very little effect. The engagement carried out by the Japanese submarines after the Japanese landings can only be classed as 'nuisance patrols.'[293]

The withdrawal of the submarine presence on Kiska was the result of a combination of factors: the U.S. air attacks on Kiska; the oncoming winter and thus worsening weather; the fact that the RO-type boats were not equipped for cold weather service; and the fact the U.S. did not operate much shipping in the Aleutians so that the opportunities for the mid-range boats were limited.

Transient Submarine Activity

In addition, of course, transient submarine activity occurred, which included the periscope observations of the harbors at Attu, Kiska and Adak by *I-26* prior to the Pearl Harbor attack,[294] the *I-9* carrying out the floatplane reconnoiter of Kiska, Amchitka, Adak and Kanaga, prior to the landings on Kiska,[295] and the submarine 'net' in connection with the Battle of Midway. In 1943 there were the various food and equipment supply runs, which later became supply and evacuation runs, carried out by *I-7, I-9, I-21, I-31, I-34, I-35, I-156, I-168, I-169, I-171,* and *I-175* (see Appendix I).[296]

For example, on 10 December 1942 fleet submarine *I-34*, Cdr Tonozuka, arrived at Kiska, bringing supplies and troops and then commenced patrols off Kiska.[297] Returning to Paramushiro on 26 December for replenishment, she returned to Kiska on 25 January with a cargo of supplies. *I-34* then carried out periscopic reconnaissance of the airfield on Amchitka. Cdr Tonozuka sighted four enemy destroyers but failed to attack them. After serving as a radio beacon for *Suisen* and *Reisui* floatplanes raiding Amchitka, *I-34* proceeded to reconnoiter Adak and Attu.

Some of these supply runs also included limited patrol activity, which increased in frequency after the U.S. landings on Attu.[298]

Japanese Troop Movements and Chain of Command[299]

The invasion was carried out by the North Sea Detachment, under direct command of the Imperial Headquarters.[300] In the period immediately after the Japanese landings, the occupation forces on Kiska comprised the ground troops under the command of LtCmdr Mukai Nifumi, the Tōkō Kōkūtai's[301] flying boat detachment under the command of Captain Ito Sukemitsu [302] and the float plane detachment under the command of Captain Nobukichi Takahashi.[303] All naval units at Kiska were under the command of Captain Ono Takeji, CO of the cruiser *Kiso*.[304] All three were directly answerable to Vice Admiral Hosogaya .[305]

Kiska and Attu were purely military installations[306] and unlike other occupied areas with resident civilian populations[307] there was no need to establish a separate military administration of the islands—all activity was covered under the normal chain of command and subject to the strategic and tactical decision by base command.

On 1 July the Japanese garrison on Kiska was augmented by 1,200 personnel and formally constituted as the 5th Garrison Force (Guard Unit) placed under the command of Captain Toshimi Sato.[308] Four days later, the seaplane carrier *Chiyoda*, under the command of Captain Harada Kaku, brought a detachment of *Suisen* float fighters, that constituted the Tōko Kū Suisen Buntai[309] under the command of Lt Kushichiro Yamada, but subordinate to Captain Ito Sukemitsu. Lt Kushichiro was supported by his Executive Officer, Ens.(Sp.Duty) Saito Kiyomi (KIA 15 Sep 42).[310]

The IJA arrives

The shelling by the U.S. task group signaled to the Japanese planners that the U.S. might attempt an assault on Kiska—after all, naval shelling to soften up the targets was textbook practice. Thus, to strengthen the Kiska garrison, the IJA moved its troops from Attu.[311]

The status of Kiska as a Japanese base was lifted to 51st Special Base Force[312] on 15th September 1942,[313] after the arrival of 1,200 IJA troops from Attu.[314] Overall local command resided with Rear Admiral Akiyama Katsuzo, IJN.[315] About that time the air power on Kiska was formally classified as the 51st Base Air Unit,[316] still under the command of Commander Takahashi Nobukichi,[317] who had been promoted to Captain by the time of the evacuation of Kiska.[318] The IJA forces at Gertrude Cove, some 1,100 men of the 301st Independent Infantry Battalion (of the 45th Independent Mixed Brigade) of the North Seas Detachment (Hokkai Garrison Unit), were initially under the command of Major Hozumi Masatochi.

The abandonment of Attu did not go unnoticed by the U.S. forces.[319] The overall strategic position was such, however, that the U.S. was not yet ready to capitalize on the situation. Thus U.S. forces did not retake Attu at the time. U.S. bombers however destroyed the facilities on the island.

After about six weeks, the 303rd Independent Battalion, with Lieutenant Colonel Yanekawa Hiroshi commanding, reoccupied Attu. The 301st Independent Infantry Battalion on Kiska remained under Major Hozumi's command until late November 1942 when Major General Mineki Juichirō (峯木十一郎) arrived.[320] He brought with him two companies of anti-aircraft artillery and a very small battalion of infantry.[321] Even though in charge of the Kiska elements of the IJA's North Seas Detachment on Kiska, in overall command terms he was subordinate to Rear Admiral Akiyama Katsuzo.[322]

However, when Yamasaki Yasuyo (山崎保代), as commanding officer of the 2nd District Force of the North Sea Defense Force reached Attu on 18 April 1943 to take

over command of the IJA defense force there, he was the highest-ranking officer in the western Aleutians and the IJA garrison at Kiska was automatically administratively subordinate to Attu. Following the annihilation of the Attu garrison, the command passed on 29 May 1943 to Lt. General Higuchi Kiichiro (樋口 季一郎), IJA, as Commander of the Northern Army and based in Hokkaido, Japan. Yet in the local command on Kiska, the IJA forces were subordinate to the Base Commander, Rear Admiral Akiyama Katsuzo.

On occasion high-ranking staff visited Kiska. On record are Cmdr Ito Taisuke, air officer on the staff of the Fifth Fleet, who visited Attu and Kiska in early August 1942,[323] and Imperial General Headquarters staff officer (supplies) LtCol Shinroku Iwakoshi who was present on Kiska from 9 January 1943 to investigate and coordinate the local supply efforts.[324] He seems to have left on a submarine in the same month.

Japanese Sea Plane Organization and Command Structure

In essence the airpower on Kiska as of 5 July 1942 had three arms: i) long-range reconnaissance and patrol bombing provided by the flying boats of the Tōkō Kū Kōkūtai under the command of Captain Sukemitsu Ito;[325] ii) medium- and close-range reconnaissance provided by the planes of the *Kamikawa Maru's* float plane detachment under the command of Captain Nobukichi Takahashi;[326] and iii) fighter/interceptor capability and close-range sector patrol provided by the *Suisen* float plane fighters of the Tōkō Kū Suisen Buntai, under the command of Lt Yamada Kushichiro, but subordinate to Captain Sukemitsu Ito.

This distributed set of responsibilities was centralized on 5 Aug 1942 when all planes of the Tōkō Kū as well as the planes brought by the *Kimikawa Maru* and the *Kamikawa Maru* were combined to constitute the 5th Kōkūtai,[327] which itself was organized under the 5th Kantai (fleet).[328] The nominal fighter strength of the 5th Kōkūtai was 12 Suisen, even though at first only half a dozen were on hand.[329]

As part of the service-wide restructuring of the squadron designation system, the 5th Kōkūtai was re-designated 452nd Kōkūtai on 1 November 1942.[330] On 18 May 1943 the 452nd Kōkūtai was removed from Kiska and attached to the 27th Air Flotilla, 12th Kantai, then based at Paramushiro.[331]

Flight crews for the fourteen Mitsubishi F1M2 *Reikan* totaled 40 pilots and 20 men, and the planes were supported by a shore party of almost 70 men[332] under the command of Captain Takahashi.[333] Another 64 men arrived on 5 July 1942 when the *Chiyoda* landed the Tōkō Kū Suisen Sentai.[334]

A provisional estimate of the Japanese strength on Kiska, based on an analysis of captured documents and interrogations of POW's, assumed that over the duration of the conflict, the 5th Kōkūtai amounted to about 300 men, but that all planes had been shot down. Moreover, the estimate lists a 54th fighter unit (presumably the 54th Hikosentai of the Imperial Japanese Army), with an estimated additional 300 men, noting that personnel may have been sent but that no planes ever reached this unit.[335] It seems as if technician and ground crew had been sent in preparation for the completion of the airfield on North Head, which have resulted in an immediate fly-in of operational aircraft. If that were correct, then the evacuation of 55 army personnel by submarine makes sense.

Table 6. Major Chronology of Japanese base developments (1935-1943) (U.S date).[336]

Date	Event	Base Development
1937		Start of base development in the Japanese Mandated Territories of Micronesia
~ Aug 40		Development of military airfields in the Marshall Islands
7 Dec 41	Japanese attack on Pearl Harbor, the Pacific War commences	
7 Dec 41	Guam falls to the Japanese (8 Dec on Guam)	
23 Dec 41	Wake Is. falls to the Japanese	
23 Jan 42	Rabaul (New Guinea) falls to the Japanese	
15 Feb 42	Singapore falls to the Japanese	
19 Feb 42	Darwin (Australia) bombed by Japanese	
8 Mar 1942	Batavia (Djakarta) falls to the Japanese	
18 Apr 42	U.S. attack Tokyo (Doolittle Raid)	
3-4 May 42	Japanese occupy Tulagi (Solomons)	Seaplane base built
4-8 May 42	Battle of the Coral Sea	
3 Jun 42	Japanese bomb Dutch Harbor, AK	
4-7 Jun 42	Battle of Midway	
6 June 42	Japanese land on Kiska	Commence development of Kiska defenses, seaplane and submarine base
7 Jun 42	Japanese land on Attu	Commence development of Attu defenses
Jul 42	Japanese land in Guadalcanal, Solomons	Development of airfield and base
7 Aug 42	U.S. forces land on Tulagi and Guadalcanal	
Sep 42	Japanese abandon Attu, transfer troops to Kiska	
19 Oct 42	Japanese land (again) on Attu	Re-commence development of Attu defenses
20 Oct 42		Commence development of Tarawa Area defenses
26 Dec 42		Japanese construction of Tarawa defenses commences
7 Mar 43		Japanese construction of Nauru defenses commences
20 Apr 43		Japanese construction of Ocean Island defenses commences
11-29 May 43	U.S. forces capture Attu	
28 Jul 43	Japanese abandon Kiska	
15-17 Aug 43	US/Canadian forces land on Kiska	US/Canadian forces begin the development of a base

Table 7. Chronology of Administrative Actions regarding Kiska Island by the Japanese occupation forces[337]

Date	Event	Note
6 Jun 1942	Japanese forces occupy Kiska and develop a base at Kiska Harbor with subsequent developments on North Head and South Head under control of the Imperial Japanese Navy	338
	Japanese base force designated	
	Kiska renamed Narukami Shima	
Sep 1942	Japanese Army units are moved from Attu to Kiska, establishing a base at Gertrude Cove	
Sep 1942	Japanese Garrison placed under overall command of Rear Admiral Akiyama, Imp. Japanese Navy	339
28 Jul 1943	Japanese forces evacuate Kiska	340

Closing the Range: Bombing from Adak

The long-range flight from Umnak, while technically feasible, exacted a toll on the planes and especially the crew that flew them. Moreover, the distances between Umnak and Kiska meant that the U.S. Air Force was limited in the choice of planes it could employ. The distance between Kiska and the main USAAF base of Cold Bay was about 840 miles, even though that could be 'shortened' 580 miles by staging a refueling and re-armament stop *en route* at Umnak. These distances meant that long-range bombers could easily fly a mission to Kiska—as was demonstrated by U.S. B-17 and B-24 bombers during the Kiska Blitz (p. xix)—although both the length of the flight and the weather conditions encountered *en route* were hard on the flight crews. While some bombers had the range, other, very powerful tools in the armory, such as the very versatile and maneuverable B-25 medium bombers, did not. More critically, none of the fighters had the range either, thus the bombers had to fly unprotected, limiting their ability to bomb at low to medium altitudes—and high altitude bombing dramatically decreased the accuracy. The mainstay of U.S. fighter squadrons in 1942 and early 1943 were the P-38, P-39 and P-40, none of which had the range to cover the bombers. While P-38s had a range of 1450km (900 miles) that was insufficient to bring the aircraft back, the other two fighters could not even reach the target.[341]

Base Development on Adak

Thus in the eyes of the U.S. planners it was highly desirable to develop an airbase that was much closer, within fighter range of Kiska. While the USAAF favored an airfield on Tanaga, the U.S. Navy strongly favored the development of a base on Adak, which although 50 miles further from Kiska than Tanaga, had a protected deep water harbor. The Navy won out and Adak, 250 miles east of Kiska, was chosen as the new advance base.

On 30 August 1942 the U.S. forces began to convert Adak Island into an advanced U.S. Navy and U.S. Army Air Force Base.[342] By draining a coastal lagoon, the Adak airfield was fully operational ten days after the initial landings.

Fig. 49. A Lockheed P-38 Lightning, Squadron tail code 86, shot through the observation canopy of another similar plane.[343]

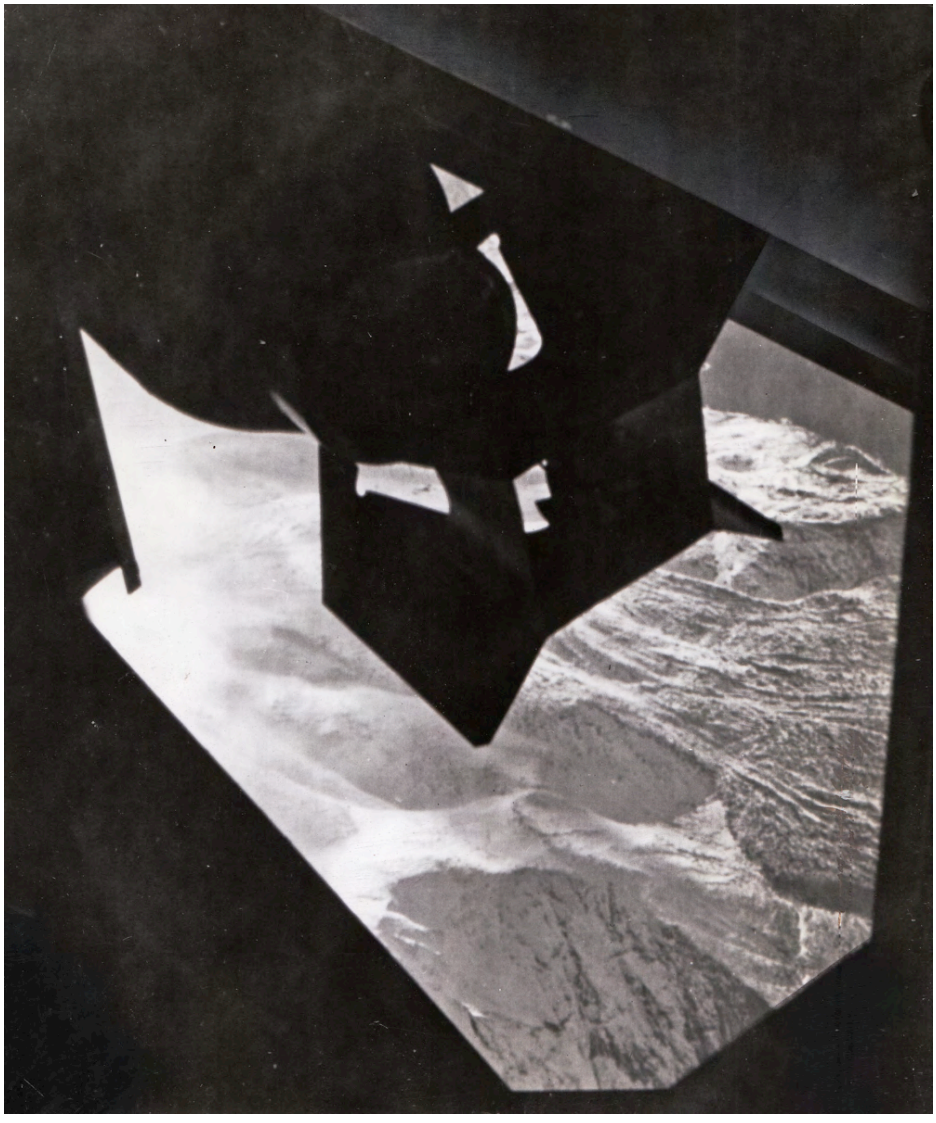


Fig. 50. A 1000-lb bomb about to be dropped on Kiska. In March or April 1943[344].

Table 8. Major Chronology of U.S. base developments (1942-1943). U.S. dates).

Date	Event	Base Development
30 Aug 42	U.S. forces occupy Adak	
10 Sep 43		Adak airstrip operational
12 Jan 43	Americans occupy Amchitka	
?? 43		Emergency airstrip on Atka operational
16 Feb 43		Amchitka airstrip operational
11 –30 May	U.S. forces successfully retake Attu	
27 May 43	U.S. forces survey Shemya	
7 Jun 43	U.S. forces occupy Shemya	
21 Jun 43		Attu Airstrip operational
28 Jul 43		Shemya airstrip operational
15 Aug 43	U.S. forces land on Kiska unopposed	

Japanese Reactionee

Some authors have claimed causality between the transfer of the Japanese from Attu to Kiska with the U.S. landing on Adak.[345] The U.S. decision to move to Adak was made on 21 August 1942, with the landings to occur on 30 August 1942. The Japanese forces had commenced the transfer of the garrison from Attu to Gertrude Cove, Kiska, on 27 August and completed this by 16 September 1942.[346] At the same time, the Japanese were not aware of the Adak base until mid- to late September, with the first Japanese bombing of Adak occurring on 2 October.[347] Given the complexity of a transfer of some 1,100 IJA troops from Attu to Kiska, and the shipping required to effect this, the events are a great example of historical synchronicity, but not causality.[348]

On the other hand, the Japanese decision to re-occupy Attu in late October 1942,[349] by sending different troops of the 7th Division of the IJA, as well as the aborted attempt to send the 303rd Independent Infantry Battalion to occupy Shemya, needs to be seen in the context of the U.S. development of the Adak base.[350]

The Air War from Adak

Adak being a mere 250 miles from Kiska meant that all bombers could be accompanied by fighters which could both suppress any air opposition and, through low level strafing could suppress anti aircraft fire, thus clearing the way for the bombers. Inevitably, given the drag caused by the large central float, the *Suisen* severely lacked in performance compared to their non-float version (the Mitsubishi A6M2'Zero'). While that performance had been relatively adequate when pitched against U.S. long-range bombers and especially against the slower flying boats—which had to fly perilously low to escape attacking *Suisen*—it was little match against the American P-38 and P-40 fighters. Even though the *Suisen* were very maneuverable and could out-climb the U.S. fighters, they were not sufficiently rugged and lacked speed. As a result, the P-39s and P-40s could outrun and outfight them.

The U.S. fighter cover now meant that Japanese air opposition could be gradually suppressed. The challenge for the Japanese was to attempt interception only on their

terms, where possible, and to ensure that any aircraft losses they incurred could be replaced swiftly as long as the construction of an airfield (on North Head) was under way. Once that airfield was operational, land based fighters with higher performance, as well as medium-range bombers could hopefully be brought in.

But even before the completion of the facilities on Adak, the U.S. Air Force committed some Umnak-based fighters to the Kiska operation. Even though directed to fly combat patrol over Kuluk Bay on 3 September, one B-24 and two P-38s flew on to Kiska.[351] The fighters strafed barges, seaplanes and shore installations. Between one and four seaplanes were claimed as destroyed in the water. It seems that none of the *Suisen* fighters rose in opposition.[352]

On 7 September a Suisen flown by PO2c Yoshikazu Sasaki chased a PBY, but, as the Kōdōchōshō states, could not reach it to shoot it down.[353] On 8 September a flight of three B-24s was attacked by a flight of *Suisen*[354] flown by Ens.(Sp.Duty) Kiyomi Saito and Sea2c Minasawa Minoru. The B-24 crews claimed one *Suisen* as shot down.[355] According to the Kōdōchōshō for the 5th Kōkūtai, Ens Saito's Suisen was struck by bullets and had to be written off later on.

Fig. 51. Japanese RADAR installation of the 'Guadalcanal-type,[356] on Kiska.[357] According to Kasukabe, this was the last installation destroyed by the retreating Japanese.[358]

On 13 September the USAAF flew its last combat sortie from Umnak, a photographic mission of an LB-30 escorted by two P-38s. From then on all operations against Kiska were launched from Adak. During that mission the U.S. planes were jumped on by a flight of three *Suisen* flown by Captain Yamada, PO2c Yoshio Suzuki and Sea2c Hachirō Narita. While the *Suisen* inflicted damage to the LB-30 photo-reconnaissance plane and one of the P-38s,[359] the pilot of the other P-38, Lieutenant Frederick E. McCoy, claimed to have shot down one of the *Suisen*.[360] No loss is reported in the Kōdōchōshō, however.

A major bombing raid on the following day (15 September) was aimed at setting back the Japanese construction effort by targeting shipping in the harbor. Aided by fighters, the bombers for the first time came in low and achieved a momentum of surprise. In addition to hits against mine layers and shipping, the bombing raid claimed damage to a moored Mavis flying boat.[361] The claim to have damaged a Mavis is puzzling as no flying boats were stationed there at the time. Unless the aircraft struck one of the

abandoned damaged Mavis, it may either have been wishful thinking by the U.S. crews or it may indicate the presence of a communications plane at the time.[362] A Japanese diary comments that the seaplanes were strafed. Five *Suisen* were hit by strafing bullets during the second raid of the day.[363]

Four *Suisen*, all that the 5th Kōkūtai could get airborne at the time, met the bombers.[364] Flying at low altitude, they were described as struggling for supremacy but being heavily outnumbered.[365] The U.S. forces claimed the downing of one biplane and four *Suisen*,[366] as well as another two *Suisen* over Little Kiska.[367] Corey Ford provided a vivid account of that raid in his 1943 book, *Short Cut to Tokyo*, describing the P-38s and P-39s going in ahead at low-level to suppress anti-aircraft fire and protect the bombers against the *Suisen* float fighters, noting that a *Suisen* "fighter rushed across the water, takes off, does an Immelmann, gets behind a bomber, but is shot down by a P-38."[368] The Japanese war diary notes that occasion of the first raid of the day two *Suisen* crashed and a third during the second raid. The diary suggests that the crashes occurred for reasons other than direct enemy action.[369] The Japanese Kōdōchōshō records show that both Ens.(Sp.Duty) Kiyomi Saito, the Executive Officer of the 5th Kōkūtai Suisen Sentai, and PO3c Katsutaro Uchiyama did not return from their flights. Sea2c Minoru Minasawa was credited with one certain and one probable kill of a P-38, while PO2c Yoshikazu Sasaki was credited with the kill of three P-38s and one F4U (mistaken identification of a P-39).[370] His plane, however, was damaged and he was forced to make an emergency water landing. Trying to taxi the plane back to base his plane overturned in the swell and sank.[371]

From then onwards, until the next arrival of the *Kimikawa Maru,* the Japanese fighter strength was reduced to a single *Suisen.* The much anticipated supply run by the *Kimikawa Maru,* again escorted by the *Hokaze,* arrived on 25 September 1942, bringing much needed replacement aircraft (five *Suisen* and two *Reisui)*, as well as a contingent of soldiers and building materials for the construction of winter quarters.[372]

On 25 September[373] the Eleventh Air Force committed ten B-24Ds, eleven P-39s and seventeen P-40s in the first joint U.S./CanadianCanadian air operations in the Aleutians. The P-40 pilots were assigned the mission of neutralizing the anti-aircraft defenses. During the second strafing attack, three "*Suisen* " float fighters attempted to intercept the bombers. Lieutenant Colonel John C. Chennault, Commander, 343rd Fighter Group shot down one and Canadian Squadron Leader Kenneth A. Boomer, Commander, Number 111 Fighter Squadron the other. It was the only Canadian aerial victory in the Aleutians.[374] In the intelligence summary compiled after the U.S. landings it was claimed that five *Suisen* fighters were shot down on that day.[375]

The Japanese side of the story states that Captain Yamada and his wingman PO2c Torao Morikawa intercepted them, followed by five additional *Suisen.* While Captain Yamada claimed the kill of one P-39,[376] PO2c Morikawa was killed in action.[377] Two *Suisen,* piloted by PO2c Yoshikazu Sasaki and Sea1c Tadashi Sasaki were struck by P-39 while still taxiing. PO2c Sasaki managed to take off and give chase, but to no avail.[378] From the Kōdōchōshō it would appear that only two *Suisen* were destroyed, one shot down and one strafed on the water.

Alerted by their RADAR of an impending U.S. air raid on 29 September[379] the Japanese brought eight *Suisen* fighters into the air. In the ensuing action, none of them were lost but none inflicted damage on the U.S. planes either.[380] The Japanese records claim that one of four U.S. planes was damaged in the morning.[381] Two Suisen, augmented by three additional Suisen scrambling to intercept, met a second raid by five B-24s. The Kōdōchōshō claimed that one B-24 received damage to two of her engines.[382]

On 29 September two float fighters on patrol encountered an incoming bomber force accompanied by P-39s and P-40s. According to Japanese combat records, PO2c Nakamachi Kunizō was credited with the kill of a P-39, but Sea1c Tadashi Sasaki was killed in action.[383] The three additional *Suisen, which took off to intercept,* were severely mauled, with Lt Kōzō Miyazawa shot down (recorded as missing in action) while the other two fighters were severely damaged. At the end of that day, the Japanese fighter strength was reduced to a single operational aircraft and to two fighters in urgent need of repair.[384] It seems that Japanese ground crews worked feverishly, getting these two planes repaired within a day.

On 1 October eleven B-24s attacked shipping and shore installations. The fighter escort of six P-39s suppressed Japanese anti-aircraft fire and warded off the *Suisen* fighters. U.S. pilots were credited with three Suisen shot down.[385] The Japanese records for the day mention that four Suisen rose for combat and claimed damage to one B-24 at no damage to their own.[386] Additional combat occurred on the following day, without losses to either side.[387]

On 2 and 3 October Japanese aircraft flew over to Adak dropping bombs and buzzing the base.[388] It is reported that a *Suisen* flew over at night and dropped bombs that missed.[389] This marked the end of the Japanese offensive air operations, as feeble as they may have been in an overall context.[390]

On 3 October, six B-24s, escorted by four P-38s and six P-39s, carried out a low-level bombing and strafing mission. The presence of the U.S. fighters exerted a substantial toll. The U.S. pilots claimed four *Reisui* reconnaissance planes and one *Suisen* fighter.[391] The Japanese records are silent on any losses, but claim the kill of a P-38.[392] Again based on RADAR observations, 4 October three *Suisen* rose to intercept an incoming attack force. PC3c Hiroshi Sato was credited with a possible kill of a P-38, but failed to return from his mission. As Sea2c Asaharu Utazu's plane was also wrecked by bullet hits, the Japanese forces found themselves in the position of having no operational *Suisen* at their disposal.[393]

In the absence of fighters to intercept the U.S. bombers, it appears that the Japanese used their scout and reconnaissance planes to establish the altitude of the attacking bombers and then throw up box patterned anti-aircraft fire with altitude set fuses.

Within a few days the Japanese had lost four reconnaissance and four fighter planes without being able to show any results themselves. Such losses were essentially unsustainable. According to Japanese sources, one *Reisui* was lost on the same day as the U.S. forces disabled the *Borneo Maru.*[394]

According to a Japanese diary captured on Kiska, the Japanese air strength was reduced to a single plane by 10 October: one *Reisui.*[395] However, matters were not all rosy for the U.S. forces either. The single-engine P-40s were not suited for the long haul from Adak, with many missions perilously close to failure. Moreover, winter weather in late October brought U.S. fighter operations against Kiska to a halt. The missions were stopped on 29 October and did not resume until the spring of 1943.[396] During this period, then, the Japanese could rebuild, at least in part, their floatplane fighter force.

War of Attrition

Even without the P-40 escorts, the winter of 1942/43 saw an air war of attrition determined by the casualties the U.S. forces could inflict and the speed and frequency with which the Japanese could replace their downed aircraft and their pilots. In the final equation, the Japanese losses of planes far outweighed their ability to bring in

replacement aircraft and crews. In part that was due to the new U.S. airfield on Amchitka, which had become operational from February 16th onwards. As elsewhere in the Pacific War, losses of skilled pilots were much harder to make up than losses of aircraft. It is claimed that in the later months of the Japanese occupation the Japanese pilots often avoided combat.[397] In the light of the supremacy of U.S. fighters it was possibly a tactical decision not to sacrifice pilots unnecessarily, but to wait, opportunistically, for situations that were conducive to success.

Table 9. U.S. Airfields in the Aleutians and their period of primary use in the Kiska Campaign

Period	Location	Distance to Kiska	Notes
11 Jun 42–???	Cold Bay	840m	[398]
Jun–14 Sep 42	Umnak	580m	
13 Sep 42–after U.S. landings	Adak	270m	
18 Feb 43–after U.S. landings	Amchitka	75m	[399]
22 Jul 43–after U.S. landings	Attu	190m	
28 Jul 43–after U.S. landings	Shemya	215m	[400]
after U.S. landings	Kiska	—	

On 1 November the 5th Kōkūtai was re-designated 452nd Kōkūtai [401] in line with a reorganization of all Imperial Japanese Navy air units that saw the introduction of a uniform numbering system which reflected the function of the planes.[402]

On 6 November *Kimikawa Maru* arrived again at Attu, this time in concert with the destroyer *Usugumo*, and delivered another five of the so desperately needed *Suisen,* as well as three *Reisui.*[403] According to Yasuho Izawa, the total monthly production of *Suisen* was not more than 12 at the time, with the entire production split between Kiska and the Solomons.[404] However, bad luck struck the Japanese in the form of a storm on 6 November. A U.S. weather mission of 7 November reached Attu and observed that a number of *Suisen* float fighters had washed ashore near a small creek on the west arm of Holtz Bay (Fig. 52).[405] Many of them were apparently replacements for the ones destroyed on Kiska. The Japanese had brought them in by transport to Attu, with the intent of flying them the rest of the way. The weather plane, after strafing them, returned to Adak.[406] Four P-38s, guided in by a B-17E, flew to Attu and, firing tracer and incendiary rounds, claimed the destruction of eight of the nine *Suisen* that had been sighted,[407] four of which had already been damaged in a storm.

On 16 December, in company with the destroyer *Hatsushimo*, the *Kimikawa Maru* launched four reconnaissance planes, presumably *Reisui,* for Kiska.[408] A week later, on 25 Dec 1942, the vessel arrived at Kiska Harbor, discharging eight *Suisen.*[409] In addition, the *Kimikawa Maru* brought three replacement pilots to make up for the shortage of six pilots.[410]

While the bad weather hampered U.S. bombing operations, it also caused operational failures of a number of Japanese planes, due to winds and especially the strong swell in Kiska Harbor. Despite the replenishment, it would appear that by the end of the month the Japanese were down to four operational '*Reisui* s' and a handful of *Suisen* float fighters.[411] On 31 December three B-25s and fourteen P-38s attacked shipping in Kiska Harbor. On that day nine Japanese *Suisen* pilots achieved a rare victory when they succeeded in shooting down two P-38s over Kiska.[412] The Kōdōchōshō of the 452nd Kōkūtai mentions that PO1c Nagase and PO2c Teruyuki Naoi were credited with shooting down a B-25 and the forced landing of a PBY.[413] While the loss of the B-25 can be confirmed,[414] the PBY cannot. The Kōdōchōshō of the 452nd Kōkūtai records that

five *Suisen* pursued a PBY that had been damaged.[415] According to U.S. sources, the PBY, piloted by Lt Charles E. Rodebaugh , managed to evade *four Suisen* pilots by flying just above the surface of the water and hugging the shoreline of Kiska and eventually flying through the saddle behind the main camp. The Japanese pilots, apparently low on gas, had to abandon the pursuit.[416] Other *Suisen* pilots[417] intercepted nine P-38s, shooting down one of them and also destroying one ditched PBY by strafing.[418] According to the *Anchorage Daily Times* one *Suisen* was shot down,[419] which is not recorded in the Japanese records.[420] The Japanese record seem to indicate that the two P-38s were shot down on 1 January 1943 (31 December U.S. date), with both Lt Yamada and WO Nakamachi achieving one kill respectively.[421]

On the following day, six Suisen met a bombing mission of six B-24s, accompanied by nine P-38s. A P-38 pilot claimed to have shot down one of them, but his claim was not substantiated.[422]

A U.S. aerial photographic assessment of the Japanese presence on Kiska noted that "twelve enemy planes were seen at Kiska Harbor on 1 January 1943, the largest number yet observed in this area."[423] The assessment also noted that 'recently' the Japanese employed three types of planes, "the Nagoya Zero, single float fighter; the Aichi 99, double float type bomber; and a twin float biplane of undetermined type."[424] A situation report compiled on 1 February noted that "14 fighter seaplanes were reported from Kiska in early January" and that it was "estimated that some of these planes [were] the same as those that were earlier reported at Attu."[425]

A flight of six *Suisen* intercepted a "U.S. bombing mission of six B-24s and six B-25s on 6 January 1943. No losses are reported for either side.[426]

Weather, the Common Enemy

The Aleutian weather did not discriminate between friend and foe. Both sides suffered from the same problems: erratic winds (williwaws), sudden and at the time unpredictable fog development, strong surf, generally high humidity, cold and fluctuating temperatures. While the poor visibility caused serious problems to the navigation of the aircraft especially during the winter months,[427] the other conditions caused technical break down and other operational losses.

As the weather pattern in the Aleutians sees a movement of the fronts mainly from the west to the east (see Chapter 6), the Japanese had the slight advantage. Not only did they have weather stations in the Kuriles, they also had an observation post on Attu that informed the seaplane operations on Kiska.[428] The U.S. forces on the other hand were blindsided; at least in the early days of the bombing war, pilots would have flown towards the Kiska, unaware what weather conditions they might experience *en route* or over the target. That was in part mitigated by sending a photo reconnaissance and weather plane ahead of any bombing mission.

While the low visibility over the target hampered both Japanese and U.S. pilots, it generally benefitted the Japanese defenders on the ground. For much of the time, U.S. pilots could not see any of the target areas except for small breaks in the cloud and fog cover. The Japanese AA gunners could not see the planes either, but pre-trained their guns on these open patches in the clouds wating for the aircraft to emerge ito plain sight—a tactic that was employed to devastating effect.[429]

Fig. 52. A U.S. Navy reconnaissance photo of four Japanese Nakajima A6M2-N *Suisen* seaplane fighters washed up on the beach at Attu on 7 November 1942.[430]

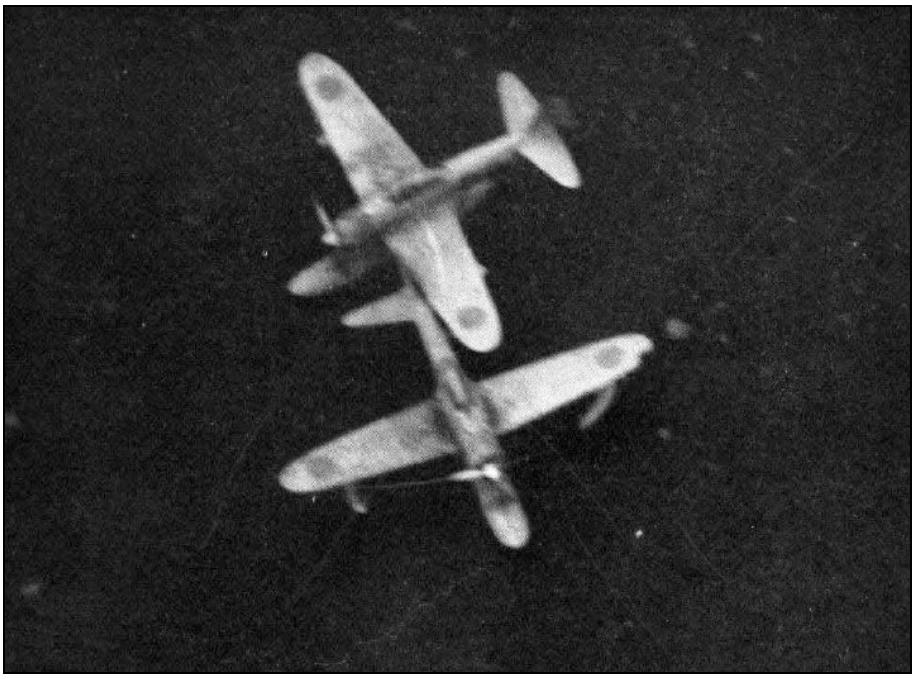


Fig. 53. Detail of the image shown in Fig. 52. Note the damage to the port the wing float of the lower plane.[431]

JAPANESE PROBLEMS AND LOSSES

The weather conditions encountered in the Aleutians were worse for the Japanese as they relied entirely on seaplanes that were also subject to surge and wave conditions.[432] Even though Kiska Harbor was quite sizeable and sheltered, weather conditions could hamper operations. A Japanese diarist noted for 20 June 1942, a plane flown from Attu to Kiska had to be ditched on the return leg in the sea near Buldir Island The seaplane tender *Kamikawa Maru* rescued the plane and crew on the following day,[433] but the plane sank at Attu harbor when it was accidentally dropped upon unloading.[434]

Winds in Kiska Harbor also caused problems. An entry in a captured Japanese diary, for example, notes for February 18th, 1943 that they were "unable to take off for mission due to strong cross wind."[435] Likewise, the sudden fog conditions could cause problems

in safe landings. A diary entry of a reconnaissance plane pilot carried the notation that on March 11th, 1943, the pilot was on reconnaissance patrol starting at 08:45 Kiska time. He "was to return at 12:30, but due to the bad weather at Kiska, [he] headed for Attu."[436] As with the flying boats, these eventualities required that the fighters had to be flown with some safety margin of spare fuel, which effectively limited the operational range, or the time they could remain airborne.

Indeed, the weather conditions encountered at Kiska were not kind to the older biplane types. Of the 24 seaplanes landed on Kiska in early June 1942, only two or three were operational at the end of two months. The losses in the surf and otherwise due to weather comprised about 60% of the total loss. The other 40% was shot down, or damaged beyond repair as a result of enemy action.[437] Similarly, even though the larger Kawanishi H6K 'Mavis' flying boats made use of the four seaplane moorings that prior to the outbreak of the war had been erected by U.S. forces in the lee of North Head,[438] the planes encountered trouble with the north-easterly swell in Kiska Harbor with many rough landings.[439] The Japanese commented on the bad swell, with an entry in a captured Japanese diary noting for March 5th that "the left pontoon of nº 18 came apart from the middle in last night's storm. Also damaged the right float."[440] Two *Suisen,* for example, were damaged in the storm of March 15th, 1943.[441] Available photographic images show that the surf at Kiska Beach could be damaging.[442]

On Attu, a storm in early November 1942 tore four *Suisen* fighters from their moorings and blew them to the shallows of a small creek. Spotted by a U.S. weather plane on 7 November (Fig. 52), they were further damaged by strafing.[443]

Of the six Kawanishi H6KFlying Boats initially flown to Kiska, three were lost through enemy action and two through weather conditions: one was lost in the fog between Ominato and Paramushiro and disappeared,[444] and another was lost in the fog returning from a reconnaissance flight east of Kiska, but managed to land at sea near Attu. While the plane sank, the crew could be rescued. The two operational losses were replaced with new aircraft.[445] On or about 17 August the remaining three Kawanishi H6K flying boats were moved from Kiska due to "to the difficulties of using them in the prevailing foggy weather and the swell in Kiska Harbor."[446] The Taitei were very significant assets to be put at risk unnecessarily.

Weather conditions also wreaked havoc on the shore establishments which had already been weakened by U.S. bombing. According to an entry in a Japanese dairy, one of the hangars collapsed in a storm on the night of February 27th, 1943.[447]

The U.S. intelligence assessments at the time, in part, of course, drawing on their own experiences with the weather conditions in the Aleutians, was aware of the operational losses the Japanese would have incurred, but were unable to quantify them.[448] A U.S. assessment of the Japanese strength on 1 February 1943, for example, noted that "two known losses [of Japanese aircraft] have occurred. Others might have resulted due to storms and weather conditions."[449]

Table 10. Japanese Losses of Kiska-based Aircraft during the Aleutian Campaign (8 June 1942 – 28 July 1943)[450]

Aircraft	Combat Losses	Operational Losses	Total
Taitei	1	2	3
Suisen	50	14	64
Reisui	17	11	26
Reikan	4	11	15
'Dave'	?	?	4
Total	71+	38+	112

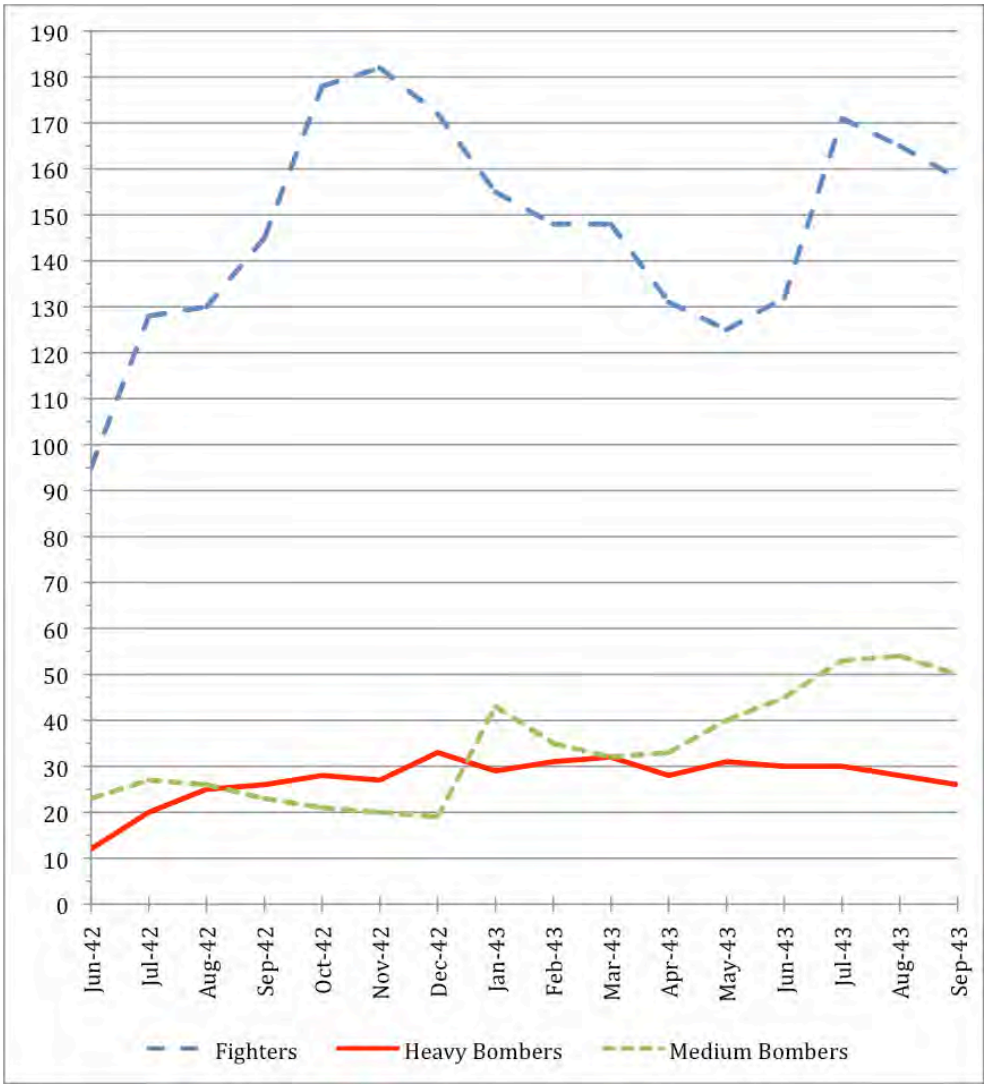


Fig. 54. Number of aircraft committed by the USAAF. to the Alaskan Theatre (June 1942–September 1943).[451]

U.S. PROBLEMS AND LOSSES

The impact of the weather on the U.S. operations can be gleaned by the fact that missions of some kind were mounted on 349 of the 435 days (=80%) of Japanese occupation of Kiska. In total, 7,318 missions were flown.[452] Yet, the actually number of days on which bombing or strafing missions could be mounted successfully, even if merely bombing through the overcast on dead reckoning runs, was limited to 162 days (37%). On some of the successful missions planes were circling over Kiska for up to two

hours, looking for a break in the clouds. In all instances where no missions were sent, or where missions had to be aborted, the weather precluded operations.

Table 11 compiles the aircraft losses incurred by the U.S. and Canadians during the Aleutian Campaign. As is self-evident, the operational losses far outweighed the combat losses. Not surprisingly, smaller planes, such as fighters, and planes that operated anyway in more adverse conditions, such as PBYs, were more prone to operational losses than heavy or medium bombers. The non-combat losses incurred in the Aleutians were an important lesson for the USSAF. With total theater losses being 6.5 times that of the combat losses, the Aleutians were more than twice as costly as the rest of the Pacific theatre (ration 3:1) Coupled with the limited period of the year to mount effective operations, any plans to use the Aleutians as a springboard for an invasion of the Japanese homeland were quickly shelved.[453]

Table 11. Allied Aircraft Losses during the Aleutian Campaign (10 June 1942 – 15 August 1943)[454]

Aircraft	Combat Losses	Operational Losses	Total
Fighters	18	108	126
Light Bombers	0	2	2
Medium Bombers	7	18	25
Heavy Bombers	10	22	32
PBY	5	34	39
Floatplanes	1	?	1
Total	41	184	225

The End Game: Bombing from Amchitka

Amchitka, an elongated island located some 60-80 miles east of Kiska, was suitable location for an airfield, although the island was devoid of a protected anchorage for larger vessels. The Japanese had considered the island as a location for an airfield of their own, with both the IJN and the IJA carrying out independent assessments. The IJN had carried out a brief survey on 13 June 1942 by both landing a survey party at Constantine Harbor and by photographing the island from the air using a reconnaissance plane launched from the cruiser *Abukuma*.[455] An IJA team surveyed the island for three days, including the digging of test pits,[456] which were later encountered by U.S. personnel.

On 13 January 1943 U.S. forces landed on Amchitka and began the construction of an airfield. Once completed it would serve as a base from which to provide effective, and if need be continuous, fighter cover over Kiska. The long-range attacks from Adak had already significantly disrupted the Japanese supply efforts. According to a Japanese source,[457] they were already two months behind schedule in early February 1943. A base on nearby Amchitka would have made these resupply runs to Kiska exponentially more difficult.

While bad weather hampered U.S. flight operations, it also prevented the Japanese from discovering the U.S. presence on Amchitka. The Japanese were not aware of the U.S. landings until 24 January,[458] when spotted by a reconnaissance patrol,[459] flown by WO Hiroshi Morita and PO1c Sasaki.[460] As an airfield on Amchitka proved a direct threat, its construction needed to be delayed. Yet, the Japanese lacked any sizable offensive capability to do so: they were down to two planes. Thus the attacks by Kiska-based planes were, in essence, merely tokenistic efforts and nuisance raids. On January

25th, two *Suisen* float fighters flew over and dropped two 60kg bombs on the Navy transport USS *Arthur Middleton* (AP-55) without causing any damages.[461] The floatplanes returned on January 26 again attacking shipping in the harbor,[462] and also on the 28th.[463] The latter raid, carried out by six *Suisen* carrying two bombs each, followed by a strafing run, resulted one U.S. fatality and two casualties.[464] Three bombs hit the fighter strip.[465] WO Morita and PO1c Sasaki flew all missions.

The Japanese stepped up their re-supply of aircraft in February. The *Kimikawa Maru's* next supply run, this time escorted by the *Usugumo,* brought a number of landing barges, as well as seven *Suisen* and one *Reisui,* to Kiska on 1 February 1943.[466] Thus, on the following day all available aircraft were sent on a bombing mission against Amchitka. According to U.S. accounts, nine Japanese aircraft bombed the camp area of Amchitka and strafed a destroyer offshore, without causing damage.[467] Yet the mission was to prove costly to the Japanese. The Japanese records show that of the 8 Suisen and one Reisui committed, two Suisen, piloted PO1c Kaisho Ōkawa and PO2c Hitoshi Naito were lost due to flak.[468] Another raid on Amchitka was carried out on 5 February with four *Suisen* and one *Reisui.*[469]

The Japanese tactic of a single aircraft buzzing a U.S. base at night by flying to and fro, was an early form of psychological warfare and designed to keep the soldiers below awake. The occasional, and seemingly unpredictable dropping of small bombs added to the tension as soldiers, awakened by the buzzing aircraft, would wonder when and where bombs might hit.[470] In World War II slang these nuisance aircraft were often given nicknames. The one working over Adak was referred to as 'Good Time Charley."[471]

The converted merchant cruiser *Asaka Maru* brought an "unknown number of fighter planes for experimental purposes" on 2 February, according to a Japanese diary entry found on Kiska.[472] While the diary is silent on the matter, the 'experimental' nature of the planes gives rise to speculation. On record is also that 4 February a reconnaissance plane, presumably a Aichi/Watanabe E13A1, was unloaded from the *Asaka Maru.*[473] Soon after, more aircraft were landed, when following a quick dash back to Ominato, the *Kimikawa Maru* returns to the Aleutians on 12 February, launching seven *Suisen* and five *Reisui* from the sea for Kiska.[474]

On 9 February a Japanese reconnaissance plane went to assess the weather situation over Amchitka. The planned bombing mission was postponed because of visibility.[475] A reconnaissance mission on12 February was called off due to bad weather.[476] Finally, a Japanese mission could be mounted on 13 February. It ended in disaster, as U.S. planes shot down three *Suisen* and one *Reisui* off Amchitka. On the same day, the Japanese lost another *Suisen* over Kiska, shot down by a P-38 covering a U.S. bombing attack.[477] The Japanese side of the story claims that PO1c Sasaki and PO2c Noai downed a P-39.[478] None of the U.S. claims are recorded in the Kōdōchōshō.

A raid on Amchitka by Japanese planes on 16 February was inconclusive for the Japanese observers,[479] but actually resulted in a direct bomb hit on a foxhole, killing both occupants and wounding two others.[480] In essence, the Japanese air attacks were largely symbolic. Of little military value, except for reconnaissance and military intelligence, the raids cost the Japanese a number of aircraft. Indeed, on 19 February,[481] P-40 pilots shot down two *Suisen* fighters over Amchitka.[482] Both WO Kunizo Namamachi and PO1c Yoshikazu Sasaki failed to return.[483] As Yasuho Izawa notes, the loss of Yoshizaku Sasaki was a major blow: not only had he been on Kiska since the formation of the Tōkō Kū Suisen tai on 5 July 1942, but he was also the undisputed Japanese fighter ace in the Aleutians, with 4 solo kills and 5 confirmed and one unconfirmed collaborative kills.[484]

The Amchitka airfield was operational from February 16th, 1943 onwards.[485] Its presence almost next door to Kiska effectively negated any Japanese opportunities at reinforcements and supplies via surface shipping. The Army transport *Melbourne Maru,* entering Kiska Harbor on 17 January 1943, and the Navy Transport *Awata Maru,* arriving on 22 February, were the last surface ships to reach Kiska.[486]From now on, much of the supplies had to be brought in by submarines. The presence of an operational U.S. airfield also required the Japanese to change their tactics. Captain Yamada decided only to attack when they were in the advantage, using a tactic labeled the "Chongqing way of war",[487] referring to the Japanese approach to bomb Chongquing only when unopposed.[488]

The air opposition was augmented by ever more accurate anti-aircraft fire. From U.S. reports in February 1943 it would appear that the Japanese anti-aircraft fire from the batteries was quite effective up to a ceiling of 15,000 feet:[489].

> "Every plane that comes back from Kiska is shot up from the anti-aircraft fire. One of the reasons for flying low is to escape this fire."[490]

The End Game for the Japanese Air Opposition

According to a Japanese diary found on Kiska, on 14 March a P-38 flew in low, and having achieved surprise, strafed the Japanese planes. It set fire to one plane and strafed another. All told, three reconnaissance planes were put out of commission.[491]

On 17 March the U.S. forces carried out a sustained attack on Kiska, relying on Amchitka and Adak for repeated sorties. In total, 13 B-24s, 16 B-25s, 32 P-38s and 8 P-40s sorties were flown against positions on North Head, the runway, parked seaplanes and facilities on Little Kiska.[492] According to Japanese diary entries, one Japanese plane "went into flames and two men were killed."[493] It seems that some of the *Suisen* fighters challenged the attacking bombers. The pilots of the remaining Japanese floatplanes, presumably mainly reconnaissance planes, took off and went into a defensive Lufberry circle[494] to avoid being strafed on the water. According to Japanese records seven Suisen worked cooperatively and achieved two kills.[495] As Yasuho Izawa noted, this was their last formal combat over Kiska.

The U.S. forces noted that March 16th marked the last day of any sizeable Japanese air opposition against attacking U.S. planes. It seems that the Japanese still had planes in hand, but chose not to use them. Moreover, soon after the plane strength was replenished, when the *Kimikawa Maru* returned to Attu on 19 March 1943 and offloaded six *Suisen,* presumably destined for Kiska.[496] It is not clear whether she also offloaded the three *Reisui* which had also been loaded at Yokosuka. A Japanese diary captured on Kiska states that "eight of our sea fighter and reconnaissance planes arrived."[497]

Table 12. Summary statistics of Japanese aircraft losses on Kiska based on U.S. intelligence data[498]

Type[499]	U.S. descriptive term	shot down	probably shot down	destroyed on the water	probably destroyed on the water	Total
Nakajima A6M2-N	Float zeroes	23	8	7		38
Mitsubishi F1M2	Twin float fighters	6				6
Mitsubishi F1M2	Biplane fighters	1		2	3	6
Aichi D13A	Scout seaplane	2	2			4
Kawanishi H6K	4 engine patrol bomber			1		1
	Total	32	10	10	3	55

As the U.S. strafing and bombing raids continued there seems to have been no attempt made at getting the aircraft airborne. For example, U.S. fighters are reported to have strafed floatplanes on the beach on 13 April 1943,[500] and 'parked' seaplanes on 14 April[501] and 17 April.[502] A U.S. photographic interpretation report of 1 June 1943, reporting on three of the photographic missions in mid and late May, noted that "no planes were observed on the beach or in the water."[503]

The presence of *Suisen* fighters on Kiska in April 1943, but their unwillingness to engage with the enemy after the 16th of March seems at first puzzling. What in fact had happened was that the Battle of the Komandorski Islands on 27 March 1943 had signaled that future supply transports to Attu and Kiska were in peril. Lacking numbers and punch, the Japanese opposition with the *Suisen* had always been tokenistic in the form of harassment and largely ineffective. A continuation was a waste of materiel and especially of personnel—at least until such time that the land-based airfield on North Head could be completed, allowing for the operations of land-based aircraft.

As a consequence, all pilots of the 452nd Kōkūtai , as well as all other highly skilled personnel, were evacuated by submarine.[504] The 452nd Kōkūtai was reorganized at Yokosuka with Lt Syunki Araki appointed as squadron leader.[505]

Table 13. Tonnage of bombs dropped by the Eleventh Air Force[506]

Type	Weight/ unit (lbs)	Quantity	Total Weight (lbs)
Demolition bombs	2,000	16	32,000
	1,100	53	58,300
	1,000	326	326,000
	600	692	415,000
	500	6,623	3,311,500
	300	1593	477,00
	250	30	7,500
	100	12,222	1,222,00
Incendiary Bombs	500	12	6,000
	140	3	420
	136	89	12,104
	100	783	78,300
Fragmentation Bombs	23	386	8.878
	20	4,076	81,520
Torpedoes	1,950	6	11,700
Total		26,910	6,049,522

Too little, too late

The medium and high-level bombing carried out by the various bombers of the Eleventh Air Force did not have the required success on a number of positions. While near misses in the Japanese Main Camp area and similar barracks and stores concentrations had some success, both through direct hits, collateral damage and through the psychological effect of harassment, the various heavy AA positions escaped the bombardment unscathed. The high and medium altitude bombing was just too inaccurate to achieve a decisive outcome. This changed when on 19 July the 633rd, 634th and 635th Bombardment Squadrons, flying A-24 dive-bombers, arrived on Amchitka. Based at

Drew Field, Tampa, Florida, they had been moved to the Aleutians to help soften up the Kiska defenses prior to the U.S. landings. The squadrons flew combat missions 4-13 August 1943 and seem to have succeeded in knocking out one of the gun positions of the 120mm dual-purpose battery. Ironically, their missions over Kiska began after the Japanese had left.

The Japanese Supply Chain—Kiska's weak link

To be fully functional, every military base requires a reliable supply system. This is complicated enough in a war situation, but can be additionally complicated if the base has no standard land connection. Being an island, Kiska was solely reliant on shipping.

A number of Japanese vessels are known to have called at Kiska. On record are the navy vessels *IJN Abukuma*[507], *IJN Akatsuki,*[508] *IJN Akigumo,*[509] *IJN Asagumo,*[510] *IJN Asaka Maru,*[511] *IJN Awata Maru,*[512] *IJN Chiyoda,*[513] *IJN Hachijo,*[514] *IJN Hatsuharu,*[515] *IJN Hatsushimo,*[516] *IJN Hibiki,*[517] *IJN Hokaze,*[518] *IJN Ikazuchi,*[519] *IJN Inazuma,*[520] *IJN Ishizaki,*[521] *IJN Kagero,*[522] *IJN Kamikawa Maru,*[523] *IJN Kazagumo,*[524] *IJN Kasumi,*[525] *IJN Kimikawa Maru,*[526] *IJN Kiso,*[527] *IJN Kumagawa Maru,*[528] *IJN Kunashiri,*[529] *IJN Nagamami,*[530] *IJN Shiokaze,*[531] *IJN Shiranuhi,*[532] *IJN Tama,*[533] *IJN Ukishima,*[534] *IJN Usugumo,*[535] *IJN Wakaba,*[536] *IJN Yugumo;*[537] the Subchasers *CH-13,*[538] *CH-14,* [539] *CH-15,*[540] CH-26;[541] the submarines *I-7,*[542] *I-9,*[543] *I-21,*[544] *I-26,*[545] *I-31,*[546] *I-34,*[547] *I-35,*[548] *I-156,*[549] *I-168,*[550] *I-169,*[551] *I-171,*[552] *I-175,*[553] *RO-61,*[554] *RO-62,*[555] *RO-63,*[556] *RO-64,*[557] *RO-65,*[558] *RO-67,*[559] *RO-68,*[560] and the transports and supply ships *Argentina Maru*,[561] *Hakusan Maru*,[562] *Kikukawa Maru*,[563] and *Sakito Maru*.[564] Specific details of these visits, including dates of movements and purpose, where known, can be found in Appendix II. Given that the destroyers usually escorted transport ships, we can assume that additional ships would have reached Kiska at the same time. Indeed, a U.S. intelligence assessment noted the presence of a number of cargo ships in Kiska Harbor on or about the dates when Japanese destroyers are known to have reached the island.[565] This changed in the early months of 1943, when destroyers became the sole mode of transport, before being replaced by submarines. The shipping data have been collated in Fig. 55. As the exact number of ships per supply run is unknown,[566] the graph just shows the number of supply events per fortnight. All ships (or submarines) arriving on the same day are counted as one.

Immediately after the Japanese landings, U.S. submarines exacted a heavy toll on the Japanese. On 5 July USS *Growler* sank one destroyer and damaged two others (Appendix 2). Two weeks later, USS *Grunion* dispatched two submarine chasers to the bottom and another two weeks later damaged the *Kano Maru*, but was sunk in the same engagement. The successes of the U.S. submarines, despite the presence of sub chasers and reconnaissance planes, exposed the weakness of the Japanese defense of Kiska.

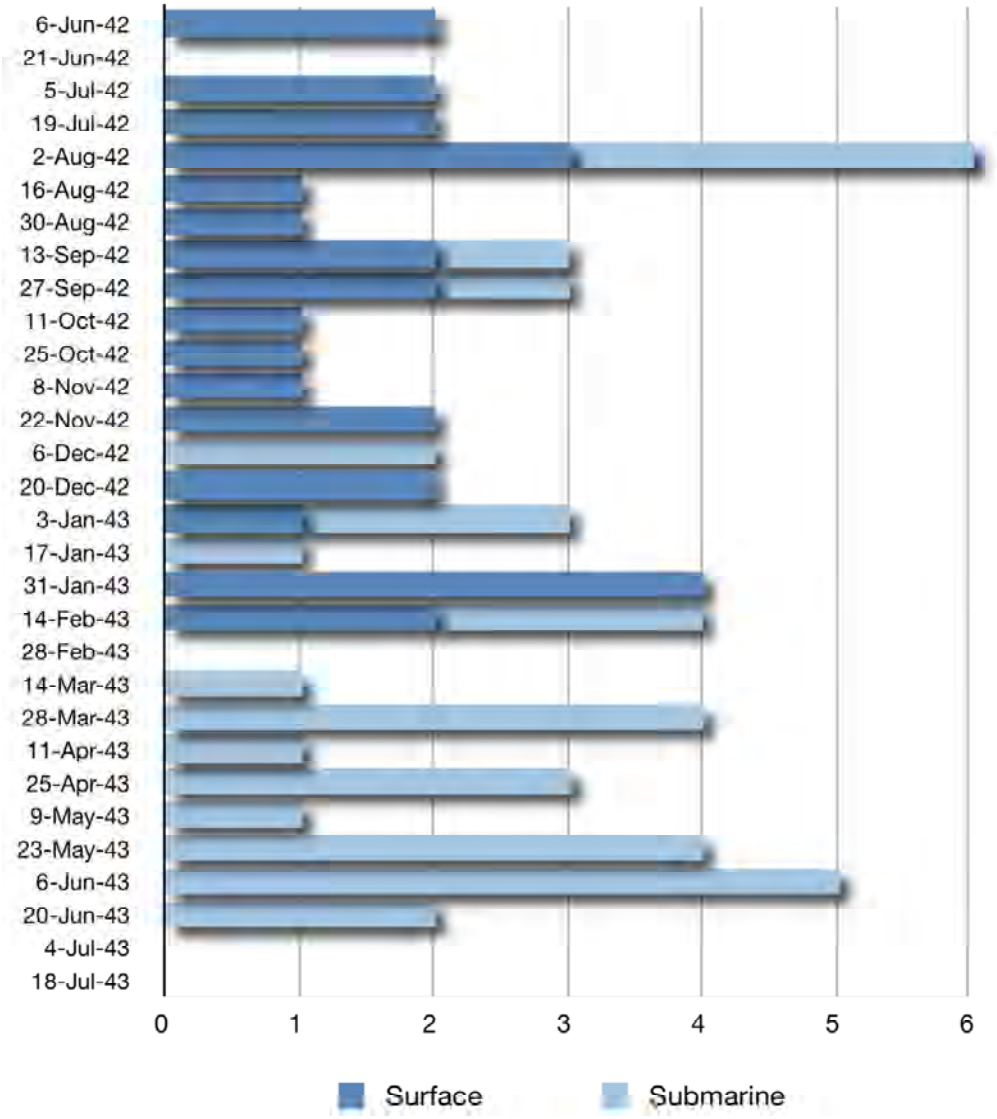
The presence of U.S. aircraft over Kiska and surrounding waters meant that a number of Japanese vessels also came under air attack. To counter balance this, ships entered Kiska at night and during periods of fog, escorted in by submarine chasers and smaller vessels. While it is not mentioned in the available sources, we can assume that the Japanese maintained a pilot service to safely guide ships to their anchorages and unloading locations.

Once the U.S. airfield on Amchitka became operational on 16 February 1943, with medium range B-25 bombers stationed there from 7 March onwards, the USAAF was able to strike all surface shipping, either as it stood in for Kiska, or while it was being unloaded in Kiska Harbor. The last surface vessels to come in belonged to a convoy

consisted of the destroyer IJN *Hatsushimo*escorting the IJN *Awata Maru* and IJN *Wakaba*, and possibly some additional transports, arriving 22 February 1943. Thereafter all supply runs had to be made via submarines (Fig. 55).

Given that Kiska had a large harbor, and given that the swell of the Pacific runs from east to west and thus moves objects into the harbor, it is somewhat surprising that the U.S. never attempted to mine Kiska Harbor by submarine, either using stationary or drift mines.[567]

Fig. 55. Frequency of supply events per fortnight



Sunk, or damaged and run aground on Kiska, were the supply ships *Borneo Maru*,[568] *Kano Maru*,[569] *Nissan Maru*,[570] *Nozima Maru*,[571] *Urajio Maru*,[572] the destroyer IJNS *Arare*[573] and the Subchasers CH-25[574] and CH-27.[575] In addition, the following vessels were sunk in the Attu and Kiska area while supplying Kiska: *IJN Nenohi,*[576] *IJN Oboro,*[577] *I-9*[578] and the transport *Montreal Maru*.[579] *I-157* was damaged in a supply run to Kiska (running aground near Amchitka), but could be refloated and return to Paramushiro without delivering her cargo of supplies or evacuating personnel.[580] *I-7* was damaged by gunfire from the destroyer USS *Monaghan* when the submarine entered

Gertrude Cove on a resupply run for the IJA garrison. When the boat left Gertrude Cove it was again shelled, damaged and beached east of the Cove.[581]

Table 14. Damage to and Losses of Japanese Shipping [582]

Date	Locations	Type[583]	Vessel	Cause	Damage
11-Jun-42	Kiska	DD	IJN *Hibiki*	aircraft	medium
18-Jun-42	Kiska	AO	*Nissan Maru*	aircraft	sunk
26-Jun-42	Kiska	DD	IJN *Kasumi*	?	medium
26-Jun-42	Kiska	DD	IJN *Seiranui*	?	medium
2-Jul-42	Anchorage Agattu	AP	*Fujisan Maru*	aircraft	minor
2-Jul-42	Anchorage Agattu	AV	IJN *Kamikawa Maru*	aircraft	minor
2-Jul-42	Anchorage Agattu	AG	IJN *Kimikawa Maru*	aircraft	minor
4-Jul-42	entrance to Kiska harbor	DD	IJN *Arare*	submarine	sunk
4-Jul-42	entrance to Kiska harbor	DD	IJN *Kasuni*	submarine	medium
4-Jul-42	entrance to Kiska harbor	DD	IJN *Shirabuni*	submarine	medium
14-Jul-42	outside Kiska Harbor	PC	Ch 25	submarine	sunk
14-Jul-42	outside Kiska Harbor	PC	Ch 27	submarine	sunk
30-Jul-42	12 nm from Kiska	AG	*Kashima Maru*	submarine	medium
8-Aug-42	Kiska	A-Cargo	*Kano Maru*	aircraft	run aground
15-Sep-42	Kiska	AG	Nozima Maru	aircraft	run aground
17-Sep-42	9mi 31° of Kiska	DD	IJN *Hatsugaru*	aircraft	minor
17-Sep-42	9mi 31° of Kiska	DD	*IJN Oboro*	aircraft	sunk
26-Sep-42	Kiska	SS	*RO-67*	aircraft	minor
8-Oct-42	Gertrude Cove	A-Cargo	*Borneo Maru*	aircraft	run aground
9-Oct-42	Kiska	PC	Ch 14	aircraft	minor
3-Nov-42	Kiska	SS	*RO-65*	aircraft	sunk
27-Dec-42	Kiska	AG	*Nichiyu Maru*	aircraft	minor
30-Dec-42 3-Jan-43?	Kiska	A-Cargo	*Urajio Maru*	aircraft naval battle?	run aground
5-Jan-43	53°26N 177°52E	C-Cargo	*Montreal Maru*	aircraft	sunk
13-May-43	Kiska	SS	*I-31*	?	sunk
11-Jun-43	off Attu	SS	I-24	sub chaser	sunk
13-Jun-43	off Attu		*I-9*	naval gunfire	sunk
22-Jun-43	Kiska	SS	*I-7*	naval gunfire	run aground

U.S. Submarine Activity

The overall performance of the U.S. submarines in interdicting Japanese supplies to Kiska was limited and as the Japanese occupation went on, the successes of the first days were not to be met again. One of the key parameters that limited submarine activity on both sides was the foul weather, both the strong and cold winds and the strong ocean swell, which posed problems for the operation of the smaller types of fleet submarines especially in the winter months.[584] The persistent fog merely compounded the problems, with many of the submarines unable to gain accurate fixes on their positions.[585]

Effect of the interruption of supply

A word of caution needs to be inserted here. While the U.S. were able to effectively interdict the supply to Kiska after the U.S. base on Amchitka had become operational, the Japanese had stockpiled large amount of food on Kiska. Thus, while the U.S. was successful of nearly starving to death a number of Japanese bases in Micronesia,[586] Japanese veterans returning from Kiska were being accused by their fellow countrymen as being 'fat.'[587] Indeed, food supplies were ample. In addition to supplies shipped in from Japan, the IJN and IJA had a policy of self-sufficiency to the extent possible and thus augmented and often replaced, their rations with locally grown food and locally caught fish. The IJA garrison at Gertrude Cove, for example, was lucky inasmuch as it had some soldiers who had been professional fishermen and were able to keep the troops in supply of fresh fish.[588] When the U.S. forces landed on Attu, they were astonished to find:

> "The Jap ration included dried squid, canned salmon, beans, rice, dried potatoes, canned emergency rations, duck, canned mandarin oranges, fresh fish, and seaweed. Strings of freshly caught cod were found. Very large quantities of fresh vegetables, dried foods, ammunition, blankets, rifles, charcoal, and clothing were captured intact in the Holtz Bay area. In fact so much in the way of supplies was captured that it would be logical to suppose that Kiska had been receiving supplies from Attu."[589]

In the Vise: The U.S. retake Attu

The increased U.S. air cover over Attu meant that the island, as well as Kiska, could no longer be reinforced with additional troops and war materiel. Japanese enforcements sent to Attu received a major blow on 19 February 1943 when USS *Indianapolis* and two destroyers intercepted the transport *Akagane Maru* carrying a platoon of troops and, importantly, materials for an airstrip on Attu.[590] The last Japanese reinforcements, sent as a major guarded convoy, reached Attu on 10 March, at which time the garrison numbered, 2,200.[591] Following the Battle of the Komandorskis on 27 March, when a U.S. cruiser force intercepted the second Japanese supply convoy and forced it back, the fate of Attu and Kiska was clear. Effectively cut of from supply convoys from the Japanese homeland, these bases could from now on be supplied by submarine only. Attu was a brief exception as it received supply runs by the destroyers *Kamikaze* and *Numakase* making two fast trips each.[592] Cut off from Japan and under continual air attack, it was only a matter of time until either of the islands was attacked by U.S. amphibious assault.

On May 11 U.S. forces landed on Attu and began the re-conquest of the island which lasted until 30 May. This is not the place to narrate this battle in any detail. Suffice to say, that the Japanese had entrenched themselves in the hills and allowed the U.S. forces to land largely unopposed. U.S. progress was slow and steady, but costly. While it had initially been assumed that Attu could be conquered in three days,[593] the invasion took three weeks. The landing on Attu was a costly U.S. assault in the Pacific, with 549 U.S. fatalities and 1,148 U.S. casualties due to wounds and trenchfoot.[594] Faced with annihilation, Colonel Yamasaki, who had reached Attu in April 1943 by submarine to take over command of the Army defense force on Attu, ordered in the night of 29 May the (in)famous all-out, no holds barred ('suicide') attack in the Battle for Engineer Hill. It eventually failed, with 600 Japanese, including Colonel Yamasaki, dead.

The U.S. forces lost no time in developing airfields on Attu and on nearby Shemya.

Japanese Evacuation

The Japanese government, which had ordered Colonel Yamasaki to defend Attu to the end, generated much public sympathy for the stand of the Attu defenders, publicly, for the first time, labeling such a 'heroic' act *Gyokusai* (玉砕).[595] The Japanese government extolled the values of the ultimate sacrifice rendered and, later in the year, provided a state ceremony for the fallen. The government was now caught in a vice as the fall of Attu followed soon after the death of Admiral Yamamoto on 19 April 1943, which was a blow to military and especially public morale, as he had been built up in the media as the architect of the Japanese military successes in the Pacific. Now the government could ill afford another major negative news item.

The U.S. landings on Attu changed the balance of power in the Aleutians. The *Kimikawa Maru's* final run in May 1943, transporting eight *Reikan* and two *Suisen* was aborted after the U.S. landings as Attu was no longer available as a staging point to ferry planes to Kiska.[596] As a direct consequence, the plans of redeploying a reorganized 452nd Kōkūtai back to the Aleutians were shelved, and from July 1943 the 452nd was instead based at Beppo-numa, a water body on Hokkaido.[597]

The fact that Attu and not Kiska had been attacked first was not lost on the Japanese military strategists, even while the Battle for Attu was still raging. An airfield on Attu meant that Kiska could be shuttle bombed by planes departing from Amchitka, bombing Kiska, refueling and rearming on Attu and returning to Amchitka with another bombing run over Kiska. More importantly, though, a U.S. airfield on Attu would effectively negate *any* hopes that the Japanese may have held of supplying the Kiska garrison.

In mid-May 1943 the Japanese headquarters held a major staff conference to consider its overall strategic position. Following the death of Admiral Yamamoto, Admiral Koga took over as CiC Combined Fleet,[598] thus influencing naval strategy.[599] Koga believed that the only chance of delivering a decisive blow to the U.S. Navy rested in a decisive naval engagement and did not wish to be held down in a defensive posture.[600] He argued that Kiska could serve as a base to deliver the opportunity for this engagement. While the IJN advocated that the Kiska garrison fight to the last man, the IJA, which had intelligence from Attu, argued that it "would be a waste of manpower if there was no prospect of ultimate success of the Northern Operations."[601] The IJA's view won out. One can assume that had the U.S. assault on Attu occurred two or three weeks later, the Japanese headquarters would have committed itself to a different and ultimately much more costly strategy.

As Kiska had become essentially untenable, the Japanese strategists decided to evacuate the island initially by submarines. On 21 May, the Imperial High Command ordered the evacuation of the Aleutians,[602] followed by an Imperial Directive 23 May which ordered to commence the evacuation of Kiska by submarine.[603] An evacuation by surface fleet was planned subject to favorable fog conditions.[604] As that could not be guaranteed, all evacuation submarines transported as much ammunition for anti-aircraft guns and food for the Kiska troops as they could carry.[605] Between 21 May and the final evacuation on 28 July, the IJN allocated 13 large fleet submarines under the command of RAdm Takerō Kōta.[606]

Lost in the operations were *I-24*, sunk on 11 June when rammed off Attu by the U.S. sub-chaser *PC-484*, and *I-9,* sunk by the destroyer USS *Frazier* on 13 June off Attu.[607] Even though the Japanese submarine command considered these losses as too high and wanted to call off the resupply, the Japanese High Command was determined to press on.[608] The loss of *I-7* on 22 June, a large boat commonly used as a squadron

flagship, was particularly bitter. That loss precipitated the final termination of all resupply attempts by submarine. The last boat to sail, *I-169*, arrived at Kiska in late June.

The evacuation force initially departed Paramushiro 7 July 1943 but the mission had to be aborted on the 14th because of lack of fog cover and the suspected presence of U.S. forces. On 22 July 1943 the fleet sailed again.[609] After collisions *en route* required sending home some vessels, the remaining fleet made a dash for Kiska on the 27th, using radio beacons from Kiska to navigate in thick fog. The fleet of eleven ships, HIJMS *Abukuma,*[610] the light cruiser HIJMS *Kiso*, eight destroyers and the transport *Awata Maru*, approached the Harbor at about 13:16 local time on 28 July 1943, dropping anchor at 13:50.[611] Landing barges and boats immediately transferred the garrison forces to the ships who went "aboard in orderly fashion and in fine spirits."[612]

We have in hand some original sources, both derived from interrogations of Japanese officers by the U.S. forces[613] as well as later recollections.[614] The most senior interrogation with reliable details on the situation on Kiska comes from IJN Commander Mukai Nifumi, who from 1 May to 30 June 1942 was the commanding officer of the Special Naval Landing Force which occupied Kiska. From 1 July 1942 to 30 July 1943 he was Senior Officer of the Kiska Defense Force.[615] According to his testimony at interrogation, the entire evacuation took about an hour. According to IJN Commander Miura, then Air Officer on the staff of Commander Fifth Fleet (but not an eyewitness), the evacuation of all troops took about half an hour.[616] The reported timing seems to be subjective, based on which part of the evacuation fleet is referred to: as according to an ensign present aboard one of the destroyers, the ships of the nº2 Transport Unit[617] were loaded by 14:20 and stood out of the harbor, while the vessels of nº 1 Transport Unit[618] followed soon after.[619] Be it as it may, in less than one hour the evacuation of 5,183 Imperial Japanese Army and Navy personnel was complete.[620] All vessels returned undetected to Paramushiro. With some troops taken to Shimushu.[621] An additional 870 troops, in particular those wounded and specialists such as aviators and submariners, had already been evacuated via submarines in the weeks leading up to the 27th of July.[622]

Given the great speed with which the evacuation was effected it is clear that any gear and equipment that was also removed had to be carried by personnel. According to Commander Miura's testimony, himself not an eye witness, "no equipment or supplies were taken aboard, just personnel."[623] The war diary of an ensign aboard one of the destroyers of nº 2 transportation unit does not make reference to any major equipment being carried aboard.[624] Two soldiers, for example, normally carried the 7.7mm machine gun, on poles. It is possible that such weapons could have been removed in the evacuation and then ditched in the harbor, as were the rifles and bayonets.[625]

One wonders what happened to Daihatsu landing craft that were used to ferry the troops to the ships. According to an eyewitness, some of the ships had brought 20 landing craft which combined with the garrison's 19 craft made up the ferry fleet.[626] As there were eight evacuation ships in the fleet we can assume that there would have been at least eight Daihatsu that made the final run to each vessel. Given the speed of evacuation, it made little sense to salvage them by hoisting them aboard. Just jettisoning them and letting them float in the harbor would have potentially endanger the evacuation fleet and most certainly would have hampered the fleet's ability to maneuver. Thus it is most probable that they were scuttled.[627] Indeed, a U.S. photographic intelligence assessment noted that in the first week in August there were "ten or twelve less barges than usual in the Kiska Harbor area."[628]

Major equipment and supplies had to be left behind,[629] and for the most part had been made unusable.[630] Indeed, the U.S. intelligence investigating the plane strength on Kiska found that the engines they encountered lacked vital parts, or where they were present, were extremely decayed.[631] None of the aircraft had any of their guns fitted,[632] and all instruments were missing as well. Some instruments and carburetor parts were found in the instrument and electrical shop, but smashed to pieces. Other items were found buried in a ravine and in a streambed nearby.

The evacuation of Kiska was certainly well prepared by *some* units. On 8 June 1943 the Japanese destroyed the midget submarine base: two of the midget submarines in the harbor were blown up with demolition charges and one with torpedo warheads. The three midget submarines in the maintenance shed were also demolished. Between 29 June and 9 July 1943 the equipment in the submarine maintenance shed and all surrounding installations was destroyed and 20 Type 98 torpedoes were dumped into the harbor.[633] The U.S. photographic intelligence assessment in early August notes that a number of buildings at the submarine base had been either demolished or destroyed.[634] Even though this level of change and removal of viable buildings is much higher than anywhere else on Kiska, U.S. intelligence did not find this suspicious.

WHY DID THE U.S. FORCES NOT REALISE KISKA WAS EVACUATED

This leads to the vexing question, why U.S. forces kept attacking Kiska for three weeks after the Japanese had evacuated, and the U.S. and Canadian forces eventually invaded an essentially abandoned Kiska (p. xxii). As will be shown below, the invasion resulted in an appalling level of casualties caused by friendly fire and other incidents.

On the day of evacuation, the U.S task group, normally on patrol southwest of Kiska, was engaged in refueling and had left its station. The destroyer patrol that normally covered Kiska at a radius of 40nm, had been withdrawn on 27 July and was only resumed on 30 July, two days after the Japanese had left. On the day the Japanese evacuated, heavy fog hampered air patrols. The U.S. was effectively blind sided, with the exception of submarine patrols. While the *Abukuma* spotted a U.S. submarine, the submarine did not see the *Abukuma* —and the Japanese got away undetected.[635]

But why did the U.S. intelligence not notice that the Japanese had left? After all, there were a number of signs that matters were different from the standard pattern of Japanese activity. For example, a comparison of aerial photography for the period 27 July to 4 August 1943 showed that:

- the radio stations had been removed or destroyed
- the two RADAR sets had been damaged, or were being dismantled
- bomb hits on the runway had not been filled in; and
- other buildings in the Main Camp area had been destroyed without any evidence of bombing.

The photographic intelligence report specifically notes that

> "It is significant that most of the buildings affected show no evidence of having been bombed or shelled. In these cases the revetments are not damaged nor disturbed in any way and no recent bomb craters or shell holes are observed nearby. Considerable debris is seen but it is wholly within the revetments. In previous cases of building destruction by bombing or shelling the debris had been rather scattered over the surrounding area. The exact manner of this destruction or removal, and the reason therefore, it not apparent.

> It is also significant that the photos of August 2nd and August 4th show all the trucks in identical positions but show ten or twelve less *[sic]* barges than usual in the Kiska Harbor area."[636]

Despite repeated comments by pilots reporting no activity, as well as commentary by aerial photography interpretation which had noted that neither trucks nor small vessels had moved for a while, and despite the fact that Kiska radio, which had been very active for the previous couple weeks, had fallen silent on 28 July, U.S. planners did not wish to believe that the Japanese had indeed left. It was believed that the Japanese had been cunning and had entrenched themselves in the hills, as they had on Attu, and that they were all merely lying low. As the evidence mounted that Kiska had indeed been abandoned, it was seen as too late to reverse the decision. Requests by Holland Smith, USMC, to send in some scouts to reconnoiter the situation were refused by Kincaid. If indeed the enemy had evacuated, Kincaid argued, the troop landings would nevertheless "be a good training exercise, a super dress rehearsal, excellent for training purposes."[637]

After the fall of the Aleutian bases, the Japanese propaganda argued that the garrisons had successfully achieved their war aims, such as camouflaging the fortification of the Kuriles, as a first line of defense.[638]

Fig. 56. 1970s Mexican Cinema Lobby Card of the 1965 movie 'Taiheiyo kiseki no sakusen: Kisuka'.[639]

THE EVACUATION IN POPULAR CULTURE

The Japanese withdrawal from Kiska certainly spurred the public imagination in Japan, and continues to do so. A search of Japanese language websites relating to Kiska shows a preponderance of sites that detail Operation KE and its tribulations. In 1965, Seiji Maruyama directed the film 'Miraculous Military Operation in the Pacific Ocean, Kiska'[640] with Toshirō Mifune in the starring role as Major General Omura.[641] The title of the film clearly encapsulates the Japanese perception of the events. Not surprisingly, the title was adjusted to 'Retreat from Kiska' when it was shown in the Anglophone world, where, as far as can be ascertained, it was only screened on television.[642] Intriguingly, however, the film was also distributed in Latin America by Continental Films SA.[643] Surviving lobby cards show that the film was screened in cinemas in Mexico, now under the title 'Los Heroes de Kiska', presumably with Spanish subtitles (Fig. 56).[644]

Table 15. Losses incurred by the Japanese during the Aleutian Operation.[645]

	Attu	Kiska	Aleutians	Total
SHIPS				
Destroyers[646]	2	1	—	3
Subchasers[647]	—	2	—	2
Fleet Submarines, Class A (I-xx)[648]	2	2	—	4
Fleet Submarines, Class B (RO-xx)[649]	—	1	1	2
Midget Submarines, Class C (HA-xx)[650]	—	8	—	8
Transports[651]	3	5	2	10
Total	7	19	3	29
AIRCRAFT				
Aichi D3A ('Val')	—	—	2	2
Aichi D13A1 ('Jake')	2	23	1	26
Kawanishi H6K 2 ('Mavis')	—	3	—	3
Mitsubishi A6M2('Zero')	—	—	2	2
Mitsubishi F1M2 ('Pete')	—	15	—	15
Nakajima A6M2-N ('Rufe')	8	49	7	64
Nakajima B5N9 ('Kate')	—	—	2	2
Nakajima E8N2 ('Dave')	—	—	4	4
Total	10	90	18	118
PERSONNEL (killed)				
Air crew	?	~150	10	~160
Ship Crew	478+	250	540	1268
Submariners	101	206	164	471
Army Garrison	2351	~250	—	~2601
Navy Garrison	?	~260	—	~260
Total	~2930	~1116	714	~4760
PERSONNEL (captured)				
Air crew	—	—	5	5
Ship Crew	—	—	—	—
Submariners	—	—	5	5
Army Garrison	27	—	—	27
Navy Garrison	—	—	—	—
Total	27	0	10	37

The Cost

It is worth to briefly tally the total costs of the Aleutians operation for the Japanese (Table 15).[652] While the data for equipments (ships, aircraft) can be compiled with relative certainty, data on Japanese fatalities are difficult to come by. In total, the losses were 19 naval combatant units and 10 transports and almost 120 aircraft. The total number of fatalities amounted to some 4800 personnel, only 40 of which had been taken Prisoners of War. The majority of fatalities occurred during the battle of Attu, followed by crews of ships and submarines. Loss of life due to aerial bombardment was low. Indeed, when assessing the effectiveness of the U.S. bombing efforts, the U.S. Strategic Bombing Survey expressed disappointment that the losses of the Kiska garrison due to bombing were only between 5% and 7%.[653]

U.S. / Canadian occupation of Kiska

Given that Kiska was effectively bypassed and cut off from Japanese supplies, with U.S. airfields, and concomitant land-based air cover, on Amchitka and Attu, and later on Shemya, it would have been suicidal for Japanese forces to attempt a counter attack. Thus, a good case could be made to just leave the Japanese there and to move on with the war, as stated by the official Canadian history of the war:

> A strong case could have been made for leaving the Japs to freeze in their own juice on Kiska and Attu, where they were at most a nuisance to American operations in the Pacific. However, their presence naturally worried the inhabitants of Alaska, British Columbia and the Pacific Coast states, and there was thus a "political" motive for ejecting them.[654]

During the period of the Japanese occupation, the USAAF flew 5,318 missions against Kiska and Attu, dropping 4,331 tons of bombs.[655] As will become clear in subsequent pages, the bombardment was not very precise and thus not very effective. Indeed, although the aerial bombing had undermined the Japanese ability to develop Attu and Kiska unfettered, aerial bombing alone had not subdued the Japanese, let alone forced them to abandon their foothold. It took the US landings on Attu to achieve this.

Indeed, this bypass of Japanese garrisons became the pattern in the Central Pacific in early 1944, when Majuro, Kwajalein and Eniwetok were taken by U.S. forces, but the heavily defended Japanese airbases on Jaluit, Mile, Wotje, Maloeap and Wake were stripped of their planes and then left to their own devices.[656] The war then moved on, and even the largest Japanese naval and air base, Chuuk Lagoon (Truk), was subjected to a concerted carrier attack, stripped out its airpower, and then bypassed. This strategy achieved two aims: it forced the Japanese command to dedicate a number of resources and assets, usually submarines to keep on supplying these bypassed bases; and it saved U.S. lives and equipment, which were not sacrificed to what was effectively a strategically insignificant territorial gain.

The strategic concept of bypassing key Japanese bases, however, had not been developed by mid-1943. In addition, the U.S. invasion of Kiska, and later the re-conquest of Guam, have to be seen also a political exercise. It would have been difficult for the U.S. decision makers to justify the continued presence of an enemy occupation force no matter how ineffective and inconsequential, on U.S. soil.

Planning and Preparations

By April 1943 plans were being drawn up to also retake Kiska. In May 1943 the Canadians were invited to participate as "the presence of Japanese in the Aleutians could be considered a threat to continental security"[657] Canada formally agreed to her participation on 3 June 1943.[658] Detailed planning for the retaking of Kiska (Operation 'Cottage' in U.S. terms and Operation 'Greenlight' in Canadian terms) progressed rapidly.

Fig. 57. The final conference prior to the invasion of Kiska.[659]

Fig. 58. The final pre-invasion conference. Note what appears to be a three-dimensional latex model of Kiska mounted on the wall.[660]

The Canadian force, built around three combat teams that had combined from various elements, started training by 18 June in order to be ready for embarkation to Adak by 10 July 1943. As this was the first major joint U.S. /Canadian amphibious assault, the Canadian forces elected to standardize with a certain number of U.S. equipment, e.g. the 75mm mountain guns, to reduce confusion and reduce the size of the supply train required. The Allied invasion is significant as it was the first time that Canadian forces were involved in joint large-scale combat operations with U.S. forces.[661]

Immediately after arrival on Adak both forces started familiarization training under Aleutian conditions, while the overall command started to integrate the USA and Canadian forces. As will be outlined below, that integration was not sufficient and led to mistakes in the field that cost lives through friendly fire. A final training exercise, a rehearsal amphibious assault was carried out on Great Sitkin on 3-7 August.

A combined U.S./Canadian contingent, the First Special Service Force, was dropped off at Amchitka to prepare for the Kiska invasion.[662]

Intelligence

After the U.S. landed on Attu, the intelligence analysis for Kiska underwent a shift. Until then aerial coverage had been limited to the core areas and concentrations of Japanese development, *i.e.* Kiska Harbor, Gertrude Cove and Little Kiska. From then on the U.S. began to seriously look at the presence of Japanese defenses and personnel elsewhere on the island, cataloguing the presence and development of trenches and the like.[663] Jeff Cove and Mutt Cove had already been frequently covered through runs that targeted the IJA concentration at Gertrude Cove. Now was the time to consider other, smaller landing beaches, such as Sargent Cove on the southern shore of South Head. A systematic intelligence assessment of Kiska, but also of Segula Island, was made in late June and the first half of July 1943, when Navy PBYs were tasked to fly the coastlines at very low altitudes (as low as 100 feet) to obtain oblique images with the aim of detecting any gun positions that had been concealed from vertical imagery.[664] These augmented vertical imagery that had been shot earlier. As a result beach defenses, mainly wire entanglements or machine gun positions were noted at Witchcraft Point, Cotton Cove, Wheat Cove, Lilliput Cove and Vega Point, Chicken Cove, Turkey Cove. Additional activity was observed at Summer Cove and Spring Cove.

In late June 1943 the USAAF shifted its focus from the Navy installations at Kiska Harbor to the Army base at Gertrude Cove.[665] While the early part of the bombing had essentially been directed at suppressing the Japanese ability to launch seaplane and submarine patrol operations from Kiska, the refocused strategy now aimed at reducing their ability to defend the island from the planned U.S. attack.

Also in preparation of the landings, the U.S. examined a possible presence on Segula, but only located "[t]he trappers cabin and *barabara* at Zapad Head" as well as the survey monument put up by USS *Oglala* in 1935.[666]

Naval shelling in preparation of the landings

In addition to aerial bombardment there was also some preparatory naval shelling of the installations on North Head and Little Kiska. A number of destroyers fired 100 rounds each, with little resultant destruction. The main aim of this shelling, it seems was to create a psychological effect that the U.S. Navy was controlling the waters off Kiska and was keeping watch, blockading the Kiska garrison.[667]

A major bombardment occurred on 22 July when two task groups commanded by Rear Admiral Robert C. Giffen (Task Group George, Centered in the cruiser USS *Louisville* and Rear Admiral Robert M. Griffin (Task Group Gilbert, centered on battleship USS *Mississippi*) attacked. The battleship group approached from the north and the cruiser group from the south. Army planes bombed the island during the approach. Task Group George approached from the south and fired on the main camp area and Little Kiska for 21 minutes while Task Group Gilbert approached from the north and fired for 18 minutes on batteries at North Head, South Head, Sunrise Hill, and the submarine base. In total some 2800 lb of shells were fired (Table 16), many of which were duds. No enemy batteries fired on Task Group George. Only one battery, composed of four 75-mm, was believed to have directed fire at Task Group Gilbert.[668]

Table 16. Chronology of Naval Shelling July-August 1943[669]

Date	Ship(s)	Rounds	lb
9 July	DD *Aylwin*	100	
10 July	DD *Monaghan*	100	
14 July	DD *Monaghan*	100	
15 July	DD *Monaghan*	100	
20 July	DD Aylwin DD Monaghan	100 100	
30 July	DD *Farragut* DD *Hull*	100 100	
22 July	TG George TG Gilbert		1719 1084
2 Aug	TG Baker TG King		1,261 1,051
12 Aug	TG Baker	1,607	
2 -15 Aug	DD *Abner Read* *DD Aylwin* *DD Farragut* *DD Hull* *DD Monaghan* DD *Phelps*	994	

On the afternoon of 2 August, Task Group Baker (Rear Admiral Wilder D. Baker) and Task Group King (Rear Admiral Howard F. Kingman) carried out a combined bombardment, the former from the south, the latter from the north.

Table 17. Quantity (lbs) of shells fired on Kiska on 22 July, 2 and 12 August 1943 by Task Groups Baker George, Gilbert and King

	22 July		2 August		12 Aug
Caliber	TG George[670]	TG Gilbert[671]	TG King[672]	TG Baker[673]	TG Baker[674]
14-inch HC		123 lb	120lb		
8-inch HC	345 lb	63 lb		250lb	85 rds
6-inch HC	300 lb			605lb	450rds
5-inch 51 cal HC		272 lb			
5-inch 38 cal AA	942 lb	615 lb			
5-inch 25 cal AA	132 lb	1145 lb			
5-inch			931lb	406lb	1072 rds
	1,719lb	2,218lb	1,051lb	1,261lb	1,607 rds

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

Additional bombardments were executed between 2 and 15 August by the destroyers USS *Abner Read,* USS *Aylwin,* USS *Farragut,* USS *Hull,* USS *Monaghan,* and USS *Phelps.* A total of 994 rounds of 5-inch ammunition were expended. The final battleship shelling occurred on the day of the landings.

> "In the early morning hours of 15 August 1943, *Tennessee* ... approached Kiska as troops prepared to assault the island. At 0500, the ship's turret guns began to fire at coastal-battery sites on nearby Little Kiska as the 5-inch guns struck antiaircraft positions on that island. The 14-inch guns then shifted their fire to antiaircraft sites on the southern side of Kiska, while the secondary battery turned its attention to an artillery observation position on Little Kiska and set it on fire. The landing force then went ashore, only to discover that nobody was home."[675]

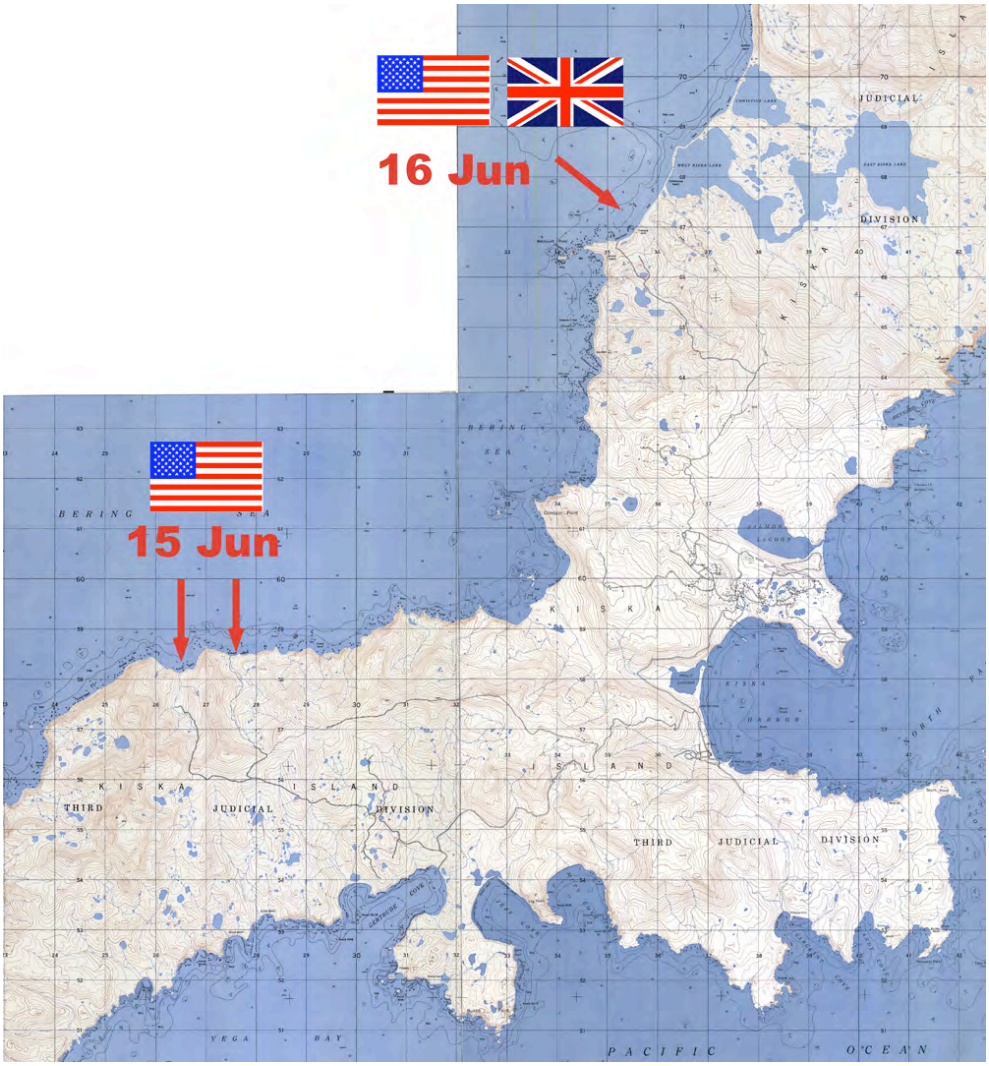


Fig. 59. The invasion beaches on Kiska

Landings

The invasion force embarked on 9 August, but the ships remained in Adak Harbor until 11 August (See Appendix 6 for the Order of Battle).

For the purpose of invasion, the island was divided into two sectors. The dividing boundary between the north and south sector areas was a line from Swallow Rocks in Beach Cove, on the north side of the island, through Middle Pass to a point about a mile south of Trout Lagoon on Kiska Harbor.

The plans for the invasion of Kiska saw the landing occur on two days:

- On D-Day, 0620 hours, U.S. forces comprising Tactical Groups 87 and 17 would be landing at Beach 9 (Quisling Cove) and Beach 10 (the mouth of Lilly Creek). Their objective was the hilly area of Leather Hill and Lawson Hill overlooking the enemy positions around Gertrude Cove.
- On D+1 the northern force, Tactical Group 184 (US) and Tactical Group 13 (the Canadians) would be landing at Beach 14, immediately to the north of Witchcraft Point. Their objective was to seize the high ground, Ranger Hill, Riot Hill, Rex Hill and Morgan Hill in preparation for the assault south into the Kiska Harbor area.
- The 2nd Regiment of the 1st Special Landing Force was to stand by on Amchitka and carry out an airborne (parachute) assault if needed.

The landing force arrived off the northwestern shore of Kiska at 01:20 in the morning of August 15th and the first troops, comprising the combined U.S.-Canadian Special Service Force, were put ashore by rubber boats at each of the beaches. Both the landings on the southern and northern beaches went without major incident[676] under generally favorable weather conditions.[677] Setting aside the issue of friendly fire casualties, the troops swiftly moved across Kiska and took possession. The Canadian and U.S. forces on the southern beaches also swept south, with those on the northern beaches sweeping the northern part of Kiska, looking for hidden contingents of Japanese. But all they found were a number of abandoned defensive positions of small artillery which had been readied by the Japanese in preparation of a possible U.S. landing that had to be defended. By the end of the first day it had become quite evident that the island was deserted.[678] Despite this, the landings on the northern beach went ahead as planned.

By the second day, Canadian patrols had penetrated to the main camp area and had ascertained beyond doubt that the Japanese had left. Kiska Harbor was ready to receive the invasion fleet. Thus, unloading of supplies at the landing beaches soon stopped as now all equipment could be safely landed at Kiska Beach in Kiska Harbor—and as this was the final destination of the supplies.

Losses due to friendly fire

On the first day alone, a total 26 soldiers died from friendly fire and another four from booby traps and land mines, another 50 soldiers were accidentally shot or wounded by booby traps.[679]

The level of friendly fire casualties was nothing short of appalling (Table 18. The adverse Kiska weather played a major role as the post-operation report noted:

> Much of the time visibility was extremely limited and recognition of our own troops was impossible beyond five to ten yards. Because of the high wind, voice recognition was impossible and patrols 15 yards apart could not tell when they had been challenged.[680]

Subsequent studies suggested that none of the major elements of the invasion forces had properly trained together, and that much of the training that had been done, had focused on the squad and platoon level, rather than the regimental level.[681] None of the training included identification and communication with friendly forces,[682] even though this had been part of military doctrine and even though it had been highlighted as a major problem during the invasion of Attu.[683] The lack of procedures and combat training in adverse weather conditions caused bizarre situations. One infantryman, for

example, continued to engage an 'enemy' patrol, even though members of that patrol shouted at him to stop. When he began to throw grenades he was shot down.[684]

7TH SPORT ed. NIGHT FINAL 88TH YEAR

THE CALL BULLETIN

EXTRA

SAN FRANCISCO, SATURDAY, AUGUST 21, 1943 5c DAILY

KISKA TAKEN!

SIBERIA ALASKA

Yanks And Canadians Land; Find Japs Gone

By JACK VINCENT

WASHINGTON, Aug. 21 (INS).—The Navy announced today that United States and Canadian troops have captured Japanese-held Kiska Island in the Aleutians without opposition, marking the first time in the history of the war that the Japs have turned tail and fled without fighting.

ITALY UNDER Japs First,

Fig. 60. Front page of the Extra Edition of the San Francisco Call Bulletin of 21 Aug 1943.[685]

Fig. 61. American and Canadian Flags flying at Beach 14.[686]

While the overall casualties for Kiska pale to insignificance, compared to the losses at Attu, where 549 soldiers were killed and 1,148 were wounded, we need to remember that almost all of the casualties on Kiska were totally unnecessary as the island had been abandoned. There had been mounting evidence that the Japanese had evacuated, which could have been readily investigated by landing a small group of scouts to reconnoiter the area.

Table 18. Casualties of the Kiska Operation[687]

	US		Canadians	
	Killed	Wounded	Killed	Wounded
Friendly Fire	11	⎫		1
Mines	⎫	⎪	1	⎫
Booby Traps	⎬ 17	⎬ 50	1	⎬ 3
UXO	⎭	⎭	2[688]	⎭
USS *Abner Read*	71	34		
Total	99	84[689]	4	4

The Kiska Garrison

U.S. strategists had drawn up a range of plans for the future of Kiska once the island was secured following the amphibious assault.[690] Above all, the island had to be denied to the Japanese. A garrison of U.S. Army troops would ensure that Kiska remained in U.S. hands. Like the Japanese, the U.S. Navy assumed that Kiska Harbor was a protected environment suitable for large-scale seaplane operations. Also, Kiska could become a major staging base for any future military operations down the Aleutian Chain, a day's sail closer to Japan than Adak, yet unlike Attu, without being exposed to air attacks originating from the Japanese home bases such as Paramushiro.

While Gertrude Cove became a major supply storage area (Fig. 62, Fig. 63), Kiska Harbor was developed into an Army and Navy Base with soldiers encamped in various areas. The history of the physical development of the U.S. occupation is set out in more detail in Chapter 4.

The following extracts from the Canadian war report, however, illustrate the conditions very well:

> The work of erecting tents and "winterizing" them claimed priority over all other tasks. As it was expected that Quonset [sic] or Pacific Huts would be issued at a later date, all excavations for tents were made large enough to accommodate a 36-foot hut. In these dugouts, protected from 80-mile-an hour "Williwaws" by 5-foot revetments, the American pyramidal tents were set up - usually in pairs....an early November gale that was estimated to run to gusts of 110 miles per hour, flattened close to thirty tents in the lines of one exposed unit at the top of Salmon Pass The one Pacific Hut issued per unit was definitely earmarked for orderly room or recreation room, so that all ranks were apparently destined to continue to sleep in tents during their stay on Kiska.
>
> While a small coal heater in each tent provided cheerful warmth, lighting facilities were in the main restricted to a limited supply of candles. Some units were fortunate enough to resurrect old Japanese generators, whose fitful current supplied a rather wavering but definitely appreciated illumination, but an impending famine in light bulbs, which had a high rate of mortality in the storm-battered tents, threatened an enforced return to the universal dimness of candlelight.[691]
>
> The mass of snow that fell during the last week of December and the first week of January' flattened tents or drove tent poles many feet into the soft ground. Two U.S. soldiers died when a Pacific Hut collapsed under the weight of the snow, and another lost his life in a terrible blizzard that swept the island on Christmas night.[692]

Fig. 62. Aerial view of Gertrude Cove area in August 1943, with landing craft on beach and tents going up on nearby hillside in an area of former Japanese installations.[693]

Fig. 63. Aerial view of supplies landed in Gertrude Cove, Kiska Island, August 1943.[694]

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

Table 19. Chronology of Administrative Actions regarding Kiska Island, Aleutians after the Japanese evacuation[695]

Date	Event	Note
28 Jul 1943	Japanese forces evacuate Kiska	696
15 Aug 1943	U.S. and Canadian forces land on Kiska	697
15 Aug 1943	U.S. Command on Kiska established	
17 Aug 1943	US-Canadian 1st Special Service Force re-embarks and leaves Kiska	698
24 Aug 1943	U.S. forces declared Kiska'secure'	
25 Aug 1943	U.S. Army Post Kiska established	699
11 Sep 1943	Naval Auxiliary Air Facility Kiska commissioned as part of the Adak Sector of the Seventeenth Naval District	700
23 Nov 1943	First Canadian forces withdraw from Kiska	701
9 Dec 1943	Kiska reserved for military purposes by the Navy	702
1 Jan 1944	Construction of Naval Auxiliary Air Facility Kiska completed	703
7 Jan 1944	Canadian forces complete withdrawal from Kiska	704
30 Jun 1944	Construction of U.S. Army Facility Kiska effectively completed	705
	U.S. Army Air Force field (on completed Japanese runway) commissioned	706
	U.S. Coast Guard Racon station commissioned	
19 Sep 1944	Naval Auxiliary Air Facility Kiska decommissioned	707
1945	U.S. forces finalize withdrawal from Kiska	
25 Aug 1945	U.S. Army occupation Kiska ends	708
	U.S. Coast Guard presence on Kiska ends	
19 Sep 1946	U.S. Army declares all improvements on Kiska and Little Kiska as surplus	709
19 Jan 1949	U.S. War Assets administration abandons and relinquishes all interest in all improvements on Kiska	710

Japanese reactions to the U.S. landings

After the U.S landing on Attu, the Japanese carried out an occasional, long-range bombing mission against the U.S. forces stationed there. The last such mission occurred on 13 October 1943. These had little effect and were more of a harassment value.

The Japanese reaction to the landings was largely confined to Radio Tokyo poking fun at the U.S. landings, given that the Japanese forces had long departed. No direct military action against Kiska is on record. During the U.S assault on Attu, the Japanese carried out long-range bombing raids from Paramushiro on 14, 24 and 24 May. As far as can be ascertained, none of these planes were shot down even though the last raid was intercepted by P-38.[711]

However, the annual sanitation report by NAAF Kiska for 1943 contains a reference to a body of a Japanese flyer that had been washed up at the shore of Little Kiska in early November 1943.[712] The brief note makes no reference to the state of decomposition, and whether the dead flyer had been wearing a kapok life jacket. Given that the last event of a Japanese pilot shot down in action (that we know of) occurred on 19 February 1943,[713]and given that all remaining Japanese pilots had been evacuated by submarine in early April 1943 (p. xxii), it is unlikely that that the body belonged to an aircrew member of the 452nd Kōkūtai .[714] It is more probable that the body belonged a

flyer that had crashed at sea in the week or weeks before being found. In addition, to the attacks on Attu, the Japanese flew reconnaissance missions of the area using land-based attack planes[715] on 25 August, 2 September and 20 September 1943. The last mission, sent to Attu, was followed by a bombing run of eight planes on 14 October 1943, dropping bombs on Attu.[716] The body of the pilot could have come from one of these missions or could have belonged to a pilot of a small reconnaissance plane launched from a Japanese submarine sent to reconnoiter Kiska after the U.S. landings.

U.S. /Canadian Withdrawal

While some forces were based on Kiska as a garrison to staff the U.S. Army Post Kiska which was formally established on 25 August 1943, the draw down of some troops occurred as soon as feasible.

The joint US-Canadian 1st Special Service Force, for example, a crack force that was required for other operations, re-embarked a couple of days after the landing and returned immediately to the U.S. mainland, arriving at Fort Ethan Allen, VA, on 9 September for R&R and onwards to deployment to Italy.[717] Likewise, the 184th Infantry Regiment was withdrawn almost immediately, being moved to Schofield Barracks, Hawaii, where it arrived in September of 1943.

The 13th Infantry Brigade Group remained on Kiska for more than three months, living in "winterized" tents, and engaged in road and pier construction, transport activities, building and manning defenses. The withdrawal to British Columbia began in November 1943. The last shipload of Canadians left Kiska on 12 January 1944.[718]

The 87th Mountain Infantry Regiment left in December 1943.[719]

On the navy side, the Naval Auxiliary Air Facility Kiska was commissioned as part of the Adak Sector of the Seventeenth Naval District on 11 September 1943.[720] Yet, just as the Japanese had struggled with the weather conditions in Kiska Harbor, so did the U.S. Navy. The harbor was not well protected for the operation of seaplanes. Less than a month after the commissioning of NAAF Kiska, it was recommended to scale down the operations to a bare minimum, essentially only a partial squadron of Kingfishers, a small pier, minor communications facilities and personnel and equipment for 2 officers and 102 enlisted men.[721] This was approved by the end of November 1943.[722] Less than a week later, in view of the decision to limit the U.S. presence in the Aleutians to 80,000 personnel, the Navy cut back NAAF even further by removing all AA batteries, with the exception of short-range weapons and reduced the personnel to a rump force being capable of handling six Kingfishers. The only vital infrastructure to remain was an aerological station, a RADAR beacon station (Racon) and a small communications facility.[723]

Concurrent with this, also by late November 1943, the U.S. Army garrison was downscaled. Overall, the U.S. armed forces allocated 80,000 personnel to garrison the entire Aleutian Chain. As result of allocations, the Kiska garrison was downscaled to a token force of 46 Officers with 900 men,[724] enough to at least temporarily stave off any Japanese landing attempts and raids.

On 3 September 1944 the decommissioning of NAAF Kiska was ordered.[725]

Fig. 64. The abandoned facilities of NAAF Kiska, photographed on 27 October 1944.[726]

Kiska after World War II

This is not the place to engage in a detailed discussion of the history of Kiska after the end of World War II. Suffice to state that after the end of war Kiska again became an essentially uninhabited island, with only seasonal visits by commercial operators and scientists.

Private parties tried to pick up where they had left off at the outbreak of the war and fox trapping resumed. Yet in 1947 a total 468 Arctic fox skins from Kiska were withdrawn from sale because prices were too low.[727] From then on, it seems, that business was no longer profitable and was given up.

The U.S. Military engaged in limited clean-up activities, mainly by proxy. It permitted private operators to salvage some of the Japanese vessels (such the *Kano Maru* and the *Nozima Maru*, as well as war debris left on land. Scrap Metal salvage occurred in 1951-52 on several islands of the Aleutians, focusing on material 'on wheels' that could be easily removed.[728] In 1953 a second contractor, General Metals of Tacoma (WA), focused on the higher value non-ferrous metals.[729]

The U.S. military retained used rights over Kiska until 1955 when the enforcement of Naval Defensive Sea Area and Airspace Reservation was set in abeyance (but never revoked)[730] and Kiska was handed back to the Aleutian Islands National Wildlife Refuge.[731] In subsequent years, the USFWS undertook a long series of biological research projects on Kiska, mainly focusing on sea bird research (including the eradication of foxes).

Table 20. Chronology of Administrative Actions regarding Kiska Island after the end of U.S. military presence on the island[732]

Date	Event	Note
2 May 1949	Army control of land relinquished back to the Navy	733
23 Feb 1951	Navy requests that Dept of the Interior withdraw Kiska from Public domain	734
about 1955	enforcement of Naval Defensive Sea Area and Airspace Reservation set in abeyance (never revoked)	735
14 Sep 1955	Kiska and Little Kiska handed to Aleutian Islands National Wildlife Refuge through revoking of Executive Order 9 Dec 1903	736
3 Jan 1967	Old navy coal reservation on Kiska handed to Aleutian Islands National Wildlife Refuge through revoking of Executive Order 13 Jun 1902	737
1976	Aleutian Islands Biosphere Reserve and National Wildlife Refuge declared	738
1976–7	U.S. Army Corps of Engineers debris removal and cleanup study Aleutian Islands	739
2 Dec 1980	Alaska National Interest Lands Conservation Act merges Aleutian Islands Refuge with various other refuges and creates Alaska Maritime National Wildlife Refuge	740
1982	Kiska Battlefield nominated to the National Register of Historic Places	741
Aug 1983	87th Mountain Infantry Regiment erects memorial in Main Camp	742
4 Feb 1985	Kiska 'Japanese Occupation Site' National Historic Landmark designated	743
5 Sep 1990	Aleutian Islands Unit of the Alaska Maritime National Wildlife Refuge placed on tentative World Heritage List	744
6 Jun 2004	Kiska NHL declared 'threatened' from vandalism and looting	745
5 Dec 2008	WW II Valor in the Pacific National Monument declared Part of the Kiska NHL forms a component of the monument	746

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

Notes to the Preceding Chapter

1. eg. Cloe, John Haile (1991) *The Aleutian Warriors. A history of the 11th Air Force & Fleet Air Wing 4*. Missoula: Pictorial Histories.

2. Given the international dateline, the 7th of December 1941 in Pearl Harbor was the 8th of December in Japan as well as in Guam and the rest of Micronesia.

3. Having taken the Micronesian Islands (with the exception of U.S.-owned Guam) in World War I from the Germans, Japan received the islands as a League of Nations Mandate in 1919. Japan held on to the islands after they left the League of Nations in 1935.

4. Look, David W. and Dirk H.R. Spennemann, (1993) *For Future Use: A Management Conservation Plan for the World War II Sites in the Republic of the Marshall Islands*. Albury, NSW, Australia, and San Francisco, U.S.A.: The Johnstone Centre of Park, Recreation and Heritage and the U.S. National Park Service Western Regional Office.

5. Fuchida Mitsuo and Okumiya Masatake (1955) *Midway: The Battle That Doomed Japan, the Japanese Navy's Story*. Annapolis, MD. United States Naval Institute. Pp. 53-54

6. Fuchida and Okumiya, Midway, *op. cit.*

7. Base map: composite satellite image by NASA, Mercator projection.

8. Glines, Carroll V. (1968) *Doolittle's Tokyo Raiders*. New York: Van Nostrand Reinhold.

9. Interrogation of Captain Watanabe, Y, IJN, Gunnery Officer on Admiral Yamamoto's Staff, 'Pearl Harbor-Midway-Solomons,' Interrogation by Capt. C Shands, USN, Tokyo, 15 October 1945. Interrogation NAV nº 13, USSBS nº 96. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. Pp. 65-70.

10. See *Shashin Shūhō* (写真週報, Weekly Pictorial Report nº 317, 19 August 1944, p. 2 (published on occasion of the second anniversary of the Doolittle raid. See Earhart, David C. (2008) *Certain victory: images of World War II in the Japanese media*. Armonk, N.Y.: M.E. Sharpe. P. 407.

11. Interrogation of Captain Ito Taisuke, IJN, Tokyo 11 October 1945. Interrogation by Captain J.S. Russell, USN. Interrogation USSBS nº 101, NAV-24. On the Aleutian Campaign, Planning and Operations through November 1942. Headquarters U.S. Strategic Bombing Survey (Pacific) APA 234. MS on file. Australian War Memorial Canberra.—Interrogation Watanabe, *op.cit.*—Vice Admiral Fukudome, at the time on the Naval General Staff, saw the Aleutian Islands operation as part of an expanded defensive perimeter, which had strategic importance, even if it later had to be surrendered to enemy forces: Interrogation of Vice Admiral Fukudome, Shigeru, IJN, Chief First Section, Naval General Staff, Tokyo, April 1941 to May 1943; Chief of Staff, Combined Fleet from May 1943 to March 1944, 'The Naval War in the Pacific,' Interrogation by Rear Admiral R.A. Ofstie, USN, Tokyo, 9-12 December 1945. Interrogation NAV nº 115, USSBS nº 503. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials. ONAV P-03-100.* Naval Intelligence Division. Pp. 501-530.—USSBS, Campains of the Pacific War *op. cit*. p. 79.—but the effectveness of this was doubted by some IJN staff: Takahashi Hisashi (1995) The Japanese Campaign in Alaska. in: Fern Chandonnet (ed). *Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993*. Anchorage, AK: Alaska at War Committee. Pp. 39-42.

12. An exception: Johnson, Robert L. (1977) The Aleutian Campaign, World War II. Historical Study and Current Perspective. Master of Military Art And Science, U.S. Army Command and General Staff College. Fort Leavenworth, Kansas.—The [present] author too is guilty of falling for the Doolittle mythology in an earlier examination of the Kiska guns: Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan.* Dec 2008. (Report Kiska #1). Study prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

13. Parshall and Tully, *Shattered Sword: the untold story of the Battle of Midway*. Washington, D.C.: Potomac Books. Pp. 41-42.

14. Interrogation of Admiral Toyoda, Soemu, IJN, CinC Kure NavSta; November 1942 appointed Supreme Military Counsellor, residing in Tokyo. May 1943 became CinC Yokosuka NavSta, 'Japanese War Plans And Peace Moves,' Interrogation by Rear Admiral R.A. Ofstie, USN; Maj. Gen. O.A. Anderson, USA; Lt. Comdr. W. Wilds, USNR, Tokyo, 13-14 November 1945. Interrogation NAV nº 75, USSBS nº 78. *United States Strategic Bombing Survey (Pacific)*

Interrogation of Japanese Officials. ONAV P-03-100. Naval Intelligence Division. Pp. 313-326.—Interrogation Fukudome *op. cit.*

15. The Aleutians were to be included at least as far as Attu and Kiska were concerned, but, should the opportunity present itself, even as far as Dutch Harbor (i.e. Amaknak Island) (Interrogation Fukudome *op. cit.*).

16. Interrogation of Captain Ohmae, Toshikazu, IJN, Bureau of Military Affairs, 'Japanese Naval Planning,' Interrogation by Captain T.J. Hedding, USN, Tokyo, 30 October 1945. Interrogation NAV nº 42, USSBS nº 192. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. Pp. 176-177.

17. Parshall and Tully, Shattered Sword, *op. cit*.

18. Interview Watanabe *op. cit*.—Interrogation Fukudome *op. cit*.

19. Johnson, Robert L. (1977) *The Aleutian Campaign, World War II. Historical Study and Current Perspective*. Master of Military Art And Science, U.S. Army Command and General Staff College. Fort Leavenworth, Kansas.

20. eg: Morison, Samuel Eliot (1949). Coral Sea, Midway and Submarine Actions, May 1942 – August 1942. *History of United States Naval Operations in World War II*, vol. 4. Boston: Little, Brown & Co, pp. 77-78; Fuchida Mitsuo and Okumiya Masatake (1955) *Midway: The Battle That Doomed Japan, the Japanese Navy's Story*. Annapolis, MD. United States Naval Institute, p.17.—Hailey, Foster (1944) *Pacific Battle Line. The First Two Desperate Years*. New York: Macmillan. P. 21ff.—Stephan, John J. (1974) *The Kuril Islands. Russo-Japanese Frontier in the Pacific.* Oxford: Clarendon Press. P. 138.

21. Allard, The North Pacific Campaign in Perspective *op. cit.*

22. Dan Lenihan (Aleutian Affairs. Archaeologists return to Japan's World War beachhead in Alaska. *Natural History* May 1992, pp. 51-60.

23. Parshall and Tully, Shattered Sword, *op. cit*. p. 43ff.

24. e.g. 'Japs Attu Move is Defensive. '*The Courier* (Brisbane, Australia) 30 June 1942, p. 4 col. 6.—On the other hand, during the war some authors tired to paint the 'Japanese menace' in darker colors and attributed a different motive to the Aleutian occupation: the aim of attacking and conquering Alaska and from there the naval base at Bremerton, WA (near Seattle)(e.g. Ford 1943, pp. 2-3).

25. e.g. Interrogation of Captain Amagi, Takahisa, IJN, Air Officer on CV Kaga at Battle of Midway. 'The Battle of Midway,' Interrogation by Capt. C Shands, USN, Tokyo, 6 October 1945. Interrogation NAV nº 1, USSBS nº 6. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. PP. 1-3

26. e.g. Interview Okumiya *op. cit.*

27. see Interview Ito Taisuke *op. cit.*—Interview Okumiya *op cit.*

28. This argument has previously been made by Lenihan, Aleutian Affairs, *op. cit*.

29. Such as was carried out by the U.S. during the Carlsson raid on Tarawa in Kiribiati (the Gilberts) in 1943. While that raid was a resounding tactical success, it was a total strategic failure. The Japanese realised the weakness of their southern flank and fortified the island heavily—which the Marines were to experience at high costs when they landed later on.

30. Interview Fukudome *op. cit.*

31. For references to these, see the ensuing discussion of each of these three concerns.—Takahashi (The Japanese Campaign in Alaska, *op.cit.* p.37), building on Fuchida and Okumiya (Midway, *op. cit.* p. 61), advances an additional, albeit minor, motive: In his view, the Japanese Fifth Fleet had its own agenda in view of its recent establishment as a fleet unit and in view of its status as a junior player in the overall IJN scheme of things. Carrying out a successful assault operation in the Northern Pacific would boost its own morale.

32. 'Nomonhan Incident' in Japanese terminology; fought from 11 May to 16 September 1939.

33. The figures of the Japanese fatalities are unclear. See the detailed discussion of casualties in Coox, Alvin D. (1990) *Nomonhan: Japan against Russia, 1939*. Stanford, CA: Stanford University Press. Pp. 914-919.

34. With the collapse of both the Netherlands and France in the European theatre of war, Japan was confident that not much resistance could be mustered and that both would be an easy conquest. Coox, Nomonhan *op. cit.*

35. For the USSR that pact brought some stability in the east and allowed Stalin to focus is military forces in the west, where, he quite rightfully, feared an attack by Nazi Germany.

36. The Tri-Partite Pact stipulated support of one of the signatory powers was *attacked* by enemies they were not at war with at the time of signature. Since Germany was the aggressor, Japan could argue that it was not required to lend support. Japan was caught off guard and had not anticipated such a turn of events (Coox, Nomonhan *op. cit. p.* 1035)—Yet, in the weeks after Germany's attack, Japan was ready to strike if needed. It seems that the Southern option remained the only viable altenative as long as the outcome of the German-Sovet war remained in doubt—and that Japan was hedging its bets. Stepan, The Kurile Islands *op. cit*. pp. 134-135.

37. Armstrong, T. E. (1955) The Soviet Northern Sea Route. *The Geographical Journal* vol. 121 (2), pp. 136-146.—Allard, The North Pacific Campaign in Perspective *op. cit.*—The majority of the land lease material shipped to the USSR via Alaska were aircraft that were transferred at Ladd Field (Fairbanks, AK) and were flown via Nome to the Soviet Union. USSBS, Campaigns of the Pacific War *op. cit.* p. 84.

38. The Japanese seem to have detained a few vessels for inspection which is not surprising as many of the ships used were actually US-built Liberty ships: Paperno, Alla (2000) The Unknown World War II in the North Pacific. Lecture on the International Scientific and Practical Conference "Results of the World War II and Mission on Secure Peace in the XXI Century", St. Petersburg, House of Friendship and Peace, April 27-28, 2000. <www.kscnet.ru/ivs/bibl/paperno/for_65_engl.htm>

39. Allard, The North Pacific Campaign in Perspective *op. cit*.—Later the lend lease cargo was shipped in USSR hulls, mainly because US hulls were needed for the US war effort.

40. Coox, Nomonhan *op. cit.* p. 1053.—Despite this scrupulous adherence, mistakes could happen: On 11 October 1942 the Japanese fleet submarine I-25 torpedoed what it believed to be an American submarine, sinking it with all hands. Had the identity of the sunken sub become public during the war, that carefully maintained balance of neutrality may well have been upset.

41. As was argued in USSBS, Campaigns of the Pacific War *op. cit.* p. 84.—A view also argued by Cmdr Tatsukichi Miyo, Chief of Air Operations (Takahashi, The Japanese Campaign in Alaska, *op.cit.* p. 36).

42. This point was not lost on contemporary commentators: Japs Attu Move is Defensive. *The Courier* (Brisbane, Australia) 30 June 1942, p. 4 col. 6.—The same was reputedly publicly announced by General Higuda Hideichiro of the Japanese Northern Army in a public broadcast: Mitchell, Robert J., Tyng, Sewell T., and Drummond, Nelson L. (1944) *The Capture of Attu: a World War II battle as told by the men who fought there.* Washington, D.C.: Infantry Journal. p. 2—repeated in: Morgan, Murray (1947) *Bridge To Russia Those Amazing Aleutians*. New York: E P Dutton & Company Inc. p. 150)

43. Just in case the Soviet threat might eventuate, the Japanese had developed some basic airfields in the Kuriles by mid 1941.

44. Suetsugu, Nobumasa (1941) Article in *Keizai Joho, Seokeihen*. Cited in: Gayn, Mark, J. (1941) *The Fight for the Pacific*. London: The Bodley Head. P. 352

45. Interrogation Ito Taisuke *op. cit*.—Interrogation of Captain Arachika, Rokuji, IJN, (Chief of Staff to Commander 1st Destroyer Squadron from December 1941 until November 1943). On the Aleutian Campaign. Operations of the Japanese First Destroyer Squadron. Interrogation 15 & 16 November 1945. Interrogation NAV nº 73. USSBS NO. 367. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. OPNAV P-03-100. Naval Intelligence Division. Pp. 300-307.—U.S. Army (1959) *History of Imperial General Headquarters Army Section (Revised Edition)* Japanese Monograph No. 45. Headquarters United States Army Japan, Assistant Chief Of Staff, G3 Foreign Histories Division. Text copied at <www.ibiblio.org/hyperwar/Japan/Monos/JM-45/index.html>. P. 172. (henceforth: Japanese Monograph No. 45).

46. Interrogation Watanabe *op. cit.*—Takahashi, The Japanese Campaign in Alaska, *op.cit.*, p. 37.

47. Indeed it can be argued that the Soviet desire to find a quick end to the conflict at the Manchurian-Japanese border, and not to pursue the Japanese beyond the actual border (as interpreted by the Soviets) stemmed from the fear of having to fight a war on two fronts. Nazi Germany was poised to invade Poland in 1939, and indeed did so the day after Zhukov's decisive victory.

48. Johnson, The Aleutian Campaign, World War II. *op. cit.*

49. Japanese Monograph No. 45, *op cit.*, p. 107.

[50]. Japanese Monograph No. 45, *op. cit.* p. 178.

[51]. As key references see: Fuchida and Okumiya, Midway *op. cit.*—Morison, Coral Sea, Midway and Submarine Actions, *op. cit.*—Parshall and Tully, Shattered Sword *op. cit.*—Takahashi (The Japanese Campaign in Alaska, *op.cit.* p. 36) claims that an in principle agreement on the Midway operation had been reached on 5 April 1942.

[52]. It has been argued that the Doolittle raid tipped the balance in the favor of the IJN.

[53]. Japanese Monograph No. 88. Aleutian Naval Operation, March 1942-February 1943. Translated by the U.S. Army, Headquarters, Army Forces Far East, Office of Military History. n.d. Pp. 89. Cited after: Polhamus, John A. (2005) The Aleutian Campaign In World War II: A Strategic Perspective. Master of Military Art And Science, U.S. Army Command and General Staff College. Fort Leavenworth, Kansas

[54]. Japanese Monograph No. 45, pp. 85-86.

[55]. See here for details: Parker, Frederick D. (1993) *A Priceless Advantage: U.S. Navy Communications Intelligence and the Battles of Coral Sea, Midway, and the Aleutians*. United States Cryptologic History Series IV World War II Volume 5. Washington, D.C.: Center For Cryptologic History, National Security Agency.—See also VAdm Fukudome, who states that a landing at Dutch Harbor was left at the discretion of the IJN (Interrogaion Fukudome *op. cit.*).

[56]. It is not certain at this point how much of that information was provided to the commanders in Alaska apart from general orders.

[57]. Interrogation of Captain Inouye, Isamu, IJN, flight commanding officer aboard the *Chitose* from November 1941 to September 1942. 'Midway-Eastern Solomons-Philippines,' Interrogation by Captain C. Shands, USN, Tokyo, 1 November 1945. Interrogation NAV nº 66, USSBS nº 295. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. Pp. 270.

[58]. Interrogation Inouye, *op. cit.*

[59]. The destroyer USS *Gillis* (AVD-260), acting as seaplane tender supporting Patrol Wing 4, and the attack transport USS *Fillmore* (APA-83).

[60]. Interrogation Okumiya *op. cit.*

[61]. Interrogation Okumiya *op. cit.*

[62]. Interrogation Okumiya *op. cit.*

[63]. Hackett, Bob and Kingsepp, Sander (2002) HIJMS Submarine I-26: Tabular Record of Movement. www.combinedfleet.com/I-26.htm.

[64]. USSBS, Campaigns of the Pacific War *op. cit*. p 79.

[65]. Hackett, Bob and Kingsepp, Sander (2009) *HIJMS Submarine I-9*: Tabular Record of Movement. www.combinedfleet.com/I-9.htm [hece forth TROM I-9].

[66]. Interrogation Ito Taisuke *op. cit*.

[67]. Interrogation of Commander Nifumi Mukai on the Japanese Occupation of Kiska, the Kiska Garrison, and Operation in the Kuriles. Interrogation NAV nº 22, USSBS nº 99. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. OPNAV P-03-100. Naval Intelligence Division. PP. 102-105.

[68]. Interrogation Mukai *op. cit.*

[69]. Interrogations of Vice Admiral Omori Sentaro (Commanding Officer [as a Rear Admiral] of the 1st Destroyer Squadron from October 1940 to October 1942) and Captain Arachika Rokuji (Chief of Staff to Commander 1st Destroyer Squadron from December 1941 until November 1943). On the Aleutian Campaign. Operations of the Japanese First Destroyer Squadron. Interrogation 15 & 16 November 1945. Interrogation NAV nº 73. USSBS NO. 367. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. OPNAV P-03-100. Naval Intelligence Division. Pp. 299-307.—Captain Tsuda Hiroki, chief navigator of the battleship Hiyuga at the Battle of Midway, also referred to the Aleutians invason fleet as the "KISKA-ADAK fotce." Interrogation of Captain Tsuda, Hiroaki, IJN, Chief Navigator of the *Hyuga* from September 1941 to February 1943. 'Midway-Eastern Solomons-Philippines,' Interrogation by Captain C. Shands, USN, Tokyo, 1 November 1945. Interrogation NAV nº 66, USSBS nº 295. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. Pp. 269.

[70]. It seems that the group, centered on the cruiser *Abukuma,* had come to within 60 nm of Adak when the landings were cancelled: Interrogation Omori *op. cit.*

[71]. Interrogation Watanabe *op. cit*

[72]. Source: Keishuku Nichi-Tai Kōkan, Sūjiku-gun no hokori oyobi kōgeki, dai jūkkan dai kyū-gō (Blessing Fraternizing with Thailand: the Dirt and Attack of the Axis Powers Force). Cover of Sekai Gahō (World Pictorial News) vol. 18, no. 9, Aug 20, 1942 (published by Kokusai Joho Sha, Tōkyō).—Original magazine in the possession of the author.

[73]. Jōhōkyoku, ed. Shashin Shūhō, Aryūshan Kōryaku Shōhō, dai nihyaku nijū hachi-gō, shichi-gatsu yō-ka (Weekly Pictorial News, Detailed News of Aleutian Attack, no. 228, July 8, [1942]). Page 5 Original in the possession of the author.

[74]. Apparently Admiral Yamamoto was of that view and argued against the continued occupation of the Aleutians (Interrogation Ito Taisuke *op. cit*.

[75]. One cannot but wonder whether Takahashi's assertion of the Fifth Fleet's need to profile itself played into this position. Certainly, Hosagaya's part of the Midway Campaign had been a success and holding on to the gains made on Attu and Kiska were meant to publicly underline that success.

[76]. Hosagaya argued that Kiska was a suitable location from which to neutralise Dutch Harbor (Interrogation Ito Taisuke *op. cit*).

[77]. Interrogation Ito Taisuke *op. cit.*

[78]. Interrogation Ito Taisuke *op. cit*.

[79]. Interrogation Ito Taisuke *op. cit.*

[80]. Johnson, The Aleutian Campaign, World War II. *op. cit*.

[81]. The survivors of the warships sunk at Midway were isolated to prevent news of the losses from leaking. U.S. Army, History of Imperial General Headquarters, Army Section, Japanese Monograph Number 45. United States Army Headquarters. USA Japan. Assistant Chief of Staff, 6-3. Foreign Histories Division. 1945). p. 87.

[82]. While Clausen (1943) argued that this was the main reason for the Aleutian occupation, Johnson (1977) contends that it a major reason why the Japanese stayed on Kiska even after Midway had gone wrong.—Clausen, Walter B. (1943) *Blood for the Emperor. A Narrative Historv of the Human Side of the War in the Pacific*. New York: D. Appleton-Century Company, Incorporated. Pp. 323-324.—Johnson, The Aleutian Campaign, World War II. *op. cit.*

[83]. See for example Stephan, The Kuril Islands*, op. cit.*,.

[84]. The troop numbers cited in the literature vary widely. The figures of 6,000 are a good approximation to indicate the personnel commitment required of the Japanese military planners. As to actual numbers, we know that at the time of evacuation, the Japanese garrison on Kiska numbered 5,183 to which we have to add about 870 who were evacuated by submarine (Interrogation Mukai, *op. cit*). These comprised the combined IJA and IJN commitment to the initial taking of the Aleutians (the initial garrison on Attu was relocated to Kiska in September 1942). For the final and total personnel commitment (after strategic reconsiderations) we have to also add the second Attu garrison which at the time of the U.S assault on 11 May 1943 numbered about 2,900 men (of which only 29 surrendered).

[85]. For example, before Midway it had been believed by some planners that Kiska Harbor would freeze over in winter, making it unusable for seaplane operations (Interrogation Ito Taisuke *op. cit.*).—Overall, it seems, Japanese planner over- rather than underestimated the conditions in the Aleutians, making them more cautious than warranted.

[86]. Gilman, William (1944) *Our Hidden Front*. New York: Reynal and Hitchcock, Inc. p. 89.

[87]. See discussion in Stewart, Henry (1995) Aleuts in Japan, 1942–1945. in: Fern Chandonnet (ed). Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993. Anchorage, AK: Alaska at War Committee. Pp. 301–304

[88]. After the war Etta Jones wrote up her recollections which do not tally with external assessments of the events.—See: Breu, Mary (2009) *Last Letters from Attu. The True Story of Etta Jones, Alaska Pioneer and Japanese POW*. Anchorage: Alaska Northwest Books.

[89]. This borne out by many images held in private Japanese hands.—See also: Stewart, Aleuts in Japan, 1942–1945 *op. cit.*—Personal communication Usami Toshiharu, 6 March 2010.—Brief synopsis:

Born on 23 December 1909 (= Meji 42) in Fukushima Prefecture. On 1 June 1928 enrolled to Second Regiment Konoe Infantry. On 1 August 1939 graduated from IJA officers school and assigned to 25th Regiment, 7th Division as a Division. Second Lieutenant. Participated in war in Nomohan (Russia) was injured in both legs and neck), invalided a hospital in China, promoted to first lieutenant and moved to Asahikawa district; on 19 May 1942 he joined the 103rd Regiment Hosumi Troop; on 8 June 1942 they landed at Attu (came on *Kinukasa* Maru) where his group occupied Chichagof Harbor and raised the Japanese flag in US territory.—On 16 September 1942 his regiment (Hosumi Troop) was moved to Kiska aboard the small cruiser; Usami appointed Commander 4th Company of Independent Infantry Batallion 301 (ie became of commander of Usami troop). Evacuated from Kiska 29 July 1943 aboard the light cruiser *Abukuma* to Hokkaido (Shimuzu Isands). On 1 December 1944 became Shoza of the Japanese Army. On 18 July 1945 he was promoted Batallion Commander of 250 Airfield in Okayama Prefecture. After atomic bombing of Hiroshima he commanded rescue troops for the event. In December 1945 be was moved to the Army Reserve. After the war Mr Usami resided in Kami-Furano (Furano Prefecture, Hokkaido) and managed the Nippon Gekijo (theatre; he was a member of town council / legislature and filled a number of public positions.

[90]. The Attuans stayed aboard while the IJA disembarked. One of the Attuan evacuees died *en route* to Kiska: Stewart, Aleuts in Japan, 1942–1945 *op. cit.*—Nishijima Teruo (1995) Recalling the Battle of Attu. in: Fern Chandonnet (ed). *Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993*. Anchorage, AK: Alaska at War Committee. Pp. 109-112

[91]. The Attuans were allowed to take not only their personal belongings, but also their furniture, stoves and the like, as well as their boats and outboard motors (Stewart, Aleuts in Japan, 1942–1945 *op. cit.*). These belongings were loaded on the *Yoko-Maru*.—They were taken to Otaru, Hokkaido, where sixteen died, as well as three of the four babies born there.—The remaining 25 were repatriated after the war, but not to Attu. According to Nishijima, Recalling the Battle of Attu, *op. cit.* p. 117, the Attuans suffered from tuberculosis.

[92]. Interrogations of Vice Admiral Omori Sentaro (Commanding Officer [as a Rear Admiral] of the 1st Destroyer Squadron from October 1940 to October 1942) and Captain Arachika Rokuji (Chief of Staff to Commander 1st Destroyer Squadron from December 1941 until November 1943). On the Aleutian Campaign. Operations of the Japanese First Destroyer Squadron. Interrogation 15 & 16 November 1945. Interrogation NAV nº 73,. USSBS NO. 367. *Interrogation of Japanese officials*. ONAV P-03-100. Naval Intelligence Division. Pp. 299-307.

[93]. *United States Army in World War II. Pictorial Record. The War Against Japan*. Washington: Office of the Chief of Military History, The Department of the Army, 1952. p. 180.

[94]. In U.S. documents often spelled 'Yonekawa.'

[95]. It was on one of these that Colonel Yasuyo Yamasaki (山崎保代), commanding officer of the 2nd District Force of the North Sea Defense Force reached Attu in April 1943 to take over command of the Army defense force relieving Lieutenant Colonel Hiroshi Yanekawa.

[96]. Information obtained from 16 Japanese military Ps/W between 9 Jul – 23 Jul 1943 in U.S.A. Secret A-61, Copy 20 of 36. Dated 4 Aug 1945. By Authority A.C. of S., G-2. 8pp. Australian War Memorial, Canberra, Australia. File AWM 54/799/3/111.

[97]. Information from 7 Japanese Army and 1 Navy Ps/W. Obtained in the United Sates 8-15 Jul 1943. Secret A-60, Copy 19 of 36. Dated 22 Jul 1943. By Authority A.C. of S., G-2. 7pp. Australian War Memorial, Canberra, Australia. File AWM 54/799/3/111.

[98]. Interrogation Miura *op. cit.* p. 100.

[99]. 10,000 Japs in Aleutians. Navy Doubts Pribilof Invasion Spokesman Estimates 5000 of Enemy on Kiska, Attu and Agattu, With Rest Either Manning or Living on Warships and Transports Near By.' *Los Angeles Times* August 1, 1942 p. 1.

[100]. Interrogations Sentaro and Rokuji *op. cit.*

[101]. eg. Earle, George F. (1995) Kiska: Birth of a Division in: Fern Chandonnet (ed). Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993. Anchorage, AK: Alaska at War Committee. Pp. 103-107; esp. p. 104—Polhamus, John A. (2005) *The Aleutian Campaign In World War II: A Strategic Perspective*. Master of Military Art And Science, U.S. Army Command and General Staff College. Fort Leavenworth, Kansas.

[102]. See the book title of the 2010 republication of a 1943 study: *The Aleutians campaign: the official Navy history of the only World War Two invasion of US soil.* St Petersburg, FL: Red and Black Publishers, 2010.

[103]. Even though the legality of the U.S. possession of Wake can be drawn into dispute: cf. Spennemann, Dirk H.R. (1998) The annexation of Eneen-kio (Wake Island, Central Pacific Ocean) by the United States of America *Journal of Pacific History* 38(2), pp.239-247.

[104]. U.S. Coast and Geodetic Survey, United States Coast Pilot 9, 1st ed, *op. cit.*—U.S. Coast and Geodetic Survey (1926) *United States Coast Pilot 9: Alaska Part II: Yakuat Bay to Arctic Ocean*. Second Edition. United States Coast and Geodetic Survey, U.S. Department of Commerce. Washington, D.C.: U.S. Government Printer.

[105]. Similar observations can be made in Micronesia when considering some of the Japanese administrative decisions after the Japanese occupied German colonies in Micronesia in 1914 (such as considering Wotje as a naval base merely because of the 1816-17 Kotzebue expedition).

[106]. Executive Order nº 241 "Reserving All Lands on Certain Alaska Islands, including Kiska Island, Little Kiska Island, and Adjacent Islets For Naval Purposes" signed by President Theodore Roosevelt dated 9 December 1903.—JAG 2 200 17. NARA RG 71/1001/14 Kiska I.

[107]. NARA document (unreferenced) in NPS-AKRO NHL file 'Kiska'.

[108]. Executive Order nº 8680 "Establishing naval defensive sea areas around and naval airspace reservations over the islands of Kiska and Unalaska." Signed by President Frank Delano Roosevelt on 14 February 1941. *Federal Register* vol. 6, 1941 p. 1014.—The text in relation to the specific of the high-water mark was amended by Executive Order nº 8729 of April 2, 1941 (*Federal Register* vol. 6, 1941 p. 1791).—Today, the restrictions imposed under this executive order 'have been suspended subject to reinstatement without notice at any time that the interests of national defense may require such action': National Oceanic and Atmospheric Administration (2010) *United States Coast Pilot 9: Pacific and Arctic Coasts Alaska: Cape Spencer to Beaufort Sea*. 28th Edition. National Oceanic and Atmospheric Administration, U.S. Department of Commerce. Washington, D.C.: U.S. Government Printer. P. 421.

[109]. Hackett, Bob and Kingsepp, Sander (2002) HIJMS Submarine I-26: Tabular Record of Movement. www.combinedfleet.com/I-26.htm. [henceforth TROM I-26].

[110]. USSBS, Campaigns of the Pacific War, *op cit*. p. 79.

[111]. Interrogation Okumiya, *op.cit.*—TROM I-9, *op. cit.*—The same plane also reconnoitered Amchitka (Interrogation Okumiya, *op.cit.*).

[112]. Interrogation Ito Taisuke *op. cit.*

[113]. The 6th of June 1942 according to Japanese dates.

[114]. Local time but U.S. date (Japanese date was 7 June 1942)

[115]. Interrogation Mukai *op.cit.*—3rd Maizuru Special Naval Landing Force had been formed at Maizuru on 5 January 1942 and assigned to Combined Fleet. After the occupation of Kiska it was deactivated on 1 Jul 1942 and became 5th Guard Unit (<www.geocities.com/historyfan2002/general/infantry/ japan/maizuru.htm>.).

[116]. According to a map published in: Kobayashi, Shin'ichirō (1963) *Kiri no kotō: Kisuka Senki (The Isolated Island in the Fog: Commentaries on the war in Kiska),* Aichi, Japan: self published.

[117]. Captured were:

Robert Melwyn Christensen—of Bremerton, WA; Radioman 2nd class, PAT Wing 4 WX Detachment; ASN 4143613; sent to Tokyo POW Camp Branch #2 (Kawasaki) Tokyo Bay Area 35-139.

Rolland L. Coffield—of Seattle, WA; Chief Pharmacist's Mate, of PAT Wing 4 VP 41; ASN 3856374; sent to Tokyo POW Camp (Shinjuku) Tokyo Bay Area 35-140.

Madison L. Courtenay, Jr—of Riverhead, L.I., NY; Radioman 3rd class, PAT Wing 4 WX Detachment; ASN 4029180; sent to Dispatch Camp (Tokyo POW #3 - Kawasaki) Tokyo Bay Area 35-139.

LeThayer L. Eckles—of Osborne, KS; Gunners Mate 3rd class; ASN 3419769; sent to Osaka, Main Camp Chikko Osaka 34-135 POW camp.

Wilfred Ivan Gaffey—of Coquille, OR; Seaman 1st class, PAT Wing 4 WX Detachment; ASN 6541603; sent to Tokyo POW Camp (Shinjuku) Tokyo Bay Area 35-140.

William Charles House—of Esconbito, CA; Aerographer's Mate, 1st Class, PAT Wing 4 WX Detachment; ASN 3930782; sent to Tokyo Dispatch Camp #5-Kawaski Tokyo Bay Area 35-139.

John C. McCandless— of Oakmont, PA; Cook 3rd class, PAT Wing 4 WX Detachment; ASN 205354; sent to Tokyo POW Camp Branch #2 (Kawasaki) Tokyo Bay Area 35-139.

Gilbert F. Palmer—of Evansville, IN; Seaman 1st class, PAT Wing 4 WX Detachment; ASN 2916257, sent to POW camp nº 521.

James Leroy Turner— of Seattle, WA; Aerographer's Mate, 2nd Class, PAT Wing 4 WX Detachment; ASN 3856543; sent to Tokyo POW Camp (Shinjuku) Tokyo Bay Area 35-140.

Walter Monroe Winfrey—Cliffside Park, NJ; Aerographer's Mate, 2nd Class, PAT Wing 4 WX Detachment; ASN 2232828; sent to Tokyo POW Camp Branch #2 (Kawasaki) Tokyo Bay Area 35-139.

World War II Prisoners of War Data File, 12/7/1941 - 11/19/1946 in the Series: Records of World War II Prisoners of War, created 1942 - 1947, documenting the period 12/7/1941 - 11/19/1946 - Record Group 38 Data via military records search: <aad.archives.gov/aad/fielded-search.jsp?dt=466&tf=F&cat=WR26&bc=,sl> and POW data NARA RG 407 Box 12 (via www.mansell.com/pow_resources/camplists/sendai/sendai_4/ sendai_4_yanks.html)

[118]. Wounded was W.M.Winfrey who was shot in the leg.

[119]. Cloe *op. cit.* p. 145. He was taken to Japan aboard the *Osada Maru*, accompanying the Aleuts that had been evacuated from Attu together with the Japanese garrison.

[120]. Image sourced from: Jōhōkyoku, *Shashin Shūhō* (写真週報), Aryūshan Kōryaku Shōhō, dai nihyaku nijū hachi-gō, shichi-gatsu yō-ka (Weekly Pictorial Report, Detailed News of Aleutian Attack, no. 228, July 8, [1942]). Page 4-5 Original of the magazine in the possession of the author.

There is much confusion about this image, as it is occasionally attributed to Attu (e.g. Cloe, Aleutian Warriors, *op. cit, p. 146.*—U.S. Fish and Wildlife Service, Alaska Region [2011] *Battle for the Aleutians. A Brief Illustrated History*. [Anchorage, AK: U.S. Fish and Wildlife Service, Alaska Region]). The topography, the marshy lake and the location and shape of the buildings make the identification of Kiska certain. The same image is reproduced in the official Japanese war history and clearly attributed to Kiska (Bōei Kenshū jo Senshishitsu (1969) 北東方面海軍作戦 [*Hokutō hōmen kaigun sakusen [*Naval Operations in the Northeast Area] 防衛庁防衛研修所戦史室 [*Bōeichō Bōei Kenshū jo Senshishitsu cho /*Military History Office, Defense College, National Defense Agency]. Tōkyō: Asagumo Shinbunsha. Plate section [henceforth cited as: Bōei Kenshū jo Senshishitsu, Hokutō hōmen kaigun sakusen*)*. In addition, identical imagery exists as part of a Japanese newsreel that shows that second platoon (with the flag) on the rise north of the U.S. facilities, while the first platoon is making its way towards the buildings (日本ニュース 第107号 (The News In Japan nº 107) 昭和17年6月22日 (22 June 1942). Newsreel provided online by NHK at: cgi2.nhk.or.jp/shogenarchives/jpnews/movie.cgi?das_id= D0001300492_00000&seg_number=003). It also should be noted that this newsreel only covers Kiska and makes no reference to he occupation of Attu which is reported a week later.

A superficially similar image (a Japanese troop with flag overlooking a valley) was taken on occasion of the occupation of Attu is frequently erroneously attributed to Kiska (e.g on the War in the Pacific National Park website: War in the Pacific: The First Year. A Guide to the War in the Pacific). <www.nps.gov/archive/wapa/indepth/extContent/wapa/guides/first/sec1.htm>.

[121]. Jōhōkyoku, Shashin Shūhō, Aryūshan Kōryaku Shōhō, dai nihyaku nijū hachi-gō, shichi-gatsu yō-ka (Weekly Pictorial *Report*, Detailed News of Aleutian Attack, no. 228, July 8, [1942]). Pages 4- 5 Original in the possession of the author.

[122]. Jōhōkyoku, Shashin Shūhō, Aryūshan Kōryaku Shōhō, dai nihyaku nijū hachi-gō, shichi-gatsu yō-ka (Detailed News of Aleutian Attack, *Weekly Pictorial Report*, no. 228, July 8, [1942]). Page 5 Original in the possession of the author. —Identical imagery at: (日本ニュース 第107号 [The News In Japan nº 107] 昭和17年6月22日 [22 June 1942]. Newsreel provided online by NHK at: cgi2.nhk.or.jp/shogenarchives/jpnews/movie.cgi?das_id=D0001300492_00000&seg_number=003.

[123]. Identification of the two captives as John C. McCandless (cook) and Rolland L. Coffield (pharmacist's mate) is based on comparison with Fig. 22, corroborated by the Japanese caption, labelling the two as "Caulfield and John."

[124]. Earhart argues that their answers, as well as their appearance in civilian clothes and unshaven, would have suggested to the Japanese audience a low morale.—Earhart, David C. (2008) *Certain victory: images of World War II in the Japanese media*. Armonk, N.Y.: M.E. Sharp. P. 378.

[125]. Data and spelling after map reproduced in R.C. Jacobs, Assistant Chief of Staff, G-2, War Department, Washington DC to Assistant Chief of Staff, Western Defense Command, Presidio of San Francisco, CA, dated June 30, 1943. NARA RG165 Entry 77 Box 50 Folder 'Kiska Operations.'—In addition to the names shown on the map, others names are reported, such as Hiraitsuhama, Meike, Okie and Imohama (Summary of Information on Japanese names applied to the Aleutian Islands and the Komandorskis. NARA RG 165 Entry 77 Box 46 Folder 6000-6905 Alaska).

[126]. Summary of Information on Japanese names applied to the Aleutian Islands and the Komandorskis. NARA RG 165 Entry 77 Box 46 Folder 6000-6905 Alaska.

[127]. Summary of Information on Japanese names applied to the Aleutian Islands and the Komandorskis. NARA RG 165 Entry 77 Box 46 Folder 6000-6905 Alaska.

[128]. Reardon, Jim (1997). "Koga's Zero—An Enemy Plane That Saved American Lives". *Invention and Technology Magazine*. Volume 13, Issue 2.

[129]. Jōhōkyoku, Shashin Shūhō, Aryūshan Kōryaku Shōhō, dai nihyaku nijū hachi-gō, shichi-gatsu yō-ka (Weekly Pictorial Report, Detailed News of Aleutian Attack) no. 228, Jul 8, [1942], p. 4.—Images contained in a Japanese newsreel on the occupation of Kiska show a Kawanishi H6K4 'Mavis' Flying Boat (aircraft O-31) of the Tōkō Kōkūtai in Kiska Harbor on or about 10 June 1942. The white stripe above the tail code indicates that the aircraft belonged to the 2nd Chutai.

[130]. Image from "Aleutian Islands: Flying a battleship flag in Narukamitō" (Aryūshan rettō: Gunkanki hirugaeru Narukamitō). Daitoa sensō gahō (dai jūichi-gō [October 8, 1942]). Ōsaka Minichi Tokyo Nichinichi Shinbunsha. Page 10. Magazine in the possession of the author. For lay-out reasons, it seems, the image was printed mirrored. Note the censor's retouching of the background and the inclusion of a backdrop culled from an image taken on Attu.

[131]. But unclear from the resolution of the image is which vessel is which.

[132]. The Imperial Japanese Navy in World War II. A graphic representation of the Japanese Naval Organization and list of combatant and non-combatant vessels lost or damaged in the War. Prepared by the Military History Section, special Staff, General Headquarters, Far East Command, February 1952. p. 123.

[133]. Interrogation of Captain Ito Sukemitsu, I.J.N.; from February 1942 to March 1943, commanding Officer of the Toko Seaplane Squadron at Yokohama. 'Japanese Flying Boat Operation in the Aleutians,' Interrogation by Capt. James S. Russell, USN, Tokyo, 9 October 1945. Interrogation NAV nº 23, USSBS nº 100. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. PP. 106-107.

[134]. For ease of reference, and in order avoid unnecessary clutter and repetition in the text, the Allied code name for the planes will be used for the remainder the study.

[135]. Interrogation Ito Sukemitsu *op. cit*

[136]. Interrogation Mukai *op. cit.*

[137]. Interrogation of Comdr Miura, Kintaro, IJN, Tokyo, senior air officer on board the seaplane tender Kamikawa Maru. 'Aleutian Campaign Seaplane Operations, the Naval Battle of the Komandorski Islands and the Defense of the Kuriles.' Interrogation by Capt. James S. Russell, USN, Tokyo 20-23 Oct 1945. Interrogation NAV nº 21, USSBS nº 98. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. p. 97-101.—According to Hackett *et al* all eight Aichi E13A were offloaded: Hackett, Bob, Kingsepp, Sander and Alsleben, Allan (2004) IJN Seaplane Tender *Kimikawa Maru:* Tabular Record of Movement. <www.combinedfleet.com/ Kimikawa%20Maru _t.htm>.—Henceforth cited as 'TROM *Kimikawa Maru*.

[138]. The *Kimikawa Maru* provided the technical and maintenance support needed for the operations of the planes until the shorebase was erected. In general, Japanese seaplane facilities could be erected very quickly, being fully operational within a couple of days even if no dedicated sea-plane tender was available. For example, on 10 December 1941 the Japanese forces land on Makin (Kiribati). Two days later, the seaplane base was operational (Hackett, Bob, Kingsepp, Sander and Cundall, Peter [2010] IJN Auxiliary Minelayer Tenyo Maru: Tabular Record of Movement. www.combinedfleet.com/Tenyo_t_t.htm).

[139]. Image from "Aleutian Islands: Flying a battleship flag in Narukamitō" (Aryūshan rettō: Gunkanki hirugaeru Narukamitō). Daitoa sensō gahō (dai jūichi-gō [October 8, 1942]). Ōsaka Minichi Tokyo Nichinichi Shinbunsha. Page 10. Magazine in the possession of the author.

[140]. Interrogation Ito Sukemitsu, *op. cit.*

[141]. Interrogation Ito Sukemitsu, *op. cit.*

[142]. Hackett, Bob and Cundall, Peter (2011) IJN HISHI MARU No. 2: Tabular Record of Movement <www.combinedfleet.com/Hishi2_t.htm>.

[143]. The *Kimikawa Maru* had been laid down in 1936 at Kobe as freighter for the Kawasaki Kisen K.K. Line. Requisitioned by the Japanese Navy in 1941 it was converted to a sea plane tender as sister ship to the *Kamikawa Maru.* Her aft well deck was fitted with two 56' catapults, cranes fitted to recover aircraft. At the time she carried six Type 0 Aichi E13A1 'Jake' three-seat reconnaissance floatplanes with two in reserve. Her aircraft's tail code was 'X-xx'. From November 1942 on the tail code of her aircraft was 'M-xx' (Hackett, Bob, Kingsepp, Sander and Alsleben, Allan (2004) IJN Seaplane Tender *Kimikawa Maru:* Tabular Record of Movement. <www.combinedfleet.com/ Kimikawa%20Maru _t.htm>.—Henceforth cited as 'TROM *Kimikawa Maru.*'

[144]. It is understood that a large number of E13A1 were actually built by Watanabe, as can be evidenced by the serial numbers. For the sake of simplification, all are referred to as Aichi E13A1, unless actual serial numbers prove otherwise.

[145]. Interrogation Miura *op. cit.*—According to Hackett *et al* (TROM *Kimikawa Maru, op. cit)* all eight Aichi E13A are offloaded.

[146]. Like the *Kimikawa Maru,* the *Kamikawa Maru* had been laid down in 1936 at Kobe as freighter for the Kawasaki Kisen K.K. Line. Requisitioned by the Japanese Navy in 1937 it was converted to a sea plane tender. In 1939 she was converted into a 17-knot 6,853 ton sea plane tender and sea plane carrier. Like the *Kimikawa Maru,* the *Kamikawa Maru's* aft well deck was fitted with two 56' catapults and cranes fitted to recover aircraft. Six Ten Year type 120-mm (4.7-inch)/45 cal. high angle guns were installed. At the time she carried four Kawanishi E7K2 Type 94 'Alf' and eight Nakajima E8N2 Type 95 'Dave' floatplanes. Her aircrafts' tail code was 'Z1-xx.' On 22 November 1941 she was reissued with new aircraft and now carried 14 Aichi Type 0 E13A1 'Jake' reconnaissance seaplanes and Mitsubishi F1M2 'Pete' observation seaplanes. In preparation for the Midway invasion, the *Kamikawa Maru* was loaded with fourteen F1M2 'Pete' and four E8N2 'Dave'' to be based at Midway. She sailed from Saipan on 28 May 1942 as part of 11th Seaplane Tender Group with seaplane carrier *Chitose.* Surviving attacks from B-17s as part of the Battle of Midway she was redirected to Kiska (Hackett, Bob, Kingsepp, Sander and Alsleben, Allan (2006) IJN Seaplane Tender *Kamikawa Maru:* Tabular Record of Movement. <www.combinedfleet.com/ Kamikawa%20Maru _t.htm>.).—See also: for diary of person aboard that voyage: Document nº 16. Diary of person unknown probably a member of Kure Nº 5 Special Landing Party. Diary Captured in the Milne Bay Area about 3 September 1942. Allied Land Forces Southwest Pacific Area. GSI/RRL/SMV 00882. Advanced Headquarters, dated 15 September 1942 Australian War Memorial, Canberra, Australia. File AWM 54/253/5/2.

[147]. Interrogation Miura, *op. cit.*

[148]. Withdrawal of the *Kamikawa Maru:* Document nº 16. Diary of person unknown probably a member of Kure Nº 5 Special Landing Party. Diary Captured in the Milne Bay Area about 3 September 1942. Allied Land Forces Southwest Pacific Area. GSI/RRL/SMV 00882. Advanced Headquarters, dated 15 September 1942 Australian War Memorial, Canberra, Australia. File AWM 54/253/5/2.

[149]. See Appendix.

[150]. Interrogation Miura, *op. cit.*

[151]. TROM *Kimikawa Maru, op. cit.*—The *Kamikawa Maru* may have made one run to Japan to replenish, and, presumably, to load with new planes (Hackett *et al.,* Seaplane Tender *Kamikawa Maru, op. cit.*)—This run is not mentioned in a diary of a member of the Kure Nº 5 Special Landing Party: Document nº 16. Diary of person unknown probably a member of Kure Nº 5 Special Landing Party. Diary Captured in the Milne Bay Area about 3 September 1942. Allied Land Forces Southwest Pacific Area. GSI/RRL/SMV 00882. Advanced Headquarters, dated 15 September 1942 Australian War Memorial, Canberra, Australia. File AWM 54/253/5/2.

[152]. The Imperial Japanese Navy in World War II, *op. cit. p.* 178

[153]. Interrogation Miura, *op. cit.*

154. Interrogation Miura, *op. cit.*

155. Compiled from Francillon, R.J. (1979) *Japanese Aircraft of the Pacific War*. Annapolis, Maryland: Naval Institute Press.

156. Actually: E13A= Reishiki Sanza Suijo Teisatsu-ki, contracted to *Reisui* (occasionally also addressed as *Suitei* on discussion boards).

157. Actually E7K2= Kyū-Yon Shiki

158. Actually: H6K = Kyū-nana Shiki Hikoh-tei, expressed as *Taitei* ('large boat')

159. Actually: A6M = Reishiki Kanjo Sento-ki, contracted to *Reisen*.

160. Actually: F1M2 = Reishiki Suijoh Kansoku-ki, contracted to *Reikan*

161. Actually: B5N - Kyū-nana Kanjoh Kohgeki-ki, contracted to *Kankoh*.

162. Actually: A6M2-N = Nishiki Suijo Sento-ki, contracted to *Suisen*.

163. Actually: E8N2 = Kyū-Go

164. One would assume that the U.S. weathermen should have able to notify Dutch Harbor (or Umnak) by radio, but that does not seem to have been the case. It seems that many were caught asleep in their bunks.

165. ex DD-260, reclassified 2 August 1940.

166. Naval Historical Center (1993) United States Navy Combat Narrative. The Aleutians Campaign. June 1942--Aug 1943, Washington: Naval Historical Center, Department of the Navy. p. 18.—BUAER (1943) Patwing 4 over the Aleutians. *Bureau of Aeronautics Navy Department Newsletter* [U.S. Navy] nº 187, 1 February 1943, pp. 36-37.

167. The Imperial Japanese Navy in World War II, *op. cit.*, p. 177.

168. The Consolidated B-24D, serial # 41-1088 was piloted by Captain Jack F. Todd.

169. The images cannot be reproduced for copy right reasons. Based on the film angles, the film crew was most probably stationed on the *Kimikawa Maru* at the time (see Cloe, Aleutian Warriors, *op. cit.* p. 155 for context shot, showing position of the *Kimikawa Maru*). (日本ニュース 第107号 [The News In Japan nº 107[昭和17年6月22日 [22 June 1942]. Newsreel provided online by NHK at: cgi2.nhk.or.jp/shogenarchives/jpnews/movie.cgi?das_id=D0001300492_00000&seg_number=003).Still photographs from the news footage have been published in Bōei Kenshū jo Senshishitsu, Hokutō hōmen kaigun sakusen *op. cit.* front matter.—See also image published in Cloe, Aleutian Warriors, *op. cit.* p. 158.

170. USAAF Chronology: Combat Chronology 1941-1945, of the U.S. Army Air Forces, June 1942. <paul.rutgers.edu/~mcgrew/wwii/usaf/ html/Jun.42.html>.

171. The fleet comprised of the heavy cruiser *Asahama*, the light cruisers *Kiso* and *Tama*, the destroyers *Akatsuki, Hibiki* and *Hokaze*, two armed troop transports, two auxiliary cruisers (*Awata Maru, Asaka Maru)*, seaplane tender *Kimikawa Maru,* the transport *Kumagawa Maru,* and the cargo ships, *Hinto Maru, Nissan Maru, Amagi Maru* and *Kemitsu Maru* carrying supplies and fuel remained anchored in Kiska Harbor for a few days.—The light cruiser *Tama* departed Kiska on 13 June 42 (Hackett, Bob and Kingsepp, Sander [2007] HIJMS *Tama*: Tabular Record of Movement. <www.combinedfleet.com/ tama_t.htm>.) and the light cruiser *Kiso* on June 18th (Hackett, Bob and Kingsepp, Sander [2007] HIJMS *Kiso*: Tabular Record of Movement. <www.combinedfleet.com/ kiso_t.htm>).

172. Jentschura, H., D.Jung & p. Michel (1977) *Warships of the Imperial Japanese Navy 1869-1945*. London: Arms & Armour Press. p. 106.

173. Post by Jim Lansdale on 30 June 2009 to the discussion thread'seaplane operations on Kiska, Aleutians ' <www.j-aircraft.org/smf/index.php?topic= 7943.0.

174. The newsreel is too grainy to allow for an identification of the type of floatplane on the catapult.

175. A possible fifth flying boat later observed in flight was interpreted as one of the four seen anchored: Kiska Harbor, Rat Islands. Photo Interpretation Section Report nº 40. 6 Jul 1942. Washington, DC: Headquarters Army Air Forces. Directorate of Intelligence Section A-2, Operational Intelligence Division, Photo Interpretation Section.

[176]. Kiska Harbor, Rat Islands. Photo Interpretation Section Report nº 40. 6 Jul 1942. Washington, DC: Headquarters Army Air Forces. Directorate of Intelligence Section A-2, Operational Intelligence Division, Photo Interpretation Section.

[177]. Source: Cooper, H.J. and Thetford, O.G (1944) *Aircraft of the Fighting Powers*. Vol. V. Leicester: Harborough Publishing Co. Ltd, p. 69.—Drawing elements rearranged adjusted to fit portrait page lay-out.

[178]. Source: Thetford, O.G and Maycock, C.B. (1945) *Aircraft of the Fighting Powers*. Vol. VI. Leicester: Harborough Publishing Co. Ltd., p. 51.—Drawing elements rearranged adjusted to fit portrait page lay-out.

[179]. Source: Cooper and Thetford, Aircraft of the Fighting Powers *op. cit*., p. 71.—Drawing elements rearranged adjusted to fit portrait page lay-out.

[180]. June 12, 1942:6 B-17s and 1 B-24 bomb shipping in the harbor at Kiska Island. A cruiser is heavily damaged and one destroyer is seen burning.—June 13, 1942: An LB-30 flies a weather mission and for the third straight day shipping in the harbor at Kiska Island is bombed by 5 B-17s and 3 B-24s; 2 heavy bombers turn back; the others bomb partially cloud-obscured targets. No effect is observed.—USAAF Chronology, June 1942, *op. cit.*

[181]. Not mentioned in The Imperial Japanese Navy in World War II, *op. cit.*

[182]. USAAF Chronology, June 1942, *op. cit.*

[183]. Interrogation Ito Sukemitsu, *op. cit*.

[184]. Ford, Short Cut To Tokyo*, op. cit*.p. 23.

[185]. Photographic Interpretation Kiska Island, Aleutian Islands. Prepared by staff, Photographic Interpretation School 13 July 1942. Photographic Interpretation School, Naval Air Station Anacostia, DC. [based on sortie Patwing Four Photographic Reconnaissance of 18 June 1942]. NARA RG165 Entry 77 Box 50 Folder Kiska Operation.

[186]. U.S. Army, Japanese Monograph No. 88. Aleutian Naval Operation," p. 53.

[187]. "A brave Navy solder fishing *iwana* at Kiska, Aleutians" Cover of *Daitoa sensō gahō* (dai jūichi-gō [October 8, 1942]). Ōsaka Minichi Tokyo Nichinichi Shinbunsha. Original magazine in the possession of the author.

[188]. Image from "Aleutian Islands: Flying a battleship flag in Narukamitō" (Aryūshan rettō: Gunkanki hirugaeru Narukamitō). Daitoa sensō gahō (dai jūichi-gō [October 8, 1942]). Ōsaka Minichi Tokyo Nichinichi Shinbunsha. Page 10. Magazine in the possession of the author.—The location is small waterfall near the midget submarine base.

[189]. Image from "Aleutian Islands: Flying a battleship flag in Narukamitō" (Aryūshan rettō: Gunkanki hirugaeru Narukamitō). *Daitoa sensō gahō* (dai jūichi-gō [October 8, 1942]). Ōsaka Minichi Tokyo Nichinichi Shinbunsha. Page 10. Magazine in the possession of the author. Note: the top left corner of the image has been digitally cloned and retouched to remove text that intruded into the image

[190]. Like the *Kimikawa Maru,* the *Kamikawa Maru* had been laid down in 1936 at Kobe as freighter for the Kawasaki Kisen K.K. Line. Requisitioned by the Japanese Navy in 1937 it was converted to a sea plane tender. In 1939 it was converted into a 17-knot 6,853 ton sea plane tender and sea plane carrier. Like the *Kimikawa Maru,* the *Kamikawa Maru's* aft well deck was fitted with two 56' catapults, cranes fitted to recover aircraft. Six Ten Year type 120-mm (4.7-inch)/45 cal. high angle guns are installed. At the time she carried four Kawanishi E7K2 Type 94 'Alf' and eight Nakajima E8N2 Type 95 'Dave' floatplanes. Her aircrafts' tail code was 'ZI-xx.' On 22 November 1941 she was reissued with new aircraft and now carries 14 Aichi Type 0 E13A1 'Jake' reconnaissance seaplanes and Mitsubishi F1M2 'Pete' observation seaplanes. In preparation for the Midway invasion, the *Kamikawa Maru* was loaded fourteen F1M2 'Pete' to be based at Midway, in addition to her own tactical complement of two E8N2 'Dave'' and two Aichi/Watanabe E13A1 'Jake'. The *Kamikawa Maru* sailed from Saipan on 28 May 1942 as part of 11th Seaplane Tender Group with seaplane carrier *Chitose*. Surviving attacks from B-17s as part of the Battle of Midway she was redirected to Kiska (Hackett, Bob, Kingsepp, Sander and Alsleben, Allan (2006) IJN Seaplane Tender *Kamikawa Maru:* Tabular Record of Movement. <www.combinedfleet.com /Kamikawa%20Maru _t.htm., henceforth cited as 'TROM *Kamikawa Maru.*

[191]. Alden, John D. (1989) *U.S. Submarine Attacks During World War II (Including Allied Submarine Attacks in the Pacific Theater).* Annapolis: Naval Institute Press. P. 12.—Tully, Anthony (2003) IJN *Nisshin*: Tabular Record of Movement. <www.combinedfleet.com/ Nisshin.htm>.

[192]. IJN *Abukuma* assisted, but did not enter Kiska Harbor.—See also: Interrogations Sentaro and Rokuji *op. cit.*

[193]. IJN *Abukuma* assisted, but did not enter Kiska Harbor.—See also: Interrogations Sentaro and Rokuji *op. cit.*

[194]. Look, David W. and Dirk H.R. Spennemann, (1993) For Future Use: A Management Conservation Plan for the World War II sites in the Republic of the Marshall Islands., Albury, NSW, Australia, and San Francisco, U.S.A.: The Johnstone Centre of Park, Recreation and Heritage and the U.S. National Park Service Western Regional Office.—Spennemann, Dirk H.R. (1995) Physical reminders of the British-Japanese Armament Trade in Micronesia. *Journal of the Pacific Society* (Tokyo) 18 (3), pp. 117-130.

[195]. Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. The 6-inch Gun Battery on Little Kiska Island*. (Report Kiska #4) Documentation and Condition Report. November 2008. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[196]. Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. The 6-inch Gun Battery on North Head, Kiska Island*. (Report Kiska #5) Documentation and Condition Report. November 2008. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[197]. Together with the AO *Fujisan Maru*, the AO *Nissan Maru* had formed part of the Main Body of the Aleutian Force (See Appendix 1).—Hackett, Bob and Kingsepp, Sander (2010) IJN *Nachi:* Tabular Record of Movement. <www.combinedfleet.com /nachi_t.htm>;Hackett, Bob and Cundall, peter (2010) IJN *Fujisan Maru:* Tabular Record of Movement. <www.combinedfleet.com /Fujisan_t.htm>

[198]. The Imperial Japanese Navy in World War II, *op. cit., p.* 177.—Not named, but described as burning and sinking from large hole in port side: Photographic Interpretation Kiska Island, Aleutian Islands. Prepared by staff, Photographic Interpretation School 13 July 1942. Photographic Interpretation School, Naval Air Station Anacostia, DC. [based on sortie Patwing Four Photographic Reconnaissance of 18 June 1942]. NARA RG165 Entry 77 Box 50 Folder Kiska Operation.

[199]. USAAF Chronology, June 1942, *op. cit.*

[200]. *Kamikawa Maru* Sentōshōhō, via Luke Ruffato.—I am most indebted to Luke Ruffato, who kindly provided translations of the *Kamikawa Maru's* Sentōshōhō as well as several Kōdōchōsho (translated entries until late August 1942).

[201]. This cannot be verified, as the *Kimikawa Maru* Sentōshōhō did not survive the war.

[202]. Ford, Short cut to Tokyo, *op. cit.* p. 23.

[203]. Later it was claimed that that the Catalina was attacked by Nakajima A6M2-N 'Rufe' (*Suisen).* That claim is puzzling, since, as far as can be reconstructed, the Japanese forces on Kiska did not possess any *Suisen* at that time. It is very likely that the U.S. pilots misread a Mitsubishi F1M2 *Reikan* for a 'harmless' reconnaissance plane.—While the Mitsubishi F1M2 'Pete' is a biplane rather than a monoplane like the Nakajima A6M2-N 'Rufe', both have a large central float in common. Moreover, at that point of the war, the Eleventh Air Force and Patwing-4 Pilots did not have much experience in identifying enemy floatplanes. Indeed, a 1944 source claims that the PBY crew had mistaken Japanese plane for a float reconnaissance aircraft and thus was not aware of the danger.—Engel, Leonard (1944) PBY Saga. From the log of a PBY squadron. *Air Trails Pictorial*. February 1944, pp. 22-23, 62, 64, 68; event on p. 68—For context see also History of Naval Air Station, Kodiak, Alaska. 28 December 1944. W. M. McDade, CO Naval Air Station, Kodiak,AK to Chief of Naval Operations (History Unit, Op-33-J-6, Office of Editorial Research). Dated 11 January 1945. Reproduced at www.kadiak.org/navy/1944history.txt.

[204]. Francillon, R.J. (1979) *Japanese Aircraft of the Pacific War*. Annapolis, Maryland: Naval Institute Press., p. 362.

[205]. *Kamikawa Maru* Sentōshōhō, via Luke Ruffato.

[206]. Source: National Archives 342-FH-3A29470-24199AC via Luke Ruffato.—Central section of image was published in: BUAER (1944) Jap Pilot Material. *Naval Aviation News* [U.S. Navy] nº 208, 15 January 1944, pp. 1–3.

[207]. Hutchinson, p. 30.

208. *Kamikawa Maru* Sentōshōhō, via Luke Ruffato.

209. Hutchinson, p. 32.

210. *Kamikawa Maru* Sentōshōhō, via Luke Ruffato. .

211. Interrogation Mukai, *op. cit.*—The Nakajima A6M2-N 'Rufe' (Japanese: Suisen 2 [float fighter type 2]) did its maiden flight on the day of the Pearl Harbor attack and entered service in early June 1942, first being issued to the Yokohama Kōkūtai then sent to Rabaul. (Virtual Aircraft Museum. Nakajima A6M2-N 'Rufe' <www.aviastar.org/air/japan/nakajima_a6m-n.php.—<www.j-aircraft.org/smf/index.php?topic=3158.0.—Operational with the Yokohama Kōkūtai as of 6 June 1942: <www.j-aircraft.org/smf/index.php?topic=7763.0).

212. HA-28, HA-29, HA-31, HA-32, HA-33 and HA-34 (Hackett, Bob and Kingsepp, Sander [2006] IJN Seaplane/Midget Submarine Carrier Chiyoda: Tabular Record of Movement. <www.combinedfleet.com/ Chiyoda_t.htm>.).

213. Hackett and Kingsepp, Seaplane/Midget Submarine Carrier Chiyoda, *op. cit.*

214. Virtual Aircraft Museum. Nakajima A6M2-N 'Rufe' <www.aviastar.org/air/japan/nakajima_a6m-n.php.

215. A major naval base in Honshu, Japan.

216. On 3 Jul the two seaplane tenders, as well as the oiler *Fujisan Maru* and six destroyers are attacked by a flight of seven B-24 bombers. The *Kimikawa Maru* suffers a near miss (TROM *Kimikawa Maru, op. cit.),* but 1 crew was killed and 3 wounded (Document nº 16. Diary of person unknown probably a member of Kure Nº 5 Special Landing Party. Diary Captured in the Milne Bay Area about 3 September 1942. Allied Land Forces Southwest Pacific Area. GSI/RRL/SMV 00882. Advanced Headquarters, dated 15 September 1942 Australian War Memorial, Canberra, Australia. File AWM 54/253/5/2).

217. Status of Enemy Air Raid Situation on Kiska. Captured Japanese document, dated 15 October 1942. AC/AS Intelligence Evaluation Report, dated 11 Aug 1943. File E-29456. On file NPS NHL file Kiska.

218. Local Kiska time is calculated at GMT-11 or Tokyo Time -19hrs.

219. See Appendix 3.—see also Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.

220. USAAF Chronology, Jul 1942, *op. cit.*

221. Not mentioned in the Kōdōchōsho of the Tōkō Kō.

222. The damage is not mentioned in the Kōdōchōsho.—One PBY crew, short of fuel, landed in the ocean southwest of Umnak and was rescued. (Hist, Fleet Air Wing Four, Aug 1941-Dec 1944, p. 48).

223. The *Kamikawa Maru* Sentōshōhō has not survived the war and cannot be consulted.

224. As is argued by Luke Ruffato, the Japanese pilots most probably misinterpreted the exhaust fumes coming from the engines as the U.S. pilot gave full throttle to evade the fighters.

225. See Appendix 3.—See also Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.

226. See Appendix 3.

227. In fact, another 10 minute interval in refuelling was claimed for Lt Yamada Kushichiro's Shōtai between the 3rd and 4th combat air patrol of the day (Appendix 3).

228. See Appendix 3.—Not substantiated by U.S. sources.

229. See Appendix 3.

230. Capt Jack L. Marks' pilot; Lt Harold E. Mitts, co-pilot; Lt John R. Giddens, SSgt John E. Cane, Cpl Edward p. Dwelis, Sgt Bill von Diehl, Cpl Hubert D. Smith, Pvt Theodore A. Alleckson, Pvt Robert G. Brown and Pvt Consetto J. Castagna were killed.

231. Source: NARA 342-AF-116708-AC.

232. One of three Kawanishi outbound on their daily search had sighted the tender. When each had finished their sector search, all three flying boats concentrated on Kuluk Bay, joined in section formation and bombed. Each plane carried two 250 kg. bombs. The crews were not sure but thought no damage had been inflicted on the tender. One plane had one small shrapnel hole in its tail surfaces as a result of AA fire—Interrogation Ito Sukemitsu, *op. cit*.

233. See Appendix 3.

234. Later Major Ramputi, Commander 21st Bombardment Squadron, 11th AAF.

235. See Appendix 3.

236. Not mentioned in the Kōdōchōsho of the Tōkō Kō.

237. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2009) IJN Subchaser CH-26: Tabular Record of Movement. <www.combinedfleet.com/ CH-26_t.htm>. henceforth 'TROM Subchaser CH-26.'—See also Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.

238. TROM Subchaser CH-26.

239. See Appendix II, 15 July 1942.

240. The wreck of USS *Grunion* (SS-216) has since been located by remote-controlled submersible. Examination of the wreckage suggests that the submarine carried out a crash dive, went too deep and could not recovere from the dive. It is unclear to what extent the damage inflicted by the *Kano Maru* contributed to the loss. (Dunham, Mike [2011] After 70 Years, Mystery Endures Over Fate Of USS Grunion. *Anchorage Daily News* 30 May 2011.

241. Payne, The Enemy on Kiska, *op. cit.* p. 45.—Although this was not mentioned in 'The Imperial Japanese Navy in World War II' *op. cit.*

242. See here for a 1946 image of the Kano Maru: <www.flickr.com/photos/12567713@N00/88094931/sizes/l/.

243. Source: National Archives 342-FH-3A29840-51697AC via Luke Ruffato.

244. Wire prints of USN press releases in the possession of the author.

245. Cloe, Aleutian Warriors *op. cit*, pp. 199-201.

246. Japanese sources claim that none of the *Taitei* were lost due to enemy action apart from three that were caught in the naval shelling of 8 August (see p. xx): Interrogation Ito Sukemitsu *op.cit.*

247. Morison, Samuel Eliot (1951). Aleutians, Gilberts and Marshalls, June 1942 – April 1944. *History of United States Naval Operations in World War II*, vol. 7. Boston: Little, Brown & Co. pp. 10-12.—Commander Task Group 8.6, U.S. Pacific Fleet, Final Report of Action by Main Body Task Force Eight on 7 Aug 1942. Intelligence Center Pacific Ocean Areas, 25 November 1942. NARA Entry 77, Box 50, Kiska Operations.

248. Commander Task Group 8.6, U.S. Pacific Fleet, Final Report of Action by Main Body Task Force Eight on 7 Aug 1942. Intelligence Center Pacific Ocean Areas, 25 November 1942. NARA Entry 77, Box 50, Kiska Operations.

249. Interrogations Sentaro and Rokuji *op. cit*.

250. Interrogation Ito Taisuke, *op. cit.*

251. Interrogation Ito Sukemitsu, *op. cit.*—Both wrceks were left on Kiska.

252. Interrogation Ito Sukemitsu *op. cit*.—Interrogation of Captain Ito Taisuke *op. cit.*

253. Based on Prisoner of War reports on the passage of the war on Kiska, it was claimed that "six four motored bombers [e.g. the Kawanishi] came in at the end of June 1942. Two of these were destroyed by American Naval gunfire on Aug 8th; two were shot down by fighter panes in September and two of them returned to Japan. (Payne, The Enemy of Kiska, *op. cit*, p. 93).

254. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.

255. Commander Task Group 8.6, U.S. Pacific Fleet, Final Report of Action by Main Body Task Force Eight on 7 Aug 1942. Intelligence Center Pacific Ocean Areas, 25 November 1942. NARA Entry 77, Box 50, Kiska Operations.—Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.

256. PO2c Suketada Ōkawa; PO3c Katsutaro Uchiyama and Sea2c Minoru Minasawa.

257. Morison, Aleutians, Gilberts and Marshalls, *op. cit.* pp. 10-12.

258. Commander Task Group 8.6, U.S. Pacific Fleet, Final Report of Action by Main Body Task Force Eight on 7 Aug 1942. Intelligence Center Pacific Ocean Areas, 25 November 1942. NARA Entry 77, Box 50, Kiska Operations.

259. King, Ernest J. (1946) *U.S. Navy at War, 1941-45: Official Reports to the Secretary of the Navy*. Washington: United States Navy Department. P. 75.

260. 1115(+10) (U.S. Time) @ 51-51N 177-38E.—Sawruk, Jim C (2000) Air-to-Air Claims and Credits for Navy and Marine Corps Patrol Type Aircraft During World War II. Appendix 4 to Michael D Roberts (ed) Dictionary of American Naval Aviation Squadrons Volume 2 The History of VP, VPB, VP(H) and VP(AM) Squadrons. Washington, DC: Naval Historical Center, Department of the Navy. Pp. 713-740.

261. Kōdōchōshō for the 5th Ku for 9 August.

262. TROM *Kimikawa Maru, op. cit.*—Izawa (Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118) mentions that only 5 were delivered on the 14th and another five on the 31st.

263. Interrogation Mukai *op. cit.;* Interrogation Ito Sukemitsu *op. cit.*

264. A total of only 215 Kawanishi H6K had been built, making them precious commodities (Francillon, 'Japanese Aircraft of the Pacific War' *op. cit., p.* 306).

265. Gilman, *Our Hidden Front*, p. 108.

266. For the raw data, see the Appendix.

267. All had been built at Ourazaki, Kure Naval yard. The Type A submarines, crewed by 2 men, were displacing 46 tons (submerged) and had a speed of 23kts surfaced / 19kts submerged; ranges: 80nm @ 6kts surfaced, 18nm @19kts submerged; maximum dive depth: 100 feet: Carpenter, Dorr and Polmar, Norman (1986) *Submarines of the Imperial Japanese Navy*. Annapolis, Md.: Naval Institute Press. P. 130

268. Hackett, Bob and Kingsepp, Sander (2006) IJN Seaplane/Midget Submarine Carrier *Chiyoda*: Tabular Record of Movement. www.combinedfleet.com/ Chiyoda_t.htm.—The *Chiyoda* could carry up to 12 midget submarines, up to 12 sealpanes, or a combination of both: Carpenter and Polmar, Submarines of the Imperial Japanese Navy, *op. cit*. p. 145.

269. Hackett Bob and Kingsepp, Sander (2006) Sensuikan! Midget Submarines Based at Kiska, Aleutians 1942-1943. www.combinedfleet.com/ Kiska.htm.

270. Hackett and Kingsepp, Sensuikan! *op.cit*

271. Both were Type A, as the others, but the hull numbers are unknown at present.

272. Nine members of the 12th Construction Batallion had died in a bomb shelter after a direct hit on 4 November 1942: Hackett and Kingsepp, Sensuikan! *op.cit*).

273. Hackett and Kingsepp, Sensuikan! *op.cit*

274. Hackett and Kingsepp, Sensuikan! *op.cit*.

275. Hackett and Kingsepp, Sensuikan! *op.cit*.

276. Photographic Interpretation Report nº 33. Kiska and Segula Islands. Photographic Advanced Intelligence Center, North Pacific Area, c/0 F.P.O. 230, San Francisco. Serial SO33/AIC. Dated 14 July 1943. NARA RG165 Entry 77 Box 52 Folder 9135.

277. With I-21 being the first, taking ten personnel of the submarine base on 30 May 1943.—The remaining personnel is evacuated as part of the overall evacuation.

278. Hackett and Kingsepp, Sensuikan! *op.cit.*

279. Image NARA SC189261.

280. Hackett and Kingsepp, Sensuikan! *op.cit*.

281. Hackett and Kingsepp, Sensuikan! *op.cit.*

282. Comprised of *I-9, I-15, I-17, I-19, I-25, I-25* and *I-26* (Carpenter and Polmar, Submarines of the Imperial Japanese Navy, *op. cit*. p. 26).

283. Some boats were then sent to the west coast of North America, shelling Vancouver (I-26, 20 June 1942) and Oregon (I-25, 21 June 1942): Carpenter and Polmar, Submarines of the Imperial Japanese Navy, *op. cit*. p. 26.

284. Comprised of *I-1, I-2, I-3, I-4, I-5, I-6* and I-7 (Carpenter and Polmar, Submarines of the Imperial Japanese Navy, *op. cit*. p. 26).

[285]. The general characteristics of the RO-class boats were 16 kts speed surfaced and 8kts submerged; range 5,500 surfaces; 80nm @4kts submerged.

SubDiv 26: *RO-61* (ex #72), launched 19 May 1923, completed 9 February 1924.—*RO-62* (ex #73), launched 10 September 1923, completed 24 July 1924.—*RO-65,* built by Mitsubishi Kobe, launched 25 September 1925, completed 30 June 1926.—*RO-67,* built by Mitsubishi Kobe, launched 18 March 1926, completed 15 December 1926, surrendered August 1945, scrapped 1946.

SubDiv 33: *RO-63* (ex #74), launched 24 January 1924, completed 20 December 1924.—*RO-64,* built by Mitsubishi Kobe, launched 19 August 1924, completed 30 April 1925, sunk by mine Hiroshima Bay 12 April 1945.—*RO-68,* built by Mitsubishi Kobe, launched 23 February 1925, completed 29 October 1925, surrendered August 1945, scrapped 1946: Carpenter and Polmar, Submarines of the Imperial Japanese Navy, *op. cit*. p. 121).

[286]. SubDiv 26 and SubDiv 33 had been part of the SubRon 7, assigned to the Fourth Fleet and had been operating in tropical Micronesia (Carpenter and Polmar, Submarines of the Imperial Japanese Navy, *op. cit*. p. 27).

[287]. In addition, boats *RO-65* and RO-67 were part of SubDiv26.

[288]. Hackett, Bob and Kingsepp, Sander (2003) HIJMS Submarine RO-61: Tabular Record of Movement. www.combinedfleet.com/ RO-61.htm.—Hackett, Bob and Kingsepp, Sander (2008) HIJMS Submarine RO-62: Tabular Record of Movement. www.combinedfleet.com/ RO-62.htm.—Hackett, Bob and Kingsepp, Sander (2008) HIJMS Submarine RO-63: Tabular Record of Movement. www.combinedfleet.com/ RO-63.htm.—Hackett, Bob and Kingsepp, Sander (2003) HIJMS Submarine RO-64: Tabular Record of Movement. www.combinedfleet.com/ RO-64.htm.—Hackett, Bob and Kingsepp, Sander (2001) HIJMS Submarine RO-65: Tabular Record of Movement. www.combinedfleet.com/ RO-65.htm.—Hackett, Bob and Kingsepp, Sander (2003) HIJMS Submarine RO-67: Tabular Record of Movement. www.combinedfleet.com/ RO-67.htm.—Hackett, Bob and Kingsepp, Sander (2001) HIJMS Submarine RO-68: Tabular Record of Movement. www.combinedfleet.com/ RO-68.htm.

[289]. USS *Casco* was refloated on 12 September, and returned to Puget Sound Naval Yard after emergency repairs at Dutch Harbor and at Kodiak .

[290]. TROM RO-61 *op. cit*.—Carpenter and Polmar, Submarines of the Imperial Japanese Navy, *op. cit*. p. 26.

[291]. Five survivors were picked up and taken POW.

[292]. TROM RO-65 *op. cit*.

[293]. Boyd, Carl, and Yoshida Akihiko (1995) *The Japanese Submarine Force and World War II*. Annapolis: Naval Institute Press. P. 87.

[294]. Hackett, Bob and Kingsepp, Sander (2002) HIJMS Submarine I-26: Tabular Record of Movement. www.combinedfleet.com/ I-26.htm.

[295]. Hackett, Bob and Kingsepp, Sander (2009) HIJMS Submarine I-9: Tabular Record of Movement. www.combinedfleet.com/ I-9.htm.

[296]. Hackett, Bob and Kingsepp, Sander (2001) HIJMS Submarine I-35: Tabular Record of Movement. www.combinedfleet.com/ I-35.htm.—Hackett, Bob and Kingsepp, Sander (2002) HIJMS Submarine I-157: Tabular Record of Movement. www.combinedfleet.com/ I-157.htm.—Hackett, Bob and Kingsepp, Sander (2009) HIJMS Submarine I-156: Tabular Record of Movement. www.combinedfleet.com/ I-156.htm.—Hackett, Bob and Kingsepp, Sander (2009) HIJMS Submarine I-31: Tabular Record of Movement. www.combinedfleet.com/ I-31.htm.—Hackett, Bob and Kingsepp, Sander (2009) HIJMS Submarine I-7: Tabular Record of Movement. www.combinedfleet.com/ I-7.htm.—Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-168: Tabular Record of Movement. www.combinedfleet.com/ I-168.htm.—Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-169: Tabular Record of Movement. www.combinedfleet.com/ I-169.htm.—Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-171: Tabular Record of Movement. www.combinedfleet.com/ I-171.htm.—Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-175: Tabular Record of Movement. www.combinedfleet.com/ I-175.htm.—Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-21: Tabular Record of Movement. www.combinedfleet.com/ I-21.htm.—Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-34: Tabular Record of Movement. www.combinedfleet.com/ I-34.htm.

297. Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-34: Tabular Record of Movement. www.combinedfleet.com/I-34_t.htm.

298. Carpenter and Polmar, Submarines of the Imperial Japanese Navy, *op. cit*. p. 34.

299. The data, as far as they could be compile at the time of writing, are incomplete as the (English-language) sources available to the author are scattered and patchy.

300. Bōei Kenshū jo Senshishitsu, Hokutō hōmen kaigun sakusen *op. cit*. 615 ff. (pagination cited after Stephan, The Kuril Islands, *op. cit.*, p. 138).

301. The Tōkō Kōkūtai was organized at Yokohama on 15 November 1940.

302. According to the USSBS interrogation his name was Ito Sukemitsu, while Yasuho Izawa refers to him as 'Hiromitsu' Ito (Izawa, Imperial Japanese Navy Float Plane Fighter Units *op. cit.*, p. 118).

303. These had been offloaded from the *Kimikawa Maru* and the *Kamikawa Maru.*

304. Interrogation Miura *op. cit.*

305. Interrogation Ito Sukemitsu *op. cit.*

306. Attu had temporarily a civilian resident population, but that ended when all were sent to Japan in September 1942.

307. Eg. Guam: Higuchi, Wakako (2001) The Japanisation Policy for the Chamorros of Guam, 1941–1944. *The Journal of Pacific History* vo. 36(1), pp. 19-35.

308. Interrogation Mukai *op. cit.*

309. Initially organised at Yokusuka (Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118).

310. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.

311. Takahashi, The Japanese Campaign in Alaska, *op. cit.*

312. A Special Base Force (特別根拠地隊 *Tokubetsu Konkyochitai*) provided support and security to naval facilities. The nomenclature makes it very clear that the IJA's role on Kiska was to support the IJN and that the IJN facilities were the *raison d'être* for the Japanese presence on Kiska.

313. The Imperial Japanese Navy in World War II, *op. cit.*, p. 14.

314. Interrogation Mukai *op. cit*.—1,200 men from the 301st Independent Infantry Battalion and 301st Independent Engineer Company under Major Hosumi Matsutoshi that had occupied Attu were moved to Kiska, occupying the Gertrude Cove area. (Interrogation Mukai, *op. cit*, p. 4).—Major General Toichito Mineki assumed command of the Army garrison on Kiska, which was reinforced with another 570 more men in late Dec (Japanese Monograph 88, p. 33; Interrogation Mukai, *op. cit.)*.

315. Hall, Henry W. (1943) The Battle of the Aleutians. In honor and memory of the men of the North pacific theatre who died so that a continent might be free. Adak: Intelligence Section, Field Force Headquarters Adak, Alaska. October 1943.—Akiyama Katsuzo * 18 Feb 1891 Shiga, † 9 Dec 1962; Naval Academy Class 40 (1912), CO of various submarines 1919–1937; CO of CA *Abukuma;* CO of CA *Aoba* 1938; 1940 CO CA *Isumo;* RAdm 1 May 1942 attached to Yokosuka Naval District, after evacuation attached IJN General Staff, then Chief of Personnel,Yokosuka Naval District.

316. Payne, Enemy on Kiska, *op. cit. p. 7.*

317. Takahashi Nobukichi *7 Apr 1897 Gunma † 16 May 1945 KIA; Naval Academy Class 47 (1919), 1936-1938 Chief Air, Ominato Kōkūtai; various posts; 1 Feb 1942 CO Chichima Kōkūtai; 5 Aug 1942 CO 5th Kōkūtai; promoted Captain 1 May 1943; after evacuation 6 Jul 1943 attached to Yokosuka Naval District, 15 Jul 1943 CO Tokushima Kōkūtai; 1 Oct 1943 CO Tateyama Kōkūtai.

318. He seems to have been evacuated by submarine, as he is reported to have been attached to the Yokosuka Naval District as of 6 July 1943 (Naval Academy Class 47 <homepage2.nifty.com/nishidah/e/px47.htm#r019>).

319. 'Kiska only Enemy Base left in Area. Fliers see No Sign of Occupancy, on Attu, Agattu, in several weeks.' *Pittsburgh Post-Gazette* Oct 8, 1942, p. 1 col. 8.

320. Mineki Juichirō (occasionally listed as Mineki Toichirō), 1894–1970. Before he came to Kiska, he was Chief of Staff 54th Division.

321. Interrogation Mukai *op. cit.*—Interrogation Miura *op. cit.*

322. Interrogations Sentaro and Rokuji *op. cit*.

323. Interrogation Ito Taisuke *op. cit.*

324. Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-34: Tabular Record of Movement. <www.combinedfleet.com/ I-34_t.htm>.

325. According to the USSBS interrogation his name was Ito Sukemitsu, while Yasuho Izawa refers to him as 'Hiromitsu' Ito (Izawa, Imperial Japanese Navy Float Plane Fighter Units *op. cit.*, p. 118).

326. Izawa claims that the Tōkō Kō Suisen Sentai replaced the *Kimikawa Maru's* floatplane detachment in their duties (Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118).

327. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.—The Imperial Japanese Navy in World War II, *op. cit.*, p. 125.

328. The Japanese Air Groups (Kōkūtai), while initially associated with the airfield from which they originated, were numbered as they left Japan for front-line placement. Air Group numbers above 400 were reserved for air groups comprised solely of float planes. Each Kōkūtai comprised of three to four squadrons (Chutai) of nine to twelve aircraft each. Each squadron was split into three or four flights or sections (Shōtai). Each aircraft number was unique and carried as a number on the tail.

329. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.

330. The Imperial Japanese Navy in World War II, *op. cit. p. 14.*

331. The Imperial Japanese Navy in World War II, *op. cit. p. 141.*

332. Interrogation Miura, *op. cit.*

333. Interrogation Ito Taisuke *op. cit.*

334. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.

335. Provisional Estimate Enemy Strength Kiska. R.G. Jacobs to Assistant Chief of Staff S-2, Western Defense Command, Presidio of San Francisco, California, to Assistant Chief of Staff, G-2, Military Intelligence Service, Washington, DC. NARA RG165 Entry 77 Box 3229 File San Francisco.—A study of enemy defensive installations on Kiska Island as known on 5 Jul 1943. Intelligence Memorandum nº 6 prepared by G-2, Western Defense Command and Fourth Army. Headquarters Western Defense Command and Fourth Army. Presidio of San Francisco, California. Office of the Assistant Chief of Staff G2, pp. 19-20.

336. Local dates given. Kiska date and time uses U.S.dates.

337. Table derived from (and with addition to) Appendix I: Administrative and resource management actions related to Kiska Island, Aleutians: a Synoptic Chronology. In: Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan.* Dec 2008. (Report Kiska #1). Study prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

338. Interrogation Mukai *op. cit*.

339. Hall, Henry W. (1943) The Battle of the Aleutians. In honor and memory of the men of the North pacific theatre who died so that a continent might be free.Adak: Intelligence Section, Filed Force Headquarters Adak., Alaksa. October 1943.

340. Interrogation Mukai *op. cit*.

341. Ranges: P-39 840km (525 miles); P-40 1050km (650 miles); P=38 1450 km (900 miles).

342. See Carter, Worrall Reed (1953) *Beans, Bullets, and Black Oil. The Story of Fleet Logistics Afloat in the Pacific During World War II*. Washington, DC: United States Government Printing Office. Pp. 72-74.

343. Lockheed P-38G-10-LO Lightning Serial #42-13545 from the 18th Fighter Squadron, 343rd Fighter Group, 11th Air Force. Crashed during take-off on March 18,1945. Image Source: D. Shelley, www.flickr.com/photos/18532986@N07/3551068084/in/photostream.

344. Wire prints of USN press release in the possession of the author. Release date 19 Apr 1943.

345. e.g. Alluded to in Gilman, Our Hidden Front*, op. cit* p. 110; USSBS, Campaigns of the Pacific War *op. cit,* p. 80; Mitchell *et. al.*, The Capture of Attu. *op. cit.* p. 3.—expressed in Cloe, Aleutian Warriers *op. cit.* p. 147; —and then repeated several times: Wilder, Carol A. (1993) *Weather as the Decisive Factor of the Aleutian Campaign, June 1942-August 1943*. Master of Military Art And

Science, U.S. Army Command and General Staff College. Fort Leavenworth, Kansas. p. 51,.—Wetterhahn, Ralph (2004), The Last Flight of Bomber 31: Harrowing Tales of American and Japanese Pilots Who Fought World War II's Arctic Air Campaign. New York: Carroll & Graf. P. 39.

346. Morison, Samuel Eliot (1951). *History of United States Naval Operations in World War II, Volume VII: Aleutians. Gilberts and Marshalls, June 1942-April 1944*. Boston: Little, Brown and Company. p. 13.

347. Payne, Enemy on Kiska, *op.cit.*

348. Takahashi (The Japanese Campaign in Alaska, *op. cit.*) argued that the shelling of Kiska by Task Group 8.6. on 3 August 1942 (see this document, p. xx) precipitated the move of the IJA troops to Kiska in order to strengthen Kiska against a possible landing by U.S. forces.

349. According to Takahashi (The Japanese Campaign in Alaska, *op. cit.*) on 1 November 1942.

350. Interrogations Sentaro and Captain Rokuji *op. cit.*

351. Five B-25 and three P-38 aborted the Kuluk Mission due to bead weather. (Carter, K.C and R. Mueller (1973) *The Army Air Force in World War II. Combat Chronology 1941-1945*. Washington: Albert Simpson Historical Center, Air University & Office of Air Force History, Headquarters U.S.A.F. p. 38).

352. Carter and Mueller, Combat Chronology 1941-1945, *op. cit*, p. 38.

353. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119.

354. September 7th, U.S. date.—Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118.

355 Cloe, Aleutian Warriors *op. cit.* p. 209.

356. 'Guadalcanal type' as it was first observed and inspected by U.S. forces on Guadalcanal, Solomon Islands. It is an array where the top part was used for receiving and the bottom for sending. The RADAR had a range of about 50 to 60 miles: BUAER (1945) Jap Electronics. *Naval Aviation News* [U.S. Navy] nº 234, 1 February 1945, pp. 1–7.

357. 'Damaged Jap equipment, Jap Radar installations rear of Main Camp area (Captured Enemy Equip. Jap), Kiska, Alaska.' Photographer: NAS Adak, Date: 7 Sept. 1943. Image: ADK 1779. NARA R-80G-80385.—For the apearance of te RADAR durng the Japanese period see the special photo issue of *The Manichi Graphic* 25 November 1965 p. 62 (top of page).—The image cannot be reproduced here for copyright reasons.

358. Kasukabe also claimed that the RADAR on Kiska had been salvaged from the British battleship *Prince of Wales* (sunk off Malaya) and that this unit had been the first RADAR seen in Japan: Kasukabe Karl Kaoru (1995) The Escape of the Japanese Garrison from Kiska. in: Fern Chandonnet (ed). *Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993.* Anchorage, AK: Alaska at War Committee. Pp. 121–123.—That claim is highly unlikely. If the RADAR had indeed been salvaged from the Prince of Wales it would have been retained for in-depth analysis and would more certainly not been shipped to Kiska where it was a high risk of being destroyed. Moreover the RADAR, once immersed in seawater, would not have been able to be returned to operational condition.

359. Claimed as shot down in the Kōdōchōshō.—Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119.

360. Lieutenant Frederick E. McCoy received the credit for shooting down the Rufe. (Cloe, Aleutian Warriors *op. cit.* p. 211; USAF Historical Study No. 85, *USAF Credits for the Destruction of Enemy Aircraft, World War II*, Office of Air Force History, 1978).

361. Coles, Harry L. (1950) The Aleutians Campaign. in: Craven, Wesley Frank, and Cate, James Lea (eds.) *Army Air Forces in World War II Vol. IV The Pacific: Guadalcanal to Saipan. August 1942 to July 1944*. Washington DC: Government Printing Office. Pp. 359-404.

362. Based on photography, Eleventh Air Force intelligence staff claimed the destruction of a four engine flying boat and five other Japanese aircraft (Carter and Mueller, *Combat Chronology 1941-1945*, p. 41).

363. Status of Enemy Air Raid Situation on Kiska. Captured Japanese document, dated 15 October 1942. AC/AS Intelligence Evaluation Report, dated 11 Aug 1943. File E-29456. On file NPS NHL file Kiska.

364. This is based on the statement by Izawa (Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 118) only one operational Suisen remained after that days' action.

365. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119.

366. Lieutenants Richard B. Gardner and Hawley p. Mills each claimed a Rufe and Lt George Laven claimed a float reconnaissance aircraft. While the pilots were credited with the kills (Cloe, Aleutian Warriors *op. cit*. p. 216), their claims were not fully substantiated. (Coles, Aleutians Campaign, *op. cit.)*

367. Lieutenant Gene L. Arth and his wing-man, Lt Wintow E. Matthews, claimed two Rufes shot down (Cloe, Aleutian Warriors *op. cit*. p. 216).

368. Ford, *Shortcut to Tokyo*, pp. 64-70.

369. Status of Enemy Air Raid Situation on Kiska. *Op. cit.*

370. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119.

371. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119.

372. TROM *Kimikawa Maru, op. cit.*—Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119.

373. 25 September U.S. date.

374. Hatch, F.J. (1974) Allies in the Aleutians. *Aerospace Historian* vol. 21 (2), pp. 70-78.

375. Payne, Enemy on Kiska, *op. cit.* p. 3

376. Not in the U.S. record.

377. It is possible that PO2c Torao Morikawa had arrived only the day before aboard the *Kimikawa Maru.*

378. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119.

379. 30 September U.S. date.

380. Carter and Mueller, Combat Chronology 1941-1945, *op. cit*, p. 45.

381. Attacked by a Shotai flown by Lt1 Kōzō Miyazawa; PO2c Kunizō Nakamachi and Sea1c Tadashi Sasaki. Source: Kōdōchōshō for the 5th Ku.

382. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119. Not mentioned in U.S. accounts.

383. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119.

384. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 119.

385. Captains Kenneth E. George and Cecil A. Thomas and Lieutenant James R. Burgett III, each received credit for a float fighter. (Cloe, Aleutian Warriors, *op. cit.* p. 232).

386. Flown by PO2c Yoshikazu Sasaki; Sea2c Asaharu Utazu; PC3c Hotoshi Naito; and PO2c Kaishi Ōkawa: Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

387. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

388. Payne, Enemy on Kiska, *op.cit.*

389. Cloe, Aleutian Warriors, *op. cit.* p. 232.

390. Payne, Enemy on Kiska, *op. cit.* p. 3.

391. Cloe, Aleutian Warriors, *op. cit.* p. 232.

392. The mention intercepts by PO2c Yoshikazu Sasaki and Sea2c Asaharu Utazu claiming the kill of a P-38 and another possible.—PO1c Kunizō Nakamachi and PC3c Sato claimed having damaged one B-24 (Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120).

393. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

394. Status of Enemy Air Raid Situation on Kiska. *op. cit.*

395. Status of Enemy Air Raid Situation on Kiska. *op. cit.*

396. Hatch, F.J. (1974) Allies in the Aleutians. *Aerospace Historian* vol. 21 (2), pp. 70-78.

397. Karig, Walter and Purdon, Eric (1947) *Battle Report Pacific War Middle Phase*. New York, NY.: Farrar & Rhinehardt. P. 296.

398. Normally the planes would be staged through Umnak where they would be refueled and, on occasion, armed.

399. Amchitka was operational by 16 February 1943 and acted as an advance fighter base and refuelling location. The first aircraft (B-24s of the 21BS 30BG were stationed on Amchitka from 18 February onwards.

400. Shemya airfield became operational on 27 July 1943, essentially too late for any use in any meaningful attacks on Kiska. It served as the base of the 28th Bombardment Group (Composite), Eleventh Air Force from 25 February 1944 to 20 October 1945. (Rickard, J [2007], 28th Composite Group/ 28th Bombardment Group, <www.historyofwar.org/air/units/USAAF/28th_Bombardment_Group.html)

401. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

402. The 400 series numbers were reserved for float plane units.

403. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 12 claims six Aichi E13A1.—TROM *Kimikawa Maru, op. cit*. states that the vessels arrived at Kiska on 2 November and that two, not three Aichi E13A1 were delivered.

404. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

405. Coles, Aleutians Campaign, *op. cit. p.* 373.

406. Coles, Aleutians Campaign, *op. cit.* p. 373.

407. Coles, Aleutians Campaign, *op. cit.* p. 373.

408. From a position about 52°50'N, 166°E: TROM *Kimikawa Maru, op. cit*.

409. TROM *Kimikawa Maru, op. cit*.—Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120 states that the planes were sent to Attu and from there to Kiska.

410. Three killed in action since the last replacement, with an addition three pilots returned to the homeland: PO2c Suzuki, Sea2C Narita and Sea2C Minasawa.

411. Interrogation Miura, *op. cit*, p. 2.

412. Lieutenants Artie L. Kayser and John A. Leighton, 54th Fighter Squadron, were reported MIA (Cloe, Aleutian Warriors, *op. cit.* p. 248).

413. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

414. *Anchorage Daily Times* 2 Jan 1943, p. 1, and 5 Jan 1943, p. 1.—See also: Coles, Aleutians Campaign, *op. cit.* p. 374.

415. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

416. According to Handleman, Rodebaugh received the Distinguished Flying Cross for his skills in this encounter: Handleman, Howard (1943) *Bridge to Victory. The story of the Reconquest of the Aleutians*. New York: Random House. p. 46).

417. PO1c Nakamachi, PO1c Sasaki, PO2c Misao Cho and PO2c Naito.

418. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

419. *Anchorage Daily Times* 2 Jan 1943, p. 1, and 5 Jan 1943, p. 1.—See also: Coles, Aleutians Campaign, *op. cit.* p. 374.

420. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

421. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

422. Carter and Mueller, Combat Chronology 1941-1945, *op. cit*, p. 75.

423. Enemy installations on Kiska Island as known 24 February 1943. Headquarters Western Defense Command and Fourth Army, Office of the Assistant Chief of Staff, G-2, Presidio of San Francisco, California, to Assistant Chief of Staff, G-2, Military Intelligence Service, Washington, DC. NARA RG165 Entry 77 Box 46 Folder 6800 Alaska-Western Defense Command.

424. Enemy installations on Kiska Island as known 24 February 1943. *Op. cit.*

425. Bratton, Rufus S (1943) Japanese Forces in the Aleutians. Memorandum for the Chief, Strategy Section, C.P.D. Dated 5 February 1943. MID 370.2 Aleutian Is. NARA RG165 Entry 77 Box 46 Folder 'Alaska Japanese Potentialities.'

426. Carter and Mueller, Combat Chronology 1941-1945, *op. cit*, p. 324.

427 Flying conditions were seen as unfavourable (ceiling less than 1,000 feet, visibilty less than 2.5 miles) for over 40% of days in the months of January to March: Chief of Naval Operations (1945) *Aerology and Amphibious Warfare, Fleet Air Wing Four Strikes*. NAVAER 50-40T-2. June, 1945. Washington, D.C.: Chief of Naval Operations, Aerology Section.

428. As Ford (Short Cut To Tokyo, *op. cit.* p. 39) pointed out, the Japanese would have quickly realised how long it took for a front over Kiska to reach Adak, which then would have shut down the U.S. flight operations, and so could use the predictable lull in bombing to good effect.

429. Report from the Aleutian Islands Area. *BUAER Newsletter* [U.S. Navy] nº 192, 1 May 1943, p. 3.—Engel, Leonard (1944) PBY Saga. From the log of a PBY squadron. *Air Trails Pictorial*. February 1944, pp. 22-23, 62, 64, 68. Specific reference p. 68.

430. NARA via pacific wrecks.com.

431. BUAER (1943) Japanese Fighter Aircraft. "Zero" signifies a type, not a plane. Zeke, Hap, Rufe, Pete, Dinah are code names for Zero models. *BUAER Newsletter* [U.S. Navy] nº 191, 15 April 1943, p. 1-3.

432. Interrogation Ito Taisuke, *op. cit*

433. See Operational log *Kamikawa Maru* Hikōkitai.

434. Document nº 16. Diary of person unknown probably a member of Kure Nº 5 Special Landing Party. Diary Captured in the Milne Bay Area about 3 September 1942. Allied Land Forces Southwest Pacific Area. GSI/RRL/SMV 00882. Advanced Headquarters, dated 15 September 1942 Australian War Memorial, Canberra, Australia. File AWM 54/253/5/2.

435. 'What the Japanese say about Kiska Weather." In: Payne, Enemy on Kiska, *op. cit*. p. 88.

436. 'What the Japanese say about Kiska Weather." In: Payne, Enemy on Kiska, *op. cit*. p. 88.

437. Interrogation Miura, *op. cit.*

438. Interrogation Ito Sukemitsu, *op. cit.*

439. Interrogation Ito Sukemitsu, *op. cit.*

440. 'What the Japanese say about Kiska Weather." In: Payne, Enemy on Kiska, *op. cit*. p. 88.

441. 'What the Japanese say about Kiska Weather." In: Payne, Enemy on Kiska, *op. cit*. p. 89.

442. See for example the image of a 'Jake' riding out rough surf: Bōei Kenshū jo Senshishitsu, Hokutō hōmen kaigun sakusen *op. cit.* p. 348. The image cannot be reproduced here for copyright reasons.—See also the same apicture nd additional images of overturned and severely damaged aircraft in an accident report contained in Archives of the National Institute for Defence Studies (NIDS), Tokyo, File 5 航空基地 36. The images from this report cannot be reproduced here for copyright reasons, even if some of these images have been published previously in U.S. publications. While NIDS owns the original document, it was accessioned without attribution of the images. As NIDS cannot ascertain and contact the copyright owner, the photos are deemed protected under copyright and all reproduction is expressedly forbidden (pers. comm. Mr. Shimizu, Senior Researcher, NIDS).

443. Coles, Aleutian Campaign, *op. cit*. p. 373.

444. It is not clear whether this occurred during the initial deployment, or whether it happened when the plane was stationed on Kiska and used for long-range ferry service.

445. Interrogation Ito Sukemitsu, *op. cit.*

446. Interrogation Mukai, *op. cit.;* Interrogation Ito, *op. cit.*

447. 'What the Japanese say about Kiska Weather." In: Payne, Enemy on Kiska, *op. cit*. p. 88.

448. While the operational logs of the Japanese squadrons that are available can be drawn on to determine the level of operational capability, it makes little sense to attempt and interpolate the availability of planes from the data. For example, the *Kamikawa Maru* landed 14 Mitsubishi F1M2 on Kiska on 15 June, but the operational logs show that the combat air patrols were only flown by five crew (Operational log *Kamikawa Maru* Hikōkitai 15 June to 11 Jul 1942, translated data

courtesy of Luca Raffato, Rome). Care must be exercised, however, to avoid over interpreting the data, as we do not know the tactical situation on each day. While we know the nature and timing of U.S. attacks, we do not know conclusively, for example, when major transport vessels arrived, which would have required aerial anti-submarine patrols to guide them in. Thus the absence of patrol flights may be caused by inclement weather, by inoperability of the planes, and by an absence of need to have planes air borne

449. Bratton, Japanese Forces in the Aleutians. *op. cit.*

450. This table does not include the losses sustained in the carrier attack on Dutch Harbor.

451 Data extracted from United States Strategic Bombing Survey (1947) United States Strategic Bombing Survey, *The Seventh and Eleventh Air Forces in the war against Japan.* Washington: Naval Analysis Section, United States Strategic Bombing Survey. Pp. 32-33.

452. USSBS, Campaigns of the Pacific War, *op. cit.*

453. USSBS, Campaigns of the Pacific War, *op. cit.* p. 85.

454. USSBS, Campaigns of the Pacific War, *op. cit.* p. 90.

455. Interrogation Omori, *op. cit.*—Interrogation of Captain Arachika, Rokuji, IJN, (Chief of Staff to Commander 1st Destroyer Squadron from December 1941 until November 1943). On the Aleutian Campaign. Operations of the Japanese First Destroyer Squadron. Interrogation 15 & 16 November 1945. Interrogation NAV nº 73. USSBS NO. 367. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. OPNAV P-03-100. Naval Intelligence Division. Pp. 300-307.

456. Interrogation Ito Tasuke *op. cit.*

457. Northern Area Naval Operations February 1943–Aug 1945. Japanese Monograph nº 89,p. 13.

458. 23 January Amchitka U.S. date.—See the Japanese comments that show the Japanese belief that the U.S. forces landed on that date on Amchitka (Northern Area Naval Operations. *op.cit.*,

459. Handleman, Bridge to Victory, *op. cit*. p. 22.

460. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

461. Handleman, Bridge to Victory, *op. cit*. p. 22.—Karig and Purdon, Battle Report *op. cit.,* p. 300.—Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

462. Handleman, Bridge to Victory, *op. cit*. p. 23.

463. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

464. Handleman, Bridge to Victory, *op. cit*. p. 23.

465. Gilman, *Our Hidden Front*, p. 145.—Handleman, Bridge to Victory, *op. cit*. p. 23.

466. From a position 52º55'N, 168ºE: TROM *Kimikawa Maru, op. cit*.—According to Izawa (Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120) 6 Suisen and 1 Reisui were supplied.

467. Handleman, Bridge to Victory, *op. cit*. p. 23.

468. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

469. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

470. The origin of the practice, at least in the South Pacific, seems to be on 28 Aug 1942, when IJN Rear Admiral Takaji Joshima, at Rabaul, "R Area Air Force" by combining float planes from various squadrons. Operating from bases in the Shortland Islands and Rekata Bay the planes began regular nightly patrols over Guadalcanal.

471. Ford, Short Cut To Tokyo *op. cit.* p. 29.—Later accounts name the plane erroneously 'Washing Machine Charley'. This is conflation of a similar aircraft operating on Guadalcanal: where two planes, known to the Marines as "Washing Machine Charlie" and "Louie the Louse" had distinctive characteristics: The expression 'Washing Machine Charley' was first coined for a two engine bomber aircraft flying over Guadalcanal, where by accident or intent, the Japanese pilot ensured that his two engines were out of sync, creating a deep rhythmic thrumming sound resembling a washing machine under load. The term spread from Guadalcanal throughout the Pacific Theatre of war. 'Washing Machine Charlies' have been reported from a number of battlefields, such as Tarawa (Kiribati). In addition, in post World War II memories the term was retrospectively applied to all Japanese nuisance raiders.—Goldman, Martin R. R. (1983) Morale. In: W.F. Craven and, J.L. Cate (eds.) The Army Air Forces in World War II. VII Services around the World. Pp. 431-476.—Frankel,

Stanley A. [1992] Frankel-y [*sic*] speaking about World War II in the South Pacific. Chapter 6 <www.frankel-y.com/tape006.htm>.—Shaddox, Shad (nd) Slang used in the 5th AAF in the SWPA During WW 2. <www.kensmen.com/slang.html>.—Sherrod, Robert(1944) Tarawa. The story of a Battle. New York: Duell, Sloan and Pearce. p. 84.

472. 'What the Japanese say about Supplies and Shipping for Kiska." In: Payne, Enemy on Kiska, *op. cit*. p. 85.—For ship movements of the *Asaka* Maru, see: Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2000) IJN Asaka Maru: Tabular Record of Movement. <www.combinedfleet.com/Asaka_t.htm>.

473. 'What the Japanese say about Supplies and Shipping for Kiska." In: Payne, Enemy on Kiska, *op. cit*. p. 85.

474. From a position 52°55'N, 168°E: TROM *Kimikawa Maru, op. cit*.

475. 'What the Japanese say about Kiska Weather." In: Payne, Enemy on Kiska, *op. cit*. p. 88.

476. 'What the Japanese say about Kiska Weather." In: Payne, Enemy on Kiska, *op. cit*. p. 88.

477. Cloe, Aleutian Warriors, *op. cit.* p. 262.

478. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

479. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

480. Handleman, Bridge to Victory, *op. cit*. p. 23.—Karig and Purdon, *Battle Report,* p. 300.

481. 8 February U.S. date.

482. Karig and Purdon, Battle Report *op. cit.,* p. 300.

483. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

484. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

485. Coles, Aleutian Campaigns, *op. cit.* p. 376.

486. Northern Area Naval Operations. *op.cit.*, p. 51.

487. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

488. The bombing of the Chinese provisional capital of Chongqing focused almost entirely on the civilian population, and probably can be seen as an early example of terror bombing (cf. <en.wikipedia.org/wiki/Bombing_of_Chongqing).

489. Report from the Aleutian Islands Area. *BUAER Newsletter* [U.S. Navy] nº 192, 1 May 1943, p. 3

490. Interrogation reports from Officers and Enlisted Men recently returned from the Aleutian Islands. San Francisco Office, Military Intelligence Service, War Department to Chief, Collection Branch, Intelligence Group, Washington DC. Dated 6 March 1943. NARA RG165 Entry 77 Box 34.

491. Strafing occurred at 12:40 Kiska time.—'What the Japanese say about action on Kiska." In: Payne, Enemy on Kiska, *op. cit*. p. 79.

492. Carter and Mueller, Combat Chronology 1941-1945, *op. cit*, p. 121.

493. 'What the Japanese say about action on Kiska." In: Payne, Enemy on Kiska, *op. cit*. p. 79.

494. A Lufberry circle is a classic defensive tactic, usually employed by slower aircraft that are outclassed by faster fighters, In essence, all planes fly in a horizontal circle, where each plane can protect the back of the one in front. Lufberry circles can be easily broken by aircraft diving and attacking from above as the flight pattern of the planes in the circle is predictable. This does not seem to have occurred on this occasion.

495. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op. cit*., p. 120.

496. TROM *Kimikawa Maru, op. cit*.

497. 'What the Japanese say about action on Kiska." In: Payne, Enemy on Kiska, *op. cit*. p. 79.

498. Payne, Enemy on Kiska, *op.cit. p.* 102.

499. Based on the interpretation of the U.S. descriptive term.

500. Carter and Mueller, Combat Chronology 1941-*1945 op. cit.,* p. 120.

501. Carter and Mueller, Combat Chronology *1941-1945 op. cit.,* p. 121.

[502]. Carter and Mueller, Combat Chronology *1941-1945 op. cit.,* p. 122.

[503]. Eighteen photographic sorties on 11, 18 and 26 May 1943).—Kiska Island. Photographic Interpretation Report nº 30. Report CO30/AIC Advanced Intelligence Center, North Pacific Area. NARA RG 165 Entry 77 Box 50 Folder Kiska Operations.- Carter and Mueller, *Combat Chronology 1941-1945 op. cit.,* pp. 141-142 claim that a strafing run on parked seaplanes was carried out on 1 June, but that seems erroneous.

[504]. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.—Likewise on 1 April 1943 all pilots of the Japanse midget submarines stationed at Kiska were evacuated aboard the submarine *I-169* also destined for Yokosuka: Hackett and Kingsepp, Sensuikan! *op.cit.*

[505]. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

[506]. After Payne, Irving P (1943) *The enemy on Kiska*. US Naval Intelligence, Section G-2. AC/G-2, Advance Command Post, Hdqtrs. Alaska Defense Command, and Advance Intelligence Center, North Pacific Area. U.S. Confidential.

[507]. Hackett, Bob and Kingsepp, Sander (2010) HIJMS *Abukuma*: Tabular Record of Movement. <www.combinedfleet.com/ abukuma_t.htm>.

[508]. Nevitt, Allyn D. (1998) IJN *Akatsuki*: Tabular Record of Movement. <www.combinedfleet.com/ akatsu_t.htm>.

[509]. Nevitt, Allyn D. (1998) IJN *Akigumo*: Tabular Record of Movement. <www.combinedfleet.com/ akigum_t.htm>.

[510]. Nevitt, Allyn D. (1998) IJN *Asagumo*: Tabular Record of Movement. <www.combinedfleet.com/ asagum_t.htm>.

[511]. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2000) IJN *Asaka Maru*: Tabular Record of Movement. <www.combinedfleet.com/ Asaka_t.htm>.

[512]. Hackett, Bob and Kingsepp, Sander (2006) IJN Awata Maru: Tabular Record of Movement. <www.combinedfleet.com/ Awata_t.htm>.

[513]. Hackett, Bob and Kingsepp, Sander (2006) IJN Seaplane/Midget Submarine Carrier *Chiyoda*: Tabular Record of Movement

[514]. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2010) IJN Escort Hachijo: Tabular Record of Movement. <www.combinedfleet.com/ Hachijo_t.htm>.

[515]. Nevitt, Allyn D. (2009) IJN Hatsuharu: Tabular Record of Movement. <www.combinedfleet.com/ hatsuh_t.htm>.

[516]. Nevitt, Allyn D. (2009) IJN Hatsushimo: Tabular Record of Movement. <www.combinedfleet.com/ hatsus_t_t.htm>.

[517]. Nevitt, Allyn D. (1998) IJN *Hibiki*: Tabular Record of Movement. <www.combinedfleet.com/ hibiki_t.htm>.

[518]. Nevitt, Allyn D. (1997) IJN *Hokaze*: Tabular Record of Movement. <www.combinedfleet.com/ hokaze_t.htm>.

[519]. Nevitt, Allyn D. (1998) IJN *Ikazuchi*: Tabular Record of Movement. <www.combinedfleet.com/ ikazuc_t.htm>.

[520]. Nevitt, Allyn D. (1998) IJN *Inazuma*: Tabular Record of Movement. <www.combinedfleet.com/ inazum_t.htm>.

[521]. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2010) IJN Minelayer Ishizaki: Tabular Record of Movement. <www.combinedfleet.com/ Ishizaki_t.htm>.

[522]. Nevitt, Allyn D. (1998) IJN *Kagero*: Tabular Record of Movement. <www.combinedfleet.com/ kagero_t.htm>.

[523]. Hackett, Bob, Kingsepp, Sander and Alsleben, Allan (2006) IJN Seaplane Tender *Kamikawa Maru:* Tabular Record of Movement. <www.combinedfleet.com/ Kamikawa%20Maru _t.htm>.

[524]. Nevitt, Allyn D. (1998) IJN *Kazagumo*: Tabular Record of Movement. <www.combinedfleet.com/ kazagu_t.htm>.

[525]. Nevitt, Allyn D. (1998) IJN *Kasumi*: Tabular Record of Movement. <www.combinedfleet.com/ kasumi_t.htm>.

[526]. Hackett, Bob, Kingsepp, Sander and Alsleben, Allan (2004) IJN Seaplane Tender *Kimikawa Maru:* Tabular Record of Movement. <www.combinedfleet.com/ Kimikawa%20Maru _t.htm>.

[527]. Hackett, Bob and Kingsepp, Sander (2007) HIJMS *Kiso*: Tabular Record of Movement. <www.combinedfleet.com/ kiso_t.htm>.

[528]. Hackett, Bob and Cundall, Peter (2010) IJN Kumagawa Maru: Tabular Record of Movement. <www.combinedfleet.com/ Kumagawa_t.htm>.

[529]. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2010) IJN Escort Kunashiri: Tabular Record of Movement. <www.combinedfleet.com/ Kunashiri_t.htm>.

[530]. Nevitt, Allyn D. (1998) IJN *Naganami*: Tabular Record of Movement. <www.combinedfleet.com/ nagana_t.htm>.

[531]. Nevitt, Allyn D. (1997) IJN *Shiokaze*: Tabular Record of Movement. <www.combinedfleet.com/ shioka_t.htm>.

[532]. Nevitt, Allyn D. (1998) IJN *Shiranuhi*: Tabular Record of Movement. <www.combinedfleet.com/ shiran_t.htm>.

[533]. Hackett, Bob and Kingsepp, Sander (2007) HIJMS *Tama*: Tabular Record of Movement. <www.combinedfleet.com/ tama_t.htm>.

[534]. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2010) IJN Minelayer Ukishima: Tabular Record of Movement. <www.combinedfleet.com/ Ukishima_t.htm>.

[535]. Tabular Record of Movement. <www.combinedfleet.com/ usugum_t.htm>.

[536]. Nevitt, Allyn D. (2009) IJN Wakaba: Tabular Record of Movement. <www.combinedfleet.com/ wakaba_t.htm>.

[537]. Nevitt, Allyn D. (1998) IJN *Yugumo*: Tabular Record of Movement. <www.combinedfleet.com/ yugumo_t.htm>.

[538]. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2010) IJN Subchaser CH-13: Tabular Record of Movement. <www.combinedfleet.com/ CH-13_t.htm>.

[539]. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2010) IJN Subchaser CH-14: Tabular Record of Movement. <www.combinedfleet.com/ CH-14_t.htm>.

[540]. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2010) IJN Subchaser CH-15: Tabular Record of Movement. <www.combinedfleet.com/ CH-15_t.htm>.

[541]. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2009) IJN Subchaser CH-26: Tabular Record of Movement. <www.combinedfleet.com/ CH-26_t.htm>.

[542]. Hackett, Bob and Kingsepp, Sander (2009) HIJMS Submarine I-7: Tabular Record of Movement. <www.combinedfleet.com/ I-7.htm>.

[543]. Hackett, Bob and Kingsepp, Sander (2009) HIJMS Submarine I-9: Tabular Record of Movement. <www.combinedfleet.com/ I-9.htm>.

[544]. Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-21: Tabular Record of Movement. <www.combinedfleet.com/ I-21.htm>.

[545]. Hackett, Bob and Kingsepp, Sander (2002) HIJMS Submarine I-26: Tabular Record of Movement. <www.combinedfleet.com/ I-26.htm>.

[546]. Hackett, Bob and Kingsepp, Sander (2009) HIJMS Submarine I-31: Tabular Record of Movement. <www.combinedfleet.com/ I-31.htm>.

[547]. Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-34: Tabular Record of Movement. <www.combinedfleet.com/ I-34_t.htm>.

[548]. Hackett, Bob and Kingsepp, Sander (2001) HIJMS Submarine I-35: Tabular Record of Movement. <www.combinedfleet.com/ I-35.htm>.

[549]. Hackett, Bob and Kingsepp, Sander (2009) HIJMS Submarine I-156: Tabular Record of Movement. <www.combinedfleet.com/ I-156.htm>.

[550]. Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-168: Tabular Record of Movement. <www.combinedfleet.com/ I-168.htm>.

[551]. Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-169: Tabular Record of Movement. <www.combinedfleet.com/ I-169.htm>.

[552]. Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-171: Tabular Record of Movement. <www.combinedfleet.com/ I-171.htm>.

[553]. Hackett, Bob and Kingsepp, Sander (2010) HIJMS Submarine I-175: Tabular Record of Movement. <www.combinedfleet.com/ I-175.htm>.

[554]. TROM RO-61 *op. cit*.

[555]. TROM RO-62 *op. cit*.

[556]. TROM RO-63 *op. cit*.

[557]. TROM RO-64 *op. cit*.

[558]. TROM RO-65 *op. cit*.

[559]. TROM RO-67 *op. cit*.

[560]. TROM RO-68 *op. cit*.

[561]. Troop transport, 12,755 tons. *Argentina Maru* (Transport, 1941-1942): <www.history.navy.mil/photos/sh-fornv/japan/japsh-a/argnta-m.htm>.

[562]. Hackett, Bob and Kingsepp, Sander (2009) *Hakusan Maru*: Tabular Record of Movement. <www.combinedfleet.com/ Hakusan _t.htm>.

[563]. Ammunition supply ship, 3883 tons; sank in Chuuk Lagoon during Operation Hailstorm 17 and 18 February 1944.

[564]. Sunk on 29 February 1944 in the Philippine Sea (by USS Trout):Appendix II . Tabular Summary of U.S. Submarine Losses During World War II. Submarine Report Depth Charge, Bomb, Mine, Torpedo and Gunfire Damage Including Losses in Action 7 December 1941 to 15 August 1945. Preliminary Design Branch, Bureau of Ships, Navy Department, U.S. Hydrographic Office. 1 January 1949.

[565]. Enemy installations on Kiska Island as known 24 February 1943. Headquarters Western Defense Command and Fourth Army, Office of the Assistant Chief of Staff, G-2, Presidio of San Francisco, California, to Assistant Chief of Staff, G-2, Military Intelligence Service, Washington, DC. Dated 25 February 1943. NARA RG165 Entry 77 Box 46 Folder 6800 Alaska-Western Defense Command

[566]. While it is possible to compile the movements of the Japanese naval units, records not always mention which non-IJN transports were escorted to Kiska.

[567]. But such operations had been carried out elsewhere in the Pacific: Alden, John D. (1989) *U.S. Submarine Attacks During World War II (Including Allied Submarine Attacks in the Pacific Theater).* Annapolis: Naval Institute Press. Pp. 233ff.

[568]. Steamship, 5863 tons; sunk at Gertrude Cove. Dates of sinking vary between 5 and 8 October. (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).

[569]. Army Transport, 8572 tons; damaged on 30 July 1942 by a torpedo fired by USS *Grunion*, the *Kano Maru* could be towed into Kiska Harbor for unloading of supplies and emergency repair. Caught in an air raid on 15 September, damaged and run aground off South Head.—(Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 33. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).

[570]. Steamship, 6,537 tons (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 32. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).

[571]. Troop transport, 7189 tons. Dates of sinking vary. Also reported is 28 September (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese

Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 33. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).

572. Steamship, 3,110 tons, sunk on 7 May 1942 by USS *Growler* just outside Kiska Harbor. (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 7. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).—USSBS, Campaigns of the Pacific War, *op. cit.* p. 92.

573. Nevitt, Allyn D. (1998) IJN *Arare*: Tabular Record of Movement. <www.combinedfleet.com/ arare_t.htm>.—(Japanese Naval Vessel Sunk During World War II (Chronological). Chronological List of Japanese Naval Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 1. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-3.html>).

574. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2010) IJN Subchaser CH-25: Tabular Record of Movement. <www.combinedfleet.com/ CH-25_t.htm>.—(Japanese Naval Vessel Sunk During World War II (Chronological). Chronological List of Japanese Naval Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 3. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-3.html>).

575. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2009) IJN Subchaser CH-27: Tabular Record of Movement. <www.combinedfleet.com/ CH-27_t.htm>.—(Japanese Naval Vessel Sunk During World War II (Chronological). Chronological List of Japanese Naval Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 3. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-3.html>).

576. Sunk on 5 July 1942 by submarine USS *Triton* off Agattu at 52°15'N 173°51'E, while escorting IJN *Kamikawa Maru* on a supply run, Nevitt, Allyn D. (2009) IJN *Nenohi*: Tabular Record of Movement. <www.combinedfleet.com/ nenohi_t.htm>.—(Japanese Naval Vessel Sunk During World War II (Chronological). Chronological List of Japanese Naval Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 3. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-3.html>). —USSBS, Campaigns of the Pacific War, *op. cit.* p. 92.

577. Sunk 16 October by B-24 aircraft jist north of Kiska at 52°17'N 178–08'E.—Nevitt, Allyn D. (1998) IJN *Oboro*: Tabular Record of Movement. <www.combinedfleet.com/ oboro_t.htm>.—(Japanese Naval Vessel Sunk During World War II (Chronological). Chronological List of Japanese Naval Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 3. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-3.html>).—USSBS, Campaigns of the Pacific War, *op. cit.* p. 93.

578. Hackett, Bob and Kingsepp, Sander (2009) HIJMS Submarine I-9: Tabular Record of Movement. <www.combinedfleet.com/ I-9.htm>.

579. Cargo vessel, 6577 tons. Sunk by aircraft at 53°26N 177°52E (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 37. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/>).

580. Hackett, Bob and Kingsepp, Sander (2002) HIJMS Submarine I-157: Tabular Record of Movement. <www.combinedfleet.com/ I-157.htm>.

581. USSBS, Campaigns of the Pacific War, *op. cit.* p. 93.

582. See also data in: Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/>.

583. Prefixes for the cargo ships: A-Army, B-Navy, C-Civilian.

584. For the U.S. forces these were the S-boats with 800-1,100t displacement; and for the Japanese the RO-boats.—Wilder makes much of the limiting factors of the weather on US operations, but does not highlight that the Japanese were likelwise hampered: Wilder, Carol A. (1993) *Weather as the Decisive Factor of the Aleutian Campaign, June 1942-August 1943*. Master of Military Art And Science, U.S. Army Command and General Staff College. Fort Leavenworth, Kansas.

585. S-27, commanded by Lt Herbert T Jukes, for example was lost when recharging batteries in the fog, and currents pushed her aground on Amchitka on 19 June 1942. The crew abandoned ship, and was picked off Amchitka by a flying boat rescue.—Blair, Clay, Jr. (1975) *Silent Victory: The U.S. Submarine War against Japan*. New York: Bantam Books.

586. United States Strategic Bombing Survey (1947) United States Strategic Bombing Survey, *The American campaign against Wotje, Maloelap, Mille and Jaluit.* Washington, DC.: Naval Analysis Section, United States Strategic Bombing Survey.

587. Pers. Comm. Uzami Toshiharu, Interview 6 March 2010.

588. Pers. Comm. Uzami Toshiharu, Interview 6 March 2010.

589. Notes on Japanese Forces on Attu" *Tactical and Technical Trends*. No. 27, June 17, 1943, pp. 38-41.

590. USSBS, Campaigns of the Pacific War, *op. cit.*, p. 81.

591. Naval Historical Center (1993) *United States Navy Combat Narrative. The Aleutians Campaign. June 1942--Aug 1943*, Washington: Naval Historical Center, Department of the Navy p. 84.

592. Interrogation of Commander Kuwahara, Tadao on the Aleutian Campaign (Naval Battle of the Komandorski Islands). Interrogation NAV nº 51, USSBS nº 205. Interrogation of *Japanese officials*. ONAV P-03-100. Naval Intelligence Division. Pp. 207-208.

593. Conn, Stetson, Engelman, Rose C., and Fairchild, Byron (2000) *Guarding the United States and Its Outposts*. *United States Army in World War II. The Western Hemisphere.* Washington, D.C.: Center of Military History, United States Army. P. 284.

594. The most costly assault was Iwo Jima (6,504 killed), followed by Saipan (4,893) with Peleliu, Palau (1,467) and Tarawa, Kiribati (1,711) coming third and fourth. Okinawa is not considered here. (US Navy and Marine Corps Personnel Casualties in World War II. Naval History and Heritage Command , Department of the Navy. www.history.navy.mil/faqs/faq11-1.htm).

595. *Gyokusai* (玉砕). Literally meaning 'crushed crystal' or 'crushed gem,' it refers to the Chinese proverb, taken on by the Japanese that "It is better to be a gem that is smashed to pieces than a tile that is whole.' Essentially that dying with honor is preferable to surrender.

596. The *Kimikawa Maru* had departed Paramushiro on 11 May and was to launch her planes 250m SW of Attu. As Attu was under attack by U.S. forces, the *Kimikawa Maru* was ordered back to the Kuriles: TROM *Kimikawa Maru, op. cit*.—Northern Area Naval Operations. *op.cit.*, p. 15.

597. Izawa, Imperial Japanese Navy Float Plane Fighter Units, *op.cit*., p. 120.

598. On 23 April 1943.

599. Interrogation Fukudome *op. cit.*

600. Interrogation Fukudome *op. cit.*

601. Interrogation Fukudome *op. cit.*

602. Japanese Monograph 45, p. 378.

603. Northern Area Naval Operations. *op.cit.*, p. 8.

604. Northern Area Naval Operations. *op.cit.*, p. 8.

605. Northern Area Naval Operations. *op.cit.*, p. 38.

606. Allocated were I-2, I_7, I-9, I-21, I-24, I-34, I-36, I-155, I-156, I-157, I-169, I-171 and I-175: Boyd and Yoshida, The Japanese Submarine Force and World War II, *op. cit.,* p. 118.

607. Boyd and Yoshida, The Japanese Submarine Force and World War II, *op. cit.,* p. 209.

608. In fact, RAdm Takerō had called off the supply missions on 14 June but recommenced them on 17 June: Boyd and Yoshida, The Japanese Submarine Force and World War II, *op. cit.,* p. 119.

609. Translation of a Japanese Ensign's notebook recovered Tarawa 26 November 1943. National Archives and Records Administration WNRC Record Group 338, Box 372.

610. That vessel was involved in the original landings on Attu and Kiska as well in covering the second reinforcement convoy in early July 1942, also covered the second occupation of Attu in October 1942, and landed troops on Kiska in December 1942.

611. On approach, the fog was so thick that the cruiser HJIMS *Abukuma* and the destroyer HIJMS *Shimikaze* mistook Little Kiska for an enemy surface craft and fired at it with torpedoes (*Abukuma)* and naval guns (*Shimikaze*). Intriguingly, while the area of Kiska was shrouded in fog, the harbor itself was fog free which greatly facilitated the evacuation operations (Translation of a Japanese Ensign's notebook...*op. cit*).

612. Translation of a Japanese Ensign's notebook...*op. cit.*

613. Interrogation Mukai *op. cit.*

614. e.g. Kasukabe, The Escape of the Japanese Garrison from Kiska *op. cit.*

615. Interrogation Mukai *op. cit*.

616. Interrogation Miura *op. cit.* Quote p. 100.

617. The nº 2 Transport Unit comprised of *Kiso* (1,189 evacuees), *Shimakaze, Samidare, Awata Maru* (converted cruiser).

618. The nº 1 Transport Unit comprised of *Abukuma* (1,212 evacuees), *Hatsushimo, Naganami.*

619. Translation of a Japanese Ensign's notebook...*op. cit.*

620. The 5,183 personnel were loaded onto the following ships: *Abukuma* (1,202), *Kiso* (1189), *Yugumo* (479), *Kazagumo* (478), *Akigumo* (463), *Asagumo* (476), *Usugumo* (478) and *Hibiki* (418).—Nishijima (Recalling the Battle of Attu, *op. cit.*) quotes a figure of 5,219.

621. Interrogation Miura *op. cit.*

622. Interrogation Mukai *op. cit*.—The overall breakdown was 299 Navy personnel, 55 army personnel and 466 civilian employees. (Northern Area Naval Operations. *op.cit.*, 39).—The detailed breakdown of the evacuees by submarine after 27 March indicates that navy and army personnel were given priority followed by civilians on later submarines. While we do not know who exactly was evacuated, we can assume that it was first the technical personnel, such as pilots, navigators (those who had not been evacuated before) and submariners, followed by technical army personnel as well as civilian engineers and technicians. It is not clear why 55 army technical staff would have been among those evacuated by submarine.

623. Interrogation Miura *op. cit*.

624. Translation of a Japanese Ensign's notebook...*op. cit.*

625. Kasukabe, The Escape of the Japanese Garrison from Kiska *op. cit.*

626. Kasukabe, The Escape of the Japanese Garrison from Kiska *op. cit.*

627. Kasukabe (The Escape of the Japanese Garrison from Kiska *op. cit*) claims the same.

628. Aerial Photo Interpretation Report Kiska Island July 27 to August 4, 1943. J.V. Smythe, 4th AAF PID to Commanding General, Army Air Forces, Washington D.C. Dated 5 August 1943. Field Headquarters Eleventh Air Force, Office of the Assistant Chief of Staff A2, APO 980. NHL File Kiska, NPS-ARO (ex Elmendorf History Office. Folder-Intelligence Reports, Kiska, Various).

629. Interrogation Miura *op. cit*.

630. Interrogation Mukai *op. cit.*

631. Huff, 'Information on Japanese Aircraft, Kiska Island' *op. cit*. p. 1.

632. Huff, 'Information on Japanese Aircraft, Kiska Island' *op. cit*. p. 18.

633. Hackett and Kingsepp, Sensuikan! *op.cit.*

634. Aerial Photo Interpretation Report Kiska Island July 27 to August 4, 1943. J.V. Smythe, 4th AAF PID to Commanding General, Army Air Forces, Washington D.C. Dated 5 August 1943. Field Headquarters Eleventh Air Force, Office of the Assistant Chief of Staff A2, APO 980. NHL File Kiska, NPS-ARO (ex Elmendorf History Office. Folder-Intelligence Reports, Kiska, Various).

635. USSBS, Campaigns of the Pacific War, *op. cit*.

636. Aerial Photo Interpretation Report Kiska Island July 27 to August 4, 1943. J.V. Smythe, 4th AAF PID to Commanding General, Army Air Forces, Washington D.C. Dated 5 August 1943. Field

Headquarters Eleventh Air Force, Office of the Assistant Chief of Staff A2, APO 980. NHL File Kiska, NPS-ARO (ex Elmendorf History Office. Folder-Intelligence Reports, Kiska, Various).

637. Garfield 1979.

638. Japanese radio broadcast cited in *New York Times* 23 August 1943.

639. In the author's possession.

640. 太平洋奇跡の作戦 キスカ [Taiheiyo kiseki no sakusen: Kisuka]. (alternative translation 'Miraculous Military Strategy in the Pacific Ocean, Kiska") Tohoscope, 35mm, 105 mins. Premiered 19 June 1965. Distributed by Toho Co Ltd. For cast see internet movie database: <www.imdb.com/title/tt0058634/ <accessed 22 October 2010>.—Re-released on VHS video tape 1 October 1994, by Toho Films (<www.amazon.co.jp/〜太平洋奇跡の作戦〜キスカ-VHS-丸山誠治/dp/B00005GDX7 <accessed 22 October 2010>); re-released on DVD 22 Jul 2007, distributed by Toho Films. (<www.cdjapan.co.jp/detailview.html?KEY=TDV-15208D <accessed 22 October 2010>).

641. Toshirō Mifune [三船 敏郎] * 1 April 1920 (Qingdao, Shandong, China), † 24 Dec 1997 (Mitaka city, Tokyo, Japan) starred in well over a dozen films directed by Akira Kurosawa. As a result, Mifune is one of few Japanese actors well recognised in the Anglo-phone world. Mifune played a number of military roles, including that of Admiral Yamamoto in Midway (1976). Biography see here: <www.toshiromifune.org/biography/index.html>. <accessed 22 October 2010>, Filmography see here: <www.toshiromifune.org/films/byyear2.htm>.

642. TV distribution by United Productions of America (UPA) U.S. TV premiere 24 Aug 1973 (KNBC Channel 4). All Japanese dialogue was dubbed (<www.imdb.com/title/tt0058634 < 22 October 2010>). Ad for TV screening: *Los Angeles Times* 24 Aug 1973, p. D25. The *Los Angeles Times* reviewed the movie commending the TV station for 'an unusual and imaginative piece of programming' (Champlin, Charles [1973] World War II From the Japanese Side. *Los Angeles Times* 24 Aug 1973, p. D24).—The Television pages of the *U.S. papers* suggest that the film was occasionally broad cast in prime time, but usually as late night filler by various TV stations across the USA. On record are screenings in February 1974, May 1975, Jul 1975, February 1977, June 1978, Aug 1978, Dec 1979, and June 1980 (entries not verified [data from the NYT archive database] 'Television' *New York Times* 17 February 1974, 24 May 1975, 2 Dec 1979, 9 June 1980); verified: *Sarasota Herald Tribune* 16 June 1978, p. 24; *Boca Raton News* 25 Jul 1975, p. 18; *Miami News* 26 Jul 1975, p. 10; *Palm Beach Post* 23 Aug 1978, p. B11; *Lakeland Ledger* 5 February 1977, p. 6B; *Los Angeles Times* 1 June 1980, p. S8.

643. Mifune had a Mexcican following after he had been hired in 1962 to play the lead role in the Mexican production "Ánimas Trujano (El hombre importante)" (<www.imdb.com/title/tt0055646/ <accessed 22 October 2010>). In a remarkable performance, Tashirō Mifune memorised the entire Spanish dialogue he was required to carry through, although he did not speak Spanish at all.

644. Another set of identical lobby cards suggests that Continental Films SA distributed the film also under the title 'Comandos del Infierno' (Devil's Commando) (<www.fjmovie.com/tposter/60-4/poster60-4.htm>. <accessed 22 October 2010>).—It is possible that the distribution under the alternate title occurred in other countries in Latin America.

645. Data culled by the author from the from various sources previously cited in this report.

646. IJN *Arare* (104 killed), IJN *Nenohi* (188 killed), IJN *Oboro* (~200 killed)

647. *CH-25* (all hands; ~68 killed)*; CH-27* (all hands; ~68 killed).

648. *I-7* (87 killed)*, I-9* (all hands; 101 killed)*, I-24* (all hands, 104 killed)*, I-31* (all hands, ~100 killed).

649. RO-*61* (60 killed, 5 taken PoW)*; RO-65* (19 killed).

650. HA-28, HA-29, HA-31, HA-32, HA-33, HA-34; plus two "Type A", hull numbers unknown.

651. Run aground (unknown number of fatalities as a result of the attacks): AG *Borneo Maru,* AG *Kano Maru*, AG *Kachosan Maru*, AG *Nojima Maru*, AG *Urajio Maru*.—Sunk: AG *Agakame Maru* (all hands, 140 killed), AG *Cheribon Maru* (all hands; ~40 killed), AG *Kotihara Maru* (all hands; ~40 killed), AG *Montreal Maru* (all hands plus construction troops; ~400 killed); AO *Nissan Maru* (unknown number of fatalities).

652. The data have been culled from various events outlined in the text., as well as the following sources: USSBS, Campaigns of the Pacific War *op. cit,* p. 83.

653. USSBS, Campaigns of the Pacific War *op. cit,* p. 83.

654. Stacey, C.P. (1955) *Official History of the Canadian Army In the Second World War. Volume: Six Years of War The Army in Canada, Britain and the Pacific*. Ottawa: Queen's Printer. p. 496.

655. Fleet Air Wing 4 flew an additional 704 missions, dropping 295t of bombs. USSBS, Campaigns of the Pacific War, *op. cit.*

656. And for most of the time they became training grounds for fresh pilots, who were being cycled through the Marshalls before being moved to the front.

657. Canadian Report 6, p. 4.—Roy, R. H. (1972) Canadians in the North Pacific, 1943: Major-General Pearkes and the Kiska Operation. *BC Studies* nº 14, pp 3–16.

658. Canadian Report 6, p. 4.

659. "American and Canadian troops have occupied Kiska, vast Japanese stronghold in the Aleutians, without meeting opposition from the enemy, it was announced on Aug. 21st. This photo just received from the front shows high ranking officers of Army, Navy, Marine and Air Corps, who planned Invasion B land, sea and air as they met shortly before the start of invasion in Admiral Kinkaid's conference room at North Pacific Fleet Headquarters at an Aleutian port. Left to right -- seated around table -- Maj. Gen. J.B. Murchie, Canadian Army; Commodore L.E. Gehres, Commanding Officer of Fleet Air Wing Four; Maj. Gen. Holland M. Smith, Commanding General U.S. Marine Amphibious Corps; Brig. Gen. James W. Barnett, (hidden) Lt. Gen. John L. DeWitt, Commanding General 4th Army; Rear Admiral Grancis W. Rookwell; Vice-Admiral Thomas Kinkaid, Commander of the U.S. North Pacific Fleet; and Commander-in-Chief of the Kiska Invasion; Major General Charles H. Corlett; Lt. Gen. Simon Bolivar Buckner, Jr.; Major General William Butler; Maj. Gen. George Randolph Pearkes, Commanding Canadian forces: (standing in rear) Col. G.B. Erskine; Commander R.L. Dennison; Capt. O. S. Colclough; Col. Carl T. Jones; Brig. Gen. E.D. Post; Brig. Gen. J. L. Ready.—Image University of Alaska Archives. UAF-1970-11-77.

660. For the terrain models (incl. images of the models made for Attu) see: BUAER (1944) Terrain Models. *Naval Aviation News* [U.S. Navy] nº 227, 15 October 1944, pp. 1–5.

661. Perras, Galen Roger (1992) Canada as a Military Partner: Alliance Politics and the Campaign to Recapture the Aleutian Island of Kiska. *The Journal of Military History* vol. 56 nº 3, pp. 423-454.

662. Neeley, Alastair (1995) The First Special Service Force in: Fern Chandonnet (ed). Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993. Anchorage, AK: Alaska at War Committee. Pp. 87–95.

663. Photographic Interpretation Report nº 30. Kiska Island. Photographic Advanced Intelligence Center, North Pacific Area, c/0 F.P.O. 230, San Francisco. Dated 1 June 1943. NARA RG165 Entry 77 Box 50 Folder "Kiska Operation."

664. Photographic Interpretation Report nº 33. Kiska and Segula Islands. Photographic Advanced Intelligence Center, North Pacific Area, c/0 F.P.O. 230, San Francisco. Serial SO33/AIC. Dated 14 July 1943. NARA RG165 Entry 77 Box 52 Folder 9135.

665. Photographic Interpretation Report nº 33. Kiska and Segula Islands. Photographic Advanced Intelligence Center, North Pacific Area, c/0 F.P.O. 230, San Francisco. Serial SO33/AIC. Dated 14 July 1943. NARA RG165 Entry 77 Box 52 Folder 9135.

666. Photographic Interpretation Report nº 33. Kiska and Segula Islands. Photographic Advanced Intelligence Center, North Pacific Area, c/0 F.P.O. 230, San Francisco. Serial SO33/AIC. Dated 14 July 1943. NARA RG165 Entry 77 Box 52 Folder 9135.

667. Jameson, Colin G. and Smith, L.C. (1993) *United States Navy Combat Narrative. The Aleutians Campaign. June 1942--August 1943*. Washington, D.C.: Naval Historical Center, Department Of The Navy. Pp. 118-119.

668. Jameson and Smith, United States Navy Combat Narrative. *Op. cit.* Pp. 118-119.

669. Jameson and Smith, United States Navy Combat Narrative. *Op. cit.* Pp. 118-119.

670. CA *Louisville*, CA *San Francisco*, CA *Wichita*, CL *Santa Fe*, DD *Aylwin*, DD *Bache*, DD *Hughes*, DD *Morris*, DD *Mustin*.

671. BB *Mississippi*, BB *New Mexico*, CA *Portland*, DD *Abner Read*, DD *Farragut*, DD *Monaghan*, DD *Perry*.

672. Task Group King: BB *Idaho*, BB *Tennessee*, DD *Anderson*, DD *Aylwin*, DD *Dale*, and DD *Phelps*.

673. Task Group Baker: CA *Salt Lake City*, CA *Indianapolis*, CL *Richmond*, CL *Detroit*, CL *Raleigh*, DD *Edwards*, DD *Farragut*, DD *Frazier*, DD *Gansevoort* and DD *Meade.*

674. Task Group Baker: CA *Salt Lake City*, CA *Indianapolis*, CL *Richmond*, CL *Detroit*, CL *Raleigh*, DD *Edwards*, DD *Frazier*, DD *Gansevoort*, DD *Meade* and DD *Phelps.*

675. <www.chinfo.navy.mil/navpalib/ships /battleships/tennessee/bb43-tenn.html>.

676. Neeley, The First Special Service Force, *op. cit.*

677. Chief of Naval Operations (1944) *Aerology and Amphibious Warfare. The Occupation of Kiska*. NAVAER 50-30T-2. May 1944. Washington, D.C.: Chief of Naval Operations, Aerology Section.

678. Neeley, The First Special Service Force, *op. cit.*

679. Eg. Clubb, Merrel (2005) *A life disturbed: my Pacific war revisited*. Seattle: University of Washington Press p. 52.—These losses were compounded when the destroyer *Abner Read* hit a mine, suffering 71 fatalities and 34 casualties.

680. USSBS, Campaigns of the Pacific War, *op. cit*.—Garfield, Brian (1969) *The Thousand Mile War*. Garden City: Doubleday. Pp. 286 - 288.

681. Some authors see this as a critical failure of the US forces: Garrett, William B. (1993) Fratricide. Doctrine's Role in Reducing Friendly Fire. Monograph. School of Advanced Military Studies, U.S. Army Command and General Staff College. Fort Leavenworth, Kansas.—Others have argued that the entire Aleutian Campaign took too long and was to costly overall due to the lack of a unified command: Breslin, Charles B (1994). World War II in the Aleutians. Fundamentals of Joint Campaigns. Paper. Naval War College, Newport, R.I.—Similar position by: Friedli, Neil B (1994). The Aleutian Campaign. Lessons in Operational Design. Paper. Naval War College, Newport, R.I.

682. Field orders seem to have directed how to signal to own aircraft, but no directives were given how to signal to ground force: Field Order #1, Landing Force 16.8. Seattle: Headquarters, Landing Force 16.8, August 1, 1943. From US Army Command and General Staff College Archives, Fort Leavenworth, KS. Cited after Garrett, William B. (1993) Fratricide. Doctrine's Role in Reducing Friendly Fire. Monograph. School of Advanced Military Studies, U.S. Army Command and General Staff College. Fort Leavenworth, Kansas.

683. Ewbank, K. H. "Action on Attu" Lecture. 17 June 1943. From US Army Command and General Staff College Archives, Fort Leavenworth, KS. Cited in Garrett, William B. (1993) Fratricide. Doctrine's Role in Reducing Friendly Fire. Monograph. School of Advanced Military Studies, U.S. Army Command and General Staff College. Fort Leavenworth, Kansas.

684. Garfield, Brian (1969) *The Thousand Mile War*. Garden City: Doubleday. p. 288.

685. Source: eBay auction June 2010.

686. Images NPS files NHL Kiska. Image donated to NPS on 1 September 1994 by copy Office of History, Alsakan Air Command, Elmendorf AFB.

687. Compiled from: Earle, George F. (1995) Kiska: Birth of a Division in: Fern Chandonnet (ed). Alaska at War, 1941-1945: The Forgotten War Remembered. Papers from the Alaska at War Symposium, Anchorage, Alaska, November 11-13, 1993. Anchorage, AK: Alaska at War Committee. Pp. 103-107.—Stacey, C.P. (1955) Official History of the Canadian Army In the Second World War. Volume: Six Years of War The Army in Canada, Britain and the Pacific. Ottawa: Queen's Printer. p. 502.—Naval History Division (1981) Dictionary of American Naval Fighting Ships. Entry USS Abner Read (DD-526). Washington, D.C.: Office of the Chief of Naval Operations, Naval History Division. —The fatality and causalty figures cited in the literature fluctuate wildly: 11 friendly fire fatalities, all others UXO and mines (Earle); 24 friendly fire fatalities, 4 fatalities due to mines, 50 casualties plus Abner Reed fatalities& casualties (Goldstein & Dillon); 28 fatalities, 50 casualties, plus Abner Reed fatalities& casualties (Perras); 17 fatalities (Lorelli).—Perras, Stepping Stones to Nowhere, *op. cit*., p. 101.— Goldstein and Dillon, The Williwaw War, *op. cit*.—Lorelli, The Battle of the Komandorski Islands, *op. cit*. p. 172.

688. One killed by Japanese mortar round found in ammunition dump; second killed by US Naval shell dud: Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 p. 236/

689. Plus 130 cases of trench foot.

690. Stacey, Official History of the Canadian Army *op. cit.*

691. Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 pp. p. 55.<www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/ahqrd-drqga-eng.asp?txtType=3&RfId=194>.

692. War Diary, 1 Bn RM Rang, d/26 Dec 43, and 10 Jan 44. Cited in: Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 pp. 81-83 <www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/ahqrd-drqga-eng.asp?txtType=3& RfId=194>.

693. Source: NARA RG 80-CF164_80517.

694. Source: NARA RG 80-CF164_80517.

695. Table derived from (and with addition to) Appendix I: Administrative and resource management actions related to Kiska Island, Aleutians: a Synoptic Chronology. In: Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan.* Dec 2008. (Report Kiska #1). Study prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

696. Interrogation Mukai *op. cit.*

697. U.S. Navy Department Library (n.d.) U.S. Naval Administration in World War II: CINPAC. North Pacific Force and Areas Alaskan Sea Frontier. Seventeenth Naval District. Washington: U.S. Navy Department Library.

698. Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 pp. 81-83 <www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/ahqrd-drqga-eng.asp?txtType=3&RfId=194>.

699. General Order nº 144 Headquarters Alaska Defense Command 25 August 1943.

700. CanAlSec disp. To VCNC, 22 Sept 1943. Cited in: U.S. Naval Administration in World War II: CINCPAC. North Pacific Force and Area Alaskan Sea Frontier. Seventeenth Naval District. Washington, DC: Navy Department Library. Not paginated.

701. Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 pp. 81-83 <www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/ahqrd-drqga-eng.asp?txtType=3&RfId=194>.

702. (unnumbered Exec Order) Real Estate Division, Office of the Chief Engineer, Department of the Army, to Bureau of Yards and Docks, Department of the Navy, dated Washington, 2 May 1949. NARA RG153/SCA/48 Kiska.

703. Construction Summary Alaskan Sector Thirteenth Naval District NAAF Kiska 1 Jan 1944. Nat Arch Pacific NW Region Seattle RG 181 War Time Diaries Box 8 Folder 2 Report of Alaskan Sector Activities Bureau.

704. Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 pp. 81-83 <www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/ahqrd-drqga-eng.asp?txtType=3&RfId=194>.

705. Field Progress Report APO 730 Alaska for the period ending 30 Jun 1944. NARA RG77 Entry 1011 Box 128 Folder 600.914.

706. As late as 10 April 1945 it was recommended that the Kiska airfield be retained after the war as a satellite and alternate airfield under full military control (James R. Thorn for Commanding General Eleventh Air Force to Commanding General Advanced Command Post. Alaskan Department, U.S. Army, dated Seattle 10 April 1945. NARA CP RG 338 E AK Dept AG Correspondence 1940– Box 182 File 602).

707. ComAdalSec secltr 00148 to CNO, Naval Auxiliary Air Facility Kiska, Alsaka Decommissioning, of. 6 Dec. 1944 (ON2/A4 2) cited in: U.S. Naval Administration in World War II: CINCPAC. North Pacific Force and Area Alaskan Sea Frontier. Seventeenth Naval District. Washington, DC: Navy Department Library. Not paginated.

708. FE Matthews, Assistant Adjutant General, Headquarters Alaskan Department, Office of the Commanding Office, to Adjutant General Washington DC, dated Seattle 5 Dec 1945. NARA CP RG 338 E Alaska Department Adjutant General's Correspondence 1940-45 Box 183 folder 602.

709. This included, *inter alia*, 446 buildings with a 1946 value of $1,143.000: L.T. Main, Regional Director War Assets Administration Region 37, to Commanding Officer, 17th Naval District, NOB, Kodiak Alaska. Dayed 10 January 1949. NARA RG 71 E Real Property Case Files Box 212 File Area #2-General.

710. L.T. Main, Regional Director War Assets Administration Region 37, to Commanding Officer, 17th Naval District, NOB, Kodiak Alaska. Dayed 10 January 1949. NARA RG 71 E Real Property Case Files Box 212 File Area #2-General.

711. USSBS, Campaigns of the Pacific War, *op. cit.* p. 81.

712. The entry reads: "Nov 4, 1943. Two (2) Pharmacist mates were dispatched to Little Kiska to Bring back a body that had been washed up on the shore. The body proved to be that of a Japanese flyer. The body was turned over to the U.S. Army for disposition." (Annual Sanitary Report of the U.S. Naval Auxiliary Air Facility, Kiska, Alaska for the Year 1943. File A9 /2 Annual and Semin-Annual Reports. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 2).

713. Sasaki Yoshikazu and Nakamachi Kunizō, both petty officers first class and pilots of Nakajima A6M2-N 'Rufe'.

714. We do not have in hand enough data on the decomposition rate of human corpses in Aleutian waters, but it is highly unlikely that a body could have remained afloat for 7-8 months, even if wearing a kapok life jacket (there is no reference to a life jacket in the report; moreover, after 7-8 months a kapok life jacket would have absorbed enough moisture to offset any buoyancy).

715. Mitsubishi G4M 'Betty'.

716. USSBS, Campaigns of the Pacific War, *op. cit.* p. 95.

717. Neely, The First Special Service Force *op. cit.*—Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 pp. 81-83 <www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/ahqrd-drqga-eng.asp?txtType=3&RfId=194>.—Werner, Bret (2006) *First Special Service Force 1942-44*. London: Osprey.

718. Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 pp. 81-83 <www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/ahqrd-drqga-eng.asp?txtType=3&RfId=194>.

719. A 10th Mountain Timeline. *Skiing Heritage Journal* vol. 7, nº 2, 1995, pp. 10-13.

720. ComAlSec dispatch To VCNC, 112122 Sept 1943. Cited in: U.S. Naval Administration in World War II: CINCPAC. North Pacific Force and Area Alaskan Sea Frontier. Seventeenth Naval District. Washington, DC: Navy Department Library. Not paginated.

721. ComAlSec secret letter. S-323 To VCNC, Alaskan Sector—Naval Auxiliary Air Facility Kiska. Revisions of Plans for Facilities, revision of Officer and Enlisted Complement. 6 Oct 1943. Cited in: U.S. Naval Administration in World War II: CINCPAC. North Pacific Force and Area Alaskan Sea Frontier. Seventeenth Naval District. Washington, DC: Navy Department Library. Not paginated.

722. ComAlSec secret letter 0832330. To Bureaus, Alaskan Sector—Naval Auxiliary Air Facility Kiska. Revisions of Plans for Facilities, revision of Officer and Enlisted Complement. 29 Nov 1943. Cited in: U.S. Naval Administration in World War II: CINCPAC. North Pacific Force and Area Alaskan Sea Frontier. Seventeenth Naval District. Washington, DC: Navy Department Library. Not paginated.

723. *ibid*.

724. Major K.R. Lenzen to ComAlSec, Kiska Garrison, 22 November 1943. Cited in: U.S. Naval Administration in World War II: CINCPAC. North Pacific Force and Area Alaskan Sea Frontier. Seventeenth Naval District. Washington, DC: Navy Department Library. Not paginated.

725. Writnack, K.C., War Diary report Month of September 1944. NAAF Kiska Alaska (Navy 442) RG 181.

726. NARA RG181 E149 B14 FH-13 #1.

727. Bailey, Edgar P. (1993) Introduction of Foxes to Alaskan Islands - History, Effects on Avifauna, and Eradication. *Resource Publication* 193. Washington, D.C: Fish And Wildlife Service, United States Department of the Interior, p. 12.

728. Salvage Aleutco (Seattle) contracted by Bankers Life and Casualty Company of Illnois: Merritt, M.L. (1977) History 1741-1967. In: Merritt, M.L. and R.G. Fuller, (eds.) *The environment of Amchitka Island, Alaska*. Technical Information Center, U.S. Dept. of Commerce. Pp. 130. —In May, 1948, Aleutco purchased from the War Assets Administration, for $868,000, miscellaneous surplus war property located in the Aleutian Islands, Alaska, in the custody of the Navy. Eighteen

boatloads were removed by Aleutco in the summer of 1948: Aleutco Corporation v. United States of America, Appellant., 244 F.2d 674 (3rd Cir. 1957).

729 Merritt, History 1741-1967 *op. cit.*

730. National Oceanic and Atmospheric Administration (2010) *United States Coast Pilot 9: Pacific and Arctic Coasts Alaska: Cape Spencer to Beaufort Sea*. 28th Edition. National Oceanic and Atmospheric Administration, U.S. Department of Commerce. Washington, D.C.: U.S. Government Printer. P. 421.—In this context it is worth noting that it appears as if Executive Order 1613 closing Kiska Harbor to Foreign Shipping, is also still in effect as it has never been rescinded—but enforcement has either been suspended or the fact has been overlooked (Executive Order 1613 Harbors Not Subject to Entry, signed by President William H. Taft on March 23 September 1912.—Bureau of Insular Affairs (1914) *Acts of Congress, Treaties, proclamations, Decisions of the Supreme Court of the United States and the opinions of the Attorney General relating to Noncontiguous Territory, Cuba and Santo Domingo, and to Military matters*. Washington: Government Printing Office. pp. 545-546.)

731. Public Land Order nº 1224. Federal Register vol. 20, 1955, p. 7076.

732. Table derived from (and with addition to) Appendix I: Administrative and resource management actions related to Kiska Island, Aleutians: a Synoptic Chronology. In: Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan*. Dec 2008. (Report Kiska #1). Study prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

733. WH Hastings, Real Estate Division, Office of the Chief Engineer, Department of the Army, to Bureau of Yards and Docks, Department of the Navy, dated Washington, 2 May 1949. NARA RG153/SCA/48 Kiska.

734. JAG 2 200 17. NARA RG 71/1001/14 Kiska I.—See also R.H.Foller, Assistant Secretary of the Navy to Fred A Seaton, Secretary of the Interior, dated Washington 24 Sep 1956. Copy on file NHL file Kiska, U.S. NPS Anchorage.

735. National Oceanic and Atmospheric Administration (2010) *United States Coast Pilot 9: Pacific and Arctic Coasts Alaska: Cape Spencer to Beaufort Sea*. 28th Edition. National Oceanic and Atmospheric Administration, U.S. Department of Commerce. Washington, D.C.: U.S. Government Printer. P. 421.—In this context it is worth noting that it appears as if Executive Order 1613 closing Kiska Harbor to Foreign Shipping, is also still in effect as it has never been rescinded—but enforcement has either been suspended or the fact has been overlooked (Executive Order 1613 Harbors Not Subject to Entry, signed by President William H. Taft on March 23 September 1912.—Bureau of Insular Affairs (1914) *Acts of Congress, Treaties, proclamations, Decisions of the Supreme Court of the United States and the opinions of the Attorney General relating to Noncontiguous Territory, Cuba and Santo Domingo, and to Military matters*. Washington: Government Printing Office. pp. 545-546.)

736. Public Land Order nº 1224. Federal Register vol. 20, 1955, p. 7076.

737. Public Land Order nº 4143. Federal Register vol. 32, 1967, p. 213.

738. UNESCO MAB Biosphere Reserves Directory Biosphere Reserve Information, United States of America, Aleautian Islands. <www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all &code=USA+01.

739. Dowell, Th. (1977) *Debris removal and cleanup study Aleutian Islands and Lower Alaska Peninsula) Alaska*. Anchorage, Alaska: Alaska District, U.S. Army Corps of Engineers. June 1977.

740. "An Act to provide for the designation and conservation of certain public lands in the State of Alaska, including the designation of units of the National Park, National Wildlife Refuge, National Forest, National Wild and Scenic Rivers, and National Wilderness Preservation Systems, and for other purposes." Public Law 96-487-Dec. 2, 1980. 94 STAT. 2371 (on-line text: <alaska.fws.gov/asm/anilca/toc.html>.).

741. NHL files Kiska, NPS-AKRO.

742. Inscription on Memorial Marker left on Kiska Island.

743. National Register Number: 85002732.

744. Submitted as cultural property.—Property nº 758: <whc.unesco.org/en/tentativelists/758/

745. <tps.cr.nps.gov/nhl/detail.cfm?ResourceId= 1912&ResourceType=Site.

746. Establishment of the World War II Valor in the Pacific National Monument: A Proclamation by the President of the United States of America. 5 December 2008. <home.nps.gov/pwr/customcf/apps/ww2ip/dsp_proclamation.cfm>.

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

4. Japanese Development of Kiska

From the moment the Japanese forces landed on Kiska on 6 June 1942, until about a week before their evacuation on 28 July 1943, the Japanese developed Kiska into a base from which to operate seaplanes and submarines. Based on what we know from U.S. photographic intelligence, the majority of the construction was completed by late October 1942. With the exception of the airfield on North Head, no new major construction projects were started during the winter of 1942/43 or during the spring and early summer of 1943. Yet construction continued, especially the development of additional (alternative) defense positions; personnel positions, such as trenches and foxholes; concealed and underground gun positions; as well as an extension of the road network.[1]

At the same time, the aerial bombardment and, to a lesser degree, the naval shelling by U.S. forces took their toll on the structures that had been built. Some of the damaged structured were repaired, others abandoned. This chapter pulls together, from a range of sources the physical development of the Japanese base on Kiska. The Japanese defense strategy that can be inferred from the observations made in this chapter will be addressed in chapter 6 (Military Terrain Analysis).

The available data

This analysis is based on a number of archival sources. It should be noted that the various datasets are not complete. While at the time of fighting, the U.S. Intelligence officers (G-2) of the various units had a full set of aerial images and the textual interpretations and analysis that were based on the images, as well as summaries of pilots' debriefing reports, time seems to have taken its toll and many such reports and images were scattered and lost after the war. Some of the reports and images can be found scattered in various files in the U.S. National Archives,[2] but they are manifestly not complete. A lot of material seems to have been held solely at the field level, *i.e.* at the U.S. base on Adak, as well as the forward base on Amchitka. Once Kiska had fallen and the focus of the war had moved on, these files—and what must have amounted to filing cabinets full of aerial photographs—were no longer relevant to the war effort. It is quite unclear how much of this was ever shipped back to Elmendorf for the Eleventh AAF, the U.S. Navy at FPO 230, or the Western Defense Command at the Presidio in San Francisco. Even what got there may not have been scheduled for archival retention and thus no longer exists. Thus we have aerial photographs but do not have the interpretation reports that are based on these, or we have the interpretation reports, but no photos. While this patchwork nature of the surviving archival documents is quite frustrating, the existing data set is detailed enough to allow for a reasonably fine-grained analysis.

The data available for the analysis are derived from a range of sources: i) U.S. Intelligence reports drawn up as a result of bombing strikes and photographic intelligence; ii) extant aerial photographs;[3] iii) the final target map drawn up for use during the U.S./Canadian assault on

Kiska;[4] iv) Japanese documents; and v) photographs taken during the Japanese occupation of Kiska;[5] vi) photographs of Japanese installations taken after the occupation of Kiska by U.S. forces;[6] and, vii) interrogations of Japanese officers after World War II.[7] In addition, a small number of captured Japanese documents exist.

Intelligence Reports

A number of U.S. Intelligence reports could be drawn on, dating from a few days after the landing by the Japanese to a few days before the U.S./Canadian assault.[8] The numbering of some of the available reports indicates the reports in hand are not complete. However, as they span the entire period, they can be seen as adequately covering the development of the base. Not surprisingly, the frequency of reports seems to increase as the invasion by U.S. forces approached. In addition, there are post-landing assessments,[9] most notably Irving Payne's *The Enemy on Kiska*.[10] Some of this intelligence then flowed into Pacific-wide intelligence studies on the capabilities of the Japanese—studies that were of significance for the conduct of the war in the Pacific theater.[11]

The intelligence reports compiled prior to the re-occupation by U.S. and Canadian forces provide a range of figures on the Japanese build-up. Much of this is based on educated guesses and conjectures. One of the major problems faced by U.S. intelligence was to accurately estimate the total size of the Japanese garrison on Kiska. While the strength of the defenses could be accurately gauged by the number of gun emplacements with guns, it was much more difficult to estimate personnel numbers. The common method used was to calculate the floor space of those buildings and tents interpreted to house troops and then divide the total by an arbitrary figure. This approach was prone to two main sources of error: the possible attribution of storage and workshop spaces as personnel barracks; and the correlation of floor space with numerical occupancy. One such assessment for 25 November 1942 calculated a total of 228,198 square feet of housing space. The report allocated 24 square feet per soldier, rather than the 20 square feet, "the minimum prescribed for American soldiers under emergency conditions in the theater of operations."[12] These calculations then gave an estimated strength of 9,500 Japanese soldiers on Kiska[13]—almost twice the actual number at peak development.[14]

Intelligence analysis was hampered by the mixed quality of photoreconnaissance data available. Often, the quickly changing weather conditions obscured the target areas. The patchy nature of the photographic intelligence data can be illustrated by considering the two sample periods for which we have detailed data. In May 1943, when bombing missions were flown on 20 of the 31 days of the month (see Appendix 3), only four days yielded aerial imagery suitable for analysis.[15] From the combat chronology set out in Appendix 3, we know that photo-reconnaissance missions were also flown on 2 May, 16 May and 30 May, none of which seem to have yielded usable imagery.[16] The majority of the images seem to have been shot by the bombing aircraft rather than by photoreconnaissance missions specifically flown to gather data.[17]

The second sample period is closer to the landing on Kiska, spanning the period 24 June to 11 July 1943. These images fall into two groups, those shot by planes of the Eleventh AAF[18] and those obtained by PBY Catalinas from Fleet Air Wing 4.[19] The latter images, all obliques, some shot at extremely low altitudes, were presumably shot to interpret the shoreline defenses of Kiska and Segula in the final stages of the planning for the invasion of Kiska.[20]

In addition, we need to consider that not all image runs yielded data useful to intelligence. Overall, at present we only have a small minority of Photographic Intelligence Reports in hand, which means that the analysis of the troop and base build up on Kiska will be less fine grained than might be possible if all data were in hand.

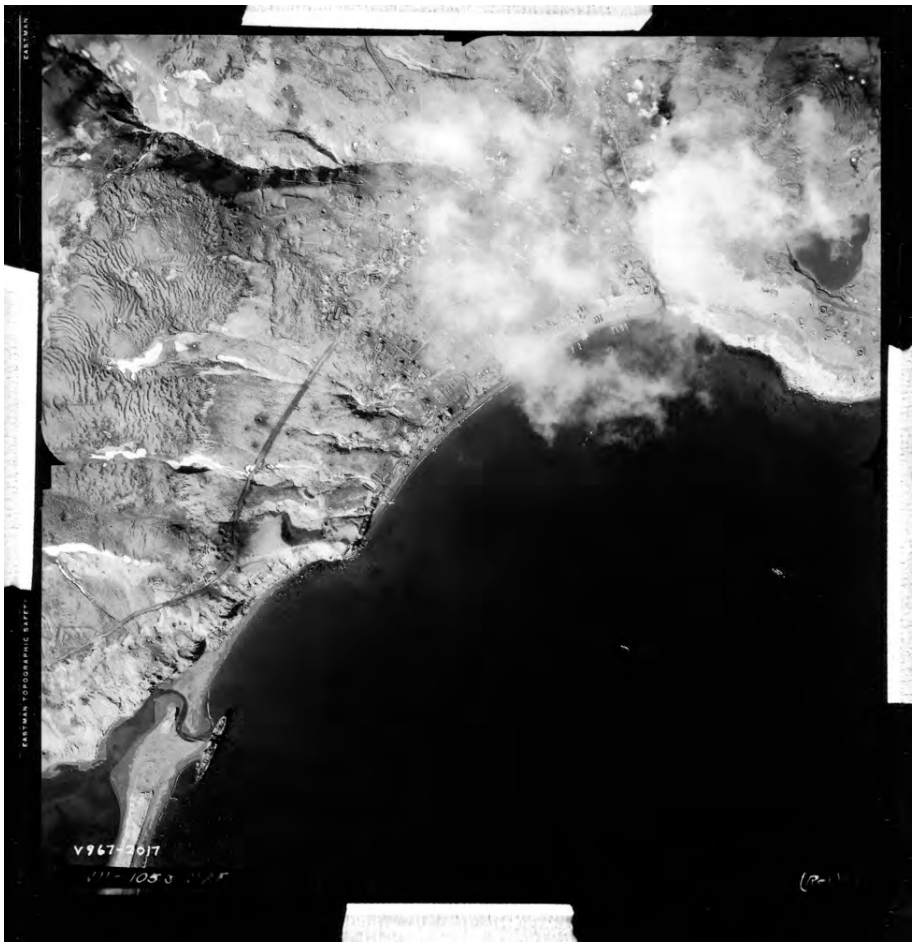


Fig. 65. Example of an aerial reconnaissance photograph of 16 March 1943, showing the Japanese developments at Kiska Harbor. The seaplane base is located at the center left of the image.[21] At bottom left is the transport *Nozima Maru*, beached on 25 September 1942 after being hit by U.S. bombers.

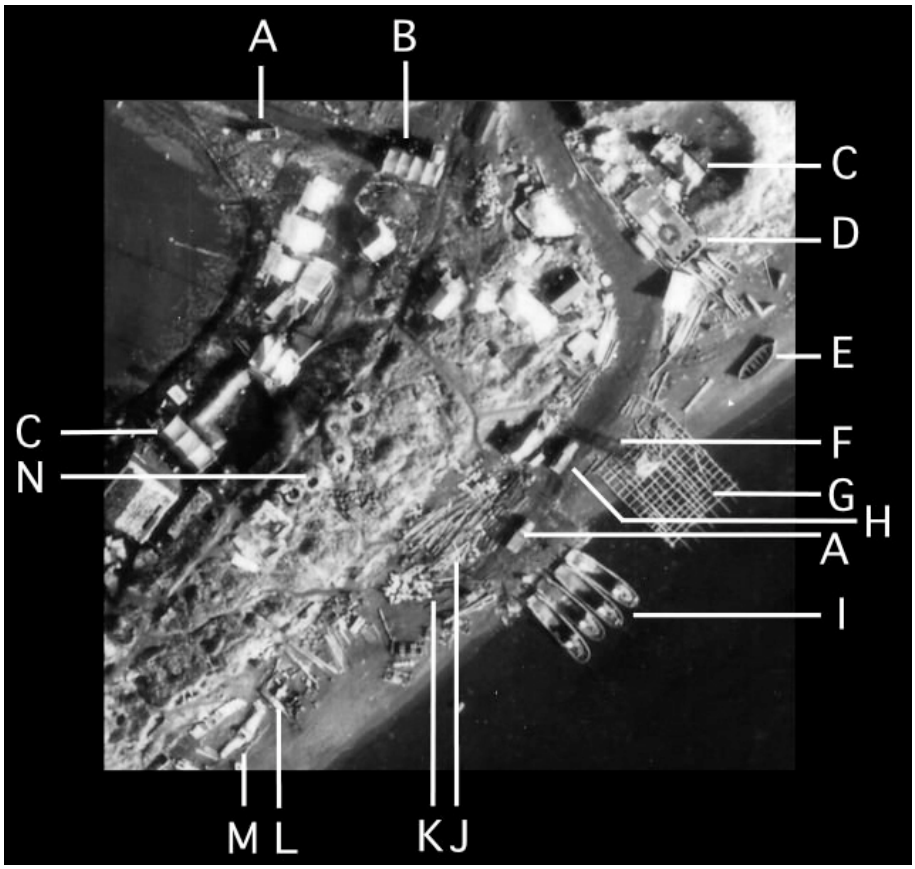


Fig. 66. Example of the detail that can be found on the reconnaissance air photos (shown is a section of Fig. 79). A—open truck; B—Five-ribbed rectangular tent; C–four-ribbed rectangular tent; D-old barge; E-boat; F–shadow of derrick/crane; G–pier; H–covered truck; I–four Daihatsu Barges; J–lumber / poles; K–fuel drums; L–central float of a Nakajima A6M2-N 'Rufe'; L–central fuselage and wings of a Nakajima A6M2-N 'Rufe' (upside down); N– machine gun positions.

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Table 21. Photographic Intelligence Reports in hand

Report	Date	Reference
N° 40	8 July 1942	22
N° 21	3 March 1943	23
N° 30	1 June 1943	24
N° 33	14 July 1943	25
N° 35?	5 August 1943	26

It should noted, however, that a close examination of the available air photos also provide additional data that may not have been of military importance at the time, or that may have been reported in intelligence assessments which we do not have in hand at present. An example for this would be the identification of food gardens, as shown in Fig. 80, or the identification of the three Japanese tanks as shown in Fig. 175.

Fig. 67. Example of a sheet of the 1:25,000 topographic maps drawn up in preparation for the U.S./Canadian invasion of Kiska. Shown is the western part of Kiska Harbor.[27]

U.S. target maps for use during the assault on Kiska

In preparation for the assault on Kiska, the U.S. Army developed a set of topographic maps which showed all Japanese installations known to date (Fig. 67). These were based on a 1:25,000 scale topographic map drawn up by 29th Engineers, U.S. Army in May 1943 and printed in late June.[28] Two versions exist: a set of large map sheets showing the installations; and a series of maps that show sections of Kiska in a series of map sheets, each covering 1.5 x 2 miles. The latter target maps

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were published in two editions: the first on 30 June 1943 and a second edition updated to 28 July 1943 (Fig. 69). That second edition also numbered the individual objectives, which were consecutively numbered by major area (e.g. Main Camp, North Head, etc) and for which a separate identification listing exists.[29]

Japanese Documents

As can be expected, a number of resources exist in Japan. The documents held in Japanese Archives, in particular the National Institute for Defense Studies (NIDS), Tokyo, have not been consulted. Two visits to NIDS showed the presence of a number of photo albums which have a bearing on Kiska (and Attu),[30] but these images were kept in albums donated to NIDS without copyright conditions attached. As a result NIDS is unable to grant reproduction rights.

All Japanese data on Kiska reflect Tokyo date and time (Japan Standard Time, time zone 'K'). As a rule of thumb, to convert Tokyo times and dates to Kiska local time (i.e. USA Hawai'i/Aleutian Time zone), 19 hours need to be deducted.

Post-War Interrogations

The data derived from the interrogations of Japanese officers after World War II are of mixed value, depending on the rank of the informant and the area of questioning. The most senior interrogation with reliable details on the situation on Kiska comes from IJN Commander Nifumi Mukai, who from 1 May to 30 June 1942, was the commanding officer of the Special Naval Landing Force which occupied Kiska. From 1 July 1942 to 30 July 1943 he was Senior Officer of the Kiska Defense Force.[31]

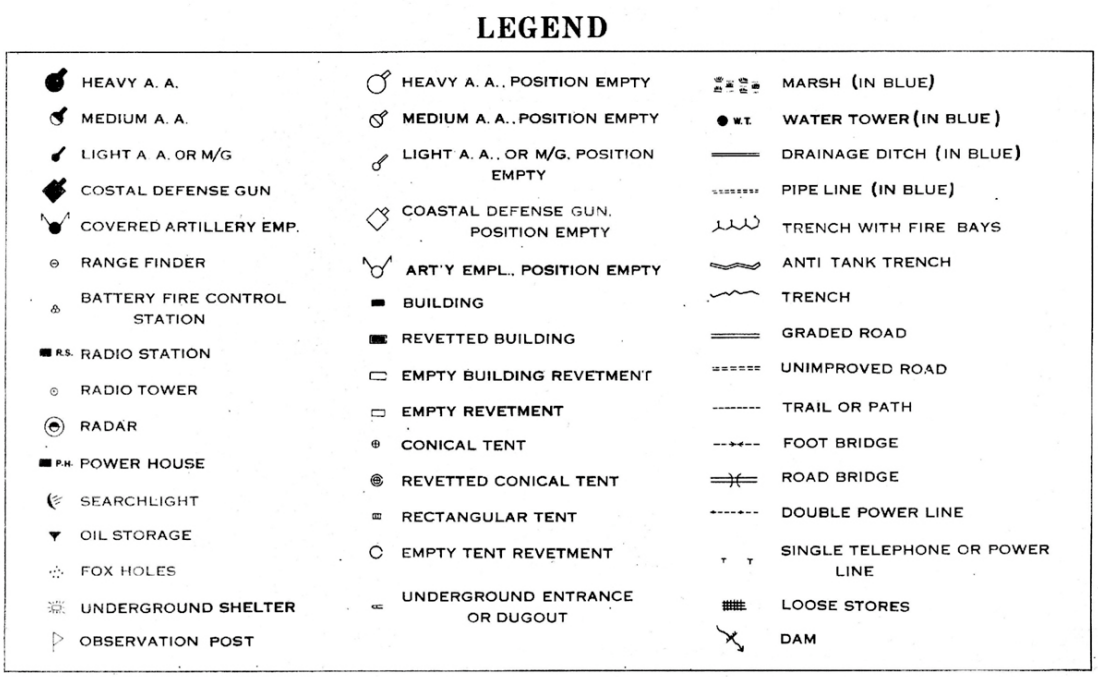

Fig. 68. Legend used for target maps drawn up in preparation for the U.S./Canadian invasion of Kiska.[32]

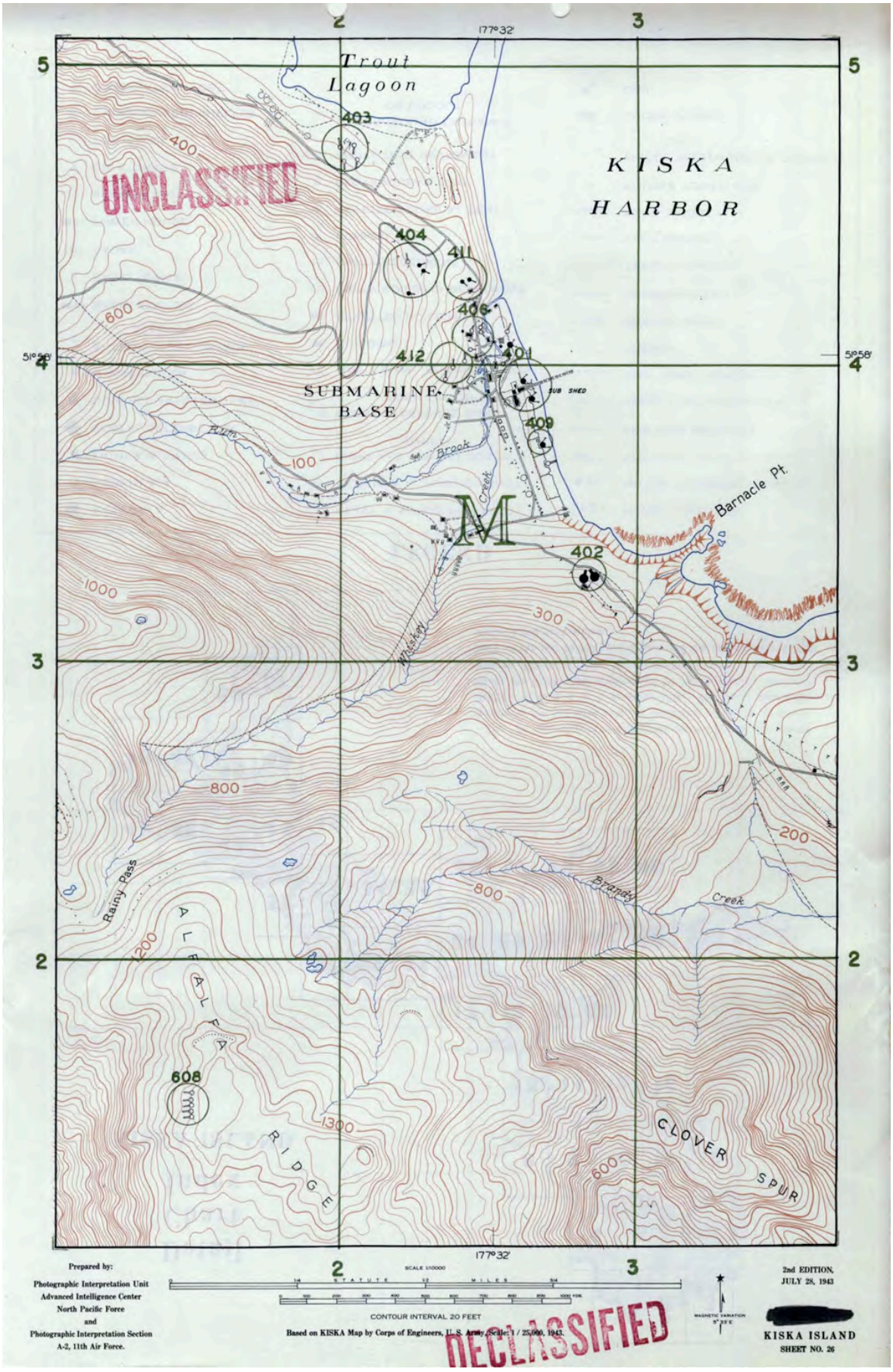

Fig. 69. Example of a sheet of the target maps drawn up in preparation for the U.S./Canadian invasion of Kiska. Shown is the submarine base area with the individual objectives numbered.[33]

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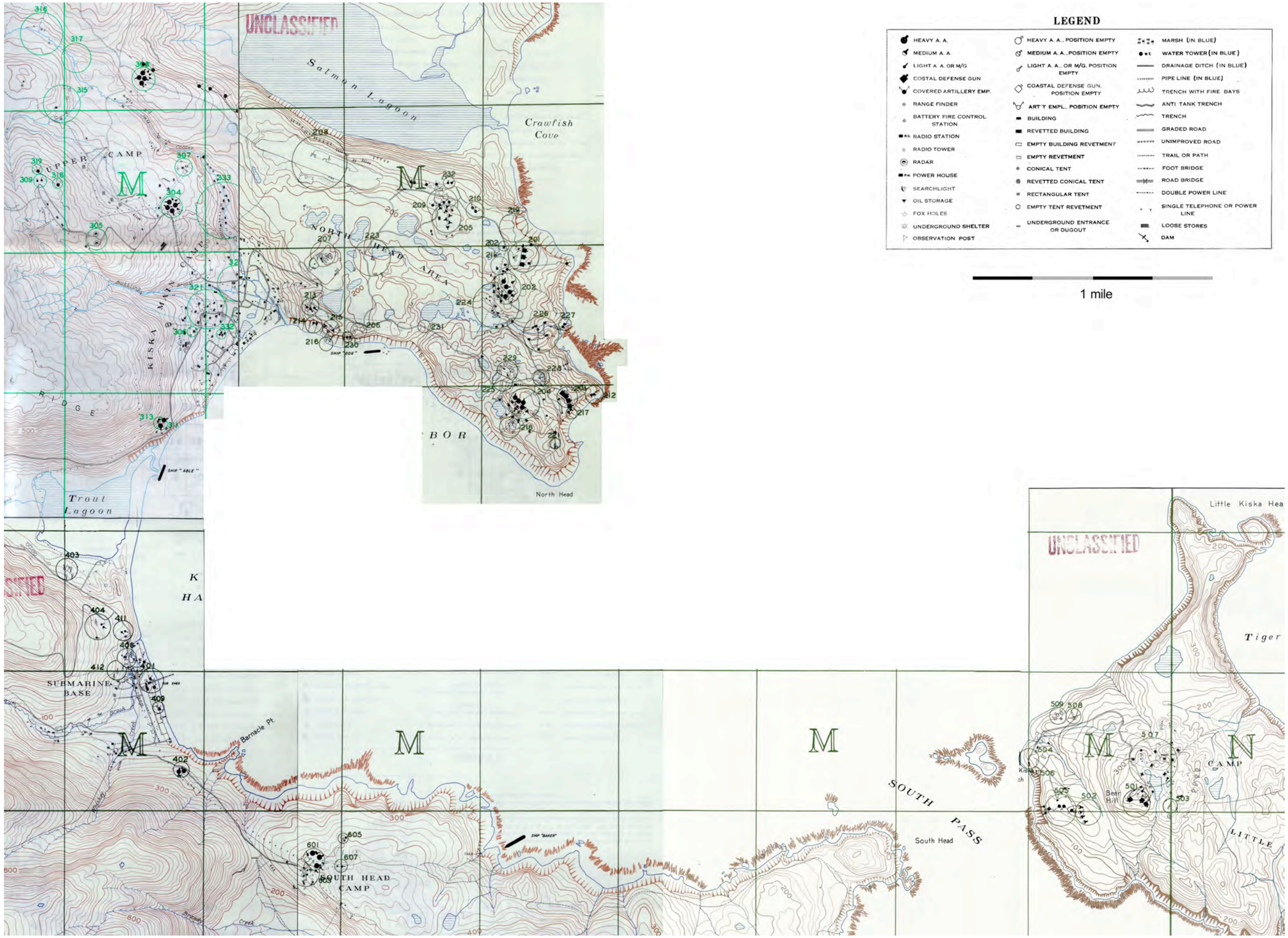

Fig. 70 Pastiche of target maps drawn up in preparation for the U.S./Canadian invasion of Kiska, covering the Kiska Harbor area. The concentration of sites is evident.

Overall patterns of build-up on Kiska

The overall pattern of build-up of the Japanese presence on Kiska occurred in four stages:

v) landing and initial occupation;

vi) base expansion with materiel and personnel initially destined for Midway;

vii) strengthening of the base by relocating the IJA garrison from Attu; and

viii) deepening the defense system and improving infrastructure.

Given that two arms of the Japanese military were present on Kiska, the island had to be split into areas of responsibility (Fig. 71). The Imperial Japanese Navy (IJN) controlled the *raison d'être* of the Japanese presence on Kiska, the installations in Kiska Harbor, as well as the areas needed to protect these assets, while the Imperial Japanese Army (IJA) had a garrison on Gertrude Cove, situated there to deny the U.S. forces a strategic landing beach, and control over other landing beaches and the inland areas.

The spatial pattern of the IJN presence also shows clearly that the two bases, seaplane and submarine, were the core, while the rest was merely a defensive perimeter. Indeed, the bulk of personnel housing, stores and other infrastructure was concentrated in the Main Camp area near the seaplane base, and to a lesser degree near the submarine base. All other IJN barracks development, such as on North Head, South Head and on Little Kiska was limited to barracks supporting the gun batteries sited there.

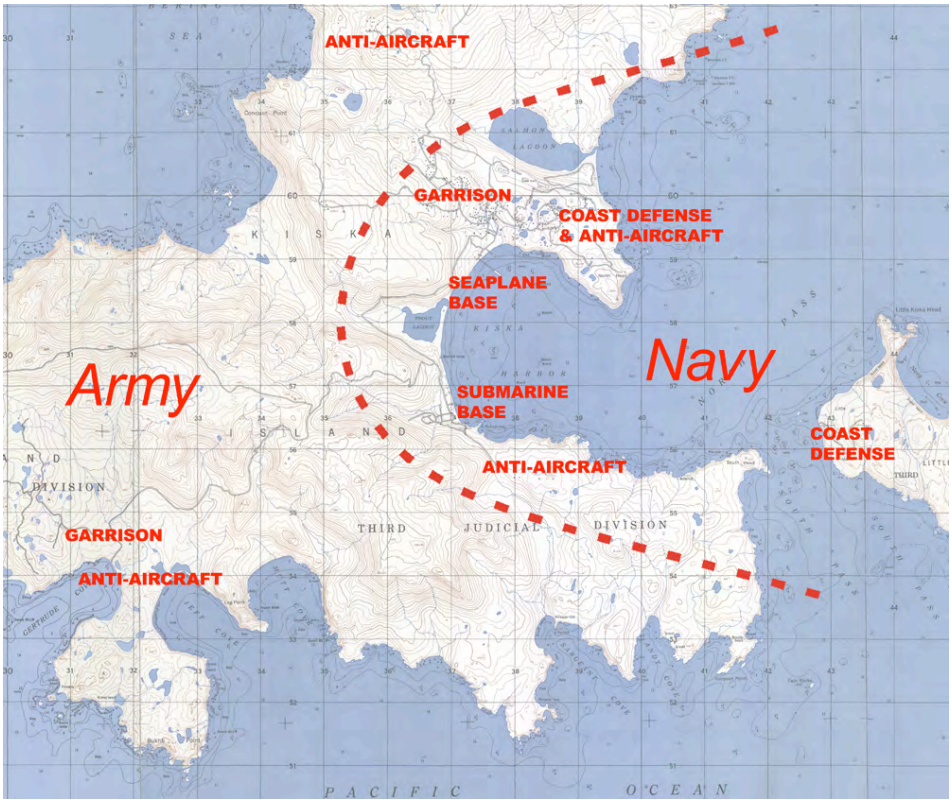

Fig. 71. Broad areas of responsibility on Kiska. Note that the dotted line does not constitute a formal Japanese administrative boundary.

The Beginnings of a Base

Immediately after the landings, the Japanese began to develop the island into a base from which to launch seaplane and submarine operations. The Japanese set up a seaplane base along the beach in the northwestern sector of Kiska harbor, right next to the U.S. weather station. Some of the captured U.S. buildings were converted into radar and radio stations. That base development comprised shore installations, namely tents, fuel and material dumps and some personnel trenches.[34] To repel any attack, the Japanese forces set up two antiaircraft and one coastal defense gun battery. An anti-aircraft battery, consisting of four 13.2mm light AA, was emplaced on the rise just to the east of the encampment area, while a battery of four 75mm Type 88 medium AA was emplaced on a rise to the west. A small caliber coastal defense gun battery, consisting of four 4.7-inch guns of mixed Japanese and British manufacture,[35] was set up on the eastern shore of North Head. From a strategic perspective, these gun positions, which were under development as soon as the forces landed, provided a protective umbrella right over the centre of the fledgling base.

On 8 June the first six Japanese flying boats arrived.[36] A U.S. intelligence photographic plane accompanying a bombing run on 18 June noted four Kawanishi Type 97 'Mavis' flying boats as well as at least two float planes.[37]

Fig. 72. A Daihatsu-type landing barge, captured by U.S. forces on Attu and used for their own purposes there. These were the standard barges used to ferry materiel and troops, both to unload the larger ships and to provide communication where roads did not (yet) reach. [38]

Base development was brisk with at least 15 storage buildings and 35 revetted / store buildings being constructed. The USAAF intelligence analysis noted that the structures were erected in a dispersed fashion, obviously to make it harder to target them. In addition the report notes the construction of barracks and the start of road works connecting the beach area with the main valley and North Head.[39] Unloading of materiel was well progressed at that stage, with "a considerable quantity of stores...on the beach near the landing point."[40] If the observations are accurate, then this was achieved with only a small number of craft. The report noted the presence of three landing barges (presumably Daihatsu, three motor launches and two motorboats. A re-analysis of the same data by the USN noted six 60' landing barges, which based on the description, were Daihatsu, as well as two 30' barges, also with a ramp bow.[41]

What is significant, is that less than a week after the landings, Kiska was a fully functioning base for the operation of medium-range reconnaissance float-planes (the Aichi E13A1 'Jake', *Reisui*) and long-range flying boats (the Kawanishi H6K 'Mavis', *Taitei*).

Midway Materiel

The base received a major boost when material that had been en route to Midway was re-routed to Kiska. The first to arrive were the *Suisen* float-plane fighters that were delivered by the sea-plane transport *Kamikawa Maru* on 15 June 1942.[42] Two weeks later, on July 6th a convoy brought the full complement of military might that was to have been installed on Midway: two 6-inch coastal defense batteries, two under-strength heavy anti-aircraft gun batteries (the 120mm DP); several medium AA (25mm and 75mm) as well as smaller weapons.

When the heavy guns arrived, the decision was made to concentrate both under-strength heavy anti-aircraft gun batteries in one location and set them up, as per military manual (Fig. 73), as a four-gun battery. The reasoning that these were intended as two under-strength batteries is based on observations made on the Japanese bases on the coral islands of Micronesia where the IJN set up their heavy AA batteries, 127mm DP guns in these cases, as a triangle of three emplacements—the central one of which was left empty, to be filled at a later date.[43] Midway is a coral atoll, similar to Maloelap, Mili, Jaluit, Kwajalein, Wake, or Wotje where the two-gun/three emplacement pattern can be demonstrated.[44] On the coral islands these two batteries tend to be set up on opposite sides of an island, thus maximizing cover. In the case of Kiska, the commanders decided that it was strategic to concentrate them on the highest point of North Head, thereby covering the most likely enemy approaches to the base. The two six-inch coastal defense gun batteries were emplaced commanding the entrance to the harbor, one on North Head and one on the rise in the western part of Little Kiska. Additional AA were distributed as needed.

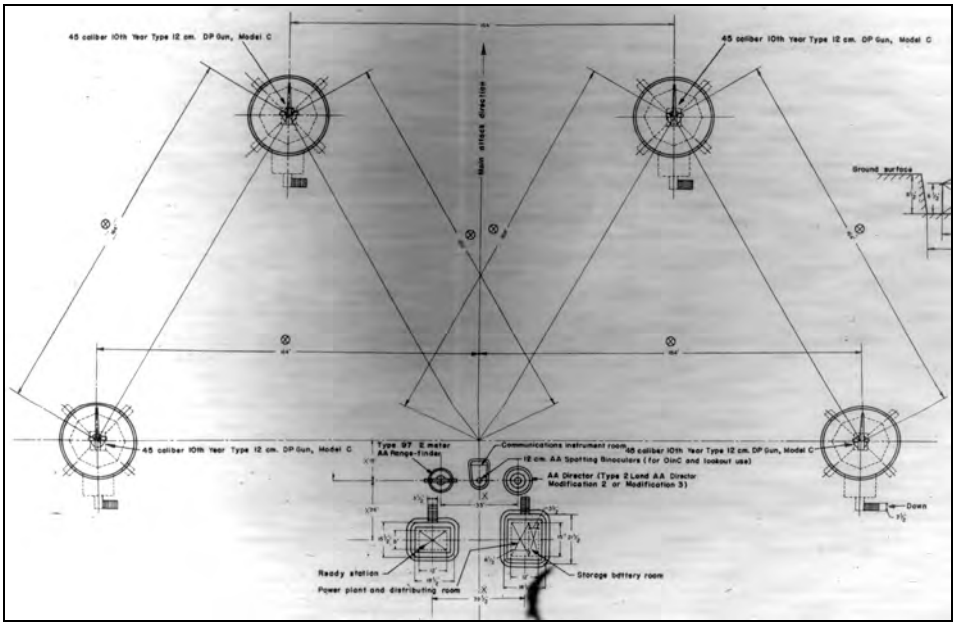

Fig. 73. Arrangement of a 120mm DP gun emplacement according to a Japanese Manual.[45]

At the same time, IJN *Chiyoda* delivered eight midget submarines that had initially been intended to form an advanced submarine base on Kure Atoll and that now formed the core of the submarine base on Kiska (p. xxvi). In addition to the materiel that had been destined from Midway and Kure, Kiska received troops from the 12th Construction Battalion as well as additional naval personnel.

In September 1942 the Japanese troops under Usami Toshiharu, which had occupied Attu, were shifted to Kiska, where they occupied the area around Gertrude Cove.

The Road network

Given the dispersed nature of the Japanese presence on Kiska, it was imperative that a network of roads be established as soon as feasible. Until that was in place, all communication had to occur on foot trails, which may have been passable by motorbike, and via in-shore transport using motorboats and barges.

Unlike U.S. forces, which could rely on heavy trucks and bulldozers to aid the construction of roads and airfields, the Japanese only had light trucks and manual labor. When the U.S. forces landed on Kiska, they found that the Japanese roads could not withstand heavy traffic and deteriorated to impassability within a week. The U.S. intelligence report on the Japanese base on Kiska stresses the point, however, that this was a factor of the different types of trucks used, and that the Japanese roads were more than adequate for the lighter trucks the Japanese employed on the island.[46]

Fig. 74. General representation of the Japanese road network on Kiska.

Fig. 74 sets out the extent of the Japanese road network on Kiska. The first road to be built connected the main camp area with the defense systems that were under construction on North Head. The U.S. intelligence assessment of photographic data collected on 18 June noted a newly built and completed road connecting Kiska Beach with the 13.2mm AA battery on North Head, and the continuation of that road further west along the southern side of North Head.[47] In addition, a major road, connecting Kiska Beach with the tip of North Head had also been built, allowing for a connection between the beach and the 4.7-inch gun battery that was in the process of being emplaced there.

The next priority was to develop a road connection between the Main Camp area and Trout Lagoon, and from there to the submarine base. Trout Lagoon soon became a major locale for the

Japanese activity as the supply ship *Nozima Maru* had been run aground there on 15 September 1942, having been damaged in an U.S. air raid. The ship was gradually unloaded on the sand spit (Fig. 157).

Examining aerial photos also allowed the U.S. intelligence to assess the transport capability of the Japanese. One aerial photograph taken on 28 September 1942,[48] for example, shows a total of 17 trucks on the road or parked near buildings (Fig. 175).[49]

Once the IJA garrison had been established at Gertrude Cove, the need arose to connect it with the IJN base at Kiska Harbor. As is readily understandable, the terrain was not very conducive to a rapid development. And even where the road had been constructed, accidents seem to have frequent. The post invasion U.S. intelligence assessment notes a number of burnt-out truck wrecks.[50] The analysis of late February 1943 noted a new road development south of Trout Lagoon. It was speculated that the road might eventually link up with the road to the main camp and to Gertrude Cove, although it was mentioned that it might lead to an 'as yet unidentified installation'.[51] By early May the Japanese had finally succeeded in completing the road that connected the submarine base area with the Main Camp area.[52] By mid July the road from Gertrude Cove to the Submarine Base had been expanded by another 1,000 yards, some 100 yards from Gertrude Cove and some 900 yards at the Submarine Base end. Yet the road was still incomplete for some 3,500 yards, which was only a passable trail.[53] The intelligence assessment noted that the missing section covered difficult terrain. That meant that by the time of the Japanese evacuation (end of July 1943) the connection between Gertrude Cove and the main concentration could still not be carried out by truck. This also implies that all supplies that had to be transported to Gertrude Cove had to be delivered by ship or small landing craft, or had to be hand carried across the pass.[54] By mid July the road from Conquer Point to the higher inland areas had also been expanded and upgraded.

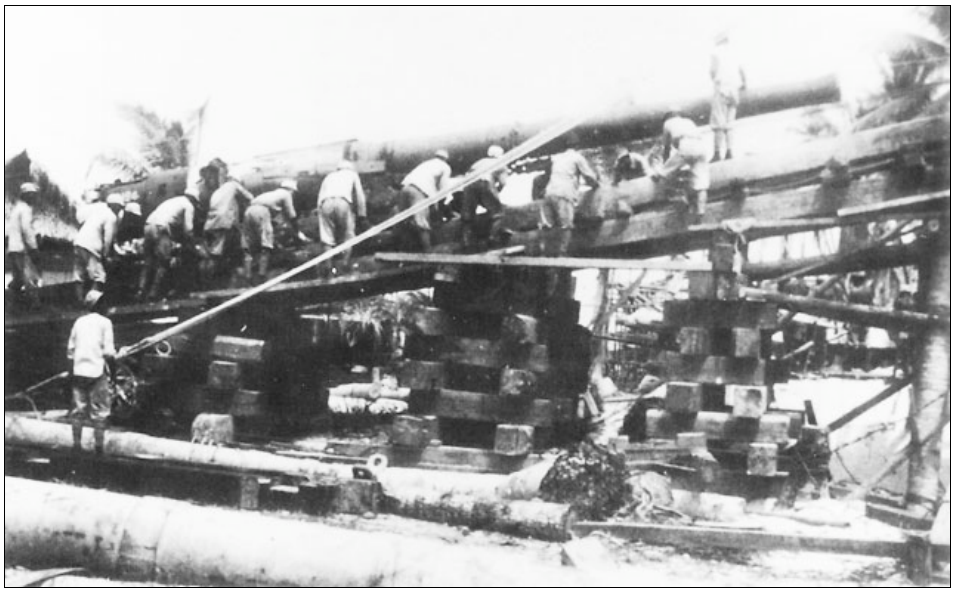

Fig. 75. Installing an 8-inch gun barrel in one of the guns emplaced on Betio, Tarawa, Kiribati. The image shows how the Japanese military overcame the absence of heavy lifting machinery.[55]

Japanese Logistics for moving heavy guns

Most goods and supplies could be moved by hand or by light truck. This does not, however, extend to the heavy gun barrels. While we do not know exactly when the heavy guns arrived on Kiska (see below), we can assume that their erection would have been swift. From other parts of the Pacific theatre we have some data that indicate how quickly six-inch gun batteries could be set up and made operational, at least for manual firing. Based on a captured Japanese document we know that the two of the five two-gun batteries on Nauru Island (Central Pacific) were landed on 7 March 1943. By the end of May the construction of both batteries was only 35% complete, but

all guns were operational, had been test fired and were able to be operated manually and by local control.[56] On Ocean Island (Central Pacific) two two-gun batteries were installed. On 20 April 1943 the guns were landed and construction of the first battery commenced on the same day, completing main earthworks nine days later. Both guns were test fired on 20 May.[57]

Gradual Build-up of Defenses

Additional anti-aircraft and coastal defense batteries could be installed at Kiska Harbor after new supplies (and garrison troops) arrived on 1 July 1942.[58] The Japanese sources in hand are silent on the detailed chronology of the following

4 x 120mm DP on North Head;[59]

4 x 75mm AA on South Head;[60]

3 x 150mmCD on Little Kiska;[61]

4 x 25mm AA on hill behind main camp;[62]

4 x 13.2mm AA on North Head;[63]

4 x 13.2mm AA near Submarine Base;[64]

4 x 13.2mm AA on Little Kiska;[65] and

4 x 13.2mm AA near RADAR Station west of main camp.[66]

It appears that the big 6-inch guns came with heavy anti-aircraft guns provided by the re-routed Midway convoy. Irrespective of the date, we can assume that their erection would have been swift. We know that a coastal battery of some sort, reputedly located on South Head,[67] returned fire on a U.S. cruiser task force that shelled Kiska on 7 August 1942.[68] The report mentions that the shells were 5-inch caliber and that the Japanese fire was ineffectual. It is quite probable that the U.S. report confused North Head with South Head.[69] Given the stated caliber it is more likely that the fire came from the 4.7-inch battery on North Head, which had been established immediately after landing.

The aerial intelligence data on the coastal defense guns are highly confusing. An assessment for late November 1942 lists three guns on North Head and none on Little Kiska.[70] Yet we know that the 4.7-inch battery consisted of four guns, and that they were operational soon after landing. They were even mentioned in reports as being constructed in June 1942, but were always interpreted as *three* guns. It was not until February 1943 before the battery on Little Kiska was positively identified, although it is located quite prominently (Fig. 164), and it took until July 1943 that this 6-inch gun battery on North Head was to be listed in the assessments. While it is possible that the guns may have been missed in the early analysis due to camouflage, it is more likely that the major emphasis in interpretation was geared at anti-aircraft defenses and that the guns may have been misclassified. Clearly, it did not take that long to set up the guns which were operational soon after. Indeed, both the four 4.7-inch and the three 6-inch guns are readily recognizable on aerial imagery of March 1943.[71] Unfortunately, aerial imagery prior to March 1943 is presently unavailable for retrospective analysis.

In November 1942 the Imperial Japanese Army garrison was strengthened when companies of anti-aircraft artillery were landed, with one company setting up at Gertrude Cove,[72] and one company setting up inland in an area west of Kiska Harbor.[73]

An intelligence study compiling the state of affairs as known in November 1942 and comparing the knowledge between 8 November and 25 November 1942 demonstrated the developments at Gertrude Cove.[74] It is noteworthy that by the end of November there were no coastal defense guns in evidence on Little Kiska and that only three coastal defense guns were

identified on North Head, with another five tentative ones in late November. It is likely that these five were the three six-inch guns (objective 201) as well as the three empty coastal defense emplacements near Salmon Lagoon (objective 209). The rapid build up of defenses on November 25 is worth noting, although some of this can be attributed to the increased level of aerial scrutiny. It is understandable that as the Japanese defense strategy for Kiska, and the resultant tactical decisions, was continually evolving, the arrangement of guns changed as well.

We also have in hand an assessment dated to the end of February and another from the end of June 1943, which show additional variations. An intelligence assessment during the final days of the Aleutian campaign, dated 12 July 1943, provides an overview of the extent of defenses erected by the Japanese as far as they could be identified from the air. The changes to the June 1943 assessment can be attributed to improved visibility during July due to reduced snow cover. The actual distribution of guns as counted through on-the-ground verification after the U.S. landings is set out in Table 27. The observable fluctuations in the gun numbers are an artefact of both the vicariousness of photographic intelligence and the fact that the Japanese relocated some of the guns.

Table 22. Guns on Kiska and Little Kiska Islands
(as identified from aerial imagery and observers' reports by 8 November and 25 November 1942).[75]
Tentative identifications are shown in brackets.

		8 Nov			25 Nov	
	Coast Def.	Heavy AA	Light AA	Coast Def.	Heavy AA	Light AA
North Head	3	25	8	3 (5)	24	4
Main Camp		8(2)	2		11	11(6)
Sub Base		2	4(8)		6 (2)	4(12)
South Head		4				
Little Kiska		2	(7)		4(1)	6
Gertrude Cove		8	8(2)		10(4)	20(14)
Total	3	49(2)	22(17)	3(5)	55(7)	45(32)

Table 23. Guns and other structures on Kiska and Little Kiska Islands
(as listed in the Intelligence assessment of 24 February 1943).[76]

	Coast Def.	Heavy AA	Medium AA	Light AA or MG	Light FA	Buildings	Tents
North Central							
North Head	3 (?4)	16		6		45	
Main Camp		4 (?6)		28		226	
Sub Base				30		32	
South Head		6		6		16	
Little Kiska	3			14		21	
Gertrude Cove		9 (?11)		16		78	
Total	6 (?7)	35 (?39)		100		418	

*) 'none identified'

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Table 24. Guns and other structures on Kiska and Little Kiska Islands
(as listed in the Intelligence summary of July 1943).[77]

	Coast Def.	Heavy AA	Medium AA	Light AA or MG	Light FA	Buildings	Tents
North Central		5		10	*	17	
North Head	7	8	4	13	*	43	7
Main Camp		4	4	30	*	154	33
Sub Base		4		23	*	37	
South Head		4		2	*	33	
Little Kiska	3		5	2	*	19	
Gertrude Cove		8	5	20	*	56	14
Outpost Area					2		
Total	10	33	18	100	2	359	55

*) 'none identified'

Table 25. Guns and trenches on Kiska and Little Kiska Islands (as identified from aerial imagery and observers' reports by 12 July 1943).[78]

	Coast Def.	Heavy AA	Medium AA	Light AA or MG	Covered 37mm/MG	Open/ Unoccupied		Buildings	Tents	Yards of Trench
						MG	37mm			
Reynard Area		5	4	4	10		1	26	0	1,600
North Head	7	10	12	37	4			60	9	2,000
Main Camp		10		26	4	5		164	38	3,600
Sub Base		2		4	3			38	4	1,400
South Head		4		5		9		19	0	650
Little Kiska	3		6	2	4			17	1	500
Gertrude Cove		11		9	13	19	22	56	15	12,900
Lief Cove					1			1	0	3,700
Vega Bay						1		1	0	
Total	10	42	22	87	39	34	23	382	67	26,350

Table 26. Breakdown of buildings, tents and dugouts on Kiska and Little Kiska Islands
(as identified from aerial imagery and observers' reports by 12 July 1943).[79]

	BUILDINGS					TENTS			Dugout
	Very Large	Large	Medium	Small	All	Rectangular	Conical	All	
Lake Area	0	0	0	0	0	0	0	0	1
Reynard Area	11	1	10	4	26	0	0	0	7
North Head	0	9	29	22	60	2	7	9	80
Main Camp	3	54	61	46	164	14	24	38	163
Sub Base	1	10	19	8	38	4	0	4	37
South Head	0	10	7	2	19	0	0	0	13
Little Kiska	1	6	4	6	17	1	0	1	21
Gertrude Cove	12	6	17	21	56	6	9	15	50
Lief Cove	0	0	0	1	1	0	0	0	2
Vega Bay	0	0	1	0	1	0	0	0	1
Total	28	96	148	110	382	27	40	67	375

Table 27. Heavy guns on Kiska and Little Kiska Islands as enumerated after the U.S. landings (weapons for which only mounts were found are shown in brackets).[80]

	North Central	North Head	Main Camp	Sub Base	South Head	Gertrude Cove[81]	Little Kiska	Beach & Bluff Coves	Vega Bay	Total
6″ CD		3					3			6
4.7″ CD		4								4
120mm DP		4								4
76.2mm CD			2	2						4
75mm CD						2				2
75mm AA	4	4	4		4	6				22
75mm Mount. gun						2	4	1		7
70m howitzer									2	2
37mm Mount. gun	2	2	2			3	1	1		11
25 mm AA (twin)		2	8							10
20mm AA	3	2			4	6				15
13mm (twin)		5	2	2			5			14
13mm (single)		4								4
Total	9	30	18	4	8	19	13	2	2	105

Main Camp (IJN)

The initial concentration of IJN activity was at the exact same location as the U.S. weather station: the wide sweeping sandy beach at the northwestern shore of Kiska Harbor. This is hardly surprising, as this is the most protected part of the harbor. In addition, the Japanese could make use of the U.S. built infrastructure. U.S. Intelligence gave that cluster of Japanese structures the name 'Main Camp" with a section located upslope to the west named 'Upper Camp" (Fig. 78).[82]

Infrastructure

In addition to the road network, which included a number of bridges across the minor creeks, and the construction of barracks and store buildings, the Japanese soon started to develop the infrastructure that ensured a smooth operation of the base. Of the highest priority was, of course the ability to communicate with the relevant superior command in Japan. As the U.S. had a radio station working there, we can assume that the Japanese may have made use of at least part of the antenna installation. The development of a high frequency radio facility was under way ten days after the Japanese had landed.[83]

By early February 1943, the infrastructure at Main Camp comprised two radio stations, an electric power station, and two RADAR sets. The intelligence assessment noted 22 earth-covered dumps as well as 40 stacks of timber and poles in the open, indicative of planned construction activities. In addition there was a dam across the creek above main camp, presumably to safeguard the freshwater supply for the garrison,[84] or to feed the fire suppression system that had been installed. Additional infrastructure was a searchlight installed on an elevation behind main camp. While it was primarily associated with the 75mm AA battery located nearby, but, according to U.S, intelligence (post-occupation), also served as a beacon for shipping and to facilitate unloading of ships.

Analysis of the imagery preceding 2 April 1943 indicated that a large building that had been constructed NW of the radio station was interpreted as a Shinto shrine (Fig. 77).[85] Post-war

imagery shows indeed a large Shinto shrine on a rise in the Upper Camp area (e.g. Fig. 81), but neither this, nor a shrine on South Head (Fig. 162) have any roof structures over them. In total, five shrines were constructed on Kiska.[86]

Table 28. The build-up of the Main Camp Area[87]

	Coast Defense	Heavy AA	Medium AA	Light AA or MG	Light FA	37mm & MG	Buil-dings	Tents	Tren-ches	Sour-ce
18 Jun 1942		4		3			21			[88]
8 Nov 1942		8(2)		2			180			[89]
25 Nov 1942		11		11(6)			116	55		[90]
24 Feb 1943		4 (?6)		28			226[91]			[92]
23 Apr 1943		4	4	30	*		[93]			[94]
5 Jul 1943		4	4	30	*		154	33		[95]
12 Jul 1943		10		26		4	164	38	3,600	[96]
after landing	2	4[97]	8[98]	2[99]		2				[100]

Note: Trenches in yards, other values in absolute numbers. (*) 'none identified'

Fig. 76. Searchlight near Main Camp.[101]

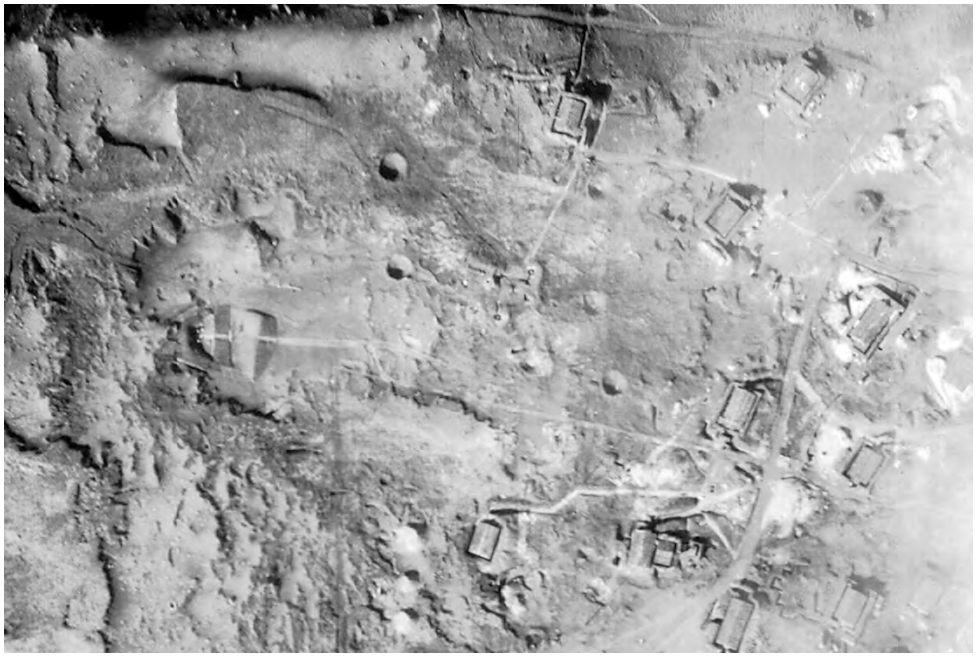

Fig. 77. Section of the Main camp area showing barracks buildings as well as the stepped area of the Shinto shrine (center left).[102]

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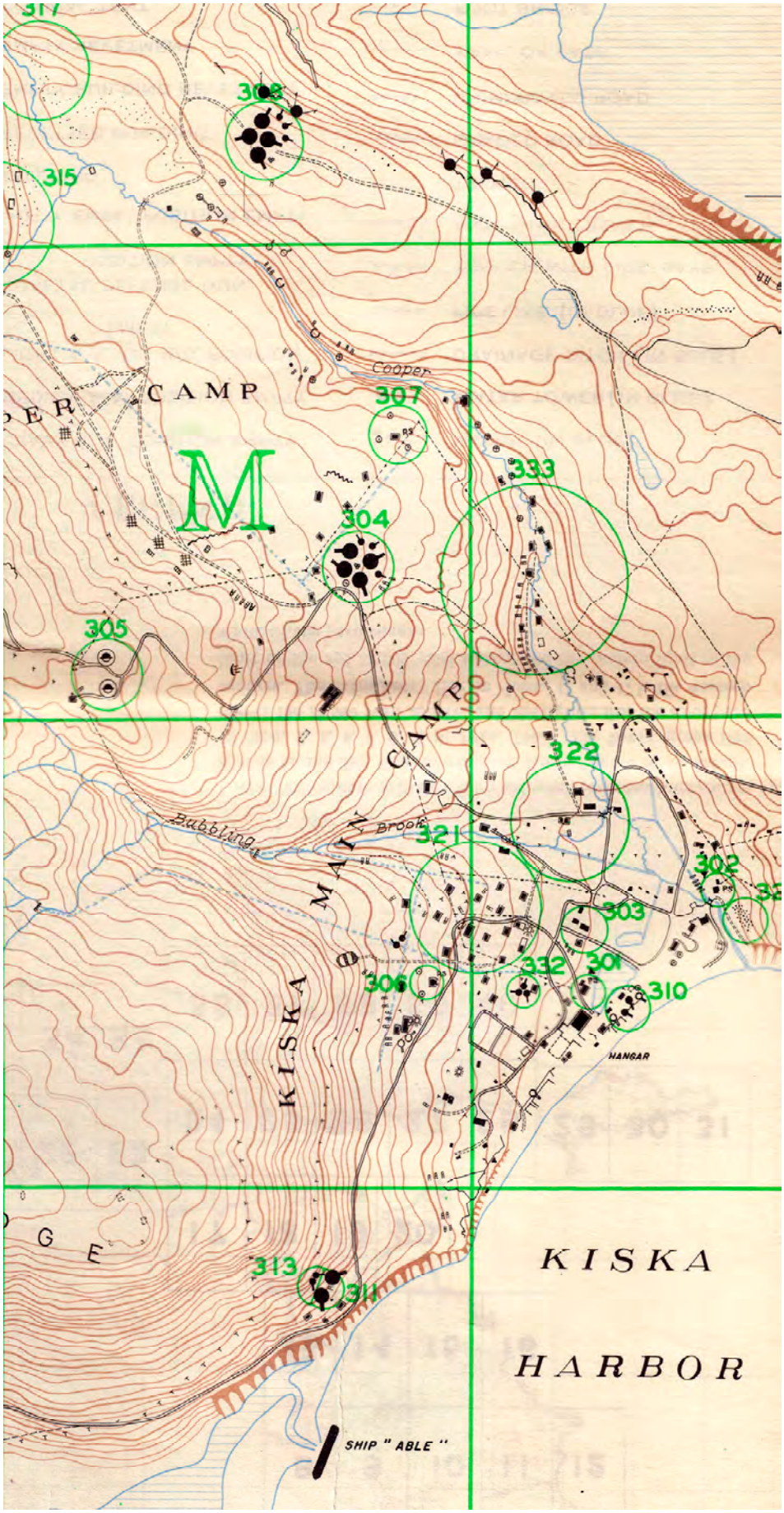

Fig. 78. Section of the target map of 28 July 1943, showing the Main camp and Upper Camp areas.[103]

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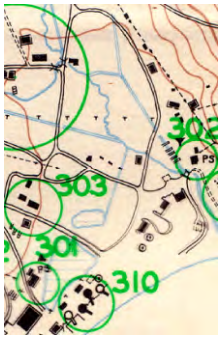
Fig. 79. Main Camp area seen from the air, 28 September 1942 (for interpretive details see Fig. 80).[104]



Detail of the target map shown in Fig. 78 representing the area covered in the air photo shown at right.

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Fig. 80. Interpretation of the appearance of Main Camp area and the distribution of trucks (T) on 28 September 1942.

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Fig. 81. The Shinto shrine at Main Camp after U.S occupation (note the stone-lined path leading to the steps of the platform).[105]

Fig. 82. The Shinto shrine at Main Camp after U.S occupation (note the stone steps and dry-stone retaining wall).[106]

Fig. 83. Main Shinto shrine in the Upper Camp area of Main Camp.[107]

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Fig. 84. Detail of the Shinto shrine at Main Camp (see Fig. 83 for full image).[108]

Fig. 85. A surviving Japanese barracks building photographed in 1943.[109] Note the sandbag walling as well as the tundra sods on the roof. The building is erected at an elevated position with the ground sloping off steeply (to the foreground), which may have necessitated the use of sand bag retaining walls.

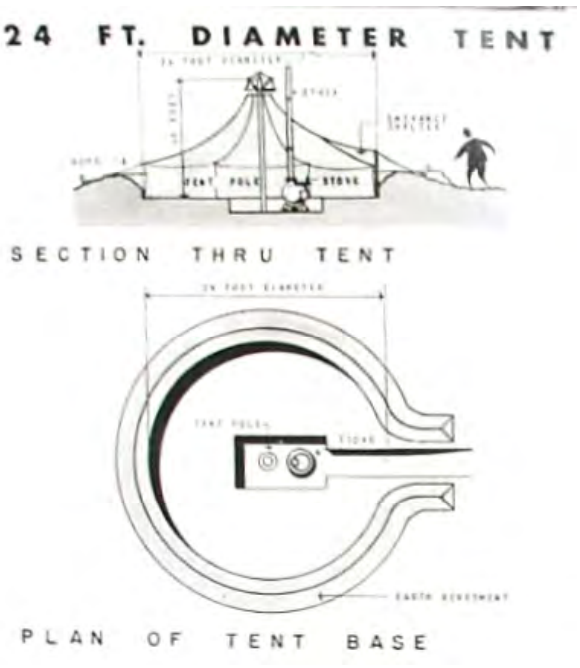

Fig. 86. Schematic of a Japanese conical tent.[110]

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Fig. 87. Standard Japanese conical tent. This particular example was photographed on Attu, but the type was used on Kiska as well..[111]

Fig. 88. Excavated base for a Japanese conical tent on Attu.[112] Note the recessed heating pit.

Personnel Facilities

Soon after the initial landing, the Japanese commenced construction of barracks and personnel facilities. The U.S. intelligence assessment of photographic data collected on 18 June noted eight barracks buildings, of about 20 x 36 feet each, erected in two rows in the main camp area off the landing beaches.[113] An additional three barracks had been erected near the bridge between the marshy area near the beach and the valley. At the same time, the expansion into North Head had begun, with one building erected on the road that was being constructed.[114] Most of the development was within 0.5 miles of the landing area.[115] The USAAF[116] and USN[117] analysis of the same photography resulted in a different interpretation. While the USAAF saw the aligned buildings as barracks and the scattered buildings as storage, the USN interpreted them the other way round, even though all had about the same dimensions of 20 x 36 feet.[118]

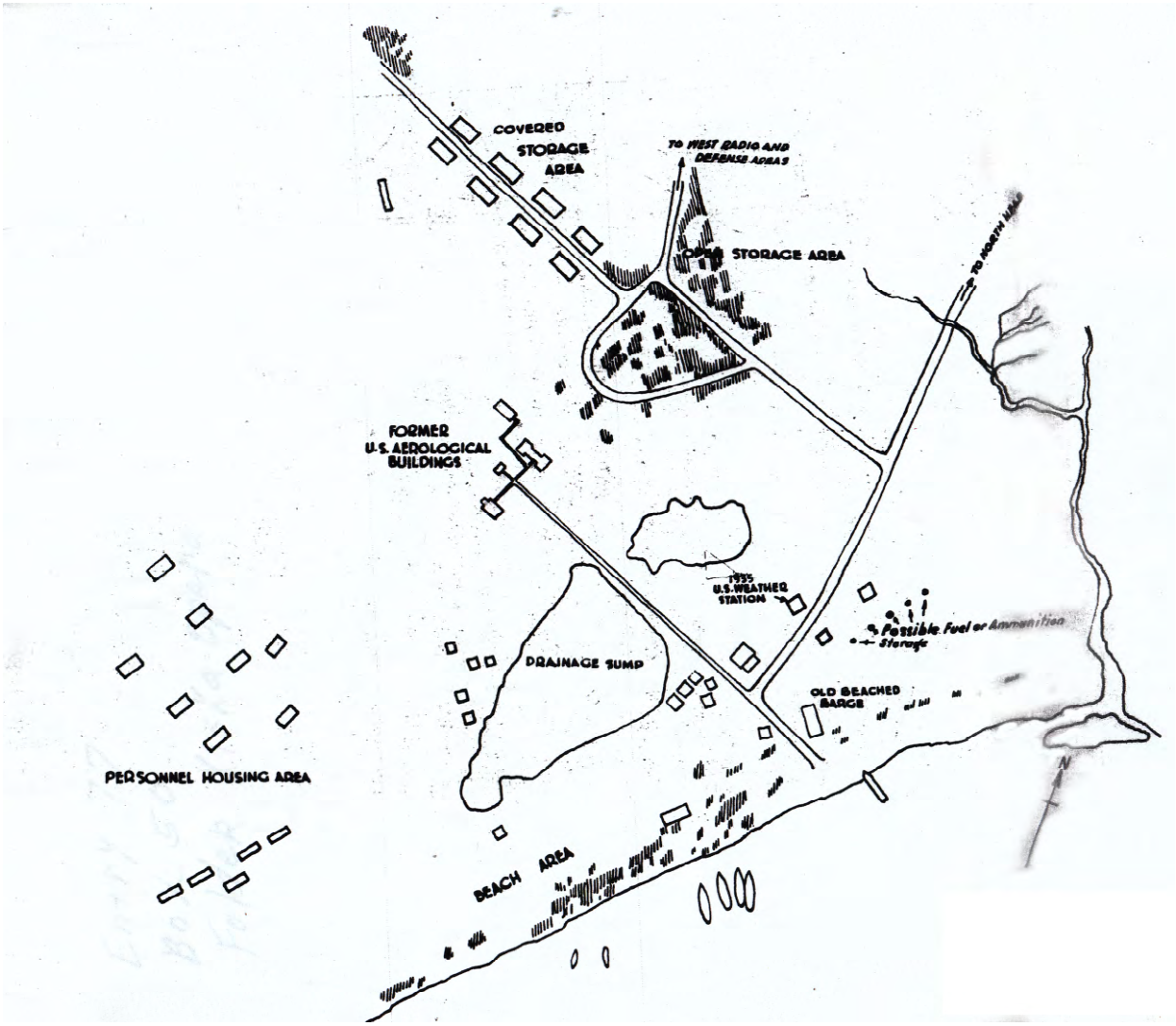

Fig. 89. The beginning of Japanese base development.
Section of the Main camp area as shown in the intelligence report of 18 June 1942.[119]

A compilation of intelligence assessments shows that by November 1942 the Main Camp area had almost reached its full strength and only grew gradually thereafter. The recorded peak of development was in late February 1943 when some 266 structures had been erected. Any sizeable base development came to a halt once the USAAF operated out of Amchitka and effectively choked the Japanese Garrison of all supplies.

The nature of the Japanese base development suggests that the IJN meant to stay. If a short- or medium-term occupation had been intended, then the development of tent cities would have sufficed. A good example for this is the development on many U.S. bases, which made long-term and ample use of personnel tents. The Japanese instead built wooden structures designed to last—and they kept building them despite the every increasing U.S. air attacks. It can be surmised that the Japanese assumed that the U.S. air attacks would eventually subside if and when the tide of war once more turned against the U.S.

By mid-May 1943, however, continued bombing and strafing had exacted a toll on the Japanese structures. The analysis of 1 June notes, for example, that three medium sized buildings had been hit.[120] One of those destroyed was the last surviving building of the first batch of structures built by the Japanese in June 1942.[121]

The most comprehensive breakdown of structures was compiled in July 1943, when all structures on Kiska were designated as numbered operational objectives and so shown on the

target charts (e.g. Fig. 69). The compilation showed a range of barracks buildings from the very large with over 2000 sq. ft (3 buildings) to small (500 sq ft and less, 46 buildings). Significantly, that assessment also totals, for the first time, the dugouts and caves, which equal the buildings in number. Most of these must be regarded as personnel shelters to be used during an air raid. As was discovered after the U.S. invasion, several such dugouts were in fact base installations such as a command post, hospital and the like.

At the same time, U.S. Intelligence was quite surprised to find that despite the apparent direness of the situation (with all shipping effectively cut off) the Japanese found time for recreation:

> "Recent photographs of the Main Camp reveal a heretofore undiscovered side of the proverbially industrious Japanese nature. Courts divided at the center by nets, apparently used for volleyball, can be seen at the center of the Main Camp and at the rim of the Copper Creek Valley."[122]

Fig. 90. Aerial photograph of the section of the Main Camp area (on 16 March 1943) showing a concentration of partially destroyed buildings replaced by conical tents.[123]

Given the size of the IJN garrison at Main Camp, some 2,000-3,000 soldiers,[124] the base command had to consider sanitation. We do not have any Japanese documents that shed light on this, and the issue of potable water and sewage cannot be examined based on the available photographic evidence. Given that the use of night soil in food gardens was a common Japanese practice, we can assume that this would have occurred on Kiska as well. We can further assume that at least some of the base at Main Camp had piped potable water, possibly from the dam located across the creek above Main Camp.[125] The Japanese has installed a fire suppression system for the Main Camp area; some of the hydrants are still extant (see Fig. 288).

Food Production

As mentioned earlier, one of the principles for Japanese occupation forces was to be as independent as possible of externally provided food supplies. To this extent the Japanese fished (Fig. 40), and also created small food gardens. Close inspection of some of the aerial imagery shows vegetation patterns that do not fit the natural environment (Fig. 91). In the northwestern section of main camp, close to the eastern face of the valley, aerial photography of September 1942 showed three regular patterns that resemble planting beds. Each bed shows discrete points, set out in a 9 x 12 foot array. It is difficult to estimate the size of these patches. Going by the size of the Daihatsu landing craft that are visible in the same image (Fig. 79),[126] these patches measure about 23 x 28 feet. Assuming the dots are individual plants (presumably beans), then the planting spacing would have been 3 feet. In addition, at the same location are some areas with irregular outlines that seem to have a row or furrow pattern to them (indicated with "?" in Fig. 91). It is possible that they too were planting beds.

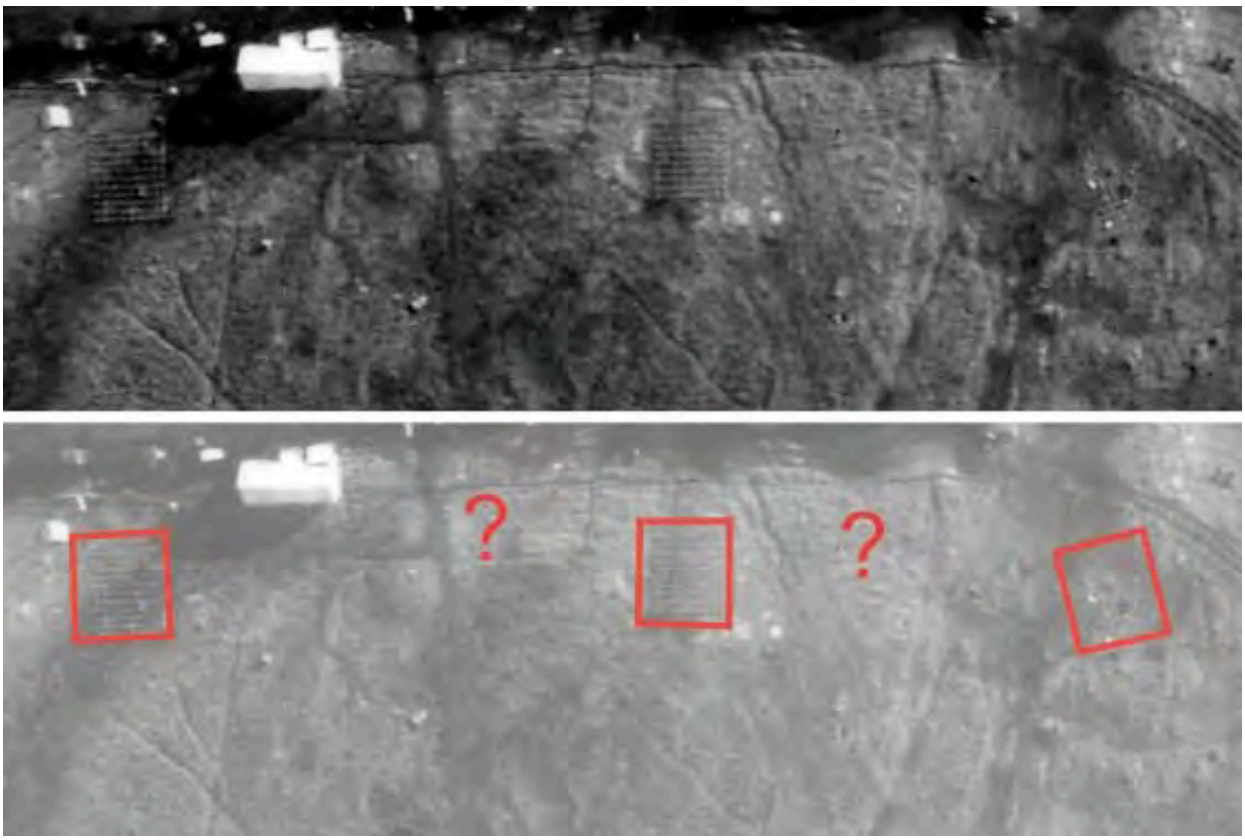

Fig. 91. Section of the Main camp area showing what appear to be food gardens in September 1942. Aerial photograph on top, interpretation on bottom.[127] (for relative position, see Fig. 79).

Seaplane Facilities

On the day after the invasion of Kiska, the Japanese commenced to establish a seaplane base at the southern sector of the Main Beach at Kiska Harbor. Much of the personnel and material had been brought on the troop transport and auxiliary *cruiser Awata Maru.*[128] Fuel was landed in 200-liter (=53 U. S. gallon) drums.[129] A row of buoys was laid just offshore for the use of the small planes. Japanese experience in the following weeks showed that the planes moored well at the buoys in fine weather, but during bad weather and for servicing the planes had to be dragged ashore, using bamboo mats and hand power to get them through the surf.[130]

Table 29. Breakdown of Buildings in the Main Camp Area
(as identified from aerial imagery and observers' reports by 12 July 1943).[131]

	Very Large[132]	Large	Medium	Small	All
Buildings (Personnel)	3	54	61	46	164
Tents *)		14	31		45
Dugout **)			163		163
Hangar	1				1
Garages	2	4	2	1	9
Operations Bldg		1	5		6
Radio Station		2	1		3
Kitchen/Messhall	1	1			2
Power House		1	1		2
Storage Buidlings			18	8	26
Rectangular Store Tent			14		14
Misc. Function			9	15	24
Total	7	77	305	70	459

*) Rectangular tents classified as Large; conical tents as medium.—**) Dugouts (underground personnel shelters, ammunition storage &c) are classified as medium

Fig. 92. Aerial photograph taken on 28 September 1942, showing the Japanese developments at Kiska Harbor as seen from an elevation of 3,000 feet. The seaplane base is located at the lower left of the image.[133]

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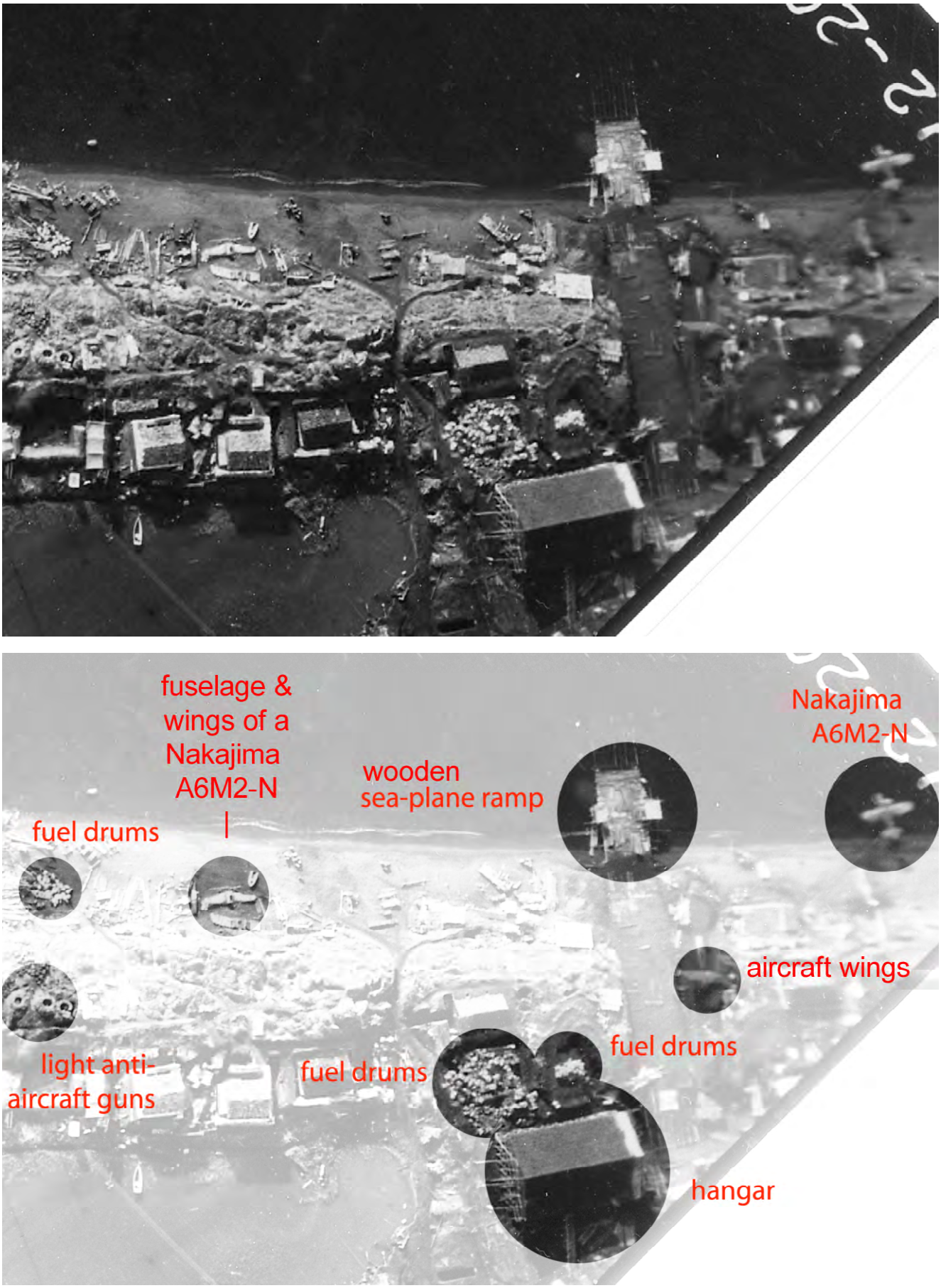

Fig. 93. Aerial photograph (and interpretation) of a section of the seaplane base taken on 28 September 1942.

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Fig. 94. Aerial photograph of a section of the seaplane base taken on 16 February 1943.[134] Note that the seaplane ramp has lost all of its cover and that the second hangar (at the left) which had been destroyed in a storm has already been removed. Six Suisen can be seen, all with dark-green camouflage paint scheme.

Fig. 95. Aerial photograph of the seaplane base taken on 16 March 1943. The wreckage of a Kawanishi H6K flying boat can be seen at the bottom left margin. Note the eight *Reisui* and the six *Suisen*. A number of fuel and ammunition dispersal areas can also be made out. Note that the plane in the large revetment casts a lesser shadow than the other planes suggesting it is not resting on its pontoons (indicative that it is a wreck used to cannibalize spare parts).

These shore installations, however, were for the smaller aircraft only. The large Kawanishi H6K flying boats had to be serviced at their moorings. Refueling also took place there, with the fuel brought out in drums loaded on small landing craft.[135] Photographic evidence shows that by the end of September 1942 a wooden sea plane ramp had been erected, as well as a slipway leading to a hangar and fuel dumps.

By early February, the base comprised the ramp, two completed hangars and a third hangar under construction.[136] A narrow gauge railway had also been built, connected with the hangar development. Concentrated air attacks and storms took their toll so that by the end of April 1943 the southern hangar had been destroyed as well as the ramp leading to it.[137] No attempts were made to repair the ramp in subsequent months, indicating that float operations had come to an end.[138]

Fig. 96. The snow-covered seaplane base at it appeared during a low-level attack on 20 Dec 1942.[139]

Fig. 97. Aerial photograph of a section of the seaplane base taken before 28 September 1942. Note the wooden seaplane ramp. Visible are three Nakajima A6M2-N fighters on the beach with a light colored factory-type paint scheme, as well as a F1M2 pulled up on the beach. Note that the fuel dump next to the northeastern corner of the northern (right-hand) hangar building is stacked very neatly. A small fuel dump can be seen close to the beach at the left margin of the ramp. There are also two wing sections on the beach.

From an interrogation of Captain Kintaro Muira, we know that "sometimes the planes were flown over and landed in the calm waters of Salmon Lagoon for engineering [repair, *ed.]* work. Salmon Lagoon was also used for operations when the wind was high."[140] According to the interrogation of Commander Nifumi Mukai, "Near the end of June some of the float planes, which were under repair in Salmon Lagoon, were damaged by bombs."[141] Indeed upon landing, U.S. forces found the wreckage of a Mitsubishi F2M1 'Pete' at the southwestern shore of Salmon Lagoon. Probably damaged beyond repair it had been cannibalized for parts and abandoned in place.[142]

Fig. 98. The Japanese seaplane hangar, Kiska, as photographed after the U.S. landings in August 1943.[143]

Fig. 99. Exterior of the Japanese seaplane hangar at the time of the U.S. occupation of Kiska as seen from inland.[144] The U.S. invasion fleet can be seen at anchor in Kiska Harbor. Note the sandbagged area, which represents an improvised Japanese personnel shelter.

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Fig. 100. Exterior of the Japanese seaplane hangar at the time of the U.S. occupation of Kiska. Similar view to that shown in Fig. 101, but showing the tents of U.S. servicemen interspersed among the destruction.[145]

Fig. 101. The Japanese seaplane hangar, Kiska, Photographed after the U.S. landings in August 1943 seen from the northeast.[146] Note what appears to be an open sliding door of the hangar protruding from the left corner of the building.

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Fig. 102. Interior of the Japanese seaplane hangar at the time of the U.S. occupation of Kiska.[147] Two panels of Aichi/Watanabe E13A1 wings. . In the foreground a beaching cradle for a Suisen.[148]

Fig. 103. Interior of the Japanese seaplane hangar at the time of the U.S. occupation of Kiska. The light coloring, as well as darker (left) leading edges indicate that the undersides of the wings are visible. Note the feathered dark green paint at the leading edges and the lacking white outline of the Hinomaru at the two left wings and the different paint scheme of the wing at right, which has a white ring around (larger) the Hinomaru.[149] All wings show impact damage from bullets, Also note the beaching gear in the foreground.

Fig. 104. The open doors of Japanese seaplane hangar at the time of the U.S. occupation of Kiska.[150] Note the beaching gear in the left foreground. The soldier in front has taken his coat off and seems to be souveniring (see package under his arm). His assault rifle is leaning against the cradle.

Fig. 105. Interior of the Japanese seaplane hangar at the time of the U.S. occupation of Kiska. Note the three aircraft wings stored against the left wall. The light coloring, as well as darker (left) leading edges indicate that the undersides of the wings are visible. Also note the beaching gear next to right hand wings as well as the stack of compressed air bottles in the right foreground.[151]

Fig. 106. Interior of the Japanese seaplane hangar at the time of the U.S. occupation of Kiska. Two tail sections of Nakajima A6M2 float plane fighters can be seen. The tail code MI-118 can be clearly made out.[152]

Fig. 107. The open doors of the Japanese seaplane hangar at the time of the U.S. occupation of Kiska.[153] Note that the sliding doors are at least 3 feet above the ground. Also note that the left door support is concrete, while the right support is timber. Note aircraft tail code MI-Ixx, with the last two digits on the missing rudder.

Fig. 108. Japanese aircraft bone yard at Kiska.[154] The tail sections of Suisen M1-110, M1-113 and M1-119 are readily identifiable. The hangar building is in the right background.

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Fig. 109. Japanese aircraft bone yard at Kiska. In foreground is an Aichi E13A1's horizontal stabilizer and aileron assembly with white lines 5 degrees apart, used as navigation aids.[155] At right is a Nakajima A6M2-N's punctured wing float. In the background are visible fuel drums and several dismantled parts, the wrecked rear cockpit fuselage section (for the radioman) of an Aichi/Watanabe E13A1 and a couple of pontoons; behind the E13A1 is a port tail plane of a Nakajima A6M2-N.[156]

Fig. 110. Cannibalized Nakajima A6M2-N at the beach of Kiska on 19 August 1943.[157] Note that the engine and the tail section are missing. It is very likely that this is the mid section (fuselage and wings) visible on the aerial photograph Fig. 93).

Fig. 111. Two wrecks of Nakajima A6M2-N on the beach of Kiska Harbor. Both have been cannibalized for spare parts.[158] Note that the engines and the tail sections are missing.

Fig. 112. Cannibalized plane wreckage at the Japanese seaplane base, Kiska, Photographed after the U.S. landings in Aug 1943.[159] Visible (from left) are the tail and port wing of a Nakajima A6M2-N with the tail code M1-111 and the heavily destroyed, upside-down port wing and cockpit of an Aichi/Watanabe E13A1.

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Fig. 113. Tail section, pontoon and wing fragment of a Nakajima A6M2-N at Kiska, photographed after the U.S. landings. The aircraft tail carries the tail code [M1-]116.[160]

Fig. 114. Section of the port wing of an Aichi/Watanabe E13A aircraft, converted by Allied servicemen into a makeshift windbreak. Kiska Harbor, Photographed after the U.S. landings in August 1943.[161]

Note the U.S. landing ships in the background. Also note the abundance of holes that had been punched into the aircraft skin at almost regular intervals. It can be surmised that the Japanese did this before they evacuated the island.

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Fig. 115. Central float of a Nakajima A6M2-N 'Rufe', pulled up ashore, Japanese seaplane base, Kiska, Photographed after the U.S. landings in Aug 1943.[162]

Fig. 116. Japanese aircraft bone yard at Kiska. In the right foreground are two Aichi E13A1's rear fuselages; at upper left are visible a pontoon and sets of wings.[163]

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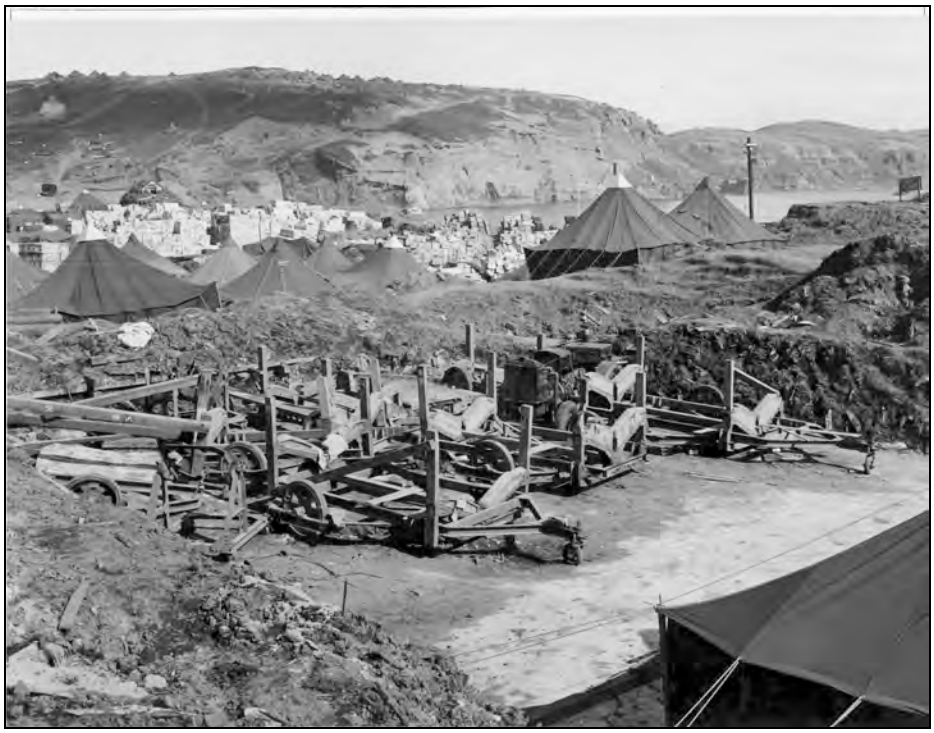

Fig. 117. Shown in the foreground is the beaching gear for Nakajima A6M2-N 'Rufe' floatplane fighters, Japanese sea- plane base, Kiska, Photographed after the U.S. landings in Aug 1943.[164] Present are six single-axle beaching cradles and one Allis Chalmers tractor.

Fig. 118. Japanese aircraft bone yard at Kiska on 19 Aug 1943. Several fuselage, main pontoon, wing sets of Nakajima A6M2-N are visibly scattered all around the area. In the right foreground the rudder of Aichi E13A1 [M1-]19 rests abandoned. At centre-left are the tail sections of Suisen M1-113 and M1-119.[165]

Dummy Aircraft

U.S. aerial intelligence commented on the fact that the Japanese set up dummy aircraft in an attempt at fooling the U.S. into assuming a greater than real strength of the Japanese air power on Kiska. Such dummy planes, said to be 'dead white in color' were noted on 12 June 1942 on a sand spit off Trout Lagoon, far away from the major base developments (Fig. 119).[166] Rather than merely mislead the U.S. into believing a greater aircraft strength, these dummy planes were also intended to draw medium to high altitude U.S. bombing runs away from the actual base developments, on the assumption that destruction of air power would take precedence over the destruction of base facilities. Yet, U.S. air photo interpreters were not fooled that easily.[167]

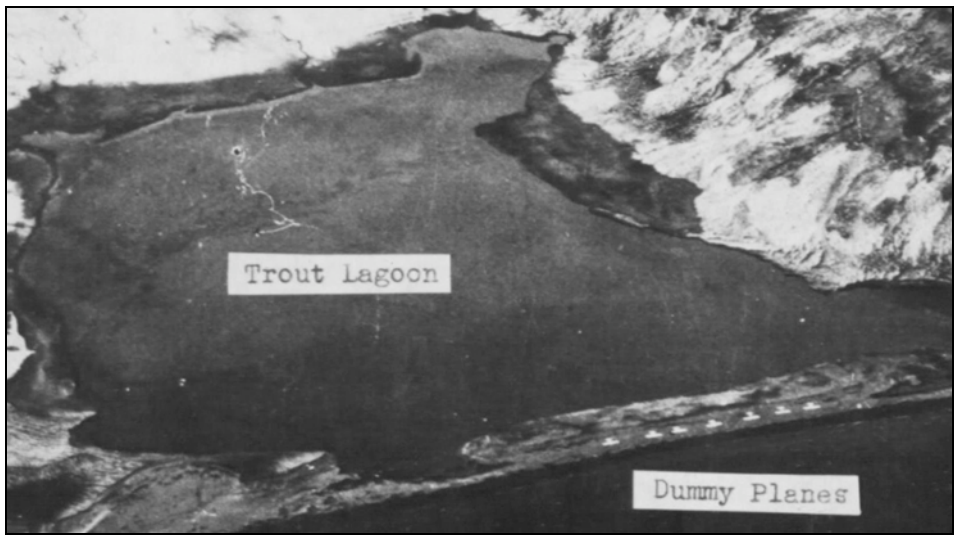

Fig. 119. Image of Trout Lagoon, Kiska Harbor, showing seven dummy planes lined up on the sand spit.[168]

Fig. 120. The 75mm AA battery of the Main Camp area as seen on an aerial image taken on 16 March 1943.[169]

Defenses

The concentration of structures, especially the seaplane base, required some protection. While North Head was chosen as the focus of the AA and coastal defense guns, the Main Camp area was protected by a 75mm Type 88 AA battery on a rise behind the camp. The build-up of the defenses is set out in Table 30. What is important to note is that the assessment after the U.S. landings also found two small coastal defense guns, which would have been taken from one of the wrecked merchant vessels.

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In addition there were two 25mm Type 96 antiaircraft batteries. One battery of four guns was set up to the northwest of the airfield (objective 308, Fig. 122), protecting the landing strip from attacks from the west. The other was set up at Mercy Point, the promontory that separates the Main Camp area from Trout Lagoon (objective 311, Fig. 122).

Table 30. The build-up of guns and structures on North Head

	Coast Defense	Heavy AA	Medium AA	Light AA or MG	Light FA	37mm & MG	Buil-dings	Tents	Tren-ches	Sour-ce
18 Jun 1942	(3)[170]	(4)[171]					1(3)			[172]
8 Nov 1942	3	25		8			53			[173]
25 Nov 1942	3 (5)	24		4			33	22		[174]
24 Feb 1943	3 (?4)	16		6			45			[175]
5 Jul 1943	7	8	4	13	*		43	7		[176]
12 Jul 1943	7	10	12	37		4	60	9	2,000	[177]
after landing	8	8[178]	2[179]	11[180]		2				[181]

Note: Trenches in yards, other values in absolute numbers. (*) 'none identified'

North Head (IJN)

North Head forms a very prominent, broad peninsula jutting out from Kiska Island and enveloping Kiska Harbor from the north. The gently undulating contours, punctuated by some gentle rises, makes North Head an ideal location to site anti-aircraft batteries. The Japanese defense planners did just that. Table 30 sets out the development of the defense system on North Head as it is reported in the various intelligence assessments. What is immediately obvious is that by November 1942 most of the AA and buildings (plus tents) were in place.

Table 31. Breakdown of buildings, tents and dugouts on North Head (as identified from aerial imagery and observers' reports by 12 July 1943).[182]

	Very Large[183]	Large	Medium	Small	All
Buildings (Personnel)		9	29	22	60
Tents *)		2	7		9
Dugout **)			80		80
Observation Tower			1		1
Garages					0
Operations Bldg					0
Radio Station					0
Kitchen/Messhall					0
Power House					0
Storage Buidlings		1	2	4	7
Rectangular Store Tent					0
Misc. Function			1	9	10
Total	0	12	120	35	167

*) Rectangular tents classified as Large, Conical tents as medium.—**) Dugouts classified as medium

Compared to Main Camp, the total number of buildings on North Head was much less, even though North Head had more space. Consulting the available aerial photos as well as the bomb target maps (Fig. 121) shows that all structures on North Head are personnel and operations

buildings related to the anti-aircraft and coastal defense batteries. Only a very small number of storage and other buildings were erected (Table 31).

In the overall scheme of Japanese base development, North Head only functioned as an array of defensive installations. Even at the height of construction activity at the airfield, no attempt was made to locate troops closer to their workstation.

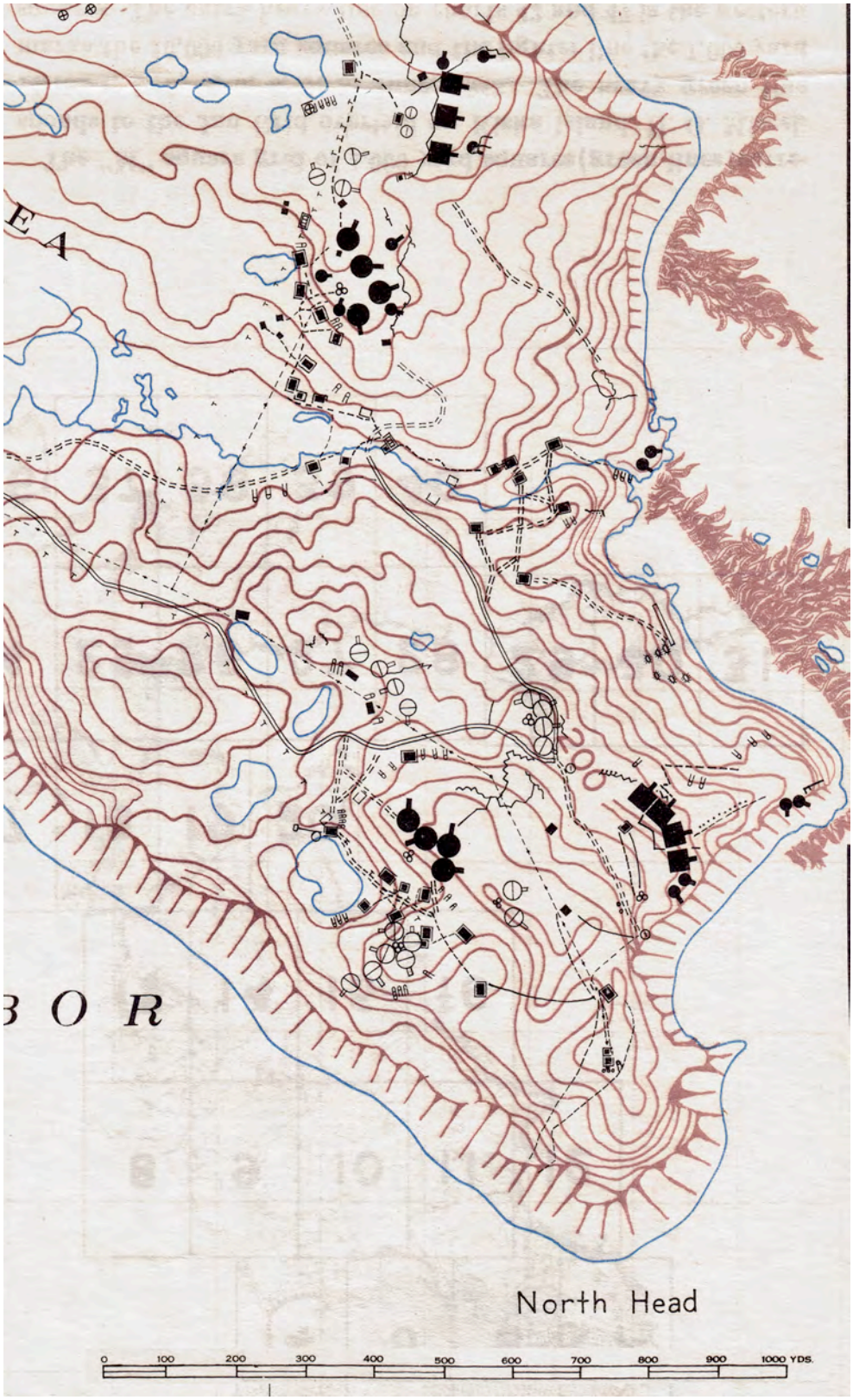

Fig. 121. The anti-aircraft and coastal defense batteries on North Head, as shown on sheet nº 20 of the 30 June 1943 U.S. Army target map.[184]

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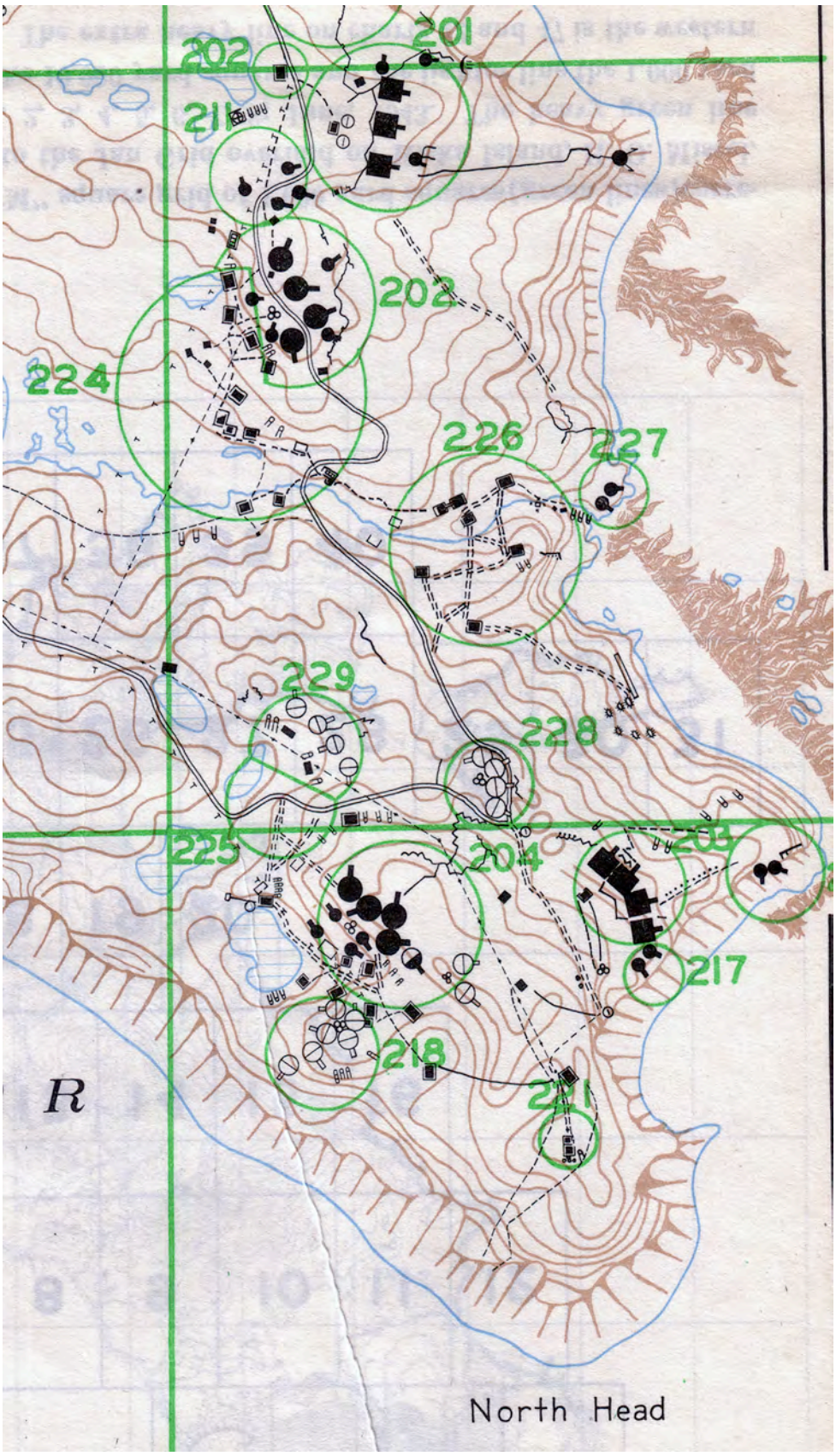

Fig. 122. The anti-aircraft and coastal defense batteries on North Head, as shown on sheet nº 20 of the 28 July 1943 Army target map[185] The large numbers represent objectives to be conquered during the invasion.

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Gun Batteries and other Defense Installations

The construction of defense installations commenced immediately after the initial landings, with the construction of a medium AA battery just north of Kiska Beach as well as a 4.7-inch coastal defense gun battery at the tip of North Head. In addition an array of other small developments were noted in the first photographic analysis of the Japanese base development on 18 June 1942.[186] All these developments were interpreted as light AA. An accompanying sketch map shows activity on the eastern end of North Head with:[187]

four revetments for the 75mm AA battery;[188]

a series of small revetments northeast of the 75mm AA battery;[189]

a couple of revetments southeast of the 75mm AA battery;[190]

a series of revetments at the location of the 4.7-inch gun battery;[191] and

a triangle of revetments north east of the 4.7-inch gun battery.[192]

4.7-inch Coastal Defense Battery on North Head

In his testimony, IJN Commander Nifumi Mukai stated that the 4.7 –inch gun battery was one of the first to be erected, together with a four-gun 13.2mm light anti-aircraft and a four-gun 75mm anti-aircraft battery. Construction for these began as early as June 1942.[193] By the end of the month the 4.7-inch battery seems to have been completed.[194]

Even though U.S. aerial photography was limited, as many images did not show the necessary overlap to allow for stereoscopic interpretation, an aerial reconnaissance mission could obtain the first good aerial imagery on 18 June 1942. Analyzed by both the U.S. Army Air Force[195] and the U.S. Navy,[196] it noted a number of gun positions as being under construction as evidenced by 'roads, trenches and revetments.'[197] An accompanying sketch map shows activity on the eastern end of North Head with a series of revetments at the location of the 4.7-inch gun battery.[198] The presence of a boat on the northeastern shore suggest that the construction of the sea-ward batteries, such as the 4.7-inch gun battery, occurred from the beach rather than by land transport across North Head.[199] Given the weight of the gun barrels of the large guns, and given the absence of a road serviceable by heavy trucks at the time, this approach makes much sense.

On 8 August 1942 a U.S. naval force attacked Kiska in the fog (p. 85).[200] Some minor damage was inflicted, with two casualties. In his testimony, Commander Mukai stated that the "batteries did not fire one round because they also had no fire control RADAR and the fog was too thick for visual control."[201] According to U.S. sources the shore batteries did return fire after about 15 minutes, but that fire was highly inaccurate.[202] Japanese defense strategy in Micronesia, for example, had been not to fire the guns at maximum range but rather at two-thirds the maximum range where fire efficiency could be expected, and at night at half that distance.[203]

Aerial photographs taken on 13 February 1943 show the gun battery as being in existence and completely developed with buildings and communications trenches. A U.S. intelligence summary of July 1943 includes the guns of the 4.7-inch battery in its tabulation, but is uncertain about the caliber, listing them, as well as the three 6-inch guns as "7 Coastal Defense Guns, estimated 5" or 6" [caliber]."[204]

We have in hand some reports on the effects of the bombing. In the very last weeks of the bombing, after the Japanese had already withdrawn, U.S. bombings targeted coastal defense guns on Little Kiska as well as on North Head. A bombing run on 4 August 1943 affected the 4.7-inch battery.

> *"The 4-gun Coast Defense Battery "F" seems to have been hit. Numerous bomb craters are seen around it, and the two southernmost guns are believed to be seriously damaged."*[205]

After the U.S. landings an on ground inspection was carried out to compare the aerial intelligence with the actual situation. That study noted that two of the 4.7-inch guns were 'manufactured by the Kure Naval Arsenal [guns C & D] and two by Armstrong Whitworth & Co (Model 1905) [guns A &B].[206]

The 4.7-inch battery was laid out as a four-gun battery in a general north-south alignment with the guns facing the east. This is unusual, as commonly Japanese coastal defense gun installations are arranged in sets of three, as could be observed for the 6-inch guns on Kiska[207] and Little Kiska,[208] as well as at several locations in Micronesia.[209] The underlying rationale for a grouping of three was derived from naval gunnery, where the initial ranging shots used the central gun to fire at the estimate target range and the lateral guns fired slightly short and slightly long, thus straddling the target to accurately establish range.

A detailed aerial photograph of 16 March 1943 (Fig. 123) shows the battery and its associated structures and communication trench networks. Based on the communications trenches (see Fig. 125), the four 4.7-inch guns were arranged in two pairs. Indeed, as has become evident from the interpretation of historic photographs and extant guns, there are a pair of British-manufactured guns (A & B) and a pair of Japanese-manufactured guns (C & D).[210] The use of four guns is possibly an artefact of the limited availability of suitable sets of guns at the time Kiska was occupied by the Japanese forces.[211]

The gun battery was controlled by a fire control position that was situated upslope and to the east of the battery (Fig. 124). Standard practice in other areas, for example on the atolls of Micronesia, was to situate the fire control in the centre of the battery,[212] but set it back to ensure that direct hits on the guns would not affect the functioning of fire control and *vice versa*.[213] Close to the battery, just upslope from gun D is the barracks for the gun crews (Fig. 124) connected by trenches to the battery, as well as to the fire control. A second, larger barracks, as well as the ammunition storage are set back further upslope.[214] A smaller feature immediately to the northeast of the second barracks building is likely to be the toilet and ablution facility. An unformed road or track seems to be connecting the two searchlights as well as the fire control with the barracks adjacent to gun D.

The battery was flanked by two powerful searchlights and is protected by light anti-aircraft guns (Fig. 124). They are sited flanking the guns with two emplacements in front and down-slope. While no data on these guns are in hand, we can assume them to be light anti-aircraft, possibly 13.2mm. In addition, a number of other features can be made out which are interpreted as machine gun positions to protect the immediate approaches to the battery (Fig. 124).

Even though the guns were electrically fired, they were manually operated. Thus the power requirement for the guns could be serviced with batteries. The searchlights, on the other hand, required mains power, which presumably would have been routed along the above-mentioned track.

Fig. 123. 4.7-inch Coastal Defense Battery, North Head, as shown on 16 March 1943 aerial imagery.[215] Note that north is at the bottom of the image.

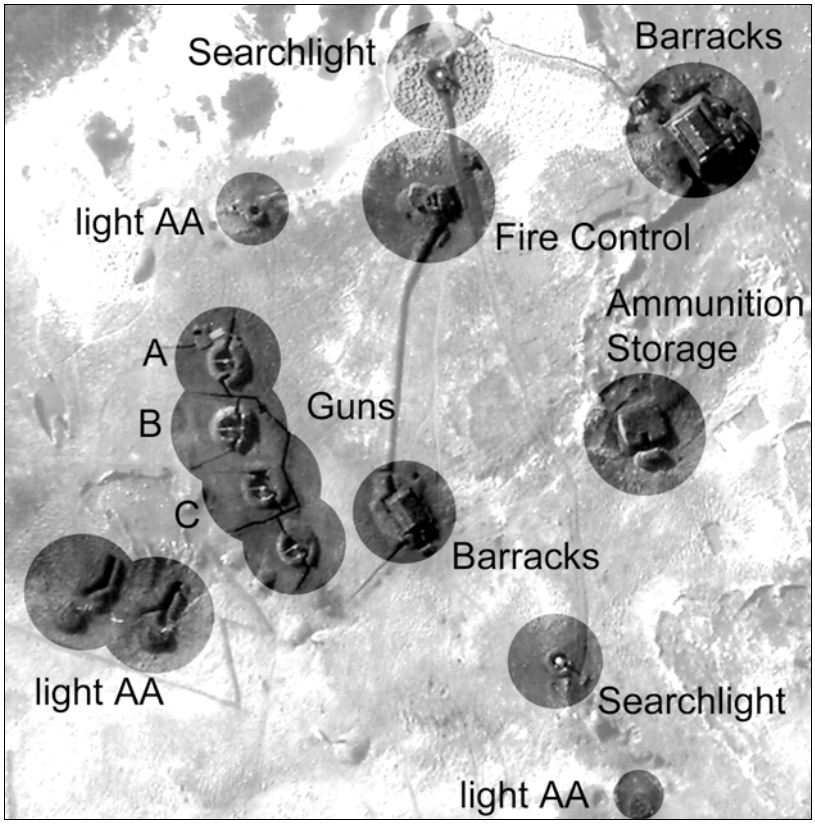

Fig. 124. 4.7-inch Coastal Defense Battery, North Head, as shown on 16 March 1943 aerial imagery.[216] Interpretative, annotated version of Fig. 123 showing the main positions.

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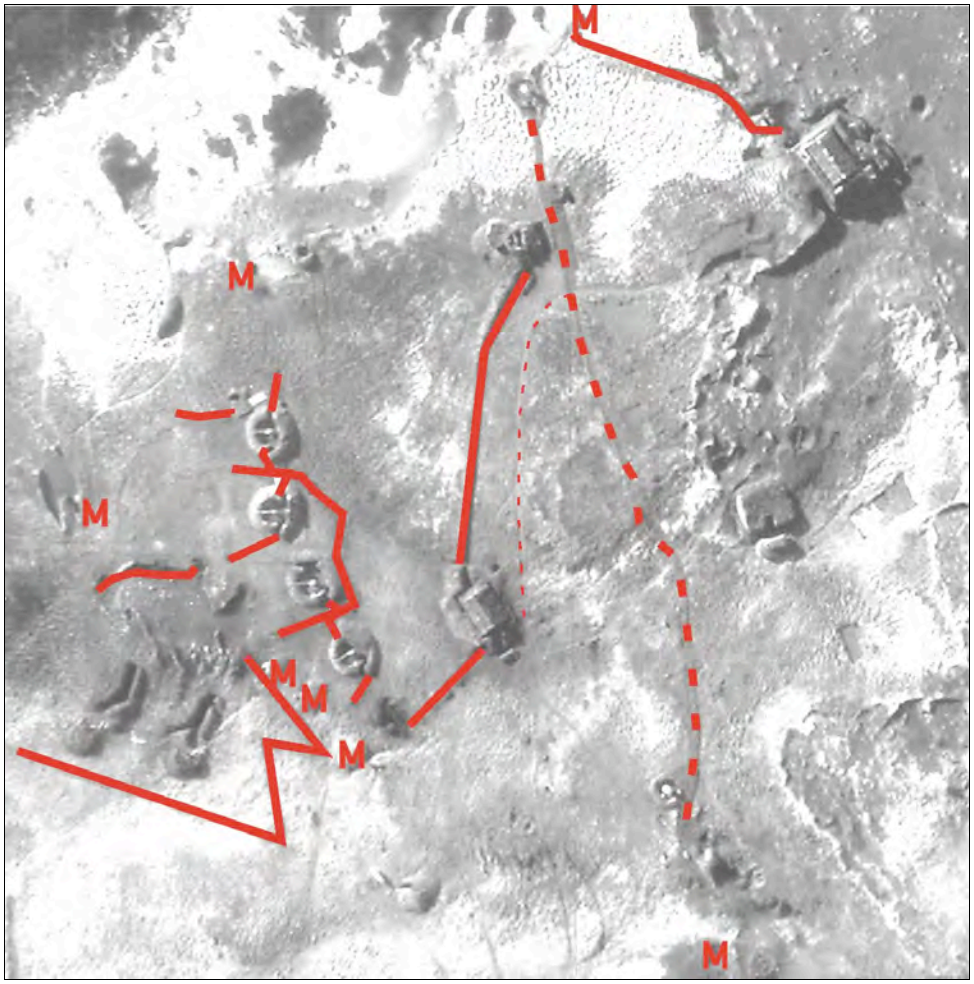

Fig. 125. 4.7-inch Coastal Defense Battery, North Head, as shown on 16 March 1943 aerial imagery.[217] Interpretative, annotated version of Fig. 123 showing the trenches (solid lines) and tracks (dotted line) as well as suspected machine gun emplacements (M).

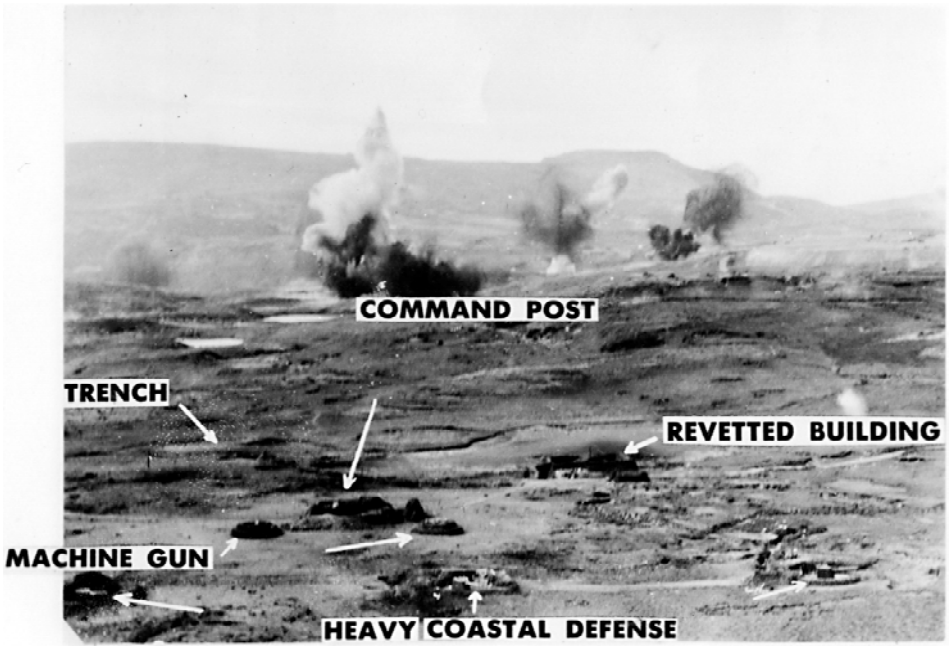

Fig. 126. The 6-inch coastal defense battery, North Head, as seen by an attacking U.S. aircraft.[218]

6-inch Coastal Defense Battery on North Head

As with the 4.7-inch battery, in the absence of a detailed war history from the Japanese side, the specific historic context of the 6-inch gun battery has to be compiled from U.S. observations such as the U.S. Army bombing runs on Kiska[219] and interrogation reports. Going by the available aerial photography, the battery was fully operational in February 1943 as it is included in both the 13 February 1943 and the 16 March 1943 (Fig. 127) aerial images. In addition we have in hand an oblique image taken in early 1943, that shows an aerial attack on installations near the airstrip (then under construction). In the foreground of that image two of the six-inch guns are clearly visible.

Fig. 127. The 6-inch coastal defense battery, North Head, as shown on 16 March 1943 aerial imagery.[220]

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Fig. 128. Appearance of gun positions and fire control.

The 6-inch coastal defense battery, North Head, as shown on 16 March 1943 aerial imagery. Detail of Fig. 127. The two range finders can be clearly seen to the west (left) of the battery.

Fig. 129. The 3m Range finder for 120mm CD Battery on North Head, as photographed after the capture of Kiska (date 12 September 1943)[221] The revetment at the left contains the storage box for the range finder unit. The range finder is similar in appearance to that for the 6-inch battery visible in Fig. 127.

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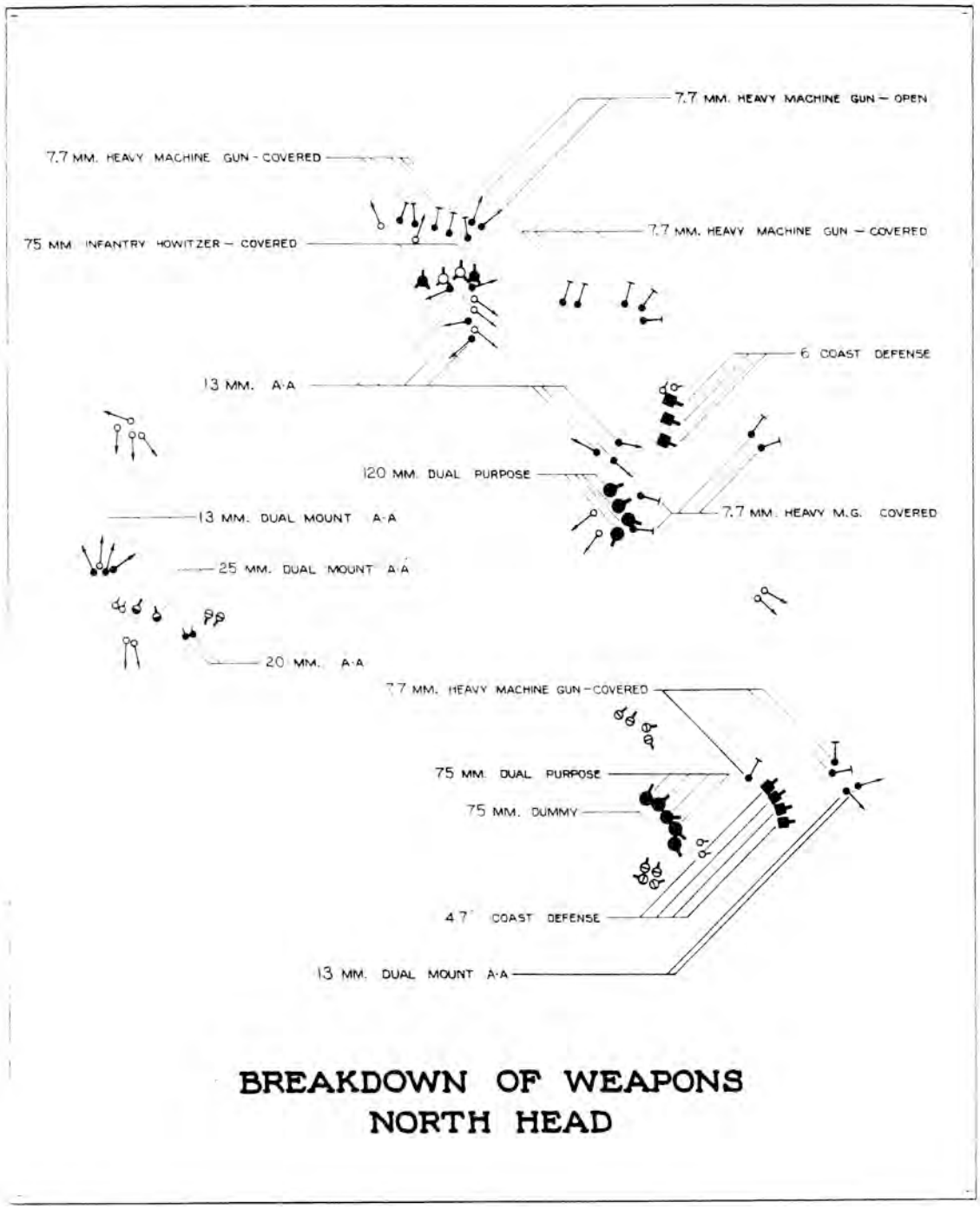

Fig. 130. Schematic on the interpretation of Japanese Defenses after the U.S. landings by U.S. intelligence service.[222]

[222] Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

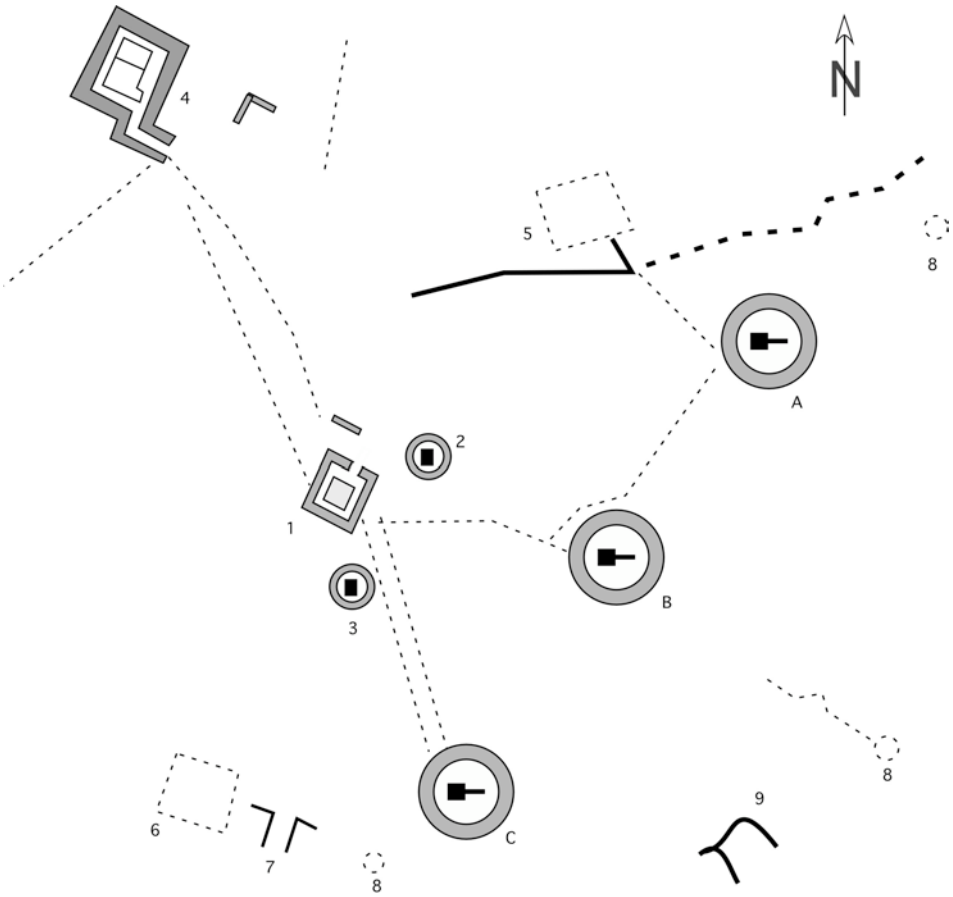

Fig. 131. The 6-inch coastal defense gun battery, North Head. Schematic layout. A, B, C—6-inch guns. 1-fire command center, 2&3—range and direction finders; 4—barracks; 5—underground/earth-covered ammunition storage; 6—earth covered structure (probably the ammunition storage); 7—revetment for artillery piece; 8—machine gun nests; 9—personnel trenches for light machine guns. Thick lines: personnel trenches; dotted lines—surface tracks.

Fig. 132. The 6-inch coastal defense battery, North Head, Gun A, photographed by a U.S. intelligence team on 12 September 1943.[223] Note that the rubberized cloth covering the barrel connection with the turret has been removed.

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120MM DUAL-PURPOSE GUN BATTERY

Additional anti-aircraft and coastal defense batteries could be installed at Kiska Harbor after new supplies arrived on 6 July 1942.[224] The Japanese sources in hand are silent on the detailed chronology of the gun installations. The 4 x 120mm dual-purpose (DP) guns on North Head were among that shipment.[225]

Fig. 133. Aerial view of the 120mm DP Battery, as photographed on 13 February 1943.[226]

The fact that the aerial reconnaissance mission of 18 June 1942 did not reveal any construction activity at the site of the 120mm DP guns suggests that construction commenced only after the guns had been landed.

This is significant. Given that the 120mm DP were the most formidable AA to be emplaced on Kiska, one can assume that the Japanese would have been keen to have it emplaced as soon as possible. That construction did not start until after the guns arrived suggests that the Kiska Base Command was not aware of the (contents of the) shipment until it actually arrived.

Information on the processes for the establishment on Japanese defenses on Tarawa (Kiribati), Nauru and Ocean Island (all in the Central Pacific) in the same year and in early 1943[227] seems to suggest that construction battalions were created. They sourced the guns from the naval arsenals, accompanied the guns to their destinations and constructed the batteries, aided by local labor forces (or labor troops) where needed. If these Micronesian data are any guide, we can assume that less than four weeks after the barrels were landed all 120mm DP would have been emplaced, successfully test fired, and fully operational on manual movement with local fire control.[228] Subsequent construction would have entailed the erection of the centralized fire control, revetments with ammunition ready magazines, ammunition storage, and barracks.

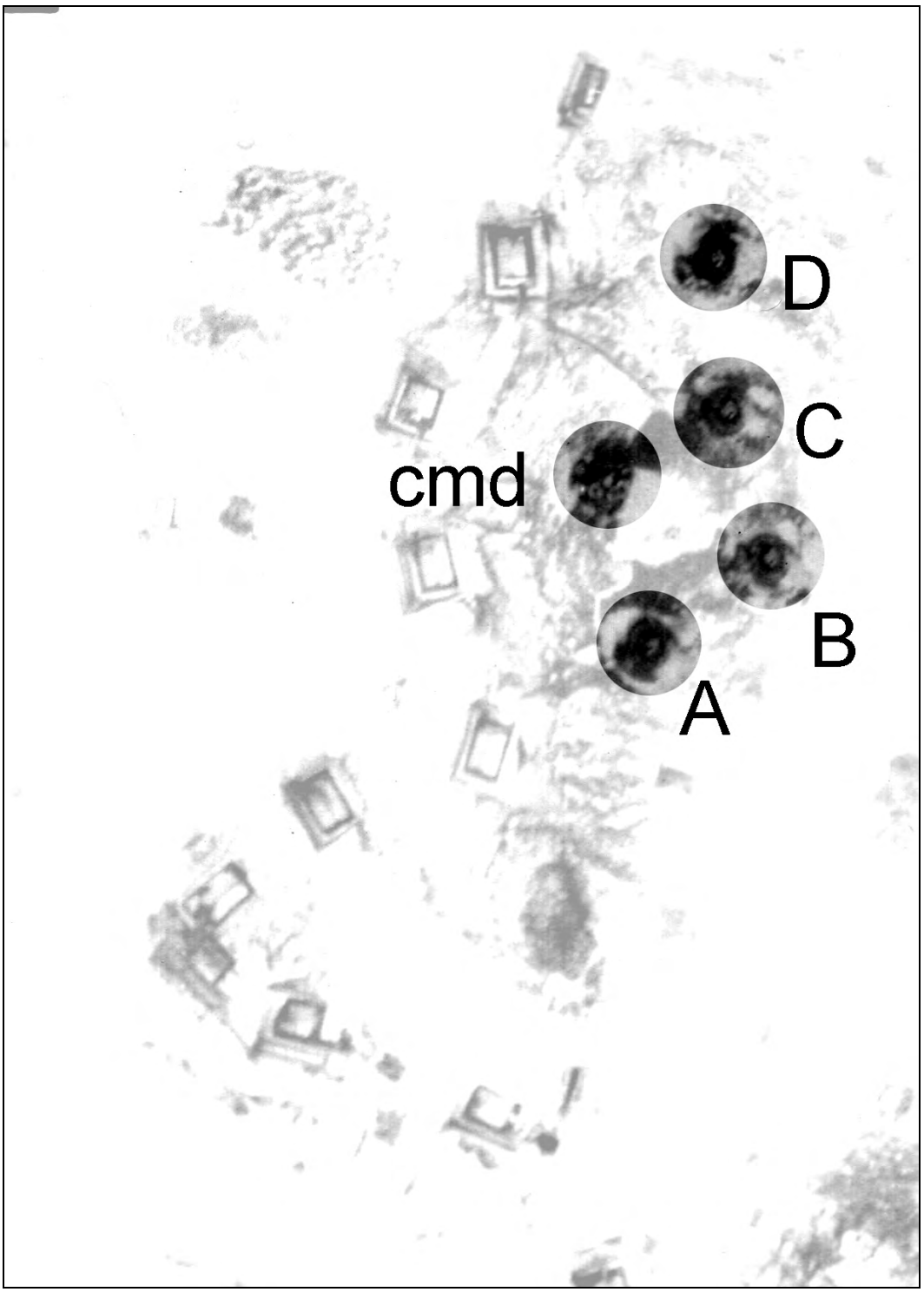

Fig. 134. Aerial view of the 120mm DP Battery, as photographed on 13 February 1943. Interpretation of Fig. 133.

cmd=command

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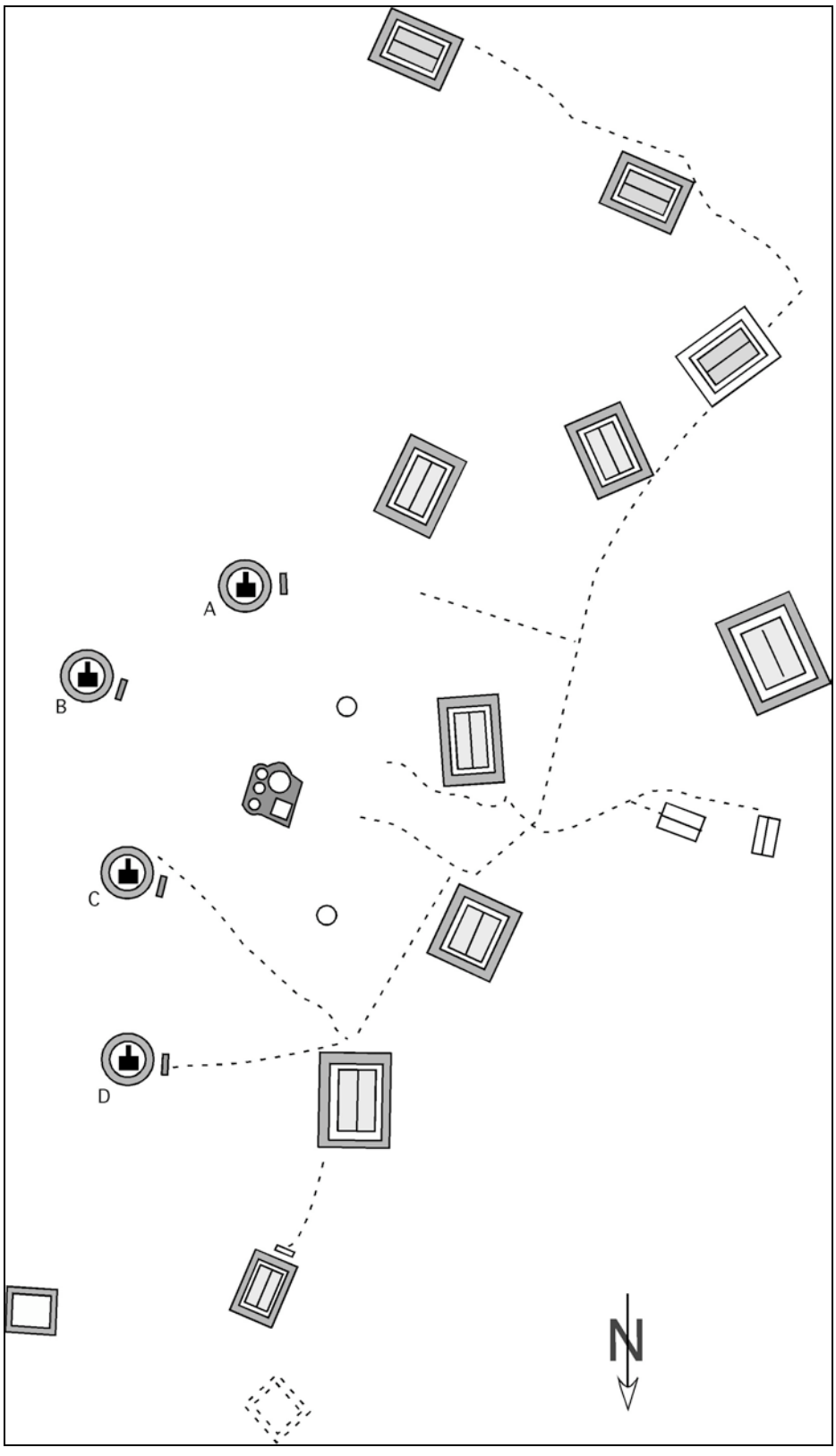

Fig. 135. Actual lay-out of the 120mm DP battery on North Head as mapped from WW II aerial photography (north arrow approximate)

Aerial photographs taken on 13 February 1943 show the gun battery as being in existence and completely developed with buildings and communications trenches (Fig. 133).

A U.S. intelligence summary of July 1943 includes the guns of the 120mm dual-purpose battery in its tabulation.[229] The gun batteries on North Head were subjected to a range of aerial bombardments, not one of which seems to have been damaging to the guns until March 1943 even though one bomb hit came quite close leaving a major crater. Between March 1943 and the

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U.S. landings in August 1943, Gun A received a near direct hit to its emplacement, striking to the southwest of the revetment. The force was enough to severely damage the gun and put it out of action.

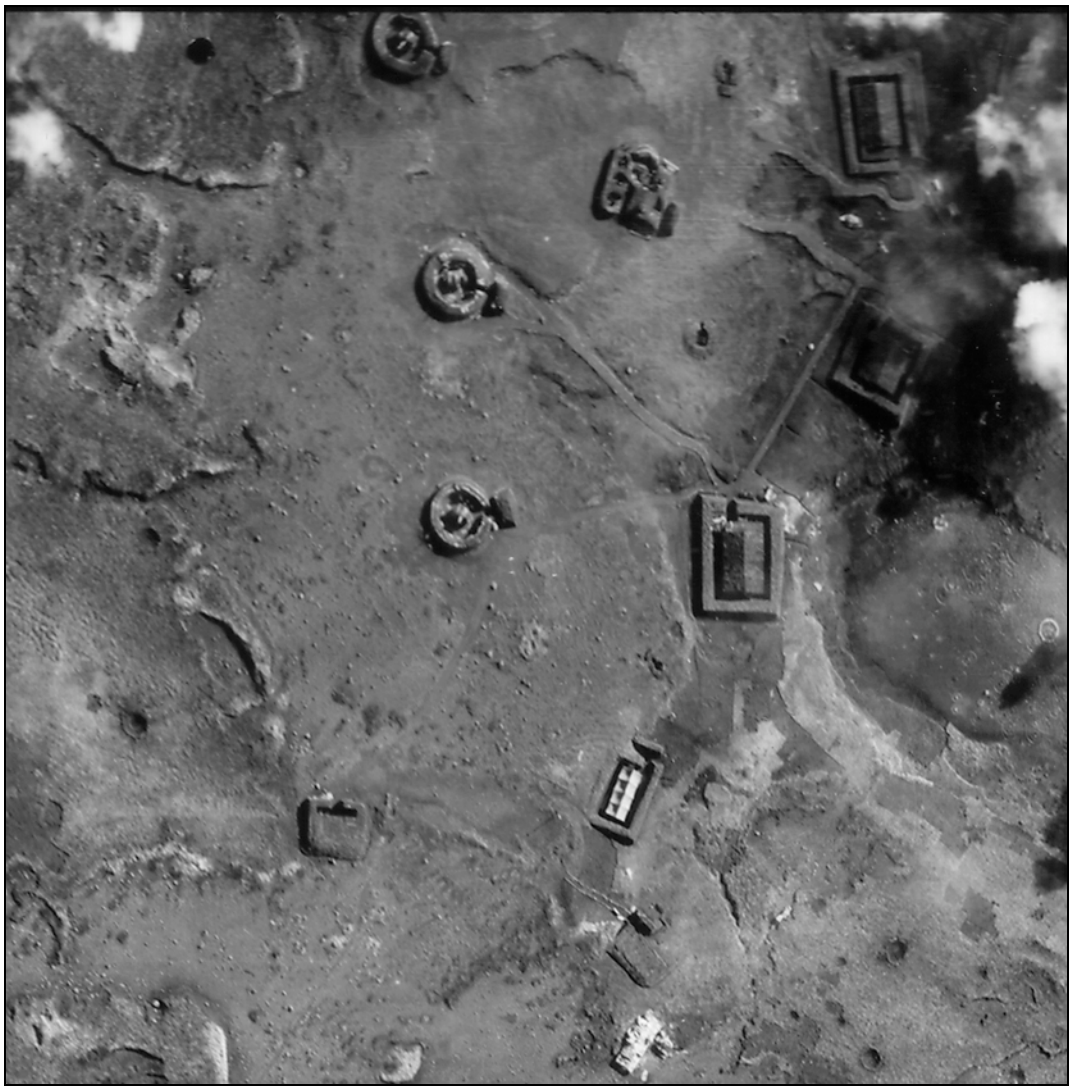

Fig. 136. 120mm dual-purpose gun battery, as seen from the air on 6 March 1943.[230]

75mm Type 88 Anti-Aircraft Battery

One of the first gun batteries to be erected was the 75mm Type 88 anti-aircraft battery. Placed close to the tip of North Head (Fig. 137), the battery commanded a field of fire that covered both the harbor entrance and much of the eastern approaches.

The battery (objective nº 204, Fig. 122) is placed on a slight knoll. It is consisted of four gun emplacements set out in a gentle arc with the fire control on the centre and to the eastward (Fig. 138). A series of barracks and ammunition storage facilities is located to the east.

13.2 mm AA battery north of Kiska Beach

By 18 June 1942, the Japanese had set up a small 13.2 mm AA battery just north of Kiska Beach and made it operational. A road had been built, connecting the beach with the battery and two barracks buildings had been erected as well.[231]

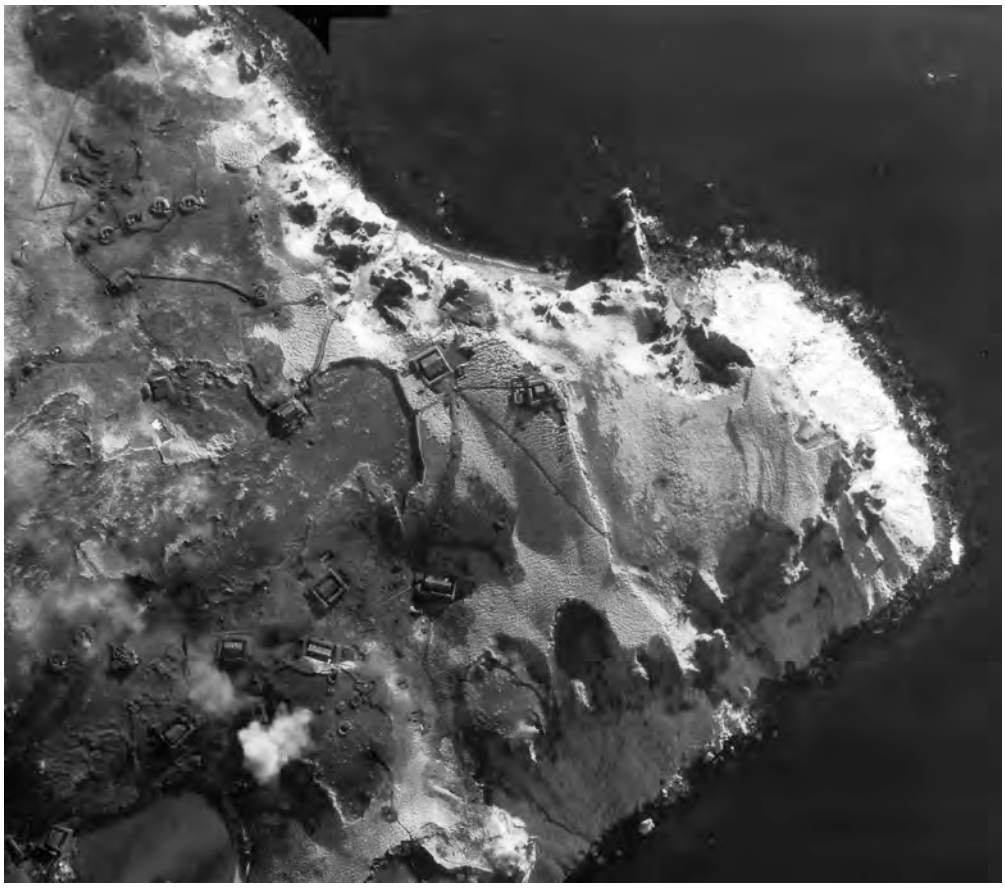

Fig. 137. Aerial view of the tip of North Head showing the 75mm Battery (bottom left) in relation to the 4.7-inch coastal defense battery (top left). Aerial image taken on 16 March 1943.[232]

Fig. 138. Aerial view of the 75mm on North Head Battery, as photographed on 13 February 1943.[233] The four gun emplacements are in the upper half, just left of centre. Note the machine gun pits at the left margin of the image.

Fig. 139. Aerial view of the 75mm on North Head Battery, as photographed on 16 March 1943.[234] Detail of Fig. 137.

Fig. 140. View of the 75mm on North Head Battery, as photographed from the Japanese fire control position, looking north.[235] Photographed on 7 Sept. 1943.

The Airfield on North Head

In hindsight, one wonders why the Japanese relied on seaplanes for much of the time and why they did not press earlier and harder for the construction of an airfield that would permit the use of land-based aircraft.

In the first week after the landings the IJN carried out a preliminary assessment of the suitability of the western Aleutian Islands for locations of land-based airfields. This included a sea-based survey of the Semichi Islands and a sea-, land- and air-based assessment of Amchitka.[236] It appears that as early as July 1942 plans had been drawn up to develop airfields in the Aleutians, one on Attu,[237] and two on Kiska, one on North Head and one at Gertrude Cove. The siting of

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the second Kiska field could not be agreed on and was eventually dropped,[238] in favor of a dual fighter and bomber strip (in a V-shaped) on North Head.[239] In addition, both the IJN and the IJA independently reconnoitered Amchitka to assess its use as an airfield. The IJA even carried out soil tests.[240]

It would appear that the construction of the airfield on North Head had commenced sometime in late December 1942 six months after the landings and in the middle of winter. Two main reasons for the delayed start can be advanced:

i) the Japanese strategy had been to occupy Midway and Kiska and to abandon the Aleutian bases in the winter. As the Battle of Midway had gone wrong for the Japanese, their lynchpin in the defense system was missing. Kiska (with Attu) became a significant, yet not critical investment. The Japanese presence of Kiska and Attu tied down U.S. forces that otherwise could have been used elsewhere in the Pacific Theatre of War and also blocked any line of attack against the Japanese homeland from the north. It was quite sufficient to maintain a holding action there, as long as Kiska served as a base for medium-range aerial reconnaissance missions and submarine patrols of the Northern Pacific.

ii) Until the threat emerged that the U.S. might be able to develop airfields closer to Kiska, the floatplane fighters provided adequate, albeit not superior, air cover for much of Kiska's operations. Once the potential threat of closer U.S. airfields and the impact of the fighter aircraft accompanying the U.S. bombers had sunk in, the need for a land-based airfield became prominent if not paramount.

Fig. 141. Low-level of oblique of part of North Head, showing AA positions in the foreground and the Japanese runway development in the background. Note the height of the built-up area.[241]

U.S. aerial photography taken on 31 December 1942 showed "a worked ground area approximately 2,200 feet long," which the U.S. intelligence assessment interpreted as "either an infantry installation or a possible landing strip."[242] Subsequent aerial photography taken a month later, on 7 February 1943, left no doubt that the Japanese were building an airstrip, which by that time was deemed about 50% complete.[243] The intelligence report noted that "little power equipment was in evidence and the greater share of work was apparently by manual labor" and went on to estimate that the airstrip would be complete in another 30 days.[244]

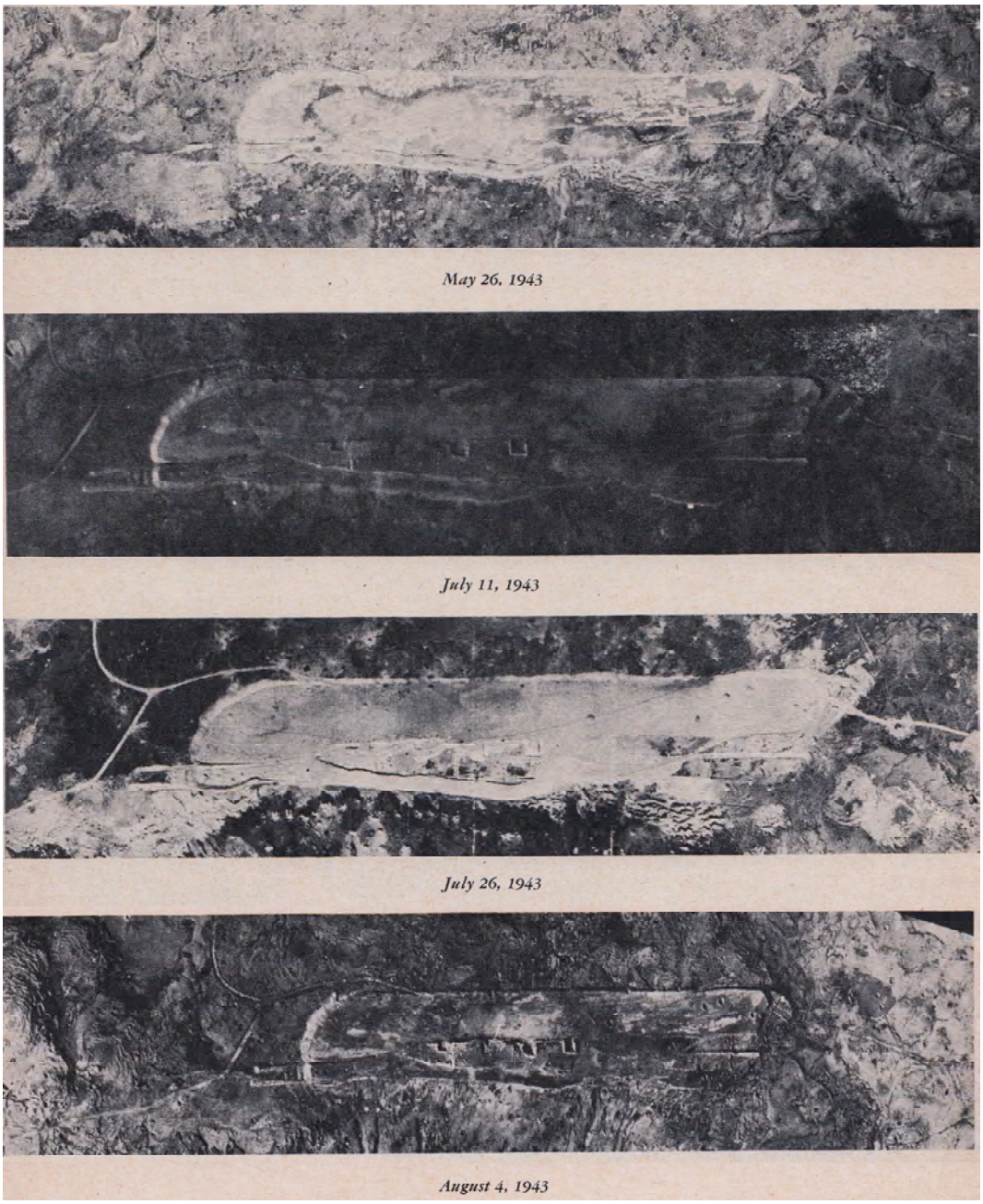

Fig. 142. Stages of development of the Japanese airfield on Kiska.[245]

The construction of the airfield was indeed hampered by the lack of heavy earth moving equipment and by the American bombing runs. Most of the heavy construction equipment destined for Kiska had been lost on 5 January 1943 with the sinking of the transport *Montreal Maru,*[246] which was also bringing in an engineer battalion.[247] The loss left the engineers on Kiska with two small bulldozers, six rollers and five air compressors.[248] The work had to be done largely by hand, using picks and shovels and handcarts to move dirt and fill over a narrow gauge steel tracks.

A directive of 5 February 1943 reconfirmed the importance of Kiska and Attu in the overall defense thinking of the Japanese and directed the Army to build the airfield, with the IJN being directed to provide assistance. It was anticipated that the initial airfield on North Head would be completed in the latter part of March, and that shipping such supplies was to be given priority. Given the weather conditions prevalent on Kiska in February and March, that plan was ambitious at best. The strip was to be 2600 ft long and 330 feet wide, with an additional 600 feet long and 250 feet wide overrun at the eastern end.[249]

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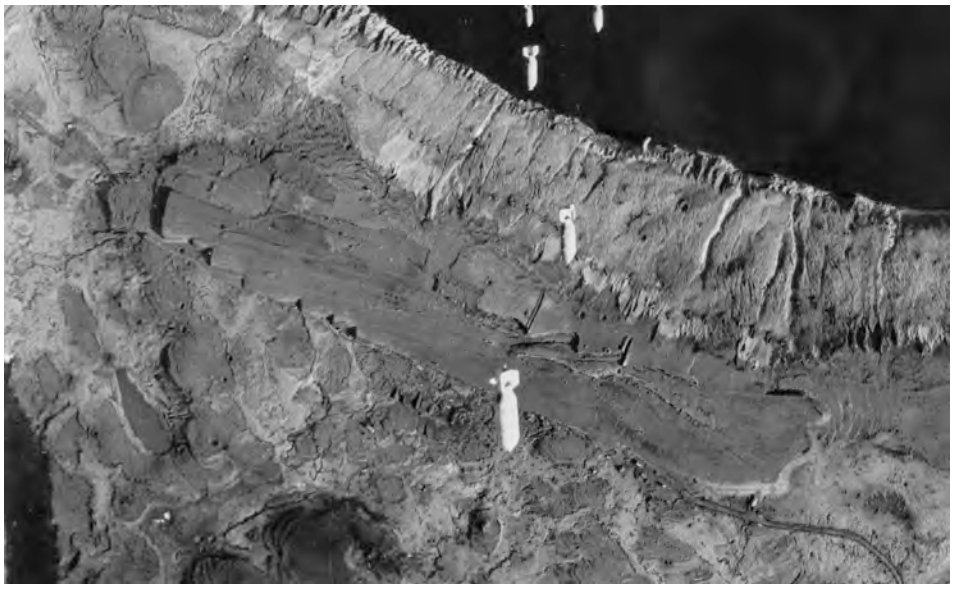

Fig. 143. The Japanese airfield on Kiska under construction in early 1943. The leveling and extension activities are clearly visible. Also note the bombs falling.[250]

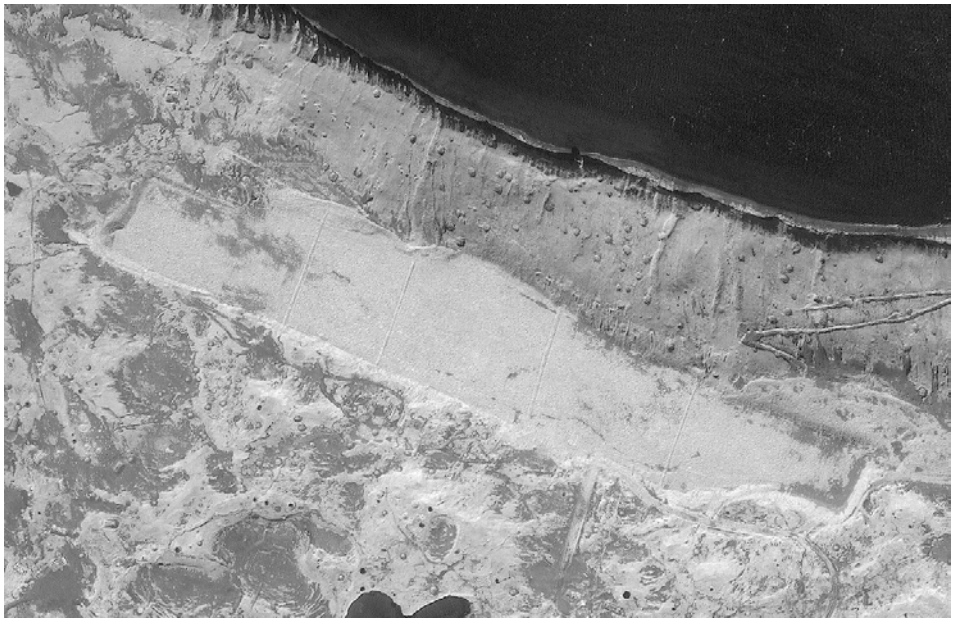

Fig. 144. The airfield on Kiska, finished by U.S. forces in 1943, as it appeared from space in 2001.

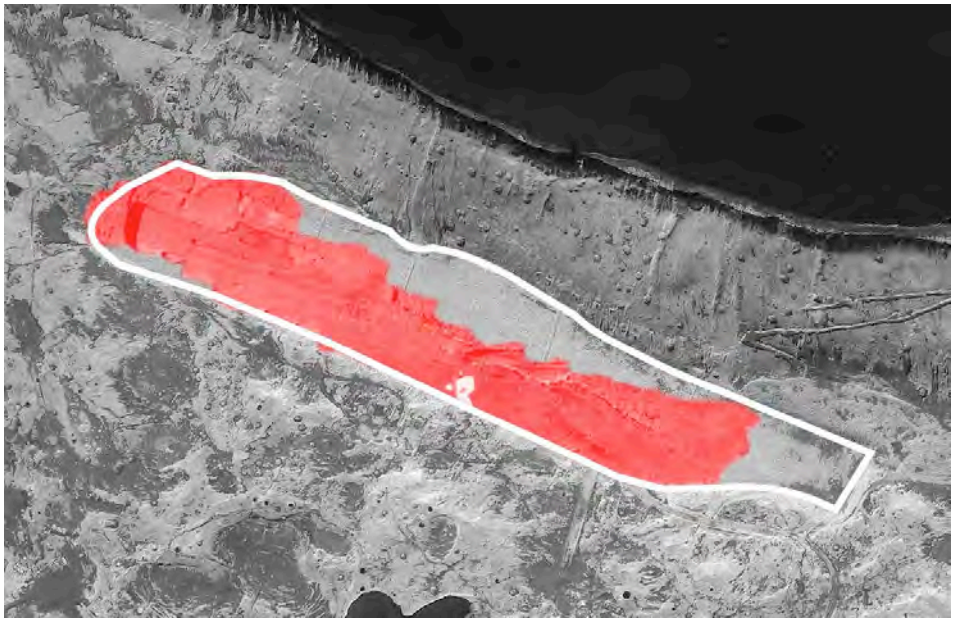

Fig. 145. Superimposition of the Japanese development as shown in Fig. 143 (shaded in red) with the final U.S. development (white outline) as visible from space (Fig. 144).

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The ultimate development as envisaged by Japanese planners also saw a second and, with 3900 x 400 feet, larger airstrip aligned NW-SE and set at a 45-degree angle across the center of North Head. A taxiway was to connect both strips, which would be augmented by hardstands and revetments for 22 aircraft.[251] This would have required substantive construction, only possible with heavy earthmoving equipment.

Despite these setbacks the Japanese were determined to complete the airfield and to this end the Japanese continued to work on it even during U.S. air attacks.[252] A U.S. intelligence assessment of late April 1943 noted that the "landing strip is reported completed" and that there were "three plane revetments along the strip large enough [for] three planes each."[253] The Japanese continued working on the strip, extending it to a total length of 2,675 feet (810m), not counting small overruns at either end. By 1 June a taxiway connecting the end of the runway, as well as the three revetments, had also been built.[254] It appears from the available intelligence data, that construction activities had stopped by mid July 1943.[255] Yet, as far as can be ascertained, the installation was being maintained and any bomb damage to the runway was being repaired.

Having a completed airstrip was all fine and well, but turning that strip into an operational airbase was a different proposition altogether. While planes and maintenance crews could be flown in, an operational airbase also required fuel supplies, bombs and ammunition for machine guns and cannon. And this is the crux: by the time the strip was completed, the strategic situation over Kiska had changed. The U.S. airfield on Amchitka had been operational by 16 February 1943, with a squadron of B-25 based there as of 7 March. These medium bombers, capable of effective bombing at low latitude and located only a few flight minutes away, effectively interdicted all surface shipping into Kiska. Henceforth all supplies had to come in by submarine. By the time Attu had fallen, Kiska had become an untenable proposition.

One can only speculate how events might have unfolded, had the *Montreal Maru* not been sunk and the Japanese could have brought the machinery to work, thus completing the airfield at about the same time or even earlier than, the U.S. airfield on Amchitka was completed. The presence of land-based IJA fighters would have made some difference. Moreover, one can speculate that the U.S. landings on Attu would been complicated by the presence of Japanese aircraft on Kiska. While the runway possibly would have been too short for a medium range bomber, it would have been suitable for dive-bombers such as the Aichi D3A 'Val', which was widely deployed on the Japanese bases in Micronesia.[256] The presence of such planes would have severely endangered the U.S. landings.

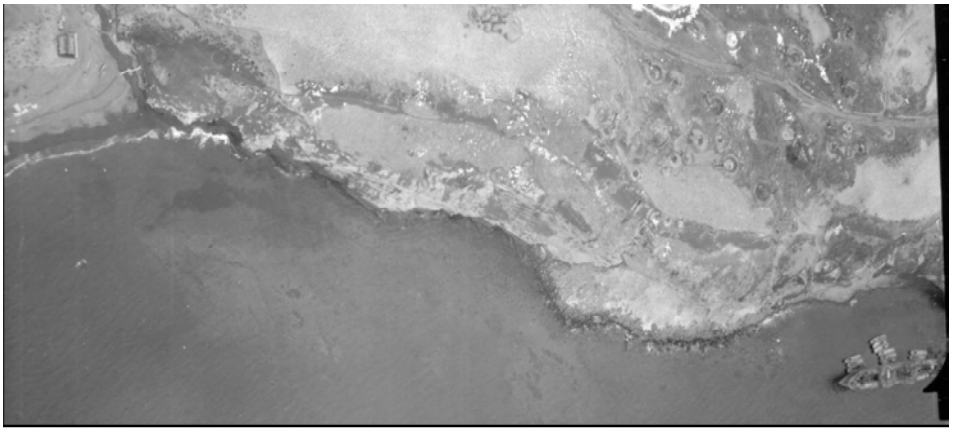

Fig. 146. The *Urajio Maru* run aground off North Head on 30 December 1942. The aerial photo shows the ship as it appeared on 30 March 1943.[257]

Fig. 147. The *Urajio Maru* run aground off North Head on 30 December 1942. The aerial photo shows the ship as it appeared on 30 March 1943.[258]

Note that the ship is used as a protective harbor for a number of Daihatsu barges.

Fig. 148. The *Urajio Maru* run aground off North Head as seen in late 1943.[259]

Note that the ship is painted with the jagged Arctic camouflage scheme. Also note the smooth water on the landward side of the ship.

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Barge Harbor

When the Japanese freighter *Urajio Maru* was damaged in an air raid on 30 December 1942, it was beached parallel with North Head (Fig. 146). Compared to other shipwrecks, such as the *Nozima Maru* at Trout Lagoon (Fig. 157), this wreck was rather inconveniently located for the easy retrieval of its cargo. The ship was beached a distance from the beach, and there was no easy, direct access to the beach given the cliff of North Head. Thus all unloading had to occur via barges.

Yet this, in the end, proved a boon. The span of water enclosed by the shipwreck provided a small sheltered harbor where all Daihatsu craft could be moored when not needed (Fig. 147).

Submarine base (IJN)

When the convoy of ships carrying the equipment originally destined for Midway Atoll arrived in Kiska Harbor on 5 July, IJN *Chiyoda,* a floatplane and midget submarine carrier, also brought the equipment and personnel initially earmarked for a midget submarine base on Kure Atoll.[260] The submarine base was established on the flat area between South Head and the promontory towards Trout Lagoon.

It is important to appreciate that the IJN had developed the ability to set up seaplane and submarine bases at any location that provided shelter and a gently sloping and obstacle-free beach to pull up planes and equipment. All supplies and repair could be carried out by a seaplane or submarine tender or on the beach. Major repairs, which required heavy equipment, or dry-docking, necessitated a return to Japan. The U.S. has similar concepts, such as the USS *Casco*, which supported the PBY in their initial retaliatory attacks on Kiska.

The history of the midget submarine activity has been set out earlier. The onshore developments commenced on the day IJN *Chiyoda* arrived. The first task of construction was the construction of a slipway, cut through the strand wall on the beach, erecting a maintenance shed and a set of launch rails. The entire base was completed by October 1942.[261] This is well reflected in the enumeration of buildings and structures compiled in Table 33. Some of the discrepancies between the number of structures observed in early and late November 1942 were most likely caused by a differential interpretation of the demarcation between the submarine base and South Head.

Table 32. The build-up of guns and structures in the Submarine Base Area

	Coast Defense	Heavy AA	Medium AA	Light AA or MG	Light FA	37mm & MG	Built-dings	Tents	Trenches	Sour-cue
8 Nov 1942		2		4(8)			56			[262]
25 Nov 1942		6 (2)		4(12)			33	7		[263]
24 Feb 1943				30			32			[264]
5 Jul 1943		4		23	*		37			[265]
12 Jul 1943		2		4		3	38	4	1,400	[266]
After landing	2[267]			2[268]						[269]

Note: Trenches in yards, other values in absolute numbers. (*) 'None identified'

By early February 1943 the submarine base comprised a slipway, two buildings, a number of dugouts, presumably underground structures, and fox holes.[270] By late February 1943 the data had

been amended, noting a slipway with two tracks, two cranes, as well as a shed, and what was interpreted to be a repair shop.[271]

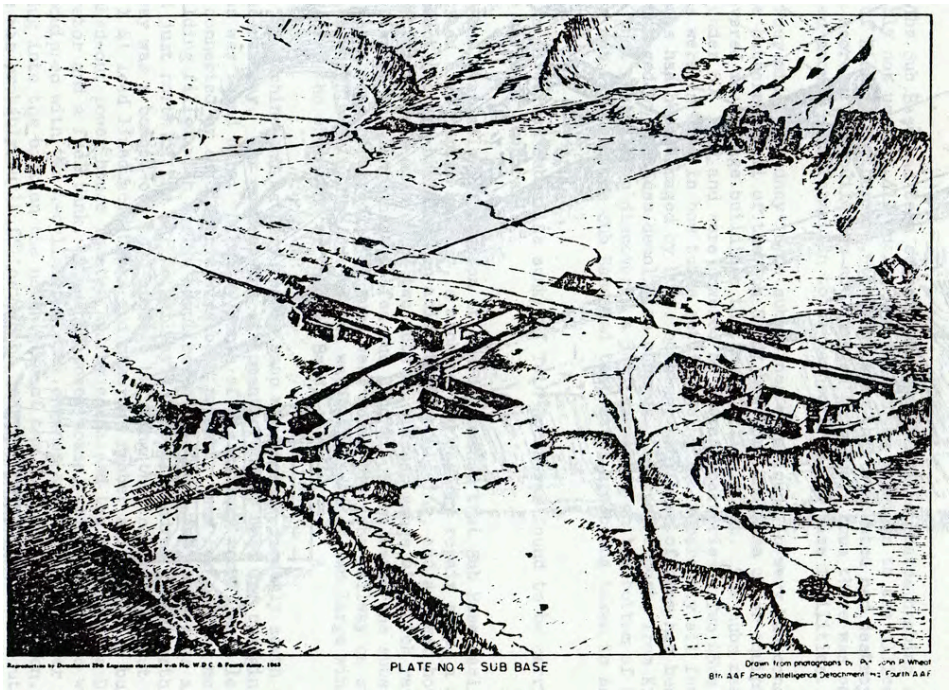

Fig. 149. An artist's impression of the submarine based as interpreted by U.S. photographic intelligence analysts in 1943.[272]

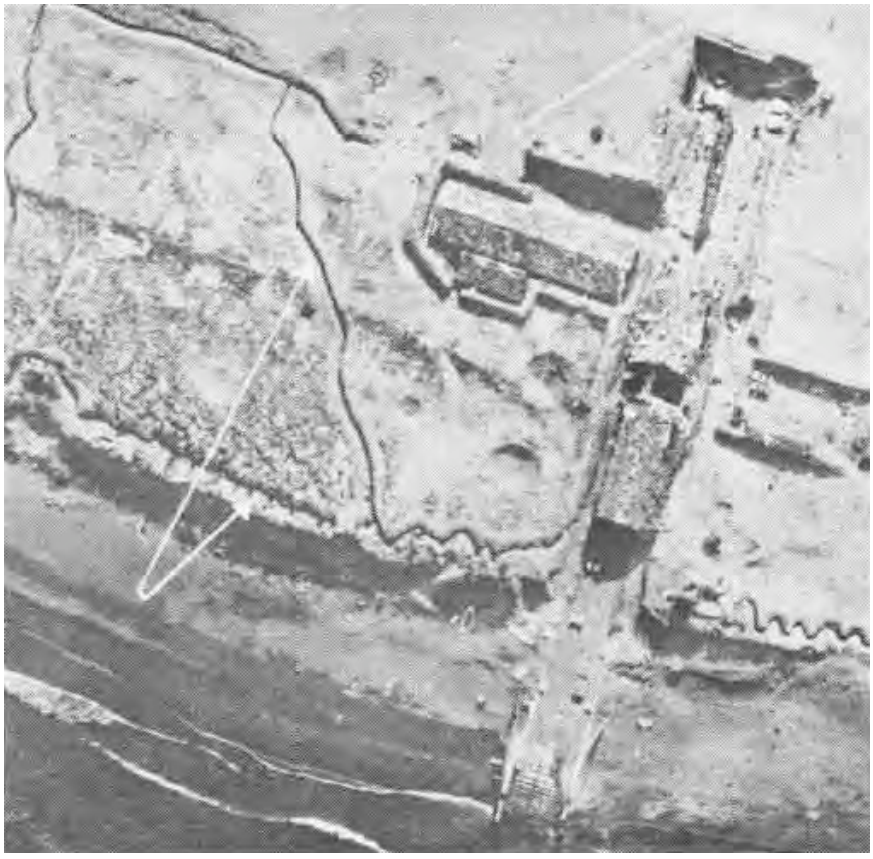

Fig. 150. Aerial photograph of the submarine base. Note the midget submarine at the end of the slipway.[273]

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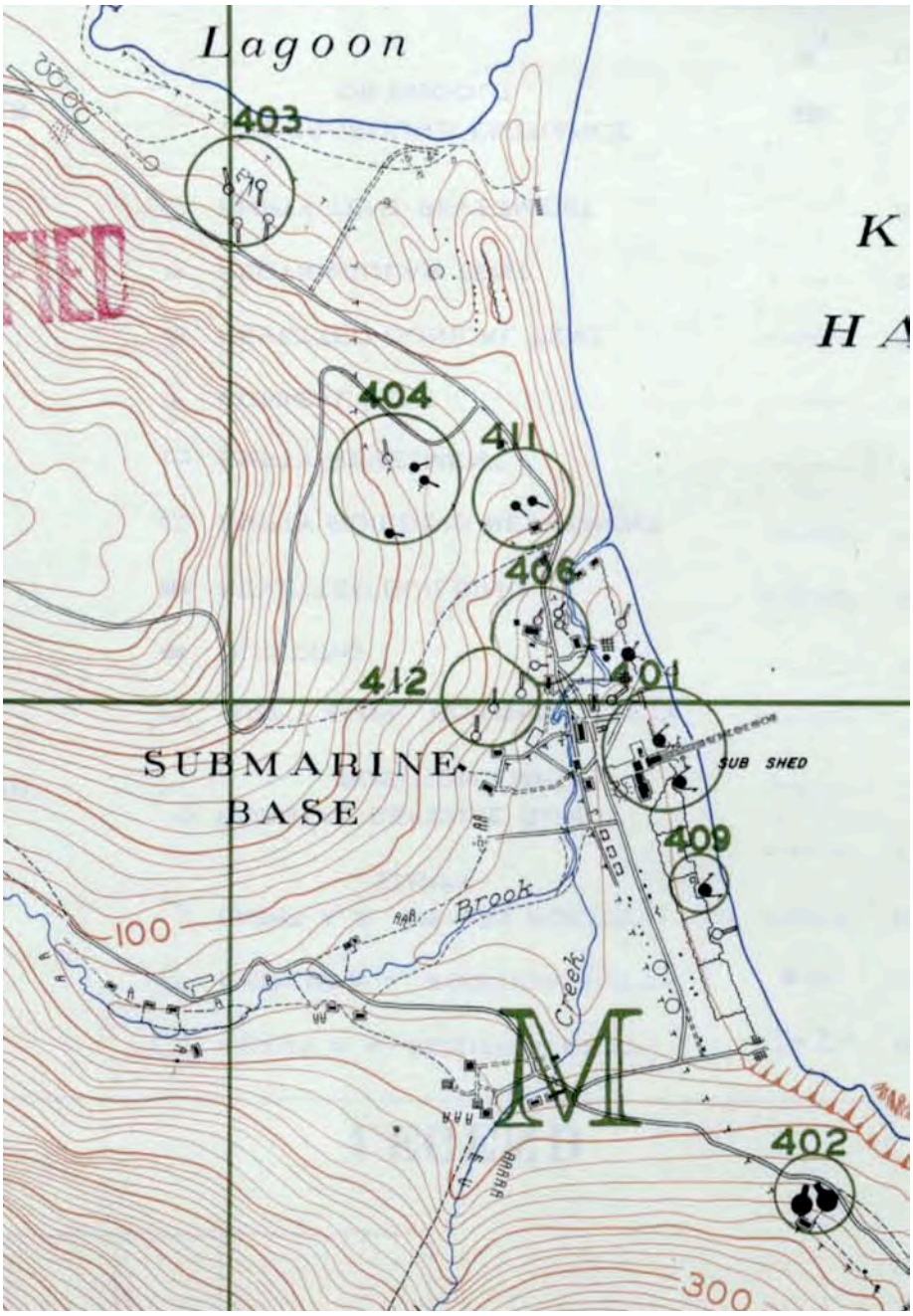

Fig. 151. The submarine base as shown on the target map drawn up in preparation for the U.S./Canadian invasion of Kiska.[274]

The individual objectives are numbered:
(401) Subsheds and railway;
(401) AA position (two guns);
(403) MG position empty;
(404) MG position;
(406) two MGs, plus empty positions;
(408) covered artillery, one gun
(409) covered artillery, two guns;
(411) two MGs;
(412) MG position, empty.[275]

The submarine base had never been a major target for the U.S efforts and consequently U.S. bombing had affected the submarine base only in a limited fashion. From an intelligence perspective it was significant that one air raid in early 1943 had damaged part of the submarine shed's roof and that this was not repaired. This allowed photoreconnaissance aircraft to observe whether or not the three submarines on the slipway had been moved. Intelligence assessments showed that by early May 1943 the operations of the midget submarines essentially ceased.[276]

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Fig. 152. Midget submarines H-29 and HA-32 in the maintenance shed at the Kiska submarine base, August/September 1943.[277]
View looking west.

Fig. 153. Midget submarines H-29 and HA-32 in the maintenance shed at the Kiska submarine base, August/September 1943.[278]
View looking east. Note the roof construction of the intact portion of the submarine shed.

Fig. 154. Midget submarines H-29 and HA-32 in the maintenance shed at the Kiska submarine base, August/September 1943.[279]
View looking west. Note the double propeller. The marine railway and the steel cables can be readily made out.

Fig. 155. The British-built 3-inch coastal defense gun,[280] salvaged from the *Kano Maru* and emplaced to defend the submarine base. The position is shown as objective 409 on the target map shown in Fig. 151.

Fig. 156. One of two 25mm Type 96 AA at Mercy Point. These guns covered the northern approaches to the submarine base (objective 311, Fig. 78).[281] The submarine base area can be seen in the right background.

The base was defended by one 75mm AA battery situated to the south of the beach, at the start of South Head (objective 402, Fig. 151). Approaches from the north were covered by the 25mm AA battery at Mercy Point (objective 311, Fig. 78). In addition, there was an array of smaller caliber weaponry (Table 32). The initial defense planning for the base did not foresee the need for any coastal artillery. The beaching of the damaged freighter *Kano Maru* on 31 July 1942 meant that the freighter's 3-inch bow and stern guns could be landed. They were installed in covered cutout sections of the strand wall north and south of the slipway.

Table 33. Breakdown of buildings, tents and dugouts in the Submarine Base Area (as identified from aerial imagery and observers' reports by 12 July 1943).[282]

	Very Large[283]	Large	Medium	Small	All
Buildings (Personnel)	1	10	19	8	38
Tents *)		4	0		4
Dugout **)			37		37
Submarine shed	1		1		2
Submarine Repair Shop	1				1
Operations Bldg					0
Garages/Warehouses			2		2
Kitchen/Messhall					0
Power House			1		1
Storage Buidlings/Shops		2	10	1	13
Rectangular Store Tent					0
Misc. Function					0
Total	3	16	70	9	98

*) Rectangular tents classified as Large, Conical tents as medium.—**) Dugouts classified as medium

Trout Lagoon

The Trout Lagoon area saw no major structural development during the Japanese period. The use of dummy planes in the area has already been mentioned. When the freighter *Nozima Maru* was damaged in an air raid on 15 September 1942, she was beached at the outlet of Trout Lagoon. Her cargo, as well as her guns could be landed on the sand spit. It seems that the Japanese constructed a narrow land connection, which then widened by natural means as the ship trapped more sand.

South Head (IJN)

Unlike North Head, the area of South Head was not central to the base development of Kiska. Yet, like North Head, it provided a promontory, protecting the assets in the harbor. Thus it was suited for the emplacement of anti-aircraft. Unlike North Head, however, South Head was not the location that jutted out furthest on the south side of the harbor. That was Little Kiska. Thus the second coastal defense battery was emplaced there rather than South Head (p. xxvi).

When considering the chronology of developments on South Head as evidenced by the available intelligence data, we note that development did not start until late 1942 and then proceeded at a slow pace only. There was little need to develop South Head for most of the occupation period. Only when the Japanese garrison was planning to counter a possible invasion did South Head attain some level of significance as the southern coast of the peninsula is lined with a number of small coves which would allow for a landing of small parties of amphibious forces.

The main concentration of buildings was set on a rise a bit more than a mile from the submarine base. As this was far removed from Main Camp, the area has its own small Shinto shrine (Fig. 162).

Fig. 157. The *Nozima Maru* beached at Mercy Point, Trout Lagoon on 15 September 1942. The aerial image shows the ship as it appeared on 16 March 1943. Note the sand spit which extends to the ship, the barges and some of the partially buried stores on the sand spit.[284]

Fig. 158. The *Nozima Maru* beached at Mercy Point.[285]

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Fig. 159. The *Nozima Maru* beached at Mercy Point.[286].

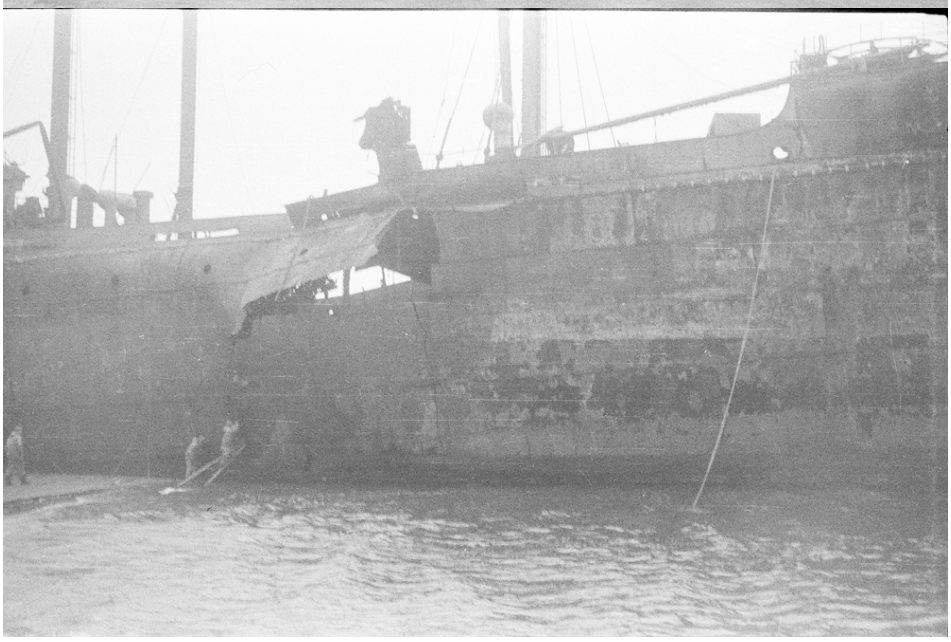

Fig. 160. The *Nozima Maru* beached at Mercy Point.[287] Note the bomb damaged starboard side of the bow hold.

Table 34. The build-up of guns and structures on South Head

	Coast Defense	Heavy AA	Medium AA	Light AA / MG	Light FA	37mm & MG	Buil-dings	Tents	Tren-ches	Sour-ce
8 Nov 1942		4								[288]
25 Nov 1942							8	4		[289]
24 Feb 1943		6		6			16			[290]
5 Jul 1943		4		2	*		33			[291]
12 Jul 1943		4		5			19	0	650	[292]
after landing		4[293]		4[294]						[295]

Note: Trenches in yards, other values in absolute numbers. (*) 'none identified'

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Table 35. Breakdown of buildings, tents and dugouts on South Head (as identified from aerial imagery and observers' reports by 12 July 1943).[296]

	Very Large[297]	Large	Medium	Small	All
Buildings (Personnel)	0	10	7	2	19
Tents *)		0	0		0
Dugout **)			13		13
Admin Bldg					0
Radio Station				1	1
Garage			1		1
Kitchen/Messhall					0
Generator Bldg					0
Storage Buidlings/Shops					0
Rectangular Store Tent					0
Misc. Function			2	5	7
Total	0	10	23	8	41

*) Rectangular tents classified as Large, Conical tents as medium.—**) Dugouts classified as medium.

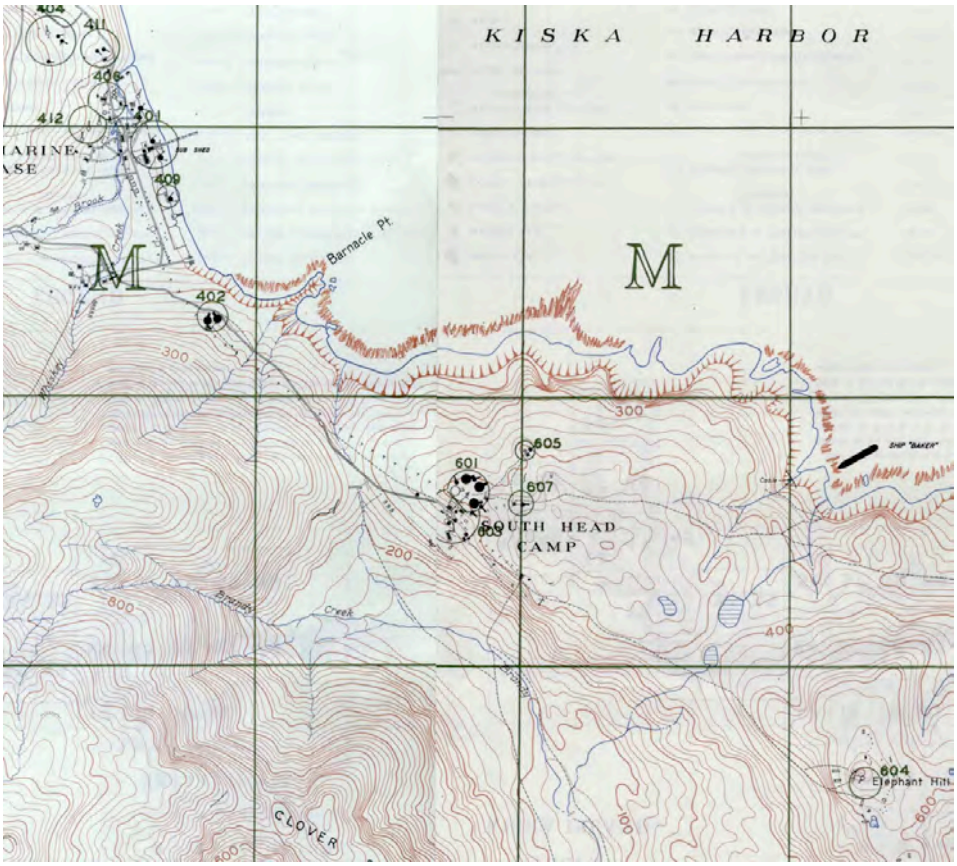

Fig. 161. The location of South Head Camp in relation to the submarine base.[298]
Note ship 'Baker'. This was the *Kano Maru* which had fired upon USS *Grunion* and from which the 3-inch guns were salvaged that were emplaced at the submarine base.

Fig. 162. The shrine on South Head.[299]

Fig. 163. The shrine on South Head.[300] Note the walls made from stacked tundra sod.

Little Kiska (IJN)

Little Kiska is a small island, located less than a mile from the tip of South Head. Together with North Head, Little Kiska commands the entrance to Kiska Harbor. Not surprisingly the Japanese chose the island as the location for their second 6-inch coastal defense battery, which was sited on a rise near the western end of the island (Fig. 164). The first intelligence assessment for Little

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Kiska stems from early November 1942. Even though the battery is not noted until February 1943, it must have existed: the number of support buildings does not change substantially from the first observations in November 1942. It would appear that the battery had initially been misinterpreted as heavy AA (Table 36).

Bomb attacks on the installation in March and April 1943 had "resulted in direct hits on buildings and the destruction of others by fire." These were replaced by "nine or ten white conical tents [which had been] set up on the west shore of the island."[301]

Table 36. The build-up of guns and structures on Little Kiska

	Coast Defense	Heavy AA	Medium AA	Light AA or MG	Light FA	37mm & MG	Buil-dings	Tents	Tren-ches	Sour-ce
8 Nov 1942		2		(7)			— 22 —			[302]
25 Nov 1942		4(1)		6			7	6		[303]
4 Feb 1943	3			14			— 17 —			[304]
24 Feb 1943	3			14			21[305]			[306]
3 Mar1943	3		5	2			19			[307]
1 May 1943	3			14			— 21 —			[308]
5 Jul 1943	3		5	2	*		19			[309]
12 Jul 1943	3		6	2		4	17	1	500	[310]
after landing	3			5[311]	4	1				[312]

Note: Trenches in yards, other values in absolute numbers. (*) 'none identified'

Table 37. Breakdown of buildings, tents and dugouts on Little Kiska (as identified from aerial imagery and observers' reports by 12 July 1943).[313]

	Very Large[314]	Large	Medium	Small	All
Buildings (Personnel)	1	6	4	6	17
Tents *)		1	0		1
Dugout **)			21		21
Headqarters Bldg		1			1
Radio Station		1			1
Garage				1	1
Kitchen/Messhall		1			1
Generator Bldg				1	1
Storage Buidlings/Shops		3			3
Rectangular Store Tent					0
Misc. Function					0
Total	1	13	25	8	47

*) Rectangular tents classified as Large, Conical tents as medium.—**) Dugouts classified as medium

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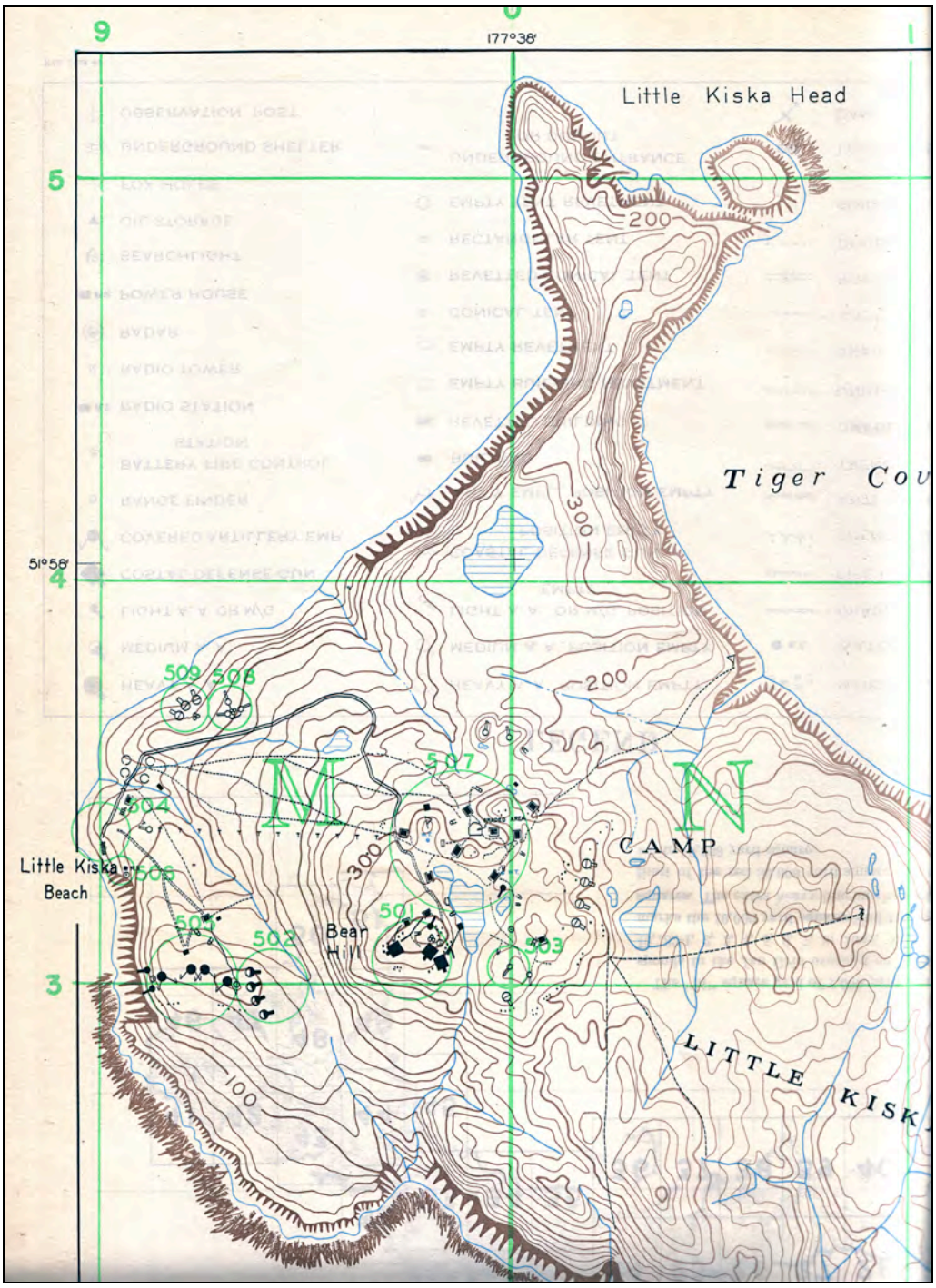

Fig. 164. The 6-inch coastal defense battery on Little Kiska (objective 501), as shown on the 28 July 1943 Army target map.

Fig. 165. Aerial view of the barracks of the 6-inch gun battery on Little Kiska. Above: aerial view.[315] Left: Section of the target map[316] showing the point of vision for the aerial image. Image taken on 21 August 1943, after the U.S. Landing on Kiska.

Fig. 166. Example of a barracks building partially recessed into the hill slope.[317]

Part of the 6-inch coastal defense battery on Little Kiska. Low-level oblique aerial image taken on 21 August 1943.

Fig. 167. Aerial view of the barracks of the 6-inch gun battery on Little Kiska photographed on 21 August 1943.[318]
(Detail of Fig. 165).
Note the area where the sods of tundra have been cut to cover the revetment wall and the roof. The individual spade cuts are visible. Also note the deep borrow pits from which the soil for the revetment had been taken. The small cutouts in the hillside are personnel shelters. The building is connected with power and telephone.

Spennemann, Dirk HR. (2011) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

THE SIX-INCH GUN BATTERY

An U.S. intelligence summary of July 1943 notes that:

> "Little Kiska Island has been developed by the [Imperial Japanese] Navy into a strong outer defensive position, protecting Kiska Harbor and the immediate vicinity from attack by sea, and to a large extent, by air. Troops landing in the vicinity of either South Head or North Head would be under the fire of artillery emplaced on Little Kiska Island. Likewise, artillery emplaced on the perimeter of Kiska Harbor could take under fire troops attempting to land on Little Kiska Island."[319]

The summary notes the three Coastal Defense Guns, estimated 5" or 6" [caliber]," as well as five medium AA of 25mm or more and two light AA of 20mm or less.[320]

Based on aerial photographic evidence, the gun battery sits at an elevation of approximately 100m (330 feet) and in general orientation faces west-southwest (Fig. 165). The battery consisted of three 6-inch gun emplacements with guns, a personnel shelter, an ammunition store, a barracks building and a fire control center. The three big guns are strung along a slightly inverted arc along the southern side of the knoll, with the central gun emplaced at the highest elevation at about 300 feet. Fire control was established at the highest point of the knoll (Fig. 165). The barracks building, which was revetted by soil walls, is located on the northwestern side, while the ammunition store and the personnel shelter are dug into the northern hillside. All components are connected by a series of personnel trenches (Fig. 165). The revetments for the guns were made from soil and spade-cut chunks of tundra (see Fig. 167 for evidence of sod cutting). Each of the guns had a small earth-covered ammunition store dug into the hillside as is clearly visible for gun C (in the foreground of Fig. 168).

In addition to a network of tracks, the battery was connected by telephone with other installations on Little Kiska (see Fig. 167 for the utility poles).

Fig. 168. The 6-inch coastal defense battery on Little Kiska and associated features. Low-level oblique aerial image taken on 21 August 1943.

Fig. 169. The 6-inch coastal defense battery on Little Kiska. Tundra sods cut out for the revetment of Gun C. Low-level oblique aerial image taken on 21 Aug 1943 (detail of Fig. 168).

Fig. 170. An U.S. Inspection party looking over the Japanese gun emplacements on Little Kiska.[321]

Gertrude Cove (IJA)

The Gertrude Cove area was the main encampment of the IJA troops that had been transferred from Attu to Kiska in September 1942. The first intelligence assessment that we have in hand, dating to early November 1942, shows that the IJA had not wasted any time and that the number of structures were more or less already at peak strength. The Japanese construction program received a temporary setback when the transport *Borneo Maru* was damaged in an air raid on 5 October 1942. It could be beached close to shore, however, and most of the cargo was salvaged.[322]

The base development proceeded at speed and by the end of November all heavy AA had been emplaced. The U.S. action reports comment that on 20 November 1942 a "reconnaissance aircraft over Kiska Island [drew] heavy AA from Gertrude Cove." (see Appendix 3). This either indicates that the IJA had taken over the air defense for the southern sector of Kiska by that time, or that the IJA was carrying some activity that they did not wish to be observed.

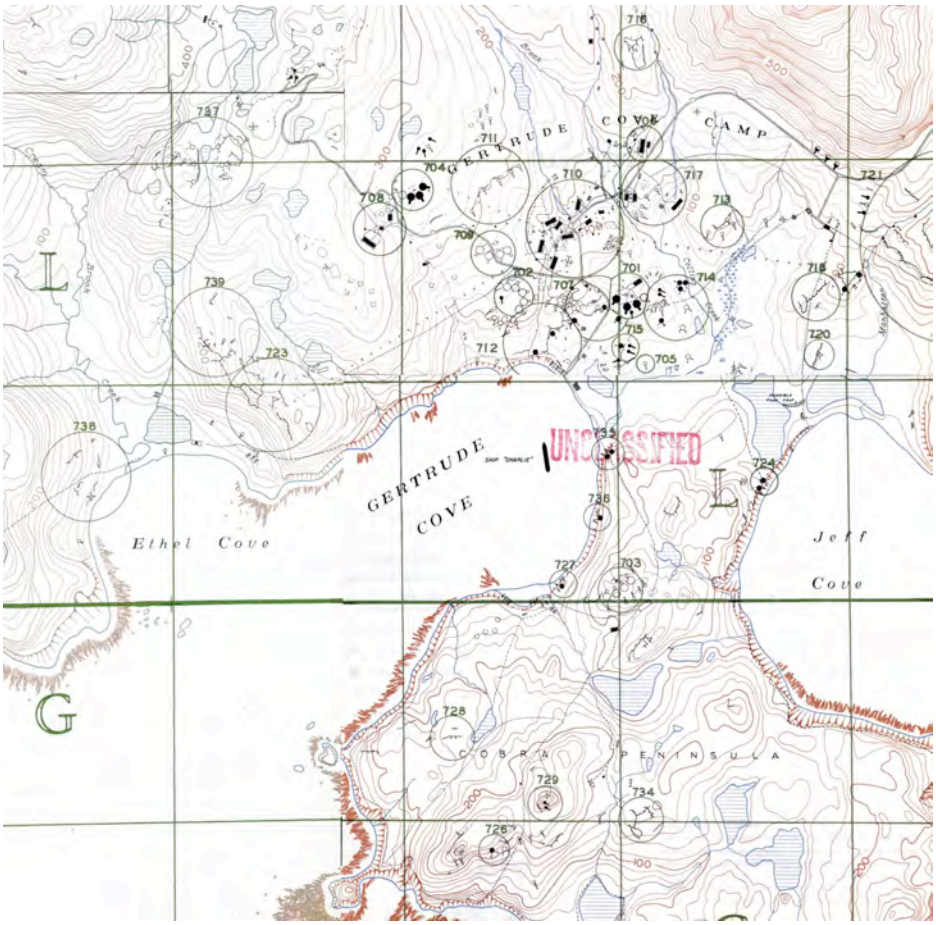

Fig. 171. The concentration of IJA activities at Gertrude Cove.[323]

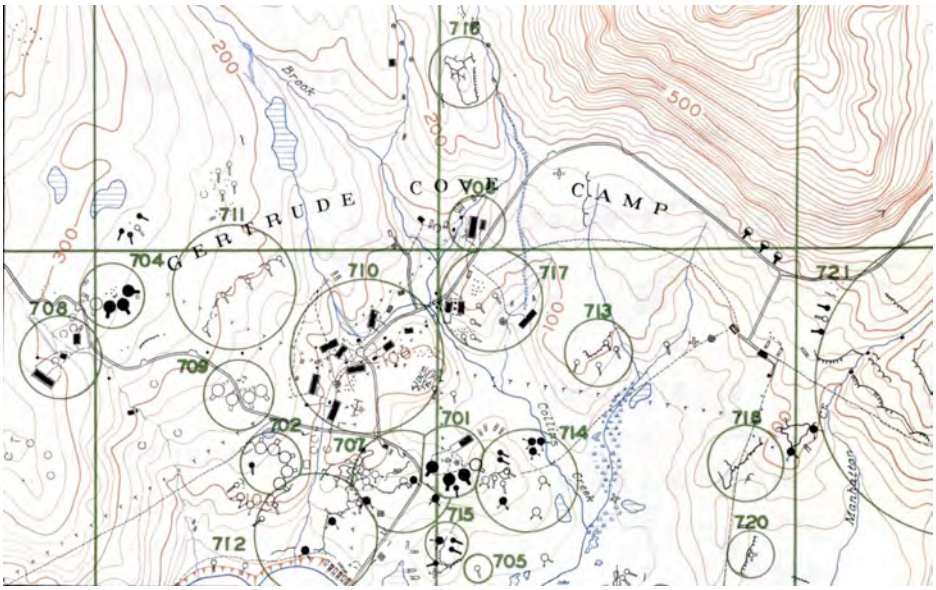

Fig. 172. The concentration of IJA activities at Gertrude Cove.[324] Detail of Fig. 171.

The concentrated bombing of the IJA positions at Gertrude Cove in late June and early July resulted in damage to one 75mm Type 88 AA gun, which was subsequently removed. In addition, damage to two 75mm AA guns was suspected.[325] A number of buildings were damaged or destroyed as well.

Unlike the IJN which seems to have been more set in its (defensive) ways, the IJA seems to have been very busy setting up a range of alternative positions for field guns and AA, most of which were never filled. It can be surmised that this occurred both to be ready in case additional guns were shipped in, and also in order to be able to disperse the guns to other locations if and when the tactical need arose.

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This nicely illustrates the differences between the IJA and the IJN troops (the SNLF excepted). The IJN established naval and naval airbases and static developments and then commenced to develop a defensive umbrella to protect these static assets. The IJA on the other hand was founded on the doctrine of a mobile, ideally continually advancing force and thus considered any defensive position in occupied territories as temporary installations. These differences not only become evident in the approaches to AA on Kiska, but also in the types of personnel facilities. While the IJN built barracks, the IJA predominantly used tents.

Table 38. The build-up of guns and structures at Gertrude Cove

	Coast Defense	Heavy AA	Medium AA	Light AA or MG	Light FA	37mm & MG	Buil-dings	Tents	Tren-ches	Sour-ce
8 Nov 42		8		8(2)			92			[326]
25 Nov 42		10(4)		20(14)			2	49		[327]
24 Feb 43		9 (?11)		16			78			[328]
23 Apr 43									4,650	[329]
1 May 43		14		43			78			[330]
5 Jul 43		8	5	20	*		56	14		[331]
12 Jul 43		11		9		13	56	15	12,900	[332]
after landing	2[333]	6[334]		6[335]	2	3				[336]

Note: Trenches in yards, other values in absolute numbers. (*) 'none identified'

Table 39. Breakdown of buildings, tents and dugouts at Gertrude Cove (as identified from aerial imagery and observers' reports by 12 July 43).[337]

	Very Large[338]	Large	Medium	Small	All
Buildings (Personnel)	12	6	17	21	56
Tents *)		6	9		15
Dugout **)			50		50
Admin Bldg	1				1
Radio Station					0
Garage					0
Kitchen/Messhall	1		1		2
Generator Bldg					0
Storage Buidlings/Shops	1		3	7	11
Rectangular Store Tent					0
Misc. Function			1	5	6
Total	15	12	81	33	141

*) Rectangular tents classified as Large, Conical tents as medium.—**) Dugouts classified as medium

Inland Areas (IJA)

During the later stages of the occupation, the Japanese began to establish smaller defense systems and observation posts in most parts of Southern Kiska. The only substantive development was an IJA operated 75mm AA position in the northern central area, covering the northwestern approaches to the main camp area.

After the U.S. landings on Attu, the Japanese prepared themselves for a similar assault on Kiska, adding a number of beach defense positions. U.S. photo intelligence noted positions at Vega Point and Tom Thumb Cove, as well as almost 4,000 feet of barbed wire defenses along the Witchcraft Point area.[339]

Despite the continual bombing and aerial photography by U.S. planes, the Japanese had been successful in erecting quite a number of concealed positions. The U.S. occupation of Attu allowed the U.S. forces to assess the design and appearance of the Japanese defense systems encountered there. Most critical was the evaluation to what extent they would be visible from the air. Based on these new insights, earlier air photos of Kiska were re-analyzed and a number of concealed medium field artillery and heavy machine gun positions were found, not only among the IJA installations at Gertrude Cove, but also on North Head, the Main camp area, Autumn Cove and the Cobra Peninsula.

Table 40. The build-up of guns and structures in the North Central Area

	Coast Defense	Heavy AA	Medium AA	Light AA or MG	Light FA	37mm & MG	Buil-dings	Tents	Tren-ches	Sour-ce
8 Nov 1942										340
25 Nov 1942										341
24 Feb 1943										342
5 Jul 1943		5		10	2		17			343
12 Jul 1943		5	4	4		11	2	0	5,300	344
after landing		4[345]		3[346]	3	3				347

Note: Trenches in yards, other values in absolute numbers.

Table 41. Breakdown of buildings, tents and dugouts on dispersed areas on Kiska (as identified from aerial imagery and observers' reports by 12 July 1943).[348]

	BUILDINGS					TENTS			
	Very Large	Large	Medium	Small	All	Rect-angular	Conical	All	Dugout
Lief Cove	0	0	0	1	1	0	0	0	2
Vega Bay	0	0	1	0	1	0	0	0	1
Reynard Area	11	1	10	4	26	0	0	0	7

Moveable Equipment

While the foregoing was focused on the structural development as well as on equipment that could theoretically be moved such as some of the heavy guns, we also need to consider moveable equipment. This ranges from the aircraft and submarines to trucks and tanks.

KISKA'S MOST VALUABLE ASSET: THE NAKAJIMA A6M2-N TYPE 2 'RUFE'[349]

The IJN had understood the need for an aircraft with fighter and interceptor capabilities that could operate in areas where formal airstrips were absent. Most of Micronesia, fell into that category, as well as many areas into which military expansion was projected, namely the South Pacific, as well as much of Indonesia (then the Dutch East Indies) and the Philippines. While the Mitsubishi F1M2 'Pete' was a capable plane, it was too slow for the developing modern combat. In September 1940 the IJN issued the 15-shi specification, calling for the design of a single-engine mono-wing seaplane fighter.[350] As this was to be designed from the ground up (to become the Kawanishi N1K1 'Kyofu' [Rex]), the IJN was concerned that it might not have fighter and interceptor capabilities at its disposal at the time open conflict was projected to occur.

In order to have a sea plane fighter available in the interim, the IJN commissioned Nakajima to develop a float-plane version of the most advanced fighter of the time, the Mitsubishi A6M Type 0 Model 11 ('Zero' or 'Zeke'). A two-row 14-cylinder radial Nakajima Sakae engine powered the aircraft. The maiden test flight of the Nakajima A6M2-N occurred on the day of the

attack on Pearl Harbor, piloted by IJN test pilot Captain Kiichiro Nishihata of the Kugisho (Air Technical Laboratory of the IJN).[351] The first front line units were sent in late June 1942 to Rabaul/Tulagi and to Kiska. An examination of the serial numbers of a few *Nakajima Suisei* encountered as wrecks showed that air frame numbers #16, #25 and #31 were among those positively identified at Attu and Kiska. The other early models were found at Tanambogo (Solomon Islands) in August 1942, where serial numbers 3–6, 13–16, 21–22 and 26 were recovered.[352]

Table 42 sets out the total deliveries of Nakajima A6M2-N to the Aleutians, as far as can be reconstructed. All planes were delivered fully assembled and ready to fly.[353] It is worth stressing, that by November 1942 the Nakajima factory still produced as few as twelve A6M2-N planes per month, half of which were sent to the Shortlands in the Solomons and half to Kiska.[354] Given that needs for such capable aircraft existed throughout the Pacific theatre, the fact that half the monthly production of these aircraft was sent to Kiska clearly demonstrates the significance and priority the Kiska operation was given by the Japanese Navy.

Table 42. Strength of Japanese seaplanes on Kiska June 1942 to July 1943: Nakajima A6M2-N Type 2 'Rufe'[355]

	Additions	Losses/withdrawals
5 Jul 42	6 delivered by *Chiyoda*	
8 Jul 42		2 Rufes are damaged in gunfights with PBYs
13 Aug 42	12 delivered by *Kimikawa Maru*	
3 Sep 42		1 to 4'seaplanes' claimed as destroyed on the water
7 Sep 42		1 Rufe claimed shot down by a B-24
13 Sep 42		1 Rufe shot down by a P-38
14 Sep 42		4 Rufe claimed shot down by P-38
25 Sep 42		2 Rufe shot down by P-40 Pilots
25 Sep 42	5 delivered by *Kimikawa Maru*	
29 Sep 42		5 Rufe claimed shot down
2 Oct 42		3 Rufe shot down by P-39
3 Oct 42		1 Rufe shot down by P-39
3 Oct 42		A total of 23 Rufe claimed to have been shot down between 13 Sep and 3 Oct
5 Oct 42		5 Rufe claimed shot down
6 Nov 42	5 delivered by *Kimikawa Maru* to Attu	
7 Nov 42		The Rufe at Holtz Bay are washed ashore in a storm
9 Nov 42		Eight of nine beached Rufes strafed and claimed as destroyed in Holtz Bay, Attu
25 Dec 42	8 delivered by *Kimikawa Maru*	
30 Dec 42	8 delivered by *Kimikawa Maru*	1 Rufe claimed shot down
30 Dec 42		1 Rufe claimed shot down (not substantiated)
1 Feb 43	7 delivered by *Kimikawa Maru*	
2 Feb 43		2 Rufe lost over Amchitka due to AA fire
4 Feb 43	*Asaka Maru* delivers 'unknown number of fighter planes for experimental purposes'	3 Rufes claimed shot down by a B-24 weather plane
12 Feb 43	7 delivered by *Kimikawa Maru*	
13 Feb 43		3 Rufe shot down over Amchitka 1 Rufe shot down over Kiska
14 Feb 43		2 Rufe shot down by P-40 over Amchitka
16 Mar 43		1 Rufe claimed shot down (not substantiated)
19 Mar 43	6 delivered by *Kimikawa Maru*	

Tanks

Both the IJA, and the Special Naval Landing Forces of the IJN made use of light tanks of Type 95 Ha-Go. These tanks were seen as infantry support vehicles and not designed for direct tank-to-tank combat. Where the tanks could not be advantageously deployed to support infantry advances, Japanese defense doctrine suggested that they be used as armored pill boxes and essentially be buried up to their turrets.[356] Imagery provided by U.S. forces after the war shows two of the three tanks found on Kiska.[357] One of these was buried as a pillbox, defending the beach at Main Camp (Fig. 173). A second one was encountered on South Head, set into protective revetment overlooking Sargent Cove (Fig. 174),[358] while the third was found burnt out at its garage at Main Camp. The fact that all three tanks were found in the Kiska Harbor area, combined with the fact the road connecting the IJA base at Gertrude Cove with the harbor had not been completed by the time that the Japanese withdrew from Kiska, suggests that they were in fact IJN tanks. That can be confirmed with an aerial photograph of 28 September 1942 which shows all three tanks in the Main Camp Area (Fig. 175).

Trucks and Vehicles

The U.S. intelligence assessment after the landings noted that "[a]bout 60 trucks were at one point in operation on Kiska", as well as eight sedans (Fig. 178) and 18 motorbikes.[359] The available aerial photography allows us to identify both open and closed trucks on the roads and in the motor pool (Fig. 175).

Fig. 173. Japanese light tank, type Type 95 HA-Go.[360]

Fig. 174. Japanese light tank type Type 95 HA-Go.[361] This tank had originally been placed in a revetment overlooking Sargent Cove on the southern side of South Head.

Fig. 175. Aerial image of the Main Camp Area. Shown is the motor pool.[362] Note the abundance of trucks. Three tanks (circled) can be clearly seen as well as what appears to be a searchlight truck (S).

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Fig. 176. A camouflaged Japanese searchlight truck on Little Kiska in a revetment.[363]

Fig. 177. A camouflaged Japanese searchlight truck on Little Kiska.[364]

Fig. 178. Japanese Sedan in the Main Camp area. [365]

[1] A study of enemy defensive installations on Kiska Island as known 5 July 1943. Intelligence Memorandum nº 6 prepared by G-2, Western Defense Command and Fourth Army. Headquarters Western Defense Command and Fourth Army. Presidio of San Francisco, California. Office of the Assistant Chief of Staff G2.

[2]. Both at NARA (College Park, MD) and in Anchorage, AK.

[3]. The majority of the photographs are held at NARA. Some have been published during the war, distributed by the USAAF and USN to the newspapers.

[4]. Map 'Kiska Island' (a series of target maps, broken into sheets). Second edition 28 July 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

[5]. Given the complexity of copyright issues, none of these can be reproduced here.

[6]. These tend to reflect the effect of the bombing and are not fully indicative, let alone representative of the appearance of the installations at the time of their use.

[7]. Interrogation of Captain Ito, Taisuke, IJN, Tokyo 11 October 1945. Interrogation by Captain J.S. Russell, USN. Interrogation USSBS nº 101, NAV-24. On the Aleutian Campaign, Planning and Operations through November 1942. Headquarters US Strategic Bombing Survey (Pacific) APA 234. MS on file. Australian War Memorial Canberra.—Interrogation of Commander Mukai, Nifumi on the Japanese Occupation of Kiska, the Kiska Garrison, and Operation in the Kuriles. Interrogation NAV nº 22, United States Strategic Bombing Survey nº 99.—*Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. p. 102-105.—Interrogation of Commander Miura, Kintaro on the Aleutian Campaign Seaplane Operations, the Naval Battle of the Komandorski Islands, and the Defense of the Kuriles. Interrogation NAV nº 21, United States Strategic Bombing Survey nº 98. Interrogation of *Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. Pp. 97-101.—Interrogation of Vice Admiral Shigeru Fukudome on the Naval War in the Pacific. Interrogation NAV nº 115, United States Strategic Bombing Survey nº 503. *Interrogation of Japanese Officials*. ONAV P-03-100. Naval Intelligence Division. p. 500-530.

[8]. This analysis can draw on reports of the following dates: 8 July 1942, 13 July 1942, 5 February 1943, 25 February 1943, 3 March 1943, 24 April 1943, 5 May 1943, 1 June 1943, 5 July 1943, 10 July 1943, 12 July 1943, 13 July 1943, 14 July 1943, 19 July 1943, and 4 August 1943. Detailed references are: Bratton, Rufus S (1943) Japanese Forces in the Aleutians. Memorandum for the Chief, Strategy Section, C.P.D. Dated 5 February 1943. MID 370.2 Aleutian Is. NARA RG165 Entry 77 Box 46 Folder 'Alaska Japanese Potentialities.'.—Enemy installations on Kiska Island as known 24 February 1943. Headquarters Western Defense Command and Fourth Army, Office of the Assistant Chief of Staff, G-2, Presidio of San Francisco, California, to Assistant Chief of Staff, G-2, Military Intelligence Service, Washington, DC. Dated 25 February 1943. NARA RG165 Entry 77 Box 46 Folder 6800 Alaska-Western Defense Command.—Photographic Interpretation Report nº 21. North Head and Little Kiska. Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Area, Kodiak, Alaska. Dated 3 March 1943. NARA RG165 Entry 77 Box 50 Folder "Kiska Operation." —[List of changes to enemy installations on Kiska Island for the period February 25 to April 23, 1943]. Kiska. Military Intelligence Service, North American Unit, Pentagon Building, Washington, D.C. NARA RG165 Entry 77 Box 46 Folder 6800 Alaska-Western Defense Command.—Enemy Installations on Kiska Island as known 1 May 1943. Headquarters Western Defense Command and Fourth Army. Presidio of San Francisco, California. Office of the Assistant Chief of Staff G2. Dated 5 May 1943. NARA RG165 Entry 77 Box 50 Folder "Kiska Operation." —Photographic Interpretation Report nº 30. Kiska Island. Photographic Advanced Intelligence Center, North Pacific Area, c/0 F.P.O. 230, San Francisco. Dated 1 June 1943. NARA RG165 Entry 77 Box 50 Folder "Kiska Operation." Enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* —Provisional Estimate Enemy Strength Kiska. R.G. Jacobs, Jr, Executive Officer G-2, to Assistant Chief of Staff, G-3, Western Defense Command, Presidio of San Francisco, California. Serial MD320.2 Japan. Dated 10 July 1945. NARA RG165 Entry 77 Box 3229 Folder "San Francisco." —Designation and Nomenclature of Target Areas, Kiska Island. T.C. Kincaid, CmdrNorthPacific Force to NorthPacificForce A16-3/H1-3, dated 12 July 1943. NARA RG165 Entry 77 Box 51 Folder "Maps for Kiska Operations." — Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*—Photographic Interpretation Report nº 33. Kiska and Segula Islands. Photographic Advanced Intelligence Center, North Pacific Area, c/o F.P.O. 230, San Francisco. Serial SO33/AIC. Dated 14 July 1943. NARA RG165 Entry

77 Box 52 Folder 9135. —O.N.I. Report on Tunnels, Kiska Island, Aleutians. Warren J. Clear, Chief, SF Office MIS to Chief U.S. Branch, Collection Unit, Military Intelligence Service, War Department, Washington D.C. Serial 1990. Dated 19 July 1943. Military Intelligence Service, War Department, San Francisco Office. NARA RG165 Entry 77 Box 34 Folder 1000 'Alaska-Geographic-Strategic'. —Aerial Photo Interpretation Report Kiska Island July 27 to August 4, 1943. J.V. Smythe, 4th AAF PID to Commanding General, Army Air Forces, Washington D.C. Dated 5 August 1943. Field Headquarters Eleventh Air Force, Office of the Assistant Chief of Staff A2, APO 980. NHL File Kiska, NPS-ARO (ex Elmendorf History Office. Folder-Intelligence Reports, Kiska, Various).

9. Such as *Japanese AA Defenses of Kiska*. Intelligence Memorandum nº 163. 1 February 1944. Fort Trotten, New York: AA-2 Section, Headquarters Anti-Aircraft Artillery Command, E.D.C.—George W. Huff (1943), Information on Japanese Aircraft, Kiska Island. By George W. Huff, Crash Intelligence Officer, October 1943. Crash Intelligence Section, Office of Assistant Chief of Staff, Field Headquarters, Eleventh Air Force. APO 980. NASM microfilm IP 1913.

10. Payne, Irving P (1943) *The Enemy on Kiska*. US Naval Intelligence, Section G-2. AC/G-2, Advance Command Post, Hdqtrs. Alaska Defense Command, and Advance Intelligence Center, North Pacific Area. U.S. Confidential.

11. *Japanese anti-aircraft and coastal defense positions.* Photographic Interpretation Unit, Anacostia, D.C. 1 October 1943.—Japanese Artillery Weapons. *CinCPac-CinCPOA Bulletin* 152-45, 1 July 1945. Commander in Chief U.S. Pacific Fleet and Pacific Ocean Areas.—*Japanese anti-aircraft and coastal defense guns*. Photographic Intelligence Report. Air Intelligence Group, U.S. Naval Photographic Intelligence Center, Navy Yard, Washington, D.C.—*Japanese Defense against amphibious operations*. Special Series 29 February 1945. Military Intelligence Division, War Department, Washington.—*Japanese guns antiaircraft & coastal defense.* OPNAV 16-VP103. February 1945. Air Intelligence Group, Division of Naval Intelligence, Office of the Chief of Naval Operations, Navy Department, Washington. D.C.—Beebe, R.E. (1944) *Flakintel Handbook*. 1 August 1944. Anti-aircraft operations intelligence. Headquarters Allied Air Forces APO 925.

12. Bratton, Japanese Forces in the Aleutians, *op. cit.*

13. Bratton, Japanese Forces in the Aleutians, *op. cit.*

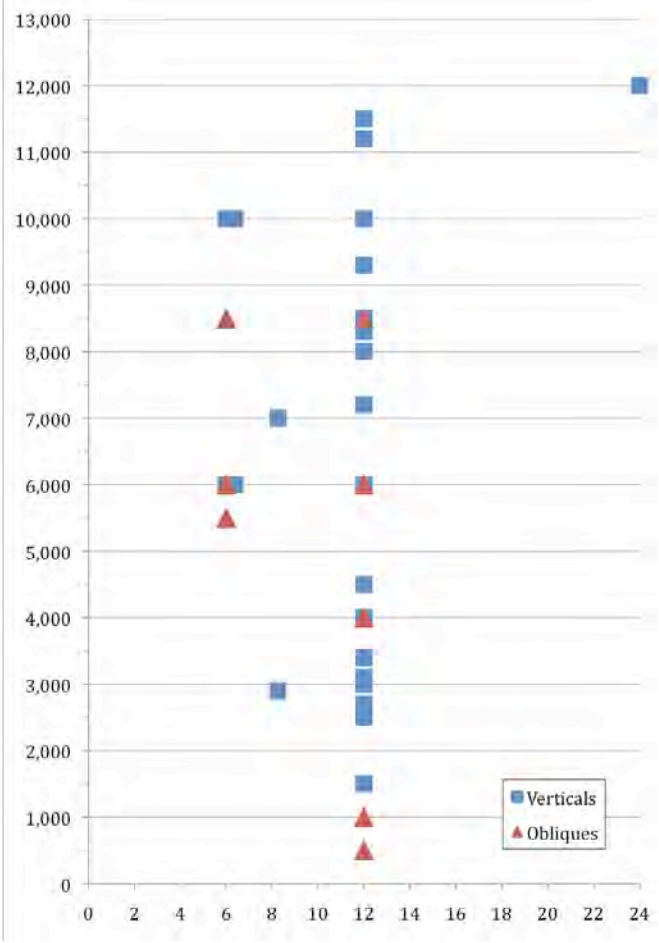
14. While the Japanese made use of dummy gun emplacements and dummy planes in an attempt to fool U.S. intelligence, there is no evidence that they built barracks buildings in order to create the illusion of a larger garrison.

15. Photographic Interpretation Report nº 30, *op. cit.*

16. Photographic data collected during May 1943 by the Eleventh AAF (Photographic Interpretation Report nº 30, *op. cit.):*

Date	Focal length	Altitude (ft)	Type	Nº of frames	Plane
11 May	12"	11,500	Verticals	12	L
	12"	11,500	Verticals	17	N
	6"	6,000	Verticals	13	84
	6"	6,000	Obliques	10	84
	12"	11,200	Verticals	13	C
	12"	6,000	Verticals	9	M
	12"	4,000' 2,500'	Obliques	19	X
13 May	12"	8,000	Verticals	3	V
	12"	8,500	Obliques	4	H
18 May	12"	8,000	Verticals	9	C
	12"	8,500	Verticals	31	H
	12"	8,000	Verticals	22	I
	12"	9,300	Verticals	19	M
	6"	8,500	Obliques	5	C
26 May	6"	6,000	Verticals	12	84
	6"	5,500	Obliques	13	84
	6"	10,000	Verticals	6	85
	24"	12,000	Obliques	14	85

[17]. Judging from the focal length used, with the 12-inch being the most popular irrespective of altitude and noting that the majority of the images were verticals, it is highly likely that the majority of the images were shot by the bombing aircraft rather than by photo-reconnaissance missions specifically flown to gather data. The imprint on the image makes it clear that the image was taken by the camera V2 of aircraft C: The imprint text reads (V2-2017-11PBC)(9-28-42-10:30)(12-3000)KISKA, which resolves to "Camera Vertical 2. Frame 2017, 11th Airforce, patrol bomber C, 28 September 1942, 10:30 Adak Time, 12" focal length, 3,000 feet elevation. Kiska. " Note that the interpretation of PB as patrol bomber is likely to be erroneous and may actually be a code for bomb group and squadron.



Above: Correlation between altitude and choice of focal length of aerial camera lens. Data: Photographic Interpretation Report nº 30, *op. cit.;* Photographic Interpretation Report nº 33, *op. cit.*

On the other hand, where we have specific commentary that photographs were obtained from both verticals and right obliques, we can surmise that this imagery was collected by F-5 Photo Lightnings which served alongside normal P-38 fighters. This tallies with the tail numbers of the aircraft: a/c 84 and a/c 85 took images, a/c 86, a standard P-38, is on record.

[18]. Photographic data collected during June/July 1943 by the Eleventh AAF (Photographic Interpretation Report nº 33, *op. cit)*

Date	Focal length	Altitude (ft)	Type	Nº of frames	Plane
24-Jun	6 3/8"	6,000	Vert.	4	G
25-Jun	12"	7,200	Vert.	9	H
	8 1/4"	7,000	Vert.	7	C
	12"	1,000	Obl.	18	EE
	12"	1,500	Vert.	8	J
	12"	8,300	Vert.	14	J
26-Jun	8 1/4"	2,900	Vert.	19	BB
	12"	3,100	Vert.	5	C
	12"	2,500	Vert.	10	J
	12"	2,700	Vert.	26	P
27-Jun	6 3/8"	10,000	Vert.	11	F
	—	—	Vert.	18	W
	12"	10,000	Vert.	13	JJ
2-Jul	12"	500	Obl.	97	K
	12"	4,000	Vert.	3	DD
	12"	4,500	Vert.	10	A
	12"	3,400	Vert.	16	E
	12"	3,000	Vert.	5	J
28-Jun	12"	3,000	Vert.	8	N
Segula					
2-Jul	12"	500	Obl.	2	K
6-Jul	12"	6,000	Obl.	4	E

Obl.—Obliques; Vert—Verticals.

[19]. Photographic data collected during June/July 1943 by FAW 4 (Photographic Interpretation Report nº 33, *op. cit.*)

Date	Focal length	Altitude (ft)	Type	Nº of frames	Plane
26-Jun	—	—	Obl.	14	S-320
11-Jul	20"	100	Obl.	63	S-328
	20"	100	Obl.	82	S-328
Segula					
11-Jul	20"	2,000	Obl.	5	S-328
12-Jul	—	—	Obl.	48	S-329

Obl.—Obliques; Vert—Verticals.

[20]. The recorded focal length of 20-inch indicates that a Fairchild F-56 camera would have been used, which would have been mounted fixed in the hull of a PBY Catalina. The 20-inch provides a 18.81° x 19.85° view angle, while the F-56 shoots 6 5/8" x 7" negatives (on roll film) (20th Combat Mapping Squadron. Aerial Camera Types K-17, K-18, K-19B, and K-22. <mysite.verizon.net/yenrav/20cms/cameras.htm>).

[21]. Source: Army Air Corps, Army Air Corps, (V967-2017), 16 March 1943 U.S. National Archives, Record Group 80, image 80-CF-7825-69034.

[22]. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

[23]. Photographic Interpretation Report nº 21, *op. cit.*

[24]. Photographic Interpretation Report nº 30, *op. cit.*

[25]. Photographic Interpretation Report nº 33, *op. cit.*

[26]. Aerial Photo Interpretation Report Kiska Island July 27 to August 4, 1943. *op. cit.*

[27]. Map "Kiska Harbor & Vicinity. Sheet 2 of 4. Produced by 29th Engineers Production Plant, Portland, Oregon. Edition of July 1943.

[28]. The topography was based on K-17 (single lens) aerial photography with horizontal control by compiled from U.S. Coast and Geodetic Survey 1873 and 1904, as well as US Navy mapping in

1933 and 1935. Compiled by 29th Engineers, US Army. Produced by 29th Engineers Production Plant, Portland, Oregon. Edition of July 1943.

29. Designation and Nomenclature of Target Areas, Kiska Island. *op. cit.*

30. I am indebted to Dr. Wakako Higuchi (Guam) for her support in these visits and the time and research effort she kindly provided in searching out these images.

31. Interrogation of Commander Nifumi Mukai, *op cit*.

32. Map 'Kiska Island' Sheet nº 26. Second edition 28 July 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

33. Map 'Kiska Island' Sheet nº 26. Second edition 28 July 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

34. Date of photograph used for the data reported was the 18th of June 1942: Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

35. Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska Island, Aleutians, Alaska. The 4.7-inch Battery on North Head, Kiska Island*. (Report Kiska #2) Documentation and Condition Report. October. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

36. Interrogation of Commander Nifumi Mukai, *op cit*.

37. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*—Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

38. US Navy photo supplied to newspapers, dated 27 May 1943. (widely published, for ex. in *Detroit Times* 28 May 1943).

39. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

40. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

41. Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

42. Hackett, Bob, Kingsepp, Sander and Alsleben, Allan (2006) IJN Seaplane Tender *Kamikawa Maru:* Tabular Record of Movement. <www.combinedfleet.com/ Kamikawa%20Maru _t.htm>).—See also: for diary of a person aboard that voyage: Document nº 16. Diary of person unknown probably a member of Kure Nº 5 Special Landing Party. Diary Captured in the Milne Bay Area about 3 September 1942. Allied Land Forces Southwest Pacific Area. GSI/RRL/SMV 00882. Advanced Headquarters, dated 15 September 1942 Australian War Memorial, Canberra, Australia. File AWM 54/253/5/2.

43. Spennemann, Dirk H.R. (1994) Japanese 127mm Dual Purpose Guns and their Emplacements in Micronesia In David Look and Dirk H.R. Spennemann (compilers) *Conservation Management of Historic Metal in Tropical Environments. Background* Note Nº 04. Workbook compiled by David W. Look and Dirk H.R. Spennemann. War in the Pacific National Historical Park, Guam, U.S.A.

44. Look, David W. and Dirk H.R. Spennemann, (1993) *For Future Use: A Management Conservation Plan for the World War II sites in the Republic of the Marshall Islands*. Albury, NSW, Australia, and San Francisco, U.S.A.: The Johnstone Centre of Park, Recreation and Heritage and the U.S. National Park Service Western Regional Office.—Spennemann, Japanese 127mm Dual Purpose Guns... *op. cit.*

45. Sketch outlining the disposition and equipment for the 45 cal. 10th Year Type 12 cm DP gun, Model C. Blueprint issued by the Ordnance Manufacturing Department of the Yokosuka Navy Yard. Dated Yokosuka 9 October 1944. CinCPac-CinCPOA Translation nº B-7598 (item captured on Iwo Jima). Heavy Dual Purpose Gun Emplacements. Special Translation Nº 59. *CinCPac-CinCPOA Bulletin* Nº 97-45, 7 May 1945. Commander in Chief U.S. Pacific Fleet and Pacific Ocean Areas.

46. Payne, 'The Enemy on Kiska' *op. cit.*

47. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

48. Date of photograph: 28 September 1942. NARA 80-CF-7825-34183.

[49]. Not counting what appears to be a search light truck.

[50]. Payne, 'The Enemy on Kiska' *op. cit.*

[51]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[52]. Enemy Installations on Kiska Island as known 1 May 1943, *op. cit.*

[53]. Photographic Interpretation Report nº 33, *op. cit.*

[54]. There is no evidence that the Japanese used pack animals on Kiska.

[55]. Alexander, Joseph H (1993) *Across the Reef: The Marine Assault of Tarawa.* Marines in World War II Commemorative Series. Washington, D.C: U.S. Marine Corps.

[56]. Battery 1 had commenced on 21 April, while battery two had been commenced on 1 April. Lieutenant Isao Murakaki, Commander 111th Construction Battalion, An account of the construction of fortifications at Tarawa, Nauru and Ocean Islands. Dated 31 May 1943. Captured Tarawa 24 November 1943. Translation of Captured Japanese Document. JICPOA Item #5085, dated 5 February 1944. AWM. Page 6.

[57]. *Ibid* Page 7.—The second battery was test fired on 31 May 1943.

[58]. Interrogation Mukai ...*op. cit.*; esp. p. 103.

[59]. Interrogation Mukai ...*op. cit.*; esp. p. 103.

[60]. Interrogation Mukai ...*op. cit.*; esp. p. 103.

[61]. Interrogation Mukai ...*op. cit.*; esp. p. 103.

[62]. Interrogation Mukai ...*op. cit.*; esp. p. 103.

[63]. Interrogation Mukai ...*op. cit.*; esp. p. 103.

[64]. Interrogation Mukai ...*op. cit.*; esp. p. 103.

[65]. Interrogation Mukai ...*op. cit.*; esp. p. 103.

[66]. Interrogation Mukai ...*op. cit.*; esp. p. 103.

[67]. But this could have been an error in the original document.

[68]. The task force comprised of the heavy cruisers USS *Indianapolis* (flag ship) and USS *Louisville*, as well as the light cruisers USS *Nashville,* USS *Honolulu* and USS *St. Louis*, escorted by the destroyers USS *Case,* USS *Reid,* USS *Gridley* and USS *McCall* as well as the mine sweeper USS *Elliot* (Final Report of Action by Main Body Task Force Eight on 7 August 1942. Commander Task Group S.6, United States Pacific Fleet. Intelligence Center Pacific Ocean Areas, dated 26 November 1942. NARA RG165 Entry 77 Box 50 Kiska Operations).

[69]. Alternatively, the fire may have come from Little Kiska, which from the distance can be mistaken for an extension of South Head. The latter would indicate that the six-inch battery was operational at the time. But this is contradicted by an intelligence report which claims that by 25 November 1942 Little Kiska still had no major defenses. (see Bratton, Japanese Forces in the Aleutians, *op. cit.*).

[70]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[71]. Spennemann, Dirk HR. (2007) *The Present and Future Management of the Japanese Guns on Kiska, Aleutians, Alaska. The 6-inch Battery on North Head, Kiska. Documentation and Condition Report. November 2007.* Documentation prepared for the US Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.—Spennemann, The 4.7-inch Battery on North Head... *op. cit.*

[72]. Interrogation Mukai ...*op. cit.*; esp. p. 104.

[73]. Interrogation Mukai ...*op. cit.*; esp. p. 104.

[74]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[75]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[76]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[77]. A study of enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* Pp. 16-17.

78. Description of targets and index of targets, Kiska Island. T.C. Kincaid, CmdrNorthPacific Force to NorthPacificForce A16-3/H1-3, dated 12 July 1943. NARA RG165 Entry 77 Box 51 Folder "Maps for Kiska Operations."

79. Description of targets and index of targets, Kiska Island. *op. cit.*

80. Source: Payne, 'The Enemy on Kiska' *op. cit.*, pp. 13-16.

81. Includes guns located at Mutt and Jeff Coves (on the western side of Kiska).

82. Although 'Upper Camp' is shown as such on the target maps, in all intelligence assessments the Upper Camp area is subsumed under the Main Camp area.

83. As was evidenced by nine circular clearings in a line and two well protected buildings at the end on the line (Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*).

84. Bratton, Japanese Forces in the Aleutians, *op. cit.*

85. List of changes ... for the period Feb 25 to April 23, 1943 *op. cit*.

86. BUAER (1944) Japanese Shrines. *Naval Aviation News* [U.S. Navy] nº 213, 15 March 1944, pp. 1–2.

87. Not counting the buildings of the weather station.

88. Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

89. Bratton, Japanese Forces in the Aleutians, *op. cit.*

90. Bratton, Japanese Forces in the Aleutians, *op. cit.*

91. Of these at least 30 are large storage tents. The rest are buildings and personnel tents.

92. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

93. The report notes 19 new buildings as well as several new buildings and tents on the road leading NW from the main camp, but also comments that nine buildings in the main camp area had been destroyed by bombing and another nine had been damaged (List of changes ... for the period Feb 25 to April 23, 1943 *op. cit.*).

94. List of changes ... for the period Feb 25 to April 23, 1943 *op. cit*.

95. A study of enemy defensive installations on Kiska Island as known 5 July 1943. *op cit.* Pp. 16-17.

96. Description of targets and index of targets, Kiska Island. *op. cit.*

97. Comprised of: 120mm DP, 75mm AA.

98. Comprised of 25mm AA.

99. Comprised of 20mm AA, 13mm (twin mount and single mount).

100. Source: Payne, 'The Enemy on Kiska' *op. cit.*, pp. 13-16.

101. BUAER (1944) Japanese Searchlights. *Naval Aviation News* [U.S. Navy] nº 218, 1 June 1944, pp. 1–4, esp. p.4.

102. Aerial photograph of sortie V940-2017, taken by V13 105.3 11th Air Force. Taken on 16 March 1943. Source: NARA RG 80-CF-7825-69034.

103. Map 'Kiska Island' Sheet nº 26. Second edition 28 July 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

104. Detail of aerial photograph. Date of photograph: 28 September 1942. NARA 80-CF-7825-34183.

105. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 041 frame 014; courtesy Beverly Maloof.

106. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 041 frame 013; courtesy Beverly Maloof.

107. US Navy photo, dated 7 Sept 1943. NARA 80-G-80394.

108. Detail of "Japanese shrines, Main Camp, Kiska, Alaska, Taken by NAS Adak (ADK 1788), 7 Sept. 1943." NARA RG-80-G-80394.

[109]. NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 48 photo no. 16; courtesy Beverly Maloof.

[110]. Japanese Military Buildings. Photographic Intelligence Report. Washington, DC: United States Naval Photographic Intelligence Center, Navy Yard. p. 4.03.

[111]. Japanese Military Buildings. Photographic Intelligence Report. Washington, DC: United States Naval Photographic Intelligence Center, Navy Yard. p. 4.03.

[112]. Japanese Military Buildings. Photographic Intelligence Report. Washington, DC: United States Naval Photographic Intelligence Center, Navy Yard. p. 4.03.

[113]. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

[114]. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

[115]. Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

[116]. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

[117]. Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

[118]. Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

[119]. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

[120]. Photographic Interpretation Report nº 30, *op. cit.*

[121]. Photographic Interpretation Report nº 30, *op. cit.*

[122]. Photographic Interpretation Report nº 33, *op. cit.*

[123]. Detail of aerial photograph of sortie V940-2017, taken by V13 105.3 11th Air Force. Taken on 16 March 1943. Source: NARA RG 80-CF-7825-69034.

[124] The numbers fluctuated due to base build-up and troop dispersal.

[125]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[126]. The Daihatsu are 60ft long.

[127]. Detail of aerial photograph. Date of photograph: 28 September 1942. NARA 80-CF-7825-34183.

[128]. The *Awata Maru* left on 13 June 1942 for Japan: Hackett, Bob and Kingsepp, Sander (2006) IJN Awata Maru: Tabular Record of Movement. www.combinedfleet.com/ Awata_t.htm.

[129]. Interrogation Miura, *op. cit*

[130]. Interrogation Miura, *op. cit.*

[131]. Description of targets and index of targets, Kiska Island. *op. cit.*

[132]. The definition for the building size was: 'very large' 2000 sq. ft and over; 'large' 1200–2000 sq. ft; 'medium 500–1200 sq. ft; 'small' 500 sq ft. and under. (Description of targets and index of targets, Kiska Island. *op. cit.*).

[133]. Source: Army Air Corps, 11PBC. (V2-2017-11PBC). U.S. National Archives, Record Group 80, image 80-CF-7825-34183.

[134]. Aerial photograph taken by V21 105.3 11th Air Force. Taken on 16 February 1943. Source: NARA RG 80-CF-7825-69035.

[135]. Interrogation Ito Taisuke *op. cit.*

[136]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[137]. List of changes ... for the period Feb 25 to April 23, 1943 *op. cit*.

[138]. Enemy Installations on Kiska Island as known 1 May 1943, *op. cit.*

[139]. U.S. National Archives 342-FH-3A29380-75713AC via Luke Ruffato.

[140]. Interrogation Miura *op. cit.*

[141]. Interrogation Mukai op *cit.*

[142]. Spennemann, Dirk HR. (2009) *The Remains of a Japanese Plane at Salmon Lagoon, Kiska Island, Aleutian Chain, Alaska. Identification and Condition Assessment*. Report prepared for the US

National Park Service and the US Fish and Wildlife Service, Alaska. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

143. Source: Japanese material captured on Kiska, the Aleutians. Wreckage of hangar. Kiska Island, Alaska, Photographer: CPU 4, Date 15 Aug. 1943. NARA R-80G-54595.

144. Kessel, Dimitri (1943) Allied troops retake deserted Kiska. *Life Magazine* vol. 15 nº 11, 13 September 1943, pp. 25– 31. Photo on page 26.

145. U.S. Navy Photo, 16 August 1943. NARA RG 80-G-54567.

146. Source: Japanese material captured on Kiska, the Aleutians. Wreckage of hangar. Kiska Island, Alaska, Photographer: CPU 4, Date 15 Aug. 1943. NARA R-80G-54595.

147. Photograph Sam Maloof. Image courtesy Beverly Maloof via U.S. National Park Service, Anchorage.

148. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 048 frame 12; courtesy Beverly Maloof.

149. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 048 frame 25; courtesy Beverly Maloof.

150. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 048 frame 16; courtesy Beverly Maloof.

151. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 048 frame 10; courtesy Beverly Maloof.

152. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 048 frame 11; courtesy Beverly Maloof.

153. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 048 frame 10; courtesy Beverly Maloof.

154. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 048 frame 32; courtesy Beverly Maloof.

155. Painted on navigation aids (Henryuu Sokutei Sen = Drift Measurement Lines). The crew member in the rear seat of a two- or three-seat plane used them to make drift-angle measurements. The lines were painted on the horizontal tails by unit personnel during operational service. Planes did not come from the factory with these lines painted on them.

156. National Archives 342-FH-3A29843-79927AC via Luke Ruffato.

157. National Archives 342-FH-3A29847-A79928AC via Luke Ruffato.

158. Kessel, Dimitri (1943) Allied troops retake deserted Kiska. *Life Magazine* vol. 15 nº 11, 13 September 1943, pp. 25– 31, Image p. 29.

159. Source: Occupation of Kiska, Aleutian Is., by U.S. and Canadian troops, 15-16 Aug. 1943. Wreckage of Japanese Zero planes. Kiska Island, Alaska, Photographer: CPU 4, Date: 16 Aug. 1943. NARA R-80G-54574.

160. Source 'American doughboys rest on the tail section of a Jap plane and consume a little K rations, before getting back to work.' SC 186894. Signal Corps Photo 196/3/43.526, taken by PfC Sanderson. Dated 19 Aug 1943. Source: Mike Furline, NARA.

161. Source: A shelter improvised by soldiers in the first days of the occupation of Kiska in the Aleutians. Tents were slow in being distributed. Canadian troops fashioned it out of wigs surfaces from wrecked Jap planes. Kiska Island, Alaska. Photographer: FAW4, Date: 23 Aug. 1943. Photo FAW 4 #6598. NARA R-80G-80737.

162. Source: Japanese material captured on Kiska, the Aleutians. Three-tiered construction. At the left a section of a Jap Zero plane can be seen. Kiska Island, Alaska, Photographer: CPU 4, Date 16 Aug. 1943. NARA R-80G-54592.

163. National Archives 342-FH-3A29476-25970AC via Luke Ruffato.

164. Source: Allied tens and supplies, Tents and supplies with Jap float type aircraft dolly in foreground (Captured Enemy Equip, Jap), Broad Beach, Kiska, Alaska. Photographer: NAS Adak, Date: 7 Sept. 1943 Photo ADK 1750. NARA R-80G-80356.

165. National Archives NA 342-FH-3A29846-79928AC via Luke Ruffato.

[166]. Kiska Harbor, Rat Islands. Photo Interpretation Section Report nº 40. 6 Jul 1942. Washington, DC: Headquarters Army Air Forces. Directorate of Intelligence Section A-2, Operational Intelligence Division, Photo Interpretation Section.

[167]. A photographic interpretation report, based on photographs taken on 18 June by a low flying PBYs of Patrol Wing 4, describes these dummy planes in more detail (Photographic Interpretation Report, Kiska Island, Aleutian Islands, prepared by Staff, Photographic Interpretation School, Jul 13, 1942. Photographic Interpretation School, Naval Air Station Anacostia, D.C.).

"These 'planes' have a span of approximately 40' and are of two different types, 'biplane' and 'monoplane.' The supposition that these are dummy planes is substantiated by several facts, namely

(a) the very high visibility paint contrasted with identified Kawanishi 94s present, painted in a non-conspicuous war color.
(b) the very conspicuousness of these 'planes' arranged in a neat line on a narrow spit of land. Parked aircraft are usually dispersed, and practically never parked in a straight line presenting such a beautiful target for strafing.
(c) the 'plane's have a very flat appearance on all photographs.
(d) The 'bi-plane-types have practically no engine section forward of the leading edges of wings
(e) There are slight but distinct differences in each 'plane', one from the other of similar type. The dummy planes are probably canvas or similar material laid [*sic]* flat on the beach."

The map accompanying that report shows the location of the dummy planes again set out on the sand spit of Trout Lagoon, with four seaplanes moored off the main camp area of North Head. Later U.S. assessments interpreted these dummy planes differently. They were interpreted as too obvious, and thus, the reasoning went, the Japanese had employed them to divert attention from the area, which was to become a supply dump: BUAER (1944) Dummy Targets. *Naval Aviation News* [U.S. Navy] nº 222, 1 August 1944, pp. 1–5. The latter reasoning seems to be post event and seems to commingle the dummy planes in the first weeks of the occupation with the later beaching of the damaged *Nozima Maru*.

[168]. Source: National Archives 342-FH-3A29358-1176797AC 18-06-42. Via Luke G.A. Ruffato.

[169]. Aerial photograph of sortie V940-2017, taken by V13 105.3 11th Air Force. Taken on 16 March 1943. Source: NARA RG 80-CF-7825-69034.

[170]. Revetments built, guns not yet emplaced.

[171]. Revetments built, guns not yet emplaced.

[172]. Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

[173]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[174]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[175]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[176]. A study of enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* Pp. 16-17.

[177]. Description of targets and index of targets, Kiska Island. *op. cit.*

[178]. Comprised of: 120mm dual-purpose, 75mm AA.

[179]. Consisting of 25mm AA.

[180]. Consisting of 20mm AA, 13mm (twin mount and single mount).

[181]. Payne, 'The Enemy on Kiska' *op. cit.,* pp. 13-16.

[182]. Description of targets and index of targets, Kiska Island. *op. cit.*

[183]. The definition for the building size was: 'very large' 2000 sq. ft and over; 'large' 1200–2000 sq. ft; 'medium 500–1200 sq. ft; 'small' 500 sq ft. and under. (Description of targets and index of targets, Kiska Island. *op. cit.*).

[184]. Map 'Kiska Island' Sheet nº 20. First edition 30 June 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

[185]. Map 'Kiska Island' Sheet nº 20. Second edition 28 Jul 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

[186]. Image analysis by the USAAF: Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*—Image analysis by the USN: Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

[187]. Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

[188]. Labeled objective nº 204 in July 1943.—Photographic Interpretation Kiska Island 13 July 1942... *op. cit.* sketch nº 2.

[189]. Labeled objective nº 228 in July 1943.—By the end of the war these revetments (presumably initially intended for light AA) were empty.—Photographic Interpretation Kiska Island 13 July 1942... *op. cit.* sketch nº 2.

[190]. Labeled objective nº 221 in July 1943.—Photographic Interpretation Kiska Island 13 July 1942... *op. cit.* sketch nº 2.

[191]. Labeled objective nº 203 in July 1943.—Photographic Interpretation Kiska Island 13 July 1942... *op. cit.* sketch nº 2.

[192]. Labeled objective nº 212 in July 1943; only two of these revetments were deemed to hold light AA.—Photographic Interpretation Kiska Island 13 July 1942... *op. cit.* sketch nº 2.

[193]. Interrogation of Commander Nifumi Mukai, *op cit*. p. 103.

[194]. *ibid.*

[195]. Kiska Harbor, Rat Islands. Photo Interpretation Section Report nº 40. 6 July 1942. Washington, DC: Headquarters Army Air Forces. Directorate of Intelligence Section A-2, Operational Intelligence Division, Photo Interpretation Section.

[196]. Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.*

[197]. Photographic Interpretation Kiska Island 13 July 1942... *op. cit.*

[198]. labeled objective nº 203 in July 1943.—Photographic Interpretation Kiska Island 13 July 1942... *op. cit.* sketch nº 2.

[199]. Photographic Interpretation Kiska Island, Aleutian Islands 13 July 1942, *op. cit.* Sketch nº 2.

[200]. Rear Admiral William W. Smith's Task Group 8.6 bombardment group comprised of the cruisers USS *Louisville* (CA-28), *Indianapolis* (CA-35), *Nashville* (CL-43), *Honolulu* (CL-48) and the *St Louis* (CL-49) and the destroyers Elliot (DD-146), Reid (DD-369), *Case* (DD-370), *Gridley* (DD-380) and the *McCall* (DD-400).

[201]. Interrogation of Commander Nifumi Mukai, *op cit*. p. 104.

[202]. Dictionary of American Naval Fighting Ships. USS *Indianapolis* II (CA-35). Washington, D.C.: Office of the Chief of Naval Operations Naval History Division. www.ibiblio.org/hyperwar/USN/ships/dafs/CA/ca35.html.

[203]. Results of the Conference held by the defense planning section. 3rd Special Base Force Secret #131-43. Tarawa, HQ 3rd Special Base Force 16 August 1943. Translation of Captured Japanese Document captured Tarawa 24 November 1943. JICPOA Item #4002. AWM 54 423/4/40.

[204]. A study of enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* p. 9.

[205]. V11, 2J-8/4/43. Aerial Photo Interpretation Report Kiska Island, July 27 to August 4, 1943. Field Headquarters Eleventh Air Force, Office of Assistant Chief of Staff A-2 APO#980. Source: NPS files Kiska NHL (copy states "Elmendorf Historic Office, Folder: Intelligence Reports, Kiska").

[206]. Payne, 'The Enemy on Kiska' *op. cit.* p. 18.

[207]. Spennemann, The 6-inch Battery on North Head... *op. cit.*

[208]. Spennemann, Dirk HR. (2007) *The Present and Future Management of the Japanese Guns on Kiska, Aleutians, Alaska. The 6-inch Battery on Little Kiska. Documentation and Condition Report. November 2007*. Documentation prepared for the US Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[209]. Spennemann, Dirk H.R. (2000) Eight-inch Coastal Defense Guns in Micronesia. *Coast Defense Study Group Journal* 14(2), 40-64.—Spennemann, Dirk H.R. (1992) British Six-inch Guns on Japanese bases in the Marshall Islands: a preliminary report on the use of foreign armament on Japanese coastal defense installations in the Central Pacific. HPO-Report 1992/5. Majuro, Marshall

Islands: Historic Preservation Office.—An exception is the battery of four six-inch guns on Temwen I, Madeloniwmh Harbour, Pohnpei State, Federated States of Micronesia (pers. obs.).

210. Spennemann, The 4.7-inch Battery on North Head... *op. cit.*—See also: BUAER (1945) Jap Coastal Guns. *Naval Aviation News* [U.S. Navy] nº 241, 15 May 1945, pp. 1–7; esp. p. 3.

211. Spennemann, The 4.7-inch Battery on North Head... *op. cit.*

212. Spennemann, British Six-inch Guns... *op. cit.*

213. In the case of the above cited battery of four six-inch guns on Temwen I., the fire control is also offset to the side of the battery, again on to the right of the right-hand gun.

214. After the re-conquest of Kiska, U.S. Intelligence note that "Ammunition on Kiska and Attu was stored in dugouts and in small heavily revetted buildings, usually located very near the AA batteries and defensive positions where it was used. Ready ammunition was found in compartments hollowed from walls of individual AA and CD gun revetments.": BUAER (1944) Jap Supply Dumps. *Naval Aviation News* [U.S. Navy] nº 228, 1 November 1944, pp. 1–5.

215. Aerial photograph of sortie V940-2017, taken by V13 105.3 11th Air Force. Taken on 16 March 1943. Source: NARA RG 80-CF-7825-69034.

216. Aerial photograph of sortie V940-2017, taken by V13 105.3 11th Air Force. Taken on 16 March 1943. Source: NARA RG 80-CF-7825-69034.

217. Aerial photograph of sortie V940-2017, taken by V13 105.3 11th Air Force. Taken on 16 March 1943. Source: NARA RG 80-CF-7825-69034.

218. OPNAV (1945) *Japanese guns antiaircraft & coastal defense.* OPNAV 16-VP103. February 1945. Air Intelligence Group, Division of Naval Intelligence, Office of the Chief of Naval Operations, Navy Department.

219. McKillop, Jack (1955-59) *Combat Chronology of the US Army Air Forces*. Various data files ftp.rutgers.edu in directory pub/wwii/usaf.

220. Aerial photograph taken by V21 105.3 11th Air Force, Frame V808-2017. Taken on 16 March 1943. Source: NARA RG 80-CF-7825-69034.

221. Photo by NAS Adak. Photo number ADK1662. NARA RG 80-G-80268.

222. Payne, 'The Enemy on Kiska' *op. cit.*

223. Photo by NAS Adak. Photo number ADK1658. NARA RG 80-G-80264.

224. Interrogation Mukai ...*op. cit.*; esp. p. 103.

225. Interrogation Mukai ...*op. cit.*; esp. p. 103.

226. Aerial photograph taken by V28 105.3 11th Air Force. Taken on 13 February 1943. Source: NARA RG 80-CF-7825-17694.

227. Lieutenant Isao Murakaki, Commander 111th Construction Battalion, An account of the construction of fortifications at Tarawa, Nauru and Ocean Islands. Dated 31 May 1943. Captured Tarawa 24 November 1943. Translation of Captured Japanese Document. JICPOA Item #5085, dated 5 February 1944. AWM. Page 2.

228. *Ibid* p. 6.

229. A study of enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* p. 9.

230. Aerial photograph taken by V21 105.3 11th Air Force. Taken on 16 March 1943. Source: NARA RG 80-CF-7825-69034C.

231. Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, *op. cit.*

232 Aerial photograph V940-2017 taken by V13-105.3-11AF on 16 March 1943. Source: NARA RG 80-CF-7825-69034E.

233 Aerial photograph taken by V21 105.3 11th Air Force. Taken on 16 March 1943. Source: NARA RG 80-CF-7825-69034C.

234 Aerial photograph V940-2017 taken by V13-105.3-11AF on 16 March 1943. Source: NARA RG 80-CF-7825-69034E.

235. Range finder position for 75-mm anti-aircraft gun on N. Head, Taken by NAS Adak (ADK 1747), 7 Sept. 1943.NARA RG-80-G-80353.

[236]. Interrogation Omori *op. cit.*

[237]. Initially to be sites at Sarana Bay and then at Holtz Bay, given that the latter was a better location for both weather and supply considerations (Interrogation Ito Taisuke*, op. cit.*).

[238]. Interrogation Ito Taisuke*, op. cit.*

[239]. Bōei Kenshū jo Senshishitsu (1969) 北東方面海軍作戦 [*Hokutō hōmen kaigun sakusen [*Naval Operations in the Northeast Area] 防衛庁防衛研修所戦史室 [*Bōeichō Bōei Kenshū jo Senshishitsu cho /*Military History Office, Defense College, National Defense Agency]. Tōkyō: Asagumo Shinbunsha. Page 353.

[240]. Interrogation Ito Taisuke*, op. cit*

[241]. BUAER *(1943)* Naval Air Reconnaissance Paves way for Allied Attack Strategy. *BUAER Newsletter* [U.S. Navy] 15 December 1943, pp. 2-3.

[242]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[243]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[244]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[245]. United States Strategic Bombing Survey (1947) United States Strategic Bombing Survey, *The Seventh and Eleventh Air Forces in the war against Japan.* Washington: Naval Analysis Section, United States Strategic Bombing Survey. p39.—The bottom image is misoriented in the original publication. For the purposes of this report that image was rotated 180º to bring it in line with the other three.

[246]. Cargo vessel, 6577 tons. Sunk by aircraft at 53º26N 177º52E (Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 37. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/>).

[247]. Parts of the 302nd and 303rd Independent Engineer Battalions.

[248]. Report, *The Enemy on Kiska*, pp. 32.

[249]. Bōei Kenshū jo Senshishitsu, Hokutō hōmen kaigun *op. cit.* Page 353. The image cannot be reproduced here for copyright reasons.

[250]. "A train of bombs drops from United States Army Air forces plane on territory in the Aleutians held by the Japanese. Our fighting forces harass the enemy at this important outpost daily." United States Library of Congress's Prints and Photographs division, digital ID fsa.8e00982 (hdl.loc.gov/loc.pnp/fsa.8e00982).

[251]. Bōei Kenshū jo Senshishitsu *op. cit.*

[252]. "Raids on Kiska," *Newsweek*, 5 Apr 1943.

[253]. List of changes ... for the period Feb 25 to April 23, 1943 *op. cit*.

[254]. Enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.*

[255]. Despite this, road construction continued. Photographic Interpretation Report nº 33, *op. cit.*

[256]. Francillon, R.J. (1979) *Japanese Aircraft of the Pacific War*. Annapolis, Maryland: Naval Institute Press. p. 271.—Spennemann, Dirk H.R. (1992) The remains of an Aichi D3A "Val" Dive bomber on Laura Beach, Majuro Atoll, Marshall Islands. HPO-Report 1992/16. Majuro Atoll, Republic of the Marshall Islands: Historic Preservation Office.—Spennemann, Dirk H.R. (1992) The remains of an Aichi D3A "Val" Dive bomber on Mile Island, Mile Atoll, Marshall Islands. HPO-Report 1992/17. Majuro Atoll, Republic of the Marshall Islands: Historic Preservation Office.

[257]. Detail of aerial photograph shot by 11th AAF 105.3 V 2017. Alt. 2400'; F. L. 12". Date of photograph: 3 March 1943. NARA 80-CF-7825-69006.

[258]. Detail of aerial photograph shot by 11th AAF 105.3 V 2017. Alt. 2400'; F. L. 12". Date of photograph: 3 March 1943. NARA 80-CF-7825-69006

[259]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 4x5 negative 016; courtesy Beverly Maloof.

[260]. Hackett, Bob and Kingsepp, Sander (2006) IJN Seaplane/Midget Submarine Carrier *Chiyoda*: Tabular Record of Movement. www.combinedfleet.com/ Chiyoda_t.htm.

[261]. Hackett Bob and Kingsepp, Sander (2006) Sensuikan! Midget Submarines Based at Kiska, Aleutians1942-1943. www.combinedfleet.com/Kiska.htm.

[262]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[263]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[264]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[265]. Enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* Pp. 16-17.

[266]. Description of targets and index of targets, Kiska Island. *op. cit.*

[267]. Comprised of two 3-inch guns taken from merchant ships

[268]. Comprised of 20mm AA, 13mm (twin mount and single mount).

[269]. Source: Payne, 'The Enemy on Kiska' *op. cit.* Pp. 13-16.

[270]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[271]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[272]. Payne, 'The Enemy on Kiska' *op. cit.* p. 34.

[273]. BUAER (1944) Jap Island Installations. *Naval Aviation News* [U.S. Navy] nº 214, 1 April 1944, pp. 17-26, esp. p. 24.

[274]. Map 'Kiska Island' Sheet nº 26. Second edition 28 Jul 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

[275]. Note the inconsistency between the target map and the official identification list (Designation and Nomenclature of Target Areas, Kiska Island. *op. cit.*).

[276]. Photographic Interpretation Report nº 33, *op. cit.*

[277]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll048 frame 003; courtesy Beverly Maloof.

[278]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll048 frame 004; courtesy Beverly Maloof.

[279]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll048 frame 001; courtesy Beverly Maloof.

[280]. "Japanese equipment, Kiska I., Alaska, 76-mm Naval gun, Captured Enemy Equipment." Taken by NAS Adak (ADAK 1664), 12 Sept. 1943. NARA RG-80-G-80270.

[281]. Captured Japanese guns on Kiska I., Alaska, 25-mm anti-aircraft gun North of Trout Lagoon, Taken by NAS Adak (ADK 1669), 12 Sept. 1943. NARA RG-80-G-80275

[282]. Description of targets and index of targets, Kiska Island. *op. cit.*

[283]. The definition for the building size was: 'very large' 2000 sq. ft and over; 'large' 1200–2000 sq. ft; 'medium 500–1200 sq. ft; 'small' 500 sq ft. and under. (Description of targets and index of targets, Kiska Island. *op. cit.*).

[284]. Source: Army Air Corps, Army Air Corps, (V967-2017), 16 March 1943 U.S. National Archives, Record Group 80, image 80-CF-7825-69034.

[285]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll042 frame 0013; courtesy Beverly Maloof.

[286]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll048 frame 005; courtesy Beverly Maloof.

[287]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll048 frame 006; courtesy Beverly Maloof.

[288]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[289]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[290]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[291]. Enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* Pp. 16-17.

[292]. Description of targets and index of targets, Kiska Island. *op. cit.*

[293]. Comprised of: 120mm DP, 75mm AA.

[294]. Comprised of 20mm AA, 13mm (twin mount and single mount).

[295]. Source: Payne, 'The Enemy on Kiska' *op. cit.* Pp. 13-16.

[296]. Description of targets and index of targets, Kiska Island. *op. cit.*

[297]. The definition for the building size was: 'very large' 2000 sq. ft and over; 'large' 1200–2000 sq. ft; 'medium 500–1200 sq. ft; 'small' 500 sq ft. and under. (Description of targets and index of targets, Kiska Island. *op. cit.*).

[298]. Map 'Kiska Island' Sheet nº 26 and Sheet 27. Second edition 28 Jul 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

[299]. Original caption "Japanese shrine on South Head overlooking Kiska Harbor. Kiska, AK, 8/24/1943. Signal Corps Photo #196-3-43-646 (Pt. Sarver). Orig. Neg. received from Hdqrs., Alaskan Defense Command, Office of the Signal Corps. Oct. 1943. Released by ... Nov. 18, 1943, 4x5 orig. neg." NARA RG-111-SC-182173.

[300]. Original caption ""An American soldier visits a small Japanese religious shrine overlooking Kiska Harbor, Kiska" Signal Corps Photo from "Yank" Kiska Invasion., AK, Sept 1943. NARA RG-111-SC-325835.

[301]. List of changes ... for the period Feb 25 to April 23, 1943 *op. cit*.

[302]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[303]. Bratton, Japanese Forces in the Aleutians, *op. cit.*

[304]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[305]. The additional four buildings are tents.

[306]. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

[307]. Photographic Interpretation Report nº 21, *op. cit.*

[308]. Enemy Installations on Kiska Island as known 1 May 1943, *op. cit.*

[309]. Enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* Pp. 16-17.

[310]. Description of targets and index of targets, Kiska Island. *op. cit.*

[311]. Comprised of 20mm AA, 13mm (twin mount and single mount).

[312]. Source: Payne, 'The Enemy on Kiska' *op. cit.* Pp. 13-16.

[313]. Description of targets and index of targets, Kiska Island. *op. cit.*

[314]. The definition for the building size was: 'very large' 2000 sq. ft and over; 'large' 1200–2000 sq. ft; 'medium 500–1200 sq. ft; 'small' 500 sq ft. and under. (Description of targets and index of targets, Kiska Island. *op. cit.*).

[315]. "Oblique aerial view of Little Kiska Island, Alaska. Close up of former Japanese installations showing revetments and excellent camouflage, Little Kiska Island. Sortie FAW 346-4, Alt. 300', F.L. 8.25". Taken by Fleet Air Wing Four (FAW4), Cameraman, PhoM1/c D.R. Terry, 21 Aug. 1943. NARA RG-80-CF-7825-80517-4 and also in RG-80-7825-80517-4.

[316]. Map 'Kiska Island' Sheet nº 29. Second edition 28 July 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

[317]. Oblique aerial view of Little Kiska Image by Fleet Air Wing Four (FAW4), sortie 346-5 Alt. 300', F.L. 8.25. Cameraman, PhoM1/c D.R. Terry, 21 Aug. 1943. NARA RG 80-CF-164-80517.

[318]. "Oblique aerial view of Little Kiska Island, Alaska. Close up of former Japanese installations showing revetments and excellent camouflage, Little Kiska Island. Sortie FAW 4-5346, Alt. 300',

F.L. 8.25". Taken by Fleet Air Wing Four (FAW4), Cameraman, PhoM1/c D.R. Terry, 21 Aug. 1943. NARA RG-80-CF-7825-80517-4 and also in RG-80-7825-80517-4.

319. Enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* p. 12.

320. Enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* p. 12.

321. Kiska Occupation, Kiska Island, Cameraman R.C. Wagner, Aug. 24, 1943. NARA RG-80-CF-164-53139.

322. pers. comm. Uzami Toshiharu March 2010.

323. Map 'Kiska Island' Composite of Sheets nº 23, 24, 35 and 36. Second edition 28 Jul 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

324. Map 'Kiska Island' Section of sheets nº 24. Second edition 28 Jul 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force.

325. Photographic Interpretation Report nº 33, *op. cit.*

326. Bratton, Japanese Forces in the Aleutians, *op. cit.*

327. Bratton, Japanese Forces in the Aleutians, *op. cit.*

328. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

329. List of changes ... for the period Feb 25 to April 23, 1943 *op. cit*.

330. Enemy Installations on Kiska Island as known 1 May 1943, *op. cit.*

331. Enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.*Pp. 16-17.

332. Description of targets and index of targets, Kiska Island. *op. cit.*

333. Comprised of two 3-inch guns taken from the Borneo Maru.

334. Comprised of: 120mm DP, 75mm AA.

335. Comprised of 20mm AA, 13mm (twin mount and single mount).

336. Source: Payne, 'The Enemy on Kiska' *op. cit.* Pp. 13-16.

337. Description of targets and index of targets, Kiska Island. *op. cit.*

338. The definition for the building size was: 'very large' 2000 sq. ft and over; 'large' 1200–2000 sq. ft; 'medium 500–1200 sq. ft; 'small' 500 sq ft. and under. (Description of targets and index of targets, Kiska Island. *op. cit.*).

339. Photographic Interpretation Report nº 33, *op. cit.*

340. Bratton, Japanese Forces in the Aleutians, *op. cit.*

341. Bratton, Japanese Forces in the Aleutians, *op. cit.*

342. Enemy installations on Kiska Island as known 24 February 1943, *op. cit.*

343. Enemy defensive installations on Kiska Island as known 5 July 1943, *op. cit.* Pp. 16-17.

344. Description of targets and index of targets, Kiska Island. *op. cit.*

345. Comprised of: 120mm DP, 75mm AA.

346. Comprised of 20mm AA, 13mm (twin mount and single mount).

347. Source: Payne, 'The Enemy on Kiska' *op. cit.* Pp. 13-16.

348. Description of targets and index of targets, Kiska Island. *op. cit.*

349. The description below is a compilation of material from the following sources: Francillon, 'Japanese Aircraft of the Pacific War' *op. cit.* 426-428.—Nohara, S. (1983) A6M Zero in action. *Aircraft No.59*. Carrollton, Texas: Squadron/signal publications.—Yasuho Izawa (1989) Imperial Japanese Navy Float Plane Fighter Units. Japanese Navy Fighter part 1. A5M, A6M, AJM. Aero Military Collection 2. Tokyo. (2005).

350. Francillon, 'Japanese Aircraft of the Pacific War' *op. cit.*, p. 317.

[351]. The 8th of December 1941 Japanese date.

[352]. Nakajima 13 to Nakajima 826.—Notes on the Production Rate of Japanese Float Fighter Rufe Type Zero Mark 1 and Type 2. JICPOA Bulletin 51-43 16 November 1943. Joint Intelligence Center Pacific Ocean Areas, Commandant Navy #128, San Francisco, CA.

[353]. Both the pictorial evidence, as well as statements by Japanese at the end of the war (comment by a Japanese prisoner of war: Payne, Enemy on Kiska, *op cit.* p. 93) indicate that aircraft arrived on seaplane tenders and ferry vessels in a *completely assembled* and ready to fly condition aboard the two seaplane transports. Not all unloading went without problems, however. A Japanese diarist noted for 21 June 1942 that "*Kimikawa Maru's* plane dropped [by the *Kamikawa Maru*] and sunk" at Attu Harbor, referring to a plane that hours earlier had been rescued from being ditched at sea by the *Kamikawa Maru* (Document nº 16. Diary of person unknown probably a member of Kure Nº 5 Special Landing Party. Diary Captured in the Milne Bay Area about 3 September 1942. Allied Land Forces Southwest Pacific Area. GSI/RRL/SMV 00882. Advanced Headquarters, dated 15 September 1942 Australian War Memorial, Canberra, Australia. File AWM 54/253/5/2).—It appears that US intelligence misinterpreted the supply situation based on crated spare parts, such as an engine that had been encountered on Attu. The Japanese mode of transporting the aircraft on deck without protection must have exerted some toll on the mechanics of the plane (even though they were designed as sea planes). The replenishment transport during winter also had to contend with sea spray freezing on the metal surfaces (Maru Magazine (1979) Imperial Japanese Navy Seaplane Tenders, *Maru Special* vol. 25, March 1979. Tōkyō: Maru Magazine. P. 69).—The Nakajima A6M2-N 'Rufe' were delivered in the Nakajima factory finish, a light grey-green finish over a red primer, with engine cowlings painted black (Imperial Japanese Navy Seaplane Tenders *op. cit* p. 66*).* The fabric-covered control surfaces were painted with a lighter grey-green. The same seems to have held true for the Watanabe E13A1 (Imperial Japanese Navy Seaplane Tenders, *op. cot.*, p. 69). In the field, the aircraft were re-painted with a dark-green paint, which on the elevators appears as grey-green.

[354]. Izawa, Yashuo (1986) Fighting floatplanes of the Imperial Japanese Navy. *Air Enthusiast* 31, p. pp7-22; esp. p. 9.

[355]. Compiled for various data cited in the text.

[356]. *Japanese Tanks and Tank Tactics*. Military Intelligence Service, Special Series No. 26, November 15, 1944; Washington, DC: War Department.

[357]. Payne, 'The Enemy on Kiska' *op. cit.*

[358]. The tanks were removed for evaluation by U.S. technical personnel: Morriss, Mack and Stein, Ralph (1944) At Aberdeen's Ordnance Research Center, inquisitive experts finds what makes an Axis vehicle tick, and their tests produce facts worth remembering. *Yank* vol. 2 (31), January 21, 1944. Unpaginated.

[359]. Payne, 'The Enemy on Kiska' *op. cit.* p. 35.

[360]. Original Caption reads: "That the Japanese meant to defend Kiska against an attack from the sea is proved by this tank sunk into the earth for use as a pill box. "15 Oct. 1943. Signal Corps Photo #196-3-43-1195 (Pt. Sarver). Orig. Neg. received from Hdqrs., Alaskan Defense Command, Office of the Signal Corps. Oct. 1943. Released by Nov. 18, 1943, 4x5 orig. neg. NARA RG-111-SC-186955.

[361]. Original Caption reads: "Japanese light tank abandoned by the Japanese when they fled from Kiska, AK, 9/6/1943." Signal Corps Photo #196-3-43-747 (Pt. Sarver). Orig. Neg. received from Hdqrs., Alaskan Defense Command, Office of the Signal Corps. Oct. 1943. Released by Nov. 18, 1943, 4x5 orig. neg. NARA RG-111-SC-182191.

[362]. Date of photograph: 28 September 1942. NARA 80-CF-7825-34183.

[363]. Photograph Cameraman R.C. Wagner, Aug. 24, 1943.—NAARA RG-80-CF-164-53137.

[364]. BUAER (1944) Japanese Searchlights. *Naval Aviation News* [U.S. Navy] nº 218, 1 June 1944, pp. 1–4, esp. p. 2.

[365]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll048 frame 017; courtesy Beverly Maloof.

5. U.S. and Canadian Development

As mentioned in chapter 3, U.S. strategists had drawn up a range of plans for the future of Kiska once the island was secured following the amphibious assault. Above all, the island had to be denied to the Japanese. A garrison of U.S. Army troops would ensure that Kiska remained in U.S. hands.

When we consider the U.S. base development on Kiska, we need to keep in mind that at the time of the Japanese withdrawal, the USAAF maintained a fully operational airbase at Amchitka, and that the development of an airfield on Attu was well under way, with an additional base planned for Shemya. Thus there was no need to develop Kiska into a fully fledged air base as well. Rather, it would suffice to complete the Japanese airfield on North Head, which could serve as an alternate and emergency strip in case of inclement weather.

Amchitka, however, had no natural harbor that was suitable for use by the U.S.N. Kiska Harbor, on the other hand, seemed to fulfill this requirement. Like the Japanese, the U.S. Navy assumed that Kiska Harbor was a protected environment suitable for large-scale seaplane operations. Also, Kiska had the potential to be developed into a major staging base for any future military operations down the Aleutian Chain—being a good day's sail closer to Japan than Adak, yet unlike Attu or Shemya, without being exposed to possible air attacks originating from the Japanese home bases such as Paramushiro.

Therefore the development of the U.S. and Canadian presence on Kiska had to satisfy both the need for medium- to long-term garrisoning and to allow the island to serve as a staging post for future action. This required substantial infrastructure. As it turned out, the near-harbor parts of the island are very hilly and flat(tish) areas are few and far between. The geography of the island simply does not lend itself to large-scale base-development as it did, for example, on Adak.

In addition, with the Japanese threat removed from the Aleutians, the two-pronged strategy at defeating Japan—a drive through the Central Pacific to support a long-range air war against the Japanese homeland and its industrial capacity, and the drive through New Guinea, Indonesia and the Philippines, thus cutting off Japan from many of the raw materials needed for its war machine.

Like the Japanese before them (IJA vs. IJN), the U.S. and Canadian occupation forces encamped themselves in different areas. Unlike the Japanese, however, all U.S. and Canadian facilities were clustered around Kiska Harbor (Fig. 179) with only a token presence at Gertrude Cove.

By the time the U.S. Army garrison and airfield on Kiska were completely developed, a total of 2,161 structures had been erected, ranging from piers and RADAR installations, to cinemas, machine shops, barracks and latrines. All of these are enumerated on as-built maps compiled in November 1944.[1]

Spennemann, Dirk HR. (2010) *The Cultural Landscape of the World War II Battlefield of Kiska, Aleutian Islands. Findings of a Cultural Heritage Survey, carried out in June 2009*. Albury, NSW: Institute for Land, Water and Society, Charles Sturt University.

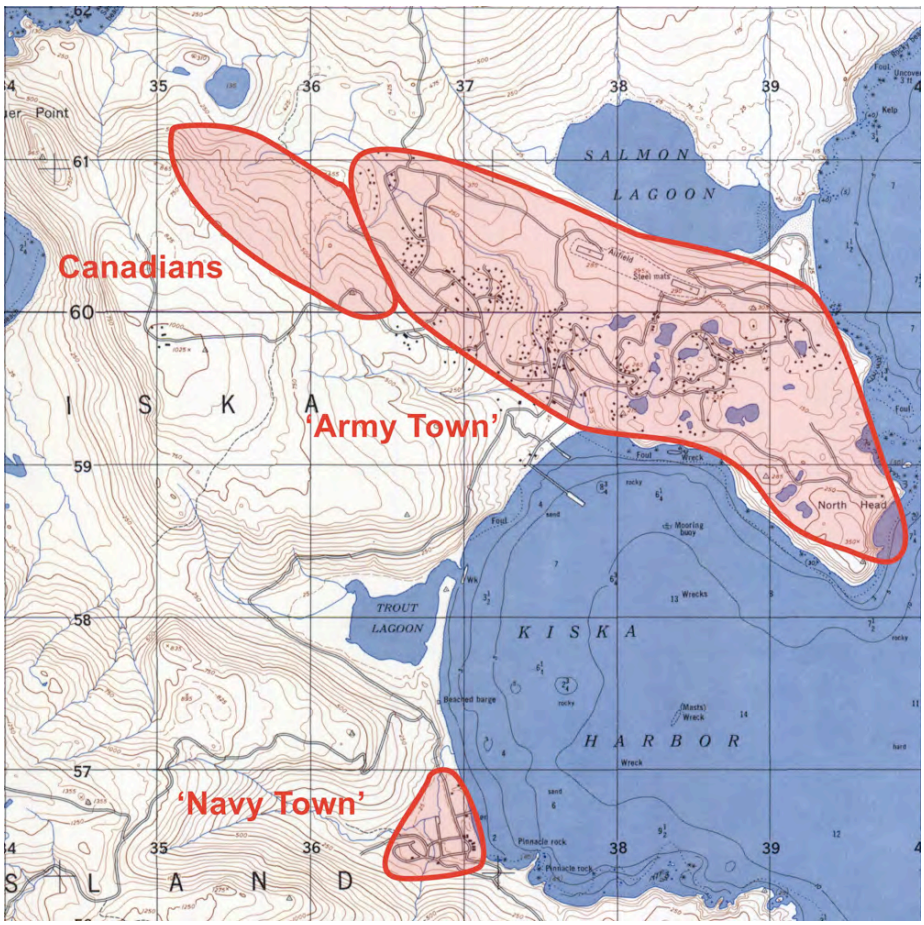


Fig. 179. The broad spatial patterning of Allied occupation of Kiska at the height of development.[2]

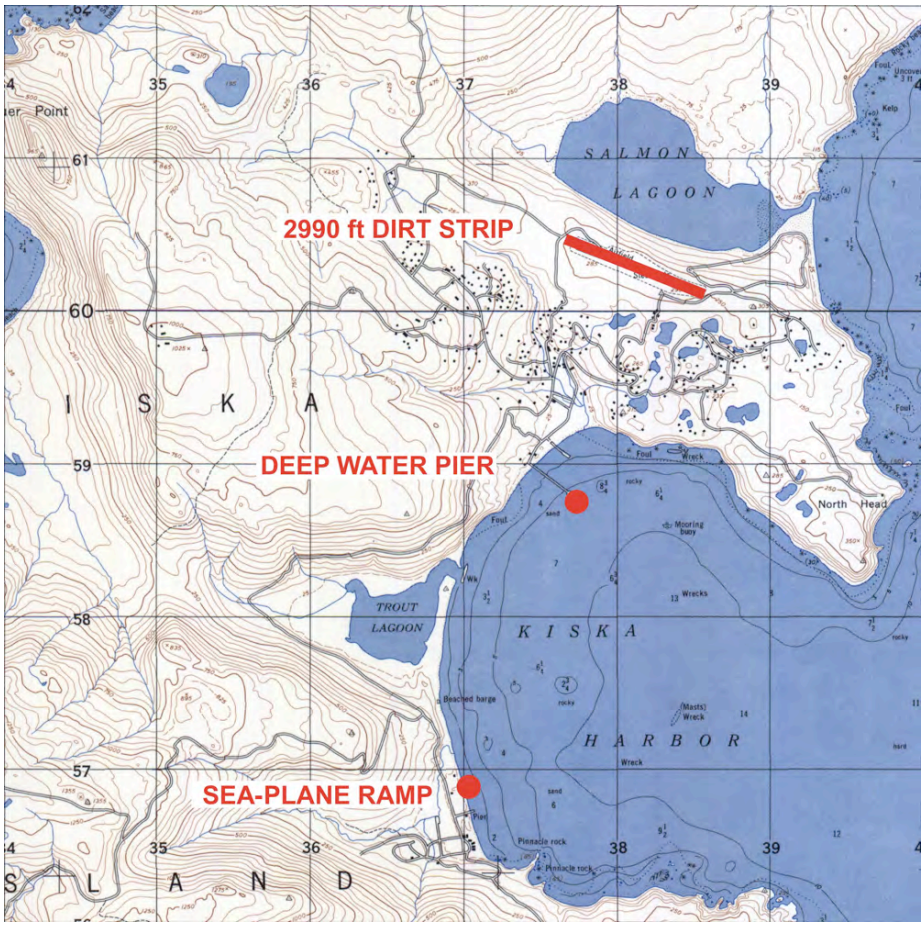


Fig. 180. Key installations of the Allied occupation of Kiska.[3]

U.S. Infrastructure

As with all other base developments executed by the U.S. forces, the primary objective was to establish as rapidly as possible the infrastructure required for the seamless functioning of the base. While the troops could bivouac in standard tents as well as makeshift facilities for a few days (Fig. 205), an orderly operation required well-established communications systems (telephones), power, and a supply infrastructure that functioned reliably regardless of weather conditions (piers, roads). A report by the 38th Navy Construction Battalion ('Seabees') noted that for the first week after landing, construction was carried out 24 hours a day, working under floodlights at night.[4] The infrastructure the Construction Battalion built comprised:

a) a road network suitable of handling the heavier U.S. trucks
b) a telephone system
c) a power system
d) a pier and loading dock facility

Road Network

The Japanese road network has already been commented on (p. 182). Upon withdrawal, the network was left intact. Even though part of the facilities, mainly the caves and personnel areas had been booby-trapped, the scourge of modern warfare, improvised explosive devices (IED) placed at roadsides, had not been invented, and only a few standard landmines seem to have been deployed. It can be speculated that the Japanese were not certain whether the evacuation would succeed as planned or whether the US would attack before that could be accomplished. As a result any mining of the roads, which were necessary to maintain the operation of the Kiska garrison until evacuation, could not be entertained by the Japanese without threatening the safety of their own troops. This effectively handed the landing U.S. forces an operational road network. The U.S. forces essentially merely resurfaced the existing Japanese road network and extended it. However, as the report by the 38th Navy Construction Battalion noted:

> "At Kiska the Japs had provided a temporary solution. Working laboriously for a year with hand picks, hand shovels and light trucks, they had built about twenty-five miles of roads leading from the beach to their gun emplacements, supply dumps, air strip and living quarters. This Jap work cut out many days off of the occupation schedule for all branches of the services. But the Jap roads were not built for American rolling stock. They were thin, one-way strips of rock laid atop the tundra, and these strips simply disappeared into the mud when our heavy machines rolled over them."[5]

While this apparent low quality of road construction led to disparaging comments by some observers, such as "...we were able to compare ourselves with the Japs as war workmen [and] the comparison left us contemptuous of our enemies,"[6] an intelligence assessment warned not to jump to conclusions, as the seemingly low quality of roads was very well suited for the lighter trucks that were being used by the Japanese.[7] The heavier trucks used by the U.S. forces required substantially more work on the construction of serviceable roads.

The report by the 38th Navy Construction Battalion noted:

> "[t]he major landing problem on all of the Aleutian Islands is tundra. This watery mat of grass and mud lies six to thirty inches deep on top of sand and volcanic rock. No rubber-tired truck can move in it. Even a bulldozer will bury itself in it if it doesn't first cut the tundra down to the sand...We have two ways of handling tundra. The best way is to blade it off completely, run ditches, then add gravel to the sand

and we have a permanent road which holds up even under winter snows...The quicker way is to spread a layer of rock on top of the tundra and let the traffic mash the rock into the wiry mass."[8]

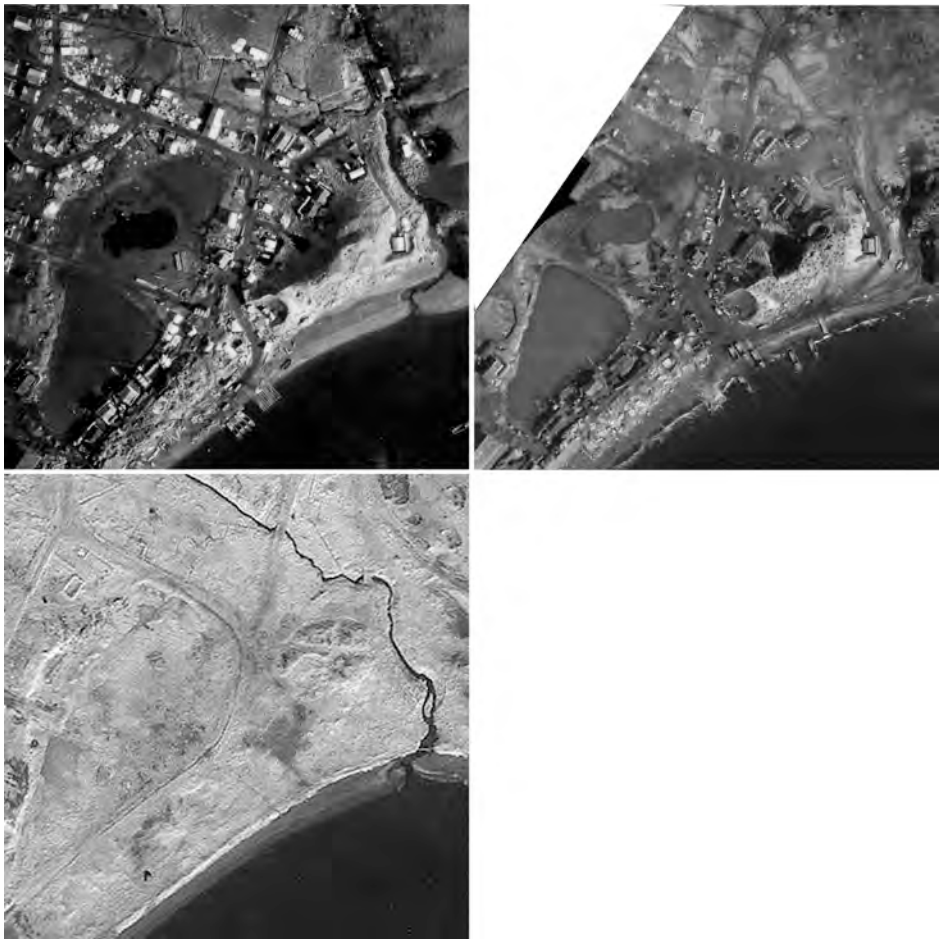


Fig. 181. Appearance of the 'hill' at Main camp in September 1942 (top left), March 1943 (top right) and present day.[9]

Fig. 182. Road works and trenching in the early days of occupation.[10]

The road material required was quarried from a small hill near the beach at Main Camp, which had already served as a quarry to the Japanese efforts. While the hill had been quarried to some degree by the Japanese forces, it was still recognizable by March 1943. The U.S. quarrying removed the entire hill. All that remains today are small piles of crushed rock ready for use.

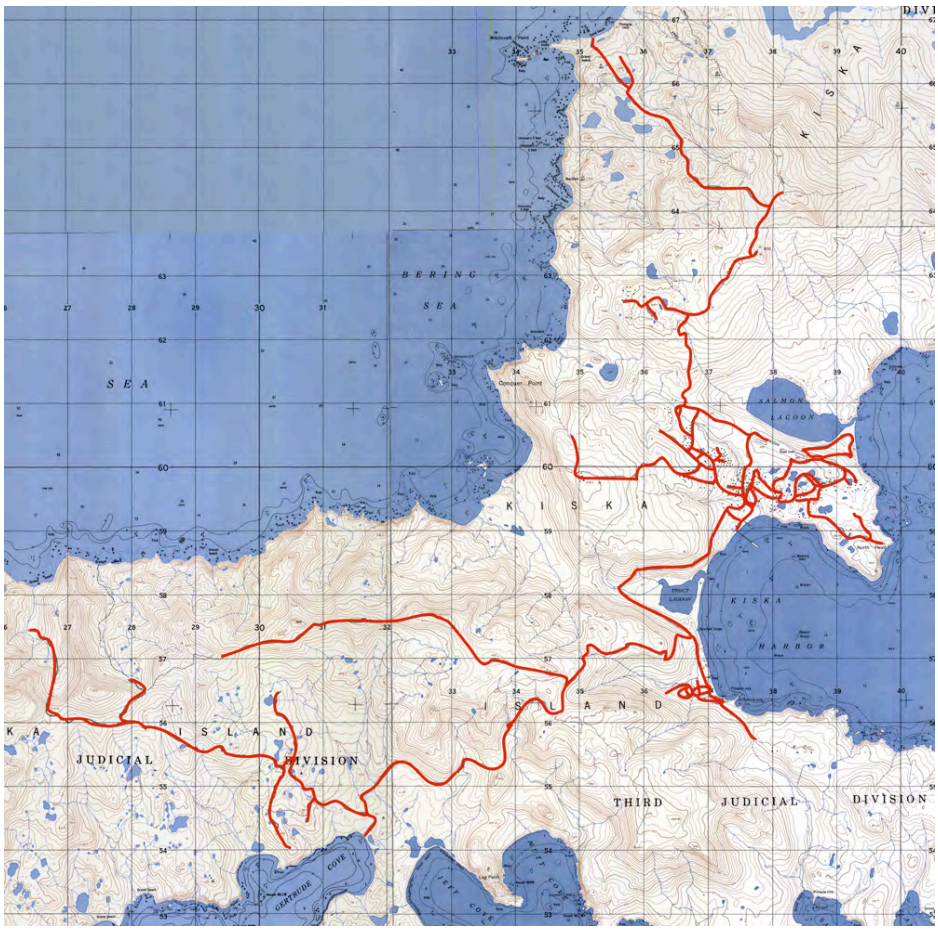


Fig. 183. The U.S. road network on Kiska at the height of development.[11]

Fig. 184. The U.S. power supply on Kiska at the height of development.[12]

Fig. 185. Stock pile of fuel in 55 gallon drums.[13]

Fig. 186. U.S. troops stringing Telephone Lines.[14]

Fig. 187. U.S. troops stringing additional Telephone Lines.[15]

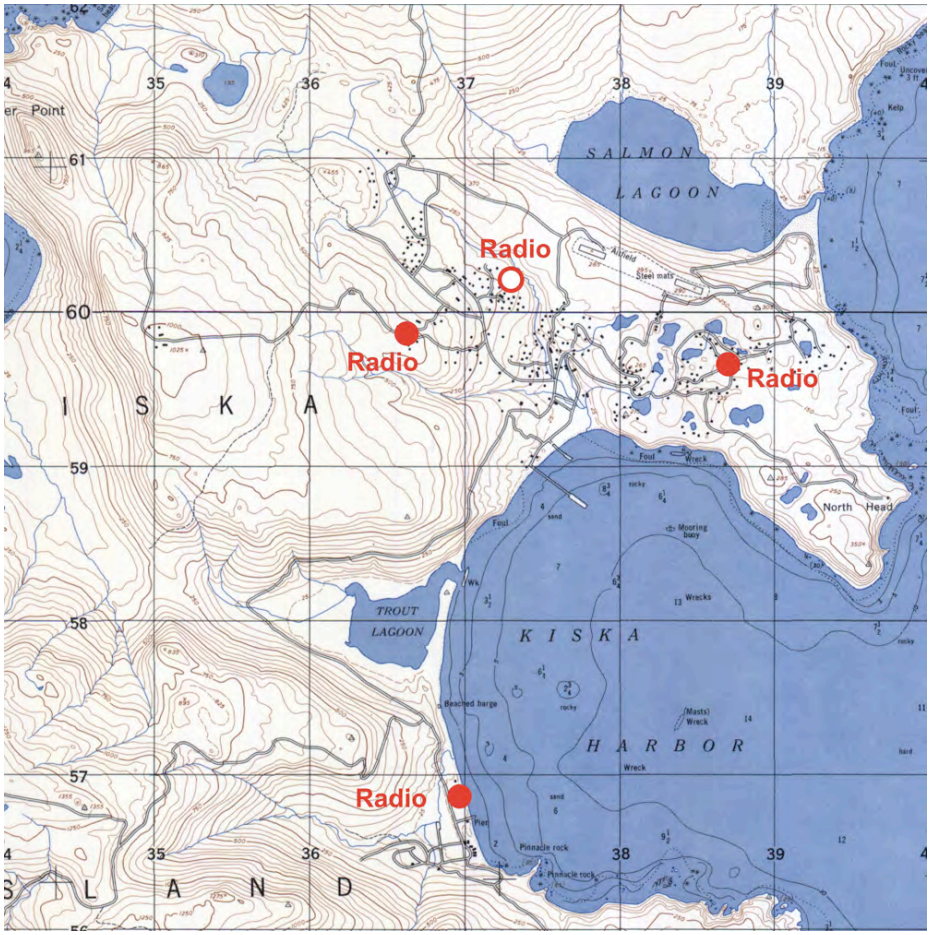


Fig. 188. Map of Kiska Harbor and surrounds, indicating the location of the U.S. communications installations.[16] Main Radio Station shown with open circle.

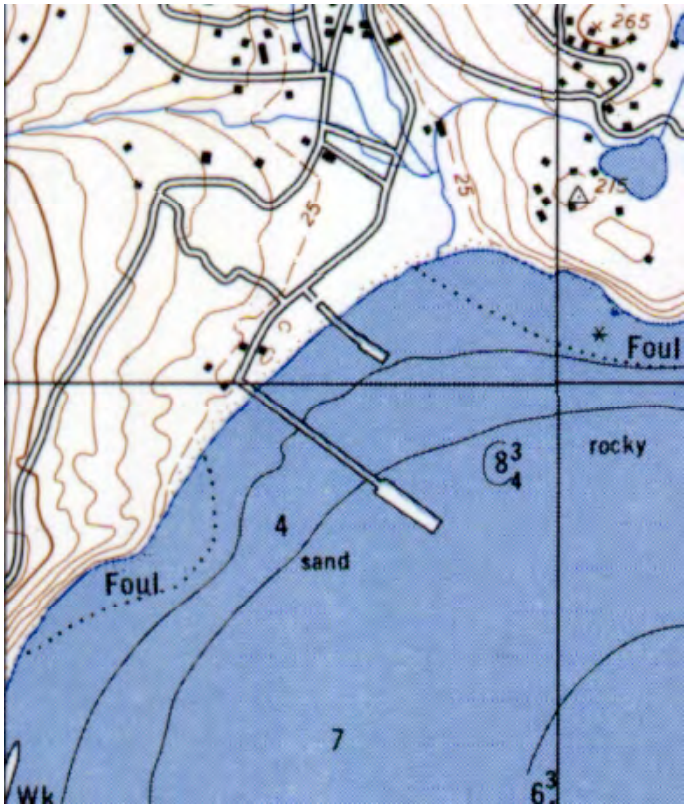


Fig. 189. The two U.S.-built piers at Kiska.[17] Note that the partial connection of shorter dock with the road network, if correct, dates to post-World War II.[18]

Telephone and Power System

The Japanese communications system had consisted of telephone lines run directly on the ground (mainly short-distance) as well as lines run on poles. The already cited report by the 38th Navy Construction Battalion noted:

> "The most helpful favor the Japs did us was to leave their communications lines almost intact. There being no trees in the Aleutians, the Japs had brought creosoted poles all the way from Japan and had strung miles or line...[we] only had to reset a few of the poles, attach out portable generators, and turn on the lights and power...At the end of the week all of our power lines had been strung with Jap wire on Jap poles and none of our supplies had been touched."[19]

Over time a more permanent power system was installed, with power plants located at the communications facilities as well as in the main barrack areas (Fig. 184).

Pier and Loading Dock Facility

Apart from the roads, the single most significant infrastructure development and overall highest priority was the construction of the piers. The sooner a pier was operational, the easier it was to land supplies. While the Japanese used landing barges to ferry all supplies from the anchored supply vessels to the shore, the U.S. preferred to offload directly onto trucks. The U.S. forces assembled and operated two pile drivers to build the piers (Fig. 192, Fig. 193). Work seems to have started immediately on the longer pier ('ship dock; Fig. 194). Construction of the shorter pier ('barge dock) was started while the first pier was still being erected. Based on the interpretation of available imagery, and assuming an equal rate of progress in ramming the piles, we can infer that the construction of pier 2 would have been commenced more or less exactly when pier 1 was half completed.[20] It is unclear at present when the docks were completed, but it would have been well before the first snow fell.

We have in hand a development plan for Kiska Harbor dated 31 August 1943, which shows that up to five docks had been envisaged, set 400 feet apart (Fig. 190). Each of these docks was to have a 90 foot wide and 410 foot long unloading platform in the deeper water, connected with the land via a 30 feet wide and approximately 1000 feet long, narrow pier. Four major warehouses were to be built at the ends of the piers, with an additional fifth dug into the hill near the road to North Head. Each of these 100 x 200 feet warehouses was to be capable of handling half the perishable cargo of a Liberty ship.[21]

The order of construction of both the docks and the warehouses had been prioritized. What was eventually constructed, was dock 1 (the 'ship dock,' which had been allocated first priority) and a pier section of dock 2 (which had been allocated second priority). While dock 1 could handle the Liberty ships and Army Transports (Fig. 197), dock 2 (the 'barge dock'), as constructed, lacked the long and wide unloading platform and did not reach as far into the harbor at all; it thus could only handle shallow drafted barges and the like that could venture close to shore.

At present it is not clear when the decision was made to limit the construction of dock 2 to a barge dock. The construction materials for the full dock had certainly been shipped to Kiska as they can be seen stockpiled by the harbor after the cessation of construction (Fig. 191). It is possible that the decision to reduced dock 2 to a stub was made before construction started.

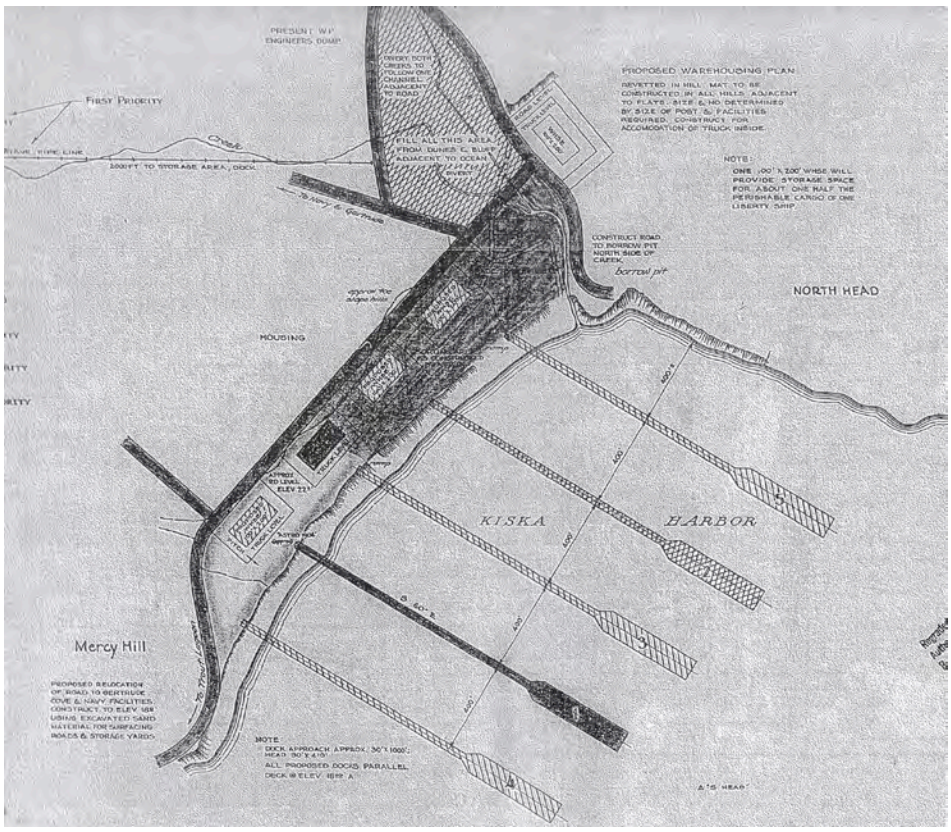


Fig. 190. Development plan for Kiska Harbor dated 31 August 1943.[22]

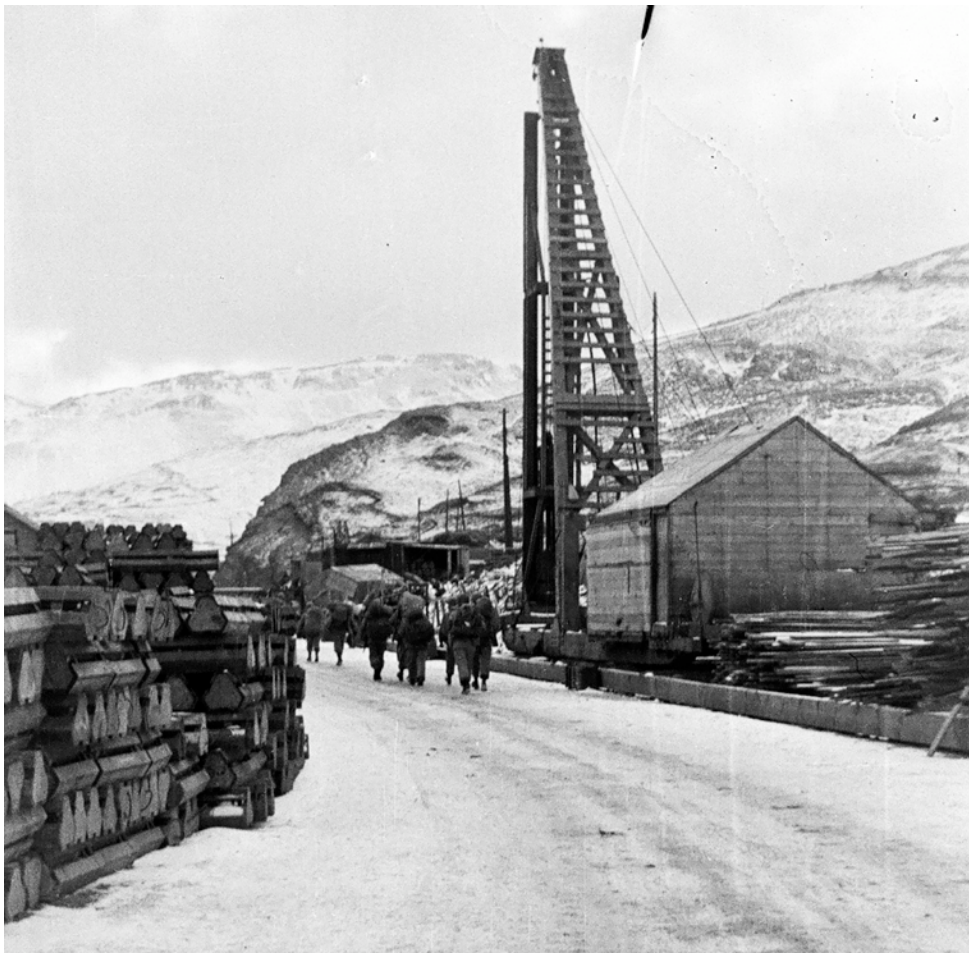


Fig. 191. Fully assembled pile driver at Kiska in winter 1943/44.[23] Note the stockpiled construction materials. Also note that the pile driver was kept in readiness for either a continuation of the construction dock 2 or to effect repairs of dock 1 as needed.

Fig. 192. Pile driver at work on the first pier.[24]

Fig. 193. Pile driver at work on the second pier. The other pile driver is still working on the longer pier.[25]

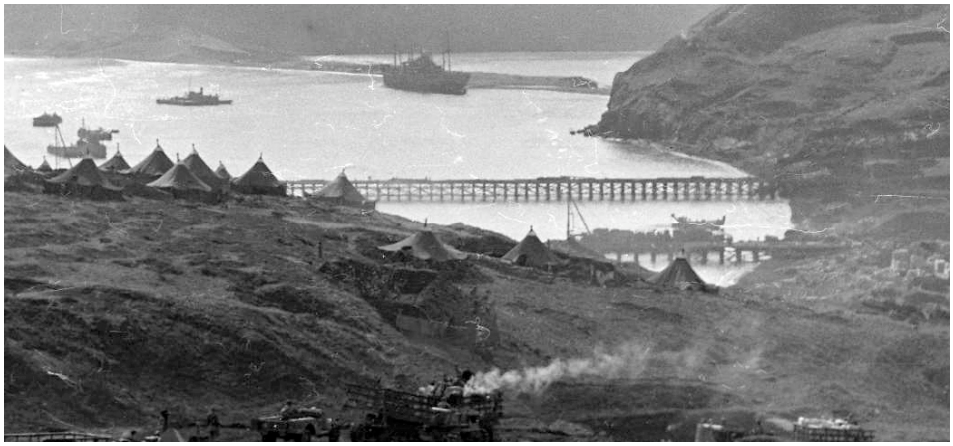


Fig. 194. The piers of Kiska as seen from the top of Mercy Point. Note the strong cross bracing.[26]

Fig. 195. Kiska Harbor as seen from road at Mercy Point. Note the anchored pontoons.[27]

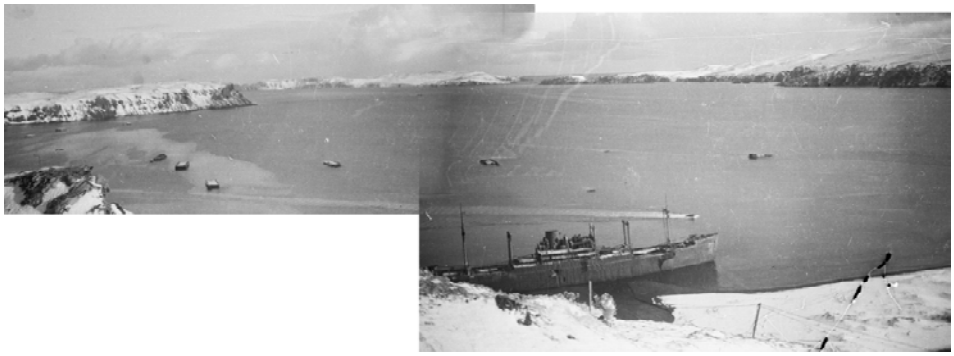


Fig. 196. Kiska Harbor as seen from road at Mercy Point. Note the anchored pontoons.[28]

Fig. 197. USS *Heywood* (APA-1) and USAT *U.S. Grant* (AP-29) at Kiska Dock.[29]

Fig. 198. Kiska Pier looking back to the island. Note the mobile crane at left (behind the truck) as well as the two pile drivers on the right.[30]

Fig. 199. The U.S. amenities and hospital system on Kiska at the height of development.[31]

Fig. 200. The U.S. recreational facilities on Kiska at the height of development.[32]

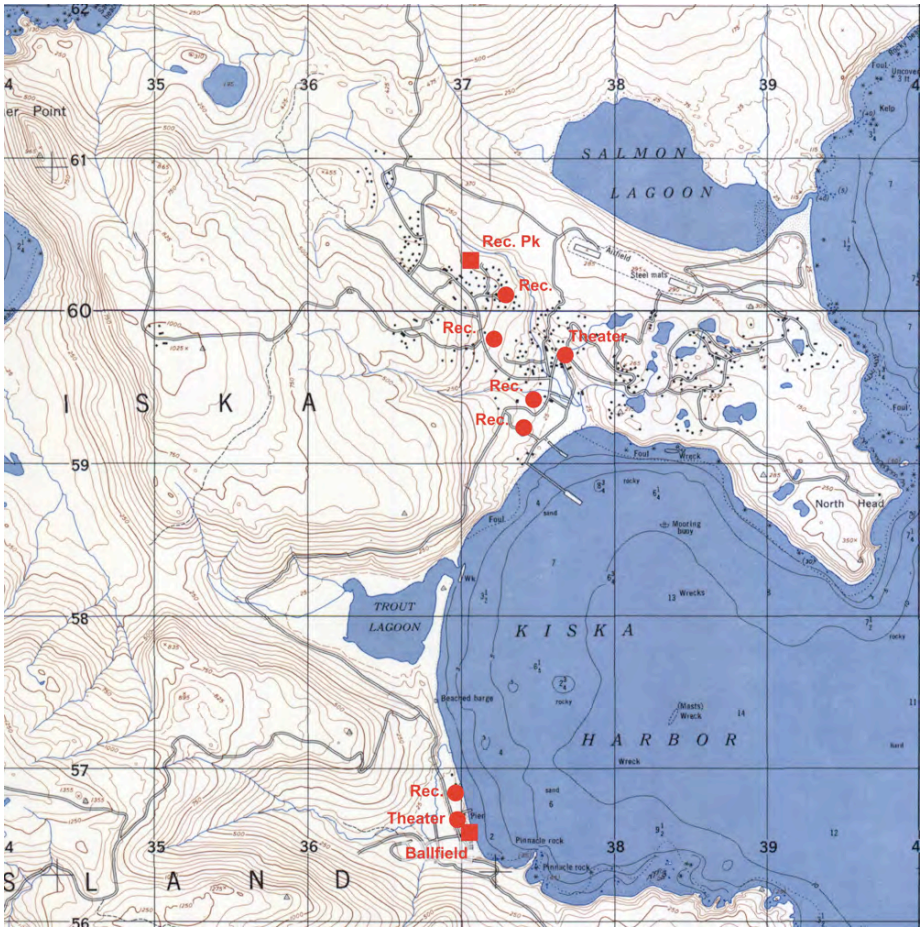


Fig. 201. The Kiska cinema in 'Army Town'.[33]

However, given the sequence of command decisions that led a re-evaluation of the role of Kiska (during September 1943), it is more probable that the construction of dock 2 was terminated part-way through the construction process.[34] Also none of the large warehouses, one of which had been allocated a construction priority level 1, were ever built.

Additionally, the as-built plans drawn up in November 1944 show that dock 2 had not been connected to the road network at all.[35] This seems to suggest that it was finished only as a fallback option and small boats/barge dock, not destined to handle heavy goods traffic. To cater for the eventuality that additional ships had to be accommodated, fixed anchorages were developed in Kiska Harbor, with moored pontoons (Fig. 196).

Sports and Entertainment

In addition to the critical infrastructure the U.S. garrison developed the amenities required for the functioning of a base, such as post offices for each of the service branches,[36] phone exchange, a barber and a PX ('post exchange') (Fig. 199). As can be expected, these facilities were near the main pier areas, in the same area that had seen the majority of the Japanese developments. In addition, both 'Army Town' and 'Navy Town' had recreational facilities, including ball fields and cinemas (Fig. 200). In Army Town, '*The Kiska'* Theater, opened on 13 November 1943, showing three screenings daily to accommodate the demand for recreation and distraction from boredom (Fig. 201).[37]

U.S. base at Main camp and North Head ('Army Town')

The main occupation area of the U.S. forces was Main Camp as well as North Head. That area was colloquially called 'Army Town', while 'Navy Town' occupied the area of the former Japanese submarine base. The early days of the occupation were characterized by make shift accommodation among Japanese war debris while essential supplies and equipment were being landed (Fig. 205, Fig. 206).The development of the base camps

required that at least some of the war debris be removed so that U.S. facilities could be erected. While it did not matter in areas where U.S. construction was limited anyway, such as on North Head, the Main Camp area near the beach needed to be clear for the storage of U.S. supplies. Thus, Japanese war debris was loaded onto Landing Craft (LCT) (Fig. 203) and taken out for dumping at sea.

Even after the two docks had been completed, material continued to be landed and stockpiled. As the initially projected warehouses were never built, the non-perishable supplies were stored in the open (Fig. 208).

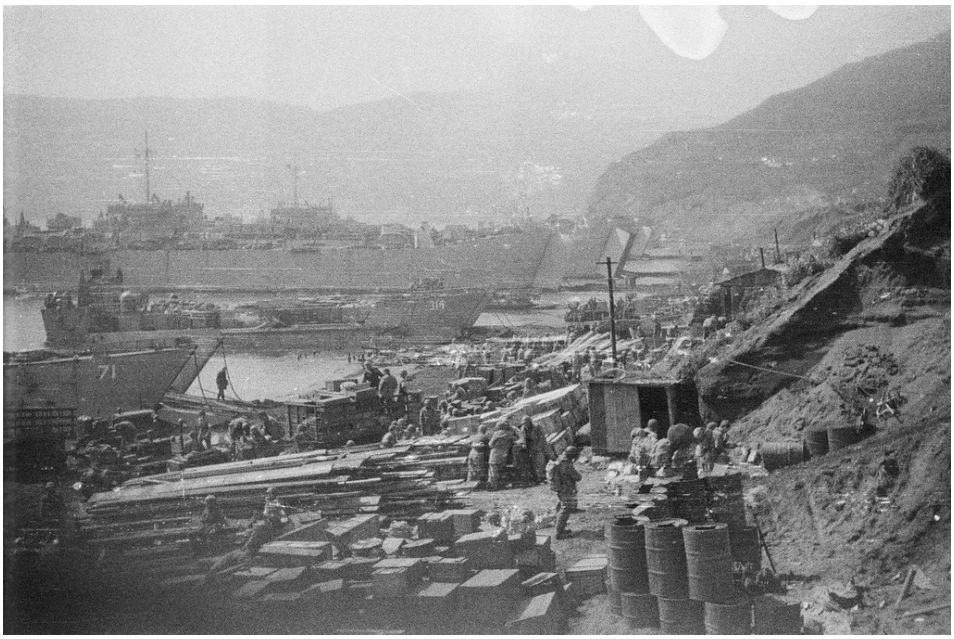


Fig. 202. Unloading supplies. Visible are LCT 71 and LCT 319. Behind are three LST with their bow doors open.[38]

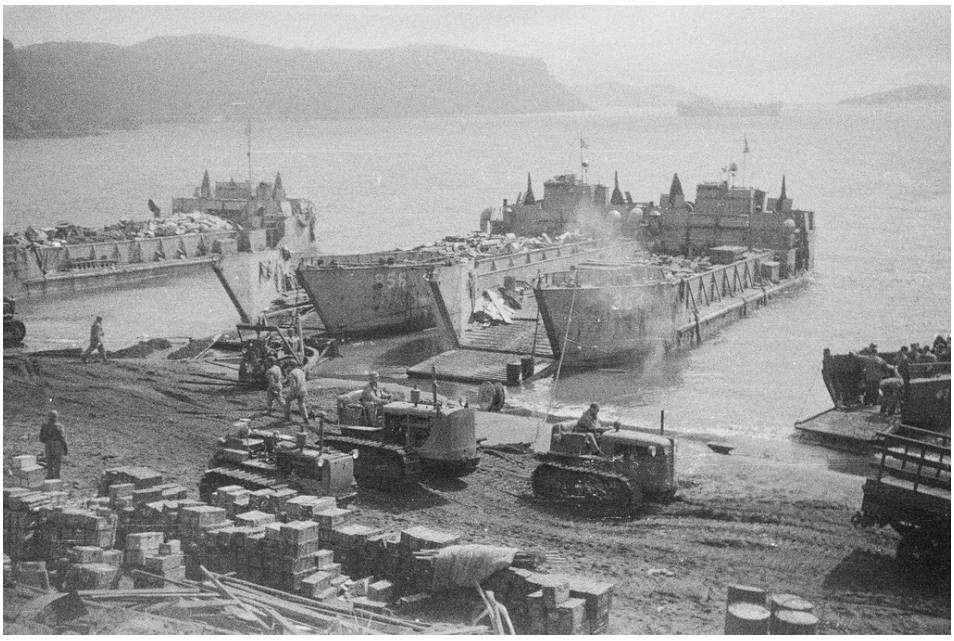


Fig. 203. Clean up operations under way. From right: LCT 354, LCT 356 and an unidentified LCT.[39]

Fig. 204. Stockpiles of building materials. Note the quantity of truss segments for Quonset huts in the center of the image.[40]The rectangular building with the pitched roof in the foreground is a 20 x 100ft warehouse shop.[41]

Fig. 205. U.S. soldiers in temporary accommodation among war debris and at any out of the wind location during the first days on Kiska.[42]

Fig. 206. Temporary mess.[43]

Fig. 207. Storage tents near Kiska beach.[44] Note the abundance of mud, as well as the warehouse being built.[45]

Fig. 208. U.S. supplies stored in the open.[46]

Below:

Fig. 209. Area of the Japanese sea- plane base, Kiska, photographed after the U.S. landings in August 1943.[47] Note the amount of materiel piled up on the beach, as well as the spread of U.S. pyramid tents in the foreground and on the rise up to North Head.

The core of the U.S. base was located just inland of the beach at Kiska Harbor. Soon after landing, a city of pyramid tents spread over the area with the residential (summer) tents in the slopes and rises near the harbor (Fig. 210–Fig. 212) and storage tents near the beach (Fig. 209). Over time these were replaced by Quonset huts and formal locations of winterized tents (Fig. 214). As the huts became available the summer tents were taken down (Fig. 216).

Most permanent structures (as shown on the as-built plans) were located situated mid-slope on gently sloping ground. It is also very noticeable that the structures are loosely spaced, set between 100 and 200 feet apart.[48] When looking at the pattern of the permanent structures (Fig. 213) it is obvious that some areas, that are seemingly suitable for occupation, are totally blank. What appears at first nonsensical becomes understandable when we consider the location of the tents that were erected in the early days of occupation (compare for ex. Fig. 210). It seems that the development of the permanent base on Kiska proceeded somewhat *ad hoc* and that, given the availability of land as well as motorized transport to haul any supplies, it was simpler to create a 'Greenfield development,' rather than trying to compete with existing land use. It also allowed, to a degree, to avoid the area already disturbed by Japanese occupation, which was also more likely to contain unexploded U.S. ammunitions.

Fig. 210. Construction of tents.[49] As seen from a rise near Main Camp, looking southeast.[50]

Fig. 211. Tent cities.[51] Image taken at the same time as Fig. 210, but looking south.

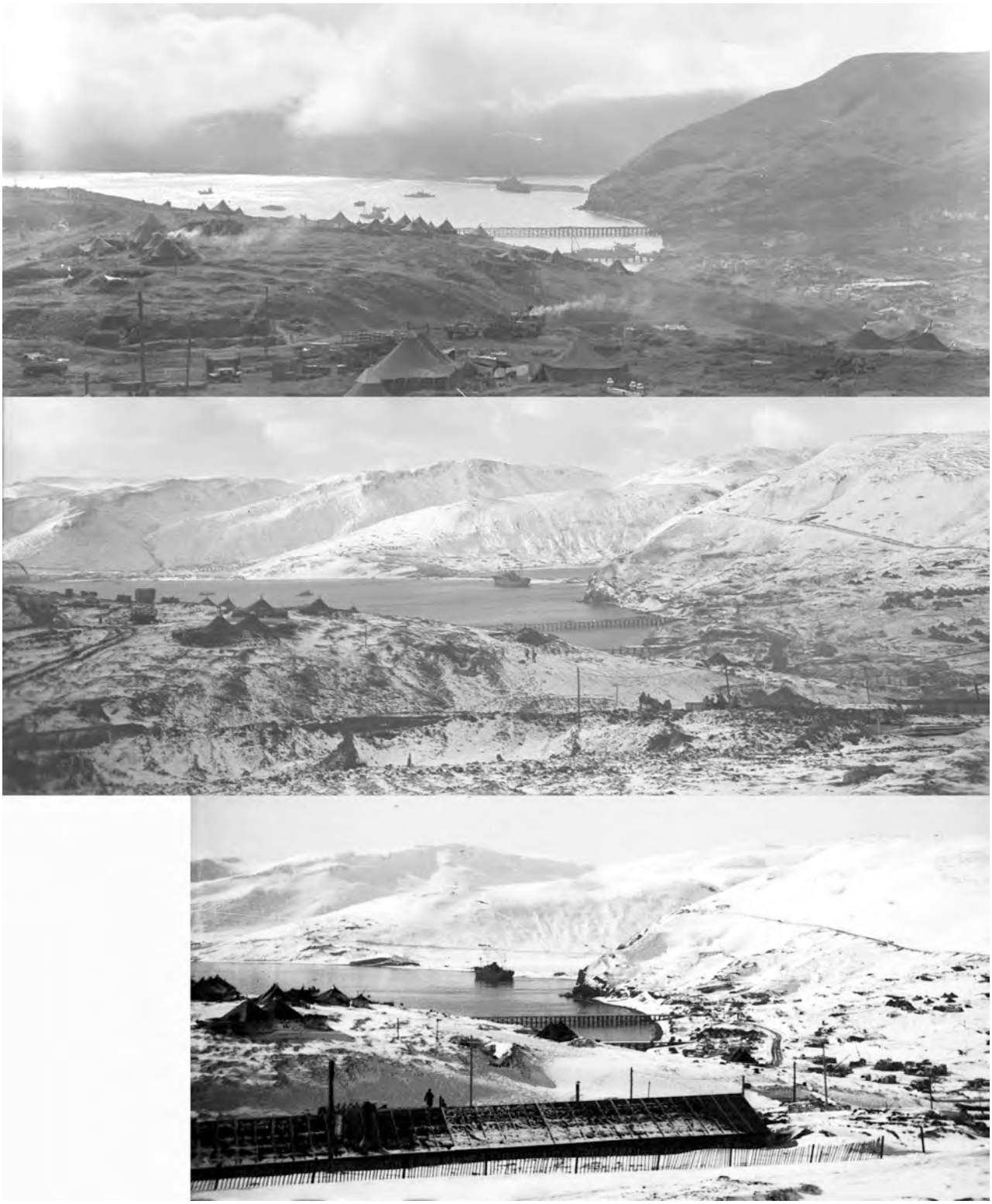


Fig. 212. The waxing and waning of tent cities, seen from the same vantage point as Fig. 210, but looking southeast. Note the difference in tent density between the image on top and by the onset of snow (middle) and deep winter (bottom).[52] The large building in the foreground of the bottom image is THE KISKAN theatre, opened on 13 November 1943.[53]

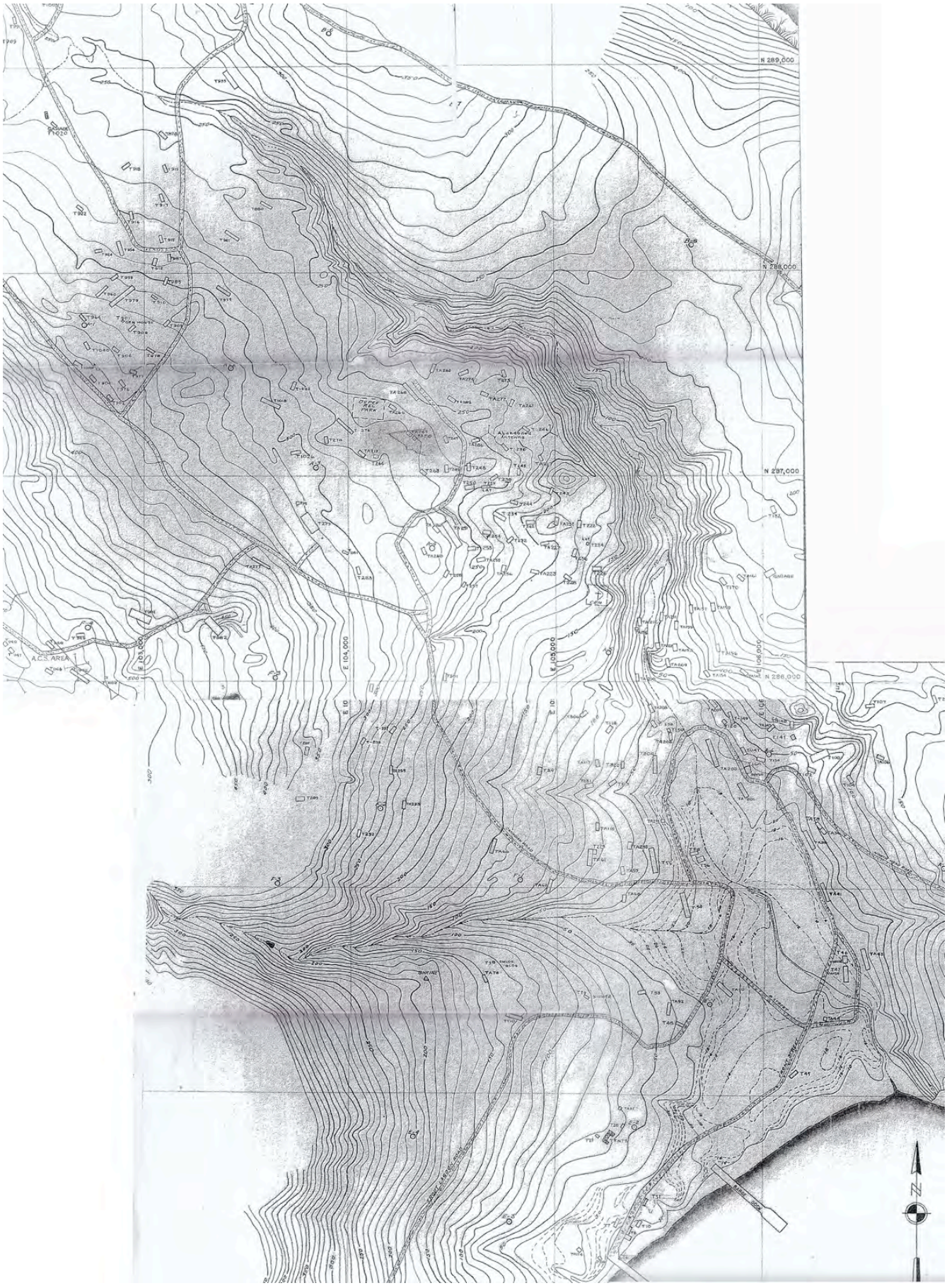


Fig. 213. Pattern of U.S. settlement in the Main camp area, Kiska.[54]

Fig. 214. Construction of winterized tents.[55] Note the shallow tent bases excavated in the background.

Fig. 215. The U.S. Army mess hall and associated buildings in snow.[56]

Fig. 216. A Quonset hut almost completely buried in a snowdrift.[57]

Fig. 217. Section of aerial photograph taken 27 Oct 1944 (see left),[58] showing the area just to the east of Kiska Beach. Note the vast number of abandoned U.S. tent bases. The deep revetments visible in the bottom right corner once housed Japanese barracks, supporting the 13.2mm AA gun position that is visible on top of the knoll.

Fig. 218. Pattern of U.S. settlement on North Head, Kiska. Top: Aerial photograph taken 27 Oct 1944. Bottom: the same area as shown on the as built-plans of November 1944.[59]

North Head forms an exception to this, as the land was limited and there was clear overlapping land use between the Japanese, and the two U.S. building phases (initial and permanent). Suitable land on North Head was further limited due to the presence of a number of perched lakes, as well as the destruction wrought by the concentrated U.S. aerial bombardment.

While the U.S. forces erected a number of Quonset huts and the like, they also constructed a series of winterized tents. These tent bases appear today as if they had been walled with tundra sod in a fashion similar to that used by the Japanese—just not as high. Yet the interpretation of the historic imagery shows that the U.S. tents were not surrounded by walling at all: the tundra was excavated down to the underlying sand/volcanic ash and leveled out (Fig. 214). Rather than using the tundra as primarily protection against the wind, the excavation was conducted to arrive at a level, as well as well drained base for the tents.

The Canadian Camp

The Canadian Camp was located to the northwest of the U.S. camp area. No detailed map or images could be sourced from the standard sources accessible during the preparation of this report.

U.S. base at former Japanese Sub-Base ('Navy Town')

The Naval Auxiliary Air Facility Kiska was commissioned on 11 September 1943 as part of the Adak Sector of the Seventeenth Naval District.[60] It consisted of net defenses, seaplane anchorage, a small pier and harbor facilities,[61] in particular there was a seaplane ramp covered with pierced steel plank (30x 150 feet), a parking area of 10,000 sq feet and three moorings in Kiska Harbor.[62]

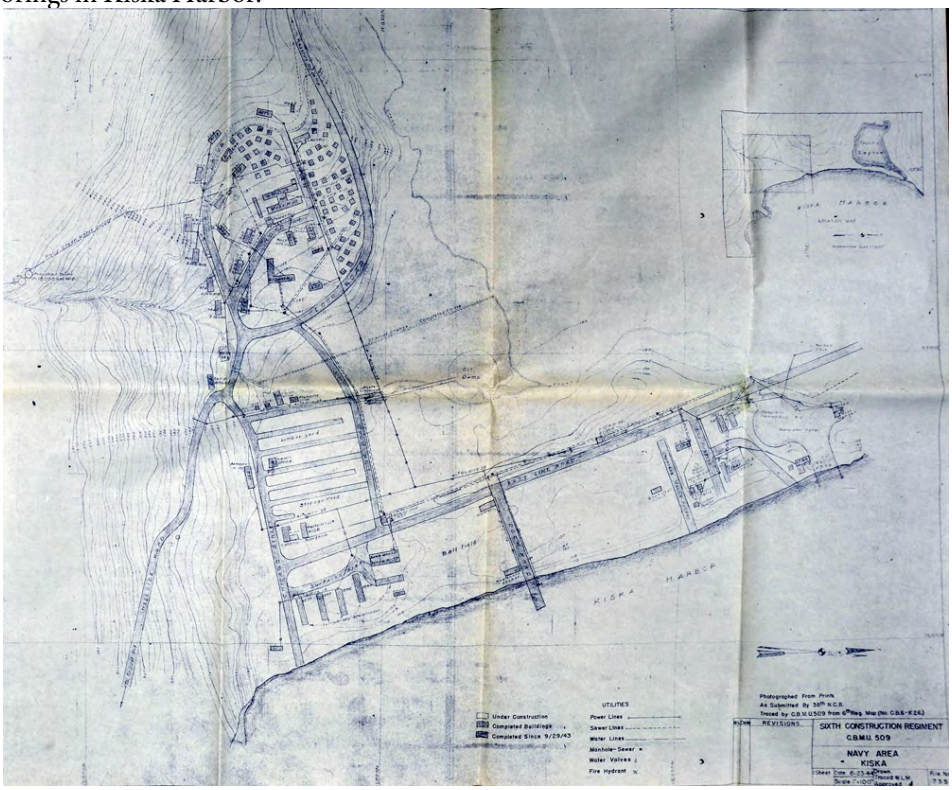


Fig. 219. Blue print of Navy Facilities in June 1944.[63]

Fig. 220. Navy Town in 1945.[64]

Fig. 221. Navy Town in 1945.[65]

The construction of the navy facilities commenced on 22 August, five days after the U.S. re-occupation.[66] Less than three weeks later the construction was sufficiently advanced that the station could be formally commissioned as 'Naval Auxiliary Air Facility Kiska' (on 11 September 1943).[67] A base-planning meeting on 13 September reviewed all 42 individual structures to be erected and prioritized all construction sequences.[68] At the time, the communications transmitter, the distillation barge (fuel supply) and the Pontoon deck, as well as 61 winterized tents (occupied by the men of the 38th NCB): were fully completed, with the communications receiver and the seaplane area between 75% and 80% completed. An additional seven projects were under way.[69] Six weeks later the construction was nearing completion and the 38th Navy Construction Battalion (Section A) was withdrawn from NAAF Kiska to Adak on 27 Oct 1943.[70] Fifty men were left behind to finish the work that had not been completed.[71] By 13 November 1943 the vast majority of the construction was completed. By that time the 2 ½ mile long Navy road network was 80% complete, with the main outstanding work relating to warehouse construction. It was anticipated that all work would be completed by 1 December 1943.[72]

Fig. 222. Blue print of Navy Town in June 1944.[73]

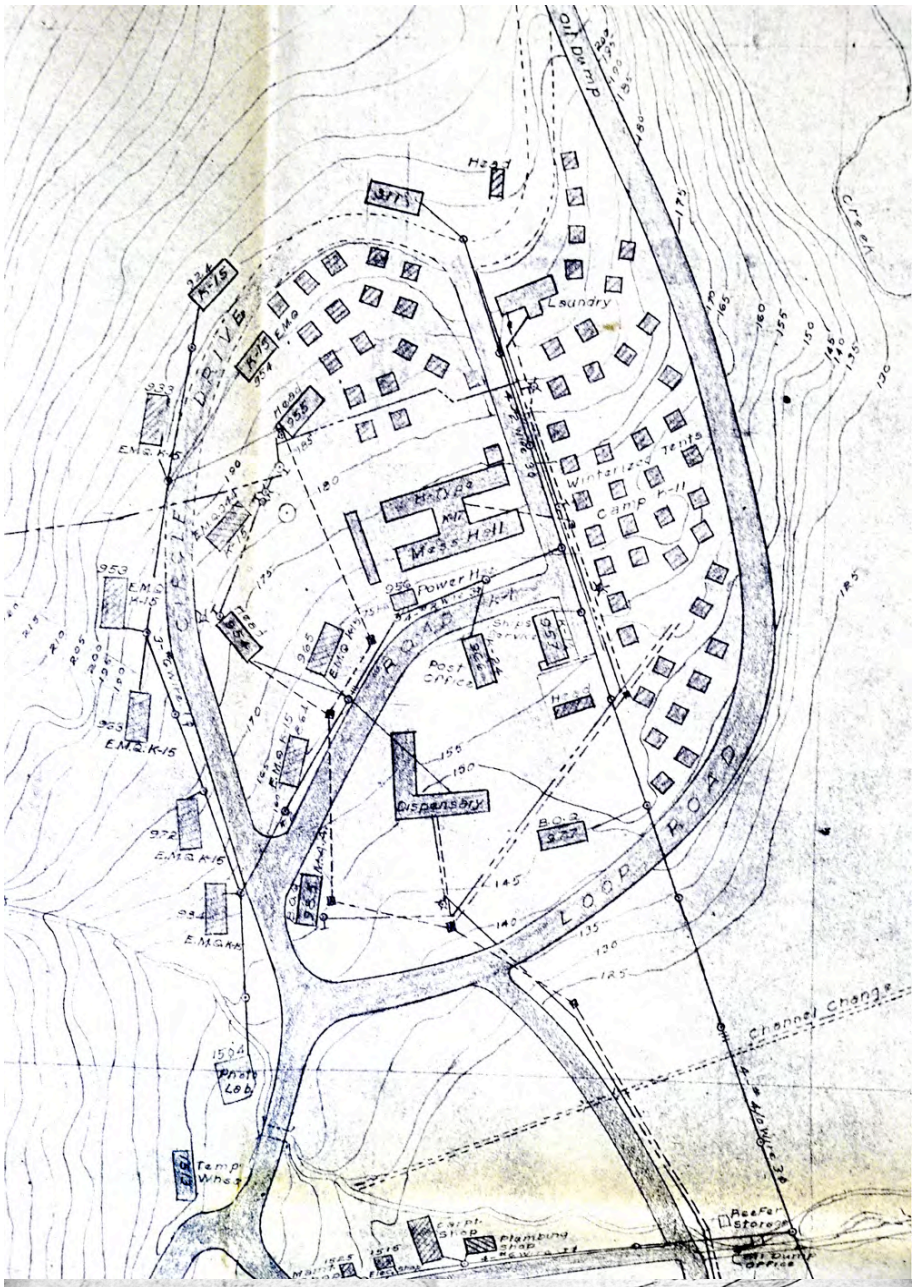


Fig. 223. Blue print of NAAF Kiska seaplane base in June 1944.[74]

Little Kiska

Like the Japanese, the U.S. forces used Little Kiska as an opportune advance point. Unlike the Japanese, who had established a coastal defense gun battery at the western tip, the U.S. forces used a rise on the easternmost point as a lookout post. The position was supported by a power station and facilities for personnel, comprising seven barracks buildings, officer's quarters, orderly room as well as mess hall, showers, latrines and pump house. The as-built map also shows the location of three temporary vans.[75] Their function is not mentioned, but we can assume that they fulfilled communications activities.

U.S. Defenses

To defend the base on Kiska, a wide array of facilities was erected, ranging from anti-aircraft positions and submarine nets to RADAR.

The U.S. forces completed the airfield that the Japanese had commenced. It measured 2,990 by 150 feet, with 75-foot shoulders but lacked taxiways and hardstands. A parking area of 150 x 225 feet had been built. The landing strip was a soil-surfaced, unlit runway, with 600 x 150 feet sections of steel matting at both ends to facilitate safe touchdowns (Fig 227). The runway was not totally flat, but rose from 285' feet at the western end to 300' in the centre and then dropped down to 195' at the eastern end.[76]

RADAR

A RADAR installation was erected on a 1,000 foot rise some two miles north-north west of the Main Camp area (Above: Fig. 224). The installation comprised the RADAR set and operations building, officers' quarters and mess hall, four 16 x 36ft barracks plus mess hall, washroom, latrine and garage.[77]

A second RADAR was erected one mile southwest of the first. That installation consisted of the eighteen structures, including a radio-station and separate powerhouse.[78]

The NAAF Kiska also possessed RADAR system, made up from a SCR-268 (Right: Fig. 225)[79] and a SCR-547 set (Fig. 226).[80] Both were no longer functional by January 1944.[81] It is not clear whether the mobile equipment remained on Kiska at that stage or had already been shipped elsewhere.

Above: Fig. 224. Map of Kiska Harbor and surrounds, indicating the location of the U.S. defense installations.[82]

Right: Fig. 225. The SCR-268 air search RADAR installation of NAAF Kiska on South Head.[83]

Fig. 226. The SCR-547 RADAR installation of NAAF Kiska on South Head.[84]

Fig 227. The Japanese airstrip on Kiska as finished by US forces (seen from the west). Note the touchdown area covered with Marston-matting in the background.[85]

Artillery and Anti-aircraft Guns

Given the U.S. air superiority in the region as well as the plethora of submarine patrols, the U.S. defense system of Kiska could eschew the installation of coastal defense guns and concentrate their efforts on anti-aircraft weapons.

Nonetheless, as the U.S. forces had shipped and landed a number of medium artillery weapons (mainly 75mm Mountain howitzers (pack) for the anticipated battle for the island, these were also, at least temporarily, emplaced (Fig. 228, Fig. 229).

The mainstay of U.S. defensive armament on Kiska were anti-aircraft guns. Both the U.S. Army and U.S. Navy used 40mm Bofors-type medium AA (Fig. 232, Fig. 233) which were emplaced at various locations surrounding Kiska Harbor. In addition the U.S. Army emplaced a battery of 90mm M1 AA guns near the north-eastern tip of North Head, just to the west of the Japanese 6-inch coastal defense battery (Fig. 230, Fig. 231).

The Canadian 46 Light AA Battery had 13 Bofors 40mm AA emplaced as part of the overall defense scheme for Kiska[86] Anti-aircraft defense for NAAF Kiska was provided by the Mobile AA Battery nº 411.[87] The AA battery comprised four electrically driven 40mm M-1, single barrel guns, each coupled with a M-5 gun director. In addition, there were four 20mm Mk. 4 guns, and ten .50 cal emplacements.[88]).

While the exact locations of these emplacements, however, are at present unknown from the archival records. We can assume that overall placement would have been where the respective forces were encamped.

Fig. 228. Soldiers haul a 75-mm pack howitzer over rough terrain using the old hand rope method, Main Camp area.[89]

Fig. 229. Troops stand in a Canadian 75-mm mountain gun emplacement on Monument Hill, Kiska Island.[90]

Fig. 230. A 90mm M1 AA gun emplaced on North Head near the former Japanese 6-inch gun battery.[91].

Fig. 231. A 90mm M1 AA ('Dorothy) emplaced on North Head near the former Japanese 6-inch gun battery[92]. Note the gun turret in the right-hand background.[93]

Fig. 232. A mobile 40mm Bofors-type AA gun belonging to D.Battery, 862nd Antiaircraft Artillery.[94]

Fig. 233. Two mobile 40mm Bofors-type AA guns under tarps.[95]

Fig. 234. A mobile 40mm Bofors-type AA gun emplaced.[96]

Fig. 235. Japanese armament dismantled and ready for shipment to the U.S. mainland.[97] The left trailer carries the turret of a 120mm dual-purpose gun as well as the turret of a 6-inch coastal defense gun. The right hand trailer carries (from left) the barrel of a 6-inch coastal defense gun, the barrel of a 3-inch coastal defense gun, the barrel of the 120mm dual-purpose gun, and some other unidentified pieces (on top).

Fig. 236.Japanese armament dismantled and ready for shipment to the U.S. mainland.[98] The trailer carries the turret of a 120mm dual-purpose gun as well as the turret of a 6-inch coastal defense gun.

Clean-up and War Booty

After the U.S. occupation, Japanese equipment captured on Kiska was sent for evaluation to a range of establishments: gas masks,[99] acid grenades[100] and smoke grenades were sent to Seattle,[101] while incendiary bombs were sent to San Francisco.[102]

In addition, heavy souvenir hunting occurred in the post invasion days. When a cache of Japanese rifles was discovered in Kiska Harbor a few weeks after the U.S. landings, many of these were fished out by the troops, cleaned and kept as souvenirs. The unexpected presence of weapons brought about a lengthy correspondence. In all, a wide range of smaller items would have been souvenired, and we can assume that many other parts could have been dismantled from larger guns. A report of January 1944 notes:

> "Enemy Material, documents, maps and charts.—Such material as is now being discovered on Attu and Kiska is being properly processed and forwarded to higher echelons. Unfortunately much material, probably of considerable value, was lost during the initial occupation stages on both Attu and Kiska when souvenir hunters

were almost totally uncontrolled. For example, Kiska, a relatively small island, had 33,000 men turned loose with no enemy to fight and abandoned Jap material on all sides. It is not, therefore, surprising that such large-scale souvenir hunting took place."[103]

In November 1943 a U.S. correspondent wrote the following in an article for the publication *Alaska Life:*

"Inventory. Partial inventory of Kiska booty increased the import of Japanese evacuation...included in the booty: two to twelve tons of small arms and ammunition, anti-personnel and anti-material mines, food, clothing, lamps, booby traps, abandoned gun emplacements, *three six-inch guns*—partially dismantled—a battery of 20mm ack-ack guns and heavy caches of machine Gun Ammunition"[emphasis mine].[104]

Fig. 237.Japanese armament dismantled and ready for shipment to the U.S. mainland.[105] The left trailer carries the turret of a 120mm dual-purpose gun as well as the turret of a 6-inch coastal defense gun. Note the painted camouflage scheme on the turret of the 120mm dual-purpose gun. The left hand trailer carries (from right) the barrel of a 6-inch coastal defense gun, the barrel of a 3-inch coastal defense gun, the barrel of the 120mm dual-purpose gun, and some other unidentified pieces (on top).

The ships in the background are USS *Heywood* (APA-1) and USAT *U.S. Grant* (AP-29) (see Fig. 197).[106]

Fig. 238.Japanese 25mm Type 96 AA dismantled and stockpiled on North Head.[107]

Fig. 239.Japanese Ammunition crates[108] Each of the cases contained 1,380 rounds of 7.7x58mm Arisaka rimless cartridges for the Type 99 Light Machine Gun. The ammunition cases carry the dates of February and March 1942.[109]

Fig. 240. Scattered Japanese ammunitions, including hand grenades.[110]

That tallies in general with Commander Nifumi Mukai's testimony in which he claimed that "the guns were immobilized by the removal and destruction of important parts."[111] This, however, was not carried out uniformly. The initial intelligence report after the U.S. landings, stated that

> "Many attempts were made to destroy equipment; some attempts were good, some poor, and some completely lacking. Some units destroyed everything and some left everything behind. Some of the naval guns had breechblocks and some of these breechblocks were taken out and buried and others were completely destroyed. One battery had a largely quantity of demolitions and the fuze was set but never went off. ... Most of the guns and half the ammunition were found intact."[112]

Compared to post-occupation inventories, a number of large weapons are missing, among them one Japanese model 4.7-inch coastal defense gun on North Head,[113] a 120mm dual-purpose gun also on North Head,[114] two 6-inch guns from North Head,[115] three 3-inch guns from Kiska Harbor, one of which is located in Canada,[116] two three-

inch guns from Gertrude Cove, and one 25mm gun from an unspecified location, also located in Canada.

Some shipments of Japanese ordnance occurred in October 1943.[117] The fate of the guns is unclear, but it can be assumed that they went to one of the U.S. ordnance proving grounds. The available imagery seems to suggest that the armament piled on the tractor trailers (Fig. 235, Fig. 237) was sent to the Naval Gun Factory of the Navy Yard in Washington DC. At the time of writing,[118] they have not been traced[119] apart from the 3-inch gun that had been removed by the Canadian forces.

Table 43. Incidence of the removal of large caliber guns from Kiska

Area	Gun type	Gun ID	Removed to	Comments
North Head	4.7″ CD	Gun C	Naval Gun Factory, Washington DC	Japanese 40cal model
North Head	120mm DP	Gun D	Naval Gun Factory, Washington DC	
North Head	6″ CD	Gun B	Naval Gun Factory, Washington DC	Japanese Model
North Head	6″ CD	Gun C	Naval Gun Factory, Washington DC	Japanese Model
Trout Lagoon	3″ CD		Naval Gun Factory, Washington DC	
Trout Lagoon	3″ CD		Canada	
Unspecified	25mm AA		Canada	
Unspecified	37mm		First to Adak, then to Anchorage	two guns in public collections[120]

Fig. 241. Japanese 37mm artillery piece next to a stockpile of Japanese ammunition crat and defused 6-inch shells.[121]

Notes to the preceding Chapter

1. Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 N-179F-17. Maps 1-6.

2. Base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.

3. Base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.

4. Huie, William Bradford (n.d. [1943]) Kiska Report. Seabees Archives, Fort Newman File 39th Naval Construction Battalion, Kiska, Alaska.

5. Huie, Kiska Report. *Op. cit.*

6. Huie, Kiska Report. *Op. cit.*

7. Payne, Irving P (1943) *The Enemy on Kiska*. US Naval Intelligence, Section G-2. AC/G-2, Advance Command Post, Hdqtrs. Alaska Defense Command, and Advance Intelligence Center, North Pacific Area. U.S. Confidential.

8. Huie, Kiska Report. *Op. cit.*

9. Top left: Date of photograph: 28 September 1942. Army Air Corps, 11PBC. (V2-2017-11PBC). U.S. National Archives, Record Group 80, image 80-CF-7825-34183.—Top right: Date of photograph: 15 March 1943. Army Air Corps. (V787-2017). U.S. National Archives, Record Group 80, image 80-CF-7825-69035—Bottom: Satellite Image 2001.

10. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 42 photo no. 28; courtesy Beverly Maloof.

11. Base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.

12. Base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.

13. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 21 photo no. 18; courtesy Beverly Maloof.

14. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 41 photo no. 15; courtesy Beverly Maloof.

15. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 47 photo no. 12; courtesy Beverly Maloof.

16. Base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.

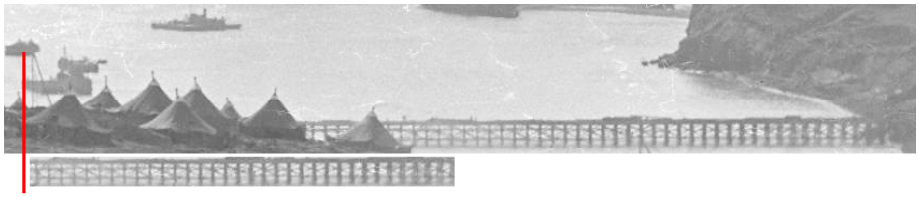
17. Base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.

18. It is not shown in the as-built plans of November 1944. (Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-17. Map 5.

19. Huie, William Bradford (n.d. [1943]) Kiska Report. Seabees Archives, Fort Newman File 39th Naval Construction Battalion, Kiska, Alaska.

20. The state of construction captured in the image below shows that eleven sets of pilings have been driven in for pier 2 (counting from the low tide area,) and that work is under way on the twelfth set.

At that time, the work on pier 1 has reached the seventieth set of pilings. Even though a number of pilings are hidden from view, we can count them accurately. As the head of the pile driver is clearly visible, and because the viewpoint of the photographer is very close to right angles to the piers, we can count out the number of pile sets hidden from view by cutting and substituting a section of visible pier (using a photo editing program) as shown below (note the perfect alignment if the visible parts between the tents):



Overall, dock 1 is 125 sets or pilings long, including the widened end. The number of piling sets of the completed dock has been counted for the pier (85 sets) and using an unpublished image for the widened unloading end (40 sets)(Image: NPS Sam Maloof WWII in Alaska Photograph Collection [Alaska Regional Office]. Roll 45 photo no. 24; courtesy Beverly Maloof).

[21]. Annotations to development plan,. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Dated 31 August 1943. NARA AK, RG 181 File N-179F-3.

[22]. Annotations to development plan. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Dated 31 August 1943. NARA AK, RG 181 File N-179F-3.

[23]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 21 photo no. 26; courtesy Beverly Maloof.

[24]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 41 photo no. 22; courtesy Beverly Maloof.—Section of image.

[25]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). 4x5 film photo no. 15; courtesy Beverly Maloof.—Section of image. The top of the second pile driver can be seen to the left of the tents.

[26]. Stitched Panorama based on Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 6 photo no. 35 (retouched to remove distracting spot marks) and photo no. 36; courtesy Beverly Maloof.

[27]. Stitched Panorama based on Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 6 photo no. 37 and 38; courtesy Beverly Maloof.

[28]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 44 photo no. 4; courtesy Beverly Maloof.

[29]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 43 photo no. 14; courtesy Beverly Maloof.

[30]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 43 photo no. 12; courtesy Beverly Maloof.—The *U.S. Grant* (ex-*König Wilhelm II*, ex-USS *Madawaska* (ID 3011) ex-USAT *Madawaska*) was a former German passenger liner, seized in 1917. In WWII she was one of the main troop ships regularly ferrying personnel to the Aleutian bases.

[31]. Base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.

[32]. Base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.

[33]. Image: NPS Roger Jeanfaivre Alaska Photograph Collection (Alaska Regional Office). Courstesy Roger Jeanfaivre .

[34]. Again drawing on the number of piling sets driven in, the development of dock 2 appears to have been terminated *before* dock 1 was completed. The length of the'standard' pier was only 20 sets. Thereafter, the pier stub is slightly widened into a platform area to allow for trucks to turn. Also, as with dock 1, the platform area has the pilings set at tighter intervals to increase the load-bearing capacity. That switch in pile density signals the end of the planned initial construction.—The termination of the construction of a full-length dock 2 occurred eight sets of piles after the

photograph was taken. Dock 2 was then finished off as a short dock for barges, with a narrower goods platform than dock 1.

35. Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-3.

36. APO 730 (17 Aug 1943–30 Jun 1945; out of San Francisco), FPO 422 (out of Seattle); the Canadians have had their own PO (CAPO 51; out of Vancouver).

37. *Kiskan Volcano* vol. 1, no 12, 13 November 1943. [Army Newssheet, printed on Kiska).

38. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 48 photo no. 14; courtesy Beverly Maloof.

39. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 48 photo no. 15; courtesy Beverly Maloof.

40. Sticthed panorama of Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 21 photos no. 15 & 16; courtesy Beverly Maloof.

41. Building TA39, Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-3.

42. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº46 photo no. 3; courtesy Beverly Maloof.

43. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº42 photo no. 26; courtesy Beverly Maloof.

44. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 5 photo no. 2; courtesy Beverly Maloof.

45. The warehouse is most likely building TA47, a 20 x 77 foot warehouse (NARA AK, RG 181 File N-179F-3 Map 5).

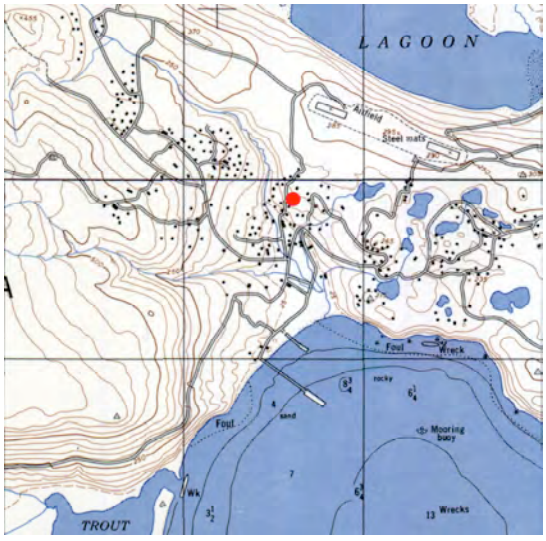
46. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 43 photo no. 25; courtesy Beverly Maloof.

47. Source: Allied tens and supplies, Tents and supplies with Jap float type aircraft dolly in foreground (Captured Enemy Equip, Jap), Broad Beach, Kiska, Alaska. Photographer: NAS Adak, Date: 7 Sept. 1943 Photo ADK 1750. NARA R-80G-80356.

48. Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-3 Maps 1-3, 5-6.

49. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 41 photo no. 35; courtesy Beverly Maloof.

50. A large number of photos have this same vantage point:



[51]. Stitched panorama, Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 41 photos no. 8-9; courtesy Beverly Maloof.

[52]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). 4x5 negatives image 13 (top) and image 15 (middle), roll nº 44 photo nº 5 (bottom)(all cropped); courtesy Beverly Maloof.

[53]. Identified as structure nº 100, a 28 x 80 building (enlarged?, dimensions don't seem correct?).—Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. File N-179F-17. Maps 1-6. NARA AK, RG 181.

[54]. Combined sections Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-17. Maps 3 & 5.

[55]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 18 photo no. 31; courtesy Beverly Maloof.

[56]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 2 photo no. 23; courtesy Beverly Maloof.

[57]. The rectangular building is structure TA251, a 20 x 130 foot mess hall (Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-17. Map 3).—Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 25 photo no. 21; courtesy Beverly Maloof.

[58]. Photograph: NARA-AK RG181 E149 B14 FH1-3 #6.

[59]. Photograph: NARA-AK RG181 E149 B19 A12—Combined sections Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-17. Maps 4& 6.

[60]. CanAlSec disp. To VCNC, 112122 Sept 1943. Cited in: U.S. Naval Administration in World War II: CINCPAC. North Pacific Force and Area Alaskan Sea Frontier. Seventeenth Naval District. Washington, DC: Navy Department Library. Not paginated.

[61]. U.S. Naval Administration in World War II: CINCPAC. North Pacific Force and Area Alaskan Sea Frontier. Seventeenth Naval District. Washington, DC: Navy Department Library. Not paginated.

[62]. Report of Facilities, Naval Auxiliary Air Facility, Kiska, Alaska (Navy 422). Dated 1 July 1944. File: G & S NB Facilities etc. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 15.

[63]. Navy Area, Kiska. Sixth Construction Regiment C.B.M.U. 509. Dated 23 June 1944. File C&S NB Facilities, Etc. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 15 FF12-S86.

[64]. Image: NPS Roger Jeanfaivre Alaska Photograph Collection (Alaska Regional Office). Courtesy Roger Jeanfaivre .

[65]. Image: NPS Roger Jeanfaivre Alaska Photograph Collection (Alaska Regional Office). Courtesy Roger Jeanfaivre .

[66] Department of the Navy (1947) *Building the Navy's Bases in World War II. History of the Bureau of Yards and Docks and the Civil Engineer Corps 1940-1946*. Vol. II. Bureau of Yards and Docks, Department of the Navy. Washington, DC: U.S. Government Printing Office.

[67]. Commanding Officer was Lt Comdr Clifford E Smith.—Annual Sanitary Report of the U.S. Naval Auxiliary Air Facility, Kiska, Alaska for the Year 1943. File A9 /2 Annual and Semi-Annual Reports. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 2.

[68]. Three of them, a boat dock, the officers' mess and the officer's recreation building were deleted from the list (Results of the Planning Board Meeting of 13 September 1943. Naval Auxiliary Air Facility Kiska, Alaska. File A1 Projects, Plans and Policies. Naval Districts & Shore Establishment 17th

Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 1.).

69. 38th U.S. Construction Batallion, Kiska, Alaska. Weekly Construction Report 22 August 1943 to 14 September 1943. File A1 Projects, Plans and Policies. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 1.

70 Department of the Navy, Building the Navy's Bases in World War II, *op. cit.* p. 187.

71. Annual Sanitary Report of the U.S. Naval Auxiliary Air Facility Kiska, Alaska for the Year 1943. File A9 /2 Annual and Semi-Annual Reports. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 2.

72. Weekly Progress Report 6 November to 13 November 1943. File A3-1 N.C. Batallion. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 1.

73. Section of: Navy Area, Kiska. Sixth Construction Regiment C.B.M.U. 509. Dated 23 June 1944. File C&S NB Facilities, Etc. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 15 FF12-S86.

74. Section of:Navy Area, Kiska. Sixth Construction Regiment C.B.M.U. 509. Dated 23 June 1944. File C&S NB Facilities, Etc. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 15 FF12-S86.

75. Topography and as built construction. Little Kiska Island, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-17. Maps 1-6.

76. Report of Facilities, Naval Auxiliary Air Facility, Kiska, Alaska (Navy 422). Dated 1 July 1944. File: G & S NB Facilities etc. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 15.

77. Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-17. Map 1.

78. Topography and as built construction. Airfield and Garrison, Kiska Island, Alaska. U.S. Army Corps of Engineers, Alaskan Department, Engineer Office, Anchorage, Alaska. Roy O Smith, Senior Engineer. Dated 13 November 1944. NARA AK, RG 181 File N-179F-17. Map 2.

79. The SCR-268 was a Mobile Long Wave Searchlight Control Set, functioning as an air search RADAR ('Anti-Aircraft Artillery Intelligence Service'): Radar Research and Development Sub-Committee (1943) U.S. Radar. Operational Characteristics of Radar Classified by Tactical Application FTP 217. Prepared by Authority of the Joint Chiefs of Staff, by the Radar Research and Development Sub-Committee of the Joint Committee on New Weapons and Equipment 1 August 1943. Washington, D. C: Department of the Army. P. 46<accessed via Naval Historical Center: http://www.history.navy.mil/library/online/radar.htm>

80. The SCR-546 was a Mobile Microwave Radar-Optical Height Finder, comprised of the antenna trailer, tractor, and spare parts truck: Radar Research and Development Sub-Committee , *op. cit.* p. 48.

81. NAAF Kiska, 1 January 1944. Construction Summary, Alaskan Sector, Thirteenth Naval District. Alaska Divisions, Bureau of Yards and Docks. File A1 Projects, Plans and Policies. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 13.

82. Base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.

83. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 6 photo no. 16; courtesy Beverly Maloof.

84. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 6 photo no. 15; courtesy Beverly Maloof.

[85]. Taken on 23 September 1943; NARA 342-FH-3A29838-26095AC; kindly supplied by Luca Ruffato (Rome).

[86]. Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 p. 57.<http://www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/ahqrd-drqga-eng.asp?txtType=3&RfId=194>.

[87]. Muster roll for 30 June 1944. U.S. (40MM) Mobile AA Battery nº 411 (NAAF Kiska, Alaska). File A9-3/P16-2/mm. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 2.

[88]. 40mm M-1: gun nº 1: 8239, tube nº 48459, on carriage 14320; gun nº 2: 7977, tube nº 9785, on carriage 9785; gun nº 3: 20676, tube nº 14824, on carriage 14824; gun nº 4: 19571, tube nº 14051, on carriage 14051; with four spare tubes (20847; 39236; 43516; 50560).—M-5 gun directors, serial nºs 15417, 15428, 15336, and 15367.—20mm Mk 4 guns: nº 33554 on nº 25077 mount; nº 33590 on nº 25082 mount; nº 33691 on nº 25089 mount; nº 33695 on nº 25088 mount; with two sare guns without mounts: nº 49775; 49828 ([Inventory of] Ordnance Equipment, assigned to Battery 411 and to NAAF. Dated 23 June 1944. File A16-War, Preparation of; Conduct of; Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 4).—See also listing in NAAF Kiska, 1 January 1944. Construction Summary, Alaskan Sector, Thirteenth Naval District. Alaska Divisions, Bureau of Yards and Docks. File A1 Projects, Plans and Policies. Naval Districts & Shore Establishment 17th Naval District, Kiska, Alaska Naval Air Facility Confidential Files 1943-1944. NARA-AK RG181 Entry 83 Box 13.

[89]. Kiska Island, Alaska. Occupation of Kiska Island by U.S. and Canadian forces. Soldiers haul a 75-mm pack howitzer over rough terrain using the old hand rope method. 16 Aug. 1943. Signal corps Photo (Wilfred R. Morgan). Release by OPI, D/D, 25 Apr. 1050. Orig. neg. Lot 18197 mk. NARA RG-111-SC-337846.

[90]. Troops stand in a Canadian 75-mm mountain gun emplacement on Monument Hill, Kiska Island. 10-5-43. Signal Corps Photo #196-3-43-1058 (Pfc. Sanderson) from 196th Sig. Photo Co., released by BPR 4/4/46. orig. Neg. Lot 6062 mk. NARA RG-111-SC-246478.

[91] Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). 4x5 image no. 10; courtesy Beverly Maloof.

[92] Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 5 photo no. 24; courtesy Beverly Maloof.

[93]. That 6-inch gun no longer exists.

[94]. Pfc. Arthur L. Headrick of D. Battery, 862nd Antiaircraft Artillery stands beside one of the guns at Kiska Island. 9-25-1943. Signal Corps Photo #196-3-43-942 (Pvt. Sarver). Released by BPR 22 Nov. 1943. orig. neg. Lot 5472 1db. NARA RG-111-SC-245206.

[95]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 49 photo no. 32; courtesy Beverly Maloof.

[96]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 51 photo no. 1; courtesy Beverly Maloof.

[97]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 43 photo no. 24; courtesy Beverly Maloof.

[98]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 43 photo no. 23; courtesy Beverly Maloof.

[99]. The Alaskan Department Chemical Bulletin nº 10, dated 15 February 1944. NARA RG 165 Entry 177 Box 46 Folder 6000-6905 Alaska.

[100]. Ten Japanese hydrocyanic Acid Grenades Type TB172C sent for analysis to HQ Alaska Defense Command, 97th Chemical Composite Company, Laboratory Section: Norris B. Clough, Assistant Adjutant General, Office of the Commanding General Headquarters Alaska Defense Command, Seattle, to Commanding General, Western Defense Command, Presidio of San Francisco, dated Seattle 25 September 1943. NARA RG 165 Entry 177 Box 46 Folder 6000-6905 Alaska.

[101]. The Alaskan Department Chemical Bulletin nº 10, dated 15 February 1944. NARA RG 165 Entry 177 Box 46 Folder 6000-6905 Alaska.

[102]. V. Van Keuren, Advanced Intelligence Center North Pacific Area, San Francisco, to Officer In Charge, Commander North Pacific Force, dated San Francisco 18 February 1944. NARA RG 165 Entry 177 Box 46 Folder 6000-6905 Alaska.

[103]. Report of Inspection, Alaska Department, Western Defense Command, Northwest Service Command. Period 10 November 1943 to 4 January 1944. NARA RG 165 E 77 B56 F Alaska Correspondence.

[104]. Handleman, Howard (1943) Kiska Story. *Alaska Life,* November, pp. 44-49.

[105]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 43 photo no. 22; courtesy Beverly Maloof.

[106] As the image shows the ships without snow on the pier, we can assume that the photo with the gun trailers represents the first snow of the season. At present, climatic records for Kiska during WWII have not been located.

[107]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). 4x5 photo no. 32; courtesy Beverly Maloof.

[108]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). 4x5 photo no. 32; courtesy Beverly Maloof.

[109] Translation courtesy Adrien Rebollo (France).—See here for the cartridges: http://en.wikipedia.org/wiki/7.7x58mm_Arisaka; and here for the Type 99 Light Machine Gun:http://en.wikipedia.org/wiki/Type_99_Light_Machine_Gun.

[110]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 49 photo no. 33; courtesy Beverly Maloof.

[111]. Interrogation of Commander Nifumi Mukai ...*op. cit*. p. 105.

[112]. Notes on Interview with Lt. Colonel William J. Verbeck, held 1000, 4 November 1943. NARA RG 165, Entry 77, Box 47 Folder 6910 Alaska.

[113]. Gun C: Spennemann, Dirk HR. (2007) *The Present and Future Management of the Japanese Guns on Kiska, Aleutians, Alaska. The 4.7-inch Battery on North Head, Kiska. (Report Kiska #2) Documentation and Condition Report*. November 2007. Documentation prepared for the US Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[114]. Gun D: Spennemann, Dirk HR. (2007) *The Present and Future Management of the Japanese Guns on Kiska, Aleutians, Alaska. 120mm dual-purpose Gun Battery on North Head, Kiska.* (Report Kiska #3) Documentation and Condition Report. November 2007. Documentation prepared for the US Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[115]. Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. The 6-inch Battery on North Head, Kiska island. (Report Kiska #5) Documentation and Condition Report*. January 2008. Documentation prepared for the US Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[116]. Pers. comm. Bob Spring.

[117]. A review of the files of the Naval Auxiliary Air Facility Kiska (held by the US National Archives, Anchorage Office) located one reference to a shipment of Japanese ordnance. Shipped on USS *Garrison* on 13 October 1943 were "3 pos[itions] Japanese Ordnance" for S.O. N.S.D. Seattle for trans[hipment] to Exp[erimental] Invest[igation] Lab[oratory], Indian Head, Md [Maryland]. Two positions of Japanese depth bombs went to the same consignee. On the same vessel "4 pos[itions] Japanese Ordnance" were sent to S.O. Adak; and 6 boxes of Japanese bombs to the Navy Yard in Washingon D.C. also via S.O. N.S.D. Seattle. As there is clear reference to bombs and depth bombs (=depth charges) it can be assumed that the other ordnance mentioned refers to shells and other ammunition rather than entire guns ('Shipment of boxes of Japanese articles.' Clifford E Smith, Officer in Charge, Naval Auxiliary Air Facility Kiska, to Commander Alaskan Sector, dated Kiska 8 November 1943. NARA Alaska Office RG 181 Naval Districts and Shore Establishments, Entry 83, 17th Naval District, Kiska, AK, Naval Air Facility Confidential Files 1943-44, Box 5, L21 Shipments).

[118]. 30 November 2007.

[119]. The missing gun was apparently not received by the US Army Weapons Testing facility, the Aberdeen Proving Ground in Maryland (E-mail to the author by Jim Petrie [for Roy E. (Ed)

Heasley, Deputy Director/Curator], U.S. Army Ordnance Museum, Aberdeen Proving Ground. Dated 14 November 2007).

120. One gun in the Anchorage Museum; one gun at the Aviation Heritage Museum, Anchorage.

121. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll nº 49 photo no. 30; courtesy Beverly Maloof.

6. Military Terrain Analysis

Unlike in a game of chess, where the playing field is level and both forces are equal in strength and disposition at the commencement of the battle, a real-life battlefield is defined by the geographical terrain and the differential strength and disposition of forces that are or can be brought to bear. In the days past, many decisive battles were fought between large armies clashing on a battlefield, where the command of high ground, combined with the control over the opponent's movements due to a judicious exploitation of the geography provided a distinct advantage. Battles like that of Trasimene Lake (217 BCE) or that of the Teutoburg Forest (9 CE)[1] come to mind. Cognizance of the enemy's field of fire, and firing capabilities, had a bearing on the success of military engagements or the lack thereof, as was the case with the ill-fated charge of the Light Brigade in the Battle of Balaclava during the Crimean War of 1854.[2]

A meticulous analysis of the opportunities and challenges posited by the terrain can provide a commander with a distinct advantage in an impending conflict. This applies to movement warfare, where both sides are mobile, fighting over contested ground, and to stationary warfare, where one side has established a defensive stronghold to prevent an opposing force from advancing.

The application of KOCOA and its theoretical underpinning

The U.S. military, in keeping with most armed forces, has a developed a formalized approach for this. Like with many planning concepts impressed on the common soldier, the U.S. military uses a mnemonic acronym for military terrain analysis: *KOCOA*.[3] It encapsulates the analysis of:

Key Terrain/Decisive Terrain

Observation and Fields of Fire

Concealment and Cover

Obstacles

Avenues of Approach/Withdrawal.

As has been noted by military commentators, the standard approach of KOCOA has to be modified for warfare in urban conflict settings,[4] as well in situations where counter-insurgency measures are being undertaken.[5] While the terrain used by land battles can be readily examined in this way, aerial warfare requires some adjustments.

Table 44 Definitions of KOCOA Battlefield Evaluation System used by the NPS

Battlefield Element	Definition	Examples
Key Terrain	A portion of the battlefield, possession of which gives an advantage to the possessor.	Road junctions, bridges, high ground.
Observation and Fields of Fire	Any point on the landscape that allows observation of the movements, deployments, and activity of the enemy that is not necessarily key terrain, offers opportunity to see over an area and acquire targets, and allows flat-trajectory weapons to be brought to bear on the enemy.	High ground, sloping approaches to entrenched positions.
Cover and Concealment	Landforms or landscape elements that provide protection from fire and hide troop positions from observation.	Walls, structures, forests, ravines, riverbanks, entrenchments, ditches.
Obstacles	Landscape elements that hinder movement and affect the ultimate course of the battle.	Rivers, walls, dense vegetation, fortifications, ravines, ditches.
Avenues of Approach	Corridors used to transfer troops between the core battle area and outer logistical areas.	Roads, paths, creek beds, railroads

KOCOA and the NPS

The NPS American Battlefield Protection Program has adopted KOCOA as a suitable tool for analyzing a historic battlefield. In principle, it needs to be understood that in a military setting, KOCOA is an analysis tool aimed *at assessing the suitability of the terrain for the movement of friendly and enemy forces.* In the historic preservation setting, KOCOA is an analysis tool aimed at *hindcasting a battle commander's view of the battlefield*, in the hope of being able to reconcile the actual battlefield with the historic accounts of the battle. Geographical features, which figure prominently in the KOCOA analysis as determinants, must be examined in the light of the military doctrine of the day, as well as in the light of the then available technology. In the ideal world, this approach allows to a) better interpret the battlefield to an audience, and b) to identify those aspects of the battlefield that may have not seen the level of management attention they deserve.

The NPS site managers and consultants, as well as other heritage researchers, have used KOCOA successfully to analyze historic battlefields and the manifestation in the cultural landscape they created and in which they are embedded, such as the Battle of Little Big Horn,[6] the Battle of Buckland Mills,[7] or Vicksburg.[8] However, common to all battles so far analyzed, is that they are terrestrial battles only. All the battles of the War of Independence, the Civil War, and the Indian Wars were land warfare pure and simple, on occasion augmented by naval action bombarding shore installations. The aerial dimension to active warfare was a later development—but one that plays an integral role in the understanding of the Kiska Battlefield.

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Limitations of KOCOA

While KOCOA is a suitable tool to examine a battlefield location, it is not a tool that can be applied uncritically to any situation. Critical in the understanding of KOCOA is that the methodology is primarily suited for land-based combat between two opposing forces. KOCOA is *inherently unsuited* for open sea naval warfare as well as for purely aerial warfare. KOCOA is also of limited use in a situation where an opposing force holds an environmentally circumscribed terrain, such as an island, but where no actual person-to-person ground combat occurred. This is the case of Kiska. In the following we will look at how KOCOA can be used as a query tool for the understanding of the Kiska battlefield and in the process we will advance a modified KOCOA approach suitable for the island conquests in a twentieth century warfare setting.

KOCOA and the Pacific Island War

The Pacific Theatre of Word War II was defined by Japanese-occupied islands that were heavily defended and which were either conquered, or bypassed, by the advancing U.S. forces. Common to all situations was that after their initial occupation, the Japanese forces commenced to fortify the islands against U.S. attacks (from air, sea and from amphibious assaults) and that the U.S. forces attacked an island first from the air, and on occasion, from the sea, prior to a possible landing. If a landing was planned, then the island was subjected to an intense naval bombardment in the days prior to the assault. While some islands were attacked by amphibious assaults, such as Guadalcanal (1942), Attu (1943) Tarawa (1943), Kwajalein (1944), Saipan (1944), Peleliu (1944) and Iwo Jima (1945), others were merely bypassed, isolated and thus neutralized, such as Chuuk (Truk), Wotje, Taroa (Maloelap) or Mile (all in Micronesia).[9]

It can be argued that any combat zone, where no actual ground combat occurred, does not qualify as a battlefield *sensu strictu*. For the purposes of this study, these semantics are set aside, and the concept of a battlefield shall encompass that contested ground where direct military action occurred either through ground combat or through the projection of lethal force onto a stationary opponent.

Given the fact that some island battlefields never saw a direct assault leading to a successful or aborted re-conquest, any military terrain analysis of such island battlefields, therefore, has to proceed along two discrete lines: an analysis of the terrain opportunities for the pre-landing period, and an analysis for the post landing period. Only the latter, which entails ground combat, conforms closely to what can be termed the standard KOCOA approach taken by the NPS—a situation where we have to be concerned with the topography of the landing beaches, the disposition of the enemy forces opposing to that landing, if any, and how the landing forces were opposed as the gradual conquest of the island continued.

Yet the analysis of the terrain opportunities for the pre-landing period has more universal relevance as all Japanese bases in the Pacific were subjected to aerial, and on occasion naval, bombardment. In all cases, a largely stationary military force was exposed to and had to react to highly mobile aerial warfare, where the enemy could come from any direction.

Applicability of KOCOA to Kiska

Kiska is unusual among the island settings as an amphibious assault indeed occurred, but that the US/Canadian forces found the island abandoned. Thus, in the case of Kiska, we essentially have to be concerned with the pre-invasion period, and how military terrain analysis can aid in the interpretation of the battlefield.

What is the Kiska Battlefield?

As mentioned repeatedly, there was no direct land battle between the Japanese and the US/Canadian forces on Kiska; rather, it was a prolonged, 14-months engagement trying, by means of air attacks, to dislodge the Japanese after they had gained their foothold. As the 1944 U.S. Intelligence Assessment noted "[t]he fourteen-month battle for Kiska was largely an engagement between the Eleventh Air Force and Japanese AA fire."[10]

Since Kiska was an aerial battle, we cannot locate the critical and key/decisive elements of that battle in the landscape. In fact, all of Kiska that was occupied and defended by the Japanese was key terrain. Indeed, the landscape is clearly littered with evidence of the struggle. In fact, as will be argued in Chapter 10, Kiska forms a cultural landscape of a World War II battlefield that, in its integrity, is unique on a global scale.

In order to understand the Kiska battlefield and the structures and other physical remains that are still extant, it is necessary to disentangle the various threads of the background history (Chapter 3). By creating an analytical matrix we can identify significant components, which in turn will allow us to conceptualize a physical survey which will, given the geographical realities of access and climatic conditions, have to be conducted according to clear priorities (Chapter 7). The World War II history of Kiska can be broken up into six phases: i) Preparing for War, ii) Attack Phase, iii) Occupation Period, iv) Retaking Phase, v) Garrisoning, and vi) Abandonment. Some of these phases have both a U.S. and a Japanese component to them. They will be discussed below in more detail.

Table 45. Major phases of the Battle for Kiska

	Japanese	U.S. / Canadian
Phase I: Preparing for War		Meteorological Station
	Attack Preparations	
Phase II: Attack Phase	Invasion	
		Kiska Blitz
Phase III: Occupation Period	Japanese develop Naval Installations in Kiska Harbor	
		Systematic bombing of mainly IJN targets
	Japanese develop Army garrison at Gertrude Cove	Systematic bombing of IJA targets mainly in pre-retaking phase.
Phase IV: Retaking	Japanese evacuate Kiska after Attu was retaken by U.S. forces	
		U.S./Canadian forces landing unopposed
Phase V: Garrisoning		U.S./Canadian forces dig in
Phase VI: Abandonment		Canadian withdrawal U.S. withdrawal

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Applying KOCOA to the Kiska situation

In the following we will carry out, to the extent feasible, a KOCOA analysis for all six phases of the Battle for Kiska.

KOCOA for Phase I (Preparing for War)

Sometime during 1936 or 1937 the U.S. Navy erected a meteorological station at Kiska Harbor. The location of the station was solely determined by the physiography of the island: of all the bays accessible by supply ships, Kiska Harbor is the most protected and safe for medium to large-sized vessels during most of the year; of the two beach locations on the northwestern and the southwestern shore of the Kiska Harbor, the former is the more protected from winds and resultant wave action.

While the establishment of the meteorological station on Kiska forms part of the overall preparations by the U.S. for a possible Japanese offensive in the Aleutians, the developments on Kiska are fairly peripheral, compared to the development of the airfield on Umnak or the construction of the Alaska-Canadian Highway.

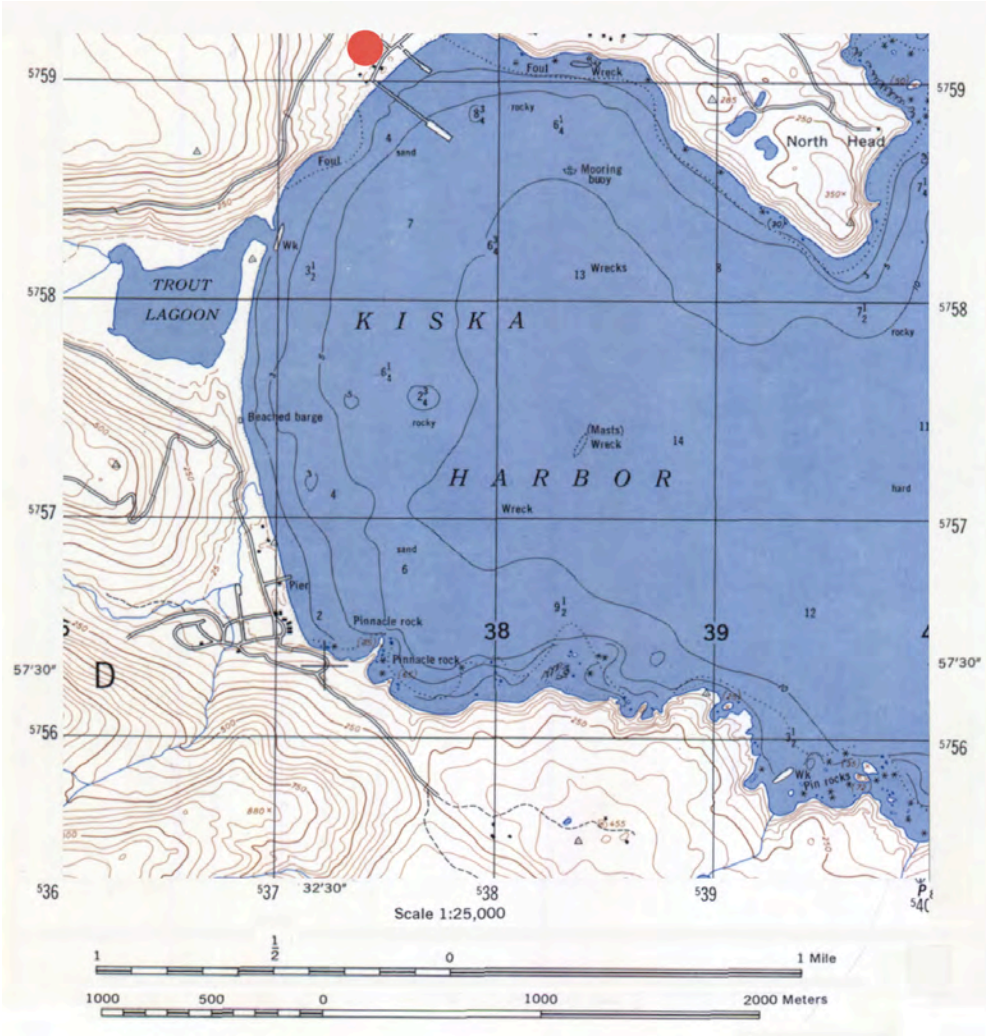

Fig. 242. The location of the weather station at Kiska Harbor (near the northern most pier. Note that the structures and roads shown reflect the end of the World War II appearance. None of them existed when the weather station was there. [11]

The Japanese preparations for the occupation of Attu and Kiska all occurred in Japan. As far as we can ascertain, there seems to have been no formal, or informal, systematic reconnoiter of Kiska in the years prior to the outbreak of World War II.

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Thus little can be gained from the KOCOA methodology in the analysis of Phase I as it either has no substantive relevance (as in the case of the meteorological station) or it occurred very remote from Kiska, on the Japanese homeland.

KOCOA for Phase II (Attack Phase)

Japanese Invasion

Japanese doctrine stipulated that no landing should be the same in order to prevent the enemy from anticipating Japanese tactics.[12] The Japanese planned for an amphibious landing on Kiska, with the aim of taking the weather station with some modicum of surprise. The longer the U.S. was in the dark that Kiska had been attacked and occupied, the more time the Japanese forces had to land troops and to establish at least temporary AA positions to fend off a U.S. aerial attack that was bound to come as soon as that could be mounted. As with any landing, the initial period is crucial, as it is that time when most of the material is still embarked on supply ships, when much of the landed material is still clogging up the beach heads, when the sea off the landing beaches is congested with ships which reduces their maneuverability in response to an aerial attack, and when landed personnel did not have the time to dig trenches or fox holes for protection.

Considering the topography of Kiska, any concealed landing had to come from one of three directions:

- landing on the western shore and a long and arduous march across the center of the island;
- a landing in one of the southern coves and an extended march across the South Head; or
- a landing in one of the coves north of North Head.

The latter option is not only the shortest, but also the least challenging from the topography. In addition, an approach from North Head allowed the Japanese to maintain an element of surprise until they were less than 1,000 yards from their objective and, to occupy the high ground, suitable for observation, with total control of the field of fire should the need arise.

To effect this, the Japanese had two options, to land along Model Cove or to land at Reynard Cove, While Model Cove was much closer to the objective, the terrain does not provide low contoured beaches suitable for rapid deployment of troops in small boats and barges. Moreover, movement inland from Model Cove would have been more difficult given the lay of the land. Reynard Cove, on the other hand, allowed for an easy landing, as well as movement along a contour gradually gaining height.[13]

Moreover, we also need to consider that Japanese intelligence of Kiska Harbor, at least in the planning stages of the attack, seems to have been extremely limited. An intelligence map of Kiska Harbor only shows the location of the meteorological station, mentions that Kiska Harbor can be used for ships, and states that larger vessels cannot use the pass between Kiska and Little Kiska.[14] There are no other data. We know that on 11 May 1942 the seaplane carrier *Kimikawa Maru* launched floatplanes some 150nm south of Kiska to carry out a brief photoreconnaissance of Kiska and Adak. While Adak was observable, Kiska was obscured by weather.[15] Given that this photoreconnaissance

was inconclusive, it is very likely that the final assessment, where the landing would occur, was only made after the attack on Dutch Harbor.

	Japanese	U.S. meteorological station personnel
Key Terrain/Decisive Terrain	northwestern shore of Kiska Harbor	northwestern shore of Kiska Harbor
Observation and Fields of Fire	coming from the north allowed Japanese to occupy high ground by surprise	Kiska Harbor Entrance and Bay
Concealment and Cover	landings shielded by the elevation of North Head, presence and approach shielded until less than 1000 yards away	not applicable (not aware of landings)
Obstacles	no anthropogenic obstacles only environmental conditions (soft underfoot)	not applicable (not aware of landings)
Avenues of Approach/Withdrawal	from north as shortest distance, no withdrawal envisaged	option to flee to Trout Lagoon or inland (up the main valley)

Table 46. KOCOA for the Japanese landings

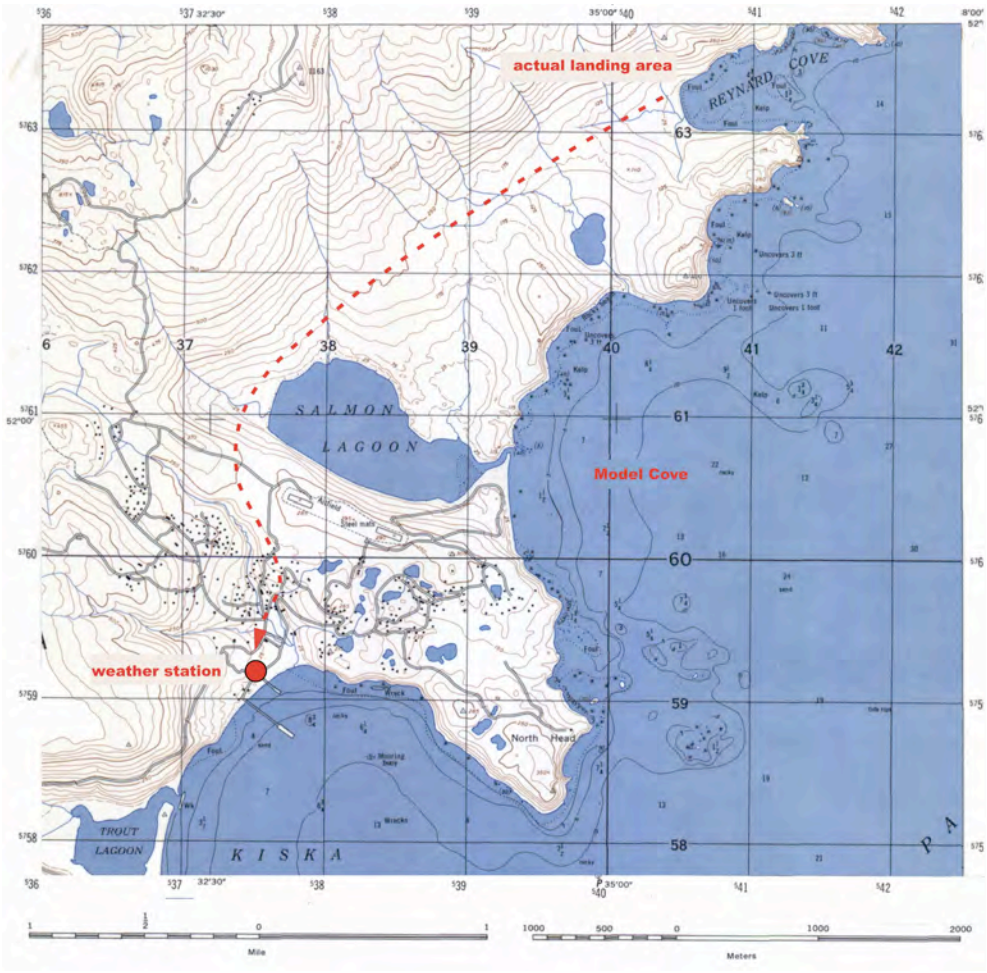

Fig. 243. The location of Reynard Cove in relation to the weather station at Kiska Harbor.

Initial U.S. response: the Kiska Blitz

Once the U.S. forces noted that the Kiska Meteorological Station stopped transmitting on 8 June 1942, the U.S. Air Force sent a reconnaissance plane to investigate. Following

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the report that the Japanese had indeed landed, the USAAF immediately began bombing missions, trying to prevent the Japanese from gaining a firm hold on the island. To achieve this, the USAAF planners had to follow a series of priorities of targets if other variables (such as opportunity and weather) were equal:

- Warships in the harbor, as they a) were the most valuable asset to the Japanese and b) could cause the most damage to Allied operations in the Pacific;
- Transport ships in the harbor, as they a) carried supplies that had not been landed and b) could be used to (re-)supply Kiska and other bases if they were allowed to sail;
- Installations and materiel already landed on Kiska.

The aim of the attacks was to catch the Japanese ships in the harbor, during unloading operations and in the hope that the ships of the Japanese invasion fleet[16] still were present and would have less room to maneuver. The mission on 11 June 1942 is the only one for which we have imagery from *both* the U.S. and the Japanese side. Film footage shot by a Japanese news crew[17] shows aircraft (visible are a PBY and a B-24) attacking at low to medium altitude. Japanese anti-aircraft fire downed one of the B-24s[18] (see below).

The aircraft, five B-24s and five B-17s, had taken off from Cold Bay and, having refueled and loaded bombs at Umnak Island. They attacked shipping targets in Kiska Harbor with the Japanese destroyer *Hibiki* sustaining medium-level damage.[19] The long-range attacks by U.S. bombers continued over the next three days.[20] On 14 June four B-17s and three B-24s continue to bomb shipping in Kiska Harbor from an altitude as low as 700 feet. Two cruisers were reported hit.[21] That attack was met by air opposition from scout planes launched from one of the Japanese cruisers. Two of the B-17s were heavily damaged, but made it back to Umnak. One of the scout planes was claimed shot down.[22]

In principle, the U.S. aircraft had a limited number of options for attacking shipping in the harbor. Unless they flew very low, using the landforms for concealment (see below), their approaches would have been noted, giving the Japanese sufficient time to man the AA positions. Two main routes were possible, coming from the east or the west. The eastern approach, through the mouth of the harbor, gave the U.S. pilots the time to choose and line up their targets as they approached (Fig. 244). But this also gave the Japanese AA gunners time to spot and aim at the incoming aircraft. Depending on which side of the harbor they attacked, the U.S. aircraft would then cross over Kiska, either in a north-westerly direction, passing over what was later known as 'Main Camp,' or in a south-westerly direction, taking the pass just to the west of Trout Lagoon. Depending on armament load, the aircraft could then return the same way for a second run.

Alternatively, the aircraft could approach the harbor from the west, flying through the pass just to the west of Trout Lagoon (Fig. 244). Depending on the height of approach, some or much of the approach would have been concealed, thus possibly catching the Japanese off-guard. While both the escape and the attack route near Trout Lagoon seemed logical, is was effectively a linear arrangement, where the surrounding hillsides offered the pilot no escape route. As a result, Japanese AA gunners could follow a plane out, or in, without having to readjust their aim to any sizeable degree.

The first Japanese medium AA position was set up on the rise just inland from what was to become known as the main camp area, with an additional light AA set up The battery consisted of four 75mm Type 88 AA guns with a range of 15,000 yards and a ceiling of 29,500 feet. From the available evidence it appears that the battery was not

operational until well after a fortnight after the landings.[23] Once established, however, that AA position would provide an effective coverage of Kiska Harbor above 500 feet (Fig. 248) which would cover all but low-flying strafing aircraft for most of the approaches. Low-level attacks at 700 feet, flown by PBY patrol bombers, for example, could be covered for much of the area bar a small reach of approach west of Trout Lagoon. Any aircraft that flew above 1,000 feet was at risk from AA fire (Fig. 249). In addition, a RADAR installation was landed and installed. It was operational by early July.[24]

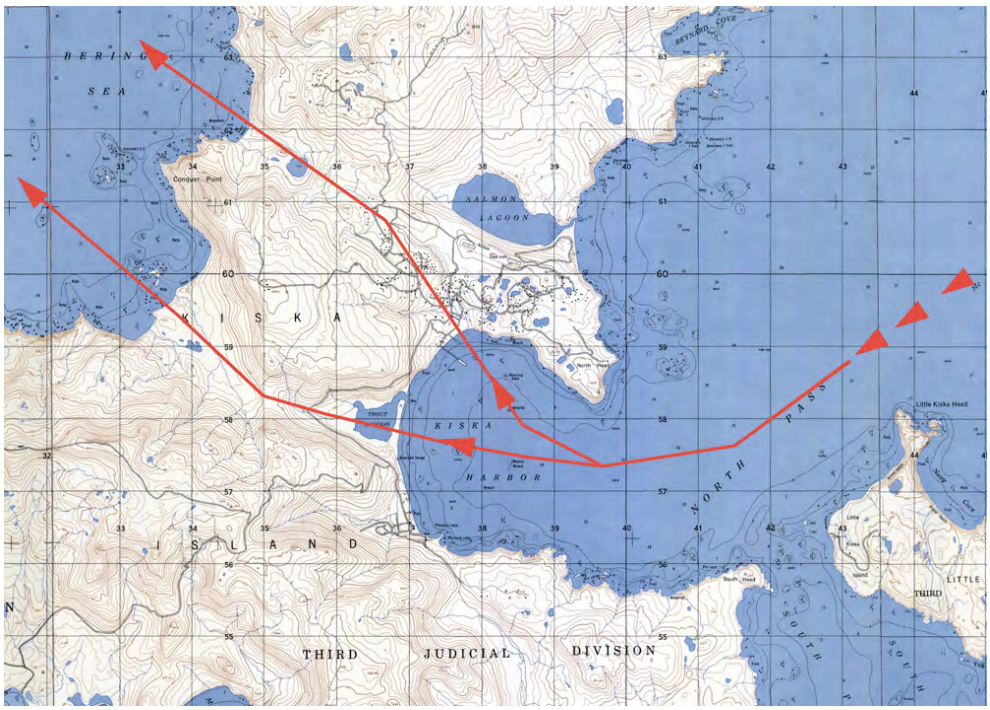

Fig. 244. Air Attack on Kiska Harbor, main approaches from the east.

Fig. 245. Air Attack on Kiska Harbor, partially concealed approach from the west.

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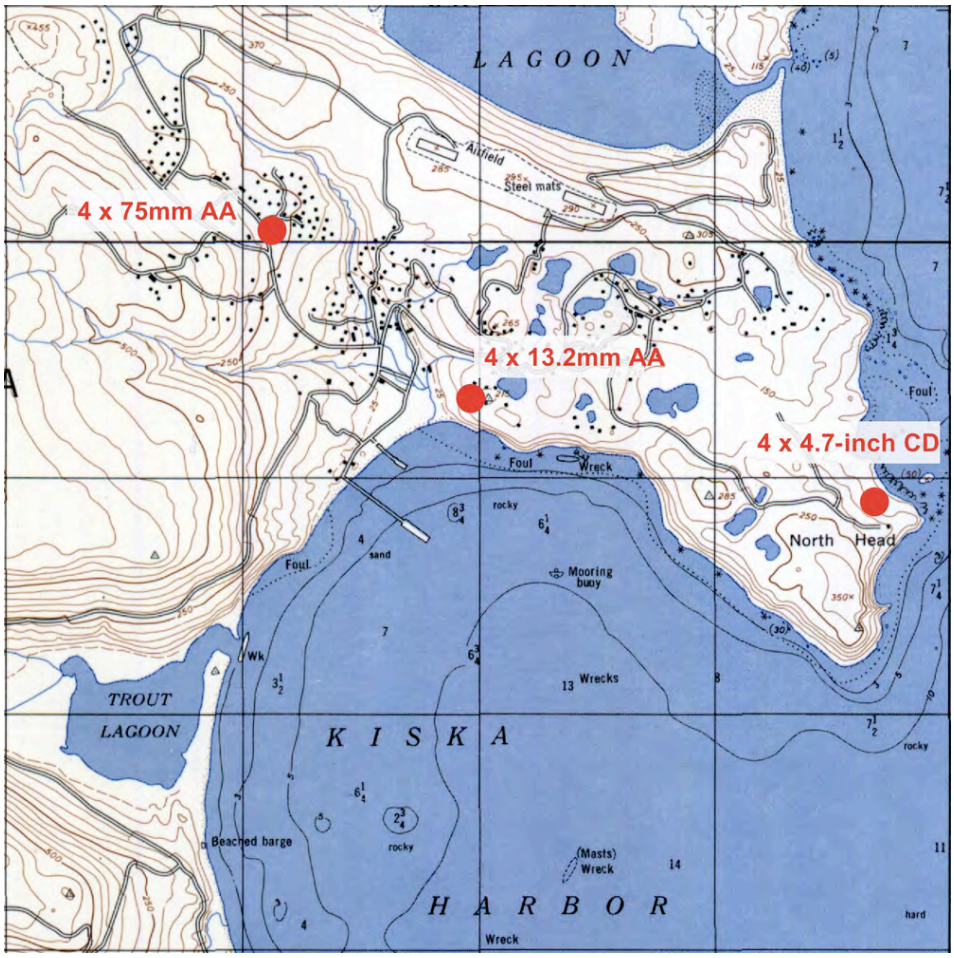

Fig. 246. Anti-aircraft and coastal defense gun positions set up on Kiska.

A review of the footage provided in the Japanese newsreel shows that, indeed, the warships in the harbor provided all AA.[25] It seems logical to assume that the warships remained in the harbor for that purpose. Keeping in mind that the newsreel footage is edited, and cut for dramatic effect, it nonetheless shows one string of bombs being dropped into the inner part of the harbor, more or less parallel with North Head, with the sequence of the bombs suggesting the plane flew from east to west. Two other explosions are shown. A single bomb dropped amidst the shipping in the harbor. It is difficult to ascertain the position of the cameraman but he was on a warship, presumably one of the two cruisers *Tama* or *Kiso*, or on the destroyer *Hokaze*.[26] It seems that the bomb shown was dropped by a PBY which approached the ships from the northeast judging by the splash/ plume of water. The other bomb, again a single bomb, was dropped near Mercy Point, also hitting the water. Again, judging by the splash / plume of water, it was dropped by an aircraft coming from the north-east.

In addition, the footage shows a PBY flying in across the island, coming in from the Trout Lagoon area. While under fire, and effectively flying straight into the AA fire, it escapes unharmed. This cannot be said for one of three incoming B-24s, which was shot down, while flying on a 1,800 foot approach.[27] The footage shows the struck aircraft disintegrating and tumbling to the ground, with a subsequent explosion.[28] The remains of that aircraft can still be seen *in situ* (Fig. 312).

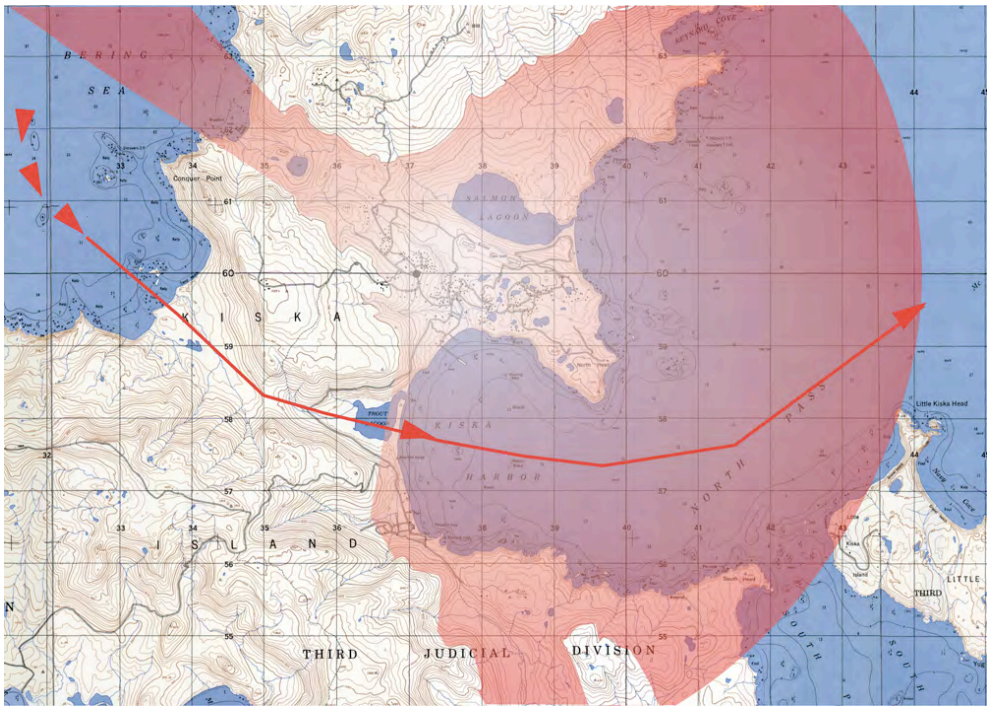

Fig. 247. The range of the 75mm AA battery at Main Camp as constrained by the 500 feet contour. The route of a partially concealed air attack from the west is also shown.

Fig. 248. The range of the 75mm AA battery at Main Camp as constrained by the 750 feet contour. The route of a partially concealed air attack from the west is also shown.

Table 47. KOCOA for the U.S. bombings during the Kiska Blitz

	Japanese	U.S. aircrew
Key Terrain/Decisive Terrain	northwestern shore of Kiska Harbor	harbor, northwestern shore of Kiska Harbor
Observation and Fields of Fire	Kiska Harbor and nearby shore areas	all of Kiska (as attack is airborne)
Concealment and Cover	cloud cover only	cloud cover only
Obstacles	nil	terrain limitations (e.g. Kiska Volcano)
Avenues of Approach/Withdrawal	n/a	open sea, overland over center of Kiska

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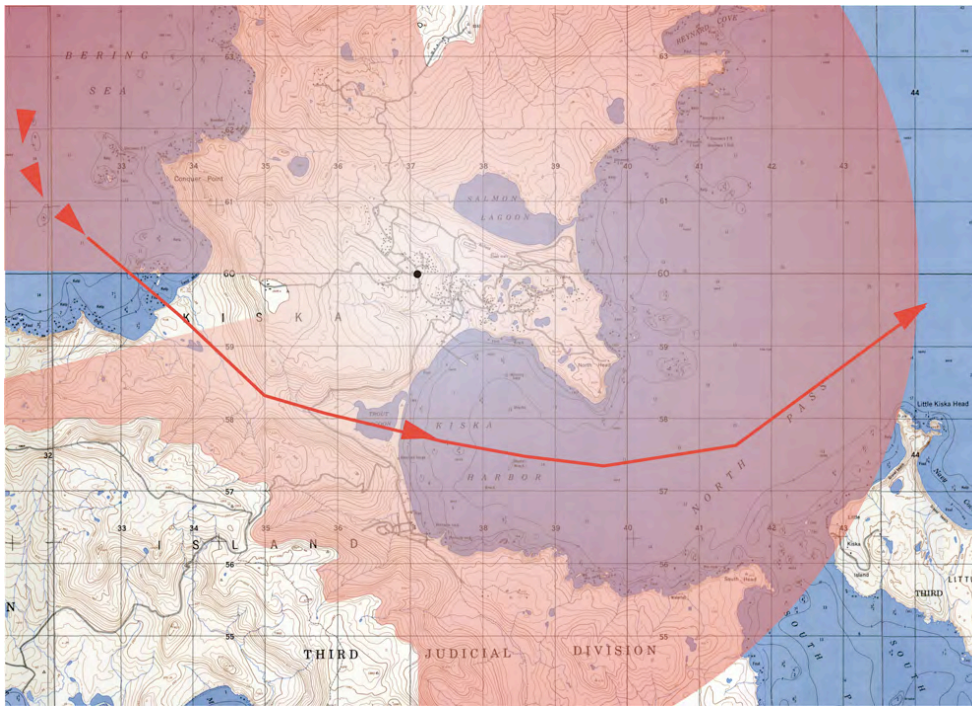

Fig. 249. The range of the 75mm AA battery at Main Camp as constrained by the 1000 feet contour. The route of a partially concealed air attack from the west is also shown.

Fig. 250. The weather over Kiska meant that often much of the target was obscured. (U.S. bombing raid on Kiska, 27 January 1943).[29]

KOCOA for Phase III (Occupation Period)

Once Kiska had been occupied, the Japanese lost no time in developing the area around the key terrain, Kiska Harbor, into a formidable base from which to launch seaplane and submarine operations. The KOCOA analysis does not add substantially to the

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understanding of either the Japanese, or the U.S. situation. Nothing changes with regard to the key terrain, but all other factors are largely immaterial because of the distances involved and the method of weapons delivery on the targets.

A more general evaluation of the strategic situation proves more fruitful. From the perspective of the Japanese defenders, any U.S. counter attack on Kiska could, theoretically, come in a number of forms (and a combination thereof):

- purely aerial bombardment by long-range bombers, with increasing frequency (under the assumption that additional airfields closer to Kiska may be built in due course).
- Low-level strafing of positions by fighter aircraft (should the U.S. build airfield that put Kiska within range of their fighters)
- aerial bombardment and low-level strafing of positions by carrier-borne aircraft
- naval bombardment of Japanese installations
- landing of small sabotage units by submarine or other means
- major amphibious landings, possibly preceded by an airborne assault.[30]

Unlike the U.S. attackers, which were essentially a mobile force that could, conceivably, attack Kiska from any direction and at any time, the Japanese were an essentially stationary force, not only with little mobility, but also with little advance warning.

Given the isolated nature of Kiska, any protection against attacks had to come from Kiska itself. The other major ally for the Japanese was inclement weather, especially fog and medium-level cloud cover, occasionally accompanied by winds in excess of 50 knots. Yet this was a double-edged sword as such weather would also exact a toll on Japanese men and gear, and would delay any construction activities they were undertaking.

Let us now consider the responses to the above threats that were available to the Japanese, first by considering attacks by air and then attacks from the sea.

Table 48. KOCOA for the U.S. bombings in the early part of the occupation period and attrition phase.

	Japanese	U.S. aircrew
Key Terrain/Decisive Terrain	western shore of Kiska Harbor	harbor, western shore of Kiska Harbor
Observation and Fields of Fire	Kiska Harbor and nearby shore areas all of Kiska (when Japanese aircraft were present)	all of Kiska (as attack is airborne)
Concealment and Cover	cloud cover only underground shelters and caves for personnel	cloud cover only
Obstacles	nil	terrain limitations (e.g. Kiska Volcano)
Avenues of Approach/Withdrawal	n/a	open sea, overland over center of Kiska

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Table 49. KOCOA for the U.S. naval engagements in the middle part of the occupation period.

	Japanese	U.S. Navy
Key Terrain/Decisive Terrain	Kiska Harbor and surrounding terrain, mainly along the western shore	Kiska Harbor and surrounding terrain, mainly along the western shore
Observation and Fields of Fire	Kiska Harbor and nearby shore areas around North Head and Little Kiska all of Kiska (when Japanese aircraft were present)	all near shore areas of Kiska (as attack is seaborne), but observation is limited to areas visible from sea and from sea level, unless ship-based aircraft are used for spotting gunfire.
Concealment and Cover	cloud/fog cover only underground shelters and caves for personnel	fog cover only
Obstacles	nil	terrain limitations (e.g. shallows and rocks)
Avenues of Approach/Withdrawal	n/a	open sea

Responding to airborne threats

When considering their defenses against airborne threats, the Japanese planners would have had to consider four attack scenarios:

i) low, medium and high altitude bombing by long-range, land-based bombers;

ii) attacks by carrier-based dive bombers on land-based targets;

iii) attacks by carrier-based dive bombers and torpedo planes on shipping in the harbor; and

iv) attacks by carrier-based fighter aircraft against exposed personnel, equipment and minor installations.

In addition, the planners would have predicted that the U.S. might establish bases closer to Kiska that allowed deploying medium-range bombers and land-based fighters.

Examining the threats

Of all the threats, the most substantive were those posed by long-range, land-based bombers capable of low, medium and high altitude bombing. They operated from land-based airfield and could be brought to bear as regular as machines and weather permitted. U.S. carrier strikes, on the other hand, would be selective, few and far in-between, given the significance of the limited number of fleet carriers to the overall U.S. war effort.

In the first days after the landings, the Japanese had already experienced the capabilities of the U.S. bomber pilots (both B-17 and B-24 long-range bombers and PBY patrol bombers) and could observe both bombing accuracy (which was bound to improve over time) and destructive effect. One of the interesting observations the Japanese must have made soon after the bombing started, was that bombs dropped on the tundra were less destructive than bombs dropped on terrestrial targets elsewhere: the tundra, coupled with the underlying sandy ash deposits, proved a soft surface absorbing much of the bomb impact.[31] Thus while bombs might explode on impact (and it is not clear at present how many did not), the soft conditions meant that ancillary damage from shrapnel and dislodged ground matter was quite confined if not totally negligible. To be destructive, the bomb had to score a direct hit. Moreover, for the bombers to have a high bombing accuracy, their course and speed was predetermined, making them more

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vulnerable once they had committed to a bombing run. Bombers, too, had to ideally fly at a medium altitude to ensure accuracy. With any increase in bombing altitude the accuracy of bombing decreased caused by minor errors in navigation, inaccurate readings of aircraft speed over land (due to instrumentation or human errors) and environmental conditions, such as wind.

When the Japanese considered their options at defending their base, they well understood the potential destructive impact of fast moving carrier forces.[32] In the early days of the Pacific War, they themselves had demonstrated the power that carriers could project in their attacks on Pearl Harbor (7 Dec 1941), Darwin (Australia, 19 February 1942) and Trincomalee (Sri Lanka, 9 April 1942). Likewise, the U.S. had carried out a strike against the Southern Marshalls, attacking the Japanese bases on Kwajalein, Taroa and Wotje (1 February 1942). Such attacks consisted of a combination of fighter aircraft sent to subdue any air opposition, and then to strafe personnel, ground installations, and small inshore craft; torpedo bombers to neutralize any shipping and of dive-bombers to selectively destroy ground targets, with fuel dumps, power stations and heavy anti-aircraft guns the primary targets. When conducting a post-attack damage assessment of the U.S. attacks on their installations in the eastern Marshalls, the Japanese Navy would have come to realize that while such strikes were highly effective against any shipping that could be caught unprepared, as well as against any aircraft still on the ground during the attack, the lasting effect of these attacks was actually limited. These were essentially strikes with a high miss ratio, where the psychological impact on the defenders was greater than the physical damage. Only when sustained by several waves of attack would they have any lasting effects.[33] Attacks by carrier-based torpedo bombers flown against shipping, however, were highly successful. Their own attack on Pearl Harbor, as well as the British attack on the Italian Fleet at Taranto (Italy, 11–12 November 1940), had unequivocally demonstrated to the Japanese planners that no fleet bottled up in a harbor could ever be safe from low-flying torpedo planes. This threat could be largely negated by limiting the time that valuable naval assets were present in Kiska Harbor, and by making use of days where heavy fog persisted. Given the significance of the limited number of fleet carriers to the overall U.S. war effort, it was clear that any U.S. carrier strikes would be selective, few and far in-between—if they ever occurred. And that evidently would depend on the overall situation of the war in the other theatres of the Central and Southern Pacific where the carriers might be better used to greater effect.

The third airborne threat, low-level strafing of positions by fighter aircraft, presuming that the U.S. would build an airfield that put Kiska within range of their fighters, is equivalent to the threat posed by carrier-borne fighter aircraft. The only exception was that such land-based fighter strikes would be much more frequent and recurrent than carrier-based strikes.

Responding to airborne attacks

The only realistic means for the Japanese against the threat posed by aircraft were to maintain aerial supremacy over Kiska, or to develop an umbrella of effective anti-aircraft fire. Let us consider the second option first, as this was one that could be readily established and maintained.

Anti-aircraft fire was primarily designed to deny the attacking forces their preferred route of attack or their desired altitude thus reducing bombing accuracy and impact. Any shoot-down of one or more attacking aircraft was highly desirable, but essentially a by-product. Thus an umbrella of effective anti-aircraft fire required a strategic placement of the available AA batteries. And here the two modes of aerial attack require different

responses. Defense against slower moving bombers required a more scattered, but overlapping, positioning of the AA batteries. This allowed the AA gunners to track and cover an attacking bomber both coming into the target and leaving it, thus maximizing disruption of the flight path on the way in, and maintaining a chance of a shoot-down on the bomber's way out. A defense against carrier-based dive-bombers required the AA to be placed close to the key installations, again to deflect the attacker's aim and to allow for the chance of a shoot down. Defense against strafing fighter aircraft was much more limited as all AA positions, by their nature, are in exposed positions with the gun crew totally in the open, which makes both the gun and its crew vulnerable to strafing by the attacking fighter. Only one of the AA gun types, the 120mm dual-purpose gun, had turret shields, but these were very thin and essentially provided the gun crew only with protection from the elements.[34] A defense against carrier-borne torpedo aircraft attacking cargo/transport shipping could only be provided by AA guns that overlooked the harbor and that could take attacking aircraft into cross fire.

Fig. 251. Locations of the two Japanese RADAR sites.

Early Warning

The success of the AA heavily relied on any early warning that the Japanese could muster. This comprised the RADAR system as well as ground-based observers.

Although the Japanese had access to RADAR, it was limited. Erected on a 500 foot rise northwest of the Main Camp area, the RADAR had become operational in early July 1942.[35] A second set was installed in August or early September 1942 on Little Kiska[36] While both were screens with a 360° traverse, operated by motor or hand, the Japanese RADAR seems to have been more or less directional pointing into the main direction of the U.S. attacks: from the east. Even when circling, the RADAR on Kiska was blind-sighted in the southwest, where the ridge separating the Main Camp valley from Trout Lagoon interfered, and in the north where the Kiska Volcano stood in the way.[37] A third, small set with a fixed array was installed at South Head.[38]

The capabilities of the Japanese RADAR are not fully clear, as post-war assessments had to contend with a heavily damaged unit,[39] but it would appear that the RADAR had a

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range of 40 miles for aircraft contacts. Assuming the RADAR operators were on the money, then that range, coupled with a B-24 cruising speed of 150mph, gave the Japanese less than 15 minutes as warning of an impending air raid.[40]

Any additional advance warning that the Japanese could have hoped for would have come from picket submarines, from land-based observers that could be placed in islands east of Kiska, such as Semisopochnoi, Amchitka or even Tanaga (Fig. 252), and from air cover that the Japanese might be able to muster.[41] From all accounts, neither picket submarines, which themselves would have been at risk from aerial attack, nor land-based observers were deployed, effectively blind-siding the Japanese defenders.

Fig. 252. Range of Japanese RADAR and geography of the region.

Tactics

In terms of battle tactics, we know from Japanese documents captured in the South Pacific, that dual-purpose guns were primarily used in an AA role, and only switched to a coast defense role when no aerial targets were to be engaged.[42] Moreover, because of the potential dual role, they seem to have been subject to fire control at the battery level, rather than the overall area level.

To improve response time and performance, the Japanese AA gunners were trained to calculate out firing data with a range of set distances and have them at the ready on boards.[43] Japanese documents captured in other theatres of the war suggest that Japanese AA fire control assumed a window of ten to twenty seconds of effective fire against a high-level bomber, emphasizing that fire had to be very rapid.[44] Against medium-level attacks, where the window was ten seconds or less, a burst of four rounds laid by eye was set as the standard. Against low-level attack, the 75mm AA was to be limited to two rounds, placed well ahead of the aircraft.[45] Barrage fire was only recommended against dive-bombing attacks, with the barrage set at 1,000 meters.[46]

The performance data for the mainstay of the Japanese AA defense, the 75mm Type 88 gun, vary widely, with effective ceiling heights, where hits can be expected, ranging from 16,400 feet to 26,200 feet.[47] Based on Japanese PoW information, a round fired from a 75mm gun took 27 seconds to reach the 26,000 foot ceiling. Normally, a 75mm Type 88 gun was staffed by a gun crew of twelve,[48] with each position having an alternate among the twelve so that they could be relieved if fatigued or injured.

Structuring the AA defenses

Thus, in structuring the defenses, the Japanese had to consider long-range bombers, strafing fighters and, possibly, carrier-based dive-bombers. This required a matrix of AA positions, combining heavy AA with a greater range, but slower rate of fire with light AA with a much lesser range, but a higher rate of fire.

Of the five available calibers, the 13.2mm, with its 3,500 feet effective ceiling, was useless against bombers attacking from medium to high altitudes. The 13.2mm were, however, significant in the defense of key installations from low level attacks.

When considering these AA barrage curtains, we need to consider the impact of the projectiles. Any of the smaller projectiles would be a stream originating from one source point. With quick evasive maneuvers they could be avoided. The other, heavier weapons used projectiles with fuzes that were set to explode either by altitude reached or by time passed since firing. These would then send an array of shrapnel, which could hit and damage planes not directly in the line of the projectile.

Table 50. Technical overview of the capabilities of the AA on Kiska[49]

Caliber	Model	practical rate of fire (rounds/min)[50]	effective ceiling (ft)[51]	Types of ammunition[52]	Weight of round (kg)
13.2mm twin mount[53]	Type 93	500	3,500	ball, AP, I&T, HE	0.05
20mm single mount	Type 98	120	5,000	AP, APT, HE, HET, HETSD, ITSD	0.14
25mm twin mount[54]	Type 96	220	6,500	AP, HE, HET, HETSD, ITSD	0.27
75mm[55]	Type 88	17-20	16,400	Type 90 AA	6.53
120mm[56]	10th year type	6-8	22,900	HE	20.73

Fig. 253. Locations of the main anti-aircraft gun batteries

Only one of the five major types of AA guns available to the Japanese, the 120mm dual-purpose gun, had to be permanently emplaced. The 25mm gun, which was electrically driven, but could be operated manually, was designed to remain stationary once emplaced, but could be moved if the need arose.[57] The three types were considered mobile and could be shifted to other positions. The 13.2mm gun could be readily dismounted and transported on a truck, while the 20mm Type 98 came with a small carriage that could be attached. The largest of these, the 75mm Type 88 gun was supported by five outriggers which could be folded up and, with the addition of two

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tires, formed a gun carriage that allowed the gun to be towed or pushed to a new location (Fig. 299).

Therefore, the Japanese AA strategy had to be two-fold: i) to establish a matrix of emplaced anti-aircraft guns that provided an effective AA umbrella of varied depth and range, and ii) to create a further matrix of empty AA positions where the three more mobile types could be relocated when the strategic situation changed. While the available evidence suggests that the Imperial Japanese Navy (IJN) initially made use of the latter concept,[58] it did not do so at the later stages of the occupation of Kiska.[59] Indeed, an U.S. post-invasions assessment of the Japanese AA Defenses of Kiska argues that the low success rate enjoyed by the Japanese AA gunners was in part due to the fact that all Japanese AA positions were well known to the U.S. planners through visual reconnaissance and photo interpretation, and who then plotted various attack and break-away routes taking into account the "knowledge of AA fire capabilities including effective range and areas of coverage."[60]

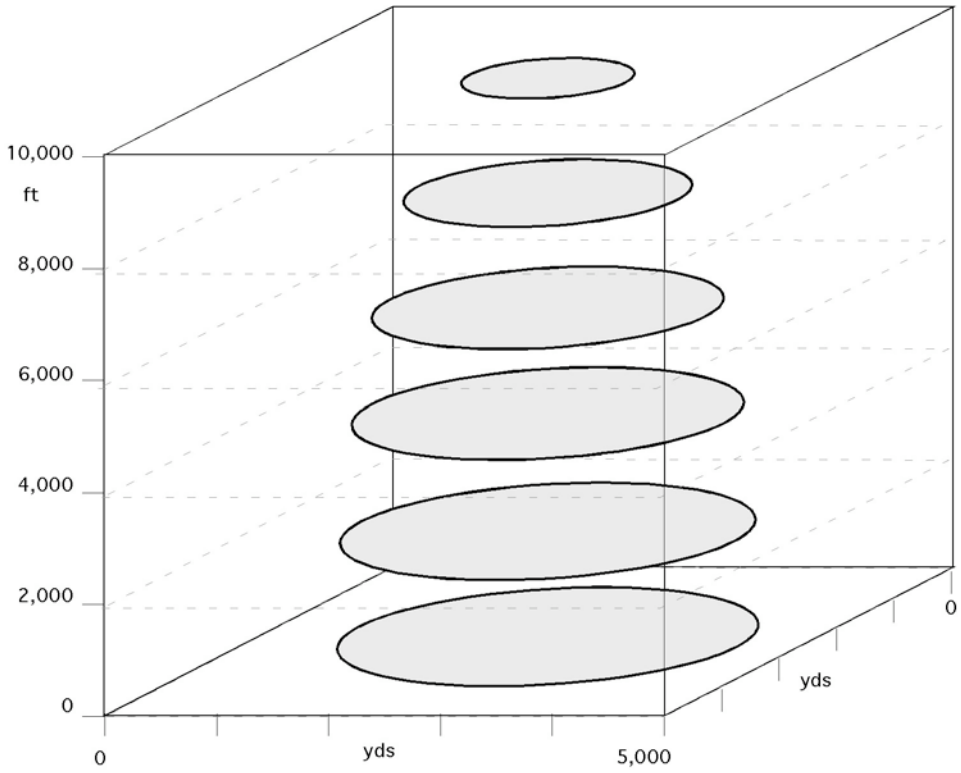

Fig. 254. Gun circles with range of fire of the 25mm Type 96 AA gun.
Note that analysis by U.S. intelligence states that the effective range, where hits can be expected, is smaller.[61]

On the other hand, there is evidence from both U.S. intelligence reports and from an analysis of satellite imagery of extant features in the landscape that the IJA in its occupation of Gertrude Cove made ample use of emplacements that were devoid of, but had been readied for the acceptance of guns. This may well reflect inter-service differences in tactics between the IJN, which was used to develop and plan for the defense of stationary bases, while the IJA would have been accustomed to moving battlefronts which required contingencies at various depths.

The pattern of AA guns as emplaced at Kiska Harbor is shown in Fig. 246. As shown, for the example of the 25mm Type 96 guns (Fig. 256) the protective cover of an AA gun has been regarded as a cone centered on the gun position. The dual position at Mercy Point, for example, covers much of the central section of Kiska, as does the 75mm AA position just to the west of Main Camp (Fig. 255) and the battery on South Head.

The coverage of various guns will overlap spatially at various levels. For example, the four 25mm AA batteries at 5,000 feet and below do cover much of the critical infrastructure and the surrounding airspace. More importantly, the four gun positions very efficiently covered the airspace above the Main Camp Area. When we take into account the number of guns emplaced in each battery, and multiply this with the practical, not the maximum, rate of fire, then the airspace could have been filled with 1,760 rounds per minute.[62] The overlap between the coverage of the gun positions is reduced dramatically at the gun's ceiling of 10,000 feet. One battery no longer overlaps with the others. Yet, there is the overlap at the northwestern shore and the areas close to the shore: the area taken up by the reason d'être of the Japanese occupation on Kiska: the seaplane base.[63]

If we now add in all 75mm batteries as well as the 120mm battery on North Head, then we can note that the entire harbor area is covered by overlapping circles at 5,000 feet (Fig. 258).

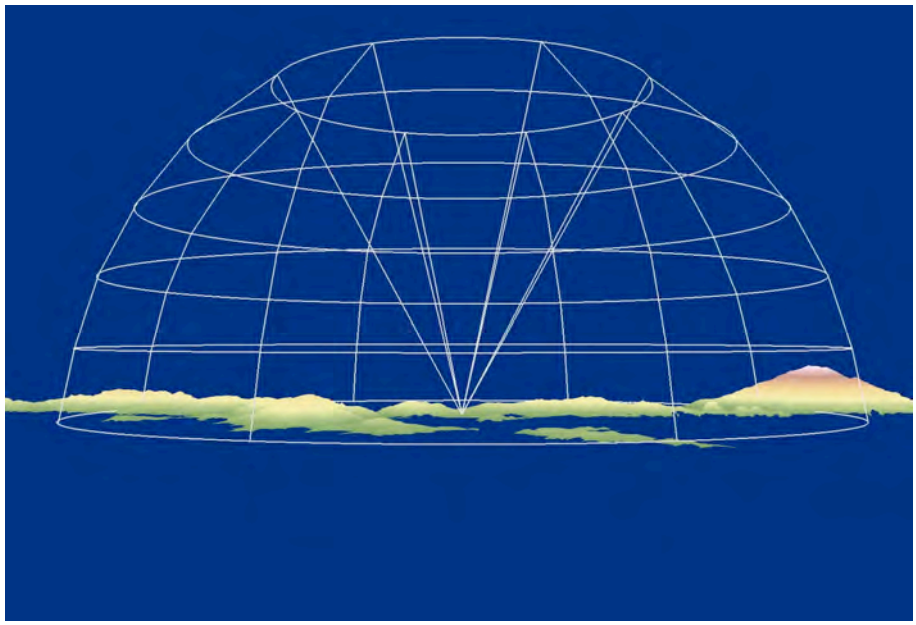

Fig. 255. The 75mm Type 88 anti-aircraft guns to the west of the Main Camp area and their range.

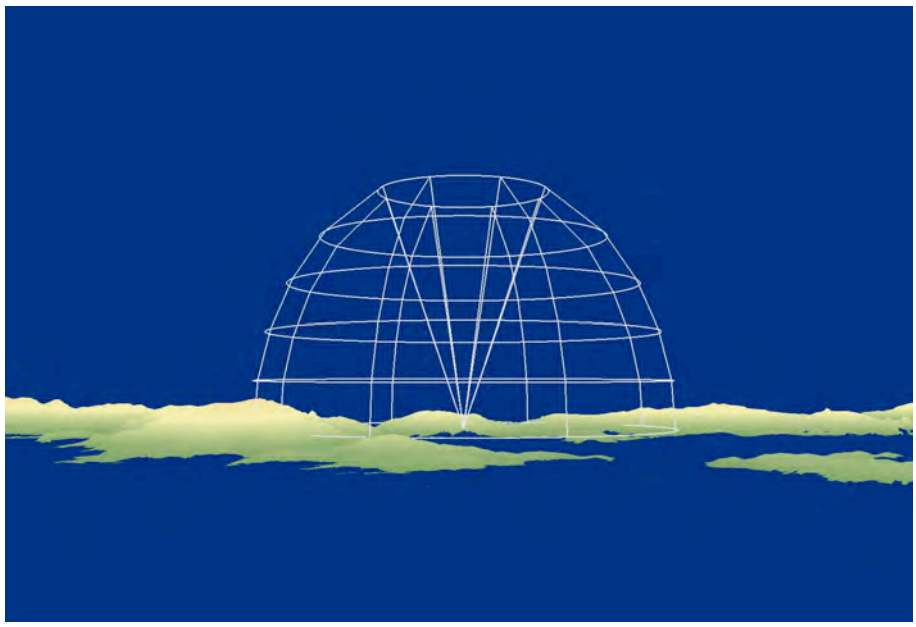

Fig. 256. The 25mm Type 96 medium anti-aircraft guns at Mercy Point and their range.

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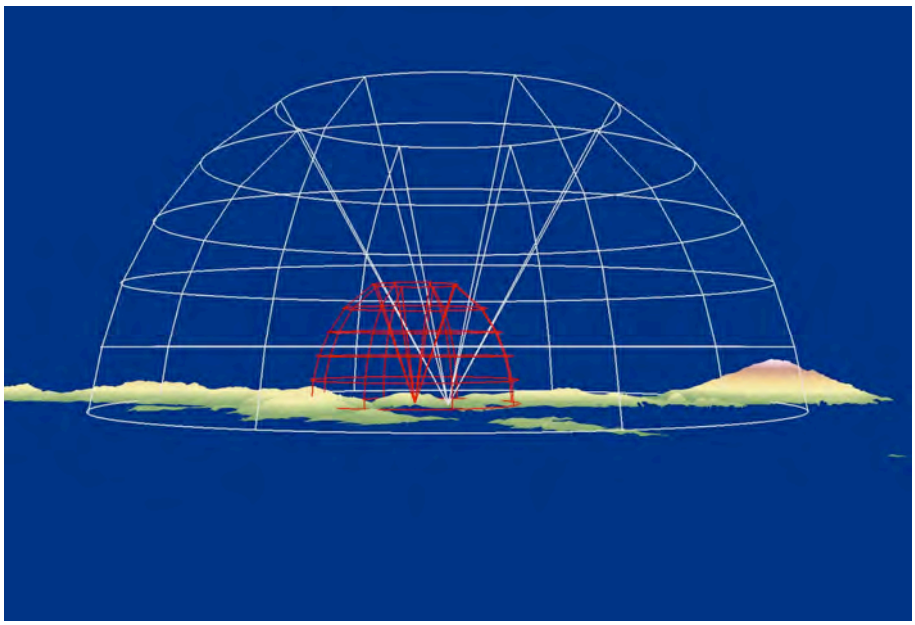

Fig. 257. The 25mm Type 96 medium anti-aircraft guns at Mercy Point and the 75mm AA on Kiska their range to the west of the Main Camp area and their range, showing the stratified structure the AA. This reflects the AA soon after the Japanese landing on Kiska.

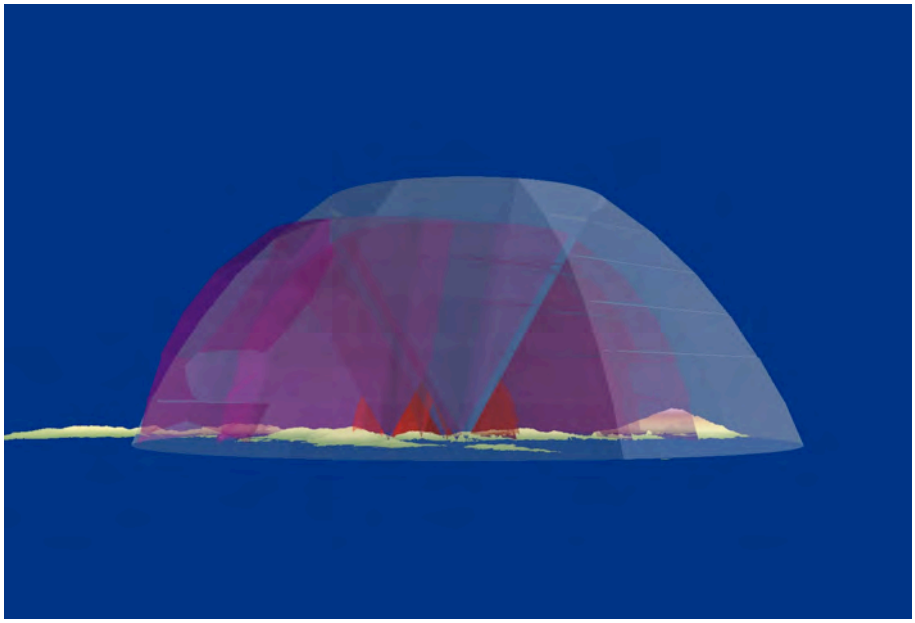

Fig. 258. Cumulative AA umbrella of all 25mm (red), 75mm(pink) and 120mm DP (grey) gun batteries. This state reflects the height of development.

Availability and Deployment of Air Cover

Japanese experiences in the Sino-Japanese War in Manchuria showed that aircraft could be used to great effect to support ground troops and to inhibit movements of enemy forces. That lesson was reinforced after the outbreak of World War II, when German aircraft quickly established air superiority over Poland, and later over Western France, facilitating rapid progress of the ground forces. Moreover, land-based aircraft had demonstrated that they could easily sink battleships when Japanese bombers and torpedo planes sank the battleship HMS *Prince of Wales* and the battle cruiser HMS *Repulse* off Malaya in 1941. At the same time, the Battle of Britain (10 July – 31 October 1940) had shown that, no matter how dangerous and well-prepared a force poised to attack might be, military might on the ground accounted for little without air superiority.

The lessons for the Japanese, as well as the US, planners were obvious: whoever controlled the skies over Kiska would be able to substantially, if not decisively, define the outcome of the events there. Air superiority meant to be able to fly about unhindered

and to inflict damage on the enemy at a time and location of one's own choosing with a weapons suited for the task at hand.

And in that, both sides were hampered: Kiska was literally in the middle of nowhere. The nearest U.S. bases were at Cold Bay, about 1350km (840 miles) to the east of Kiska, with a refueling and (re-)armament stop *en route* at Umnak 930km (580 miles) to the east, while the nearest Japanese bases were at Paramushiro and Shumushu both in the northern portion of Kurile Islands, some 1,500km (950miles) to the west. These distances meant that long-range bombers could easily fly a mission to Kiska, although it might be hard on the flight crews—as was demonstrated by U.S. B-17 and B-24 bombers during the Kiska Blitz (p. xix). Likewise, the Japanese had long-range bombers, such as the Mitsubishi G3M ('Nell') or Mitsubishi G4M1 ('Betty'), that could easily cover a return flight for the distance required. While the bombers had the range, the fighters did not. The mainstay of U.S. fighter squadrons in 1942 and early 1943 were the P-38, P-39 and P-40, none of which had the range to cover the bombers. With the P-38's a range of 1450km (900 miles) insufficient to bring the aircraft back unless equipped with drop tanks and run on low power settings, the other two fighters could not even reach the target.[64] The land-based fighters of the Japanese were no better.[65] Even the fabled Mitsubishi A6M2'Zero' with its phenomenal maximum range of 3,105 km (1929 miles) was of no use: while it could make the return trip it was so at the edge of its capacity that the CAP time over Kiska would have been limited to a few minutes.[66]

Thus by default, the U.S. forces had some sort of aerial supremacy over Kiska as they could reach it with the bombers. Both sides knew, however, that in the absence of fighters that could escort these bombers, this 'supremacy' was very tenuous at best. And here, at least in the beginning of the battle for Kiska, the Japanese had the advantage: seaplanes.[67] The introduction of the brand new Nakijima A6M2-N 'Rufe' float plane version of the Mitsubishi A6M2'Zero' brought a very capable fighter into the Aleutian theatre of war, and one that could tip the question of aerial supremacy into the favor of the Japanese. While the large central float increased drag and thus slowed down the 'Rufe' compared to its 'Zero' cousin, the plane far out-maneuvered any of the attacking bombers. Realistically, it is to the credit of the U.S. pilots, coupled with the challenging weather conditions, which disrupted accuracy in bombing but which also allowed aircraft to disappear, that the U.S. losses were not higher. If the Japanese rate of production of the 'Rufe' had been higher, and more 'Rufe' has been stationed on Kiska, the Japanese could have easily achieved aerial supremacy—until such time that Kiska was in the range of U.S. fighters escorting the bombers in and out. Once the U.S. airfield in Adak had been built, the balance of power decisively shifted to the U.S. forces: the slower 'Rufes' were no match for the P-39 and P-40, let alone the much faster P-38.

However, we also need to consider that half the plane complement on Kiska were three-seater, Watanabe-built Aichi E13A1 reconnaissance planes. While useless against bombers, they helped establish a safety perimeter around both Attu and Kiska, and were essential in suppressing the threat from submarines, essentially when guiding in supply ships.

Clearly, the key strategic mistake made by the Japanese occupiers of Kiska was that they delayed the decision on the development of a land-based airfield until December 1942. The matter was exacerbated with the sinking of the *Montreal Maru* on 5 January 1943 and with it all the construction equipment she had on board. By that time it was difficult to simply send another supply ship with replacements. Not only were the materials and equipment spoken for and needed for other construction in the South

Pacific, but also the newly established airfield on nearby Amchitka meant that the U.S. had aerial supremacy, which bode ill for any slow surface transports re-supplying Kiska.

In the race for aerial supremacy over Kiska, the Japanese had an early edge with the 'Rufe' floatplane fighters. This competitive edge they squandered through inaction. Strategically, they should have immediately commenced with the construction of a land-based airfield. While such an airfield, as it neared completion, would have undoubtedly become an primary target for concentrated U.S. air attacks, experience elsewhere in the Pacific theatre (e.g. the attacks on the Japanese airbases in the Marshalls in late 1943 and early 1944) shows how quickly a determined and motivated ground personnel filled in any damaged runways and keep the airfields operational.

Rationally, the delay in building the land-based airfield makes no strategic military sense whatsoever. Thus other factors must have been at work. It can be surmised that the delay in building the airfield was tied up with the overall strategic planning of the role and function of Kiska.

Responding to seaborne threats

Although quite wide, Kiska Harbor is well sheltered as the prevailing winds come from the west placing the harbor into the island's lee. While the wind directions vary depending on the season, and while westerly winds might whip up surf in the harbor, vessels anchored in the western part of the harbor are generally safe from storms.[68] Moreover, the northwestern part of Kiska Harbor is also hidden from sight by Little Kiska as well as the promontory formed by North Head.

The Japanese Navy, when considering a defense against a naval attack, would have had to counter four attack scenarios: i) a surprise submarine attack directly in the harbor; ii) the landing of small sabotage units by submarine or other means; iii) a surface fleet of heavy cruisers or battleships running along the eastern shores of Kiska and firing into the harbor; and iv) major amphibious landings, possibly preceded by an airborne assault.[69] The threat of carrier-borne torpedo attacks has already been mentioned before.

The first scenario, surprise submarine attack directly in the harbor, had been successfully demonstrated by the German U-boat Captain Günther Prien, who on 14 October 1939 took his U-47 submerged and undetected into the British naval base of Scapa Flow (Scotland), sinking the British battleship HMS *Royal Oak*. Using midget submarines, the Japanese themselves had carried out a submarine raid on Sydney Harbor (Australia, 31 May 1942), sinking a ferry, but missing the cruiser USS *Chicago*.[70] The submarine threat could be negated, or at least minimized through the deployment of picket vessels, minefields and submarine nets.

The landing of small sabotage or reconnaissance parties by submarine, was a threat that could not easily be minimized, particularly if it occurred at night. All the Japanese could do was to ensure that look-out/observation posts were placed at all coves in the greater vicinity of Kiska Harbor. While the landing of small sabotage or reconnaissance parties by submarine would be highly effective in modern warfare, where the landed crew could act as spotters calling in precision bombing runs, the military value of such a raid during World War II would have been limited to intelligence gathering and small infrastructure damage. While the U.S. had demonstrated with the Carlson raid on Makin (Kiribati, 17 Aug 1942) that submarine-delivered raiding parties could wreak havoc, that example has limited comparative value: the 110-men strong Japanese garrison on Makin was outnumbered 2:1 by the Marines of the 2nd Marine Raider Battalion.[71] Makin was only very lightly defended at that time. By comparison, Kiska had a well over

1,000 men strong garrison at initial occupation and was much better defended. From a Japanese defense strategy perspective any submarine based raid would by and large have had nuisance value, but would not have resulted in a weakening on the Japanese position.

The only two scenarios that could cause considerable trouble for the Japanese defenders were the naval bombardment of Japanese installations and major amphibious landings, possibly preceded by an airborne assault.

The fact that the harbor is so deeply cut into the island's shore line, coupled with the fact that much of the harbor is shielded from view by North Head and by Little Kiska meant that any naval shelling by a passing cruiser or battleship force would have to rely on airborne fire ranging and spotting. Unless the attacking force had an 'eye in the sky', their fire would have been fully ineffectual and limited to installations on North Head and on Little Kiska that could be seen from the sea. Indeed, the U.S. heavy cruisers and battleships carried floatplanes for reconnaissance and fire spotting purposes.

However, one of the key considerations in preventing or mitigating the effects of naval bombardment, was to keep the opponents forces as far away from the shoreline as possible. To do so, the Japanese commonly emplaced coastal defense guns at strategic locations (see below). Throughout the Japanese-held territory, both in the Mandated Islands of Micronesia, as well as, during the war, in occupied areas, the Japanese installed batteries of coastal defense guns. The guns were commonly obsolete naval weapons that had been taken off decommissioned warships.[72] Many of the guns were in fact of pre-World War I vintage,[73] and Kiska was no exception.[74] The majority of the guns emplaced in the Pacific were of 4.7-inch and 6-inch calibers, with the larger 8-inch guns only used on Wake Island, Tarawa, and on Moen (Chuuk).[75] The Japanese kept their larger 10-inch and 12-inch guns for the defense of the Japanese homeland.

One of the immediate implications of this was the glaring disparity in range between the coastal defense batteries and the guns carried on the U.S. Navy units afloat. The Japanese-emplaced 6-inch guns had a range of about 10km (6.2 miles),[76] while the smaller 4.-7-inch guns had a range of 7.7km (4.8 miles).[77] The available range tables for the 6-inch guns emplaced at the battery indicate that at the end of their range the shells would have had a terminal velocity of 277m/sec. It would have been most effective in the near and mid-range (up to 4.5km / 3 miles).[78] Even if the Japanese had decided in 1943 to route to Kiska some of their 8-inch guns (which had initially been destined for Kwajalein but then shifted to Tarawa [Kiribati],[79] then the maximum range they would have had available would have been 16,000 yards.

This needs to be contrasted with the U.S. units afloat. Heavy cruisers, such as USS *Indianapolis* or USS *Louisville*, both of which were part of a U.S. cruiser task force that shelled Kiska on 7 August 1942,[80] carried nine 8-inch/55cal guns and eight 5-inch/25 cal guns.[81] While the latter only had a range of 8.3km (5.2miles), the 8-inch guns had a maximum range of 29.1km (13.6 miles)[82] far outstripping the range of the Japanese guns. Yet even the light cruisers of that task force, such as USS *Honolulu* and USS *St. Louis*, carried fifteen 6-inch/47 cal guns (as well as eight 5-inch/25 cal guns),[83] which were more than a reasonable match for the Japanese 6-inch guns. Here the fact mattered that the Japanese guns were of a pre-World War II design, while the U.S. guns were a new 1937 design, with a maximum range of 23.3km (14.5 miles).[84] The Japanese stood no chance whatsoever, should the U.S. Navy commit any of their battleships to a coastal bombardment. Even the old battlewagons of the New York class, some of which had been damaged at Pearl Harbor, carried ten 14-inch 45 cal guns capable of firing a 680kg (1,500lb) shell with a maximum range of 33km (20.5 miles).[85] The more recent Iowa

class battleships, coming off the yards in early 1943, carried nine 16-inch/50 cal guns capable of firing a 1,225kg (2,700lb) shell with a maximum range of 38 km (24 miles).[86]

Thus from a strategic perspective, the vastly inferior range of the Japanese pre-World War I 6-inch guns meant that they could only be effective on short and medium range. That ruled them out as a weapon to repel any attack by major U.S. warships. In the (presumed) Japanese defense strategy for Kiska the outer perimeter defense as well as the mid-range defense would have been provided by submarines as well as by floatplanes. The coastal defense guns were essentially only sited to repel incoming landing craft and ships (Fig. 259).

Fig. 259. Locations of the main coastal defense gun batteries.

To protect the harbor and the near-harbor areas from major amphibious landings, the natural environment played readily into the Japanese hands. The promontory of North Head provides a convenient spot to site one or more coastal defense batteries, which would command a good field of fire. As mentioned earlier the Japanese landing forces brought with them a four-gun 4.7-inch coastal defense battery. Given both the limited range of the guns, as well as the need to be able to resupply and crew them easily, the guns could not be placed on Little Kiska, but had to be sited on North Head. Sited near the eastern most part of North Head, the field of fire of the battery controlled access to possible landing beaches at the mouth of Salmon Lagoon, controlled all access to Kiska Harbor and with a range of 7,750m effectively played a role in protecting the approaches to a number of possible landing beaches on the northeastern shore of Kiska (Fig. 260).[87]

Once additional guns became available, the Japanese could then move to tighten up the defense system, further discouraging any landings near the harbor. They did so by siting one of the two 6-inch batteries on the north-eastern most point of North Head. While the field of fire of that battery effectively doubles up on that of the 4.7-inch battery, the new battery added range as well as heavier shells. The choice of siting the second 6-inch battery on Little Kiska meant that any incoming enemy shipping trying to attack Kiska Harbor would have been exposed to cross fire when acting in concert with the 6-inch battery on North Head. That battery was almost 4km further to the east than the 6-inch battery on North Head and thus added to the range that could be projected

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into the sea east of Kiska. Given the topography of Little Kiska, the battery could be placed on that island's western or eastern end. While a placement at the eastern end would have almost doubled the range of the 6-inch guns emplaced on North Head, such a placement would have i) been very exposed to naval gunfire and ii) would have meant that much of the entrance to Kiska Harbor would not have been in line of sight of that battery. Given the short range of the 6-inch guns, and their ineffectiveness against larger U.S. naval units, the Japanese planners quite rightfully eschewed range over coverage.

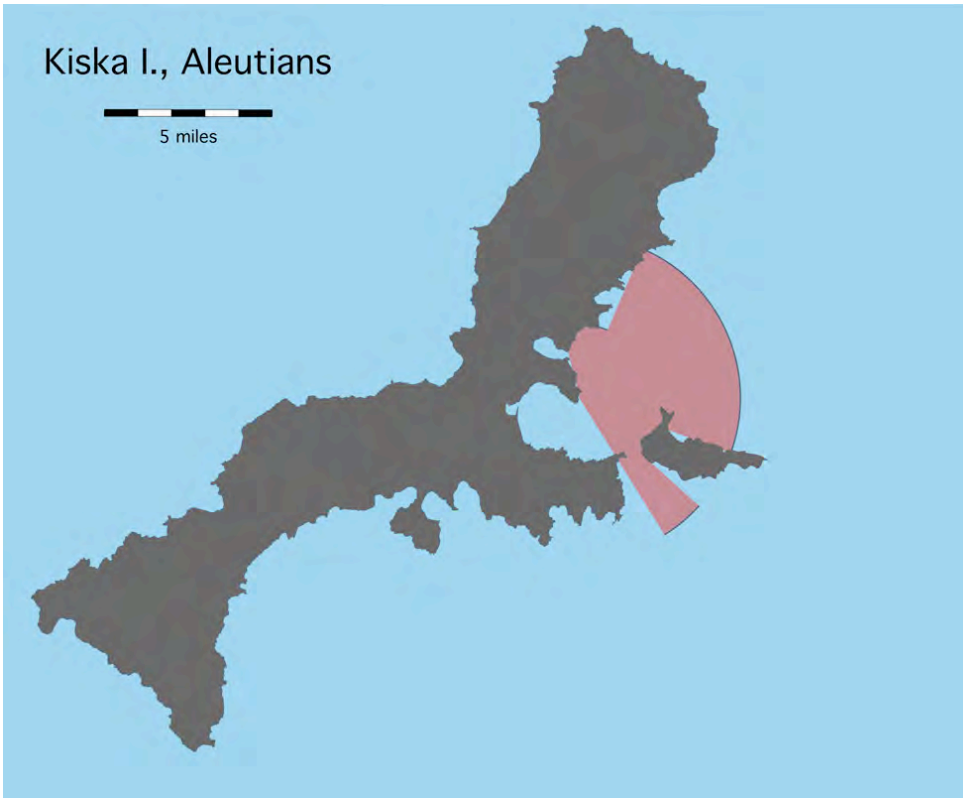

Fig. 260. The range of the 4.7-inch coastal defense battery erected on North Head.

In addition to the dedicated coastal defense gun batteries, the Japanese emplaced a heavy AA on the highest point of North Head. That 120mm dual-purpose gun battery also provided coverage of the approaches to some of the landing beaches. The total coverage of the formal coastal defense batteries is shown in Fig. 261. It should be noted that all guns, at least in theory, could fire to the western side of the island (as indicated by the outlines), but that these areas were beyond direct observation. Any fire into these areas, would have required highly accurate target spotting, good and reliable communications, accurately calibrated guns and very well trained gun crews. It is highly unlikely that many, let alone all of these conditions would have been met.[88]

It is possible that the Japanese could have developed a grid system for the island, which would have allowed for aiming these guns onto land targets during an invasion. Again, this would have required effective fire control and also a battlefield communications system.

It should be noted that the barrels for most of the Japanese AA guns allowed to be depressed to 0° and often even to -5°. This permitted the Japanese to use all AA, including the heavy AA (as represented by the 120mm dual-purpose guns) as artillery against land targets. The Japanese had done so repeatedly in New Guinea,[89] they had clear plans for doing so on Tarawa (Kiribati),[90] they did so on Attu,[91] and would have been well equipped to do so on Kiska.

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On Attu the 75mm AA model 88 guns at Holtz Bay and Chichagof Harbor were sited such that they were employed against aircraft and inshore naval targets. In his analysis of Japanese fighting on Attu, WJ Verbeck noted that:

> "they fired against our advancing infantry. Whenever our forces crossed ridgelines visible to these AA guns, the enemy would open highly effective fire with both impact and air bursts. In general, the enemy appeared to strive for HE [high-explosive, *ed.]* air bursts only a few yards over the heads of our troops. The resulting fragmentation caused many casualties, while the concussion from the burst likewise beat the men physically, the effect being as though one had been picked up bodily and thrown again until battered and bruised all over."[92]

Given their location on elevated positions, however, the AA guns were unsuited to defend any of the beaches at least with direct fire (but could lay a barrage in the way of an approaching wave of amphibious vehicles.

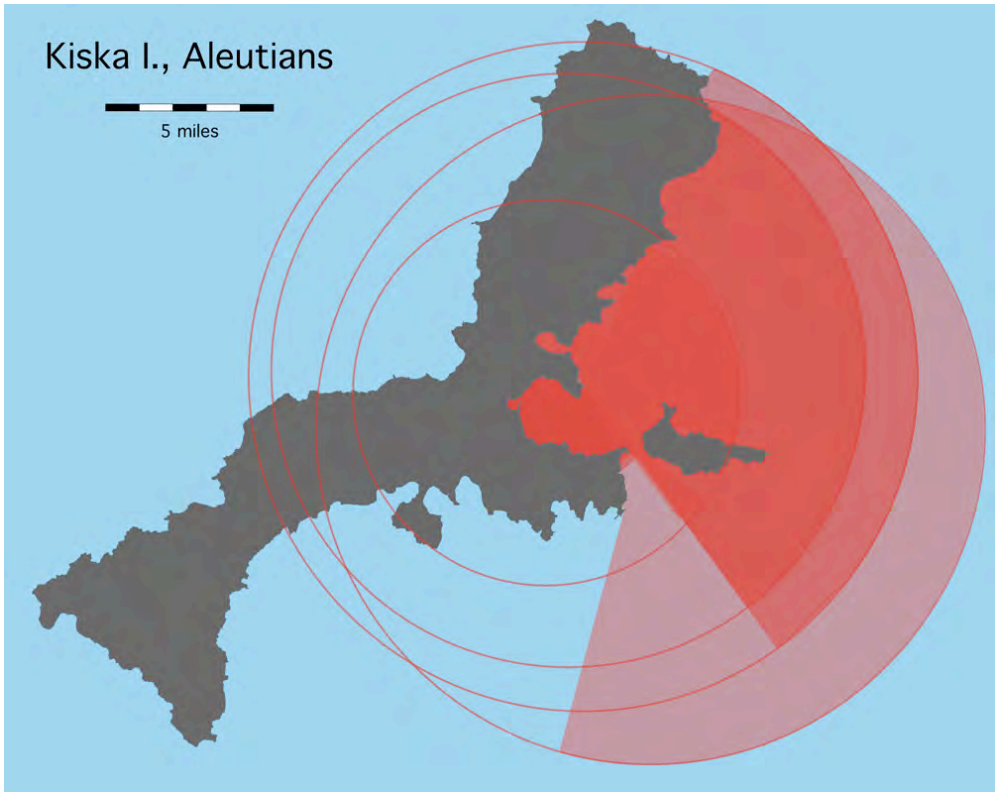

Fig. 261. The range of the coastal defense batteries erected on Kiska at the height of development.

Systematic bombing mainly IJN targets

The United States bombing efforts after the Kiska Blitz had to take into account the lessons that the first week had taught. Japanese AA gunners were far from incompetent, and low- to low-medium level attacks were subject to fierce and quite accurate AA. Moreover, it was clear that aerial bombing alone could not dissuade the Japanese from establishing a base on Kiska.

From the U.S. perspective, however, any amphibious landing operations, setting aside possible night time raids by small combat teams landed by submarines, could not be contemplated at that time. Thus all combat action would be airborne. For this to be feasible without an excessive level of combat losses, the USAAF required as good intelligence of the targets as possible. As a result, each combat mission was accompanied by a photographic plane, capturing images of the impact of the preceding bombing mission and seeking out hitherto less photographed areas. Aerial photo interpretation became an integral weapon in the reduction of Kiska as a threat. While this was significant in measuring the rate of progress of Japanese base development and the

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concomitant delaying effects caused by the U.S. destruction of Japanese assets, aerial reconnaissance and mapping was critical in exactly pinpointing the Japanese AA positions and correctly identifying the types of weapons emplaced there. This then allowed the U.S. to develop an in-depth understanding of the theoretical AA capability available to the Japanese defenders, which could then be combined with real-time observations made by the bomber crews. Moreover, the accuracy of the mapping allowed the aircrew to improve on a technique that enabled bombing of the critical area, even when the target was obscured by low-level cloud or dense fog. During the Kiska Blitz the U.S. Navy PBY squadron pioneered a technique of bombing runs carried out on set course and set time, using the peak of Kiska volcano as the starting point.[93] Given that bombs would fall through the cloud cover, Japanese AA was effectively blind sighted[94] and could only react to motor sounds. Although the Japanese had access to RADAR, it was limited, as has been outlined above.

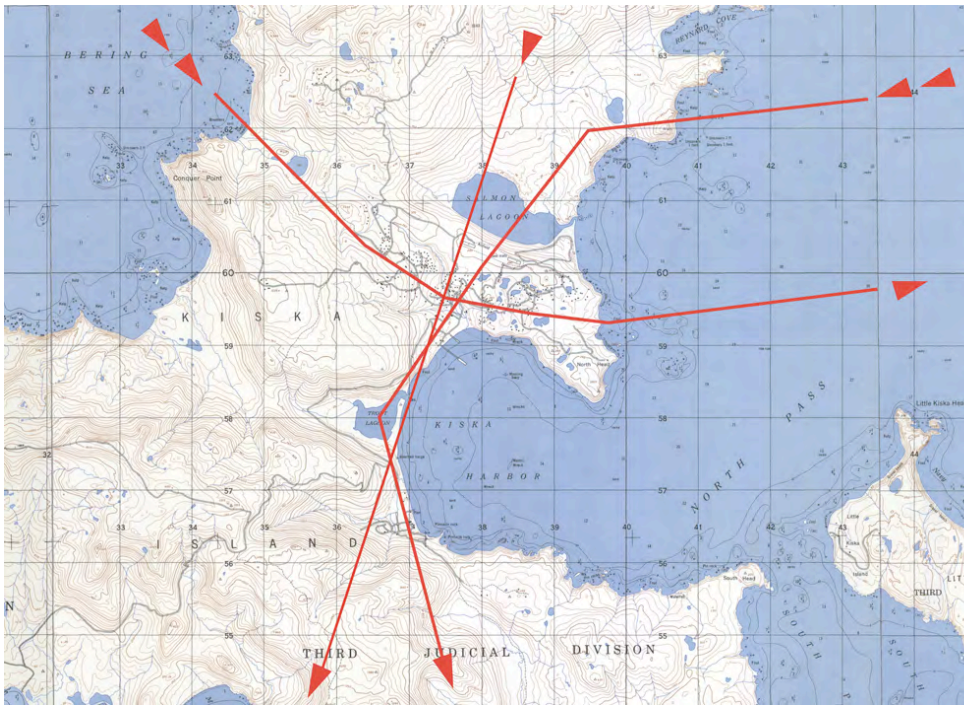

Fig. 262. Alignment of systematic U.S. bombing runs to maximize opportunistic selection of targets.

The Japanese reaction to the ongoing bombing runs was to ensure that the material was dispersed, thus giving the bombers less opportunity at hitting targets, and to develop underground facilities for critical infrastructure, such as hospitals, stores and command facilities as well as personnel shelters.

JAPANESE DEVELOP ARMY GARRISON AT GERTRUDE COVE

It was clear to both the U.S. and Japanese military planners, that the only way the U.S. could ever regain control of Kiska was either through a settlement at the conclusion of hostilities or through a direct amphibious assault. The Japanese Navy garrison was too strong to be taken by a raiding force landed by submarine or through an airborne assault alone. Thus both sides were looking at the topography of Kiska, looking for suitable landing beaches, where the access to the beach was suitable for landing craft, where the beach was wide enough for a beach head to be established that could aid the landing and distribution of war materiel, and that had a hinterland that allowed for easy and swift access for soldiers on foot, tanks and trucks.

Given the frequent photographic over flights by U.S. aircraft, and the resulting aerial interpretation of the conditions on Kiska, we can assume that both sides were essentially

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planning from the same level of data. While the Japanese had access to the locales on land, the U.S. had developed detailed topographic maps with 20 foot contours. There are seven beaches on Kiska that are eminently suitable for an amphibious assault: Reynard Cove, Kiska Harbor, Mutt Cove, Gertrude Cove and five beaches on the western side of Kiska, among them Conquer Point. In addition, Sargent Cove and Jeff Cove are secondary opportunities (Fig. 263).

For the Japanese strategists two stood out: Conquer Point and Gertrude Cove. The bay south of Conquer Point had two constraints for an attacking force: it was on the more exposed side of the island and, above all, it was uncomfortably close to the main Japanese troop concentrations at Kiska Harbor. Thus it could be expected that it would be difficult to establish a foothold. Gertrude Cove, on the other hand, faced none of this. It was located sufficiently away from Kiska Harbor, was a well-sheltered bay and possessed a wide hinterland. To deny the U.S. any opportunity of landing there, the Japanese garrisoned the bay with IJA troops that had been moved from Attu for that purpose.

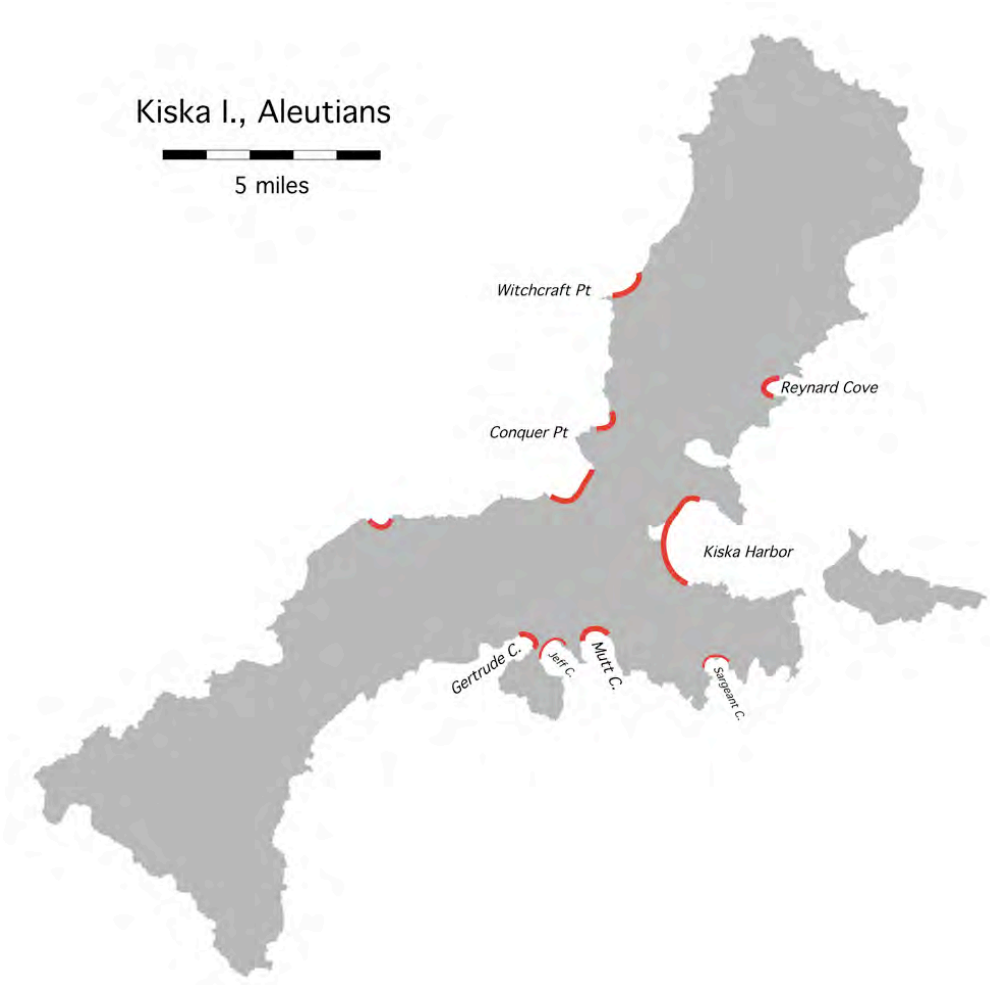

Fig. 263. Possible U.S. landing beaches on Kiska.

When considering the Japanese choice as to which of the possible landing beaches to defend, we need to take into consideration their own experiences in amphibious assault as well as their knowledge and experience of U.S. amphibious landings. Their own landing on Kiska had been effected by a small group of soldiers who landed by small landing craft in a sheltered bay (Reynard Cove). The Japanese Navy lacked any serious amphibious landing capability. The IJN did not have large landing ships that could run their bow onto the shore, opening their wide bow doors, discharge cargo and then withdraw. All landings carried out by the Special Naval Landing Forces using small boats

or landing barges, landing light armor that could be hand carried until such time that proper unloading operations could commence. While the Japanese had developed amphibious tanks, these were overall very rare and also extremely cumbersome to operate.[95] And none of them were used to ferrying attack troops to the beach. Where the Japanese had to effect a landing on a contested shore, they would run smaller, standard troop ships aground without any intent of reusing them. The second (and successful) assault on Wake Island on 23 December 1941 is a good example.[96] Once the beach was secure, additional troop and supply ships would anchor off the beach and would be unloaded with lighters and small barges. Given this *modus operandi*, then, the choice of a sheltered bay as a landing locale is understandable—a choice that influenced their own assessment of the options available to the U.S. In this context we also need to remember that in late 1942 the Japanese had no experiences with, or intelligence on, U.S. amphibious assaults.[97]

The U.S., on the other hand had an array of landing options. They used small landing craft for personnel (36) and light vehicles, such as a jeep (LCVP, 'Higgins Boat'),[98] and heavier landing craft capable of ferrying larger vehicles and single tanks (LCM), as well as 2,100-ton landing ships capable of landing multiple tanks and heavy armor (LST). The most effective way was to secure a beachhead using troops ferried ashore with Higgins Boats and then to run the large LST's ashore, disgorging all supplies. For that mode of operation the U.S. preferred larger beaches that allowed the larger vessels to maneuver. Thus bays such as Gertrude Cove were unsuited as only few LST could be beached side by side and as the bay limited vessel movements in general. For the U.S. the beaches on the western shore were the obvious choice—and the last resort in the eyes of the Japanese planners.

Thus here we have a situation, where both combatants have, more or less, exactly the same level and quality of data, yet come to very different conclusions.

Table 51. KOCOA for the U.S. bombings in the latter part of the occupation period and pre-retaking phase.

	Japanese	U.S. aircrew
Key Terrain/Decisive Terrain	Gertrude Cove area	Gertrude Cove area
Observation and Fields of Fire	Gertrude Cove and nearby shore areas; all of Kiska (when Japanese aircraft were present)	all of Kiska (as attack is airborne)
Concealment and Cover	cloud cover only underground shelters and caves for personnel	cloud cover only
Obstacles	nil	terrain limitations (eg Kiska Volcano)
Avenues of Approach/Withdrawal	n/a	open sea, overland over center of Kiska

KOCOA for Phase IV (Retaking)

As has been described in the history section, all the planning that the U.S. and Canadian forces had placed into the amphibious landings on Kiska had essentially been in vain. Faced with isolation after the fall of Attu, the Japanese garrison was evacuated, and the U.S. forces landed on an abandoned island (p. xxii). Despite repeated comments by pilots, as well as commentary by air photo interpretation which had noted that neither trucks nor small vessels had moved for a while, the U.S. planners did not wish to believe that the Japanese had indeed left.

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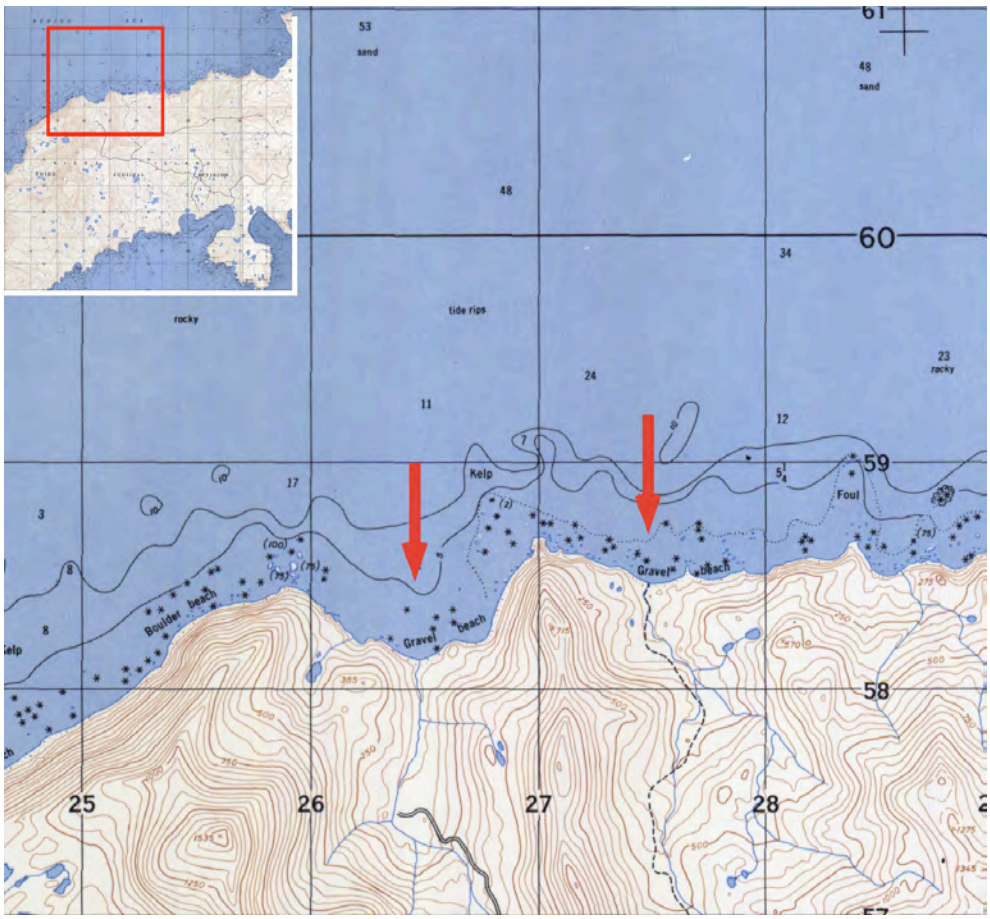

Fig. 264. Section of a topographic map showing the landing beaches used by the U.S. forces in the south on Day 1.

Fig. 265. Section of a topographic map showing the landing beaches used by the Canadian forces in the north) on Day 2.

When planning for the invasion, the U.S. forces were enabled, but also limited by the operational capabilities of their amphibious landing units. The two ideal landing beaches were located at the isthmus of the island (Fig. 263). These were, however, uncomfortably close to the main Japanese positions. Moreover, the Japanese had a 75mm Type 88 AA battery on the hill to the northeast of Conquer Point. While the guns would have made little impact on the approaching vessels, they could have caused some trouble for the soldiers in the approaching Higgins Boats.

A landing at these beaches would also have provided the Japanese defenders with a single front. In the end, as has been described above, the U.S. forces landed in the south (Fig. 264), while the Canadian forces landed in the north (Fig. 265). This would have forced the Japanese to defend against a pincer movement. Of the two landing areas, the Canadians were faced with low lying terrain that could conceivable be boggy, while the U.S. faced undulating hills.

KOCOA for Phase V (Garrisoning)

After the island had been secured, the U.S. and Canadian forces commenced to develop their own base on Kiska. While the island was now again in U.S. hands, the Allies had to maintain a military presence on the island in order to deny the Japanese the opportunity to reoccupy the island if the tide of war was going the other way.

Interestingly, the parameters that defined the Japanese presence on Kiska now defined the U.S. presence, with *one* major exception: given the depth of experience in building an airfield in the Aleutians, and given the ready availability of mechanized construction equipment, the airfield that had been started by the Japanese could be swiftly completed and put into operation. This airfield, coupled with the airfield on Attu as well as Shemya, provided the U.S. base on Kiska with both a reliable early warning system as well as aerial protection.

The U.S. and Canadian forces utilized more or less the same areas as those used by the Japanese. While the U.S. had a greater abundance of vehicular transport, and this could theoretically develop new areas, the main supply lines converged in Kiska Harbor, just as had been the situation for the Japanese.

When considering the U.S. presence on Kiska, we have to distinguish between the phase immediately after the retaking of the island, and the phase that commenced after the bulk of the attacking forces had left until the end of hostilities.

The early period of the U.S. occupation was of course characterized by an extremely large number of soldiers that had to be, at least temporarily, accommodated on Kiska. All in all 34,426 U.S. and Canadian soldiers had landed on Kiska. Even though the island was unoccupied and thus the soldiers were not engaged in a battle, they could not just be pulled off the island on a moment's notice. The logistical arrangements had to be made, and so the soldiers spent several weeks on the island.

At the same time, the U.S. forces developed Kiska into a base from which regional patrols of the sea lanes as well as airspace could be mounted. As such, then the use of Kiska was not that different from the use envisaged by the Japanese. In keeping with this aim, the U.S. established a harbor infrastructure with two piers, the airfield and accommodation facilities.

However, soon after Kiska had been secured, the overall strategic situation in the Pacific had changed and all plans for Kiska were downscaled.

KOCOA for Phase VI (Abandonment)

The final phase is circumscribed by the withdrawal of Allied troops from Kiska. As the withdrawal occurred without the presence of an enemy, this was an orderly wind down of operations, coupled with the removal of equipment and gear. The KOCOA methodology is not applicable to this final chapter of the battle.

Spatial patterns

In the context of a standard NPS planning approach, the KOCOA process results in one or more maps summarizing the findings. In the case of a World War II battlefield dominated by aerial warfare, this is more difficult as the boundaries, at least on the attacking side, are more fluid. The data are summarized, to the extent feasible, in a series of maps showing the Japanese key assets, and the primary protective umbrella (Fig. 266); the Japanese occupation areas and support systems (Fig. 267); as well defenses against surface attacks (Fig. 268). Additional maps show the U.S./Canadian key assets (Fig. 269) and garrisoning (Fig. 270).

Fig. 266. Schematic map of Kiska showing the Japanese key assets, and the primary protective umbrella against aerial attacks (the dashed outline designates the boundary of the NHL).

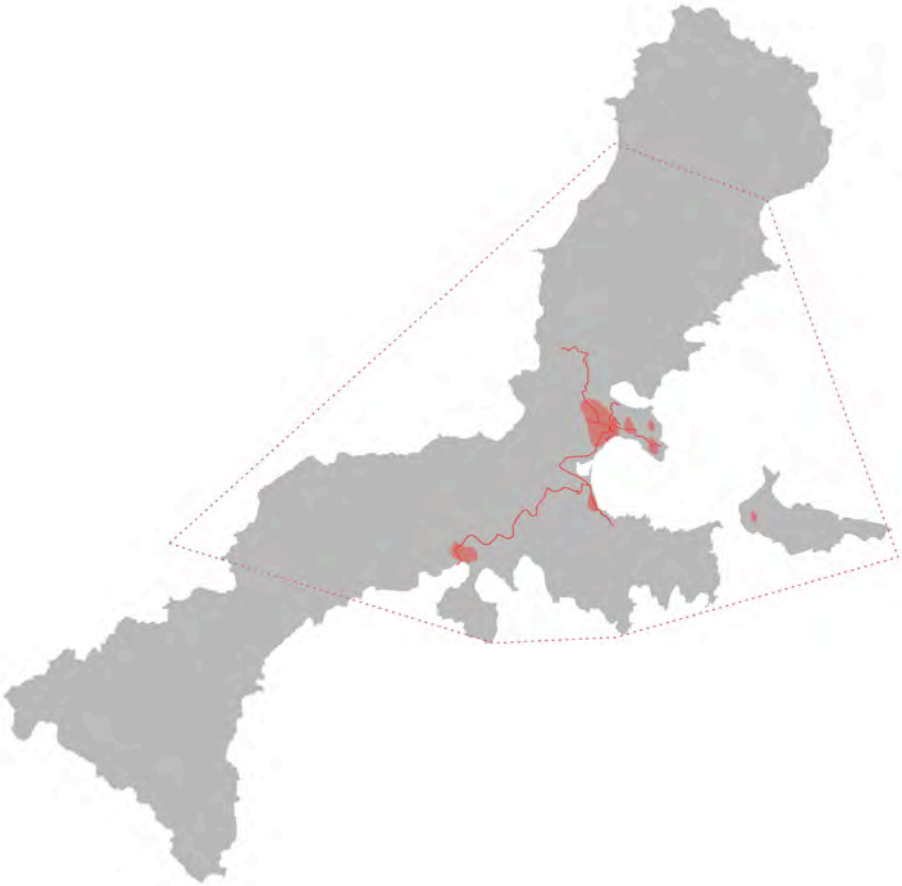

Fig. 267. Schematic map of Kiska showing the Japanese occupation areas (the dashed outline designates the boundary of the NHL).

Fig. 268. Schematic map of Kiska showing the Japanese defenses against surface attacks (the dashed outline designates the boundary of the NHL).

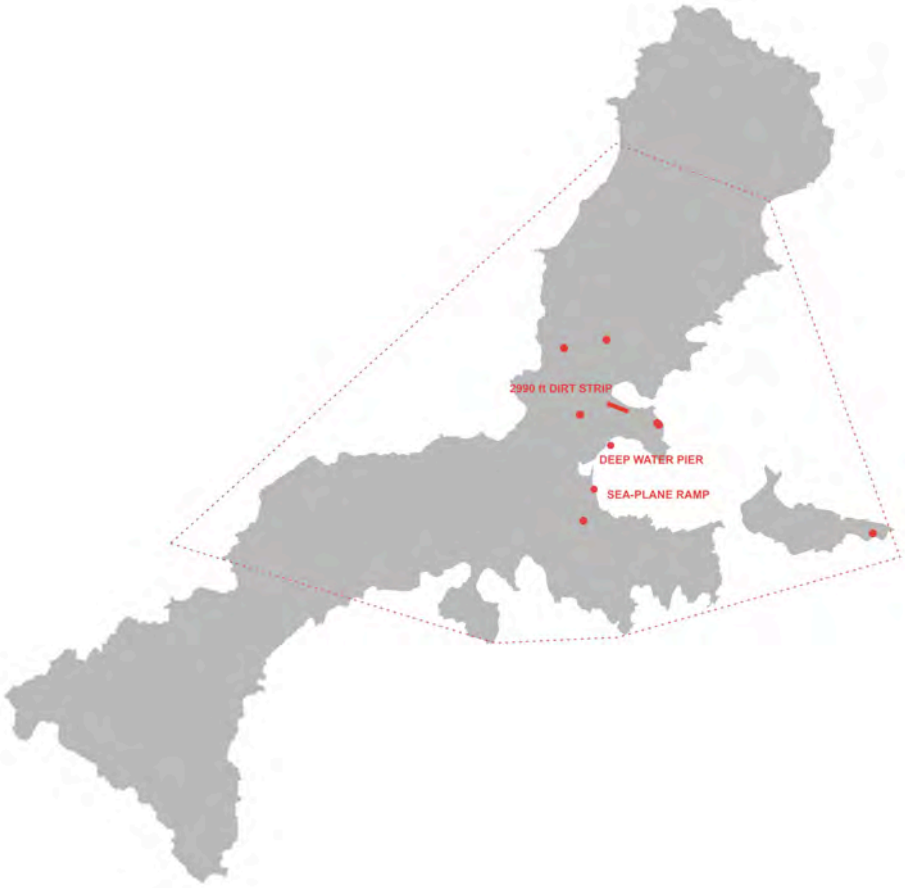

Fig. 269.
Schematic map of Kiska showing the U.S./Canadian key assets and air defense systems (dots)
(the dashed outline designates the boundary of the NHL).

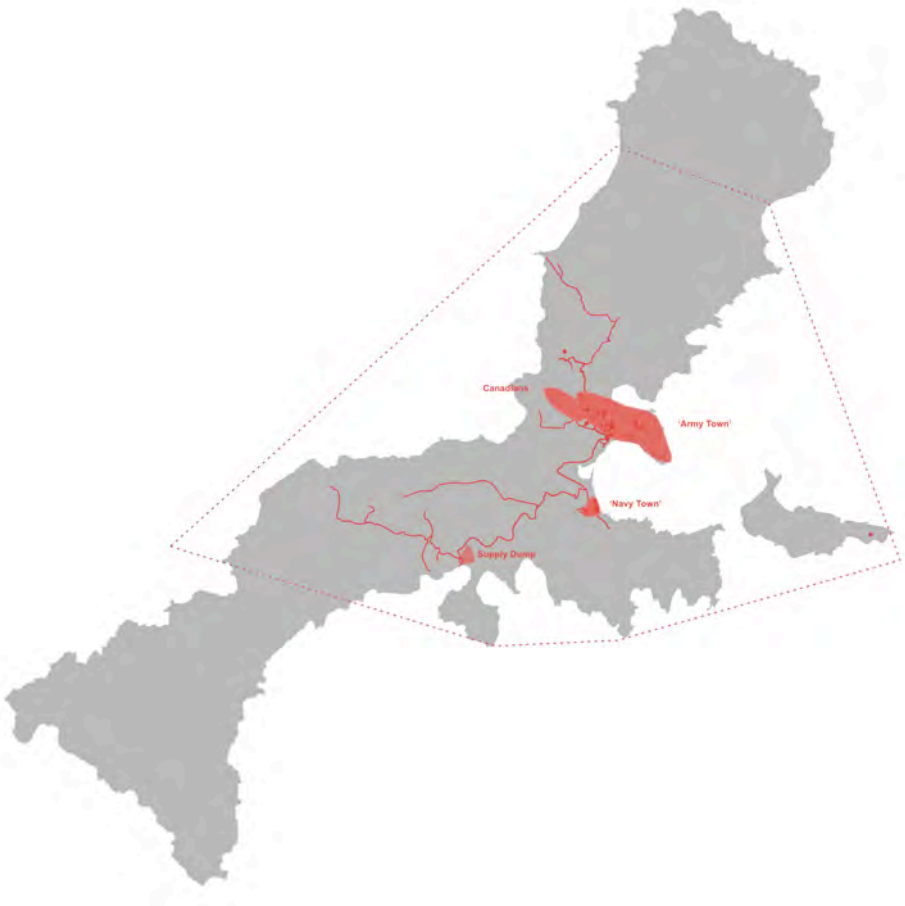

Fig. 270.
Schematic map of Kiska showing the U.S./Canadian key occupation areas and major infrastructure (dots)
(the dashed outline designates the boundary of the NHL).

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9. Neither list of islands claims to be anywhere near comprehensive and the islands are mentioned for illustrative purposes only.

10. *Japanese AA Defenses of Kiska*. Intelligence Memorandum nº 163. 1 February 1944. Fort Trotten, New York: AA-2 Section, Headquarters Anti-Aircraft Artillery Command, E.D.C. Page. 7.

11. The base map is a cropped and edited section of Topographic Map 1:25,000. Kiska C2-NE. Series Q801, Sheet 1824 IV NE, Edition 1-AMS. Map drawn up 1953. Printed: Army Map Service, Corps of Engineers, October 1957. Washington, DC.—Note that the structures and road shown on the original map reflect the end of World War II appearance of Kiska—Annotations by the author.

12. U.S. War Department (1943) [Japanese] Amphibious Tactics Based on Experiences at Wake. *Intelligence Bulletin* [U.S. War Department] vol. 1(8), April 1943 <online version used: www.lonesentry.com/articles/jp-landing-operations/index.html>.

13. In the event, as detailed by Lt. Commander Mukai, the Japanese carried out a four-pronged attack: three approaches from Reynard Cove across sections of North Head and a party in landing barge sent in around Kiska's North Head in order to cut off any escape of the weather detachment by boat: Interrogation of Commander Mukai, Nifumi, IN, on the Japanese Occupation of Kiska, the Kiska Garrison, and Operation in the Kuriles. Interrogation NAV nº 22, USSBS nº 99. United States Strategic Bombing Survey (Pacific) *Interrogation of Japanese Officials*. OPNAV P-03-100. Naval Intelligence Division. PP. 102-105.—Actual footage of the invasion was taken by news film crews: 日本ニュース 第107号 [The News In Japan nº 107[昭和17年6月22日 [22 June 1942]. Newsreel provided online by NHK at: cgi2.nhk.or.jp/shogenarchives/jpnews/movie.cgi?das_ id=D0001300492_00000&seg_number=003.

14. Archives of the National Institute for Defence Studies, Tokyo, File 北東 アリウシャン 21. That map image cannot be reproduced here for copyright reasons.

15. Hackett, Bob, Kingsepp, Sander and Alsleben, Allan (2004) IJN Seaplane Tender *Kimikawa Maru:* Tabular Record of Movement. www.combinedfleet.com/Kimikawa%20Maru _t.htm.—Henceforth cited as 'TROM *Kimikawa Maru.*'

16. The fleet comprised of the light cruisers *Kiso* and *Tama*, the destroyers *Akatsuki, Hibiki* and *Hokaze*, two armed troop transports, two auxiliary cruisers (*Awata Maru, Asaka Maru*), seaplane tender *Kimikawa Maru,* the transport *Kumagawa Maru,* and the cargo ships, *Hino Maru, Nissan*

Maru, Amagi Maru and *Kemitsu Maru (*also known as *Kamitsu Maru)* which carrying supplies and fuel remained anchored in Kiska Harbor for a few days (Interrogation of Commander Nifumi Mukai on the Japanese Occupation of Kiska, the Kiska Garrison, and Operation in the Kuriles. Interrogation NAV nº 22, United States Strategic Bombing Survey nº 99. *Interrogation of Japanese officials*. ONAV P-03-100. Naval Intelligence Division. p. 102-105).—The light cruiser *Tama* departed Kiska on 13 June 42 (Hackett, Bob and Kingsepp, Sander [2007] HIJMS Tama: Tabular Record of Movement. www.combinedfleet.com/tama_t.htm) and the light cruiser *Kiso* on June 18th (Hackett, Bob and Kingsepp, Sander [2007] HIJMS Kiso: Tabular Record of Movement. www.combinedfleet.com/kiso_t.htm).

17. The crew was aboard the *Kimikawa Maru*.

18. The Consolidated B-24D, serial # 41-1088 was piloted by Captain Jack F. Todd (Cloe, Aleutian Warriors, *op. cit.)*

19. The Imperial Japanese Navy in World War II, *op. cit.*, p. 177.

20. June 12, 1942:6 B-17s and 1 B-24 bomb shipping in the harbor at Kiska Island. A cruiser is heavily damaged and one destroyer is seen burning.—June 13, 1942: An LB-30 flies a weather mission and for the third straight day shipping in the harbor at Kiska Island is bombed by 5 B-17s and 3 B-24s; 2 heavy bombers turn back; the others bomb partially cloud-obscured targets. No effect is observed.—USAAF Chronology: Combat Chronology 1941-1945, of the U.S. Army Air Forces, June 1942. <paul.rutgers.edu/~mcgrew/wwii/usaf/ html/Jun.42.html>.

21. Not mentioned in The Imperial Japanese Navy in World War II, *op. cit.*

22. USAAF Chronology, June 1942, *op. cit.*

23. A U.S. intelligence photographic plane accompanying a bombing run on 18 June noted that in addition to the start of road works (connecting the beach area with the main valley and North Head), base development had been brisk with at least 15 storage buildings and 35 revetted barrack buildings constructed. The report does note the development of AA and coastal defense positions near the tip of North Head, but does not comment on any anti-aircraft of or other defense installations in the main camp area (Aerial Photo Interpretation Report nº 40, Kiska Harbor, Rat Islands, 18 June 1942. Photo Interpretation Section. Operational Intelligence Division, Directorate of Intelligence Section A-2, Headquarters Army Air Forces, Washington DC 8 Jul 1942).

24. According to POW information (Japanese AA Defenses of Kiska. *op cit*. p. 6).—The RADAR was of the 'Guadalcanal' type, and had a range of 50-60 miles: BUAER (1945) Jap Electronics. *Naval Aviation News* [U.S. Navy] nº 234, 1 February 1945, pp. 1–7.

25. The majority of the AA shown firing were 25mm medium AA as well as a 120mm dual-purpose gun, and what could be a 127mm dual purpose gun. Some of the footage of a 120mm DP, with a very low, if not leisurely, rate of fire, was clearly cut into the film, as the lighting is very different (sunny rather than overcast), shows substantial wave action in the background and shows the gun crew wearing summer/warm weather clothing.

26. In the newsreel the destroyers *Hibiki* and *Akatsuki* can be made out clearly by their distinct silhouettes. Some of the footage of 25mm Type 96 AA firing from a ship is clearly cut in, as it shows one gun still under tarp. Moreover, of the ships involved in the operation, only two carried 25mm AA and both (destroyers *Hibiki* and *Akatsuki*) are shown in the newsreel.

27. Japanese AA Defenses of Kiska *op. cit*. p. 6.

28. The Consolidated B-24D, serial # 41-1088 was piloted by Captain Jack F. Todd, shot down 11 June 1942 (Cloe, Aleutian Warriors, *op. cit.).*

29. Print of a U.S. Navy wire photo in the possession of the author.

30. It should be noted that for the purpose of this examination the role of submarines in intercepting Japanese surface supply vessels it outside the scope of KOCOA and outside the scope of the study. The same applies to U.S. surface units that may be patrolling the waters around Kiska.

31. For post re-occupation observations, see also Hailey, Foster (1944) *Pacific Battle Line. The First Two Desperate Years*. New York: Macmillan. P. 387.

32. We should note that, like the application of KOCOA, this is based on hind-sight and presumes that the Japanese commanders acted rationally as military strategists, setting aside ideological limitations. That may, in reality, not have been the case with the Japanese defense establishment.

33. This was the shortfall of the Japanese attack on Pearl Harbor, where a second wave of strike aircraft could have caused serious and substantial damage to land-based repair facilities and other critical

infrastructure, delaying the U.S. recovery effort.—Form the U.S. perspective, the relative effectiveness of carrier strikes was to change with the reduction of the Japanese naval base on Chuuk (Truk), which was subjected to three days of carrier attacks, shooting down all aircraft, sinking over 50 ships and destroying critical shore installations (Lindemann, K. [1992]. *Hailstorm over Truk Lagoon*. Pacific Press Publications, Belleville, Michigan).

[34]. In fact, the turret shields were mainly used on naval units afloat as a protection as against sea spray. Kiska is the only base where these shields were also employed on land—presumable as a protection against the near constant fog and light rains.—After the reconquest of Kiska, U.S. intelligence inspecting the guns assumed that the shields were solely for psychological reasons (BUAER [1945] Jap Anti Aircraft. *Naval Aviation News* [U.S. Navy] nº 236, 1 March 1945, pp. 1–7, esp. p. 4). That logic cannot be upheld in the light of all other 120mm guns installed in the South Pacific.

[35]. Japanese AA Defenses of Kiska *op. cit.* p. 7.

[36]. Destroyed 25 September 1942: Combat Chronology of the United States Army Air Forces in World War II. September 1942. www.usaaf.net/chron/42/sep42.htm <accessed 1 November 2010>.

[37]. The Enemy on Kiska *op. cit.* p. 54.

[38]. See Images at NARA, RG80-G-80767 (FAW $ # 5628 taken on 23 August 1943) and RG80-G-80768 (FAW $ # 5629 taken on 23 August 1943).

[39]. The Enemy on Kiska *op. cit.* p. 54.

[40]. That would have been enough time to scramble land-based fighters and get them to a decent altitude. Scrambling seaplane fighters and getting them to an altitude suitable for interception of incoming bombers would have taken much longer. In fact, as far as can be ascertained, Kiska is the only Japanese sea-plane base in the Pacific theatre that has been equipped with a RADAR set.

[41]. On occasion the early warning seems to have worked: For example, the first massed U.S. raid flown from Adak on 14 September 1942, comprised of 12 B-24 accompanied by 26 fighters, was met with a barrage of AA when the flight was still 8-10 miles away from the target. Kiska Harbor was reputedly 'lit up like a Christmas tree": Coles, Aleutians Campaign, *op. cit.* p. 370.

[42]. Results of the Conference held by the Defense Planning Section. 3rd Special Base Force Secret #131-43. Headquarters 3rd Special Base Force [Tarawa, Kiribati] 16 Aug 1943. Translation of Captured Japanese Document. Captured Tarawa 24 November 1943, Received JICPOA 11 Dec 1943. JICPOA Item 4002.

[43]. Results of the Conference held by the Defense Planning Section. 3rd Special Base Force Secret #131-43. Headquarters 3rd Special Base Force [Tarawa, Kiribati] 16 Aug 1943. Translation of Captured Japanese Document. Captured Tarawa 24 November 1943, Received JICPOA 11 Dec 1943. JICPOA Item 4002.—Gilbert Area Defense Force Order. Gilbert Area Defense Force Secret Order #8. Dated Tarawa (Kiribati) 15 September 1943. Translation of Captured Japanese Document. Captured Tarawa 24 November 1943, Received JICPOA 11 Dec 1943. JICPOA Item 5067.

[44]. Gilbert Area Defense Force Order. Gilbert Area Defense Force Secret Order #8. Dated Tarawa (Kiribati) 15 September 1943. Translation of Captured Japanese Document. Captured Tarawa 24 November 1943, Received JICPOA 11 Dec 1943. JICPOA Item 5067.

[45]. Gilbert Area Defense Force Order. Gilbert Area Defense Force Secret Order #8. Dated Tarawa (Kiribati) 15 September 1943. Translation of Captured Japanese Document. Captured Tarawa 24 November 1943, Received JICPOA 11 Dec 1943. JICPOA Item 5067.

[46]. Gilbert Area Defense Force Order. Gilbert Area Defense Force Secret Order #8. Dated Tarawa (Kiribati) 15 September 1943. Translation of Captured Japanese Document. Captured Tarawa 24 November 1943, Received JICPOA 11 Dec 1943. JICPOA Item 5067.

[47]. Which may well be an exaggerated claim by a PoW, but the rate of fire given by the PoW (17 rounds / min) matches the other data: Interrogation of Master Sergeant Inouye Kota of the 2656 Butai (25 AA Regiment), captured on Saipan on 12 Jul 1944. G-2 USAPOA Preliminary POW Interrogation Report nº 268. Office of the AC of S, G-2, Headquarters Unites States Army Forces Pacific Ocean Areas (Australian War Memorial, Canberra).

[48]. A 75mm Type 88 gun crew was comprised of the following twelve positions:

Nº 1	Hoko	Direction
Nº 2	Henkeiban	
Nº 3	Hoko Shusei	Direction Adjustment
Nº 4	Kotei	Elevation

Nº 5	Hoko Henkeiban	
Nº 6	Shusei Kotei	Adjustment of Elevation
Nº 7	Hoko Mirai Shusei	Adjustment of direction of lead
Nº 8	Hassha	Gunner
Nº 9	Tama Kome	Loader
Nº 10	Shinkan Kiri	Fuze cutter
Nº 11	Dan Hakobi	Ammunition Carrier
Nº 12	Mirai Shusei	Adjustment of lead

(Interrogation of Master Sergeant Inouye Kota, op. cit.)

[49]. Data compiled from OPNAV (1945) *Japanese guns antiaircraft & coastal defense.* OPNAV 16-VP103. February 1945. Air Intelligence Group, Division of Naval Intelligence, Office of the Chief of Naval Operations, Navy Department. p. 2.—Table of Characteristics of Principal Weapons.' Translation of Captured Japanese document JICPOA item 7164, captured at Kwajalein Atoll. JICPOA serial AND-191355, 19 June 1944.—CinCPac-CinCPOA Special Translation nº 61... *op. cit*., pp. 12-13.—PIU 1943, p. ix.—Japanese Anti-Aircraft Materiel. Flak Intelligence Memorandum nº 4. *CINCPAC-CINCPOA Bulletin* nº 92-45. 11 April 1945, p. 9.

[50]. It seems more sensible to provide data on the practical rate of fire, rather than the theoretical maximum. Values in rectangular brackets give maximum rate of fire (as other data unavailable).

[51]. Again, the effective ceiling, where hits could be expected is given rather then the maximum ceiling. Values in rectangular brackets give maximum rate of fire (as other data unavailable).

[52]. AP—Armor Piercing Shell; APT—Armor Piercing Shell with Tracers; HE—High Explosive Shell; HET—High Explosive Shell with Tracers; HETSD—High Explosive Shell with Tracers and Self Destructing; I&T—Incendiary and tracer shell; ITSD—Incendiary and tracer shell, Self Destructing.

[53]. CinCPac-CinCPOA Special Translation nº 62, p. 100. Max range 6,300. Given the other ratios of 45% of maximum range at effective ceiling we get an approximate gun circle of 1900 radius at 3,500 feet.—Japanese documents state that the 132.2mm guns should not be used against targets above 3000 meters (10, 000 feet, unless the situation was deemed 'very profitable.' (Gilbert Area Defense Force Order. Gilbert Area Defense Force Secret Order #8. Dated Tarawa (Kiribati) 15 September 1943. Translation of Captured Japanese Document. Captured Tarawa 24 November 1943, Received JICPOA 11 Dec 1943. JICPOA Item 5067).

[54]. Range of fire at elevation (Flak Intelligence Memorandum nº 4... *op.cit.*)

Altitude (ft)	Radius (yds)
0	3,650
2000	3,600
4000	3,400
6000	3,050
8000	2,500
10000	1,500

[55]. Range of fire at elevation (Flak Intelligence Memorandum nº 4... *op.cit.*)

Altitude (ft)	Radius (yds)
0	12,100
5,000	11,710
10,000	11,100
15,000	10,090
20,000	8,580
25,000	6,070

[56]. Range of fire at elevation (Flak Intelligence Memorandum nº 4... *op.cit.*)

Altitude (ft)	Radius (yds)
0	16,600
5,000	15,800
10,000	14,700
15,000	13,400
20,000	11,850
25,000	9,850
30,000	7,300

[57]. Both the 25mm Type 96 and the 120mm 10th year type were originally ship-based gun designs that had been adapted by the IJN for shore-based operations.

[58]. The photoreconnaissance mission on 18 June, which did not detect any existing AA positions in the main camp area, noted the construction of revetments for medium AA (the 75mm) on North Head. These emplacements were filled with guns that arrived at a later shipment.

[59]. This conditional development of complete batteries devoid of guns is different than the pattern on most Japanese bases in the Central Pacific, where heavy AA, in that case mainly 127mm DP, but also 120mm DP, were emplaced as batteries of three set in a triangle pointing to the prominent direction of attack. The central emplacement is always empty, suggesting that given the rapid expansion across the Pacific in the early days of the war, the Japanese had to deal with a shortage of armaments.

[60]. Japanese AA Defenses of Kiska *op. cit. p. 7.*

[61]. Based on data in Flak Intelligence Memorandum nº 4... *op.cit.*

[62]. We need to consider, however, that overheating of the barrels would have meant that this practical rate of fire could not have been sustained over a long period of time, even if we assume that ammunition supply in the ammunition ready magazines would have been sufficient and the gun crews would have been able to sustain reloading at this practical rate of fire.

[63]. In this context it needs to be pointed out that the submarine base, the other main establishment on the island, is covered at the 5,000 feet level, but not at the 10,000 feet circles.

[64]. Ranges: P-39 840km (525 miles); P-40 1050km (650 miles); P=38 1450 km (900 miles) 1300miles.—The P-38 were used to fly cover over the Catalinas stationed at Nazan Bay (Cloe, John Haile (1991) *The Aleutian Warriors. A history of the 11th Air Force & Fleet Air Wing 4*. Missoula: Pictorial Histories p. 199) One attempt was made on 8 August to use P-38 as escorts for bombers flying to Kiska, but that mission had to be aborted due to bad weather (Cloe, Aleutian Warriors *op. cit.,* p. 201).

[65]. Nakajima Ki-43 1200 km (750 miles) Kawasaki Ki-45 2290km (1400 miles) Francillon 1979, pp. 107; 214.

[66]. Francillon 1979, p 377. The standard range was 1790km (1100miles).

[67]. When contemplating the vast distances between their South Sea Islands possessions (the Mandated Territory), the Japanese planners were faced with the reality that the costs of building an airfield on every island were prohibitive. Where elsewhere a few airfields could suffice, with the intermediate areas serviced by road and rail, the nature of islands limited communication either to fast aircraft or slow boats/ships. However, most of the islands possessed a sheltered, sandy beach where seaplanes, be they flying boats or float planes could be safely moored or pulled ashore. Thus the Japanese Navy developed a series of aircraft suited for such an environment: long range flying boats, such as the Kawanishi H6K1 'Mavis', and three-seater reconnaissance planes, such as the Aichi E13A1 'Jake' and the observation plane, which could double up as a fighter, the Mitsubishi F2M1.

[68]. This cannot be said for sea-planes pulled up on Kiska beach. The Japanese archives at NIDS contains an illustrated report which demonstrates the effects of the surf on the Japanese aircraft. Several Nakajima A6M2-N are damaged, and one Aichi E13A1 can be found floating upside down. The images are of restricted copyright and may not be reproduced here.

[69]. It should be noted that for the purpose of this examination the role of submarines in intercepting Japanese surface supply vessels is outside the scope of KOCOA and outside the scope of the study.

The same applies to U.S. surface units that may be patrolling the waters around Kiska with the same objective.

[70]. Australia's War 1939-1945. Sydney Harbor. www.ww2australia.gov.au/underattack/sydharbour.html <accessed 22 October 2010>).

[71]. Delivered by USS *Nautilus* and USS *Argonaut*: Smith, George W. (2003). *Carlson's Raid: The Daring Marine Assault on Makin*. Berkley Trade.

[72]. Spennemann, Dirk H.R. (submitted) Managing the Heritage of Arms Limitation Treaties.

[73]. Spennemann, Dirk H.R. (1995) Physical reminders of the British-Japanese Armament Trade in Micronesia. *Journal of the Pacific Society* (Tokyo) 18 (3), pp. 117-130.—Spennemann, Dirk H.R. (1995) British Naval Guns in Micronesia. *Mariner's Mirror* 81(3), pp.343-347.—Spennemann, Dirk H.R. (1999) British Naval Heritage in Micronesia-The coastal defense guns of the Marshalls, Pohnpei and Chuuk. *Coast Defense Study Group Journal* 13(1), 34-56.—Spennemann, Dirk H.R. (2006) Physical reminders of the British–Japanese Armament Trade in Micronesia. *Micronesian Journal of the Humanities and Social Sciences* vol. 5 nº 1/2, pp. 113-129.—Spennemann, Dirk H.R. (2006) A British six-inch gun at Barcinas Bay, Tinian, CNMI. *Micronesian Journal of the Humanities and Social Sciences* vol. 5 nº 1/2, pp. 130-136.—Look, David W. and Dirk H.R. Spennemann, (1993) *For Future Use: A Management Conservation Plan for the World War II sites in the Republic of the Marshall Islands*. Albury, NSW, Australia, and San Francisco, U.S.A.: The Johnstone Centre of Park, Recreation and Heritage and the U.S. National Park Service Western Regional Office.

[74]. Spennemann, Dirk HR. (2007) The Present and Future Management of the Japanese Guns on Kiska, Aleutians, Alaska. The 4.7-inch Battery on North Head, Kiska. (Report Kiska #2) Documentation and Condition Report. November 2007. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.—Spennemann, Dirk HR. (2008) The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. The 6-inch Battery on North Head, Kiska Island. (Report Kiska #5) Documentation and Condition Report. January 2008. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.—Spennemann, Dirk HR. (2008) The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. The 6-inch Battery on Little Kiska Island. (Report Kiska #4) Documentation and Condition Report. November 2008. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[75]. Spennemann, Dirk H.R. (2000) Eight-inch Coastal Defense Guns in Micronesia. *Coast Defense Study Group Journal* 14(2), 40-64.

[76]. There are variations to the range, depending on the specific type of the gun (40 or 45 caliber) and whether we are looking at British-built barrels or units manufactured under license in the ordnance factories Japanese Naval yards. These variations (9.3–10.2km) are, on the whole minor and hence immaterial for the argument advanced here.—Spennemann, Dirk HR. (2008) The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. The 6-inch Battery on North Head, Kiska Island. (Report Kiska #5) Documentation and Condition Report. January 2008. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[77]. Spennemann, Dirk HR. (2007) The Present and Future Management of the Japanese Guns on Kiska, Aleutians, Alaska. The 4.7-inch Battery on North Head, Kiska. (Report Kiska #2) Documentation and Condition Report. November 2007. Documentation prepared for the U.S. Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[78]. Even though the Japanese 6-inch guns had a short range, some of them could be camouflaged (or made to look destroyed), which the destroyer USS *Anderson* (DD-411) found out to its peril on 30 January 1944 when it came to close to Wotje during a naval bombardment. Well placed hits by a Japanese coastal defense gun hit the *Andersons'* CIC, killing its commanding officer (Dictionary of American Naval Fighting Ships. Anderson. Department of the Navy, Naval Historical Center www.history.navy.mil/danfs/a8/anderson.htm). More embarrassing was an incident on 18 March 1944, when the battleship USS *Iowa* came too close to Mili Atoll, and received at least two hits by Japanese 4.7-inch guns (Combat Chronology of the U.S. Navy Forces in operations against and from the Marshall Islands [marshall.csu.edu.au/Marshalls/html/WWII/USN_Chronology.html]). While the shells did no serious damage, they showed that even the light-weight coastal defense guns should not be underestimated.

[79]. Lieutenant Isao Murakaki, Commander 111th Construction Batallion, An account of the construction of fortifications at Tarawa, Nauru and Ocean Islands. Dated 31 May 1943. Captured

Tarawa 24 November 1943. Translation of Captured Japanese Document. JICPOA Item #5085, dated 5 February 1944.

[80]. The task force comprised of the heavy cruisers USS *Indianapolis* (flag ship) and USS *Louisville*, as well as the light cruisers USS *Nashville,* USS *Honolulu* and USS *St. Louis*, escorted by the destroyers USS *Case,* USS *Reid,* USS *Gridley* and USS *McCall* as well as the mine sweeper USS *Elliot*. (Final Report of Action by Main Body Task Force Eight on 7 Aug 1942. Commander Task Group S.6, United States Pacific Fleet. Intelligence Center Pacific Ocean Areas, dated 26 November 1942. NARA RGi65 Entry 77 Box 50 Kiska Operations.

[81]. en.wikipedia.org/wiki/ USS_Indianapolis_(CA-35).

[82]. en.wikipedia.org/wiki/ 8%22/55_caliber_gun.

[83]. en.wikipedia.org/wiki/ USS_Honolulu_(CL-48).

[84]. en.wikipedia.org/wiki/ Mark_16/1_triple_6_in_/47_Turret.

[85]. en.wikipedia.org/wiki/ 14%22/45_caliber_gun.

[86]. en.wikipedia.org/wiki/ 16%22/50_caliber_Mark_7_gun.

[87]. It's range, however, was insufficient to reach the northernmost beaches near Kiska Volcano.

[88]. As far as is currently known.

[89]. See the background on the capture of the 75mm gun now held in the Australian War Memorial.

[90]. Results of the Conference held by the Defense Planning Section. 3rd Special Base Force Secret #131-43. Headquarters 3rd Special Base Force [Tarawa, Kiribati] 16 Aug 1943. Translation of Captured Japanese Document. Captured Tarawa 24 November 1943, Received JICPOA 11 Dec 1943. JICPOA Item 4002.

[91]. Verbeck, W. J. (1943) Fighting on Attu. Roneographed. NARA RG 165 Entry 77 Military Intelligence Division Box 48 Enemy on Kiska. p. 15.

[92]. Verbeck, W. J. (1943) Fighting on Attu. Roneographed. NARA RG 165 Entry 77 Military Intelligence Division Box 48 Enemy on Kiska. p. 15.

[93]. Japanese AA Defenses of Kiska *op. cit.* p. 7.—Engel, Leonard (1944) PBY Saga. From the log of a PBY squadron. *Air Trails Pictorial*. February 1944, pp. 22-23, 62, 64, 68. Specific reference p. 68.

[94]. The low visibility over the target generally benefitted the Japanese defenders. As the U.S. pilots could not see the target areas bar these areas devoid of fog, the Japanese AA gunners could pre-train their guns on these areas in the clouds—to devastating effect.—Engel, PBY Saga *op. cit.*, p. 68.

[95]. These were light tanks that had been fitted with bow and stern pontoons that could be jettisoned.

[96]. Spennemann, Dirk HR (1991) To hell and back: Wake during World War II. A Report presented to the Special Commission on Enenkio (Wake Island). Eneen-kio Background Report Nº 4. Majuro: Historic Preservation Office.

[97]. The first Allied Landing, Operation Torch in North Africa, occurred 8–16 November 1942.

[98]. On the atolls of the South Pacific the U.S. used tracked landing vehicles (LVT) that could traverse the reefs while normal landing craft could not.

7. Geographical Realities & Survey

The development of a survey strategy for Kiska included the considerations developed as part of the KOCOA analysis, as well as the geographical realities of Kiska. Unlike a battlefield in the mainland USA, Kiska is an uninhabited island in the Western Aleutians. This has implications posed by transportation and fieldwork logistics (no regular transport options, self sufficiency during survey) as well as by climatological considerations (temperature, storms, snow cover). The survey as conducted in 2009 could be based on experiences made by the author during a 2007 survey,[1] which in turn was based on experiences and advice by fellow archeologists and environmentalists.

In this chapter we will set out the geographical realities of Kiska as they impact on the understanding of the Kiska battlefield. We will look at the geography (see below), the weather patterns and the vegetation. This will be followed by a discussion of the types of resources that can be expected, both from the Japanese and the US/Canadian occupation. Based on this, a survey methodology will be presented.

Geography of Kiska[2]

Geography

Kiska Island rises from the crest of the Aleutian Ridge, a fault created by the underthrusting Pacific Plate.[3] The island was formed by successive eruptive events building up an island and eventually the well-defined volcanic vent. There is also evidence for tectonic uplift of the island; some terracing on Kiska suggests that the uplift was repeated followed by stable conditions.[4] During the Pleistocene, Kiska was covered by ice, probably more than once.

An active volcano exists in the north of Kiska Island. The 4,000 foot high conical stratovolcano is the easternmost historically active volcano of the Aleutian Chain.[5] A number of lava flows, particularly on the northern and southwestern flanks, as well as a cinder cone on the flank demonstrate a history of activity since the last glacial period.[6] The documented eruptive history ranges from 1907 to as recent as 1990 (Table 52). Given the uninhabited nature of Kiska, the information of eruptive events prior to the advent of satellite surveillance is limited and unconfirmed. In addition to the eruptive events, the Kiska volcano frequently emits steam from a vent on the northwest flank just outside the summit crater.[7] As a result of the volcanic history, the island is dominated by volcanic ash-derived soils.

Topographically, the island can be divided into the three parts: the conical volcano in the north, a north-central section of nearly or completely isolated plateaus with an elevations of up to 1,200 feet (360m); and a southern more eroded landscape with peaks rising up to 1,800 feet (550m). Most of the valleys in the central section trend northwest with evidence of glacial action.[8]

The pedology of Kiska has not been studied in detail. From fieldwork observations in Aug 2007, much of the central area is covered by erosion products of volcanic breccia. The particle size ranges from coarse sand interspersed with fist-sized rubble to heavy gravel. A number of areas were noted on North Head where the vegetation had become denuded, and where the finer sediment had been washed or blown away, leaving behind a rubble scatter.

Table 52. Documented eruptive history of the Kiska Stratovolcano.[9].

Dates	Dating Technique	VEI[10]	Area of Activity	Characteristics
1990 Jun 1—Jun 1?	Historical Records	2	Upper NW? flank	Flank (excentric) vent Explosive eruption Phreatic explosion(s)
1987 Apr 15 –?	Eruption is uncertain	?		Explosive eruption (?)
1969 Sep 11 - Sep 16	Historical Records	2?		Explosive eruption Lava flow(s)
1964 Mar 18 –?	Historical Records	0		Lava flow(s)
1962 Jan 24 –?	Historical Records	3	North flank (Sirius Point)	Flank (excentric) vent Explosive eruption Lava flow(s)
1927	Eruption is uncertain	2?		
1907	Eruption is uncertain	2?		

Climatology

In recent history, Kiska has been an uninhabited island. As a result, weather data were not collected from Kiska except for a short period of time. The U.S. operated a weather station from 1935 until the Japanese invasion on 6 June 1942, and then again from the Allied landings on 15 August 1943 until the end of base operations some time in 1946.[11] We can assume that the Japanese military also collected weather data during the period of their occupation on the island. None of these data were available for analysis at the time of writing. The climatic data for Kiska (51°58'N 177°29'E), therefore, has to be compiled by approximation from neighboring stations such as Attu (52°51′N 173°11′E, 310 km to the west),[12] Adak (51°53′N 176°39′W, 410 km to the east)[13] and the Canadian weather buoy nº 46071 (51°9'N 179°0'E, 140km to the southeast).[14]

The Aleutian weather affected both the Japanese defenders, the U.S. forces carrying out air attacks,[15] the survey team recording the guns in 2007 and again, the survey team conducting the cultural landscape assessment in 2009. Simplistically we can state that an average summer day on Kiska is wet, windy and cold. The weather defined by low-lying fog/clouds driven by winds of variable speed. The fog density influences visibility, which ranges from very low (less than 30 feet) to high (2-3 miles).

As noted by Fett *et al*, the Aleutians have received a reputation as having one of the world's worst climates.[16] On a global scale, the Aleutians are at the interface between the

Hawaiian High Pressure Zone (with warm air moving north) and the Polar High Pressure zone (cold air flowing south). The convergence of the two zones creates the Aleutian Low Pressure zone, a semi-permanent area of rising air. Associated with this low-pressure zone are continuous winds and associated clouds/fog as well as frequent storms.[17] During the winter months Arctic Cyclones can occur. In addition, the tracks of Western Pacific Tropical Cyclones arc back northeast and thus affect the Aleutians. Strongest between August and October they tend to be of tropical storm strength (34-63 knots) and stronger.[18]

Regarded as one of the cloudiest regions of the Northern Hemisphere, the Aleutian Chain experiences broken to overcast conditions for more than 90% of the time.[19] It has been estimated that there are only two to four clear days per month. The effect of the fog cover depends on the level of the fog. If it is high level fog, the entire island will be under cloud/fog cover, while in low-level fog situations the lee of the island will be clear (Fig. 271).[20] On a practical survey level, high-level fogs imply a reasonable level of visibility to navigate and conduct survey and documentation. Low-level fog implies variable visibility ranging from very low (less than 30 feet) to high (2-3 miles). As is well exemplified by the satellite image of Kiska (Fig. 271), this low-level fog is patchy. Driven by constant winds this implies that environmental conditions can change rapidly.

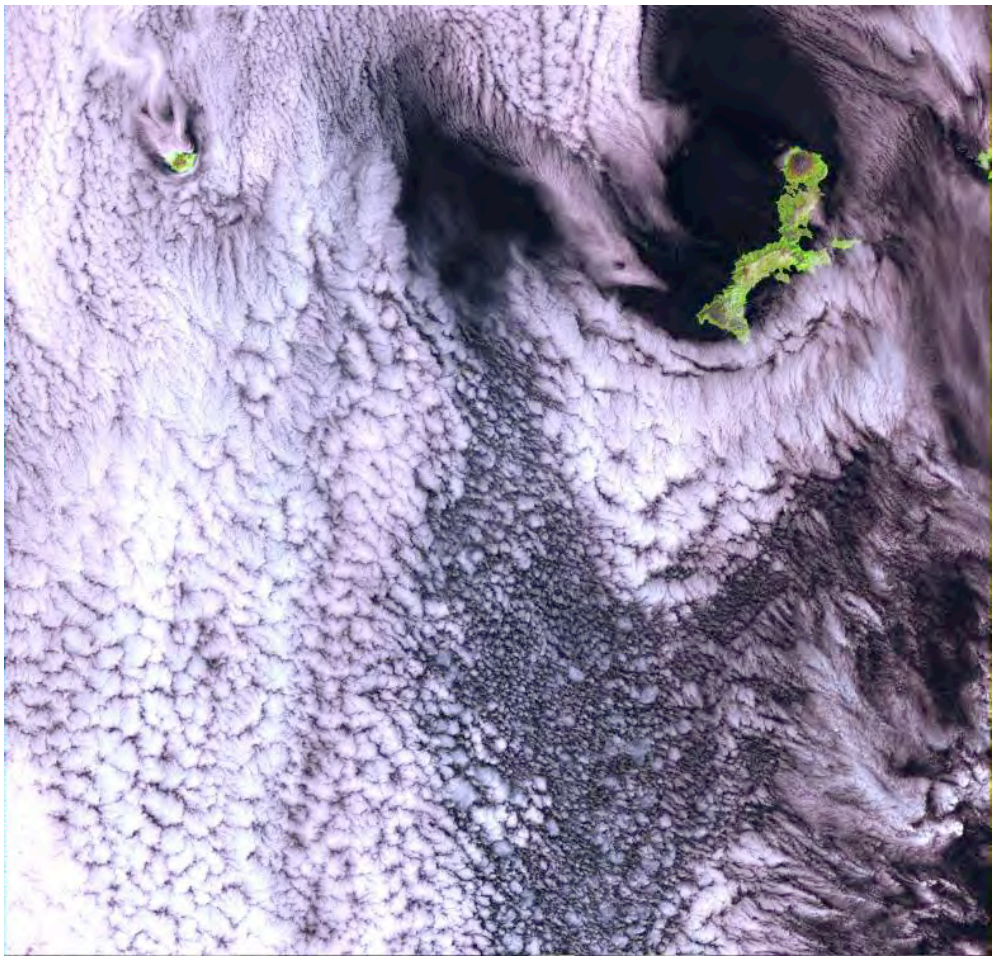

Fig. 271. Landsat image taken on 10 Aug 2001 showing typical low-level fog and cloud patterns around Kiska Island.[21] Note that the lee of the island is clear, while low-level fog is about to affect the Kiska Harbor Area.

While the Aleutians have only a limited variation in temperature because of their location at the interface between the Hawaiian and Polar Highs, the same conditions also cause continuous or near constant winds, which on occasion may attain cyclonic

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strength. Given the upper atmosphere winds, the weather patterns in the Aleutians move generally west to east.

On an annual level, the majority of the winds blow from the west to south-west (Fig. 272), but there are seasonal variations with the stronger winter winds flowing from the east (Fig. 273) while the weaker summer winds are flowing from the north and south (Fig. 274), depending which of the high pressure systems dominates.

The average wind speed changes throughout the year with August having the lowest average speeds (less than 6.5 m/sec; less than 12 knots and December having the highest (13.9 m/sec; 27 knots). During December sustained wind speeds of 25 m/sec (49 knots) and gusts up to 34 knots m/sec (66 knots) have been recorded for station nº 46071 in 2006/07.[22] When considering stations with longer data sets, speeds of 44 m/sec (85 kts) are not uncommon, with an island's topography creating situations of higher speeds at a localized level.[23]

The majority of precipitation occurs in the winter months, with over 80% of this in frozen form.[24] Adak has an average (1949-2005) annual precipitation of 61.5 inches and an annual average snowfall of 99.4 inches. The monthly snowfall can be light, but also can be as heavy as 54.8 inches in a single month (recorded for March 1952).[25] On Attu the average (1949-1993) annual precipitation is 52.6 inches with an annual average snowfall of 76.3 inches.[26] We can assume that the situation on Kiska is somewhere between these two.[27] However we should be aware that large variations are possible.

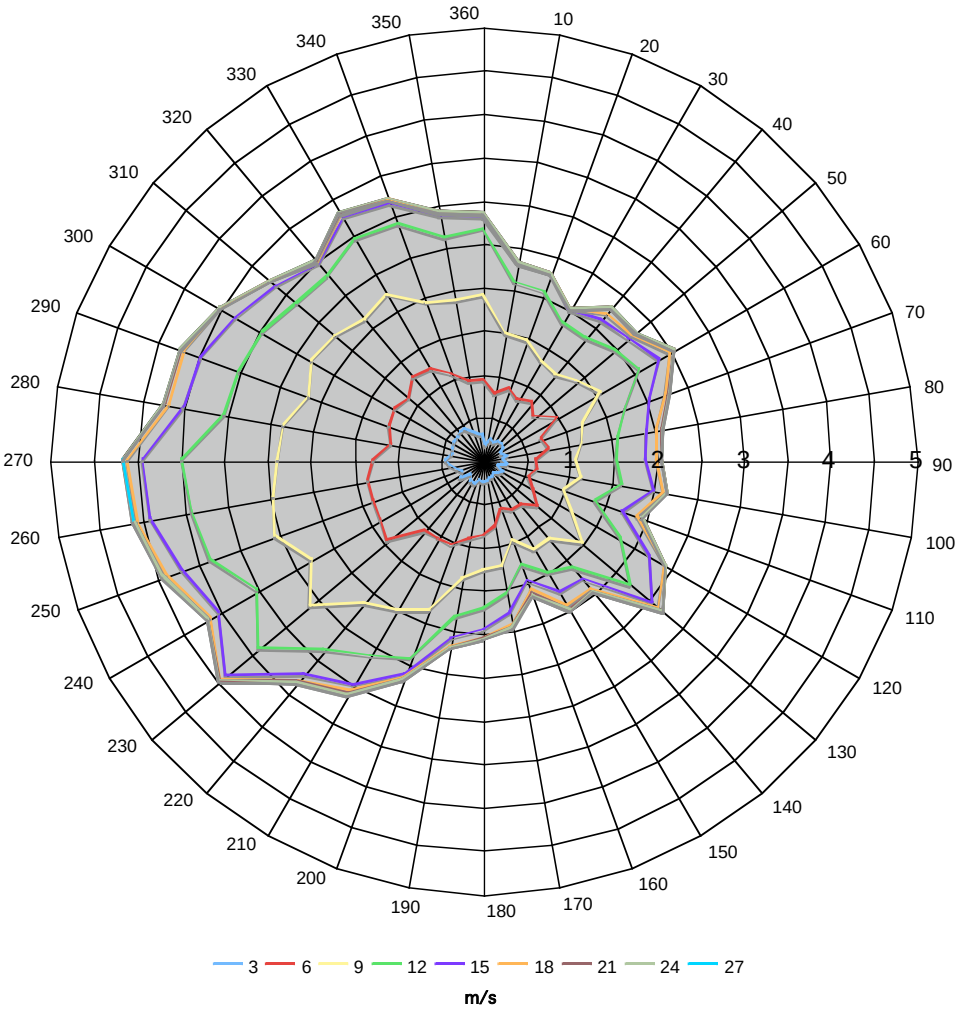

Fig. 272. Cumulative Annual Windrose (in %) Station 46071 (Oct 2004 to Aug 2007) (n=19,128).[28]

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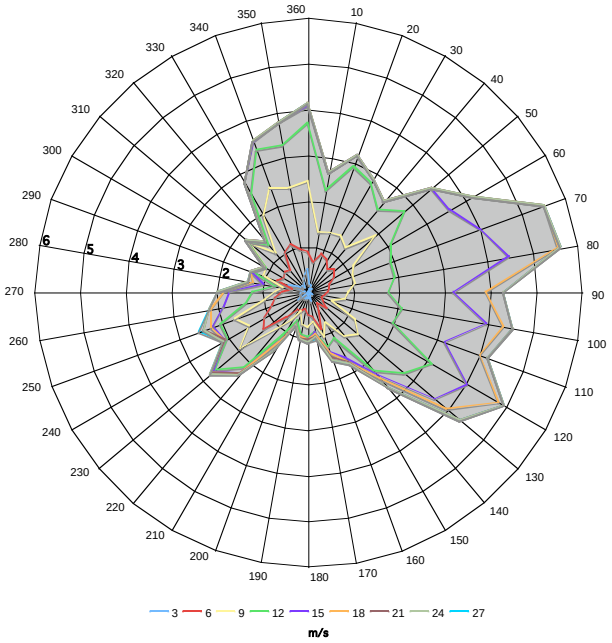

Fig. 273.Cumulative Wind rose for January (in %) Station 46071 (Oct 2004 to Aug 2007) (n=1,814)

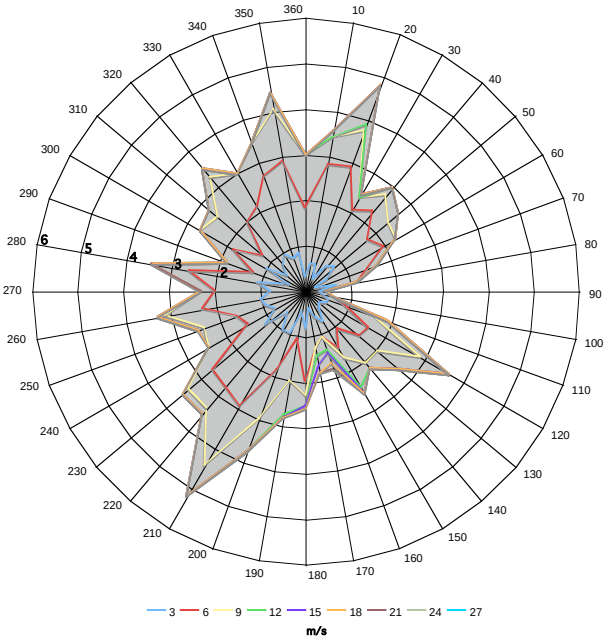

Fig. 274.Cumulative Wind rose for June (in %) Station 46071 (Oct 2004 to Aug 2007) (n=1,311)

Vegetation

The island is covered with a poorly drained blanket of tundra vegetation. Trees and major shrubs are absent. The vegetation is at its lowest just after snow melt, when it forms an ankle-deep yellow-brown mat and at its highest in late August, when it can reach above knee height. This directly affects the visibility of objects. At the height of vegetation growth all but very large objects are hidden from view.

Above 500 feet (150m) the tundra may become patchier. All occurrences of bare soil at lower altitudes were caused by military developments during World War II, in particular the leveling of the ground for the erection of tents and barracks, as well as bomb craters.

The fragility of the vegetation and the overall lack of re-growth pose a threat to a number of sites. Many areas of the island's interior have been partially denuded of grass/tundra cover. This is especially the case on the flat areas on the promontories that had seen major military development by both the Japanese and the US/Canadian forces.

There is a propensity of landslides, probably caused by the hyper-saturation of the volcanic ash soil due to snowmelt and rainfall. That water can enter the subsoil unhindered through the open and exposed soil areas. Landslides, where observed, seem to coincide with denuded patches (such as the tent bases) on steep slopes (Fig. 277), as well as at roads (Fig. 278, Fig. 279).

Conditions for the loss or re-growth of vegetation seem to be highly localized. An example for this comes from the two 25mm AA gun positions at Mercy Point. Both guns had bare emplacements at the end of the war, while the 2007 survey found that the emplacement of the northern gun shows substantial loss/lack of soil cover (Fig. 275), while the emplacement of the southern gun is fully covered (Fig. 276).

It can be surmised that micro-topographical differences in climatic conditions are the underlying cause for the differential in vegetation growth.[29]

Fig. 275. The 25mm Type 96 anti-aircraft gun at Mercy Point, Gun A (northern gun). Note the widespread lack of vegetation in the revetment.

Fig. 276. The 25mm Type 96 anti-aircraft gun at Mercy Point, Gun B (southern gun). Note that the revetment is fully vegetated.

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Fig. 277. Evidence of landslide. Note that the point of origin seems to have been an U.S. or Japanese tent base. Main Camp Area.

Fig. 278. Evidence of landslide both above and below the Japanese road that connects the main camp area with Trout Lagoon.

Fig. 279. Evidence of landslide below the Japanese road that connects the main camp area with Trout Lagoon.

Survey Methodology 2009

Types of Sites expected

A list of the types of sites that can be expected on Kiska can be culled from: the historic data as set out in chapter 3; U.S. intelligence assessments after Kiska had been retaken;[30] published and unpublished previous surveys by Susan Morton in 1989,[31] Charles Mobley in 1996,[32] and the author in 2007;[33] as well as satellite imagery (Fig. 280; and also Google Earth). While the following listing attempts to be comprehensive, it can in no way be exhaustive.

JAPANESE

Terrestrial Base Development Sites

Infrastructure

- Roads
- Runway of airfield
- Telephone Lines (utility poles)
- Telephone Lines (run on the ground)
- Power Lines (utility poles)
- Hospital (in cave)

Defense

- 13.2mm AA guns in their emplacements
- 13.2mm AA gun emplacements (empty)
- 20mm AA guns in their emplacements
- 25mm AA guns in their emplacements

- 25mm AA guns isolated
- 25mm AA gun emplacements (empty)
- 75mm AA guns in their emplacements
- 75mm AA guns isolated
- 75mm AA gun emplacements (empty)
- 3-inch guns in their emplacements
- 4.7-inch coastal defense guns in their emplacements
- 4.7-inch coastal defense gun emplacements (empty)
- 6-inch coastal defense guns in their emplacements
- 6-inch coastal defense gun emplacements (empty)
- 120mm dual-purpose guns in their emplacements
- 75mm mountain guns
- 37mm mountain guns
- medium tanks
- steel pill boxes / command boxes
- personnel trenches
- barbed wire entanglements
- Rommel spikes
- isolated ammunition

Personnel & Amenities

- Caves
- Tent bases
- Tent/barrack bases in sod walls
- Shinto shrine

Materiel

- Dumps (debris pushed out of the way by U.S. forces)
- Truck wrecks
- Landing craft wrecks
- Isolated artefacts

Aviation Heritage Sites

- Aircraft wrecks (crash sites)
- Aircraft wrecks (debris)
- Aircraft wrecks (fully submerged)

Submerged Resources

- Shipwrecks (beached/partially submerged)
- Shipwrecks (fully submerged)

U.S. / CANADIAN

Terrestrial Base Development Sites

Infrastructure

- Piers & wharves
- Roads
- Bridges
- Telephone Lines (utility poles)

- Power Lines (utility poles)

Defense

- makeshift defenses (fox holes during invasion period)
- AA gun emplacements

Personnel & Amenities

- Tent bases
- Quonset huts (standing)
- Quonset huts (collapsed)
- Board walks

Materiel

- Dumps (abandoned by U.S. forces)
- Truck wrecks
- Isolated artefacts (e.g. barrels, batteries)

Aviation Heritage Sites

- Aircraft wrecks (crash sites)
- Aircraft wrecks (debris)
- Aircraft wrecks (fully submerged)
- Sea-plane apron

Submerged Resources

OTHER

- Bomb craters
- Unexploded U.S. ordnance

Methodological approach

The requirement was to undertake a survey that provided information suitable for the development of a cultural landscape management plan of the Kiska NHL. That entailed that the methodological approach taken for the fieldwork had to be a landscape-based assessment. The methodology outlined below was developed in a series of discussions between the author and Janet Clemens (NHL Historian, NPS, AKRO).

CONSTRAINTS

The remote location of Kiska, lacking even basic infrastructure, places a number of very practical constraints on the effectiveness of a survey. There are no regular air or shipping connections to the island. Kiska is approximately 36 to 48 hours sail from Adak, the closest airport serviced by a commercial airline.[34] All transport is either handled by privately chartered vessels, or by the U.S. Fish and Wildlife Service's (USFWS) research vessel MV *Tiglax*, which supports the entire wide range of research throughout the Alaska Maritime National Wildlife Refuge (AMNWR). Given bunk space and rescue gear, the scientific complement of the MV *Tiglax* is limited to 16 personnel at any given time. In the light of the remit of the AMNWR, ecological and natural historical research takes priority, with historic preservation issues being fitted around these objectives where

feasible. As a result, the timing and the duration of the historic preservation fieldwork, as well as the number of staff that can be accommodated, is limited.

Staff

The total complement of survey staff was limited to six. The participants were: Janet Clemens (NHL Historian, NPS, AK); Debra Corbett (Regional Archaeologist, USFWS); Kim Fleming (graduate intern, USFWS, AK); Richard Galloway (graduate intern, USFWS, AK); Janis Kozlowski (Affiliated Areas Program Manager, NPS, AK); and Prof. Dirk HR Spennemann (ILWS, CSU). In addition, Jeff Williams (biologist, USFWS, AK) and Deborah Rudis (Environmental Contaminants Biologist, USFWS, AK) kindly agreed to look at some heritage sites while carrying out their own biological surveys.

Weather

The single most influential variable influencing the success of a survey on Kiska is the weather. As has been discussed in the section on climatology (p. xxxi), weather conditions are variable, with fog/low level cloud cover providing the greatest danger for navigation while operating away from the tent camp.

Mobility

Mobility on the island was limited to pedestrian movement as it proved impossible to source and deploy All Terrain Vehicles (ATV). Thus it took between one and two hours to walk into the areas further from the camp. Given the terrain, which was soft under foot as soon as one left the Japanese or U.S. built-road network, progress was not as fast as the short distances might imply. Moreover, the terrain is undulating with some of the hillsides quite steep.

Representative Sampling

Given these constraints it was clear from the start that a holistic survey of the area was illusory. Thus it was decided to carry out a representative sampling that drew on pre-knowledge of the area and the overall spatial patterning of sites identified in 2007. Based on this a priority listing had to be devised that covered all areas. This priority list, then would be serviced by three teams of two staff, but be subject to the weather conditions prevalent on the day, ensuring that the welfare and safety of the survey crew was not endangered.

Prioritization

The prioritization of areas to be survey was a three-step process. In the first instance, the site types known or assumed to be present (see previous enumeration) were grouped into the various aspects of the Battle for Kiska (Table 53). These groupings were then used to assess the expected frequency of occurrence of such features in broad geographical areas (Table 54). This drew on data contained in U.S. intelligence assessments after Kiska had been retaken,[35] as well as previous surveys by Susan Morton in 1989,[36] Charles Mobley in 1996,[37] and the author in 2007,[38] The scoring of abundance was by necessity coarse grained employing a three-step scale: sites present but scarce ('few', 1), sites reported or known to be present (some, 2) and sites known to be present in abundance ('many', 3).

Table 53. Correlation of site types with aspects of the Battle for Kiska

Aspect of the Battle	Japanese	U.S. / Canadian
Preparation to War		weather station
Ground War	tanks	makeshift defenses (fox holes) isolated ordnance
Ground Defense	steel pill boxes / command boxes personnel trenches barbed wire entanglements Rommel spikes isolated ammunition	isolated ordnance
Air War	Runway of airfield	Bomb craters Unexploded U.S. ordnance Sea-plane apron
Naval War		Unexploded U.S. ordnance
Coastal defenses	4.7-inch coastal defense guns in their emplacements 4.7-inch coastal defense gun emplacements (empty) 6-inch coastal defense guns in their emplacements 6-inch coastal defense gun emplacements (empty)	
Barracks/Personnel	Caves Tent bases Tent/barrack bases in sod walls Shinto shrine Hospital (in cave)	Tent bases Quonset huts (standing) Quonset huts (collapsed) Board walks
Support/Infrastructure	Roads Telephone Lines (utility poles) Telephone Lines (run on the ground) Power Lines (utility poles) Dumps (debris pushed out of the way by U.S. forces) Truck wrecks Isolated artefacts	Piers & wharves Roads Bridges Truck wrecks Telephone Lines (utility poles) Power Lines (utility poles) Dumps (abandoned by U.S. forces) Isolated artefacts (e.g. barrels, batteries)
Ships	Shipwrecks (beached/partially submerged) Shipwrecks (fully submerged) Landing craft wrecks	Landing craft wrecks
U.S. Air Defense		
Air Defense	3-inch guns in emplacements 13.2 AA guns in emplacements 13.2 AA gun emplacements (empty) 20mm AA guns in emplacements 25mm AA guns in emplacements 25mm AA guns isolated 25mm AA gun emplacements (empty) 75mm AA guns in emplacements 75mm AA guns isolated 75mm AA gun emplacements (empty) 120mm dual-purpose guns in emplacements 75mm mountain guns 37mm mountain guns	AA gun emplacements
Plane wrecks	Aircraft wrecks (crash sites) Aircraft wrecks (debris) Aircraft wrecks (fully submerged)	Aircraft wrecks (crash sites) Aircraft wrecks (debris) Aircraft wrecks (fully submerged)

Table 54. Coarse-grained spatial distribution of defining battlefield features

Aspect of the Battle	North Head	Main Camp North	Main Camp North (up the valley)	Sub Base	Trout Lagoon	South Head	South Head Valley	Landing Beach	North Central Kiska	Gertrude Cove Peninsula	Gertrude Cove Main	Little Kiska	Smaller sites/various locations	Kiska Harbor Submerged
Preparation to War				■										
Japanese Ground War				■									■	
U.S. Ground War								■	■					
Japanese Ground Defense	■	■		■	■	■	■		■	■	■	■	■	
Japanese Air War							■						■	
U.S. Air War	■■	■		■■	■■	■	■			■	■■	■	■	
U.S. Naval War	■											■		
Japanese Coastal defenses	■■				■							■		
Japanese Barracks	■	□		■■	■	□				■■	■			
U.S. Barracks	■	■■	■■		■		■■					■		
Japanese Support		■		■■	■		■			■	■			
U.S. Support		■	■■	■	■		■							
U.S. Ships														
Japanese Ships		■			■■	■					■			■
U.S. Air Defense			■											
Japanese Air Defense	■■	■		■	■	■				■	■■	■		
U.S. Plane wrecks							■						■	
Japanese Planes				■										■

Codes: ■■ many ■ some □ few

The frequency of sites expected for each aspect of the battle was scored from 0-3 and the total scores calculated for the Japanese and the U.S. periods for each of the broad geographical areas (Table 55). As the time on the island was anticipated to be only 4-5 days, the existing pre-knowledge of an area (from earlier surveys and the literature) was factored in as well which were scored as nil, low, medium and high.[39]

This made it clear that the priority areas for the survey would be the Trout Lagoon area followed by the valley area off the submarine base (Table 55). The second cluster were the Gertrude Cove peninsula, the submarine base area itself, as well as the scattered isolated sites, followed by the area of Main Camp North that lies up the valley. All other areas ranked low.

Where areas of equal significance were identified, the area closer to the camp was chosen so as to avoid unnecessary time spent on traversing the terrain. While it is acknowledged that this system is somewhat arbitrary and simplistic, it tries to place all areas on an equal footing irrespective of the possible 'appeal' of the resources.[40]

While a survey of Little Kiska would have been advantageous, it was decided early on that the time to motor to the island in one of the Zodiac inflatables was better spent at Gertrude Cove, which at any rate ranked much higher on the priority scale.

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Table 55. Priority Matrix of sites to be surveyed on Kiska

	North Head	Main Camp North	Main Camp North (up the valley)	Sub Base	Trout Lagoon	South Head	South Head Valley	Landing Beach	North Central Kiska	Gertrude Cove Peninsula	Gertrude Cove Main	Little Kiska	Smaller sites/various locations	Kiska Harbor Submerged
Japanese	10	9	0	14	13	7	6	0	2	9	11	6	6	4
U.S / Can.	7	7	7	7	7	2	9	2	2	2	3	6	4	0
Both sides	17	16	7	21	20	9	15	2	4	11	14	12	10	4
Prior data	3	3	0	1	0	1	0	0	0	0	2	2	0	1
Score[41]	4.3	4.0	7.0	10.5	20.0	4.5	15.0	2.0	4.0	11.0	4.7	4.0	10.0	2.0

Satellite Image Grid

Given the scope of the project, the available time on island and the available staffing, it was necessary to maximize the project returns while at the same time avoiding reductions in data quality. Given the quality of available satellite imagery, it was decided to plot all sites and ancillary information directly on the satellite imagery.[42]

The design of the grid thrown over the relevant section of the satellite image was solely driven by practicalities: to be able to print a uniformly sized section of the satellite image on a U.S. letter sized piece of paper with reasonable margins for hole-punching and annotation (see below). This resulted in grid sections that measured 0.33km E-W and 0.45km N-S. In real terms, the scale of the satellite image thus created was 1:1833. As there was no intent at measuring any distances on the physical image prints taken into the field, the potential awkwardness of the scale was entirely irrelevant.

Practical design and experiences

The limited time available for the survey, the weather conditions likely to be encountered, the amount and nature of the data to be recorded and the differential composition of the survey team required an innovative approach at recording. The standard approach of field notebook and drawing paper was adapted to the conditions. Each team carried a Rite-in-the-Rain™ notebook. It was initially considered to laser print each of the above-described survey photo segments on Rite-in-the-Rain™ paper, but this idea was discarded. The constant wind would make such sheets of paper difficult to manage. Thus a custom-designed approach was taken:

The site recording field notebook was custom-built, using the sides of hot-pink plastic folders which ensured that a notebook accidentally dropped at a site could be relocated immediately—the pink stood out very well in the yellow-green tundra. The folders were cut apart to provide rigid covers, connected by three key rings. All satellite image sections were laminated and hole-punched at the top and connected to the site recording field notebook through screws fastened with wing nuts.[43] Annotation occurred on clear overhead sheets that were overlain on the image, with the four corners marked off and each sheet labeled. A fine-point Sharpie™ permanent marker served as pen. This design was totally weatherproof and nigh indestructible. The only problem encountered

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was that the fine fog could, on occasion, inhibit the Sharpie™ from writing—a problem that could be easily overcome by wiping the section with a cloth or paper tissue.

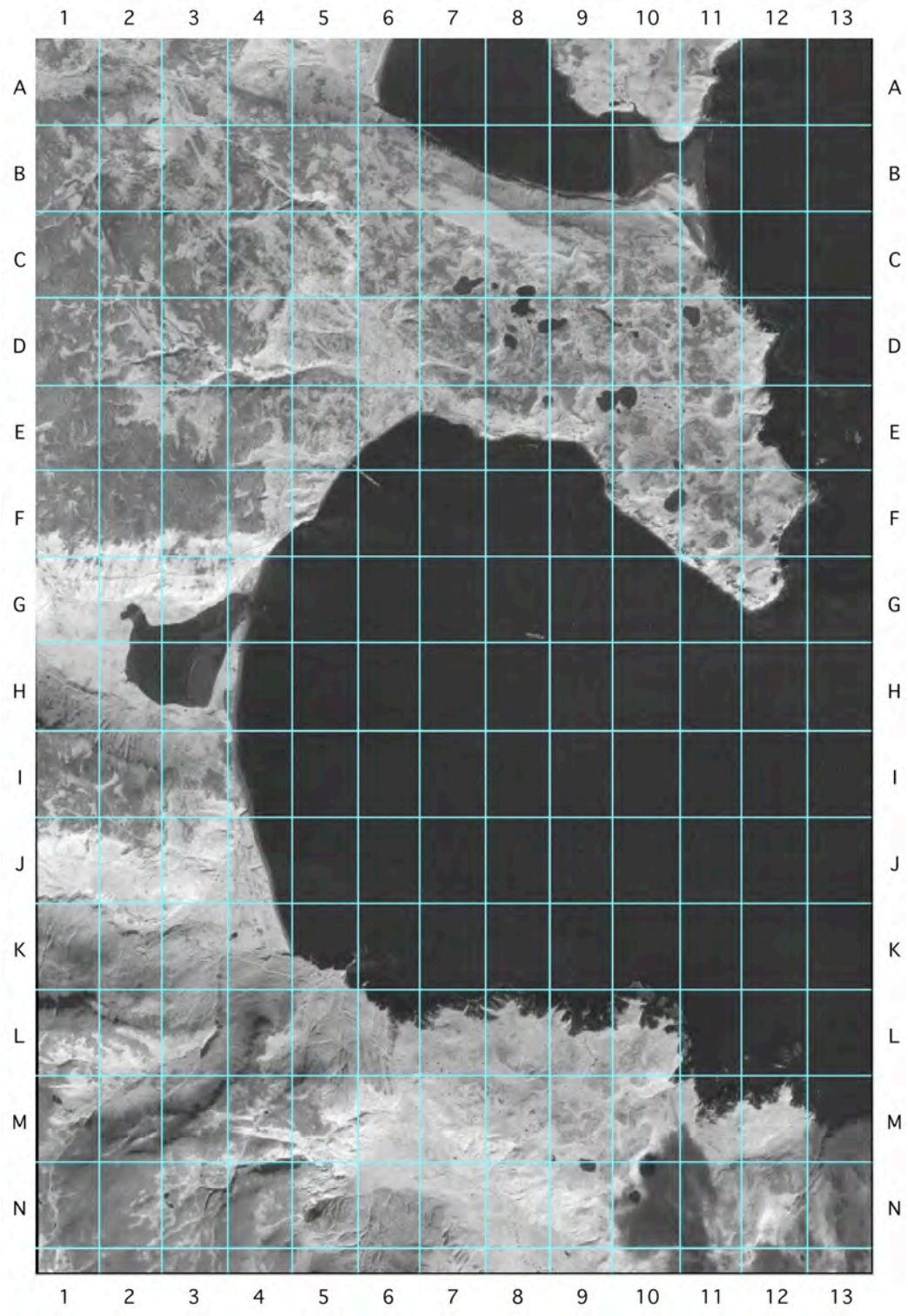

Fig. 280. Satellite Image of the Kiska Harbor Area, showing the general grid system applied.

Only the last day, when opportunity arose to document part of Gertrude Cove area was the system switched. Instead of working with satellite images, which had not been prepared, the teams worked with aerial photographs shot in 1986. During that day the teams divided the area by artificial features (roads) into discrete survey regions.

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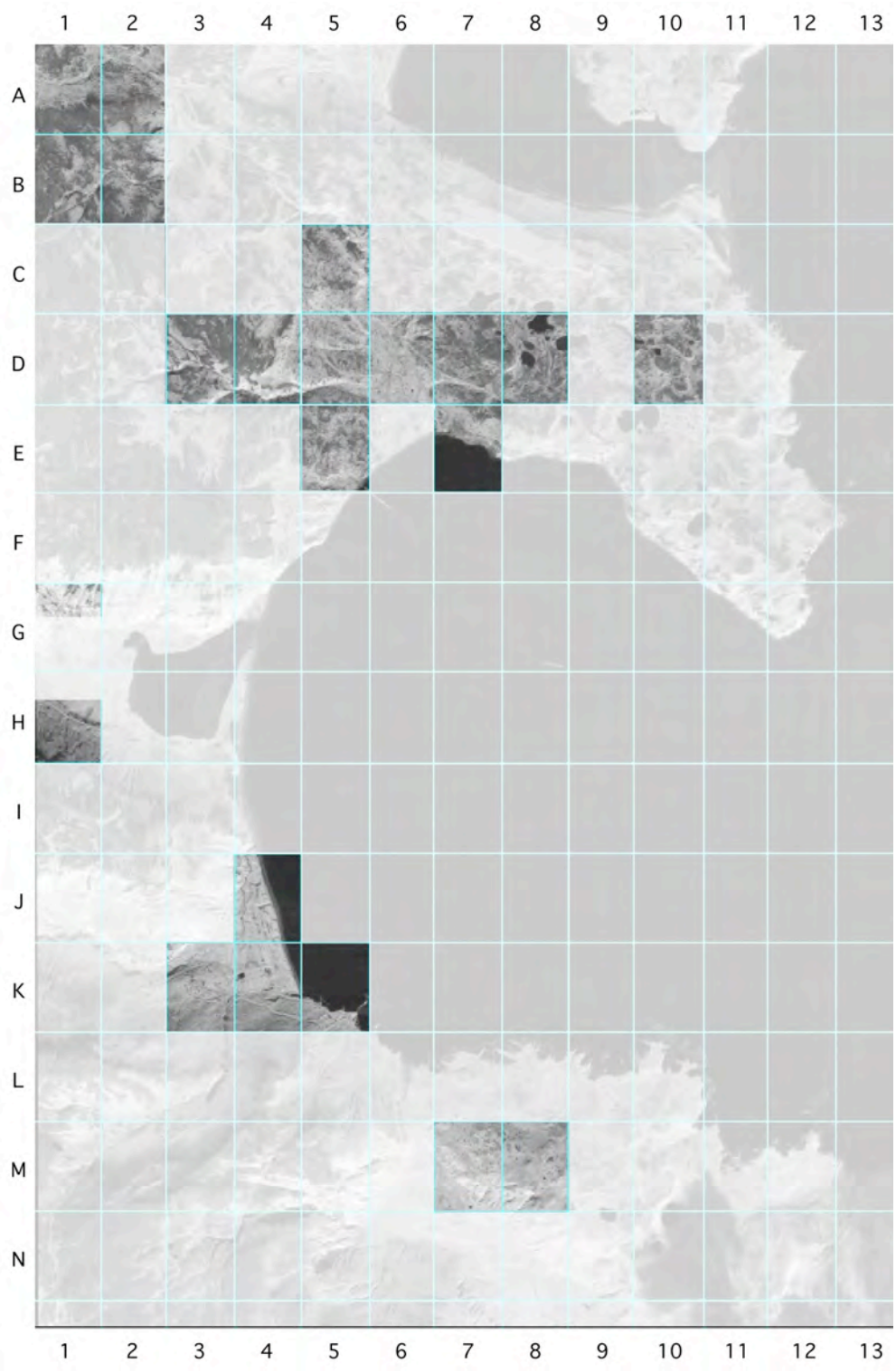

Fig. 281. Satellite Image of the Kiska Harbor Area, showing the general grid areas covered in the survey.

Survey Schedule

The overall deployment on the island was determined by the schedule of the MV *Tiglax*. The MV *Tiglax* left Adak on 4 June, and arrived at Kiska on the morning of 5 June. The decision was to set up camp and then use the inflatable to ferry they survey crew to the area of the Japanese submarine base and survey some of the grid sections there to gain a representative sample of both the Japanese installations and the U.S. installations known to exist there.

The areas covered are set out in Table 56 and shown in Fig. 354. Note that the composition of the teams varied from day to day (on purpose). Thus team composition is also given. Based on the weather conditions encountered each morning, the areas to be survey were selected.[44]

Table 56. Survey Schedule Kiska, June 2009

Date	Location	Conditions	Team 1	Team 2	Team 3
4 Jun	Departure Adak				
5 Jun	Arrival Kiska				
	Submarine Base	unrestricted	J2 [DC/DS]	K3 [JC/JK]	K4/K5 [KF/RG]
6 Jun	Main Camp Area & Canadian Camp	standard	A1/A3 [DS/JC]	D3/[C3] [DC/JK]	A3/A4 [KF/RG]
7 Jun	Trout Lagoon Main Camp Area	limited	G1 (part) [DS/JC]	D5 [DC/JK]	H1 (part) [KF/RG]
8 Jun		standard	E5 [DS/RG]	D6 [JC/JK]	E7 [DC/KF]
9 Jun	North Head	limited	reconnaissance and gun re-assessment D6-D10 [DS/JC/JK/KF/RG]		
10 Jun	Gertrude Cove	unrestricted	U.S. dump area [DS/JK]	SW of main road [DC/JC]	NW of main road [KF/RG]
	Departure Kiska				
11 Jun	Arrive Adak				

Team codes: DC-Debra Corbett (USFWS), DS–Dirk HR Spennemann (CSU), JC-Janet Clemens (NPS), JK-Janis Kozlowski (NPS), KF-Kim Fleming (USFWS), RG-Richard Galloway (USFWS)

In addition to the schedule set out in Table 56 opportunity arose to carry out a brief reconnaissance survey on part of South Head as USFWS Environmental Contaminants Biologist Deborah Rudis kindly agreed to look at some heritage sites in grid squares M7 and M8.

Notes to the preceding Chapter

1. Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan. (Report Kiska #1) Study prepared for the U.S. Fish and Wildlife Service, Alaska. Dec 2008*. Shepparton, Vic: Heritage Futures Australia.

2. This section is in the large part taken from Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan. (Report Kiska #1) Study prepared for the U.S. Fish and Wildlife Service, Alaska. Dec 2008*. Shepparton, Vic: Heritage Futures Australia.

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4. Coats *op cit*. p. 677.

5. Nye, C.J., 1995, Aleutian Arc Volcanoes: Alaska Division of Geological & Geophysical Surveys Public Data File 94-54, 1 sheet, 1:3,028,462.—March, G.D., 1993, *Holocene volcanoes of the Aleutian Arc, Alaska*. Anchorage: Alaska Division of Geological & Geophysical Surveys Public Data File 93-85, 1 sheet, 1:2,000,000.

6. Global Volcanism Program, Smithsonian Institution, Washington DC. Kiska. www.volcano.si.edu/world/volcano.cfm?vnum=1101-02.—Miller T P, McGimsey R G, Richter D H, Riehle J R, Nye C J, Yount M E, Dumoulin J A, (1998) Catalogue of the historically active volcanoes of Alaska. *U.S. Geological Survey Open File Report 98–582*. Washington, DC: U.S. Geological Survey. Pp. 1-104.

7. Lu, Zhong; Masterlark, Tim; Power, John; Dzurisin, Daniel; and Wicks, Charles (2002) Subsidence at Kiska Volcano, Western Aleutians, detected by satellite radar interferometry. *Geophysical Research Letters*, Vol. 29, No. 18, pp. 1855-1859.

8. Coats *op cit*. p. 567.

9. Global Volcanism Program, Smithsonian Institution, Washington DC. Kiska Eruptive History. www.volcano.si.edu/world/volcano.cfm?vnum=1101-02-&volpage=erupt.

10. Volcanic Explosivity Index scale is designed to express the severity of volcanic eruptions.

	Description	Plume Height	Volume	Classification	How often
0	non-explosive	< 100 m	1000s m^3	Hawaiian	daily
1	gentle	100-1000 m	10,000s m^3	Haw/Strombolian	daily
2	explosive	1-5 km	1,000,000s m^3	Strom/Vulcanian	weekly
3	severe	3-15 km	10,000,000s m^3	Vulcanian	yearly
4	cataclysmic	10-25 km	100,000,000s m^3	Vulc/Plinian	10s of years
5	paroxysmal	> 25 km	1 km^3	Plinian	100s of years
6	colossal	> 25 km	10s km^3	Plin/Ultra-Plinian	100s of years
7	super-colossal	> 25 km	100s km^3	Ultra-Plinian	1000s of years
8	mega-colossal	> 25 km	1 000s km^3	Ultra-Plinian	10,000s of yrs

. Source: Newhall, Christopher G.; Self, Steve (1982). "The volcanic explosivity index (VEI): An estimate of explosive magnitude for historical volcanism". Journal of Geophysical Research 87 (C2): 1231–1238.

11. Spennemann, Dirk HR (2008) *Administrative and resource management actions related to Kiska Island, Aleutians: a synoptic chronology*. Albury, NSW: Heritage Futures International.

12. Adak Monthly Climate Summary: www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?akadak.

13. Attu N A U, AK (500452) Monthly Climate Summary: www://www.wrcc.dri.edu/ cgi-bin/cliMAIN.pl?ak0452.

[14]. Raw data: NOAA National Data Buoy Center www.ndbc.noaa.gov/ station_history.php?station=46071.

[15]. Tatom, John (1943) *Summer Fogs and Winter Winds of the Aleutian Islands and how to fly despite them. Weather Notes for Pilots. Fleet Air Wing* 4. NAS Adak 124. Adak, AK: Fleet Air Wing 4, Naval Air Station Adak.—Chief of Naval Operations (1944) *Aerology and Amphibious Warfare, The Occupation of Kiska*. NAVAER 50-30T-2. May 1944. Washington, D.C.: Chief of Naval Operations, Aerology Section.—Chief of Naval Operations (1945) *Aerology and Amphibious Warfare, Fleet Air Wing Four Strikes*. NAVAER 50-40T-2. June, 1945. Washington, D.C.: Chief of Naval Operations, Aerology Section.

[16]. Fett, R.W., Englebretson, R.E. and Perryman, D.C. (1993) Forecasters Handbook for the Bering Sea, Aleutian Islands, and Gulf of Alaska. U.S. Naval Research Laboratory. NRL/PU/7541-93-0006.

[17]. Kelt, Douglas A. (2004) Climatic determinants of global patterns of biodiversity. In: Essays on Wildlife Conservation marinebio.org/Oceans/ Conservation/Moyle/ch3.asp.—Fett, R.W., Englebretson, R.E. and Perryman, D.C. (1993) Forecasters Handbook for the Bering Sea, Aleutian Islands, and Gulf of Alaska. U.S. Naval Research Laboratory. NRL/PU/7541-93-0006.—National Snow and Ice Data center, www.nsidc.org/arcticmet/ patterns/ semipermament_highs_lows.html.

[18]. Schroeder, Brian K., (2002) Long Range Forecast Possibilities for X-Band Radar Construction on Shemya. Master of Science Thesis presented to the Faculty, Department of Engineering Physics, School of Engineering and Management, Air Force Institute of Technology, Air University, Air Education and Training Command. AFIT/GM/ENP/02M-12.

[19]. Fett, R.W., Englebretson, R.E. and Perryman, D.C. (1993) Forecasters Handbook for the Bering Sea, Aleutian Islands, and Gulf of Alaska. U.S. Naval Research Laboratory. NRL/PU/7541-93-0006.

[20]. The low-level clouds and fog shown on the satellite image are driven by south-easterly winds. As the fog is very low it flows around the island, rather then over it. As result, the eastern side of Kiska, and in particular the harbor, is relatively fog free.

[21]. Downloaded from USGS site. Image # NZT070870240810200100.

[22]. Raw data: NOAA National Data Buoy Center www.ndbc.noaa.gov/ station_history.php?station=46071.

[23]. Fett, R.W., Englebretson, R.E. and Perryman, D.C. (1993) *Forecasters Handbook for the Bering Sea, Aleutian Islands, and Gulf of Alaska*. U.S. Naval Research Laboratory. NRL/PU/7541-93-0006.

[24]. Fett, R.W., Englebretson, R.E. and Perryman, D.C. (1993) *Forecasters Handbook for the Bering Sea, Aleutian Islands, and Gulf of Alaska*. U.S. Naval Research Laboratory. NRL/PU/7541-93-0006.

[25]. Adak Monthly Climate Summary: www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?akadak.

[26]. Attu NAU, AK (500452) Monthly Climate Summary: www://www.wrcc.dri.edu/ cgi-bin/cliMAIN.pl?ak0452.

[27]. The ocean weather buoy 46071 does not record precipitation.

[28]. Raw data: NOAA National Data Buoy Center www.ndbc.noaa.gov/station_history.php? station=46071.

[29]. For the long-term management of the resource more research into these issues seems indicated. Cf. Spennemann, Dirk HR. (2008) The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan. *(Report Kiska #1)* Study prepared for the US Fish and Wildlife Service, Alaska. Dec 2008. Shepparton, Vic: Heritage Futures Australia.

[30] Payne, Irving P (1943) *The enemy on Kiska*. US Naval Intelligence, Section G-2. AC/G-2, Advance Command Post, Hdqtrs. Alaska Defense Command, and Advance Intelligence Center, North Pacific Area. U.S. Confidential.

[31]. Murphy, Larry E. (1990) Contributions to Kiska Harbor Survey 1989: Preliminary Report. Draft. NHL files, US National Park Service, Anchorage.—see also NHL file Kiska, US NPS Anchorage.

[32]. Mobley, Charles (1996) *Cultural Resource Investigations at Kiska, Little Kiska, and Semisopochnoi, Aleutian Islands*. Report prepared by Charles M. Mobley & Associates, Anchorage, Alaska, under contract to Dames & Moore, Anchorage, Alaska for the U.S. Army Corps of Engineers, Alaska District.

[33] Unpublished field notes as well the site condition assessments mentioned earlier.

[34] Alaska Airlines operates a twice-weekly service to Adak (Thursdays and Sundays), weather conditions over Adak permitting. The airfields closest to Kiska are Eareckson Air Station on Shemya, which given its sensitive RADAR installations is off-limits for civilian traffic; and the airfield on Attu, which serviced the Coast Guard station there (closed down September 2010).

[35] Payne, Irving P (1943) *The enemy on Kiska*. US Naval Intelligence, Section G-2. AC/G-2, Advance Command Post, Hdqtrs. Alaska Defense Command, and Advance Intelligence Center, North Pacific Area. U.S. Confidential.

[36]. Murphy, Larry E. (1990) Contributions to Kiska Harbor Survey 1989: Preliminary Report. Draft. NHL files, US National Park Service, Anchorage.—see also NHL file Kiska, US NPS Anchorage.

[37]. Mobley, Charles (1996) *Cultural Resource Investigations at Kiska, Little Kiska, and Semisopochnoi, Aleutian Islands*. Report prepared by Charles M. Mobley & Associates, Anchorage, Alaska, under contract to Dames & Moore, Anchorage, Alaska for the U.S. Army Corps of Engineers, Alaska District.

[38] Unpublished field notes as well the site condition assessments mentioned earlier.

[39] Scored from 0 – 3.

[40] For obvious reasons, the large guns and similar structures provide greater diversity and a greater array of interesting features compared to a concentration of tent bases, for example. Given potentially adverse weather conditions which could wear down resolve, care had to be exercised to minimize the human dimension and the possible urge to alter the survey strategy on the spot to more interesting subject matter by rationalizing this on the grounds of 'realities on the ground.' By setting out the survey priorities as imperatives to be fulfilled early on, it was hoped that cultural landscape survey would achieve its primary aims.

[41] Calculated as total score / prior knowledge score +1 (the +1 was necessary to overcome a '0' scoring in the pre-knowledge line)

[42] The author had previously made favourable experiences in plotting sites on aerial imagery enlarged to 1:1000: Spennemann, Dirk H.R. (1987) Kartierung von Fundstellen auf Luftaufnahmen im Massstab 1:1000. Ein Erfahrungsbericht. *Archäologische Informationen* 10 (1), 1987, 68-71.

[43] Spare wing nuts were carried in case one was dropped into the high tundra when changing recording sheets.

[44] The conditions for operations were scored as follows:

Unrestricted operations: patchy, intermittent constant fog / low-level clouds, visibility fluctuates between 200-400m, occasional sunshine, occasional light drizzle; unrestricted movement.

Standard operations: almost constant fog / low-level clouds, visibility fluctuates between 100-200m, frequent light drizzle;

Limited operations: almost constant fog / low-level clouds, visibility fluctuates between 75-100m, frequent light drizzle or light rain, occasionally increasing to showers; movement was to be limited to known areas or areas close to the camp (in case the weather deteriorated).

Restricted operations: almost constant fog / low-level clouds, visibility fluctuates between 75-100m, frequent light frequent light drizzle or light rain, occasionally increasing to showers; movement was to be limited close to the camp (in case the weather deteriorated).

8. Findings of the Survey

A number of observations of the cultural landscape of Kiska were made during the survey carried out in June 2009. These could be augmented by data collected in August 2007. In this chapter we will summarize the findings of the survey. As was outlined in the previous chapter (p. xxxi), the survey was carried out to cover representative areas of Kiska, based on a priority matrix of the battlefield features (Table 55), which in itself was derived from a rapid KOCOA. In this section we will briefly summarize the types of sites that were encountered, each illustrated by a typical example.

Nature of the extant remains of the battlefield

As far as the Japanese developments are concerned, the following features survived later modification by U.S. forces:

- shrines
- tent and barracks bases
- heating systems for tents
- plane wrecks
- shipwrecks
- submarine wrecks
- truck wrecks
- gun batteries
- gun emplacements
- guns
- roads
- underground shelters
- concrete-reinforced underground structures
- caves
- fire suppression system
- unexploded ordnance
- unexploded small arms ammunition
- telephone lines

A number of features were developed by the Japanese and reused / improved by U.S. forces:

- utility poles
- roads
- airfield

As far as the U.S. and Canadian sites were concerned, we need to consider:

- Quonset huts

- bases for Quonset huts
- foundations for wooden buildings
- tents and tent bases
- heating systems for tents
- water supply infrastructure
- wooden cargo palettes, left by the U.S. forces at Gertrude Cove
- truck wrecks
- vehicle wrecks
- piles of rifle cartridges
- walkways and boardwalks
- steel matting as runway reinforcements
- piers
- bridges
- plane wrecks
- unexploded naval ordnance
- bomb craters

Additional developments are:

- memorials
- signage

The illustrations given on the following pages illustrate the types of features and sites and their appearance as they contribute to the Kiska cultural landscape.

Fig. 282. The cockpit of a Mitsubishi F1M2 'Pete' with the mouth of Salmon Lagoon in the background.

Fig. 283. Remains of a Japanese radial engine, Main Camp area, most likely for a Nakajima A6M2-N.

Fig. 284. The Japanese midget submarine HA-34 *in situ* on the slipway.

Fig. 285. Shinto Shrine, Main Camp area.

Fig. 286. Japanese solid fuel stoves, Main Camp area.

Fig. 287. Japanese solid fuel stove, Main Camp area.

Fig. 288. Japanese fire hydrant as part of the fire suppression system of the Main Camp area.

Fig. 289. A 75mm anti aircraft gun battery, near Main Camp.

Fig. 290. A 120mm dual-purpose gun in its revetment, North Head.

Fig. 291. A 75mm anti aircraft gun, near Man Camp.

Fig. 292. Concrete-reinforced underground shelter, near Shinto Shrine, Main Camp area.

Fig. 293. Corrugated iron-reinforced underground shelter, near Shinto Shrine, Main Camp area.

Fig. 294. Corrugated iron-reinforced underground shelter, near Shinto Shrine, Main Camp area.

Fig. 295. Underground shelter, dug into the unconsolidated volcanic subsoil, with a wooden ceiling covered with tundra. Submarine Base, Kiska Harbor.

Fig. 296. Remains of a iron-hulled flat-bottomed boat with two bows, Main Camp area.

Fig. 297. Japanese telephone lines run on the ground, connecting fire control and gun positions.

Fig. 298. Chassis of a Japanese search light truck, Little Kiska.

Fig. 299. Japanese 75mm Type 88 anti-aircraft gun on wheels. South Head.

Fig. 300. Japanese truck remains, Main Camp area.

Fig. 301. Japanese 25mm anti-aircraft guns collected by U.S. forces ready for removal.

Figure 302. 6-inch projectile in the emplacement of a 6-inch coastal defense battery on Little Kiska. (Gun C).

Fig. 303. Japanese small arms ammunition, North Head.

Fig. 304. Tent Base, Canadian Camp.

Fig. 305. Secondary power plant, Main Camp area. The only structure of the U.S. period still standing.

Fig. 306. Foundations of the U.S. field hospital.

Fig. 307. U.S. built boardwalk, North Head.

Fig. 308. Post foundation of the U.S. fire station, Main Camp area.

Fig. 309. Wooden trestle bridge. Near the US field hospital.

Fig. 310. The main dock (Pier 1), Kiska Harbor.

Fig. 311. The main dock (Pier 1), Kiska Harbor.

Fig. 312. Wing of Consolidated B-24D, serial # 41-1088 was piloted by Captain Jack F. Todd and shot down by Japanese anti-aircraft fire on 11 June 1942.

Fig. 313. Wing of Consolidated B-24D, serial # 41-1088 was piloted by Captain Jack F. Todd and shot down by Japanese anti-aircraft fire on 11 June 1942.

Fig. 314. Part of a U.S. tractor-trailer. Canadian Camp area.

Fig. 315. Truck wreckage. Canadian Camp area.

Fig. 316. Stack of pierced Steel Planks ('Marston mating') just south of the center section of Kiska airfield.

Fig. 317. Bomb crater (Image courtesy Richard Galloway, USFWS Anchorage).

Fig. 318. Pierced Steel Planks ('Marston mating') *in situ* on the runway of Kiska airfield Image courtesy Bruce Greenwood, NPS-AKRO, 2007).

Fig. 319. Concrete pillbox, Kiska Beach area.

Fig. 320. Possibly Unexploded 5- or 6-inch shell on the surface. Seen northwest of Gun A, 6-inch gun battery, North Head.

Fig. 321. Possibly unexploded shell largely buried in the sift soil. Seen northwest of Gun A, 6-inch gun battery, North Head.

Fig. 322. Memorial to the 87th Mountain Infantry.

Fig. 323. Warning Sign (Image courtesy Phil Johnson, USFWS Juneau, 2007).

9. BATTLEFIELD PATTERNS

In order to understand the landscape of any given battlefield from a cultural heritage management perspective, it is important to identify those elements of the landscape that best exemplify the nature and course of the battle. In standard heritage management practice, individual sites are ascribed a level of significance based on which various management actions may be balanced against, in case of competing objectives or limited funding. While in the case of Kiska it is possible to identify several areas that have a greater significance than others, it must be clearly understood that *all* elements of the Kiska battlefield are contributing features, and that all elements, taken together, make up a unique heritage site. Any management action that only focuses on those elements of the battlefield landscape that have been ascribed a higher level of significance, while either neglecting, or, actively condoning the loss of lesser elements, will result in the diminishment of this unique heritage asset.

It is important to understand that the battlefield is comprised not only of the large structures, such as the guns in their emplacements, the submarine wreck, the tent bases or the piers, but also of the seemingly lesser components, such as the bomb craters and the abandoned truck wrecks, all the way down to the smaller and seemingly peripheral items, such as the unexploded ammunition, the discarded fuel drums and the telephone wires running on the ground.

To describe the nature and make up of the Kiska battlefield, we will in the following, look at patterns in the battlefield, vignettes that exemplify the nature and course of the battle. Each of these patterns will be draw out from one or two examples. It must be clearly understood that these examples are not the only ones of their kind, and that the battlefield as a whole is larger than the patterns that will be the focus of the remainder of the chapter.

As discussed in Chapter 6, the Battle for Kiska can be broken into six phases: i) Preparing for War, ii) Attack Phase, iii) Occupation Period, iv) Retaking Phase, v) Garrisoning, and vi) Abandonment. The observations made during the brief surveys of Kiska in 1995,[1] 2007,[2] and 2009[3] allow us to draw out various key battlefield subthemes (Table 45) which will be addressed in this chapter.

Before we consider the various manifestations in the present cultural landscape, however, we also need to understand the processes that affected the transition of the material culture and sites left at the end of the war until the present day (2009).

Taphonomic Considerations

It is safe to assert that Kiska had no occupation (and concomitant structure development) immediately before the Japanese landings of 6 June 1942: the resident

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population of Kiska had been removed by the Russians in the early nineteenth century (chapter 2), and all subsequent land use of Kiska was both seasonal and very small-scale. Likewise, following the withdrawal of the last U.S. garrison troops in August 1945,[4] Kiska has remained uninhabited ever since.

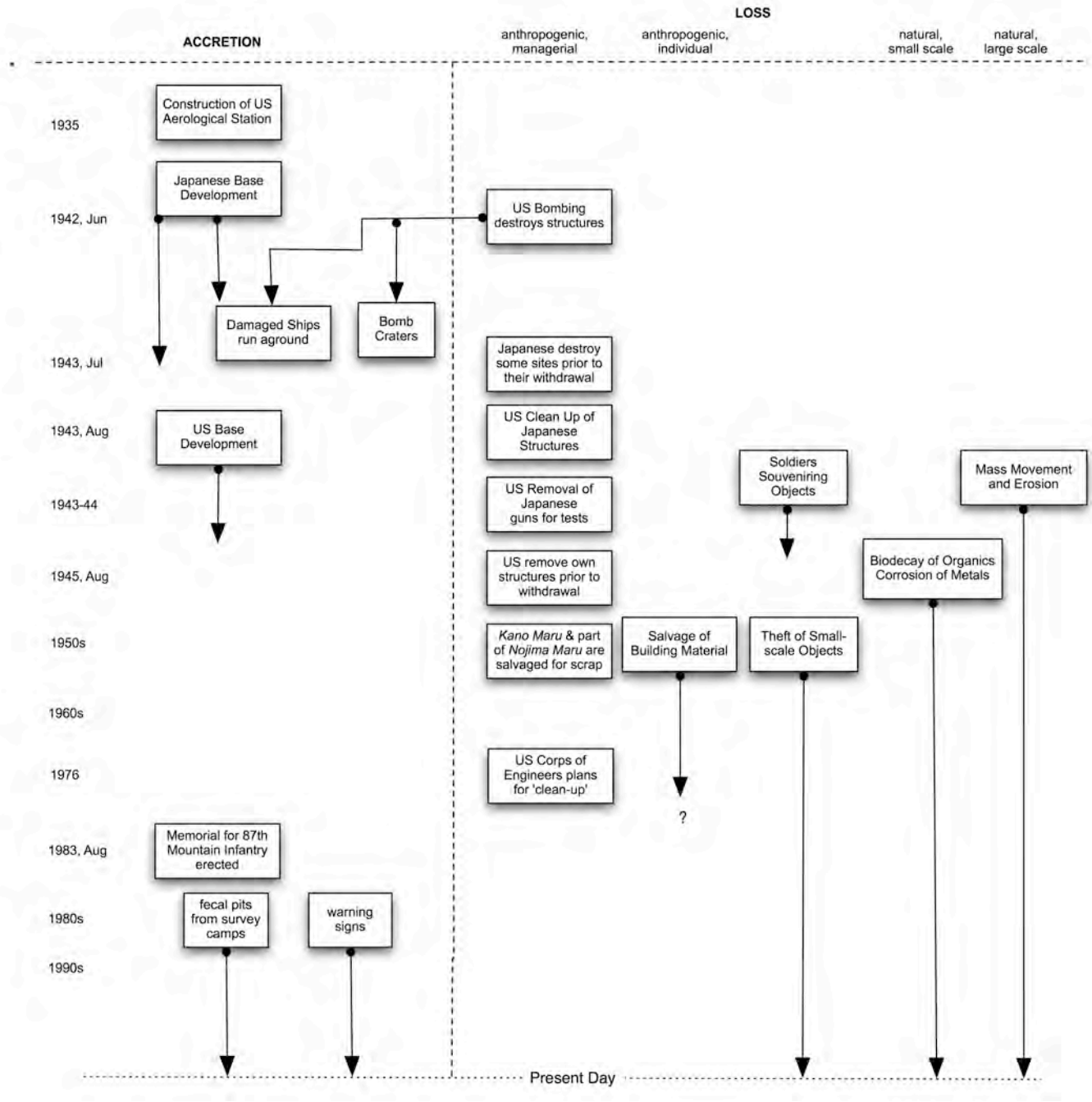

Fig. 324. Flowchart of events outlining the taphonomic processes for Kiska

If we set aside the prehistoric and the very few Russian-contact period Aleut sites that will exist (unless removed by the events of Word War II), then the island of Kiska represents a cultural landscape that is essentially *a battlefield landscape pure and simple*. Hence, every structure and object encountered on that landscape contributes to the overall cultural value of the site. Conversely, the removal of any object will detract from the cultural value the landscape does represent. Kiska was declared a National Historic Landmark on 4 February 1985.[5] In the period between the withdrawal of the last U.S.

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garrison troops and the declaration of the National Historic Landmark in 1985 a certain amount of material was removed through management action ('clean up') as well as through illegal acquisition. Some of this management action occurred before the declaration of the U.S. National Historic Preservation Act in 1966, some occurred after, before the cultural heritage value of the place was fully understood. In addition, other material was deposited on the island, sanctioned by, or initiated by management action, such as the memorial for the 87th Mountain Infantry Regiment and the signage on the beach, warning individuals of unexploded ordnance (Fig. 323).

Thus, even though the current cultural landscape of the Kiska battlefield does not represent a *pristine* battlefield landscape, the place retains a very high level of integrity (for discussion see chapter 10, p. 455). Moreover, several constituent features individually, as well as the individual objects and remains collectively make up a WWII battlefield landscape that is genuinely unique on a global scale (see Statement of Significance, p. 463).

Battlefield Patterns: The Aerial War against Shipping

As was outlined in Chapter 2 , as well as in the KOCOA analysis (Chapter 6), the major U.S. involvement for the majority of the battle was confined to aerial bombardment: first in an attempt to prevent the Japanese from establishing a firm foothold, and then to retard the development of the Japanese base on Kiska. The top priority had to be the sinking of the Japanese naval units followed by the transport ships. In this the U.S. was marginally successful (Table 57). Unlike with the bombing against land-based targets for which ample evidence of bomb craters can be drawn on, the evidence of the U.S. bombing effort against shipping is limited to vessels actually hit and sunk or damaged beyond repair. A fair number of unexploded bombs, as well as fragments of exploded bombs will be present on the bottom of Kiska Harbor.[6]

Table 57. Wrecks of Japanese cargo vessels in Kiska [7]

Date	Location	Type[8]	Vessel	Fate
18-Jun-42	Kiska Harbor	AO	*Nissan Maru*	sunk, underwater wreck
8-Aug-42	Kiska Harbor	A-Cargo	*Kano Maru*	run aground, salvaged in 1950s
15-Sep-42	Kiska Harbor	AG	*Nozima Maru*	beached, partially salvaged in 1950s, disintegrating wreck, partially submerged
8-Oct-42	Gertrude Cove	A-Cargo	*Borneo Maru*	run aground, disintegrating wreck, partially submerged
3-Jan-43	Kiska Harbor	A-Cargo	*Urajio Maru*	run aground, disintegrating wreck, partially submerged

Not counting the Japanese submarines, in total four ships were sunk or damaged and run aground in Kiska Harbor (*Kano Maru*,[9] *Nissan Maru*,[10] *Nozima Maru*,[11] *Urajio Maru*[12]) and one at Gertrude Cove (*Borneo Maru*[13]). In addition, the destroyer IJNS *Arare*[14] and the Subchasers CH-25[15] and CH-27[16] were sunk outside Kiska Harbor.[17] After the end of the war, attempts were made to salvage some of the ships for their scrap metal value. The *Kano Maru* was patched up, refloated and successfully towed to Japan to be broken up, as was the stern section of the *Nozima Maru*. Today, two of the five wrecks, as well as the bow section of another remain, at least in part, above the surface and form visual reminders of the air war against shipping. The wreck of the *Nissan Maru*

bombed on 20 June 1942 (Fig. 46), has been located and documented by NPS divers in 1989.[18]

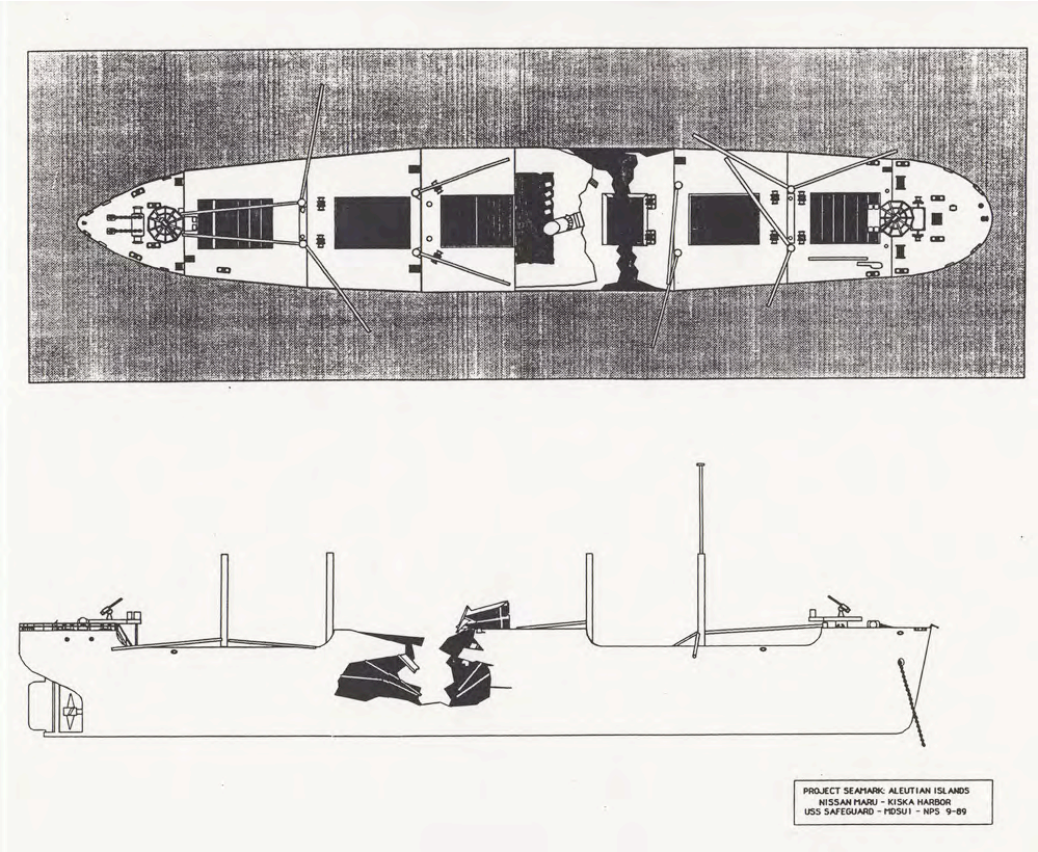

Fig. 325. The wreck of the *Nissan Maru* on the bottom of Kiska Harbor.[19]

The extant above-water remains of the Japanese supply ships in Kiska Harbor and Gertrude Cove form an integral, and highly visible part of the cultural landscape of Kiska. They are a stark reminder of the U.S. war on shipping that crippled the development of the Japanese base on Kiska and eventually made the Japanese presence in the Aleutians untenable.

Example 1: *Borneo Maru* at Gertrude Cove

The *Borneo Maru* was a steamship of 5863 tons, built in1917 at the Kawasaki Dockyard for Osaka Shosen Kaibuki Kaisha.[20] The ship, which was powered by a 440hp triple expansion steam engine, measured 385 x 51 feet with a height of 36 feet. She was severely damaged on 5 October 1942. Photographs show two large holes on the starboard side, mid-ships forward of the wheelhouse and the second forward of the aft super structure. As the vessel was run aground, and thus its cargo could be salvaged, attempts were made to fully destroy and sink the ship. Reputedly a B-26 Marauder attacked the beached *Borneo Maru* on 15 October 1942, but was hit by anti-aircraft fire and crashed into the stern of the ship.[21] The aerial attacks proved futile and the ship remained upright, sitting in shallow water (Fig. 326).

In the intervening years after the end of World War II, the ship gradually disintegrated. By 1968 the ship had broken in two, near the funnel and the aft superstructure (Fig. 327, Fig. 328). At that time it still sat upright in the water (Fig. 329) and formed a dominant part of the landscape at Gertrude Cove. By 2004 the central superstructure and the main holds of the vessel had collapsed, as a result of which much of the vessel was submerged (Fig. 330). Photography taken in 2007 and 2009 shows that

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the collapse of the wreck has continued. The bow has further submerged on the port side (Fig. 332), while the stern has essentially collapsed between 2007 and 2009, again on the port side, and is about to be wholly submerged (Fig. 334, Fig. 335). Substantial corrosion can be observed throughout.

The decay pattern of the vessel conforms with theoretically-derived expectations: the ship's structure is less strong in the area of the cargo holds and will exhibit structural failure due to corrosion and eventual collapse and wave impact well before the stern or the bow sections. The differential decay of the port side of the *Borneo Maru*, compared to its starboard side, is in all probability caused by the fact that the port side is fully exposed to the wave action in Gertrude Cove.

What was once *the* dominant feature in the cultural landscape at Gertrude Cove will eventually complete disappear. If the current pattern of decay is any guide, the stern will disintegrate first, followed by the bow section. The boiler end engine section seems the most solid and thus most likely to remain for a while. In its current state of decay, the bow section with the remains of the forward derrick are very evocative of a shipwreck in general.

Fig. 326. The wreck of the *Borneo Maru* at Gertrude Cove as seen on an aerial photograph in 1943.[22] Note the Arctic camouflage paint pattern.

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Fig. 327. View from the air. The wreck of the *Borneo Maru* at Gertrude Cove as seen on an aerial photograph taken from 300 feet; image of 2 May 1986.[23]

Fig. 328. View from space. The wreck of the *Borneo Maru* at Gertrude Cove as seen on the satellite image of 7 September 2004.[24]

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Fig. 329. View from the air. The wreck of the *Borneo Maru* at Gertrude Cove as seen on an aerial photograph taken from 300 feet; image of 2 May 1986.[25]

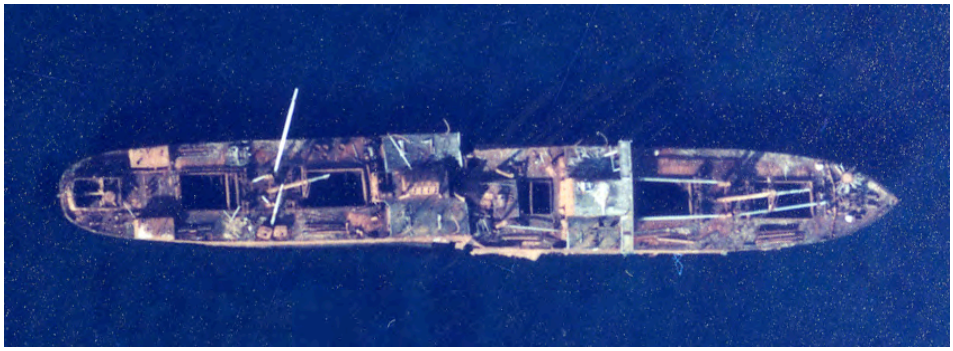

Fig. 330. View from the air. The wreck of the *Borneo Maru* at Gertrude Cove as seen on an aerial photograph taken from 300 feet; image of 2 May 1986.[26]

Fig. 331. The wreck of the *Borneo Maru* at Gertrude Cove today[27] View of the starboard side.

Fig. 332. The wreck of the *Borneo Maru* at Gertrude Cove today[28] View of the bow.

Fig. 333. The wreck of the *Borneo Maru* at Gertrude Cove today[29] View of the center section with the exposed boilers and engine.

Fig. 334. The wreck of the *Borneo Maru* at Gertrude Cove today[30] View of the stern.

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Fig. 335. The wreck of the *Borneo Maru* at Gertrude Cove today[31] View of hull, forward of the (now collapsed) wheelhouse. Detail of the buckled steel plates most probably caused by the explosion of a bomb inside the hull.

Example 2: *Nozima Maru* at Kiska Harbor

The *Nozima Maru*,[32] built in 1935, was a 7,189 tons passenger ship operated by Nippon Yusen Kaisha K.K, that had been converted to a troop transport.[33]

On August 21, 1942 she departed Kataoka Bay, Shumushu Island, arriving at Kiska on the 25th. The vessel was completely unloaded by September 15. She prepared to depart on the following day, but became the victim of two sustained air attacks.[34] Near misses in the attack holed the vessel, while a direct hit did not explode. Strafing killed the Captain of the vessel. The *Nozima Maru* could be patched, but a second air attack on the same day caused substantial damage so that the vessel was beached off Mercy Point to prevent her from sinking. Unable to be towed back to Japan she was abandoned and struck off the register on 13 October 1942. Further bomb damage occurred on 20 April 1943.[35]

The vessel was cut in two between #2 and #3 hold, patched and re-floated in 1956. The stern section was taken in tow to Japan by the American salvage tug *Salvage King* and the Canadian salvage tug *Sudbury II*. The section sank in a storm near the Japanese coast.[36] What remains is the bow section. This section has been decaying, with the side exposed to the wave action disintegrating faster than the landward side. In 1989 the bow section was sitting upright on the beach, with a large section of the hull preserved (Fig. 338). By 2007 this had been reduced to a smaller section (Fig. 339), and by 2009 the bow had been pushed over by wave action to the starboard side (Fig. 340).

The remains of the vessel, as they exist today, exemplify the post World War II salvage of shipwrecks for scrap metal.

The same decay patterns, the corrosion and concomitant structural failure along the cargo holds and the faster disintegration of the ship wreck on the side exposed to wave action (see above), can also be observed at the wreck of the *Urajio Maru* (Fig. 345-Fig. 346).

Fig. 336. The wreck of the *Nozima Maru* at Kiska Harbor as seen in 1943.[37]

Fig. 337. The wreck of the *Nozima Maru* at Kiska Harbor as seen in 1943.[38]

Fig. 338. The wreck of the *Nozima Maru* at Kiska Harbor in September 1989.[39]

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Fig. 339. The wreck of the *Nozima Maru* at Kiska Harbor in 2007.[40]

Fig. 340. The wreck of the *Nozima Maru* at Kiska Harbor in 2009.[41]

Fig. 341. The remains of the *Nozima Maru* at Kiska Harbor in 2009.[42]

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Fig. 342. The wreck of the *Urajio Maru* at Kiska Harbor in 1943 or 1944.[43]

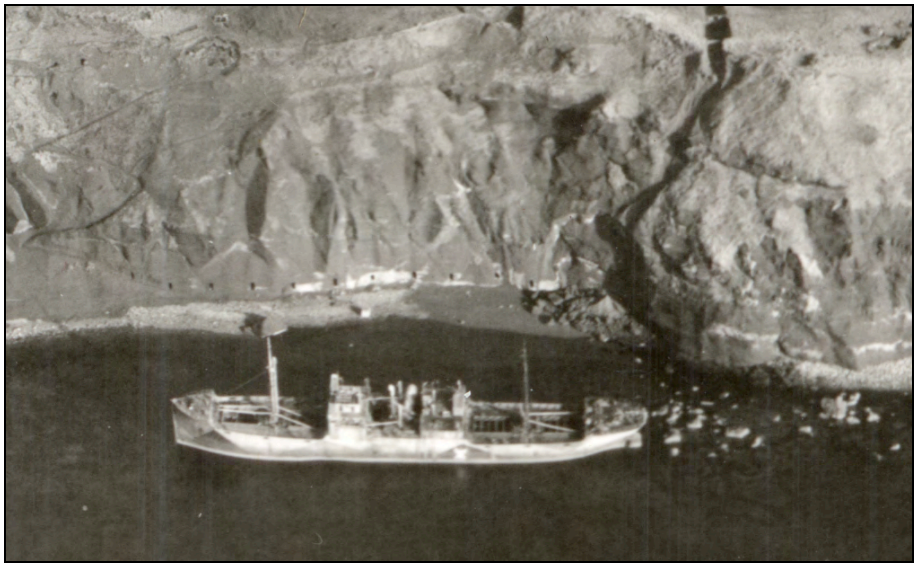

Fig. 343. The wreck of the *Urajio Maru* at Kiska Harbor in 1944.[44]

Fig. 344. The wreck of the *Urajio Maru* at Kiska Harbor in the 1980s.[45] Note the holed forward cargo hold and the impending collapse of the area due to corrosion and concomitant structural failure.

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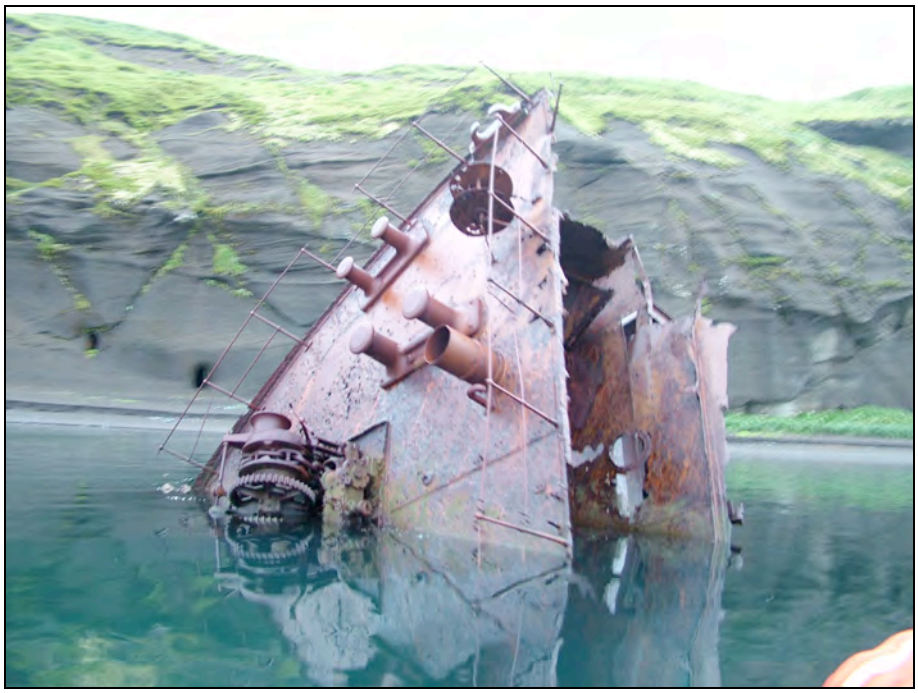

Fig. 345. The bow section of the wreck of the *Urajio Maru* at Kiska Harbor in 2007.

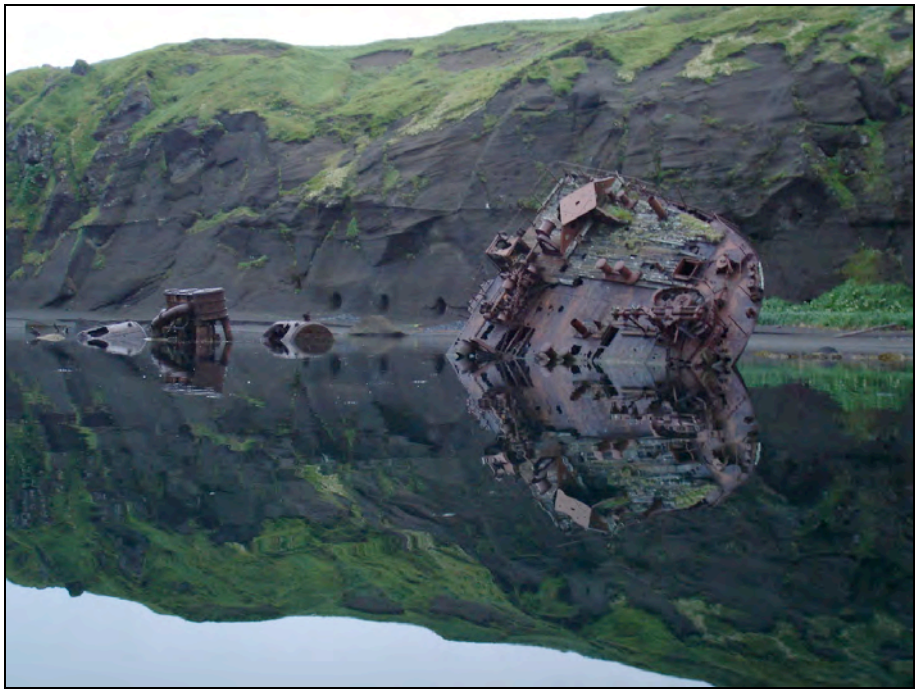

Fig. 346. The stern section of the wreck of the *Urajio Maru* at Kiska Harbor in 2007.[46]

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Battlefield Patterns: Aerial Warfare against gun positions

Aerial bombing on Kiska consisted of level bombing by medium and heavy bombers. The greater the height from which the bombs were dropped, the greater the inaccuracy in bombing. The bombing accuracy was affected in a large part by the ability to *accurately* measure an aircraft's speed above ground (as opposed to apparent air speed). Any miscalculation would result in the bombs being dropped too early or too late, thus resulting in near misses. In addition, bombardiers had to take into account any deflection of the dropped bombs due to local winds, which became a factor for bombs falling from greater altitudes. Again, the impact of the effect was not great but may have been sufficient to cause near misses.

The environment of Kiska bears evidence of these bombing runs. Then, as now, the bomb craters show up on aerial images. Below we will look in more detail at the manifestations of three such patterns: the manifestation of dead reckoning bombing, the bombing of a gun battery and the bombing of a defensive strong point. On the ground these bomb craters are visible, especially in low-lying terrain, where they fill with water (Fig. 347-Fig. 348) and on slopes, where wind erosion may have prevented them from being revegetated with tundra.

Fig. 347. Bomb craters in a perched lake, North Head (2007).

Fig. 348. String of water-filled bomb craters near the edge of a perched lake, North Head (2009, looking SSW). Additional bomb craters can be seen on the hillside in the background.

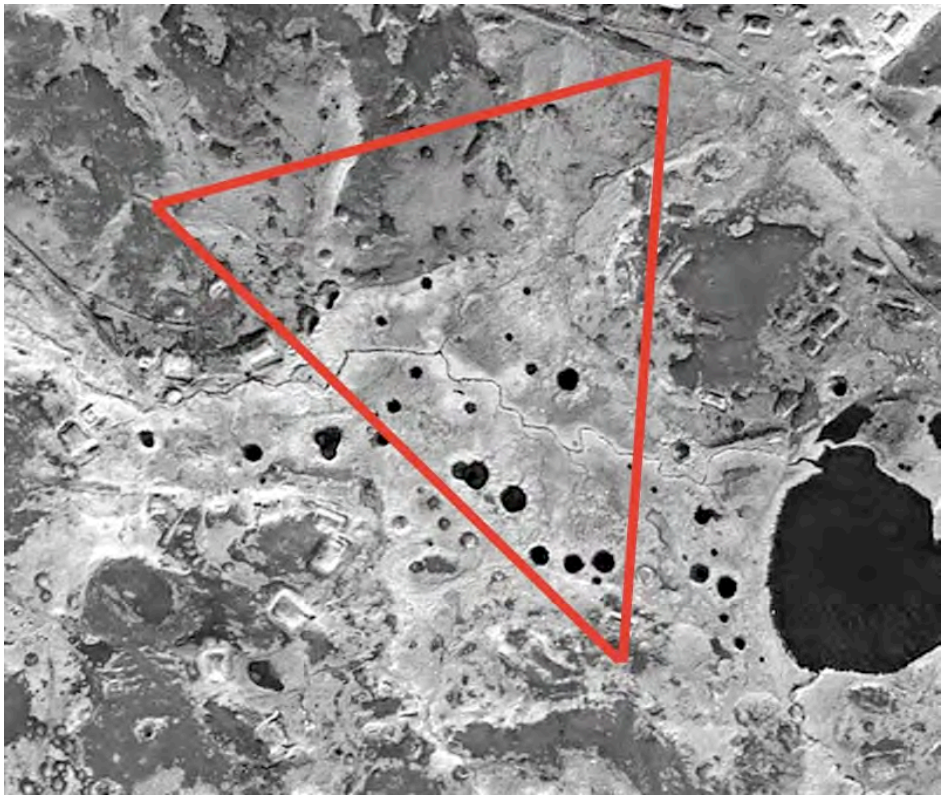

Fig. 349. String of water-filled bomb craters near the edge of a perched lake, North Head. View from space.[47] The triangle outlines the approximate view shed of Fig. 348.

Bombing techniques: Bombing by Dead Reckoning

The high frequency of fog and clouds obscuring the vital target areas during the Kiska Blitz, led PBY pilot William Theis to develop a blind bombing technique based on dead reckoning. Given that Kiska Volcano, with an elevation of 1,220m (~4,000ft),[48] was mainly above the clouds, it was possible to take the peak of the volcano as the starting point of the bombing run, and then, using a compass and a stop watch, to fly a set bearing at a set air speed, dropping the bombs on the target when the time was up.[49] This

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was a relatively safe technique, as the fog/clouds also obscured the bombers from the Japanese AA, which had to fire in the direction of the engine sounds. The Kiska landscape carries evidence of this bombing technique. Aerial imagery shows rows of bomb craters in the marshland at the western shore of Salmon Lagoon (Fig. 350).

Fig. 350. A number of bomb craters in alignment. Section of an aerial image taken on 16 March 1943, showing the southwestern shore of Salmon Lagoon.[50]

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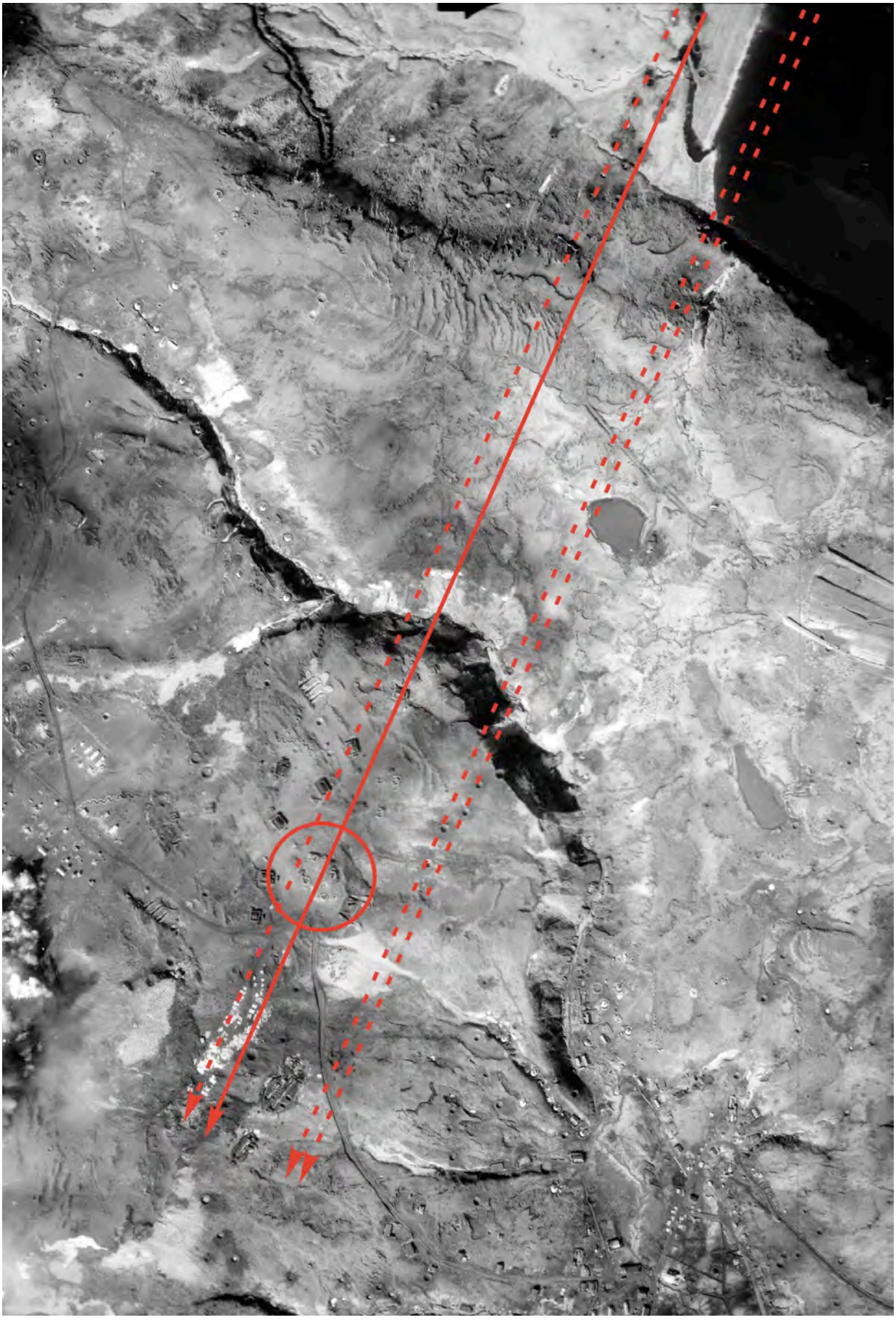

Fig. 351. A number of bomb craters are in alignment. Reconstruction of the intended target. (compare with Fig. 350).[51]

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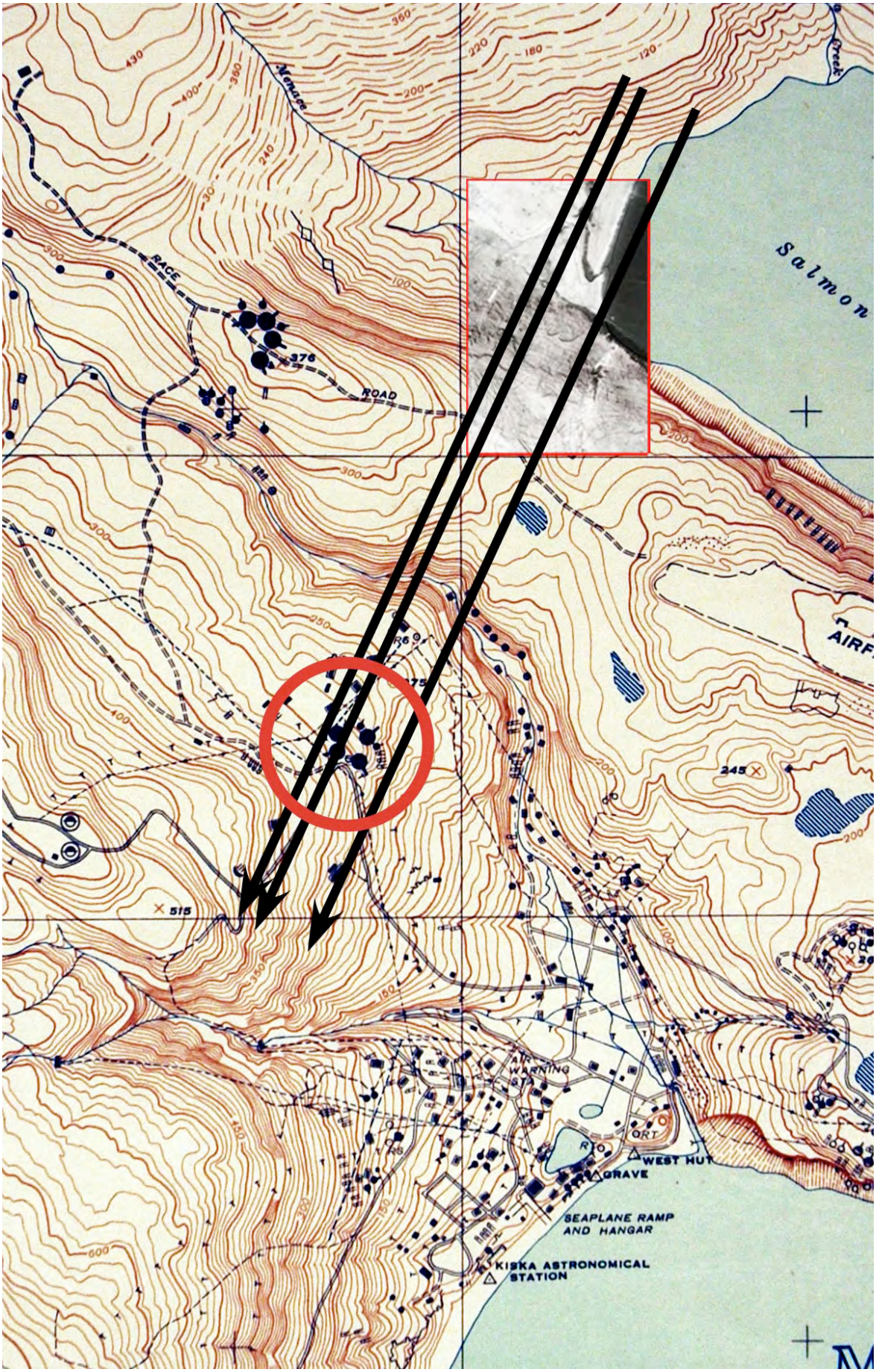

Fig. 352. Superimposition the aerial photo over a base map of Japanese installations on Kiska.

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The image shows two strings of bombs dropped very close to each other, as well as another string of bombs further to the east (at the bottom right). When these linear arrangements are extended on the air-photo (Fig. 351) or on a map (Fig. 352), the intended target, the 75mm AA position just inland from Main Camp, becomes obvious. Clearly, the bombs were dropped slightly too early. The bombs fell about 1,100-1,200 yards short of the target. If we assume an average airspeed of about 160mph during the actual bombing runs,[52] then the 1,100-1,200 yard short fall correlates with dropping the bombs about 1.5 seconds too early. Clearly, precision bombing of specific, small-scale targets, such as the 75mm AA position, was not feasible unless dive-bombers were employed.[53] On the other hand, when the same bombing technique was employed against the concentration of structures in the Main Camp area, it resulted both in more direct hits and also, more generally, in a psychological harassment value.

Bombing Accuracy: Analysis of the spread of bomb craters

While the previous example was based on bombing through the overcast, the following two examples deal with standard bombing patterns.

Example 1: The 120m Dual Purpose Gun Battery on North Head

The 120mm dual-purpose battery on North Head was the heaviest anti-aircraft battery emplaced on Kiska. Not surprisingly, it was a major target. Perusal of modern satellite imagery (Fig. 353), shows that U.S. bombing consistently missed the target of the 120mm dual-purpose gun on North Head, as there is a very high scatter of craters to the east (Fig. 354). Unlike the situation at Salmon Lagoon (described above) there is no clear evidence of linear bomb patterns. While this is largely due to the high number of craters that obscure the pattern, another factor is at work. A few bomb craters cluster very tightly on the western side of the battery (Fig. 354). It is unlikely that this tight cluster is due to a random overlap of medium to high altitude bombing. Rather, we can assume that these highly pinpointed bombs reflect the efforts of the dive bombing squadrons that were moved to Amchitka on 19 July and that flew missions against Kiska in the softening up phase before the landings (4 to 13 August). It can be surmised that these near misses would have been close enough to exact substantial damage, *if* the ground had been hard, and thus conducive to a scattering of rock and debris.

From all available evidence, it would appear that by the time the Japanese left Kiska (on 28 July 1943) all four 120mm guns were still operational. By the time the U.S. landed, one of the guns had been destroyed (Fig. 356) by a hit on the revetment wall, but this occurred *after* the Japanese withdrawal.[54] Today, this shattered and distorted wreckage of the gun is very evocative of the effects of the bombing (Fig. 357).

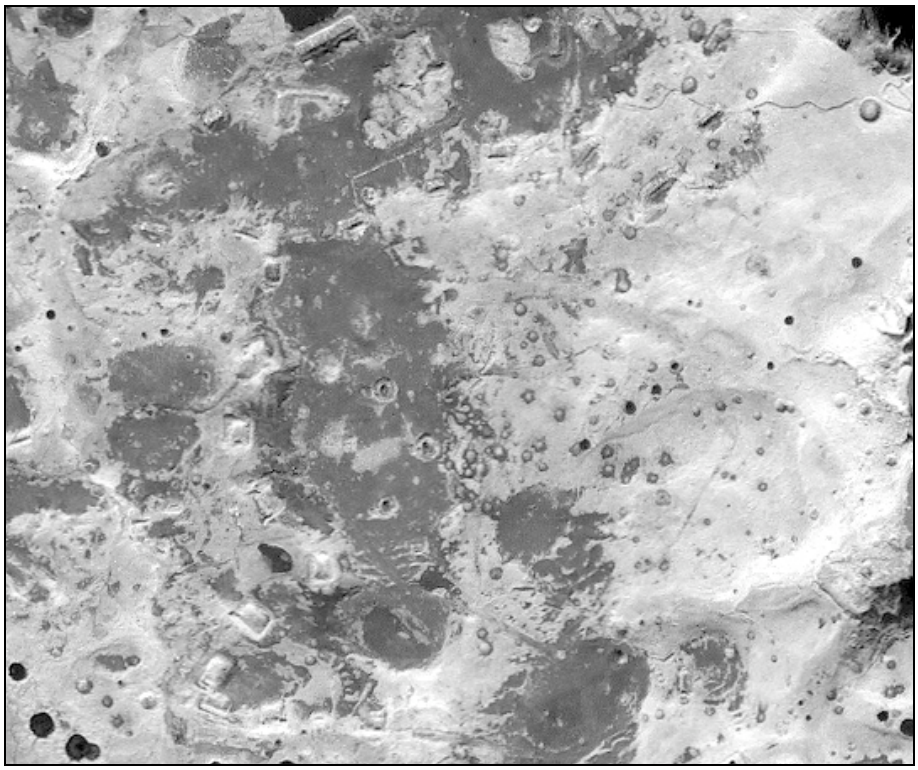

Fig. 353. View from space. The 120mm dual-purpose gun battery, as seen on the satellite image of 2001. The area covered by the aerial photograph is approximately 300 x 200m.

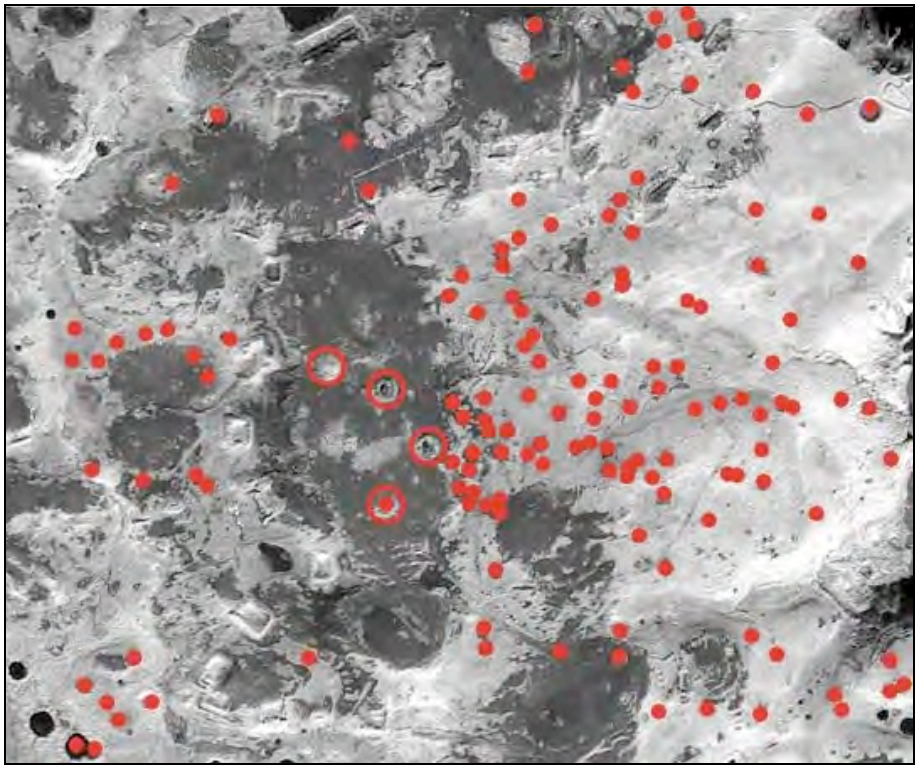

Fig. 354. View from space. The 120mm dual-purpose gun battery, as seen on the satellite image of 2001. Interpretation of Fig. 353. The open circles indicate the four gun positions. The northern (top) gun was removed by U.S. intelligence.[55] The bomb craters are highlighted as red dots.

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Fig. 355. The 120mm DP Battery on North Head, as seen from the northwest.

Fig. 356. 120 mm gun on North Head, Gun A as seen after the capture of Kiska (date 7 September 1943). Gun C can be seen in the background.[56]

Fig. 357. 120mm DP battery on North Head, Gun A as seen from the northwest.

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Example 2: The Strongpoint at Gertrude Cove

The effectiveness of bombing can also be illustrated by a strong point controlling the beach at Gertrude Cove. This position (objective nº 715 on Fig. 171), a command post with a single 75mm Type 88 anti-aircraft gun emplaced as artillery against landing craft and personnel, was protected by a 75mm Type 88 anti-aircraft battery to the north (objective nº 701) and by a second Type 88 anti-aircraft battery to the west (objective nº 704). The strongpoint was well protected with personnel trenches and well as barbed wire entanglements (Fig. 359). Judging from the size of the craters, the bombing of the position was carried out with a variety of bomb types, ranging from 1000lb bombs to smaller ammunitions.

The observable pattern of bombing is fairly uniform, with a higher concentration on the southwestern tip of the strong point. It can be assumed that a number of additional bombs fell into the small lagoon. This seems to suggest that the majority of the bombing runs came from that direction. The large bomb craters are aligned, suggesting they were dropped as a string by an aircraft flying from NW to SE. The bombs are in perfect alignment with the center of the knoll, with the last bomb falling a mere 150 feet short of the target.

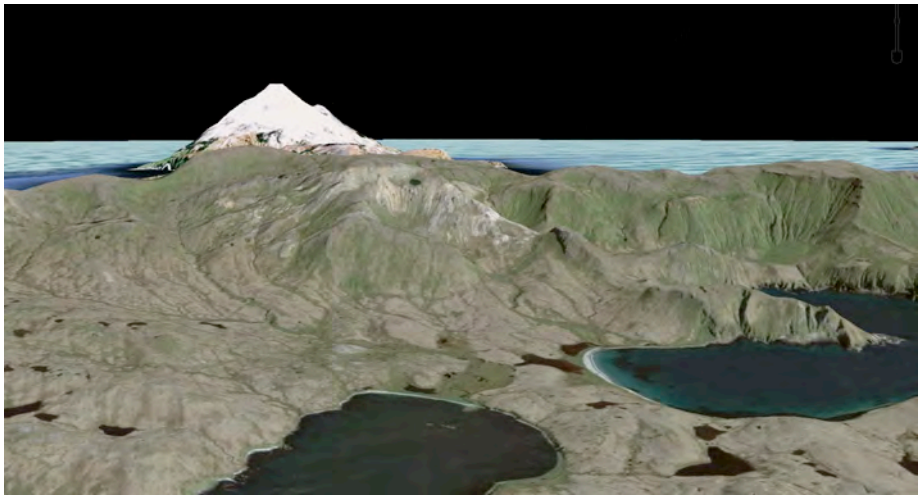

Fig. 358. Three-dimensional elevation model of Gertrude Cove with Kiska Volcano in the background.[57] The commanding position of the low knoll in the center is evident.

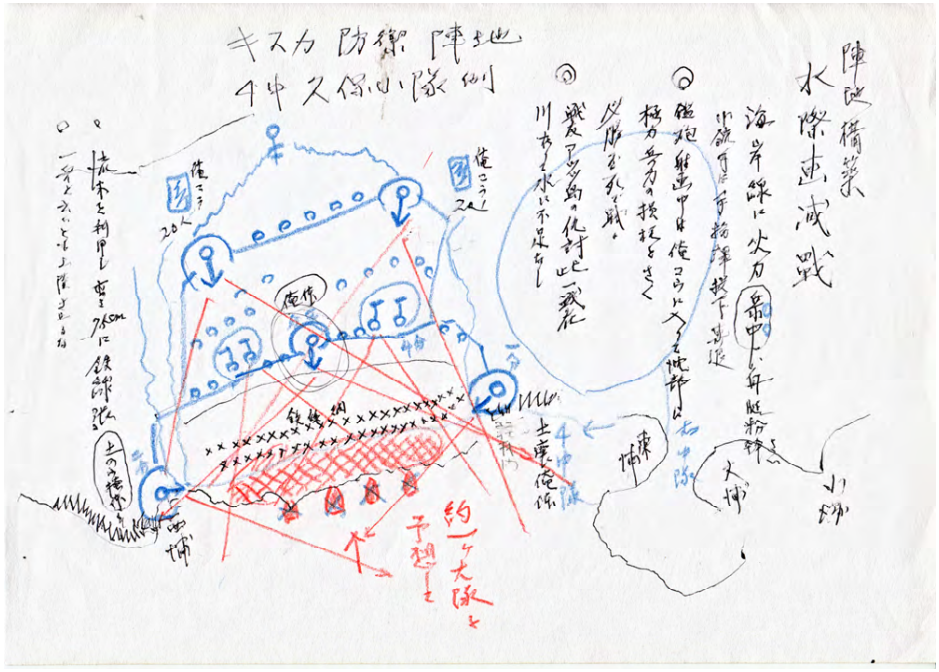

Fig. 359. Sketch by Mr. Usami Toshiharu in March 2010, setting out the defense of Gertrude Cove.[58] The defense was in depth and consisted of barbed wire approach obstacles directly at the beach, which was also flanked by guns able to take any landing part in cross fire. Three additional guns and two groups of machine guns provided defense in depth.

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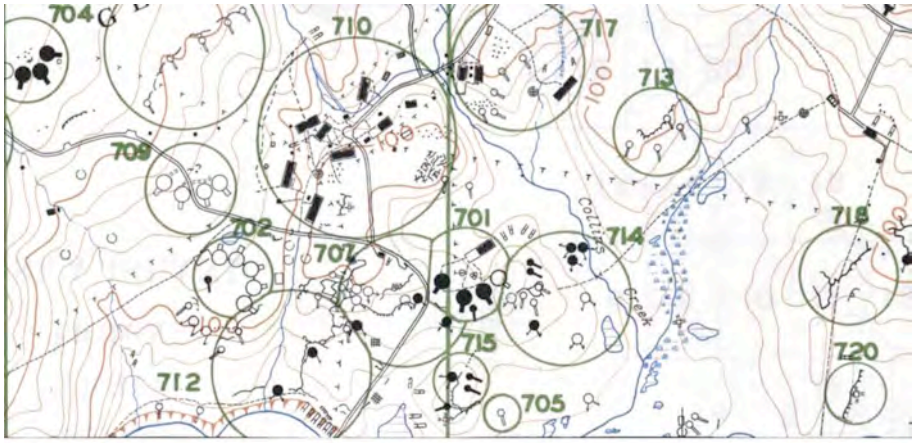

Fig. 360. The Japanese strong point commanding the beach at Gertrude Cove (objective nº 715) as mapped on target map issued on 28 July 1943.[59] Ship 'Charlie' is the *Borneo Maru*.

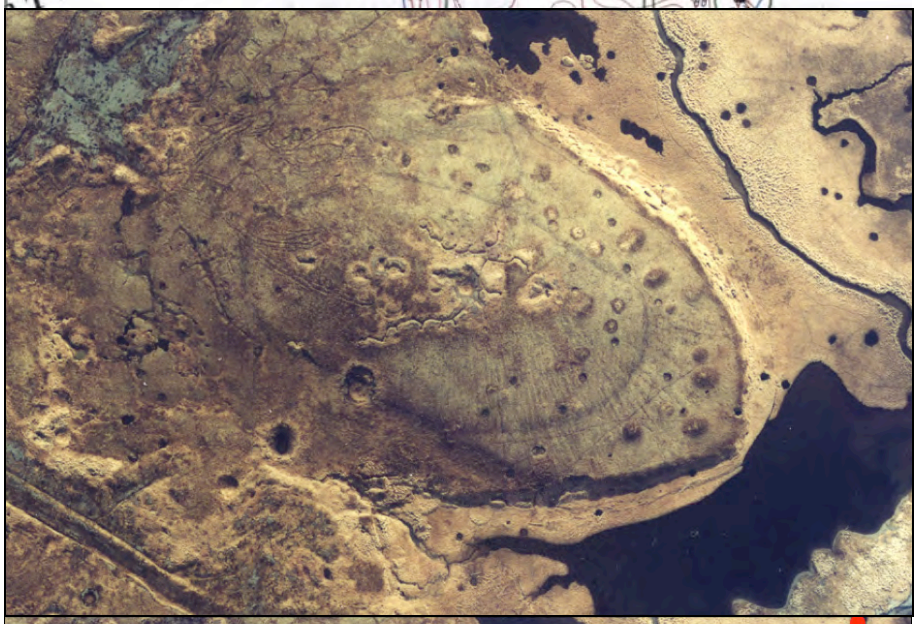

Fig. 361. The Japanese strong point commanding the beach at Gertrude Cove as seen on an aerial photograph taken from 300 feet; image of 2 May 1986.[60] Note the command position and the personnel trenches on the summit, as well as the barbed wire entanglement (visible as an oval-shaped dark line, halfway up the knoll. The area covered by the air photo is approximately 400 x 200m.

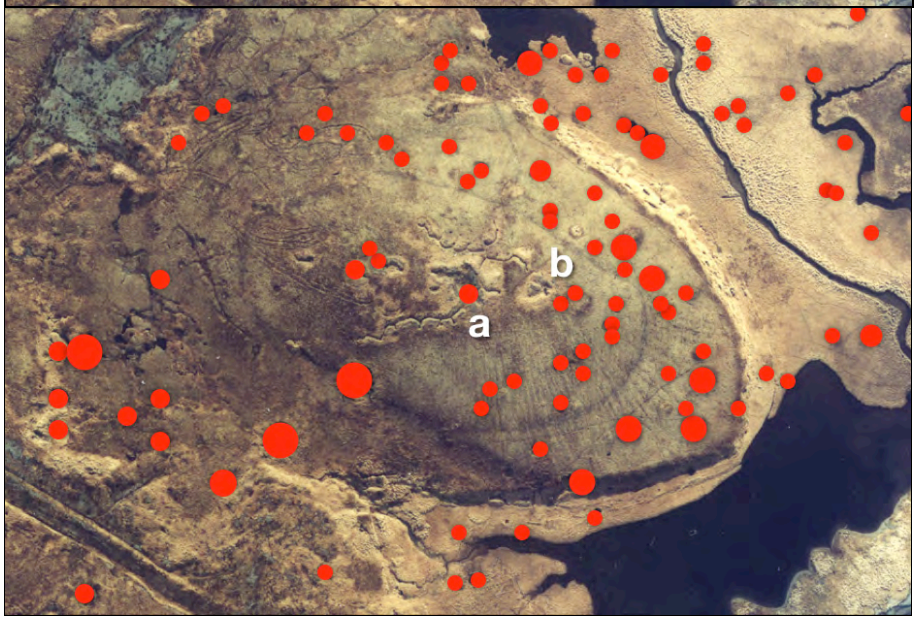

Fig. 362. The Japanese strong point commanding the beach at Gertrude Cove. Interpretation of Fig. 361. Note the bomb that destroyed the command position (a), while the gun position itself (b) remains intact despite two near misses. The bomb craters are highlighted as red dots.

Fig. 363. The Main Camp area as seen on an aerial photograph of May 1986.[61].

In an interview Mr. Usami Toshiharu,[62] who was in charge for the defense of some of the area, commented that the U.S. bombing overall did not do much damage (at least to the IJA positions at Gertrude Cove). Moreover, he noted that he had only lost three men under his command, all killed in the early days of the IJA presence in Gertrude Cove when the men tried to fire at some of the incoming aircraft. It was, in the end, much safer for the men not staffing the AA batteries to simply take cover in the underground personnel shelters, wait out the raid and then to clean up any (limited) damage that the bombers may have wrought.

A close inspection of the 1986 aerial image reveals a number of very small craters in the tundra close to the stream. These can either be naval shells[63] or unexploded aerial bombs ('duds').

Battlefield Patterns: Aerial Warfare against base infrastructure

The U.S. aerial warfare against base infrastructure followed the same patterns as that against specific gun emplacements. However, the greater area covered by the Japanese Main Camp area, as well as the greater area covered by the IJA garrison at Gertrude Cove meant that near misses against one target may have impacted on another. In addition, the damage was also psychological, in the form of harassment and fear.

The Main Camp area at Kiska Harbor has been substantially modified by subsequent U.S. occupation, so that it is difficult to assess the effect of the U.S. bombing there. It is a palimpsest that is difficult to decipher given the extensive earth moving by the U.S. forces after the re-occupation of Kiska.

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Fig. 364. The barracks area of the U.S. garrison at Gertrude Cove as seen on an aerial photograph of May 1986.[64] Inset below shows the relationship to the wider area.

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The battlefield landscape as it presents itself today is a prime example of contested ground: the geographical realities of Kiska mandate the utilization of the most sheltered part of the harbor, the northwestern beach area. Thus the area is an overlap of pre-World War II, Japanese, and World War II-era U.S. developments, as well as an area of bomb-craters caused by U.S. bombing. Because of the reshaping of the area for use by U.S. forces, the pattern of bombing is not as clear as it is for the gun positions on North Head or at Gertrude Cove. Evidence of bomb craters can be found at the periphery of the Main Camp area (Fig. 277) as well as in the marshy ground along the creek (Fig. 363). While they still exist, they do not show readily from the ground level or from low angles, mainly due to the vegetation.

The Japanese also maintained a large force at Gertrude Cove. The bomb target maps, outlining the objectives (Fig. 360) shows some buildings, but remains silent on the location of the barracks or tent city occupied by the Japanese Army. Overall, some 1500-2000 soldiers would have had to be housed.[65] The aerial photography of 1986, reproduced in part as Fig. 364, shows a number of revetments for barracks buildings. These seem to belong to the US forces, managing the supply dump in the area.

Available oblique aerial imagery taken in October 1944 suggests that all but one or two Quonset huts had been removed by that time and that the military presence in the Gertrude Cove area had ended.[66]

Battlefield Patterns: Defending Against Aerial Attack

The Japanese preparation for, as well as response to, the U.S. aerial bombing was to deploy anti-aircraft guns. The logic for their placement has been discussed in Chapter 6 (KOCOA). These guns were emplaced in batteries, commonly of four (in case of the 75mm Type 88 AA and 120mm DP).

Gun Emplacements

There is ample evidence of former Japanese gun emplacements on Kiska, due to the fact that the guns were placed at strategic, elevated locations. For these locations only limited demand existed once the U.S. re-occupied the island. The U.S. occupation sites were in the slopes and the less exposed locales, and the U.S. antiaircraft gun positions were sited accordingly. Examples for these remaining Japanese gun positions are the 120mm dual-purpose gun battery on North Head (Fig. 365) and the 75mm anti-aircraft batteries on North Head and at Main Camp, where the guns have been left in place.[67]

Fig. 365. The 120mm dual-purpose gun position on North head as seen from the southeast.

Fig. 366. The 120mm dual-purpose gun position on North head as seen from the south.

Camouflage and Dummy Positions

Another means of defense against aerial attack was to either hide the target from aerial observation through camouflage, or to set up decoy (dummy) positions in an attempt of diverting bombs from the real targets. The ultimately failed attempt of deploying dummy planes at Trout Lagoon has already been mentioned. It would appear that this was only a short-lived attempt and was not repeated after July 1942. U.S. intelligence comments on dummy gun positions, some of which were observed after the U.S. landings. Commonly they made use of bomb craters, with a wooden construction built to resemble a heavy coastal defense or anti-aircraft gun. U.S. intelligence was not easily fooled, however.

While these emplacements may have looked real from a great height, they were easily recognized as decoys by medium-level bombers and low-flying fighter aircraft. Since they relied on bomb craters, most of the dummy gun positions cannot be readily distinguished from normal gun positions once a bit of camouflaging effort was put into them.

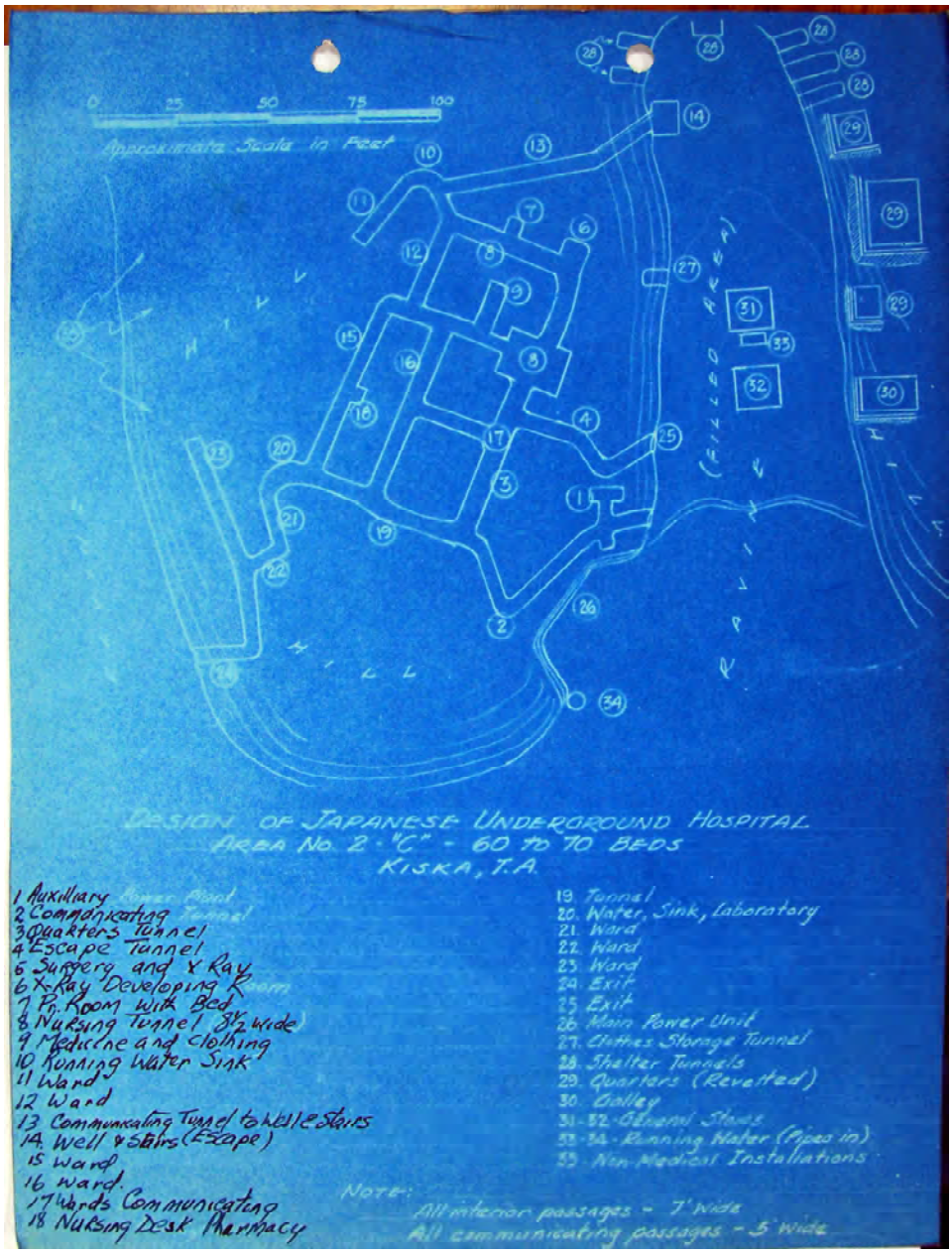

Fig. 367. Japanese Underground Hospital. Technical drawing compiled by U.S. Intelligence after the US reoccupation of Kiska.[68] Scan of blue print.

Concealment from Aerial Observations

To prevent damage to critical infrastructure and to personnel, the Japanese quickly resorted to the construction of underground facilities, that were concealed from aerial observation. While U.S. intelligence noted the presence of underground facilities (by the entrances), the exact nature, use and extent of these facilities was unknown until after the Allied landings.

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Several of these tunnels and underground facilities have been noted in 2007 and 2009 and partially examined during the survey work in 2009 (see below). A limited amount of historic imagery exists, as well as U.S. intelligence mapping of the most extensive of these, the underground hospital (Fig. 367-Fig. 369). The risk of collapse of these features caused serious safety concerns and thus prevented a more thorough investigation.

Fig. 368. Entrances to the underground hospital photographed at the time of the U.S. reoccupation of Kiska.[69]

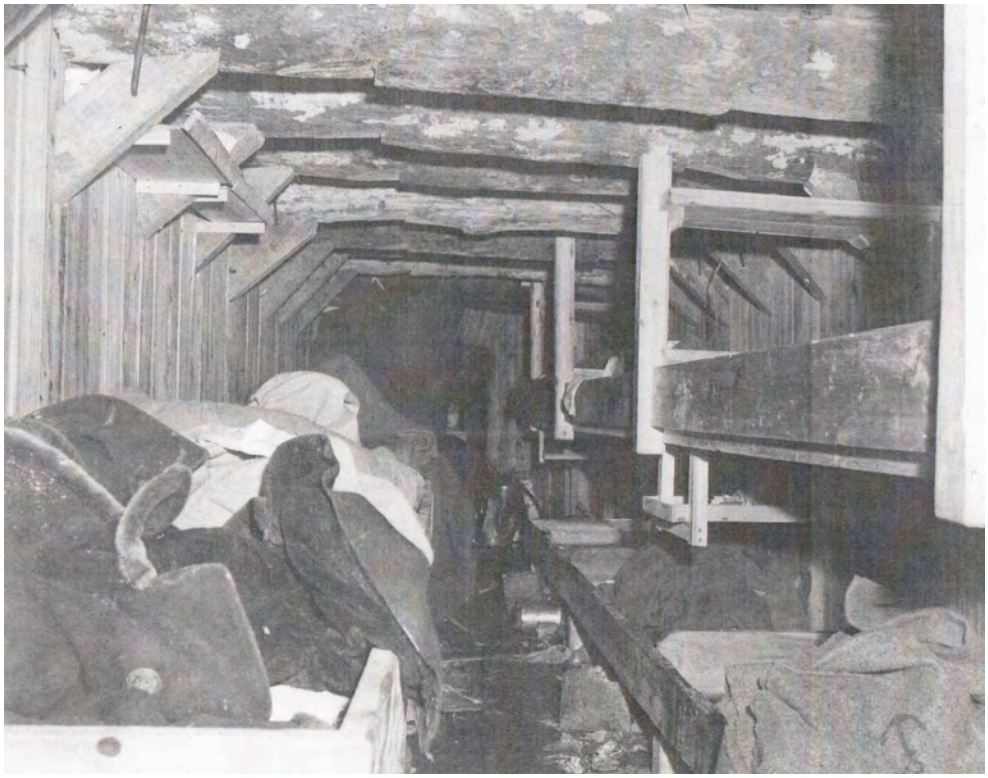

Fig. 369. The underground hospital photographed at the time of the U.S. reoccupation of Kiska.[70]

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Fig. 370. Underground shelter, dug into the unconsolidated volcanic ash in the hillside to the north of the submarine base. Note the remains of the wooden structure shoring up of the entrance.

Fig. 371. Underground shelter, kerosene fuel dump, dug into the unconsolidated volcanic subsoil, with a wooden ceiling covered with tundra. Submarine Base, Kiska Harbor.

Fig. 372. Kerosene fuel cans. Underground shelter, kerosene fuel dump, dug into the unconsolidated volcanic subsoil. Submarine Base, Kiska Harbor.

Fig. 373. Underground shelter dug into the unconsolidated volcanic subsoil, with a wooden ceiling covered with tundra. Submarine Base, Kiska Harbor. Note the opening at the rear of the excavation.

Fig. 374. Underground shelter dug into the unconsolidated volcanic subsoil, with a wooden ceiling covered with tundra. Submarine Base, Kiska Harbor. Internal view of shelter shown in Fig. 373 as seen from the entrance. Note the wooden shoring as well as what appears to be a shelf.

Case Example: underground shelters, Sub base

The survey of the area formerly occupied by the Japanese submarine base noted a number of subsurface structures, which had partially collapsed, of where the entrances had been exposed due to erosion. Two types of underground sites were seen: those dug into the hillside as tunnel networks (Fig. 375) and those that were constructed in the flat ground with wooden ceilings covered with tundra sod, and on occasion with additional metal sheeting (Fig. 374).

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Fig. 375. Entrances to underground areas on the beach of North Head next to the wreckage of the *Urajio Maru*.

Battlefield Patterns: Defending against Seaborne Attack

The defenses against sea-borne attack (on Kiska) were developed only by the Japanese as the U.S. effectively controlled the sea-lanes by the time the island was re-occupied. The Japanese set up three coastal defense batteries. The first, a 4.7-inch battery of four guns was set up on North Head. After the shipment of guns originally destined for Midway arrived in July 1942, two additional batteries of 6-inch guns were set up, one on North Head and one on Little Kiska.

In the case of North Head, the 6-inch battery was set up at a location from which the battery's fire could also cover some of the potential landing beaches to the north, while the 4.7-inch battery covered the entrance to Kiska Harbor as well as the approaches to Salmon Lagoon and Reynard Cove (Fig. 123). Combined with the 120mm dual-purpose gun battery set up to the south of the 6-inch battery, the eastern edge of North Head was dedicated to coastal and aerial defense.

Subsequent use by U.S. forces has obliterated some of the traces on North Head, which includes the removal of two of the three 6-inch guns, as well as the construction of U.S. occupation Quonset hut sites and walkways (Fig. 376), which partially buried the sole remaining gun (Fig. 377).

The total disregard by the U.S. forces for the preservation of the Japanese gun, especially its partial burial right next to the Quonset hut, is illustrative of the primacy of the needs of an occupation force in the case of war and the disregard for what went before it.

Fig. 376. Aerial image showing the area of the Japanese 6-inch battery during the period of the U.S. occupation.[71] In October 1944 two of the guns were still in place. Today only one remains.

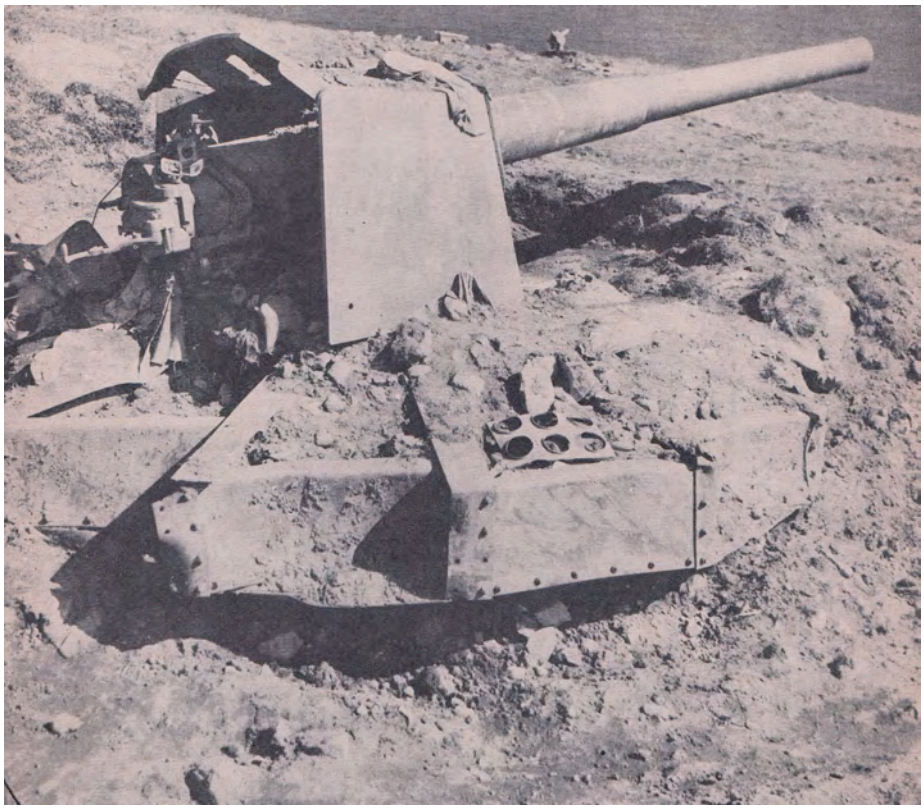

Fig. 377. Today, the sole remaining Japanese 6-inch gun on North Head. This view shows the gun at the time of the U.S. reoccupation.[72]

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Fig. 378. The sole remaining Japanese 6-inch gun on North Head. Note that it has been partially buried under the berm excavated for a U.S. Quonset hut.

Fig. 379. The sole remaining Japanese 6-inch gun on North Head. Note that it has been partially buried under the berm excavated for a U.S. Quonset hut.[73]

Little Kiska

On Little Kiska, on the other hand, no competing land-use existed. While the Japanese occupation of the island concentrated on the high rise on the western end of the island, the U.S. occupation focused on the eastern tip. Thus, the 6-inch battery on Little Kiska exists in its entirety. Also, as there was only limited presence of U.S. military on the island, there was limited souveniring that impacted the sites and resources. Thus the condition of the guns is, overall, much better, even though some minor elements of the guns have been removed.

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Fig. 380. British-built six-inch gun ('C') in its revetment on Little Kiska.

Fig. 381. British-built six-inch gun ('A') in its revetment on Little Kiska.

The environmental conditions on Kiska are such that the formerly open and cleared revetments have become fully revegetated. Some of the remaining components of the battery (command positions, barracks, etc.) exist and were noted but, because of the limited time available during the 2007 survey, these could not be documented.[74]

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Battlefield Patterns: The Midget Submarine Base

The main reason for the presence of the Japanese occupation on Kiska was the erection of a seaplane base on the northwestern shore of Kiska Harbor. This base had been the focus of concerted bombing efforts by the USAAF. While at the time of the Japanese withdrawal much of the seaplane base had been destroyed, substantial parts, such as the southern hangar (Fig. 98) as well as the aircraft bone yard (Fig. 108) remained. After the U.S. landings this area of the beach, just inland from the series of piers that had been planned, was a prime area for use by the U.S. forces as a storage area for non-perishable goods that could be stored in the open (such as building material). The extant Japanese structures were demolished and all debris was either removed for disposal in the harbor or pushed as fill into the shallow lagoon that once existed behind the strand wall. As a result, the Japanese seaplane base has been completely obliterated.

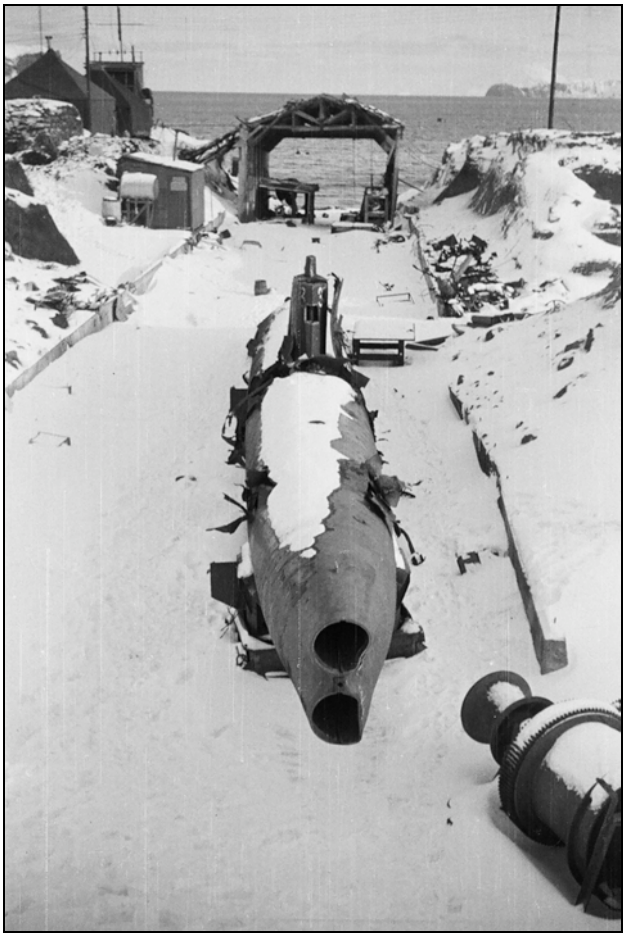

Fig. 382. The Japanese midget submarine HA-34 *in situ* on the slipway in late 1943 after it had been cleared by the U.S. Navy. The control tower of NAAF Kiska can be seen in the left background.[75]

Fig. 383. The Japanese midget submarine HA-34 *in situ* on the slipway in 2009.

The only part of the offensive power of the Japanese Base on Kiska that is still extant is the midget submarine base (Fig. 382). The deep excavation made for the slipway of the marine railway is still well preserved, even though its slopes are gradually losing the steep contours. Part of the submarine, especially its port forward section, has become buried in sediment (Fig. 383). This will cause a differential decay with the buried section corroding differently from the rest of the hull exposed to rain and mist.

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Fig. 384. The Japanese midget submarine HA-29 or HA-32 being cut up for scrap.[76]

Fig. 385. Remains of the Japanese midget submarine HA-29 and HA-32 at the beach after being cut up for scrap.[77]

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Fig. 386. The Japanese midget submarine HA-34 *in situ* on the slipway. Note the steel plates buckled outwards from the demolition charge set off by the Japanese at the time of their withdrawal.

Fig. 387. The Japanese midget submarine HA-29 or HA-32 in the intertidal zone of the beach north of the slipway of the submarine base.[78] The electric motor and part of the propeller can be seen in the foreground.

Fig. 388. The Japanese midget submarine HA-29 or HA-32 in the intertidal zone of the beach north of the slipway of the submarine base.[79] The bank of batteries is exposed with some entangled fishing nets.

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In addition to the main slip way as the most prominent feature, the extant remains of the base consisted of a 3-inch coastal defense gun in its original emplacement and a number of structures, including subsurface storage.

Battlefield Patterns: Manifestations of Garrisoning

Both the Japanese and the U.S. forces established garrisons on Kiska. The Japanese Navy housed the troops manning the anti-aircraft and coastal defense positions near the respective gun batteries. The remaining personnel were housed near their prime area of activity (sea-plane base or submarine base), near Trout Lagoon (Fig. 396) or were garrisoned at the Main Camp area. The construction workers also used the latter area. The Imperial Japanese Army troops were housed in tents in a separate part of the island at Gertrude Cove. The Allied forces, on the other hand, seem to have preferred to keep all the men together in the same barracks area as much as possible. That was, of course facilitated by the greater number of vehicles that were available.

The Canadian Camp

The Canadian troops set up their camp areas to the southwest of the US Army area, further up the valley from the Main Camp area. In the anticipation of being provided with Quonset huts, the Canadians dug revetments already sized for Quonset or Pacific huts, and then sited two Pyramid tents in them. Since they withdrew from Kiska before they were supplied with the huts, they remained in tents for the duration of the occupation (about four months). During the survey, some revetments were encountered, where the wooden tent stakes for the Pyramid tents were still *in situ* (Fig. 389), outlining the tent spaces (Fig. 390). Copper or bronze pipes, made up from one-foot long sections, supplied water to some of the revetments (Fig. 391).

Overall, the landscape of the Canadian Camp is delineated by an abundance of such double-tent revetments, with the entry commonly in the center of the down slope side to ensure proper drainage. Most of the revetments are situated on a slight slope to ensure drainage and are aligned with the contours. The base of each revetment has been slightly dug into the underlying volcanic ash, with the cutout sections of the tundra and the soils piled up as berms around the revetment. Overall, the revetments are very shallow in relation to the surrounding area, but the large size of the revetment being cleared of tundra meant that the surrounding soil wall has a height of 4 to 6 feet above the sunken revetment floor.

Fig. 389. A base for a Quonset Hut, used to site two pyramid tents. The tent pegs are still *in situ*. Canadian Camp.

Fig. 390. A base for a Quonset Hut, used to site two pyramid tents. The tent pegs are still *in situ*. Canadian Camp.

Fig. 391. A base for a Quonset Hut, used to site two pyramid tents. The sectioned water supply pipe is still *in situ*. Canadian Camp.

U.S. garrisoning of Majority Canyon

One of the areas occupied by the 87th Mountain Infantry was the valley that runs westward from Trout Lagoon. Labeled Majority Canyon (according to the M-Grid), the area was halfway between the Main Camp Area ('Army Town') and the former submarine area ('Navy Town'). A number of tent bases were erected on both the northern and southern slopes of the valley. As with the Canadian Camp, these bases run parallel with the contours.

Fig. 392. War-time image (1946) looking southeast, showing the US occupation sites on the northern slopes of Majority Canyon[80]

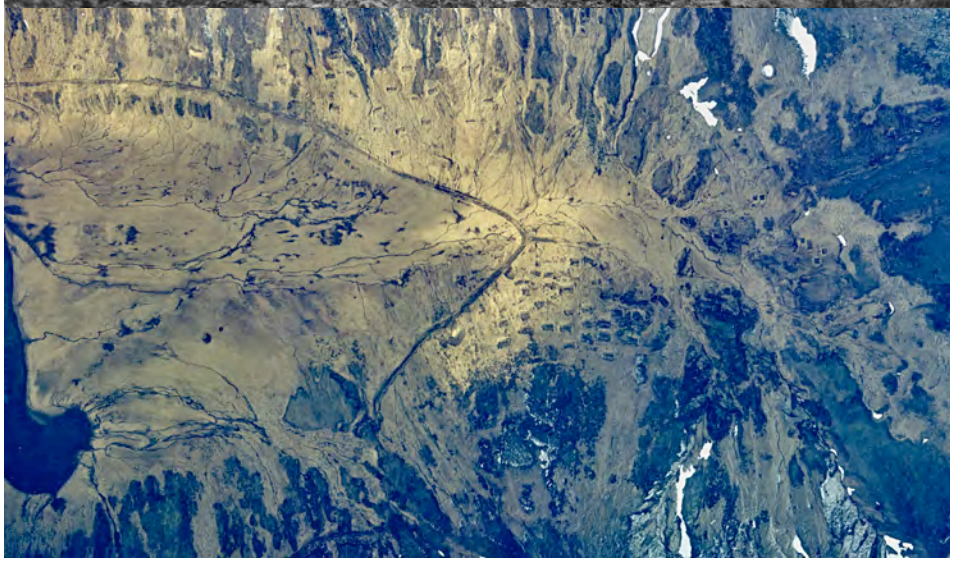

Fig. 393. Aerial view (1986, oriented north) showing the appearance of the U.S. tent bases on the southern and northern slopes of Majority Canyon.

U.S. garrisoning on North Head

The nature of U.S. garrisoning on North Head differs substantially from the developments on the Main Camp area: primarily, because North Head is characterized by a number of perched lakes as well as low-lying swampy terrain, which spatially breaks up the area available for the construction of barracks and the like.

The Japanese use of North Head was limited to the establishment of anti-aircraft and coastal defense positions as well a RADAR installation. All construction engaged in by the Japanese were command facilities, barracks and ammunition structures that supported the various gun positions. These areas saw the highest concentration of

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bombing, with the concomitant disturbance of soil. The U.S. garrisoning of North Head consisted of tent bases and bases for Quonset huts. As the Japanese before them, the U.S. planners had to avoid the swampy ground in the vicinity of the perched lakes, but also had to avoid the areas with prior Japanese occupation. Although this is not spelled out in the archival data, it would appear that choosing a locale that had not been built on previously avoided the risk of unexploded ordnance and other hazards.

Fig. 394. Example of a Pacific Hut collapsed *in situ*. North Head. Composite Image.

As a result, the evidence of the U.S. presence on North Head is widely scattered and consequently provides no clear picture on the ground.[81]

Battlefield Patterns: Debris of Reoccupation

The U.S. and the Canadian troops landing on the western shoreline of Kiska were soon followed by large quantities of equipment that was temporarily stored on the shoreline. During the landing, a number of landing craft used by the allies broke down and were beached. Once the landing forces realized that the Japanese had left and the island had been declared secure, the supplies were reloaded and shipped to Kiska Harbor. This notwithstanding a number of items were left behind at the landing beaches, among them broken-down landing craft, drums and crates.

As was outlined in chapter 7, the limited survey time available in 2009 meant that the landing beaches on the western coast of Kiska could not be visited. Equipment, however, is known to exist at these locations. This equipment would exemplify the immediate phase of U.S./Canadian re-occupation of Kiska.

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Fig. 395. Composite panorama showing the Trout Lagoon Area seen from Mercy Point looking southwest

Fig. 396 Composite panorama showing the southern edge of Trout Lagoon Area as seen from the road from Mercy Point to Majority Canyon

Fig. 397. Composite panorama showing Majority Canyon looking southwest. Trout Lagoon can be seen at the left

Fig. 398. Composite panorama showing the Main Camp area as seen from the southwest (the Japanese Shinto Shrine area)

Fig. 399. Composite panorama showing the Main Camp area as seen from the northwest (the track up to North Head).

Fig. 400. Composite panorama showing the Canadian Camp Area.

Fig. 401. Composite panorama showing the Canadian Camp Area.

Fig. 402. Composite panorama showing the Canadian Camp Area.

Fig. 403. Composite panorama showing the Canadian Camp Area.

Fig. 404. Composite panorama showing the area of the Japanese submarine base and US Navy Town (looking south and west). For the continuation of the panorama see Fig. 405 (note the telephone-cum-power pole in the foreground)

Fig. 405. Composite panorama showing the area of the Japanese submarine base and US Navy Town (looking west and north). For the continuation of the panorama to the north-east, see Fig. 404 (note the telephone-cum-power pole at th eright)

Fig. 406. Composite panorama showing the area of the Japanese submarine base and US Navy Town (looking lagoon-ward / east). The midget submarine is in the center foreground.

Fig. 407 Composite panorama showing the central area of North Head to the west of the 120mm dual purpose gun battery.

Fig. 408. Composite panorama at Gertrude Cove looking southeast from the US Barracks area (Series of base photos by Janet Clemens)

Fig. 409. Composite panorama of the US hospital, Main valley

Fig. 410. Composite panorama of a U.S. revetment for a small Quonset hut. Main Camp area. Seen from northwest.

Fig. 411. Composite panorama of a U.S. revetment for a small Quonset hut. Main Camp area. Seen from northeast.

Battlefield Patterns: Manifestations of Clean-Up

The final phase of many battles is the clean up, reverting the battlefield location to a semblance of the condition prior to the war. In the case of Kiska, the departed Japanese garrison was replaced by a U.S. garrison, which brought in new materiel and set up their own installations. As a result of the rapid evacuation by the Japanese, when most of the equipment was abandoned, much of the build up of the Japanese occupation period still remains (for exceptions see below). The incoming U.S. forces built up their own base. When that was closed, an orderly withdrawal occurred, which entailed, inter alia, the systematic dismantling of the U.S. installation and shipment of salvageable items to other bases, such as Adak, for reuse. Two examples, the Japanese Material Dump at Gertrude Cove and the U.S. clean up at base abandonment, exemplify these terminal patterns of the battlefield.

Soon after the landing of the U.S. forces, Allied troops carried out a limited clean-up operation of the Japanese Main Camp area. The available images shot soon after the Allied landings show an aircraft bone yard (Fig. 108) as well as other debris. Competing demands for the prime beach area (for the storage of construction supplies and the like), motivated this clean up. It would appear that landing barges were loaded with war debris, which was taken to be scuttled, presumably either in the deeper parts of Kiska Harbor, or beyond. This phase of the 'clean-up' occurred solely because of the competing land-use and not out of any other imperative.

The same applied to the removal of two of the midget submarines from the marine slipway of the submarine base so that the slipway could be put to use by the US forces if needed.

Japanese Material Dump at Gertrude Cove

While the U.S. forces left most of the Japanese installations at Kiska Harbor in the state that they were abandoned by the Japanese (with the exception of the immediate beach area), the U.S. forces carried out a substantial clean up of the area at Gertrude Cove. The area had been used as a major supply dump (Fig. 63). To that effect, the U.S. forces seem to have bulldozed a large area, cleared it of tundra, leveled it[82] and covered it with a thin layer of gravel.[83] The center of the former storage dispersal is characterized by a large pile of wooden cargo palettes (Fig. 414), which can be easily recognized on an aerial photograph (Fig. 412). To the southwest of the dump of palettes is a smaller area accessible from a formed road, which had been used by the U.S. forces to congregate the various Japanese war material. Aggregated there are five 75mm Type 88 anti-aircraft guns, several trucks, smaller guns, crane parts, disarmed bomb casings, reinforcement iron, wire and other metal, piled up into a disorganized heap, seemingly ready for collection and shipment as scrap metal (Fig. 415, Fig. 416). Some part of U.S. bulldozers, such as the radiator section of a Caterpillar tractor, can also be found.

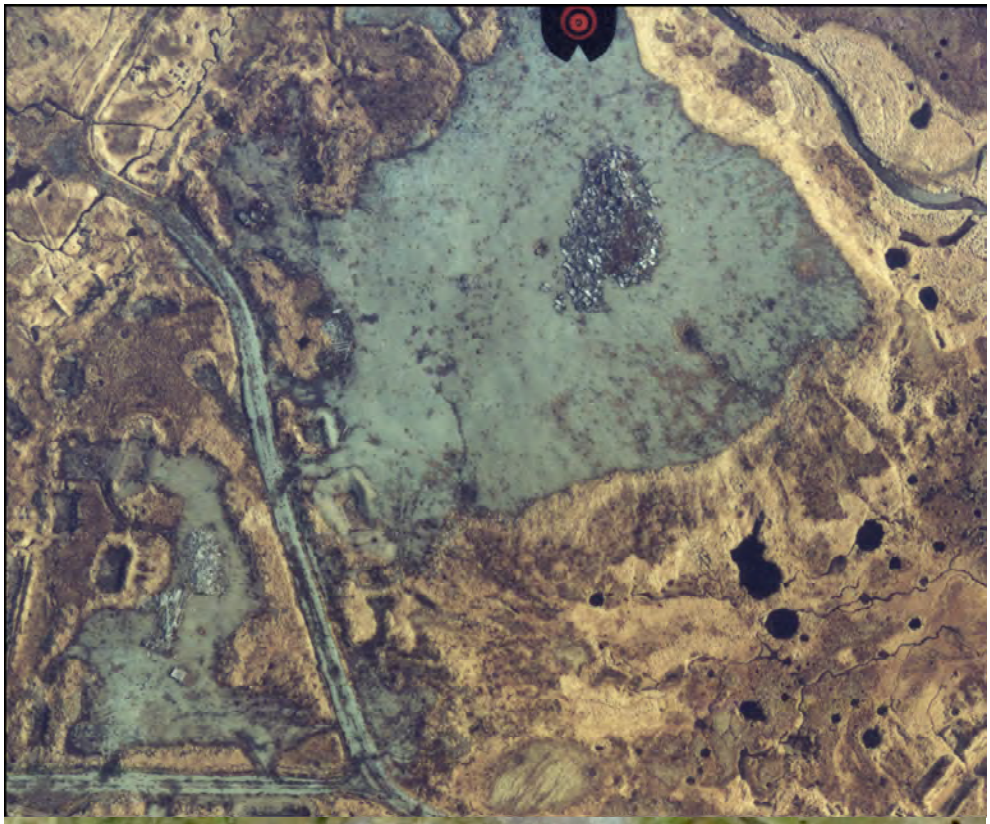

Fig. 412. Gertrude Cove. Aerial view of the dump of U.S. wooden cargo palettes (center and bottom left), as well as the accumulation of Japanese war debris for scrap metal (top left).[84] Image taken in 1986.

Fig. 413. Gertrude Cove. Aerial view of the dump of U.S. wooden cargo palettes as seen on a satellite image in 2004.[85] The decay of the material which occurred since 1968 is very obvious.

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Fig. 414. Gertrude Cove. Dump of U.S. wooden cargo palettes.

Fig. 415. Gertrude Cove. Accumulation of Japanese war debris for transport as scrap metal. Two truck wrecks are in the foreground. 75mm Type 88 anti-aircraft guns can be seen in the background.

Fig. 416. Gertrude Cove. Accumulation of Japanese war debris for transport as scrap metal. Two 75mm Type 88 anti-aircraft guns are in the foreground.

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Notes to the preceding Chapter

1. Mobley, Charles (1996) *Cultural Resource Investigations at Kiska, Little Kiska, and Semisopochnoi, Aleutian Islands*. Report prepared by Charles M. Mobley & Associates, Anchorage, Alaska, under contract to Dames & Moore, Anchorage, Alaska for the U.S. Army Corps of Engineers, Alaska District.

2. Spennemann, Dirk HR (2008) *The Present and Future Management of the Japanese Guns on Kiska I., Aleutians, Alaska. Conservation Management Plan*. (Report Kiska #1) Study prepared for the U.S. Fish and Wildlife Service, Alaska. Dec 2008. Shepparton, Vic: Heritage Futures Australia.

3. For data, see this report.

4. FE Matthews, Assistant Adjutant General, Headquarters Alaskan Department, Office of the Commanding Office, to Adjutant General Washington DC, dated Seattle 5 Dec 1945. NARA CP RG 338 E Alaska Department Adjutant General's Correspondence 1940-45 Box 183 folder 602.

5. National Register Number: 85002732. <www.nps.gov/akso/CR/akrcultural/CulturalMain/2ndLevel/NHL/NHLJapaneseOcc.htm>.

6. Any subsurface remains are outside the purview of this report, but it can be argued that the cultural landscape of the Kiska battlefield extends to the subsurface lands of Kiska Harbor and Gertrude Cove.

7 See also data in: Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/>.

8 Prefixes for the cargo ships: A-Army, B-Navy, C-Civilian.

9. Army Transport, 8572 tons; damaged on 30 July 1942 by a torpedo fired by USS *Grunion*, the *Kano Maru* could be towed into Kiska Harbor for unloading of supplies and emergency repair. The *Kano Maru* as caught in an air raid on 15 September, damaged and run aground off South Head.—(Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 33. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).

10. 6,537 tons (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 32. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).

11. Troop transport, 7189 tons. Dates of sinking vary. Also reported is 28 September (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 33. <Www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).

12. The *Urajio Maru (*alternate spellings: *Uragio Maru, Urazio Maru)*, was a 3,072 ton steamship, of 331 length and 46.8 feet beam, had been laid down as British World War I freighter. Following a mixed career, the ship was operated by Kawasaki Kisen Kaisha, Kobe, and requisitioned by the IJN as a cargo ship. The *Urajio Maru* was a British standard World War I cargo ship Type C (ie 3000 gross ton dry cargo ship, overall length 342ft, beam 46.5ft, single screw, speed 11.5 knots) built by Sir Raylton Dixon & Co. Ltd, Middlesborough. She was laid down as *War Surf (2)*, completed on October 1919, bought 1919 by the British Frank C. Strick & Co., Swansea, renamed *Serbistan*, sold in 1926 to Kawasaki Kisen Kaisha, Kobe, Japan, renamed *Urajio Maru (*Frank C. Strick & Co. / Strick Line. The Shiplist. www.theshipslist.com/ships/lines/strick.htm.—Finch, Ted and Provost, Gilbert (2008) WWI Standard Built Ships War P-War S. www.mariners-l.co.uk/WWIStandardShipsWarP.html).—On her last voyage, she departed Paramushiro on December 23rd 1942 and reached Kiska a week later (steamship, 3,110 tons (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 7.

<www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>), The vessel was attacked on 31 December 1942, after she had unloaded most of her cargo. A near miss near the port side of hold nº 1 damaged the vessel. The damage could be contained, but the ship lost power. It was blown ashore during a storm on 4 January 1943 (Peter Cundall via Pacificwrecks.com <www.pacificwrecks.com/ships/maru/urajio.html>).

13. Steamship, 5863 tons; sunk at Gertrude Cove. Dates of sinking vary between 5 and 8 October. (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).

14. Nevitt, Allyn D. (1998) IJN *Arare*: Tabular Record of Movement. <www.combinedfleet.com/ arare_t.htm>.—(Japanese Naval Vessel Sunk During World War II (Chronological). Chronological List of Japanese Naval Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 1. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-3.html>).

15. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2010) IJN Subchaser CH-25: Tabular Record of Movement. <www.combinedfleet.com/ CH-25_t.htm>.—(Japanese Naval Vessel Sunk During World War II (Chronological). Chronological List of Japanese Naval Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 3. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-3.html>).

16. Hackett, Bob, Kingsepp, Sander and Cundall, Peter (2009) IJN Subchaser CH-27: Tabular Record of Movement. <www.combinedfleet.com/ CH-27_t.htm>.—(Japanese Naval Vessel Sunk During World War II (Chronological). Chronological List of Japanese Naval Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 3. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-3.html>).

17. As part of the search for USS Grunion, the wrecks of IJNS *Arare* and the Subchasers CH-25 and CH-27 were located by side-scan sonar.

18. Murphy, Larry E. (1990) Contributions to Kiska Harbor Survey 1989: Preliminary Report. Draft. NHL files, US National Park Service, Anchorage.

18. Murphy, Larry E. (1990) Contributions to Kiska Harbor Survey 1989: Preliminary Report. Draft. NHL files, US National Park Service, Anchorage.—see also NHL file Kiska, US NPS Anchorage.

19. Murphy, Larry E. (1990) Contributions to Kiska Harbor Survey 1989: Preliminary Report. Draft. NHL files, US National Park Service, Anchorage.

19. Murphy, Larry E. (1990) Contributions to Kiska Harbor Survey 1989: Preliminary Report. Draft. NHL files, US National Park Service, Anchorage.—see also NHL file Kiska, US NPS Anchorage.

20. Steamship, 5863 tons; sunk at Gertrude Cove. Dates of sinking vary between 5 and 8 October. (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).

21. If true, then the remains that aircraft are likely to remain under water.—Inspection of the available photographic evidence, however, does not bear out such a crash as the stern of the ship seems undamaged.

22. "Close to shore, [abandoned] Japanese warship is boarded by men of U.S. Fleet Air Wing Four Photographer's number 346-1." Bureau of Aeronautics Photograph Collection, Kiska, 1943. ASL-PCA-430.—ASL-P430-88. Alaska State Library - Historical Collections.—Image cropped and two punch holes retouched out.

23. Aerial photograph, APT 2 May 1986, 300 feet; Run 50A frame nº 87

24. Image 10100100033C3002. Screen capture via Google Earth.

25. Aerial photograph, APT 2 May 1986, 300 feet; Run 50A frame nº 8.

26. Aerial photograph, APT 2 May 1986, 300 feet; Run 50A frame nº 7.

27. Image courtesy Richard Galloway, FWS, Anchorage.

[28]. Image courtesy Deb Rudis, FWS, Juneau.

[29]. Image courtesy Deb Rudis, FWS, Juneau.

[30]. Image courtesy Deb Rudis, FWS, Juneau.

[31]. Image courtesy Deb Rudis, FWS, Juneau.

[32]. Alternative spellings *Nojima Maru; Nozama Maru.*

[33]. Troop transport, 7189 tons. Dates of sinking vary. Also reported is 28 September (Japanese Merchant Vessel Sunk During World War II (Chronological). Chronological List of Japanese Merchant Vessel Losses. In: Japanese Naval and Merchant Shipping Losses During World War II by All Causes. The Joint Army-Navy Assessment Committee. February 1947. NAVEXOS P-468. Page 33. <www.ibiblio.org/hyperwar/Japan/IJN/JANAC-Losses/JANAC-Losses-4.html>).—Nippon Yusen Kaisha K.K, Ship List. www.theshipslist.com/ships/lines/nyk.htm.

[34]. Dates of sinking vary; also reported is 28 September.

[35]. *Nojima Maru* (*Nozama Maru*) (www.pacificwrecks.com/ships/maru/nozama.html).

[36]. Fred Devine Diving And Salvage Company. Salvage Log. www.freddevinedivingandsalvage.com/salvagelog.html.—Nelson,Eric (2009) Shipwrecks on Alaska Maritime National Wildlife Refuge www.amnwr.com/ShipwreckList.htm.

[37]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 48 frame nº 7; courtesy Beverly Maloof.

[38]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 19 frame nº 2; courtesy Beverly Maloof.

[39]. Image Susan Morton, 9 September 1989, NPS files Kiska, NPS-AKRO.

[40]. Image courtesy Kent Sundseth, FWS, Homer.

[41]. Image courtesy Deb Rudis, FWS, Juneau.

[42]. Image courtesy Richard Galloway, FWS, Anchorage.

[43]. Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). 4x5 negatives, image 16; courtesy Beverly Maloof.

[44]. Image Kiska Aerials 27 Oct 1944 RG181 E149 B14 FH1-3 #5.

[45]. Image Eric Nelson, FWS AMNWR.

[46]. Image Kent Sundseth, FWS, Homer.

[47]. Satellite image 2001.

[48] Lu, Z., T. Masterlark, J. Power, D. Dzurisin, and C. Wicks (2002), Subsidence at Kiska Volcano, Western Aleutians, detected by satellite radar interferometry, Geophysical Research Letters 29(18), 1855, <donahoe.geo.ua.edu/faculty/TMweb/publications/2002_lu_etal_GRL.pdf>.

[49]. Garfield, Brian (1969) *The Thousand Mile War*. Garden City: Doubleday. Pp. 122-123.

[50] Section of aerial image shot by V690-2017 AF on 16 March 1943.-Image: NARA 80-CF-7825-69034F.

[51] Section of aerial image shot by V690-2017 AF on 16 March 1943.-Image: NARA 80-CF-7825-69034F.

[52]. In the absence of accurate data for the Aleutians known to the author, the value of 160mph has been culled from various sources discussing B-24 bombing runs over Europe.

[53]. Which did not occur until July 1943 (see Appendix 3).

[54]. Spennemann, Dirk HR. (2008) *The Present and Future Management of the Japanese Guns on Kiska Island, Aleutians, Alaska. 120mm dual-purpose Gun Battery on North Head, Kiska Island. (Report Kiska #3) Documentation and Condition Report.* Documentation prepared for the US Fish and Wildlife Service, Alaska. Shepparton, Vic: Heritage Futures Australia.

[55]. It can be seen ready loaded on a trailer for shipment.

[56]. Photo by NAS Adak. Photo number ADK1711. USNA RG 80-G-80317.

[57]. The model has been derived from a projection by Google Earth.

[58] Sketch handed to the author on 7 March 2010 by Mr Usami Toshiharu, then 101 years, during an interview on 7 March 2010 at his residence in Furano, Japan.—Mr. Usami was in charge of the defense of this position.

[59]. Composite image. Note that the two sheets do not perfectly align. Map 'KISKA ISLAND' Second edition 28 July 1943. Based on Kiska map by Corps of Engineers, U.S. Army Scale 1/25,000, 1943. Prepared by Photographic Interpretation Unit, Advanced Intelligence Center, North Pacific Force and Photographic Intelligence section A-2, 11th Air Force. Sheets nº 24 & nº 36.

[60]. Aerial photograph, APT 2 May 1986, 300 feet; Run 50 frame nº 5.

[61]. Aerial photograph, APT 2 May 1986, 300 feet; Run 51 frames nº 5 (section).

[62]. Born on 23 December 1909 (= Meji 42) in Fukushima Prefecture. On 1 June 1928 enrolled to Second Regiment Konoe Infantry. On 1 August 1939 graduated from IJA officers school and assigned to 25th Regiment, 7th Division as a Second Lieutenant. Participated in war in Nomohan (Russia) was injured in both legs and neck), invalided at a hospital in China, promoted to first lieutenant and moved to Asahikawa district; on 19 May 1942 he joined the 103rd regiment Hosmi Troop; on 8 June 1942 they landed at Attu (came on *Kinukasa Maru*) where his group occupied Chichagof Harbor and raised the Japanese flag in US territory.—On 16 September 1942 his regiment (Hosmi Troop) was moved to Kiska aboard a small cruiser; Usami appointed Commander 4th Company of Independent Infantry Batallion 301 (*i.e.* became of commander of Usami troop). Evacuated from Kiska 29 July 1943 (Japanese date) aboard the light cruiser *Abukuma* to Hokkaido (Shimuzu Isands). On 1 December 1944 became Shoza of the Japanese Army. On 18 July 1945 he was promoted Batallion Commander of 250 Airfield in Okayama Prefecture. After the atomic bombing of Hiroshima he commanded rescue troops for the event. In December 1945 he was moved to the Army Reserve. After the war Mr Usami resided in Kami-Furano (Furano Prefecture, Hokkaido) and managed the Nippon Gekijo (theatre). He was also a member of the town council / legislature and filled a number of other public positions.

[63]. Although no naval bombardment of Gertrude Cove is documented, unless it occurred in the last few days of softening up Kiska before the U.S. landings.

[64]. Aerial photograph, APT 2 May 1986, 300 feet; Run 50 frames nº 3-6.

[65]. The limited war-time imagery available for the area does not show any major disturbances in the area.

[66]. Oblique Aerials of Kiska, dated 27 Oct 1944. NARA-AK RG181 E149 B14 FH1-3.

[67]. With the exception of one 120mm dual-purpose gun which was removed for evaluation and shipped back to the US mainland.

[68]. Romig, HG (1943) Annual Sanitary Report of the U.S. Naval Auxiliary Air Facility, Kiska, Alaska, for the year 1943. NARA-AK RG 181 Naval Districts and Shore Establishments, Entry 83, 17th Naval District, Kiska, AK, Naval Air Facility Confidential Files 1943-44 Box 2 Annual and Semi-annual Reports A9-1.

[69]. Taken by NAS Adak on 7 September 1943. Image ADK 1685. NARA RG80-G-80291.

[70]. Taken by NAS Adak on 7 September 1943. Image ADK 1684. NARA RG80-G-80290.

[71]. Aerial image dated 27 Oct 1944 NARA-AK RG181 E149 B19 A12.

[72]. United States Strategic Bombing Survey (1947) United States Strategic Bombing Survey, *The Seventh and Eleventh Air Forces in the war against Japan.* Washington: Naval Analysis Section, United States Strategic Bombing Survey. P. 41.

[73]. Photo courtesy Kent Sundseth, UFWS Homer.

[74]. Little Kiska was not visited during the 2009 survey.

[75] Image: NPS Sam Maloof WWII in Alaska Photograph Collection (Alaska Regional Office). Roll 19 frame nº 19; courtesy Beverly Maloof.

[76]. Taken by FAW 4 on 23 August 1943. Image FAW4#6609. NARA RG80-G-80748.

[77]. Taken by NAS Adak on 7 September 1943. Image ADK 1685. NARA RG80-G-80358.

[78] Photo courtesy Deb Rudis, UFWS Juneau.

[79] Photo courtesy Deb Rudis, UFWS Juneau.

[80]. 6 September 1943. No 196-3-43-743 NARA SC 111 Box 187 Image 182911 .

[81] . The overall areas are defined by the roads and thus can be correlated with the as built maps.

[82]. Oblique Aerials of Kiska, dated 27 Oct 1944. NARA-AK RG181 E149 B14 FH1-3.

[83]. No formal testing was carried out. It is possible that the gravel surface is the natural underlying soil on the slight rise.

[84] Aerial photograph, APT 2 May 1986, 300 feet; Run 50 frames nº 3-6.

[85] Screen capture, Google Earth.

10. Significance of the Kiska Battlefield

All good management of cultural resources is based on assessment of their cultural significance. This chapter will examine the integrity and significance of the Kiska World War II battlefield and will provide a concise statement of significance that may aid in the future revision and management of the Kiska NHL.

Pre-existing determinations

As outlined in Chapter 1, the Kiska Battlefield was declared a National Historic Landmark in 1985. The summary statement of significance developed for the nomination of the Japanese Occupation Site as a National Historic Landmark in 1985 states:

> "The Japanese occupation of Kiska in June 1942 marked the peak of Japan's military expansion in the Pacific; it created great alarm in North America that a Japanese invasion would be mounted through Alaska; it posed a serious threat to United States-Siberian communications (lend-lease to Russia); and it caused the Allies to divert tens of thousands of military to the Alaskan Theater who could have been deployed elsewhere in the Pacific. Significant too was the successful Japanese withdrawal of the entire force in 1943 without a single loss of life, despite constant surveillance of American air and sea forces. This withdrawal caused the utmost embarrassment to the United States when, eighteen days later, a huge Allied assault force of 34,000 men invaded the deserted island. The event was best summed up by the army's commanding general in Alaska, Simon Buckner, who said, "To attract maximum attention, it's hard to find anything more effective than a great big, juicy, expensive mistake."[1]

A portion of the battlefield (Fig 4) was incorporated into the World War II Valor in the Pacific National Monument in 2008. Following this proclamation, a statement of significance was developed for the Alaska Unit of the WW II Valor in the Pacific National Monument. The planning document noted that the:

"Alaska Unit

- commemorates a theatre of war, long overlooked, that played a significant role in World War II in the Pacific and transformed the demographics, culture, and environment of Alaska.
- preserves, protects, and interprets the stories and evidence of foreign invasion and occupation and the only land battle fought in North America in World War II.
- tells the stories that illustrate sacrifices made by World War II soldiers and civilians in the North Pacific.

- promotes the study and interpretation of the crucial role of aviation in the war in the Aleutians and victory in the Pacific.
- protects important war plane crash sites and one of the best preserved World War II battlefield landscapes in the world.
- furthers our understanding of the legacy and lingering effects of World War II in Alaska.[2]

Considering Integrity

The cultural significance of the Kiska Battlefield is determined by a number of components, such as relevance to the historic context, presence, preservation and rarity of constituent elements and similar aspects. The key element to be considered is integrity,[3] which according to the Secretary of the Interior's Standards is defined as

> "...the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period."[4]

In its criteria for the nomination of places, the National Register of Historic Places recognizes a property's integrity through seven qualities:

"*integrity of location, design, setting, materials, workmanship, feeling and association*"[5]

These aspects will be considered below.

As outlined in the taphonomic flowchart (Fig. 324), no major modification occurred *after* the withdrawal of U.S. forces from the island in 1945. The only losses that occurred between 1945 and 2009 were:

- the (authorized) salvage of 1 ½ ships,
- the (presumably unauthorized) salvage of some wooden structures for construction materials;[6]
- the (unauthorized) theft of small artefacts by souvenir hunters and tourists;[7]
- cutting away one short segment of the Kiska Pier to prevent visitors from breaking through the decaying planks;
- natural body-decay of extant wooden structures, e.g. Pacific huts, boardwalks etc.

The past 65 years of unfettered decay have exacted their toll in particular on the organic components of the sites. Much has decayed or is in a precarious state and subject to collapse when stepped on. A number of smaller, as well as thinner walled metal objects have corroded to a state beyond conservation. Thus in that regard, the integrity of the components of the sites is compromised. On the other hand, compared to most other areas of the USA, apart from arid zones such as the American Southwest, the preservation of organic materials on Kiska is astounding: Japanese utility poles still dot the landscape, and remains of tent pegs and tent canvas of U.S. and Canadian personnel tents can be found *in situ*. In addition, the Japanese anti-aircraft and coastal defense guns are the best preserved of their kind still *in situ* in the entire Pacific theater of war.

The Kiska Battlefield retains a high integrity of setting. Because Kiska was effectively uninhabited for over 100 years before World War II, the battlefield is superimposed an a cultural landscape that shows very little evidence of pre-existing occupation. The few Aleut sites that have been found (and which have their own significance) do in no way deflect attention from the World War II developments. Because Kiska has been

uninhabited since the end of World War II, there are no major intrusive elements or modern construction. The only post-war additions to the landscape are a few warning signs at the beaches of Kiska Harbor and the memorial to the 87th Mountain Infantry. Likewise, with the exception of small-scale landslips, the environmental setting has undergone no discernible change. Unlike other battlefields, where re-growth of vegetation can alter the feeling of the setting, the landscape of Kiska today looks exactly like the landscape visible on photographs taken during World War II.

This lack of development and lack of environmental change is unique in regard to battlefields nationwide. Globally, only the North African Battlefield of World War II is somewhat comparable, where parts of the battlefield have not seen any major modification.

Overall, the integrity of the battlefield is deemed beyond compare on a global scale.

Table 58. Assessing the levels of integrity of the Kiska Battlefield

Integrity	Level	Justification
Location	Very High	the battlefield is still in its original location with the exception of minor salvage and theft the vast majority of objects are still in their original location
Design[8]	Moderate High	Japanese sites: some modification by U.S. forces in Main Camp some loss due to salvage and theft US sites: no modification of any subsequent development some loss due to salvage and theft
Setting	Very High	absence of subsequent development no discernible environmental change
Materials	Moderate	the past 65 years of unfettered decay has exacted their toll in particular on wooden structures
Workmanship	n/a	deemed not applicable
Feeling	Very High	presence of all aspects of the battle (installations, bomb craters, etc.) no discernible environmental change
Association	High	all objects and structures in the landscape can be attributed to either of the combatant nations

(Re-)Considering Significance

While elements of the Kiska World War II battlefield are reflected in the existing NHL and the National Monument designations, the comprehensive assessment of the cultural landscape presented in this report allows us to reassess the significance on a broader scale. The following points address the various elements that individually as well as collectively make up the cultural heritage significance to the Kiska battlefield. A concise statement of significance is provided further below (p. 463).

Historic Context

- The Allied invasion is significant as it was the first time that Canadian forces were involved in joint large-scale combat operations with U.S. forces.
- Kiska is integrally associated with the Battle of Midway, the most complex naval operation ever attempted by the Empire of Japan in World War II. The defeat of the Japanese carriers is generally regarded as the turning point of the Pacific War.

- Kiska is both the northern-most and eastern-most point of the Japanese expansion during the Pacific war.
- Kiska was the first island in the U.S. Territory of Alaska to be occupied by enemy forces (followed by Attu a day later).
- The Japanese presence on Kiska (and Attu) forced the U.S. to divert tens of thousands of military to the Alaskan Theater who could have been deployed elsewhere in the Pacific.
- Kiska was the *only* invasion conducted by U.S. forces in World War II where the sole source of terrestrial fatalities and casualties was self-inflicted through i) friendly fire in the confusion of the fog; and ii) handling of booby trapped features in the course of souveniring,
- Kiska was the only locale in the Pacific theater of war where the Japanese withdrew an entire garrison.
- The Japanese effected their withdrawal without a single loss of life and undetected despite the US Navy and US Air Force having cut off the island from shipping.
- The real and perceived need to evict the Japanese from Kiska and Attu required the U.S.A. to develop a series of advanced military bases (Adak, Amchitka, Shemya, as well as Attu) that gave the U.S. a strategic advantage in the Cold War period.

Physical Evidence (Landscape)

- Because the island was effectively uninhabited for over 100 years before World War II and has been uninhabited since, Kiska is the only battlefield of the World War II era which has no intrusive elements.[9] All remains on Kiska, setting side prehistoric Aleut sites, are directly related to the Kiska battlefield.

Physical Evidence Related to the 'Battle For Kiska'

- The two 6-inch gun batteries on North Head and Little Kiska, as well as the 120mm dual-purpose gun battery on North Head are tangible evidence of the connection between Kiska and the Battle of Midway. These guns were initially destined to defend the planned Japanese seaplane base on Midway. The failure of the Japanese to take Midway thwarted these plans and the submarine base construction was redirected to Kiska.
- The extant above-water remains of the Japanese supply ships bombed and run aground in Kiska Harbor and Gertrude Cove form a stark reminder of the U.S. war on shipping that crippled the development of the Japanese base on Kiska and eventually made the Japanese presence in the Aleutians untenable. While their continued decay has seen the vessels collapse and disintegrate to a fraction of their former selves, the current state of decay is even more evocative of the destruction wrought by war than the complete hulls they once represented.
- The Japanese midget submarine HA-3 is still located on the slipway of the former Japanese midget submarine base. It is one of very few such submarines *in situ* through-out the Pacific and the only such submarine *in situ* above water.

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- The Japanese midget submarine HA-34 is tangible evidence of the connection between Kiska and the Battle of Midway. That submarine was initially destined for the planned submarine base on Kure Atoll. The failure of the Japanese to take Midway thwarted these plans and the submarine base construction was redirected to Kiska.
- The damage caused to the Japanese midget submarine HA-34 by Japanese demolition charges to deny future use of the submarine by US intelligence is tangible evidence of the Japanese preparation for their evacuation.
- The landscape on Kiska exhibits a plethora of bomb craters that illustrate the ferocity of the U.S. bombing runs and the persistence of U.S. forces in attempting to dislodge the Japanese by long-range bombing missions.
- The distribution of the bomb craters in relation to their intended targets demonstrates the inaccuracy of U.S. bombing technology during World War II.
- The Kiska battlefield retains a moderate amount of unexploded ordnance, derived from war action (U.S. naval shells and U.S. aerial bombs), as well as ammunition left behind by the Japanese defenders.

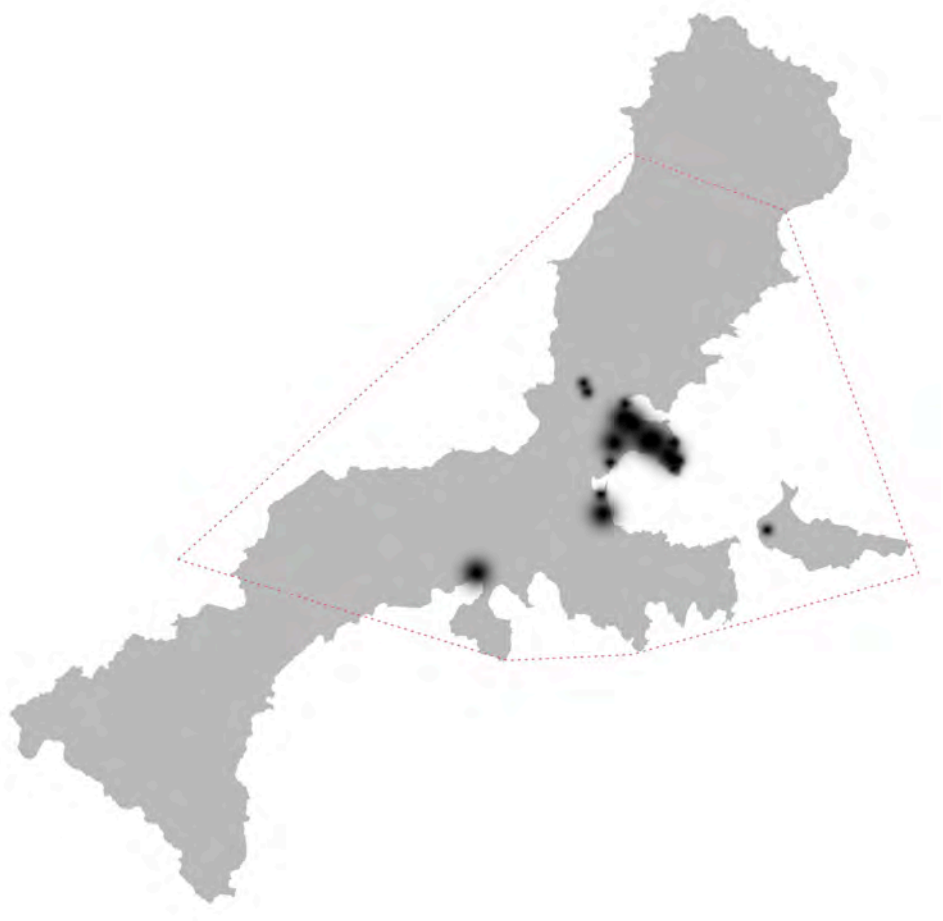

Fig. 417. Schematic map of Kiska showing an approximation of the intensity of bombing of Japanese assets. (the dashed outline designates the boundary of the NHL, but the entire island, including Little Kiska constitutes the boundaries of the battlefield.

- The Japanese 75mm AA guns on Kiska are the best preserved guns of that type still *in situ* through-out the Pacific theater of war.
- The Japanese eastern-most 75mm AA guns situated on South Head, Kiska, is, as far as can be ascertained, the *only* gun of its kind world-wide that is still on its tires and *in situ*, abandoned in the process of being re-sited. The gun is illustrative of the last minute adjustments of the Japanese defense strategy,

carried at time when the Kiska garrison had been notified that an evacuation was being planned and prepared for.

- The Kiska battlefield represents a palimpsest of both initial Japanese and later U.S./Canadian garrisoning, which is illustrative of differences in the use of the same military terrain and in the construction and layout of their barracks and defense installations.
- Several of the U.S. and Canadian tent bases still have most of their tent stakes as well as some tent fabric *in situ*, demonstrating the way in which the troops occupied the area.

PHYSICAL EVIDENCE (OTHER)

- Several of the 4.7-inch and 6-inch emplaced on North Head and Little Kiska are of British manufacture dating to the 1890s and early 1900s. They are evidence of former British-Japanese armament trade and are a tangible reminder of the origins of Japan as a naval power.
- One of the 6-inch guns emplaced on Little Kiska stems from the *Fuji*, the first (then) modern battleship ever built for the Imperial Japanese Navy.
- One of the 6-inch guns emplaced on Little Kiska stems most probably from the *Mikasa*, Admiral's Togo's flagship in the Battle of Tsushima in 1905. It was the resounding defeat of the Imperial Russian fleet in that battle which marked the ascendancy of the Empire of Japan as a regional naval power to be reckoned with—and which eventually led to the events that sparked the Japanese attack on Pearl Harbor and the outbreak of the Pacific War.
- Several of the 4.7-inch and 6-inch emplaced on North Head and Little Kiska are tangible reminders of the Washington Naval Limitation Treaty of 1922, the first ever multi-nationally agreed upon arms reduction treaty.

Boundaries

The Kiska World War II battlefield is made up from a large number of constituent components, some of which could be surveyed during the fieldwork carried out for this study. Previous administrative decisions, resulting in nominations for the Japanese Occupation Site National Historic Landmark and the World War II Valor in the Pacific National Monument, have sought to define the boundaries of the Kiska Battlefield.

The National Historic Landmark boundaries (Fig. 3) take in the key areas of Japanese (and coincidentally), U.S. occupation, while the boundaries for the National Monument (Fig. 4) are more restrictive, selecting five small and non-contiguous areas, four of which fall within the NHL, while one area, the PBY crash site on Kiska Volcano, falls outside.

A perusal of the 1943 target maps drawn up for the U.S. / Canadian invasion of Kiska shows that almost *all* of Kiska shows Japanese defenses in some shape or the other. While the majority of these defenses may be minor (e.g. beach obstacles, machine gun nests, and prepared artillery positions) compared to the concentrations around Kiska Harbor and Gertrude Cove, they nonetheless form part of a holistic defense plan by the Japanese forces.

It is the considered opinion of the author, that any revised boundary of a Kiska World War II NHL should encompass *the entire island,* as it forms a single defensive entity.

To draw on an analogy of a medieval castle: the perimeter of the island is equivalent to the moat and walls, with selected landing beaches being comparable to the gates. The concentrations at Kiska Harbor and Gertrude Cove can be likened to the strong points provided by the inner castle and keep. Just as much as it would be nonsensical to limit the preservation management of a medieval castle to the keep, so it is excessively limiting, if not nonsensical, to limit the management of the Kiska Battlefield to the concentrations at Kiska Harbor and Gertrude Cove

Defining of Significance

Common best practice of cultural heritage management ascribes various levels of significance to the site as a whole and to the individual constituent components making up the cultural resource.

SITE-SPECIFIC LEVEL

On a site-specific level we can grade the elements as being ascribed:[10]

- *Exceptional significance*—Rare or outstanding features or elements that retain full integrity and which can exemplify or demonstrate an aspect of the site's historic context or technology at a level unsurpassed by other features. The loss of a feature of exceptional significance would critically impair the site's integrity.
- *High significance*—those elements that retain a high degree of original fabric, and that demonstrate a key element of the site's significance. Such elements usually do not exhibit major alterations and the alterations that have occurred do not detract from the overall significance.
- *Moderate significance*—those elements that have been added to or altered at a later point of time and which by themselves have little heritage value, but which contribute to the overall significance of the item.
- *Little significance*—those elements that are not part of the key historic narrative, that were added to or severely altered at a later point of time, that may detract from the overall significance and that may be difficult to interpret.
- *Intrusive*—those elements that are not part of the historic narrative, that were added at a later point of time and that severely detract from or damage the overall significance.

INTER-SITE LEVEL

The site as a whole can be assessed as being of significance when compared to similar sites. The significance can be ascribed at various levels.[11] It is taken as a given that when a site has been ascribed a high order of significance it also holds significance at the lower levels.

Table 59. Levels of significance ascribed to sites

Level	Legal Concept	Explanation
Global Significance	World Heritage	The site that uniquely exemplifies a key event or process that transcends national boundaries and is of common importance for present and future generations of all humanity.[12]
National Significance	U.S. NHL	nationally significant historic places designated because they possess exceptional value or quality in illustrating or interpreting the nation's heritage
State Significance	State Register	historic places that possess exceptional value or quality in illustrating or interpreting the state's heritage transcending county/administrative boundaries
Regional Significance	n/a	historic places that possess exceptional value or quality in illustrating or interpreting the heritage of a region, transcending county/administrative boundaries (but not being of state-wide significance)
Local Significance	Local Government Area (e.g. Borough)	historic places that possess exceptional value or quality in illustrating or interpreting the county's heritage
Sub-local significance	Local Register	historic places that possess exceptional value or quality in illustrating or interpreting a community's heritage

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Statement of Significance

The cultural landscape of the Kiska Battlefield is deemed to be significant on a global level. The World War II landscape of Kiska is *historically* significant as it is:

i) integrally associated with the Battle of Midway, generally acknowledged as the turning point of the Pacific War;

ii) the furthest point of the Japanese WWII expansion to both the north and east;

iii) the only military base in the Pacific voluntarily abandoned by the Japanese; and

iv) a battlefield where all military action was confined to an air war.

As the *sole battlefield* of World War II *without any elements of prior or later occupation* modifying the battlefield experience, the Kiska Battlefield:

v) preserves *all* actions by both attackers and defenders including the wreckage of both Japanese and US aircraft, the bombs they dropped and the guns that were used to shoot some of them down;

vi) preserves *demonstrable* evidence of the ferocity and relative accuracy of U.S. bombing efforts;

vii) contains the sole Japanese midget submarine globally still *in situ*;

viii) possesses Japanese air and coastal defense installations *in situ* that are unparalleled in their condition and state of preservation;

ix) represents a palimpsest of both initial Japanese and later U.S./Canadian garrisoning, which is *illustrative* of differences in the use of the same military terrain;

x) has environmental conditions that are conducive to the preservation of organic materials, including wooden stakes and tent canvas providing *in situ* evidence that is *illustrative* of the micro-spatial lay-out of the US/Canadian occupation; and

xi) contains British-made guns installed by the Japanese that are both associated with the Battle of Tsushima which changed the global power relations on the pre-World War I Pacific; and with the Washington Naval Limitation Treaty of 1922, as the first ever multi-nationally agreed upon arms reduction treaty.

Notes to the preceding Chapter

1. Brian Garfield (1969) *The Thousand Mile War: World War II In Alaska and the Aleutians*. New York: Doubleday. p. 289.

2 World War II Valor in the Pacific National Monument. Alaska Unit. Foundation Statement. September 2010. US Fish and Wildlife Service and US National Park Service. http://alaskamaritime.fws.gov/pdf/valor.pdf.

3. Secretary of the Interior's Standards for Evaluation [As Amended and Annotated]. US NPS http://www.cr.nps.gov/local-law/arch_stnds_3.htm.

4. Secretary of the Interior's Standards. Preservation Terminology. http://www.nps.gov/history/local-law/arch_stnds_10.htm.

5. NPS (1997) How to Complete the National Register Registration Form. *National Register Bulletin* nº 16. Washington, DC. National Park Service. P.47—These qualities are further elaborated in Delgado, James P. and Foster, Kevin J. (1992) Guidelines for Evaluating and Documenting Historic Aids to Navigation to the National Register of Historic Places. *National Register Bulletin* nº 34. Washington, DC. National Park Service. P. 8.

6. It is at this point not clear, to what extent some of the Quonset huts that are recognizable on 1948 aerial images were dismantled by US forces in subsequent years and re-used on the base developments of Adak, Attu and Shemya.

7. There is a clear gradient that runs from Kiska Beach, the main landing spot for most visitors. The closer to the beach, the fewer small artefacts can be found.

8 The integrity of design, in the context of the assessment of battlefield is interpreted as the technical and spatial design of fixed features (such as gun batteries, road network and barracks area).

9 In the wider regions, the Japanese military bases in Micronesia come to mind, all of which have seen substantial modification by subsequent settlement: Adams, William, H., Ross, Richard, E., Krause, Elisabeth, L. and Spennemann, Dirk H.R. (1997), *Micronesian Resources Study, Marshall Islands Archaeology. The Japanese Airbase on Taroa Island, Republic of the Marshall Islands, 1937-1945: an evaluation of World War II Remains*., San Francisco, Calif.: Micronesian Endowment for Historic Preservation, US National Park Service.—Denfeld, D. Colt (1979) Field Survey of Ponape: World War II Features. *Micronesian Archaeological Survey Report* No. 2. Saipan: Historic Preservation Office, Trust Territory of the Pacific Islands.—Denfeld, D. Colt (1981) Field Survey of Truk: World War II Features. *Micronesian Archaeological Survey Report* No. 6. Saipan: Historic Preservation Office, Trust Territory of the Pacific Islands.—Denfeld, D. Colt (1981) Japanese fortifications and other military structures in the Central Pacific. *Micronesian Archaeological Survey Report* No. 9. Saipan: Historic Preservation Office, Trust Territory of the Pacific Islands.—Look, David W. and Dirk HR Spennemann, (1993) *For Future Use: A Management Conservation Plan for the World War II Sites in the Republic of the Marshall Islands*. Albury, NSW, Australia, and San Francisco, U.S.A.: The Johnstone Centre of Park, Recreation and Heritage and the U.S. National Park Service Western Regional Office.

10. NSW Heritage Office (2001) Assessing heritage significance. http://www.heritage.nsw.gov.au/docs/ assessingheritagesignificance.pdf.

11. NSW Heritage Office (2008) Levels of Heritage Significance http://www.heritage.nsw.gov.au/docs/ levels_of_heritage_significance_2008.pdf.

12. "Outstanding universal value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole (§49) see: UNESCO (2008) Operational Guidelines for the Implementation of the World Heritage Convention. WHC. 08/01 January 2008. Paris: UNESCO World Heritage Centre. whc.unesco.org/archive/opguide08-en.pdfm.

11. Future Work

Based on the assessment of the cultural and historic significance of the Kiska battlefield, this chapter considers a number of issues of importance that may benefit from further work and research.

Data acquisition

The available data are not evenly distributed. The Japanese and Canadian data, in particular, are limited. Future work should focus on acquiring these data.

- A preliminary search of some Japanese archives (NIDS) has yielded a number of images. Many of which are copyright protected and may not be reproduced without permission. While the author was able to make copies for his own research purposes of some of the images, others could not be copied as NIDS itself was unsure as to the rights. This issue may be overcome through diplomatic channels.
- Additional imagery exists in the hands of private individuals, usually veterans' families. Some of this was sighted in the course of the research for this study. Rights for the reproduction were not granted at this point of time.
- Japanese textual data could not be evaluated at all. As most of the sources can be accessed via JACAR, however, there is no need to travel to Japan for much of the work can be done by an overseas-based scholar.
- Likewise, at present no work has been carried out in Canadian Archives. While material has been published on the Canadian involvement in the Kiska operations (see Chapter 3), no primary data on the Canadian camp on Kiska have been sourced.

Kiska Battlefield in Context

While the Kiska Battlefield is of global significance, the battlefield cannot be seen without the context of other places in the Aleutians that form part of che wider narrative. In the vicinity of Kiska, these are the Attu Battlefield NHL (Aleut, Japanese and US occupation) and Adak NHL, as well the Japanese presence on Agattu, and the US presence on Amchitka and the US base on Shemya. Of these, only Shemya is still an operational US military facility. In the wider area, closer to the Alaskan mainland, we also need to include the Umnak / Fort Glenn NHL and the Dutch Harbor / Ft. Mears complexes of facilities, as well as Atka, which not only has the crash site of the B-24D but was also the location of PBY activity and the sinking of the Japanese submarine *RO-61*.

Even further to the east we need to consider Cold Bay and possibly even Elmendorf AFB.

Some of these sites form part of the World War II Valor in the Pacific National Monument (VPNM). In addition to the protected sites, the VPNM so far also includes a number of places as 'recognized' sites, among them two under foreign jurisdiction, Guadalcanal (Solomon Islands) and Iwo Jima (Japan), as well as one in international waters (USS *Yorktown*, off Midway).[1] Thus the structure VPNM, as its stands, would allow for an expansion to include some or all of the associated Alaskan sites.

Table 60. Kiska NHL in Aleutian Context[2]

	VPNM	NHL	NR	Land Manager(s)
Adak[3]		yes		Aleut Corp, State of Alaska
Agattu				FWS
Amchitka				FWS
Atka[4]	B-24		B-24	FWS (B-24 location)
Attu[5]	part	yes		FWS, USCG, Aleut Corp.
Cold Bay				several
Dutch Harbor[6]		yes		several
Ft Glenn[7]		yes		several
KISKA	**part**	**yes**		**FWS**
Shemya				USAAF

Of the range of research questions that can be answered by a comparative analysis, two are important to further understand the historic preservation value of Kiska:

- how does the manifestation of the Japanese presence on Kiska, which (apart from Gertrude Cove) was in the hands of the IJN, differs from that of Attu, which was garrisoned almost solely by the IJA.
- is there any difference in the manifestation of the US garrison on Kiska compared to the staging base on Adak, and is there any difference to the almost contemporaneous bases erected on Attu and Shemya.

Dissonance between historic preservation and nature conservation outcomes

As can be anticipated, the development of both Japanese and US military bases would have brought a range of liquids and materials on the island which today are termed environmental contaminants. These range from electrical transformers, which may contain poisonous coolants, to oil drums and lead.

The Japanese midget submarine at Trout Lagoon, for example, which has a World-level significance as the only Japanese midget submarine to be on land and still *in situ,* contains a large number of lead batteries originally used for propulsion. Any move to 'clean-up' the island of such contaminants will lead to the irreversible loss of the historic resource. Thus alternative containment options need to be investigated and considered.

With regard to the guns, the threats emanating from environmental clean up are restricted to the clean up of unexploded ammunition, much of which is present. While removal of UXO may be indicated in the name of public safety, such UXO forms part of

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the historic and heritage record as it illustrated preparations for and conduct of active fighting and bombardment. As part of the fabric of the heritage asset, any removal should consider the loss of integrity this will entail. A graded set of removal actions, from making safe in place to removal and explosion in place needs to be considered *before* any UXO removal occurs.[8] After all, the unexploded ammunition forms an integral part of the Kiska battlefield.

All such actions, of course, are Federal undertakings and thus subject to the provisions of the National Historic Preservation Act and associated regulations.

Notes to the preceding Chapter

1 The recognized sites are: American Samoa: Blunts Point Battery (American Samoa).—California: Rosie the Riveter/World War II Home Front NHP (San Francisco, CA).—Guam: War in the Pacific National Historical Park (Guam).—Hawaii: Battleship USS Missouri (Honolulu, HI), Ewa Field (Oahu, HI), I-401 Japanese submarine (Off Oahu, HI), Pacific Aviation Museum (Honolulu, HI); Punchbowl National Cemetery (Honolulu, HI), Point Midget Submarine (Off Oahu, HI), USS *Bowfin* (Honolulu, HI).—Utah: Wendover Airfield (Wendover, UT).—Central Pacific: Midway WWII Facilities (Midway), USS *Yorktown* (off Midway), Wake Island.—Commonwealth of the Northern Mariana Islands: Landing Beaches, Aslito-Isley Field & Marpi (CNMI); Tinian Landing Beaches, Ushi Point & North Fields (Tinian Island, CNMI).—Japan: Iwo Jima.—Solomon Islands: Guadacanal Battlefield.

2. Data derived *inter alia* from a search of the on-line database of the National Register of Historic Places properties.

3. Adak Army Base and Adak Naval Operating Station <http://pdfhost.focus.nps.gov/docs/NHLS/Text/87000841.pdf>.

4. Atka B-24D Liberator <pdfhost.focus.nps.gov/docs/NRHP/Text/79000407.pdf>.

5. Attu Battlefield and U.S. Army and Navy Airfields on Attu <http://pdfhost.focus.nps.gov/docs/NHLS/Text/85002729.pdf>.

6. Dutch Harbor Naval Operating Base and Fort Mears, U.S. Army.

7. Fort Glenn (Umnak Island).—NRHP Reference#: 87001301.—Tanadgusix Corporation (TDX) .

8. Spennemann, Dirk H.R. (1998) Cultural heritage management of unexploded ammunition. *CRM Bulletin* 21(8), 48-51.—Spennemann, Dirk H.R. (2005). Is unexploded World War II ammunition abandoned property? A case of ethics and the law in Micronesia. *Journal of South Pacific Law* vol.9 (2), December 2005 http://law.vanuatu.usp.ac.fj/jspl/current/art3.—Spennemann, Dirk HR. (2006) Managing unexploded ammunition at and near cultural heritage sites. Issues for Micronesian Historic Preservation. *Micronesian Journal of the Humanities and Social Sciences* vol. 5 nº 1/2, pp. 234-267.

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APPENDICES

Appendix 1:
Japanese Order of Battle in the Midway Operation

The Japanese Order of Battle in the Midway Operation has been reproduced here in full to document all the vessels involved (frequent reference to which is made in this study).[1]

OVERALL COMMAND:
Adm. Yamamoto Isoroku (CinC),
RAdm. Ugaki Matome (CofS)

First Mobile Force — FIRST AIR FLEET

VAdm. Nagumo Chūichi (CinC)
RAdm. Kusaka Ryūnosuke (CofS)

CARRIER GROUP

Carrier Division 1	VAdm. Nagumo Chūichi	
CV 赤城 Akagi	cl. Akagi	Capt. Aoki Taijirō
CAG: 1 B5N2	Type 97	Cdr. Fuchida Mitsuo
AVF: 18 A6M2	Type 0	LtCdr. Itaya Shigeru
AVB: 18 D3A1	Type 99	LtCdr. Chihaya Takehiro
AVT: 17 B5N2	Type 97	LtCdr. Murata Shigeharu
AG-6: 6 A6M2	Type 0	Lt. Kaneko Tadashi
CV 加賀 Kaga	cl. Kaga	Capt. Jisaku Okada
CAG: 1 B5N2	Type 97	LtCdr. Kusumi Tadashi
KVF: 18 A6M2	Type 0	Lt. Satō Masao
KVB: 20 D3A1	Type 99	Lt. Ogawa Shōichi
KVT: 26 B5N2	Type 97	Lt. Kitajima Ichirō
AG-6: 9 A6M2	Type 0	
Carrier Division 2	RAdm. Yamaguchi Tamon	
CV 飛龍 Hiryū	cl. Sōryū	Capt. Kaku Tomeo
CAG: 1 B5N2	Type 97	Lt. Tomanga Jōichi
HVF: 18 A6M2	Type 0	Lt. Mori Shigeru
HVB: 18 D3A1	Type 99	Lt. Kobayashi Michio
HVT: 17 B5N2	Type 97	Lt. Kikuchi Rokurō
AG-6: 3 A6M2	Type 0	

CV 蒼龍 Sōryū	cl. Soryū	Capt.Yanagimoto Ryūsaku
CAG: 1 D3A1	Type 99	LtCdr. Egusa Takashige
SVF: 18 A6M2	Type 0	Lt. Suganami Masaharo
SVB: 15 D3A1	Type 99	Lt. Ikeda Masahiro
SVT: 18 B5N2	Type 97	Lt. Abe Heijirō
SVS: 2 D4Y1	Type 2	
AG-6: 3 A6M2	Type 0	

SUPPORT GROUP

Cruiser Division 8	RAdm. Abe Hiroaki	
CA-17 利根 Tone	cl. Tone	Capt. Okada Tametsugu
CA-18 筑摩 Chikuma	cl. Tone	Capt. Komura Keizō

Battleship Division 3, Section 2

BB-3 霧島 Kirishima	cl. Kongō	Capt. Iwabughi Sanji
BB-4 榛名 Haruna	cl. Kongō	Capt. Tamotsu Takama

SCREEN

Destroyer Squadron 10	RAdm. Kimura Susumu	
CL-9 長良 Nagara	cl. Nagara	Capt. Naoi Toshio

Destroyer Division 4	Capt. Ariga Kosaku	
DD-31 野分 Nowaki	cl. Kagerō	Cdr. Koga Magatarō
DD-112 嵐 Arashi	cl. Kagerō	Cdr. Watanabe Yasumasa
DD-113 萩風 Hagikaze	cl. Kagerō	Cdr. Iwagami Jūichi
DD-114 舞風 Maikaze	cl. Kagerō	Cdr. Nakasugi Seiji

Destroyer Division 17	Capt. Kitamura Masayuki	
DD-27 浦風 Urakaze	cl. Kagerō	Cdr. Shiraishi Nagayoshi
DD-28 磯風 Isokaze	cl. Kagerō	Cdr. Toshima Shunichi
DD-29 濱風 Hamakaze	cl. Kagerō	Cdr. Orita Tsuneo
DD-30 谷風 Tanikaze	cl. Kagerō	Cdr. Katsumi Motoi

SUPPLY GROUP
Capt. Oto Masanao

Destroyer Division 10	Capt. Abe Toshio	
DD-115 秋雲 Akigumo	cl. Yūgumo	Cdr. Sōma Shōhei
DD-116 夕雲 Yūgumo	cl. Yūgumo	Cdr. Semba Shigeo
DD-117 巻雲 Makikumo	cl. Yūgumo	Cdr. Fujita Isamu
DD-118 風雲 Kazekumo	cl. Yūgumo	Cdr. Yoshida Masayoshi

AO 東邦丸 Tōhō Maru	cl. Tatekawa	Capt. Niimi Kazutaka
AO 日本丸 Nippon Maru	cl. Tatekawa	Capt. Ueda Hironosuke
AO 神国丸 Shinkoku Maru	cl. Tatekawa	Capt. Ito Tokutaka
AO 極東丸 Kokuyō Maru	cl. Tatekawa	Capt. Hidai Toraji
AO 旭東丸 Kyokutō Maru	cl. Tōa	Capt. Kusakawa Kiyoshi

* pilots and aircraft of 6th Air Group ferried to Midway, some of these planes

(at least 3 A6M2 of Akagi) was used for combat air patrol during the battle.

Main Body FIRST FLEET

Adm. Yamamoto Isoroku (CinC),
RAdm. Ugaki Matome (CofS)

Battleship Division 1	RAdm. Takayanagi Gihachi	
BB-11 大和 Yamato	cl. Yamato	RAdm. Takayanagi Gihachi
BB-9 長門 Nagato	cl. Nagato	Capt. Yano Hideo
BB-10 陸奥 Mutsu	cl. Nagato	RAdm. Kogure Gunji
Carrier Group	Capt. Umetani Kaoru	
CVL 鳳翔 Hōshō	cl. Hōshō	Capt. Umetani Kaoru
HVT: 8 [8] B4Y1	Type 96	Lt. Irikiin Yoshiaki (CAG)
DD-10 夕風 Yūkaze	cl. Minekaze	LtCdr. Kajimoto Shizuka
Special Force		
AV 千代田 Chiyōda*	cl. Chitose	Capt. Harada Kaku
AV 日進 Nisshin**	cl. Nisshin	Capt. Komazawa Katsumi
Destroyer Squadron 3	RAdm. Hashimoto Shintarō	
CL-15 川内 Sendai	cl. Sendai	Capt. Morishita Nobue
Destroyer Division 11	Capt. Shoji Kichiro	
DD-35 吹雪 Fubuki	cl. Fubuki	LtCdr. Yamashtia Shizuo
DD-36 白雪 Shirayuki	cl. Fubuki	LtCdr. Sugawara Rokorō
DD-37 初雪 Hatsuyuki	cl. Fubuki	LtCdr. Kamiura Junnari
DD-39 叢雲 Murakumo	cl. Fubuki	LtCdr. Higashi Hideo
Destroyer Division 19	Capt. Oe Ranji	
DD-43 磯波 Isonami	cl. Fubuki	Cdr. Sugama Ryōkichi
DD-44 浦波 Uranami	cl. Fubuki	LtCdr. Hagio Tsutomu
DD-45 綾波 Ayanami	cl. Fubuki	Cdr. Sakuma Eiji
DD-46 敷浪 Shikinami	cl. Fubuki	LtCdr. Kawahashi Akifumi
Supply Unit 1	Capt. Nishioka Shigeyasu	
AO 鳴戸 Narutō	cl. Ondo	Capt. Nishioka Shigeyasu
AO 東栄丸 Tōei Maru	cl. Tatekawa	Capt. Kusagawa Kiyoshi

* tasked with ferrying 8 Type A midget submarines for the planned Kure Atoll base.
** tasked with ferrying 2 torpedo boats for the planned Kure Atoll base.

Guard Force (Aleutian Screen) FIRST FLEET

VAdm. Takasu Shirō (CinC), RAdm. Kobayashi Kengō (CofS)

Battleship Division 2		
BB-8 日向 Hyūga	cl. Ise	Capt. Matsuda Chiaki

BB-7 伊勢 Ise	cl. Ise	Capt. Takeda Isamu
BB-5 扶桑 Fusō	cl. Fusō	Capt. Kinoshita Mitsuo
BB-6 山城 Yamashiro	cl. Fusō	Capt. Obata Chozaemon
Cruiser Division 9	RAdm. Kishi Fukuji	
CL-5 北上 Kitakami	cl. Kuma	Capt. Norimitsu Saiji
CL-7 大井 Ōi	cl. Kuma	Capt. Narita Mōichi
Destroyer Division 20	Capt. Yamada Yuji	
DD-42 白雲 Shirakumo	cl. Fubuki	Cdr. Hitomi Toyoji
DD-47 朝霧 Asagiri	cl. Fubuki	LtCdr. Maekawa Nisaburō
DD-48 夕霧 Yūgiri	cl. Fubuki	Cdr. Motokura Masayoshi
DD-49 天霧 Amagiri	cl. Fubuki	Capt. Ashida Buichi
Destroyer Division 24	Capt. Hirai Yasuji	
DD-72 山風 Yamakaze	cl. Shiratsuyu	LtCdr. Hamanaka Shūichi
DD-73 江風 Kawakaze	cl. Shiratsuyu	LtCdr. Wakabayashi Kazuo
DD-74 海風 Umikaze	cl. Shiratsuyu	Cdr. Sugitani Nagahide
DD-75 涼風 Suzukaze	cl. Shiratsuyu	LtCdr. Shibayama Kazuo
Destroyer Division 27	Capt. Yoshimura Matake	
DD-64 有明 Ariake	cl. Hatsuharu	LtCdr. Yoshida Shōichi
DD-65 夕暮 Yūgure	cl. Hatsuharu	LtCdr. Kamo Kiyoshi
DD-66 白露 Shiratsuyu	cl. Shiratsuyu	LtCdr. Hashimoto Kimmatsu
DD-67 時雨 Shigure	cl. Shiratsuyu	Cdr. Seo Noboru
Supply Unit 2	Capt. Eguchi Matsuo	
AO さんくれめんて丸 San Clemente Maru	7,335 BRT	Capt. Eguchi Matsuo
AO 東亜丸 Tōa Maru	cl. Tōa	Capt. Yokohama Yataro

Midway Invasion Force — *SECOND FLEET*

VAdm. Kondō Nobutake (CinC)
RAdm. Shiraishi Kazutaka (CofS)

Main Body

Battleship Division 3, Section 1		RAdm. Mikawa Gunichi
BB-1 金剛 Kongō	cl. Kongō	Capt. Koyanagi Tomiji
BB-2 比叡 Hiei	cl. Kongō	Capt. Nishida Masao
Cruiser Division 4, Section 1		
CA-9 愛宕 Atago	cl. Takao	Capt. Ijūin Matsuji
CA-11 鳥海 Chōkai	cl. Takao	Capt. Hayakawa Mikio
Cruiser Division 5	VAdm. Takagi Takeo	
CA-5 妙高 Myōkō	cl. Myōkō	Capt. Miyoshi Teruhiko
CA-7 羽黒 Haguro	cl. Myōkō	Capt. Mori Tomokazu

Screen

Destroyer Squadron 4	RAdm. Nishimura Shōji	
CL-11 由良 Yura	cl. Nagara	Capt. Satō Shirō

Destroyer Division 4	Capt. Oe Ranji	
DD-69 夕立 Yūdachi	cl. Shiratsuyu	Cdr. Kikkawa Kiyoshi
DD-68 村雨 Murasame	cl. Shiratsuyu	LtCdr. Suenaga Naoji
DD-70 五月雨 Samidare	cl. Shiratsuyu	Cdr. Matsubara Takisaburō
DD-71 春雨 Harusame	cl. Shiratsuyu	LtCdr. Kamiyama Masao

Destroyer Division 9	Capt. Satō Yasuo	
DD-80 夏雲 Natsugumo	cl. Asashio	LtCdr. Tsukamoto Moritarō
DD-82 峯雲 Minegumo	cl. Asashio	LtCdr. Suzuki Yasuatsu
DD-83 朝雲 Asagumo	cl. Asashio	Cdr. Iwahashi Tōru

Carrier Group	Capt. Ōbayashi Sueo	
CVL 瑞鳳 Zuihō	cl. Shōhō	Capt. Ōbayashi Sueo
ZVF: 6 A6M2	Type 0	Lt. Hidaka Moriyasu (CAG)
6 A5M4	Type 96	
ZVT: 12B5N2	Type 97	Lt. Matsuo Kaji

DD-32 三日月 Mikazuki	cl. Mutsuki	LtCdr. Maeda Saneho

Supply Group	Capt. Murao Jirō	
RS 明石 Akashi	cl. Akashi	Capt. Fukuzawa Tsunekichi
AO 佐多 Sata	cl. Notoro	Capt. Murao Jirō
AO 鶴見 Tsurumi	cl. Notoro	Capt. Fugita Toshizō
AO 健洋丸 Kenyō Maru	cl. Tatekawa	Capt. Kanemasu Yoshio
AO 玄洋丸 Genyō Maru	cl. Tatekawa	???

Close Support Group SECOND FLEET

VAdm. Kurita Takeo

Cruiser Division 7	VAdm. Kurita Takeo	
CA-16 熊野 Kumano	cl. Mogami	Capt. Tanaka Kikumatsu
CA-13 最上 Mogami	cl. Mogami	Capt. Soji Akira
CA-14 三隈 Mikuma	cl. Mogami	Capt. Sakiyama Shakao
CA-15 鈴谷 Suzuya	cl. Mogami	Capt. Kimura Masatomi

Destroyer Division 8		Cdr. Ogawa Nobuki
DD-76 朝潮 Asashio	cl. Asashio	LtCdr. Yoshii Gorō
DD-79 荒潮 Arashio	cl. Asashio	Cdr. Kuboki Hideo

AO 日栄丸 Nichiei Maru	cl. Tatekawa	???

*Seaplane Tender Group SECOND FLEET**

RAdm. Fujita Riutarō (CO)

Seaplane Tender Division 11		
AV 千歳 Chitose	cl. Chitose	Capt. Furukawa Tamotsu

VS: 16 F1M2	Type 0	??? (CAG)
4 E13A1	Type 0	

AV 上川丸 Kamikawa Maru	cl. Kamikawa	Capt. Shinoda Tarohachi
VS: 8 F1M2 Type 0	??? (CAG)	
4 E13A1 Type 0		

DD-21 早潮 Hayashio*	cl. Kagerō	Capt. Kaneda Kiyoshi
APD N°35 (*Tsuta*)	cl. Momi	???

* tasked with establishing the planned Kure Atoll sea-plane base
** carrying troops for Kure Atoll.

Transport Group SECOND FLEET

RAdm. Tanaka Raizō (CO), Capt. Toyama Yasumi (CoS)

Destroyer Squadron 2	RAdm. Tanaka Raizō	
CL-16 神通 Jintsū	cl. Sendai	Capt. Kozai Torazō
Destroyer Division 15	Capt. Satō Torajirō	
DD-19 黒潮 Kuroshio	cl. Kagerō	Cdr. Ugaki Tamaki
DD-20 親潮 Oyashio	cl. Kagerō	Cdr. Arima Tokikichi
Destroyer Division 16	Capt. Shibuya Shirō	
DD-23 初風 Hatsukaze	cl. Kagerō	Cdr. Takahashi Kameshirō
DD-24 雪風 Yukikaze	cl. Kagerō	Cdr. Tobita Kenjirō
DD-25 天津風 Amatsukaze	cl. Kagerō	Cdr. Hara Tameichi
DD-26 時津風 Tokitsukaze	cl. Kagerō	Cdr. Nakahara Giichirō
Destroyer Division 18	Capt. Mikyasaka Yoshito	
DD-17 陽炎 Kagero	cl. Kagerō	Cdr. Yokoi Minoru
DD-18 不知火 Shiranuhi	cl. Kagerō	Cdr. Akasawa Shizuo
DD-84 霰 Arare	cl. Asashio	Cdr. Ogata Tomoe
DD-85 霞 Kasumi	cl. Asashio	Cdr. Tomura Kiyoshi

Combined Landing Force

2nd Combined SNLF[2]	1,250 men	Capt. Ōta Minoru
28th Regiment's detach.	1,200 men	Col. Ichiki Kiyonao
11th Construction Btn.	1,250 men	???
12th Construction Btn.	1,250 men	???

*

Transport Group		
APD 第一哨戒艇 PB No.1	cl. Minekaze	???
APD 第二哨戒艇 PB No.2	cl. Minekaze	Lt. Furuya Takuo
APD 第三四哨戒艇 PB No.34	cl. Momi	???
AO あけぼの丸 Akebono Maru	cl. Akatsuki	Capt. Otsuka Miki

AP アルゼンチン丸 Argentina Maru	12,755 BRT	

AP 吾妻丸 Azuma Maru	6,646 BRT
AP ぶらじる丸 Brazil Maru	5,859 BRT
APV 五洲丸 Goshu Maru	8,592 BRT
AP 北陸丸 Hokuriku Maru	~7,300 BRT
AP 加納丸 Kano Maru	8,572 BRT
APV 慶洋丸 Keiyō Maru	6,442 BRT
AO 霧島丸 Kirishima Maru	8,267 BRT
ACL 清澄丸 Kiyozumi Maru	8,614 BRT
AP 南海丸 Nankai Maru	8,416 BRT
AP 東亞丸 Tōa Maru nº 2	6,732 BRT
AP 全容丸 Zenyō Maru	6,442 BRT

Minesweeper Group SECOND FLEET

Capt. Miyamoto Sadachika (CO)

AM 第三多摩丸 Tama Maru No.3	SC-183 第一六号駆潜艇 Ch-16
AM 第五多摩丸 Tama Maru No.5	SC-184 第一七号駆潜艇 Ch-17
AM 第七昭南丸 Shōnan Maru No.7	SC-185 第一八号駆潜艇 Ch-18
AM 第八昭南丸 Shōnan Maru No.8	AK 明洋丸 Meiyō Maru
AE 宗谷 Sōya	AK 山福丸 Yamafuku Maru

Advance (Submarine) Force SIXTH FLEET

VAdm. Komatsu Teruhishi (CinC),
RAdm. Mito Hisashi (CofS)

CL-18 香取 Katori*	cl. Katori	Capt. Owada Noboru
Submarine Squadron 3	RAdm. Kōno Chimaki	
AS Yasukuni Maru*		Capt. Mori Ryō
Submarine Division 12	Capt. Nakaoka Nobuki	
SS 伊一六九 I-169	cl. Kaidai VIa	LtCdr. Watanabe Katsuji
SS 伊一七一 I-171	cl. Kaidai VIa	LtCdr. Kawasaki Michio
SS 伊一七四 I-174	cl. Kaidai VIb	LtCdr. Kusaka Toshio
SS 伊一七五 I-175	cl. Kaidai VIb	LtCdr. Uno Kameo
Submarine Division 13	Capt. Miyazaki Takeharu	
SS 伊一二一 I-121	cl. Kirai-sen	LtCdr. Fujimori Yasuo
SS 伊一二二 I-122	cl. Kirai-sen	LtCdr. Norita Sadotoshi
SS 伊一二三 I-123	cl. Kirai-sen	LtCdr. Ueno Toshitake
Submarine Squadron 5	RAdm. Tadashige Daigo	
AS Rio de Janeiro Maru*		Capt. Ōhashi Tatsuo
Submarine Division 19	Capt. Ono Ryōjirō	
SS 伊一五六 I-156	cl. Kaidai IIIb	LtCdr. Ōhashi Katsuo
SS 伊一五七 I-157	cl. Kaidai IIIb	LtCdr. Nakajima Sakae
SS 伊一五八 I-158	cl. Kaidai IIIb	LtCdr. Kitamura Sishichi
SS 伊一五九 I-159	cl. Kaidai IIIb	LtCdr. Yoshimatsu Tamori

Submarine Division 30	Capt. Teroka Masao	
SS 伊一六二 I-162	cl. Kaidai IV	LtCdr. Kinashi Takaichi
SS 伊一六五 I-165	cl. Kaidai V	LtCdr. Harada Takae
SS 伊一六六 I-166	cl. Kaidai V	Cdr. Tanaka Makio
SS 伊一六八 I-168**	cl. Kaidai VIa	LtCdr. Tanabe Yahachi

* located at Kwajalein (Marshall islands)
** Midway reconnaissance

Shore-Based Air Force ELEVENTH AIR FLEET

VAdm. Tsukahara Nishizō (CinC),
RAdm. Sakamaki Munetaka (CofS)

Midway Expeditionary Force*		Capt. Morita Chisato
AG-6: 36 A6M2**	Type 0	Lt.Cdr. Kokufuda Mitsugu
VP-24: 6 K6K4	Type 97	Capt. Nakajima Daizō
VB-22: 12 G4M1	Type 01	???

24th Air Flotilla*	RAdm. Minoru Maeda	
AG-1: 43 G3M2	Type 97	Capt. Inouye Samaji
VP-21: 2 H8K1	Type 02	???

Chitose Air Group*	Capt. Ōhashi Fujirō	
VF: 36 A6M2	Type 0	???
VB: 43 G3M2	Type 97	???

* located at Marshall Islands' air bases
** transported by CVs of First and Second Mobile Force

Aleutian Force, Main Body FIFTH FLEET

VAdm. Hosogaya Moshirō (CinC), Capt. Nakazawa Tasuku (CofS)

CA-6 那智 Nachi	cl. Myōkō	Capt. Kiyota Takahiko
DD-56 電 Inazuma	cl. Akatsuki	LtCdr. Takeuchi Hajime
DD-57 雷 Ikazuchi	cl. Akatsuki	LtCdr. Kudō Shunsaku

Supply group		
AO 富士山丸 Fujisan Maru	cl. Fujisan	???
AO 日産丸 Nissan Maru	cl. Nissan	???
AK 明石山丸 Akashisan Maru		
AK 東光丸 Tōko Maru nº 2		
AK 室戸 Muroto		

Second Mobile Force FIFTH FLEET

RAdm. Kakuta Kakuji (CinC)

Carrier Division 4	RAdm. Kakuta Kakuji

CVL 龍驤 Ryūjō	cl. Ryūjō	Capt. Katō Tadao
RVF: 16 A6M2	Type 0	Lt. Kobayashi Minoru
RVT: 20 B5N1	Type 97	Lt. Yamagami M. (CAG)
CVL 隼鷹 Junyō	cl. Hiyō	Capt. Ishii Shizue
JVB: 19 D3A1	Type 99	Lt. Abe Zenji
JVF: 8 A6M2	Type 0	Lt. Shiga Yoshio (CAG)
AG-6:12 A6M2	Type 0	*
Cruiser Division 4, Section 2		Capt. Nabeshima Shunsaki
CA-12 摩耶 Maya	cl. Takao	Capt. Nabeshima Shunsaki
CA-10 高雄 Takao	cl. Takao	Capt. Asakura Bunji
Destroyer Division 7	Capt. Konishi Kaname	
DD-52 曙 Akebono	cl. Fubuki	LtCdr. Nakagawa Minoru
DD-53 漣 Sazanami	cl. Fubuki	LtCdr. Uwai Hiroshi
DD-54 潮 Ushio	cl. Fubuki	LtCdr. Uesugi Yoshitake
AO 禎洋丸 Teiyō Maru	cl. Teiyō	???

Kiska Invasion Force FIFTH FLEET

Capt. Ono Takeji (CO)

Cruiser Division 21	Capt. Ono Takeji		
CL-6 木曾 Kiso	cl. Kuma	Capt. Ono Takeji	
CL-4 多摩 Tama	cl. Kuma	Capt. Kawabata Masaharu	
Destroyer Division 6	Capt. Yamada Yusuke		
DD-58 響 Hibiki	cl. Akatsuki	LtCdr. Ishii Hagumu	
DD-55 暁 Akatsuki	cl. Akatsuki	LtCdr. Takasuka Osamu	
DD-12 帆風 Hokaze	cl. Minekaze	LtCdr. Tanaka Tomō	
Minesweeper Division 13	Capt. Mitsuka Toshio		
AM 白鳳丸 Hakuhō Maru		???	???
AM 開澎丸 Kaihō Maru	???	???	
AM Shinkotsu Maru	???	???	
Special Group	Capt. Ban Jirō		
AC 朝霞丸 Asaka Maru	cl. Awata M.	Capt. Ban Jirō	
AC 粟田丸 Awata Maru	cl. Awata M.	Capt. Maki Kikuta	
DD-8 汐風 Shiokaze	cl. Minekaze	Lt. Tanegashima Yōji	
AV 君川丸 Kimikawa Maru		cl. Kamikawa	Capt. Ujuku Keiichi
VS: 8 E13A1 Type 0			
AP 白山丸 Hakusan Maru		10,380 BRT	???
3rd Maizuru SNLF*	550 men	LtCdr. Mukai Hifumi	
AP 球磨川丸 Kumagawa Maru		7,508 BRT	???
700 laborers & construction equipment			

* Special Naval Landing Force (Japanese Marines)

BASE AIR FORCE
CO Capt. Ito, Sukemitsu (Flying Boat Unit)

6 H6K Tōko Kōkutai

PG 神津丸 Kamitsu Maru, No. 2
AK 日の丸 Hino Maru, No. 2
AK Hishi Maru, No. 5
AK 勢 寿 丸 Seiju Maru

Attu-Adak Invasion Force *FIFTH FLEET*

RAdm. Ōmori Sentarō (CO)
Cdr Arichika, Rokujo (CoS)

CL-13 阿武隈 Abukuma	cl. Nagara	Capt. Murayama Seiroku

Destroyer Division 21	Capt. Shimizu Toshio	
DD-60 初春 Hatsuharu	cl. Hatsuharu	Cdr. Makino Hiroshi
DD-61 初霜 Hatsushimo	cl. Hatsuharu	LtCdr. Migihama Satoru
DD-62 子日 Nenohi	cl. Hatsuharu	LtCdr. Terauchi Saburō
DD-63 若葉 Wakaba	cl. Hatsuharu	LtCdr. Kuroki Masakichi

Special Group			
CM まがね丸 Magane Maru			???
AP 衣笠丸 Kinugasa Maru		8,407 BRT	???
301st Infantry Bn.	1200 men	Maj. Hozumi Matsutoshi	

Submarine Squadron 1 *FIFTH FLEET*

RAdm. Yamazaki Shigeaki (CO)

SS 伊九 I-9	cl. Kō-gata	Cdr. Fujii Akiyoshi

Submarine Division 2	Capt. Imazato Hiroshi	
SS 伊一五 I-15	cl. Otsu-gata	Cdr. Ishikawa Nobuo
SS 伊一七 I-17	cl. Otsu-gata	Cdr. Nishino Kōzō
SS 伊一九 I-19	cl. Otsu-gata	Cdr. Narahara Shōgo

Submarine Division 4	Capt. Nagai Mitsuru	
SS 伊二五 I-25	cl. Otsu-gata	Cdr. Togami Meiji
SS 伊二六 I-26	cl. Otsu-gata	Cdr. Yokota Minoru

Appendix 2:
Japanese War Chronology—Movements of Ships*)

The dates given in this section may not be uniform. While care has been exerted to ensure that all dates reflect U.S. dates, some dates may well reflect Tokyo Time (Japan Standard Time, time zone 'K'). [3]

Date	Ship	Cargo/event
29-Nov-1942	*I-26*	carries out periscopic observations of the harbors at Attu, Kiska and Adak
24-May-1942	*I-9*	the submarine's float plane reconnoiters Kiska and Amchitka (and on the following day reconnoitres Adak and Kanaga)
6-Jun-1942	IJN *Akatsuki* IJN *Hibiki* IJN *Hokaze* *Nissan Maru*	Japanese forces occupy Kiska
7-Jun-1942	IJN *Kimikawa Maru*	The sea-plane tender *Kimikawa Maru* discharges her eight E13A1 reconnaissance planes, their fuel and other materials.
7-Jun-1942	IJN *Awata Maru,* IJN *Asaka Maru,* *IJN Kunashiri* *IJN Kumagawa Maru* *Hakusan Maru,*	troops and construction supplies and fuel for the seaplane base
7-Jun-1942		six flying boats land
7-Jun-1942	*Hishi Maru n° 2*	oiler, supporting the flying boat detachment (until 17 August 1942
11-Jun-1942	IJN *Hibiki*	bow damaged by U.S. PBY bombing (near misses), returns to Japan for repairs accompanied by IJN *Akatsuki*
11-Jun-1942	IJN *Kamikawa Maru*	The *Kamikawa Maru* off loads her fourteen Type 0 Mitsubishi F1M2 "Petes" and her four Type 95 Kawanishi E8N2 "Daves" to the beach where a seaplane base has been set up.
11-Jun-1942		present at Kiska is a detachment of the Toko Air Group with six Type 97 Kawanishi H6K "Mavis" flying boats under Cdr (later Captain) Ito Sukemitsu.
11-Jun-1942	*Nissan Maru*	Japanese oiler, sunk in U.S. air raid
late June 1942	IJN *Shiokaze*	supplies?, was part of Attu invasion force, but ended up in Kiska as well
	IJN Arare, *IJN Chiyoda,* *Argentina Maru,* *IJN Kasumi,* *IJN Shiranuhi* *IJN Inazuma* *IJN Ikazuchi* *IJN Abukuma* unspecified number of cargo ships	base supplies IJN *Arare* is torpedoed by USS Growler and sinks off Kiska Harbor entrance; IJN *Shiranuhi* is heavily damaged by USS *Growler*, but braced in Kiska Harbor and towed back to Japan for repairs (by IJN *Kagero*) IJN *Kasumi* is torpedoed by USS *Growler*, bow damaged; bow cut off at Kiska and vessel towed back to Japan for repairs (by IJN *Ikazuchi*) IJN *Abukuma* assists, but does not enter Kiska Harbor
9-Jul-1942	*IJN Abukuma*	stop-over at Kiska (leaves the same day)
14-Jul-1942	*Subchaser* CH-	supplies

Date	Ship	Cargo/event
	26	
14-Jul-1942	*Subchaser CH-25* *Subchaser CH-27*	supplies, but both sunk of Sredni Point, Kiska by USS*Grunion*
23-Jul-1942	*IJN Ishizaki* *IJN Ukishima*	arrive at Kiska to lay an anti-submarine net (dep 6 Aug)
30-Jul-1942	*Kano Maru*	supplies; the vessel is torpedoed by USS*Grunion* but can be towed into Kiska by the mine layer *IJN Ishizaki* the cable layer IJN *Ukishima* and the transport *Kikukawa Maru* (lashed to the side of the *Kano Maru*)
30-Jul-1942	*IJN Kagero* *IJN Ikazuchi*	escorted *IJN Kikukawa Maru* with supplies for Kiska and emergency repair crews for the damaged IJN destroyers *Shiranuhi* and *Kasumi; IJN Kagero* and IJN *Ikazuchi* two the damaged destroyers back to Japan for repairs
late July 1942	*IJN Nagamami, Hakusan Maru*	supplies
31-Jul-1942	*CH-13* *CH-14* *CH-15*	supplies
1-Aug-1942	*Kano Maru* *IJN Kikukawa Maru;*	anchored in Kiska Harbor; *IJN Kikukawa Maru* brings supplies
3-Aug-1942	*RO-63*	supplies? dep. 7 Aug failed intercept of U.S. TG.8
3-Aug-1942	*RO-64*	supplies?
3-Aug-1942	*RO-68*	supplies? dep. 7 Aug for failed intercept of U.S. TG.8
4-Aug-1942	*RO-61*	supplies? dep. 7 Aug for failed intercept of U.S. TG.8
4-Aug-1942	*RO-62*	supplies? dep. 7 Aug for failed intercept of U.S. TG.8
5-Aug-1942	*RO-64*	supplies? dep. 7 Aug for failed intercept of U.S. TG.8
9-Aug-1942	*RO-61*	dep. 10 Aug
9-Aug-1942	*RO-68*	dep. 10 Aug
9-Aug-1942	*RO-62*	return (dep. 28 Aug to Adak)
12-Aug-1942	*IJN Hokaze* *IJN Kimikawa Maru*	deliver troops?, and 12 floatplane fighters
12-Aug-1942	*RO-61*	dep. 24 Aug
12-Aug-1942	*RO-63*	dep. Aug 16
12-Aug-1942	*RO-68*	dep. Aug 16
12-Aug-1942	*RO-64*	dep. Aug 16
14-Aug-1942	*IJN Inazuma*	transport run
16-Aug-1942	*RO-61*	dep. 27 Aug
19-Aug-1942	*RO-63*	dep. Aug 27
19-Aug-1942	*RO-68*	dep. Aug 27
25-Aug-1942	*RO-64*	dep. Aug 28 to Adak
29-Aug-1942	*RO-63*	dep. Sep 2
29-Aug-1942	*RO-68*	dep. Sep 2
30-Aug-1942	*IJN Kimikawa Maru*	seaplane supplies
#VALUE!	*Nagata Maru ?* *Yoko Maru*	IJA Attu garrison is moved Gertrude Cove, Kiska (reestablished on Attu with fresh troops on 29 Oct 42)

Date	Ship	Cargo/event
3-Sep-1942	*RO-64*	dep. Sep 4
4-Sep-1942	*RO-62*	returns from Adak
4-Sep-1942	*RO-63*	dep. Sep 5
4-Sep-1942	*RO-68*	dep. Sep 6
10-Sep-1942	*RO-63*	dep. Sep 21
10-Sep-1942	*RO-68*	dep. Sep 21
11-Sep-1942	*IJN Wakaba*	troops & supplies
13-Sep-1942	*RO-62* *RO-63* *RO-68*	air attack on submarines, *RO-62* undamaged (dep. Kiska 18 Sep) *RO-63* periscope damaged by bomb (while submerged) *RO-68* is strafed by P-39, both periscopes inoperable
14-Sep-1942	*Nozima Maru (Nozima Maru)*	troops & supplies; damaged by U.S. air raid and run aground off Mercy Point, Kiska Harbor
15-Sep-1942	*IJN Hatsuharu, IJN Hatsushimo*	transport run (usually encompassing personnel and supplies)
16-Sep-1942	*RO-64*	
19-Sep-1964	*Osada Maru*[4]	returns to Japan (and also takes the Aleuts from Attu)
20-Sep-1942	*RO-62*	returns from patrol; dep. 24 Sep, return 25 Sep, dep. Sep 30 for Adak
20-Sep-1942	*RO-68*	returns from patrol
23-Sep-1942	*RO-63* *RO-64* *RO-68*	dep. Sep 25 for Japan
24-Sep-1942	*IJN Hokaze* *IJN Kimikawa Maru;*	Rufes and Jakes, troops and supplies
25-Sep-1942	*RO-65*	arrives with supplies?
27-Sep-1942	*RO-67*	arrives in time for a U.S. air raid, is attacked and receives near misses making her electric engines and the periscope inoperable. Departs for Ominato same day
27-Sep-1942	*RO-65*	strafed by U.S. air raid, receives minor damage to coning tower. dep Sep 30 for Cold Bay
2-Oct-1942	*IJN Wakaba*	troops & supplies
4-Oct-1942	*Borneo Maru*	troops & supplies to Gertrude Cove. Bombed in U.S. air raid and run aground.
7-Oct-1942	*RO-62*	dep. for Japan 17 Oct
9-Oct-1942	*CH-14*	damaged in a U.S. air raid (in the Trout Lagoon area)
14-Oct-1942	*RO-65*	returns from successful mission to penetrate Cold Bay. Dep. 16 Oct to rescue crew of sunk IJN *Oboro* and support damaged IJN *Hatsuharu*
15-Oct-1942	*IJN Wakaba*	troops & supplies
16-Oct-1942	*IJN Hatsuharu, IJN Oboro*	troops & supplies, air attack by U.S. B-26 off Kiska sinks IJN *Oboro* and damages *IJN Hatsuharu*. Supply run aborted
30-Oct-1942	*RO-65*	returns from patrol
3-Nov-1942	*RO-65*	crash dived during a U.S. air raid with coning tower hatch still open, sinks with the loss of 19 hands
5-Nov-1942	*IJN Kimikawa Maru,* *IJN Usugumo;* *IJN Hachijo*	troops & supplies, incl. five A6M2-N and three E13A1

Date	Ship	Cargo/event
9-Nov-1942	*IJN Hatsushimo* *IJN Wakaba*	troops & supplies
26-Nov-1942	*IJN Tama*	troops delivery
2-Dec-1942	*IJN Kiso* *IJN Abukuma* *IJN Wakaba*	troops & supplies IJN *Abukuma* disembarks her troops and departs on the same day
8-Dec-1942	*I-35*	supplies ?
9-Dec-1942	*I-34*	supplies and troops (and then patrols off Kiska)
9-Dec-1942	*'Maru-type' cargo ship*	seen by U.S. aircraft; dep 10 Dec
24-Dec-1942	*IJN Hatsushimo,* *IJN Kimikawa Maru*	troops & supplies *Kimikawa Maru* delivers eight A6M2-Ns
29-Dec-1942	*IJN Usugumo* *Urajio Maru* *300ft ship* *465ft/10,000ton ship*	supplies and troops (convoy) supplies, bombed in U.S. air raid and run aground off North Head (300 ft and 465ft ships noted by U.S. aircraft, in harbor til 8 Jan)
29-Dec-1942		
29-Dec-1942		U.S. aircraft note 3 small subs in the harbor
4-Jan-1943	*Montreal Maru*	supplies, sunk off Kiska (with construction equipment for the airfield)
7-Jan-1942	*200ft cargo ship*	cargo ship seen by U.S. aircraft, no longer in harbor on 23 Jan
8-Jan-1942	*I-34*	supplies and troops (incl. IG HQS staff officer (supplies) LtCol Iwakoshi Shinroku)
14-Jan-1943	*I-169*	supplies
15-Jan-1943	*IJN Usugumo* *2x medium cargo ship*	supplies and troops cargo ships seen by U.S. aircraft, no longer in harbor on 22 Jan
24-Jan-1942	*I-34*	supplies
31-Jan-1943	*IJN Kimikawa Maru,* *IJN Usugumo*	supplies and troops; incl. Rufes and Jakes
31-Jan-1943	*IJN Kunashiri*	supplies
3-Feb-1943	*IJN Wakaba,* *IJN Asaka Maru*	troops & supplies
9-Feb-1943	4x small submarine	seen by U.S. aircraft
11-Feb-1943	*IJN Kimikawa Maru*	even float fighters and five reconnaissance seaplanes launched from the open sea
19-Feb-1943	*IJN Kiso,* *IJN Hatsushimo,* *IJN Wakaba,* *Sakito Maru* *(transport)*	Supply delivery
21-Feb-1943	*IJN Wakaba*	troops & supplies
21-Feb-1943	*IJN Awata Maru*	troops and supplies (IJA air defence personnel and supplied for airfield construction)
21-Feb-1943	*IJN Hatsushimo*	transport run
24-Feb-1943	*I-169*	delivers Type A midget submarine, its torpedoes and IJA soldiers; dep Feb 25

Date	Ship	Cargo/event
25-Feb-1943	*I-171*	supplies, dep. 2 Mar
25-Feb-1943	*I-169*	supplies, IJA troops, Type A midget Sub
16-Mar-1943	*I-168*	supplies (makes a total of nine supply runs, not all detailed in list)
28-Mar-1943	*I-35*	supplies (4 tons)
late Mar, 42	*I-31*	(supplies run?)
31-Mar-1943	*I-168*	supplies
3-Apr-1943	*I-168*	supplies, removes sick from Kiska; transfers the ground personnel of the 452 Ku from Kiska to Attu
3-Apr-1943	*I-169*	supplies
18-Apr-1943	*I-168*	delivers cargo of ammunition and mail from Attu
26-Apr-1943	*I-34*	supplies
30-Apr-1943	*I-7*	food and ammunition; departs for Attu on same day
early May	*I-35*	4 tons of cargo
9-May-1943	*I-31*	supplies, departs for Attu (sunk on 11 May off Attu)
May 11, 43		U.S. forces land on Attu
7-May-1943	*I-34*	supplies
10-May-1943	*I-31*	supplies
20-May-1943		Imperial General Headquarters decides to evacuate the garrison at Kiska Island
25-May-1943	*I-7*	delivers 6 tons of food, 13.2-mm, 8-mm and 7.7-mm ammunition and a radio beacon. For her return voyage, she embarks 49 sailors, seven soldiers and four gunzoku workers (mostly sick and wounded), plus 28 boxes of the ashes of fallen soldiers and four tons of spent shell cartridges.
May 29, 43		U.S. forces defeat last Japanese troops on Attu
28-May-1943	*I-34*	evacuated 80 soldiers
29-May-1943	*I-21*	brings supplies and evacuates 10 midget submarine crews
31-May-1943	*I-156*	evacuation mission
1-Jun-1943	*I-9*	brings 17 tons of ammunition and 2 tons of food; evacuates personnel
5-Jun-1943	*I-175*	supplies
8-Jun-1943	*I-169*	supply mission to Kiska carrying 1,440 rifles with ammunition and 2 tons of food, dep. Same day with 60 passengers
8-Jun-1943	*I-7*	19 tons of ammunition and 15 tons of food. departs, carrying 101 men (42 Navy, 18 Army and 41 gunzoku workers).
7-Jun-1943	*I-34*	
16-Jun-1943	*I-175*	supplies and evacuation
19-Jun-1943		local radio beacon is deactivated 0500, 20 June
20-Jun-1943	*I-7*	supplies to Gertrude Cove. *I-7* is repeatedly attacked and eventually sunk
late Jun 1943	*I-169*	supplies
6-Jul-1943		Evacuation fleet first departs Paramushiro (abandoned)
21-Jul-1943		Second sortie from Paramushiro to Kiska
28-Jul-1943	*IJN Abukuma* *IJN Akigumo*	Japanese forces evacuate Kiska

Date	Ship	Cargo/event
	IJN Asagumo *IJN Hibiki* *IJN Kazagumo* *IJN Kiso* *IJN Usugumo* *IJN Yugumo*	
14-Aug-1943		U.S. forces land on Kiska

Appendix 3:
Chronology of USAAF actions against Kiska*)

Date	Aircraft involved	Mission Description/Summary
June 1942		
Jun 8, 42	1 LB-30	flies armed patrol over Kiska and Umnak Islands and discovers Japanese naval units in Kiska Harbor.
Jun 9, 42		Patrol flight.
Jun 10, 42		
Jun 11, 42	5 B-24s, 5 B-17s	from Cold Bay load bombs at Umnak Island and hit Kiska harbor installations and shipping targets. Low-altitude runs score near misses on 2 cruisers and a destroyer. AA downs a B-24; the other B-24s are pursued by 4 fighters back to Umnak where U.S. fighters drive them off. USN aircraft discover Japanese landing at Attu Island. Air echelon of 21st Bombardment Squadron (Heavy), 30th Bombardment Group (Heavy), based at March Field, Riverside, California, begins operating from Umnak Island with B-24s.
Jun 12, 42	6 B-17s, 1 B-24	bomb shipping in the harbor at Kiska Island. A cruiser is heavily damaged and one destroyer is seen burning. 42d Fighter Squadron, 54th Fighter Group, based at Harding Field, Baton Rouge, Louisiana, begins operating from Kodiak, with P-39s.
Jun 13, 42	LB-30	flies a weather mission and for the third straight day shipping in the harbor at Kiska Island is bombed by 5 B-17s and 3 B-24s; 2 heavy bombers turn back; the others bomb partially cloud-obscured targets. No effect is observed.
Jun 14, 42	4 B-17s, 3 B-24s	bomb shipping in the harbor of Kiska Island from an altitude of 700 feet (213 m), lowest altitude yet. 2 cruisers are hit and one scout seaplane is downed. 2 B-17s are heavily damaged but return to base. The Japanese bomb Nazan Bay, Atka Island.
Jun 15, 42	3 B-17s, 2 B-24s	bombing mission to Kiska Island by is aborted due to weather.
Jun 17, 42		A Kiska Harbor bombing mission is cancelled due to weather as is a patrolling mission by heavy bombers.
Jun 18, 42	1 LB-30, 3 B-17s, 4 B-24s	make a precision high-altitude attack on Kiska Harbor. A transport is left burning and sinking, another is mauled, and 2 scout planes are possibly shot down. 1 B-24 crashes at sea; part of its crew is saved.
Jun 19, 42		B-24s taking off to bomb Kiska Island abort due to fog. 1 of them and 2 of its crew are lost when forced to land in the water. A B-17 is dispatched to attack a reported submarine but makes no contact.
Jun 20, 42	1 LB-30, 1 B-17, 7 B-24s	take off on a search and bombing mission over Kiska Island. 3 aircraft abort the mission due to weather, 3 bomb through an overcast with unobserved results, and 3 others search in vain for a B-24 lost on the preceding day. 56th and 57th Fighter Squadrons, 54th Fighter Group, based at Harding Field, Baton Rouge, Louisiana begin operating from Nome and Elmendorf Field, Anchorage, respectively with P-39s.
Jun 22, 42	1 B-17	weather reconnaissance aircraft flies over Kiska Island. Fighters fly air base patrols. A bombing mission is cancelled due to weather.
Jun 23, 42	1 B-17	flies a reconnaissance mission over Kiska Island. Weather cancels a bombing mission.

Jun 24, 42	B-17	flies a weather reconnaissance over Kiska Island. Weather cancels a bombing mission Fighters patrol airfields.
Jun 25, 42	2 B-17s, 4 B-24s, 1 LB-30	fly bombing and weather missions over Kiska Island, bombing the N side of the harbor.
Jun 26, 42	5 B-24s	drop incendiaries and fire bombs on Kiska Harbor installations.
Jun 28, 42	1 B-17	weather aircraft flies over Kiska Island. A solid weather front cancels bombing. On this and the following day U.S. advanced reconnaissance parties land on Adak Island from submarines.
Jun 30, 42	1 B-17	flies weather reconnaissance over Kiska Island.
JULY 1942		
Jul 1, 42	1 B-17	flies weather reconnaissance over Kiska Island, Aleutian Islands and lands early due to weather. The XI Bomber Command (Provisional) comprising the 28th Composite Group and its assigned squadrons is activated, Colonel William O Eareckson in command.
Jul 2, 42	7 B-24s, 1 B-17	fly photo and bombing missions to Attu Island, which appears deserted, and to Kiska and Agattu Islands; near misses are scored on a transport and a destroyer at Agattu.
Jul 3, 42	7 B-24s, 2 B-17s	bomb Kiska and Near Islands, encountering neither fighter opposition nor AA; results are not observed.
Jul 5, 42	1 B-17	flies a weather mission.
Jul 6, 42	4 B-24s, 1 LB-30	fly bombing and weather missions to Kiska Island; results are not observed.
Jul 7, 42	1 B-17, 7 B-24s	fly weather, bombing and photo missions to Kiska, Attu and Agattu Islands; all bombs are returned to base due to weather; 1 seaplane is shot down.
Jul 8, 42	1 B-24	flies 2 photo missions over thes shore of Kiska Island and over Little Kiska Island; the bombing mission is cancelled due to weather. 404th Bombardment Squadron (Heavy), 44th Bombardment Group (Heavy) arrives in the Alaskan Theater with B-24s, originally destined for N Africa; first mission is 18 Jul.
Jul 9, 42	5 B-24s	fly photo, weather, and bombing missions to Kiska Island but return with the bombs due to weather.
Jul 10, 42	1 B-24	aborts a reconnaissance mission to Kiska Island due to weather.
Jul 11, 42	4 B-24s	taking off for weather, bombing and photo missions to Kiska Island are attack by seaplane fighters; no losses. A cruiser is bombed with unobserved results.
Jul 12, 42	3 B-24s	dispatched on weather, photo and bombing mission to Kiska Island abort due to weather.
Jul 15, 42	3 B-24s	on a bombing mission to Kiska Island turn back due to weather.
Jul 17, 42	3 B-17s, 7 B-24s	fly weather, bombing and photo missions; shipping is bombed and North and South Heads of Kiska Island are photographed; fighters down 1 B-17.
Jul 18, 42	1 B-17	flying weather and photoreconnaissance over Kiska Island crashes on Umnak Island, Aleutian Islands.
Jul 19, 42		Search missions are flown over Attu and Agattu Islands.
Jul 20, 42		Brigadier General William O Butler moves advance HQ to Umnak Island. 3 B-17s bomb Kiska Island (especially the barracks) with incendiaries and demolition charges. 4 P-38s try to intercept 4 fighters reported by U.S. Navy (USN) aircraft but no contact is made.
Jul 21, 42	4 B-24s	fly search and bomb missions over Kiska Island but make no contact because of weather.

Jul 22, 42	8 B-24s, 2 B-17s	dispatched to Kiska Island, only 8 reach the target and due to fog drop only 7 bombs with unobserved results; 1 B-24 is missing on the return flight.
Jul 28, 42		An air coverage survey for Army ground operations to Adak and Tanaga Islands is flown. Weather cancels a bombing mission to Kiska Island.
Jul 29, 42	4 B-24s, 5 B-17s	bomb vessels and installations in the Kiska Harbor area with unobserved results due to clouds.
Jul 30, 42	1 LB-30, 9 B-17s, 3 B-24s	fly photoreconnaissance and bombing missions to Tanaga and Kiska Islands; the missions are unsuccessful due to weather.
Jul 31, 42	1 B-24, 1 LB-30	fly weather and photoreconnaissance; weather cancels a combat mission to Kiska Island.
AUGUST 1942		
Aug 1, 42	1 B-24, 1 LB-30	Weather and photoreconnaissance flown over Korovin Bay and North Cape, Aleutian Islands.
Aug 3, 42	3 B-17s, 2 B-24s, 1 LB-30	fly a bombing and photoreconnaissance mission to Tanaga and Kanaga Islands and also bomb Kiska Island; 4 of the aircraft have mechanical trouble but all return.
Aug 4, 42	1 LB-30, 2 B-17s, 3 B-24s covered by 8 P-38s	escort U.S. Navy (USN) tenders to Nazan Bay, Atka Island, Aleutian Islands; two 4-engine seaplane bombers and a possible third are downed near Atka Island by 2 of the P-38's, in their first aerial combat in any theater; weather cancels bombing mission to Kiska Island. 1 LB-30 flies a photo mission
Aug 6, 42	3 B-24s, 2 B-17s, 10 P-38s	provide air coverage for USN tenders to Nazan Bay, Atka Island; photoreconnaissance is flown over Attu Island, Aleutian Islands.
Aug 7, 42	3 B-24s 4 B-24s 1 B-24, 4 P-38s, 1 LB-30	dispatched to bomb Kiska Island return with their bombs due to solid overcast; also depart for Kiska; 1 turns back with mechanical trouble, the others abort the mission over the target due to undercast; fly 2 air coverage missions at Nazan Bay, Atka Island for USN tenders.
Aug 8, 42	1 LB-30, 3 B-24s, 8 P-38s	on photo and bombing missions over Kiska Island cannot attack but Navy PBYs also operating over and off Kiska Island hit freighters and a transport, claiming 1 transport sinking, and score many hits on North Head and Main Camp.
Aug 9, 42	6 bombers	fly armed reconnaissance over Kiska and Attu Islands and hit Kiska Island.
Aug 10, 42	5 B-17s, 3 B-24s	bomb Kiska Island targets; fighters and AA down 1 B-24 and only the pilot is saved.
Aug 11, 42	1 B-24	flies photoreconnaissance over W Semichi Island and the N coast of Attu Island.
Aug 12, 42	1 B-24	flies photoreconnaissance over Amlia and Atka Islands.
Aug 13, 42	1 B-24	flies photoreconnaissance over Kiska Island.
Aug 14, 42	1 B-24	trying to fly photoreconnaissance over Tanaga and Adak Islands aborts over Kiska Island due to weather.
Aug 16, 42	1 B-24	aborts a photoreconnaissance flight over Adak Island because of mechanical failure.
Aug 17, 42	1 B-24	flies photoreconnaissance over Buldir, Kiska and Amchitka Islands, Aleutian Islands, despite heavy rain.
Aug 18, 42	1 B-24	takes oblique photos of Amchitka and Tanaga Islands; Heavy fog over Kiska and Attu Islands precludes armed reconnaissance.
Aug 19, 42	1 B-24	Mechanical failure prevents a B-24 from flying reconnaissance over Tanaga Island.

Aug 20, 42	1 B-24	flies photoreconnaissance over Kiska Island; a patrol is flown over Shumagin Island, Aleutian Islands.
Aug 21, 42	1 B-24	trying to fly reconnaissance over Kiska Island aborts due to weather.
Aug 22, 42		A photoreconnaissance mission over Kiska Island is aborted due to overcast.
Aug 25, 42		A photoreconnaissance airplane flies over Kiska, Attu and Adak Islands, then turns back because of mechanical failure.
Aug 26, 42		A photo mission is aborted over Atka Island due to weather.
Aug 27, 42	4 B-17s, 6 B-24s, 2 P-38s	fly weather, reconnaissance and patrol missions over Kiska and Atka Islands. The Japanese begin to transfer the Attu Island garrison to Kiska Island, which is completed on 16 Sep.
Aug 28, 42	3 B-17s	bombing Kiska Island, 1 fails to return; all available B-24s and 2 flights of P-38s fly naval cover at Nazan Bay, Atka Island; and an attack mission to Attu Island is cancelled due to weather.
Aug 29, 42		A USN PBY reports a force of 3 cruisers and 4 destroyers NW of Umnak Island; thereupon all aircraft of the 11th go on attack alert; the surface force then identifies itself as friendly.
Aug 30, 42	5 B-24s P-38s	U.S. troops occupy Kuluk Bay, Adak Island, amidst a terrific storm and start building a runway. photograph Kiska Island but do not bomb due to overcast, and then fly patrol and photoreconnaissance over Amchitka and Tanaga Islands. fly patrol between Great Sitkin and Little Tanaga Islands.
SEPTEMBER 1942		
Sep 1, 42		U.S. forces complete the occupation of Adak Island, Aleutian Islands. During Sep, HQ 343d Fighter Group moves from Elmendorf Field, Anchorage to Ft Glenn, Umnak Island, Aleutian Islands. The detachment of the 11th Fighter Squadron, XI Fighter Command, operating from Ft Randall, Cold Bay, with P-40s, returns to base at Ft Glenn.
Sep 2, 42	6 bombers, 12 P-38s	fly cover and photoreconnaissance over Nazan and Kuluk Bays on Adak Island, and Amchitka and Semisopochnoi Islands.
Sep 3, 42	6 bombers, 5 P-38s	off to bomb Kiska Island and flying air cover over Kuluk Bay, Adak Island, 5 bombers and 3 fighters abort due to weather; the others strafe seaplanes and boats in Kiska Harbor and nearby installations; between 1 and 4 seaplanes are claimed destroyed on the water; this is the longest over-water attack flight thus far in World War II; the 2 fighters which reach the target area return from the 1,260 mile (2,028 km) round trip with only 40 U.S. gallons (151 l) of fuel; and the 21st Bombardment Squadron (Heavy), 30th Bombardment Group (under control of the 28th Composite Group), arrives at Umnak Island from the U.S. with B-24s.
Sep 4, 42	2 bombers, 1 P-38	bomb and patrol Nazan and Kuluk Bays, but bombing of Kiska Island is cancelled due to weather.
Sep 5, 42	3 B-24s	abort the bombing of Kiska Island due to an overcast.
Sep 6, 42	1 B-24	flying patrol and armed reconnaissance over Tanaga Island, Aleutian Islands, sinks a mine layer and strafes a tender as well as nearby tents and buildings.
Sep 7, 42	3 B-24s	patrol and bomb Kiska Island Harbor and camp area and also patrol Tanaga Island; they are attacked by 3 sea fighters of which at least 1 is downed.

Sep 8, 42	1 B-24, 1 B-26	fly photoreconnaissance over Agattu, Attu, and Kiska Islands; the detachment of the 42d Fighter Squadron, 54th Fighter Group, operating from Kodiak with P-39s begins a movement to Adak (the squadron is based at Harding Field, Louisiana).
Sep 9, 42	1 B-26	patrols Tanaga and Adak Islands. HQ, AAF: Lieutenant General Henry H "Hap" Arnold, Commanding General AAF, submits to the Chief of Staff a plan (AWPD-42) estimating the size of the air force necessary to attain air ascendancy over the enemy and outlining suggestions for the use of these forces in the several theaters; this plan, which by 17 Nov 42 has been approved by the War Department and President Roosevelt, includes the buildup of the depleted Eighth Air Force in the UK and contains the seeds of the Combined Bomber Offensive (CBO).
Sep 10, 42		Weather, photoreconnaissance, and patrol missions are flown during the morning over Nazan Bay, Tanaga, Adak and Amchitka Islands; poor weather is encountered at Kiska, Attu, and Agattu Islands; a detachment of the 42d Fighter Squadron, 54th Fighter Group arrives at Adak Island with P-39s (the squadron is based at Harding Field, Louisiana).
Sep 11, 42		A weather, photo, and patrol aircraft draws AA fire over Chichagof Harbor, Attu Island and also covers Tanaga, Amchitka, and Semichi Islands, Aleutian Islands. HQ 343d Fighter Group is actived at Elmendorf Field, Anchorage.
Sep 12, 42		a weather and patrol reconnaissance aircraft finds overcast at Kiska Island but takes photos over Tanaga, Kanaga, and Attu Islands. The runway at Adak Island is completed.
Sep 13, 42	14 B-24s 1 LB-30 and 2 P-38s	of the 21st and 404th Bombardment Squadrons (Heavy) move up to Adak Island. fly a photoreconnaissance, antisubmarine coverage and strafing mission over Kiska Island lakes and harbor; a tender in the harbor is slightly damaged, 1 float fighter is downed; a P-38 is hit by AA fire and fighters damage the LB-30.
Sep 14, 42	13 B-24s, 1 B-17, 14 P-38s, 14 P-39s	In the first combined heavy mission over Kiska Island fly low-altitude and photo runs; the P-39s shell 3 submarines in the harbor; the other aircraft bomb and strafe many installations including AA guns and the submarine base; a single aircraft also strafes Segula Island; enemy losses are 5 float planes shot down and 1 flying boat destroyed on the water; 2 mine sweepers sunk and another vessel slightly damaged; while a large cargo vessel and several small barges and vessels sustain hits; 2 P-38s are lost, colliding head-on while after a fighter.
Sep 15, 42	1 B-17, 1 B-24	fly armed reconnaissance over Kiska Island, and at Amchitka Island blast buildings in the Constantine Harbor area; fighters strafe Kiska Island Camp area and down 4 intercepting aircraft.
Sep 16, 42	1 B-17, 1 B-24	fly photo and reconnaissance runs over Adak Island. The Japanese completes transfer of the Attu Island garrison to Kiska Island, begun on 27 Aug;
Sep 21, 42		Bombers fly reconnaissance over Kiska Island and bomb and fire Constantine Harbor installations at Amchitka Island; and the 21st Bombardment Squadron (Heavy), 30th Bombardment Group (Heavy) (operating under control of the 28th Composite Group), based on Umnak Island, begins operating from Adak Island with B-24s.
Sep 22, 42	9 B-24s, 2 B-17s, 1 LB-30, accompanied by 15 P-39s, 20 P-40s,	abort a Kiska Island bombing mission due to weather; photoreconnaissance suggests that Chichagof Harbor, Attu Island is abandoned.

Sep 23, 42	PBY 2 P-38s	Weather causes a mission abort to Kiska Island; photoreconnaissance over Attu Island confirms it's abandonment by the enemy; a U.S. Navy (USN) PBY escorted by 2 P-38s lands off Amchitka Island with a scouting party which determines that the island is unsuited as an airfield; the P-38s also bomb a radio shack and sink a submarine at Amchitka Island.
Sep 24, 42	3 B-24s	bomb Main Camp, storage dumps, and dock areas, starting several fires.
Sep 25, 42	9 B-24s, 1 B-17, 1 B-24 photo airplane, escorted by 11 P-39s, 17 P-40s	fly the first of 2 missions to Kiska Island; Royal Canadian Air Force (RCAF) Kittyhawks participate in this first combined Canadian-American mission of the Eleventh Air Force; later 2 B-24s and a B-17, escorted by 15 P-39s, pound Little Kiska and Kiska Islands; RADAR installations at Little Kiska Island are destroyed and explosions and fires are caused in the Main Camp area; other targets include shipping, stores, and tents; the P-39s also strafe 2 submarines; 2 float planes are downed; 5 to 8 biplanes are probably destroyed on the water; 1 large transport vessel is hit and lists badly; and 150 personnel are believed killed.
Sep 26, 42		1 destroyer, 1 freighter are bombed N of Atka Isl, at 53-30N 174-20E; 2 near misses are scored on the freighter.
Sep 27, 42	8 B-24s, 1 B-17, escorted by 1 P-38, 13 P-39s, 4 P-40s	take off first, are followed by 6 unescorted B-24s; weather turns back 13 of the fighters; Shore, harbor areas of Kiska Isl, are bombed: an LB-30 flies photo-weather reconnaissance over Attu, Buldir, the Semichi, Agattu, Amchitka Islands.
Sep 28, 42	7 B-24s, 1 B-17, 1 LB-30, escorted by 17 fighters	2 bombing missions are flown to Kiska and Attu Islands; installations on Kiska Island and a freighter nearby are bombed;
Sep 29, 42	LB-30	A morning armed reconnaissance mission is flown over Semichi and Attu Islands; it strafes a ship at Attu Island; 3 B-24s bomb and strafe sea transport, scoring no hits.
Sep 30, 42	9 B-24s	off to bomb Kiska and Attu Islands, 2 turn back; the others blast the Attu Camp area, and at Kiska Harbor score at least 1 direct hit and near misses on a ship; 8 fighters intercept over Kiska and Little Kiska Islands but inflict no losses; the detachment of the 57th Fighter Squadron, 54th Fighter Group operating from Elmendorf Field, Anchorage moves to Kodiak with P-39s (the squadron is based at Harding Field, Louisiana).
OCTOBER 1942		
Oct 1, 42	7 B-24s	search-attack and photo recon mission over Kiska hit hangars and ramps, starting several fires; 4 fighters appear and are engaged; 1 probable victory is claimed; 2
Oct 2, 42	11 B-24s, 6 P-39s	bomb 2 cargo ships in the harbor (no hits observed), drop demolition charges throughout the Main Camp area, and hit a hangars of the seaplane ramp; 4 floatplanes and 1 biplane are shot down.
Oct 3, 42	6 B-24s, 4 P-38s, 8 P-39s	bomb and strafe7 vessels in and around Kiska Island Harbor hitting a beached cargo vessel and the camp; the fighters down 6 float fighters attempting interception
Oct 4, 42	3 B-24s	abort weather, bombing and photo missions over Kiska Island due to weather and instead attack a cargo vessel; the ship's rudder is probably damaged; 1 B-24 is damaged.
Oct 5, 42	8 B-24s, 1 B-17, 10 P-39s, 8 P-38s	fly bombing and weather missions over Kiska Island hits are scored on a corvette and on a large freighter at Gertrude Cove and on a hangar in Main Camp; the radio station is damaged; a float fighter is strafed and set afire, and 6 Zekes are hit on the water.

Oct 7, 42	3 B-24s	taking off to bomb Kiska Island and patrol Near Island abort mission due to mechanical failure
Oct 8, 42	9 B-24s, 3 B-17s, 12 P-38s	blast Kiska Island Harbor installations (starting fires in Main Camp), and strafe AA positions, hangars, a corvette (silencing her guns), and a freighter.
Oct 9, 42	7 B-17s, 10 B-24s escorted by 6 P-38s, 4 P-39s	bomb the harbor at Kiska Island, installations, and shipping 6 times; targets include shipping in Gertrude Cove, small cargo vessels in Kiska Harbor, installations at North Head, a hangar, Main Camp area (hit several times), and various shore facilities.
Oct 10, 42	10 B-24s, 7 B-17s, 4 P-38s fly 4 missions to Kiska Isl,	the third mission (3 B-17s) does not make contact; the others bomb and strafe the Main Camp area, hit shipping in Trout Lagoon and off South Head, where gun positions and installations are also blasted; fires are started in the Main Camp and hangar areas. The 344th Fighter Squadron, 343d Fighter Group, is activated at Elmendorf Field, Anchorage with P-40s.
Oct 11, 42	10 B-24s, 3 B-17s	Kiska Island is hit by 3 bombing and strafing missions flown by the B-17s make no contact; the B-24s blast harbor targets and Main Camp.
Oct 12, 42	2 B-24s	abort bombing of Kiska Island due to overcast and instead fly shipping search W of Attu Island.
Oct 13, 42		A search mission is not completed due to weather.
Oct 14, 42	9 B-24s, 6 B-26s, 1 B-17, 12 P-38s	bomb and strafe Kiska Island installations and shipping; fire bombs are dropped on hangars and the Main Camp area where a large fire is started; 2 torpedo attacks on shipping in Gertrude Cove score no hits; the P-38s destroy 3 floatplanes on water; 1 P-38 is shot down.
Oct 15, 42	3 B-26s bomb, 1 B-24	flies photoreconnaissance over Kiska and Attu Islands; the B-26s hit a large cargo ship in Gertrude Cove, Kiska Island, starting a fire, and hit buildings on Attu Island; AA claims 1 B-26.
Oct 16, 42	1 B-17, 6 B-26s, 4 P-38s	bomb Kiska Island and low-level bomb and sink 2 destroyers just N of there; duds hit a large freighter beached off Trout Lagoon; 1 B-26 is shot down.
Oct 17, 42	5 B-24s bomb	the Main Camp area on Kiska Island and a beached vessel in Trout Lagoon; the results are unobserved due to clouds; 1 B-24
Oct 18, 42	4 B-24s	bomb Main Camp, score near misses on a beached vessel in Trout Lagoon, and hit a gasoline storage area; weather aircraft flies reconnaissance over Attu, Segula, Little Sitkin, and Gareloi Islands.
Oct 19, 42	1 B-17	flies weather reconnaissance and bomb runs over Attu, Semichi, Kiska, and Amchitka Islands; 6 B-24s dispatched to bomb Kiska Island abort the mission due to weather.
Oct 20, 42	6 B-24s	take off for Kiska Island but return due to weather; reconnaissance is flown to 70 miles (113 km) E of Attu Island; a negative search is made for a missing C-53. The detachment of the 56th Fighter Squadron, 54th Fighter Group, moves from Nome to Elmendorf Field, with P-39s (the squadron is based at Harding Field, Louisiana).
Oct 21, 42		Weather reconnaissance aircraft returns twice due to fog.
Oct 22, 42		Weather reconnaissance aircraft reports a submarine at 52-08N 177-21 W; a U.S. Navy (US) aircraft later makes contact and drops depth bomb; the result is unknown.

Oct 23, 42		Armed reconnaissance by 7 bombers, escorted by 6 P-38s, is flown over Kiska Island installations, chiefly the submarine base and Main Camp; visibility is excellent and direct hits are scored, including 1 on the submarine base. A detachment of the 56th Fighter Squadron, 54th Fighter Group, based at Harding Field, Louisiana, begins operating from Elmendorf Field, Anchorage with P-39s.
Oct 24, 42	3 B-17s	hit the Kiska Island submarine base; results are not observed; and a weather reconnaissance flight is made over Attu Island.
Oct 27, 42	6 B-24s	flying an attack on the Kiska Island submarine base turn back due to weather; a weather aircraft flies reconnaissance over Gareloi, Segula, Kiska, and Attu Islands, Aleutian Islands.
Oct 28, 42	6 B-24s	turn back from an attempted attack on the Kiska Island submarine base because of adverse weather; a B-17 bombs Attu Island with unobserved results and flies weather reconnaissance over Kiska, Amchitka, and Tanaga Islands, Aleutian Islands.
Oct 29, 42		The Japanese reoccupy Attu Island; a special reconnaissance flown with Lieutenant General Simon B Buckner, covers Tanaga, Amchitka, and Kiska Islands.
Oct 30, 42	1 B-24	twice flies reconnaissance over Kiska and Agattu Islands; there are no bombing mission as all bombers are on alert for possible naval targets.
Oct 31, 42		Weather and reconnaissance flight over Attu and Kiska Islands; over Kiska Island, the weather aircraft draws AA fire from Little Kiska Island; no other missions as all combat aircraft are alerted for a possible naval target.
NOVEMBER 1942		
Nov 4, 42		bad weather at Umnak Island and Dutch Harbor on UnIsland and a flooded field at Adak Island preclude missions; a new Adak Island runway permits an air alert.
Nov 5, 42		weather reconnaissance is flown over Kiska and Little Kiska Islands.
Nov 6, 42		A weather aircraft is forced back near Kiska Island.
Nov 7, 42	6 B-24s, 2 B-26s	attack the submarine base in Kiska Island Harbor, slightly damaging float fighters and a seaplane beached by storm; a B-17 flies reconnaissance over the airfield W of Holtz Bay on Attu Island, and bombs the submarine base and a previously-damaged freighter in Gertrude Cove on Kiska Island.
Nov 8, 42		there is an intermittent air alert; the weather aircraft returns due to icing.
Nov 9, 42	2 B-26s, 4 P-38s	bomb a cargo ship in Gertrude Cove, Kiska Island; no hits; 2 P-38s then strafe the harbor area on Kiska Island; 1 B-17 and 4 P-38s attack Holtz Bay, Attu Island Island and Attu Island Airfield, destroying 8 float Zekes; 1 B-17 flies weather reconnaissance over Attu, Kiska, and Segula Islands.
Nov 10, 42	5 B-24s, 1 B-17,	bomb Kiska Islbut they cannot bomb the Kiska submarine base and return with some bombs; 2 P-38s and 1 OA-10 fly local air coverage. Reconnaissance is flown over Attu, Semichi, Segula, Alaid, and Kiska Islands;
Nov 11, 42	3 B-26s, 3 B-17s, 3 B-24s	are over Kiska Island; the B-26s make unsuccessful runs on a ship in Gertrude Cove; the B-17s and B-24s find the submarine base closed by weather. A weather aircraft flies over Attu and Amchitka Islands.
Nov 12, 42		bombers are on alert at Umnak and Adak Islands to attack any reported naval targets; intermittent fighter patrols fly over Adak Island. The 344th Fighter Squadron, 343d Fighter Group, based at Elmendorf Field, Anchorage, sends a detachment to Cold Bay, with P-40s.

Nov 13, 42		reconnaissance over Attu and Agattu Islands reveals 5 landing barges in Chichagof harbor on Attu Island.
Nov 14, 42	1 B-24	flies armed reconnaissance over Kiska and Attu Islands and bombs Holtz Bay and Chichagof on Attu Island with negative results; bombers at Adak and Umnak Islands are alerted for shipping targets.
Nov 15, 42		The 21st Bombardment Squadron (Heavy), 30th Bombardment Group (Heavy) (under control of the 28th Composite Group), ceases operating from Adak Island and returns to base on Umnak island with B-24s. The 406th Bombardment Squadron (Medium), 41st Bombardment Group (Medium) (attached to 28th Composite Group), arrives at Elmendorf Field, Anchorage from the U.S. with A-29s and B-18s (the squadron has been operating from since Jun 42).
Nov 16, 42		weather reconnaissance flight is flown over Kiska
Nov 17, 42		weather a reconnaissance aircraft is forced back by weather W of Kiska Island; bombers are on alert to attack surface vessels.
Nov 18, 42		armed reconnaissance is flown over Kiska and Attu Islands; no bombs are dropped.
Nov 19, 42		reconnaissance aircraft over Attu and Agattu Islands sights 2 unidentified float monoplanes E of Buldir Island.
Nov 20, 42		a reconnaissance aircraft over Kiska Island draws heavy AA from Gertrude Cove.
Nov 21, 42		reconnaissance is flown over Kiska, Attu, and Agattu Islands.
Nov 22, 42	1 B-24	flies reconnaissance over Kiska, Attu, and Agattu Islands; bombers and fighters are alerted for a 23 Nov mission to find and destroy a reported 5-vessel convoy.
Nov 23, 42		reconnaissance is flown over Kiska, Attu, Agattu, and Amchitka Islands.
Nov 24, 42	1 B-24	flies reconnaissance over Kiska Island; weather precludes the westward continuation of reconnaissance; a scheduled mission of 8 B-24s and 4 B-26s to Kiska Island is called off due to icing conditions.
Nov 25, 42		reconnaissance is flown over Kiska, Attu and the Semichi Islands.
Nov 26, 42	1 B-24	reconnoitering Holtz Bay harbor on Attu Island spots shipping targets which are subsequently hit by 4 B-26s escorted by 4 P-38s; 1 large vessel is claimed afire and sinking; reconnaissance is flown over Rat Island, Kiska Island shipping, Agattu and Semichi Islands and the N coast of Attu Island; 2 P-38s and 1 B-26 sustain minor damage.
Nov 27, 42		Photoreconnaissance covers Kiska, Amchitka and Attu Islands; a ship attacked in Holtz Bay on Attu Island on the previous day is observed lower in water and still burning.
Nov 28, 42	1 B-24	photographs a beached freighter at Holtz Bay, Attu Island drawing no AA fire during 10 runs over the bay, and flies reconnaissance over Kiska Island.
Nov 29, 42	1 B-24	over Holtz Bay, Attu Island reports the vessel bombed and damaged on 26 Nov as still sinking; 1 B-26 flies an uneventful reconnaissance over thes shore of Kiska Island.
Nov 30, 42	1 B-24	flies reconnaissance over Semichi and Attu Islands; other flights are prevented by weather.
DECEMBER 1942		
Dec 1, 42	1 B-24	flies reconnaissance over the Semichis and Attu Islands. Weather prevents any other flights.

Dec 2, 42	1 B-24	finds Semichi and Attu unchanged during a reconnaissance run; a B-26s on reconnaissance finds Kiska closed by fog.
Dec 3, 42		two bombers and several fighters fly reconnaissance over Semichis, Kiska and Attu Islands. There is a constant air alert for U.S. forces on Adak.
Dec 4, 42	7 B-24s, 9 B-26s escorted by 16 P-38s	take off upon a Navy PBY report of a surface force southeast of Amchitka Island. At the interception point, the area is searched without results. The PBY pilot later report he saw "clouds." Reconnaissance is flown over Attu, Agattu, Semichi, Kiska and Amchitka Islands.
Dec 5, 42		reconnaissance missions over Attu, Agattu, the Semichis, Amchitka and Kiska turns up nothing.
Dec 6, 42		Reconnaissance is flown over Attu, Agattu, Amchitka, Kiska and the Semichis Islands. The 18th Fighter Squadron, 343d Fighter Group with P-40s transfers from Anchorage to Adak Island, Aleutian Islands.
Dec 7, 42		A reconnaissance mission is flown over the Semichis and Attu Islands; reconnaissance of Kiska Is is aborted due to weather.
Dec 8, 42	6 B-24s, 6 B-26s, escorted by 8 P-38s,	an attempted bombing mission of Attu and Kiska Islands is forced back by weather. An uneventful reconnaissance is flown by a B-24 and a B-26 over Attu, Agattu, Amchitka, Kiska and the Semichis Islands.
Dec 9, 42	B-26s, 6 P-38s	daily weather aircraft cannot return to base due to a sudden snow squall and crash-lands at Atka Island. An attempted bombing mission to Kiska Harbor is forced back by weather.
Dec 10, 42	4 B-26s, 6 P-38s	the weather aircraft which crashlanded at Atka Island yesterday is sighted on the west end of the island, its fuselage broken off aft of the wings. The crew, later brought back, is unharmed except for light injuries to Lieutenant General William Lynd, a visiting Inspector General. An uneventful reconnaissance covers Attu, Kiska and the Semichis Islands. abort a bomb run to Kiska due to weather.
Dec 11, 42	3 B-26s, 4 P-38s	an uneventful reconnaissance covers Attu, Agattu, Amchitka, Kiska and the Semichis Islands. rebomb and strafe a previously bombed cargo vessel in Kiska Harbor, scouting two more direct hits. The P-38s also strafe and bomb Kiska Harbor submarine base and seaplane hangars, camp area and nearby gun emplacements.
Dec 12, 42		an attempted photographic reconnaissance mission over Kiska Island by a B-24 and two P-38s returns without result due to weather. Another reconnaissance B-24 is turned back by a weather front west of Buldir Island. The detachment of the 42d Fighter Squadron, 54th Fighter Group, which has been operating in with P-39s since Jun 42, returns to its base at Harding Field, Baton Rouge, Louisiana.
Dec 13, 42		a largely negative reconnaissance is flown over Attu, Agattu, Kiska, Amchitka and the Semichis Islands by two B-24s and two P-38s.
Dec 17, 42	5 B-24s, 2 B-25s,4 B-26s	a reconnaissance sortie is flown over Attu, Agattu, Kiska, Amchitka and the Semichis Islands. fly two attacks --the second attack escorted by eight P-38s--take off for Kiska Island. On the first mission, four B-24s, gets through and hit the submarine base area, marine railway, buildings, and communication facilities. The second mission aborts due to weather. P-38s and B-24s also fly offshore patrol between Vega Point and Little Kiska.
Dec 18, 42	1 B-24	flies reconnaissance over Kiska, Attu, Agattu and Semichis Islands.

Dec 19, 42	2 B-24s	fly reconnaissance and patrol over Amchitka and Kiska Islands. Four escorting P-38s turn back due to weather and mechanical difficulties.
Dec 20, 42	4 B-26s, 5 B-24s, 5 B-25s, 9 P-38s	make a coordinated bombing, strafing, and incendiary attack on Kiska Harbor installations and vicinity, especially on the submarine base and near the marine railway and gun emplacements. A direct hit is scored on a probable ammunition dump. P-38s also strafe a previously damaged cargo ship off Trout Lagoon. One B-24 and two P-38s
Dec 21, 42	1 B-24s 1 B-24, 2 P-38s	flies an uneventful reconnaissance over Amchitka, Kiska, Semichis and Attu Islands. abort a photographic mission due to weather. A detachment of the 56th Fighter Squadron, 54th Fighter Group, which has been operating P-39s in since 20 Jun 42, returns to its base at Harding Field, Baton Rouge, Louisiana.
Dec 22, 42		all missions including a B-24 weather reconnaissance weather run are cancelled due to weather.
Dec 24, 42		the reconnaissance aircraft over Kiska finds shipping there unchanged. Weather cancel all other missions.
Dec 25, 42	1 B-24	takes photographs of Kiska and Attu Islands and unsuccessfully bombs five barges between Gertrude Cove and Kiska Harbor. The B-24 then sights eight float Zekes; three Zekes unsuccessfully attempt to attack the B-24. HQ 344th Fighter Squadron, 343d Fighter Group with P-40s transfers from Elmendorf Field, Anchorage to Ft Randall, Cold Bay.
Dec 26, 42	6 B-24s, 9 P-38s	attack Holtz Bay but do not find the eight float Zekes seen there yesterday; the P-38s strafe Attu installations at minimum altitude. while the B-24s bomb Sarana Bay. AA fire downs on P-38 and damages another. Later, six B-25s and four P-38s over Kiska and Gertrude Cove abort due to low ceiling. An OA-10 flies reconnaissance over northeast Kiska.
Dec 27, 42	2 B-24s	flying reconnaissance over Kiska and Amchitka Islands abort in bad weather.
Dec 28, 42		icing conditions and low visibility prevent all flying.
Dec 29, 42	1 B-24	flies a negative reconnaissance over Rat and Amchitka Islands. A scheduled attack on Kiska Island and the reconnaissance mission over Amchitka Island are cancelled by bad weather.
Dec 30, 42	B-25s, 14 P-38s	approach Kiska Harbor at minimum altitude for a bombing and strafing attack. Two ships and three submarines, newly arrived, are covered by Zekes. Four of the Zekes engage the approaching P-38s in a dogfight; two P-38s are shot down and four Zekes are listed as probables. The B-25s meanwhile attack the ships with unobserved results; one B-25 is shot down off Little Kiska. A Navy PBY picks up survivors, but fails to return to base. Kiska Harbor is then attacked once more by five B-24s, four B-25s and four B-26s. They claim hits on both vessels observing explosions on the smaller ship. A B-24 photographs Amchitka while a weather reconnaissance of Near Island is cancelled due to weather. Aerial reconnaissance observes for the first time Japanese use of a smoke screen at Kiska Harbor.
Dec 31, 42	6 B-24s covered by 9 P-38s,	attack Kiska Harbor, hitting two cargo vessels; one of six intercepting Japanese aircraft is probably shot down. A B-25 searching for the Navy PBY missing since yesterday also flies reconnaissance over Semisopochnoi, Segula, Little Sitkin, Gareloi and Amchitka.

JANUARY 1943		
Jan 2, 43	3 B-25s, 3 B-26s, 8 P-38s	heading for Kiska are forced back by bad wether. The weather aircraft cannot see into Kiska Harbor or Gertrude Cove.
Jan 4, 43	6 B-24s, 3 B-25s, 3 B-26s, 10 P-40s	en route to Kiska, are forced back near Segula by snow squalls and low ceiling. The weather aircraft flies unsuccessful reconnaissance over Kiska and photographic reconnaissance is flown over Amchitka. An OA-10 investigates flares reported near KagStrait.
Jan 5, 43	3 B-25s	sink a 6,500-ton cargo vessel previously sighted by a PBY off Holtz Bay, where a weather and armed reconnaissance B-24 with a direct bomb hits and sinks another freighter shortly afterwards. A B-24 flies photographic reconnaissance over Amchitka, concentrating on Constantine Harbor. A Kiska attack mission of six heavy bombers, six medium bombers and 12 fighters is cancelled due to weather.
Jan 6, 43		reconnaissance is flown over Amchitka, the Semichis, Agattu and Attu. Flotsam sighted outside of Holtz Bay confirms that the freighter bombed yesterday sank. Six B-24s, six B-25s and 12 P-38s take off to attack Kiska; the P-38s and one B-24 turn back due to weather. The B-25s find the target obscured and five Zekes waiting to intercept them, whereupon they turn back without attacking. The five remaining B-24s circle Kiska without contacting enemy aircraft; one of the B-24s, exploiting a break in the cloud cover, bombs the Kiska submarine base area, which the others four then bomb through the clouds.
Jan 7, 43	6 B-25s, 12 P-38s	dispatched to Kiska turn back due to cloud cover. Six B-24s circle over Kiska for two hours until four can bomb the submarine base. AA fire damages three of the attackers. Negative reconnaissance is flown over Amchitka, Kiska, Agattu and Attu. Photographs taken reveal use of smoke pots by the defenders and also suggest construction of a fighter strip along the ridge south of Salmon Lagoon.
Jan 8, 43	1 B-24	flies photographic reconnaissance over Amchitka. Another B-24 aborts a weather run over Kiska because of instrument trouble.
Jan 9, 43		50+ knot winds at Adak ground all missions.
Jan 12, 43	2 B-24s	cover a small U.S. Army and Navy force landing unopposed at Amchitka. Two B-25s and four P-38 escorts alson on the cover mission turn back due to weather. Weather reconnaissance is flown over Attu, Agatuu, Semichis and, lastly, over Kiska Harbor, where four ships are observed.
Jan 13, 43		three bombers and four fighters are in the air. The weather reconnaissance aircraft returns west of Kiska due to high winds. Constantine Harbor is patrolled until weather forces aircraft to return. An attack on Kiska is cancelled.
Jan 15, 43	8 P-38s, 3 B-25s, 1 v	patrol Constantine Harbor, fly reconnaissance over Kiska, where one ship is sighted, and fly negative armored reconnaissance runs over Attu, the Semichis and Buldir.
Jan 16, 43	6 B-24s	off to hit Kiska return due to weather. A B-24 flies negative reconnaissance over Buldir, the Semichis, Attu and Agattu.
Jan 18, 43	1 B-24	on reconnaissance reports two vessels in Kiska Harbor. Thereupon four B-24s, four B-26s, one B-25 and six P-38s fly out of Adak. Mechanical trouble forces two B-26s to return. The bomb run is negative. Meanwhile bad weather closes in on Kiska and Adak. Six aircraft are lost; one B-24 lands in a 20 mph downwind and crashes into two P-38s while three other B-24s are missing on the return flight.
Jan 19, 43		the crew of one of the three B-24s missing yesterday, which had crashlanded at Great Sitkin Island, is picked up by a Navy tender. Weather prevents missions and searches.

Jan 20, 43		the weather aircraft aborts shortly after takeoff. A B-24 and a Navy PBY search without results for the two B-24s missing since Monday.
Jan 21, 43		a weather reconnaissance aircraft flies. An attack run over Kiska and a patrol over Amchitka are call off due to weather. Air searches for the two B-24s missing since Monday continue.
Jan 22, 43		the weather reconnaissance aircraft finds Kiska closed in and flies a negative search for the two B-24s missing since Monday. For the first time the weather aircraft draws AA fire through the overcast at Kiska, suggesting that the Japanese have fire-control RADAR.
Jan 23, 43		weather reconnaissance over Kiska and a search mission for the two B-24s missing since Monday reveal nothing. Enemy aircraft appear over Amchitka twice but inflict no damage. Durint the period of 18 to 23 Jan, a period of continuous storms and sudden changes to extreme foul weather, non-combat losses are exceptionally high as 13 aircraft are lost; no losses result from enemy action.
Jan 24, 43	6 heavy bombers, 6 medium bombers	attempt an attack on Kiska Island. The medium bombers abort over Semiscopochnol. The heavy bombers circle Kiska until the weather closes in. Two Japanese aircraft bomb the Amchitka harbor area before U.S. interceptors, six P-38s, and one B-24 arrive. Two P-38s return due to mechanical troubles; the others fly a negative search over Kiska.
Jan 25, 43	P-38s	are dispatched too late to engage two floatplanes bombing Amchitka. Reconnaissance is flown over Kiska, Buldir, Semichis, Attu and Agattu. One B-24 and two P-38s fly two patrol missions over Amchitka. An attack mission to Kiska is turned back by weather. B-25s unsuccessfully search for missing aircraft.
Jan 26, 43		all missions are cancelled due to weather. Two Japanese aircraft strafe Constantine Harbor, Amchitka Island.
Jan 27, 43		a negative weather reconnaissance sortie is flown over Kiska Island. Four P-38s fly protective patrol over Amchitka Island. Upon their departure, three Japanese aircraft appear and unsuccessfully bomb shipping but cause three casualties.
Jan 28, 43		a weather aircraft encounters poor visibility over Kiska Island. Two patrols fly over Amchitka. The second runs into poor weather and aborts. An attack on Kiska is cancelled due to weather.
Jan 29, 43	1 B-24, 2 B-25s, 4 P-38s	weather reconnaissance over Kiska and a patrol over Rat Island, flown by one are recalled early due to weather. All other missions are cancelled.
Jan 30, 43	2 patrols, each composed of 1 B-25, 4 P-38s,	fly over Amchitka Island and are recalled early due to weather. One B-17, upon an alleged submarine sighting, drops four depth charges and one bomb whereupon a whale breaks water. Weather cancels other missions.
Jan 31, 43		a weather and photographic reconnaissance aircraft flies twice over Kiska Island. During the first mission near Attu Island, the aircraft is jumped by 6 fighters which it eludes. Four B-17s, 2 B-24s, 6 B-25s, 4 P-38s and 4 P-40s then attempt an attack on Kiska; P-40s turn back with mechanical troubles; the other aircraft find Kiska closed in and abort the mission. Two patrol missions, each by 1 B-25 and 4 P-38s, fly over Amchitka Island; two enemy floatplanes bomb Constantine Harbor on Amchitka without results.

FEBRUARY 1943		
Feb 4, 43		the weather reconnaissance aircraft over Kiska, jumped by 3 fighters, shoots 1 down. It is followed by 3 B-17s, 3 B-24s, 3 B-25s, 4 P-38s and 8 P-40s. The B-24s blast the North Head submarine base, and score near misses on a cargo ship. The B-25s hit the vicinity of the Main Camp area; 3 of 5 floatplanes which intercept are shot down. The P-40s strafe Kiska ground installations and sight a fighter strip southwest of Salmon Lagoon. Two Amchitka fighter patrols are flown; the first also strafes gun emplacements on Vega Point. Five enemy bombers strike Amchitka.
Feb 6, 43		a weather reconnaissance is flown over Kiska and Attu Islands.
Feb 7, 43	1 B-17	flies weather reconnaissance over Kiska.
Feb 8, 43		weather reconnaissance is flown over Kiska, Agattu, and Attu Islands. Five B-24s and 5 B-25s bomb the Kiska Camp area and hit a water tank and buildings. Two B-25s bomb North Head through the overcast. Four P-38s and a B-25 patrol over Amchitka Island.
Feb 10, 43		the weather reconnaissance aircraft aborts the mission due to radio failure. Four B-24s, 2 B-17s, 8 B-25s and 8 P-38s attack Kiska Island; hits are observed on the landing strip and near the hangar and buildings. Two patrol missions, each by 4 P-38s and 1 B-25, are flown over the American-held Amchitka Island.
Feb 12, 43		weather reconnaissance and attack missions against Kiska Island and a fighter patrol over Amchitka Island are broken off due to weather.
Feb 13, 43		Night mission to Kiska.
Feb 13, 43		weather reconnaissance is flown over Kiska, Attu, Agattu, the Semichis, and Buldir Island. Five heavy bombers, 6 medium bombers and 10 P-38s bomb and strafe Kiska targets including the Camp area, landing strip, and shipping. Of 5 float-type fighters which attack, P-38s shoot down 3. Four P-38s and 1 B-25 fly a patrol mission over Amchitka Island and Little Kiska; a B-25 shoots down a floatplane.
Feb 16, 43		a weather reconnaissance aircraft flies over Kiska, Attu, Agattu, the Semichis and Buldir Islands. Five B-24s, 6 B-25s, 6 P-38s and 1 B-25 photographic aircraft take off for Kiska but do not attack due to weather. One P-40, accompanying several P-38s on the Amchitka Island fighter patrol, lands on Amchitka strip; an afternoon patrol of 7 P-40s and 1 transport also land at the strip which is now safe for limited operations.
Feb 20, 43		reconnaissance over Kiska Island finds weather favorable and 5 B-24s, 7 B-25s and 8 P-38s take off to attack. The fighters hit the Main Camp area; the bombers bomb North Head, the Main Camp area and the runway. The 11th Fighter Squadron, 343rd Fighter Group with P-40s transfers from Fort Glenn on Umnak Island to Adak Island.
Feb 21, 43		weather prevents all flying from Adak Island. Fighters based on Amchitka Island patrol Kiska.
Feb 22, 43	16 bombers, 8 fighters	abort a mission against Kiska Island due to weather.
Feb 23, 43	17 bombers, 8 fighters	bomb the Main Camp area on Kiska Island while an F-5A flies a photographic mission.
Feb 24, 43	4 P-40s, to Kiska Isl,	The P-40s make no contacts, All other missions are called off.

Feb 25, 43	4 P-40s 6 B-24s, 5 B-25s	sweep Kiska Island bomb the Main Camp, North Head areas of Kiska
Feb 27, 43	6 B-24s, 6 B-25s, 4 P-38s	bomb and strafe the Main Camp area on Kiska Island. On the return trip, a weather aircraft flies reconnaissance and makes a bombing and strafing run on Attu Island and nearby barges with negative results.
Feb 28, 43		reconnaissance is flown over Kiska, Buldir, Semichis, Attu, and Agattu, with negative results. Six B-24s and 6 B-25s bomb the Main Camp area on Kiska Island.
MARCH 1943		
Mar 1, 43	P-40s	jettison their bombs when bad weather prevents a sweep over Kiska Island.
Mar 3, 43	4 P-40s	sweep Kiska Island dropping demolition and fragmentation bombs. Admiral Thomas C. Kincaid, Commanding Officer of the Defense Command, tables the Kiska Island invasion plan and substitutes an Attu Island invasion plan.
Mar 4, 43	4 P-40s	fly over Kiska Island but drop no bombs due to weather.
Mar 5, 43	1 B-24	flies negative weather reconnaissance over Kiska, Semichis, Attu, Agattu and Buldir Islands.
Mar 6, 43	1 B-24	flies uneventful reconnaissance over Kiska. Attu, Agattu, Buldir, and the Semichis Islands.
Mar 7, 43		The first flight of B-25s is brought up to Amchitka Island. This enables stepped-up raids on Kiska. Nine B-24s and 4 P-38s bomb and strafe the Chichagof Harbor area and Holtz Bay installations on Kiska. A fighter sweep, 6 B-24s, and 10 B-25s hit North Head and the Main Camp area on Kiska. HQ 343d Fighter Group transfers from Elmendorf Field, to Adak, Aleutian Islands.
Mar 9, 43	6 B-24s, 10 B-25s, 12 P-38s, 4 P-40s	attack Kiska Island. The P-40s and 6 of the B-25s return to base due to bad weather; the other bombers bomb the Main Camp area, North Head and the submarine base.
Mar 10, 43		a reconnaissance airplane is attacked by 5 enemy aircraft. The Kiska attack mission is flown by 10 B-25s, 6 B-24s, 12 P-38s (4 of them flying top cover), and 1 F-5A. Eight of the P-38s strafe ground installations; the B-25s bomb a RADAR site and pound North Head, silencing AA fire; the B-24s hit the Main Camp area. Four Amchitka-based P-40s bomb the submarine base.
Mar 12, 43	12 P-40s	based in Amchitka, scout Kiska Island. The 54th Fighter Squadron, 343d Fighter Group with P-38's transfers from Adak Island to Amchitka Island.
Mar 13, 43	1 B-24	on reconnaissance returns early because of adverse weather. Twelve P-40s strike the Kiska Island beach, camp and runway. Hits are observed on these targets and among 14 parked airplanes. Eight P-38s with 8 P-40s flying top cover again take off for Kiska. Only 3 of the P-38s reach the target and strafe aircraft on the beach. Another sights a submarine SW of Rat Island.
Mar 14, 43		HQ 28th Composite Group transfers from Elmendorf Field, to Adak Island.
Mar 15, 43	6 B-25s, with 4 P-38s	flying top cover, bomb North Head on Kiska Island, hitting the Main Camp and gun emplacements. Six B-24s with 4 P-38s for top cover then bomb Main Camp. Revetments and the hangar area are strafed by the P-38s one of which is lost to AA. Next, 5 B-24s and 16 P-38s bomb and strafe the Main Camp area and North Head. Four P-40s then unsuccessfully search for 3 enemy fighters which had earlier attacked a weather plane. Main Camp is hit two more times, by 3 B-25s and by 8 P-38s.

Mar 16, 43	16 B-25s, 13 B-24s, 8 P-40s, 32 P-38s	(cover/escort) sorties are flown to Kiska Island in one weather reconnaissance and 2 attack missions from Adak Island, and in 3 more missions from Amchitka Island. Targets hit are North Head, the Main Camp area, RADAR sites, and the submarine base. On the last Amchitka mission 1 enemy floatplane is shot down and 2 more are probables. Four heavy bombers are hit and 1 B-25 does not return.
Mar 17, 43	8 P-38s	patrol Kiska Island without making contacts.
Mar 18, 43	6 B-24s	taking off from Adak Island, bomb the Main Camp area, 6 B-25's bomb North Head, and 12 P-38's fly top cover and strafing attacks. Twelve Amchitka-based P-38's then blast the Kiska runway and Main Camp area, starting fires. At Amchitka, the 54th Fighter Squadron is reinforced by several F-5A's.
Mar 19, 43		All missions are cancelled due to weather except local fighter patrols. HQ XI Bomber Command is activated on Adak Island.
Mar 21, 43	13 B-24s, 9 B-25s, 50 P-38s, 16 P-40s, 2 F-5As	fly 8 bombing and strafing missions to Kiska Island. Some of the missions abort due to weather. The others hit the Main Camp area, while 2 P-40's make no contact when trying to intercept reported enemy aircraft.
Mar 22, 43	6 B-25s, 12 B-24s, 22 P-38s	attempt 3 missions to Kiska Island. Only 8 of the P-40's get through but fly uneventful patrol. The 404th Bombardment Squadron (Heavy), 28th Composite Group with B-24's transfers from Elmendorf Field, Anchorage, to Adak Island.
Mar 23, 43		weather grounds all missions except the weather reconnaissance flight and an unsuccessful intercept attempt of an enemy reconnaissance airplane by 2 P-40's.
Mar 24, 43	10 B-24s, 3 B-25s, 12 P-38s	fly 5 attack missions to Kiska Island. North Head runway and the Main Camp area are bombed.
Mar 25, 43		a weather airplane take photos of Holtz Bay and Chichagof Harbor. Fourteen B-24's, 3 B-25's, 12 P-38's, and 2 P-40's fly 4 missions to Kiska Island. The targets include the beach, runway, hangar area, North Head, the Main Camp and submarine base.
Mar 26, 43		a reconnaissance aircraft covers Attu, Agattu, Semichi and Alaid where a cabin is strafed. Upon report of Navy contacts with enemy surface force (Battle of Komandorskies), 13 B-24's, 11 B-25's and 8 P-38's are ordered to hit the enemy, reported 150 mi (240 km) west of Cape Wrangell (Attu). Because of mechanical failures and weather, airplanes cannot take off until 6 hours after the surface force is sighted. Thus, Japanese ships have fled when aircraft arrive at the interception point. Some of the returning B-25's bomb a RADAR site, hangar, and Main Camp area on Kiska.
Mar 27, 43	7 B-24s	from Adak and 6 Amchitka-based B-25's attempt unsuccessfully to attack naval targets. From Amchitka, 1 B-25 and 6 P-38's (of which 1 turns back with mechanical trouble) provide cover for U.S. surface force until 1300 hours local. Six P-38's and 1 B-l7 depart Adak for a second cover mission, but do not find the surface force. A detachment of the 11th Fighter Squadron, 343d Fighter Group based on Adak with P-40's begins operating from Amchitka Island.
Mar 29, 43	7	heavy and medium bombers, with fighter escort, bomb and strafe the Kiska runway and nearby Main Camp area. Heavy AA fire damages 6 bombers and 2 P-38's.
Mar 30, 43	6 B-24s, 6 B-25s, 4 P-38s	From Adak, are over Kiska at 1200 hours local but cannot bomb due to weather. Four B-24's, 4 P-38's, and 2 F-5A's then bomb the runway at Attu. Next, 5 B-24's and 4 P-38's bomb the Main Camp; intense AA fire downs 1 B-24. From Amchitka, 4 P-38's bomb Little Kiska. Next, 4 P-38's bomb Kiska through the overcast, followed by 6 B-25's bombing and strafing RADAR, radio installations, Main Camp, runway, and personnel.

Mar 31, 43		a reconnaissance airplane finds impenetrable weather and returns to base. Two P-38's make an uneventful sweep.
APRIL 1943		
Apr 1, 43		A joint directive by Commander-in-Chief, Pacific and Commanding General Western Defense Command orders preparations for Operation LANDGRAB, the invasion of Attu Island. 16 B-24, 5 B-25, and 12 P-38 sorties are flown against Kiska Island from Adak and Amchitka Islands. Targets include a ship in Gertrude Cove, the North Head area, the Main Camp and the beach. AA fire damages 2 bombers. Reconnaissance covers Kiska, Attu, Buldir, and Semichis Islands. During Apr, the 73d Bombardment Squadron (Medium), 28th Composite Group with B-25's transfers from Elmendorf Field, Anchorage, to Umnak Island.
Apr 2, 43	18 B-24s	bomb Kiska targets including North Head. Six B-25's, 16 P-38's, and 24 P-40's in 6 missions from Amchitka to Kiska, bomb the Main Camp and submarine base areas. Four B-24's bomb the runway at Attu. All aircraft, including 2 B-25's colliding in the air, return safely.
Apr 5, 43	16 B-24s, 6 B-25s	bomb the Attu runway and Kiska's Main Camp and runway. 4 P-38's fly top cover. Later, 3 B-25's, 16 P-40s, and 16 P-38's bomb Kiska again.
Apr 7, 43		the reconnaissance airplane aborts shortly after takeoff due to weather.
Apr 8, 43		The weather airplane scouts Kiska and islands W of it with negative results.
Apr 9, 43	1 B-24	flies reconnaissance over Kiska, Attu and the Semichis. P-40's fly reconnaissance over Kiska.
Apr 10, 43		the weather reconnaissance B-24 observes 4 unidentified aircraft near Segula. Three B-25's, 17 P-40's, and 6 P-38's fly 5 attack missions to Kiska, and negative searches for the unidentified airplanes at Segula. The last mission finds Kiska closed in and returns with bombs.
Apr 11, 43	4 B-25s, 22 P-40s, 8 P-38s	hit Kiska 5 times. The last mission aborts due to weather. The other 4 missions bomb various targets starting large fires. Some fighters strafe Little Kiska.
Apr 12, 43	3 B-25s, 24 P-40s, 13 P-38s	fly 7 missions to Kiska. The fighters also strafe Little Kiska. AA fire damages 1 P-40 and 1 P-38. The P-38 force-lands safely.
Apr 13, 43	15 B-24s, 15 B-25s, 28 P-38s, 20 P-40s	fly 11 attacks to Kiska; 43 tons of bombs are dropped on the Main Camp, North Head, and runway. Fighters attack the Main Camp causing large fires, and also strafe aircraft on the beach. Heavy AA fire damages 2 P-38's, 1 of which later crashes into the sea, and 1 B-25.
Apr 14, 43	30 P-40s, 17 P-38s, 9 B-24s, 6 B-25s	fly 10 missions to Kiska, bombing and strafing the runway, North Head area, installations, parked seaplanes, and facilities on Little Kiska.
Apr 15, 43		reconnaissance over Kiska, Attu, Semichis, and Agattu spots no new enemy activities. Two bomber missions from Adak and 11 fighter missions from Amchitka, composed of 23 B-24's, 20 B-25's, 25 P-38's, and 44 P-40's, hit Kiska; 1 F-5A takes photos; 85 tons of bombs are dropped. Fires result on North Head and Little Kiska. One B-24 is shot down in flames and 4 bombers receive battle damage.
Apr 16, 43	13 B-24s, 12 B-24s, 32 P-40s, 29 P-38s, 2 F-5As	Kiska is bombed and strafed 13 times, hitting installations and gun positions on North Head.

Apr 17, 43	4 B-25s, 31 P-38s, 14 P-40s	hit Kiska 9 times, bombing installations and strafing gun emplacements and 3 parked airplanes.
Apr 18, 43	22 P-38s	(some flown by Royal Canadian Air Force pilots) and 37 P-40's hit Kiska 9 times. The submarine base and gun emplacements on North Head are bombed and gun emplacements near the submarine base are silenced.
Apr 19, 43	14 B-24s, 12 B-25s, 32 P-40s, 23 P-38s	9 missions are flown to Kiska. The first mission is weathered out of the primary target, Attu, and directed to Kiska. Bombing and strafing concentrates on 4 grounded ships and the submarine base area where fires are started. One ship, believed to serve as a power station, is set afire.
Apr 20, 43	15 B-24s, 16 B-24s, 10 P-38s, 32 P-40s	10 bombing and strafing missions hit shipping in the harbor at Kiska and gun positions in North Head. Other targets include buildings in the Main Camp area and the runway.
Apr 21, 43		Commander North Pacific Forces (NORPACFOR) places all Army and Navy Air Forces [Task Group (TG) 16.1] under Brigadier General William O. Butler, Commanding General Eleventh Air Force. The Army Air Striking Unit is designated Task Unit 16.1.1 (TU 16.1.1) and the Naval Air Search Unit (Patrol Wing Four) is designated TU l6.l.2. Two P-38's take off for Kiska but abort the mission.
Apr 24, 43	2 P-38s	bomb Kiska and strafe personnel near Mutton Cove. Weather cancels other missions.
Apr 25, 43	15 B-24s, 12 B-25s, 32 P-40s, 23 P-38s, 1 F-5A	fly 12 missions to Kiska and Attu. Targets include Holtz Bay, North Head, South Head, the beach areas, the runway, shipping, and the submarine base.
Apr 27, 43	1 B-25	unsuccessfully investigates a reported submarine 4 mi (6.4 km) W of Bay Island. Four P-38's bomb the Main Camp, then scout Buldir.
Apr 30, 43	4 B-25s, 17 P-38s, 7 P-40s	fly 4 missions to Kiska. Only the P-38's get through and blast Gertrude Cove, Main Camp, the submarine base and a ship.
MAY 1943		
May 1, 43	16 B-24s, 15 B-25s, 35 P-38s, 38 P-40s, 4 F-5As.	16 attack missions on Kiska and Attu are flown by Kiska targets include the Main Camp, hangar, submarine base (where a fire is started), runway, RADAR, ship, North Head, AA guns and Gertrude Cove.
May 2, 43	6 B-25s, 8 P-40s, 8 B-24s	fly bombing, photographic and attack missions to Kiska. Targets include North Head, South Head and buildings and AA gun batteries on Gertrude Cove.
May 3, 43	7 B-24s, 11 B-25s, 20 P-38s, 27 P-40s, 2 F-5As	participate in a weather reconnaissance mission to Attu and in 9 attack missions to Kiska. Kiska targets include the Main Camp, North Head, RADAR, and runway.
May 4, 43	5 B-24s, 6 B-25s, 8 P-38s, 2 P-40s, 2 F-5As	take off on 2 Kiska and Attu missions. Missions to Kiska abort due to weather.
May 5, 43	14 B-24s, 17 B-25s, 16 B-24s, 32 P-40s, 5 F-5As	[partly with Royal Canadian Air Force (RCAF) pilots] to Kiska. Targets include Main Camp, a RADAR site, North and South Head, runway, and Gertrude Cove installations.
May 6, 43	B-24s, B-25s, B-24s	drop over 52 tons (47.2 tonnes).
May 6, 43	P-40s	blast Kiska and Little Kiska.
May 7, 43	6 P-40s	an attempted mission to Kiska by is aborted due to weather.
May 11, 43	B-24s, B-25s	Because of poor visibility the next 2 missions hit Kiska, where the runway and Main Camp are attacked.

May 12, 43	P-39	reconnaissance sortie over Kiska and Rat Island encounters poor weather and turns back.
May 13, 43	6 B-24s	An air-ground support mission of 6 B-24's divert from Attu to Kiska. 2 of the bombers don't get the message, proceed to Attu.
May 13, 43	8 P-40	dispatched to Kiska in 2 waves cannot see the target and instead bomb Little Kiska installations.
May 14, 43	2 P-40s	bomb Kiska through the overcast.
May 16, 43	8 B-24s, 12 B-25s	bombers are directed to bomb Kiska.
May 16, 43	2 P-40s	fly reconnaissance mission over Kiska.
May 18, 43	6 B-24s	bomb the GertrudeCove area on Kiska Island leaving large fires.
May 18, 43	4 P-40s	reconnoiter Kiska and strafe barges.
May 18, 43	1 B-25	flies photoreconnaissance over Kiska.
May 19, 43	4 P-40s	fly 2 reconnaissance missions to Kiska Island.
May 20, 43	20 P-40s	bomb the Main Camp and submarine area at Kiska, and strafe barges in the harbor.
May 21, 43	9 B-24s, 12 B-25s, 24 B-24s	3 missions, totalling 6 P-38's and 1 B-24, are able to bomb.
May 23, 43	1 B-25	bombs the Main Camp area.
May 25, 43	18 P-40s	fly 1 reconnaissance and 2 attack missions to Kiska and Little Kiska.
May 26, 43	9 B-25s, 16 P-40s	3 attack missions. Targets include gun emplacements on North Head and the E end of the runway.
May 26, 43	3 F-5As	Kiska is covered by photo sorties.
May 27, 43	6 P-40s	fly an attack and reconnaissance mission to Kiska, concentrating on Little Kiska and on the Main Camp area.
May 30, 43	8 P-4Os	fly 4 reconnaissance missions to Kiska.
May 30, 43	7 B-24s, 12 B-25s	3 air-ground support missions to Attu bomb Kiska installations.
May 30, 43	3 F-5As	fly photoreconnaissance.
May 30, 43	8 P-40s	attack and strafe tents and troops and blast the runway at Kiska.
May 31, 43	6 B-24s, 10 B-25s, 37 P-40s, 8 P-38s	fly attack missions to Kiska. Their targets include Gertrude Cove, AA installations, trenches, the North Head runway, and a vessel.
JUNE 1943		
Jun 1, 43	8 B-25s, 18 P-38s, 20 P-40s,	fly 7 attack missions to Kiska Island. Targets include parked aircraft and installations, runway, gun positions, RADAR, and tents on South Head, North Head, Gertrude Cove and Main Camp.
Jun 1, 43	2 P-40s, 1 B-24, 1 F-5A	fly weather reconnaissance and photo runs.
Jun 3, 43	2 B-24s, 2 P-40s	Weathered out from Kiska Island in the Aleutian Islands are 3 weather missions.

Jun 3, 43	2 B-24s, 6 fighters.	Weathered out from Kiska Island in the Aleutian Islands are 2 attack missions.
Jun 4, 43	14 P-40s, P-38s	bomb North Head, Main Camp and Little Kiska Island.
Jun 4, 43	6 B-24s following a Navy PV	make a radar-bombing run over North Head.
Jun 5, 43	7 B-24s, 6 B-25s, 6 P-40s.	fly weather reconnaissance and radar-bombing missions over Kiska Island, being handicapped by poor weather and mechanical trouble.
Jun 10, 43	7 B-24s, 8 B-25s, 12 P-40s, 2 F-5As	fly weather reconnaissance, attack, and photo missions to Kiska Island and Little Kiska Island. Targets include gun batteries, runway, North Head and Main Camp.
Jun 11, 43	7 B-24s, 8 B-25s, 10 P-40s, 4 P-38s, 2 F-5As	fly weather, photo, reconnaissance, and attack missions to Kiska Island. Main targets are Gertrude Cove and Main Camp, South Head, North Head, runway, and offshore barges. Fighter bombing and strafing, and subsequent bomber runs over emplacements, are effectively coordinated.
Jun 25, 43	25 B-25s, 12 B-24s, 2 P-38s	6 attack missions hit Kiska Island. Targets include gun revetments at Gertrude Cove and AA batteries.
Jun 25, 43	2 B-24s	2 photo and weather reconnaissance missions.
Jun 26, 43	16 bombers, 28 fighters	fly 7 attack, weather reconnaissance and photo missions to Kiska and Little Kiska Islands, starting fires. Intense machinegun fire damages 4 P-38's.
Jun 27, 43	14 B-25s	bomb Gertrude Cove, camp areas, and North Head, while 7 others abort due to weather.
Jun 27, 43	5 B-24s, 7 B-25s	bomb the Main Camp area and vicinity N of Salmon Lagoon.
Jun 27, 43	8 B-24s	make a radar run but return with their bombs due to weather.
Jun 28, 43	6 B-25s	bomb Gertrude Cove, Little Kiska Island and the southern Main Camp area through holes in the overcast. The mission is partly ineffective because of faulty bomb-release mechanisms.
JULY 1943		
Jul 1, 43		During the month of Jul: The 21st Bombardment Squadron (Heavy), 30th Bombardment Group (Heavy) based on Umnak Island ceases operating from Amchitka Island, and The detachment of the 344th Fighter Squadron, 343rd Fighter Group that has been operating from Amchitka Island with P-40's since May 43 returns to it's base on Shemya Island, and The 632nd and 633rd Bombardment Squadrons (Dive), 407th Bombardment Group (Dive) based at Drew Field, Tampa, Florida begin operating from Amchitka Island with A-36's.
Jul 2, 43	3 bombers, 4 B-24s	fly 4 reconnaissance missions over Kiska and Segula Islands. 17 B-24's and 16 B-25's then attack Kiska Island in 5 missions, 2 of them radar-guided. Fires are started at several of the targets, which include Gertrude Cove, the harbor, and buildings in the Main Camp area. Intense AA fire damages 3 aircraft. 2 B-25's on a submarine attack hit the Kiska seaplane ramp after making no contact with the target. 2 P-40's cover troops which make an unopposed landing on Rat Island.
Jul 3, 43	6 B-24s	bomb Main Camp on Kiska Island and take photos of Segula Island.

Jul 6, 43	2 B-24s, 2 P-40s	on 3 weather reconnaissance missions report Kiska Island overcast, and take photos of Segula Island. 6 B-24's bomb Main Camp on Kiska. 8 B-25's abort a radar run over Kiska Island when 1 has engine trouble and the others fail to locate a PV Pathfinder. They sight a submarine which crash-dives immediately.
Jul 8, 43	9 B-25s	fly a special mission to Attu Island in the Aleutian Islands.
Jul 10, 43		The Eleventh Air Force attacks the Japanese Home Islands for the first time as 8 B-25's raid Paramushiro Island in the Kurile Islands, scoring hits on Shimushu Island, Paramushiro Island, Kurile Strait, and northern Paramushiro Island, in dead reckoning runs when solid cloud cover prevents a maximum altitude attack. No AA fire is encountered and no enemy aircraft are sighted. The B-25's stage through Attu Island on returning to Adak Island. 6 B-24's, originally slated to accompany the B-25's to Paramushiro Island and 5 other B-25's are on short notice dispatched to attack a convoy off Attu Island. They claim 2 medium freighters sunk in deck-level strikes.
Jul 11, 43	5 B-24s	take off to attack Paramushiro Island in the Kurile Islands and fly a shipping search but are turned back by bad weather. A shipping search by 5 B-25's finds nothing. 6 B-25's and 6 B-24's in 3 missions (one by radar) attack North Head and Main Camp on Kiska Island sighting new excavations near Sredni Point, strafe a tent near Haycock Rock, and also fly over Segula Island.
Jul 15, 43	1 B-24, 2 P-39s	fly reconnaissance over Kiska and Segula Islands. 9 B-24's and 14 B-25's bomb Kiska Island targets including AA batteries at North Head, Jeff Cove and Gertrude Cove. Fires are started. 1 bomber turns back with 3 engines and jettisons bombs, another crashes on return. AA fire damages a B-25.
Jul 18, 43	2 B-24s, 6 B-25s	bomb Gertrude Cove and Main Camp on Kiska Island. 6 B-24's bomb shipping targets between Paramushiru Island and Shimushu Island in the Kurile Islands and completed runway at Murakami Bay on Paramushiro Island, which is also photographed. They observe fires among buildingss and E of this runway. Some of the observed aircraft take to the air and vainly pursue the attackers.
Jul 19, 43		The 633rd, 634th and 635th Bombardment Squadrons (Dive), 407th Bombardment Group (Dive), based at Drew Field, Tampa, Florida begin operating from Amchitka Island in the Aleutian Islands with A-24's. The squadron will fly combat missions 4-13 Aug.
Jul 21, 43	9 B-24s	bomb Kiska Island targets, including the runway, North Head, and Main Camp area where fires are observed. Poor weather cancels other scheduled missions.
Jul 22, 43	26 B-25s, 17 B-24s, 13 P-40s, 20 P-38s	hit North Head, Main Camp, and the submarine base at Kiska Island, as well as coastal defenses and AA guns at both Kiska and Little Kiska Islands, starting numerous fires. Intense and heavy AA fire downs one B-25 (crew saved) and damages 18 aircraft of which another B-25 crashes at base. 1 B-25 photographs W Kiska Island shores. 1 B-24 flies radar reconnaissance over Kiska Island. The 77th Bombardment Squadron (Medium), 28th Composite Group, based on Adak Island begins operating from Attu Island with B-25's.
Jul 24, 43	62 P-40s fly	9 missions to Kiska Island [2 of them with Royal Canadian Air Force (RCAF) pilots] bombing the runway and scoring many hits. An AA battery takes a direct hit and explodes. AA guns are strafed on North Head and Little Kiska Island. Intense AA fire downs 1 P-40.

Jul 25, 43	40 P-40s fly	7 attack missions [2 by Royal Canadian Air Force (RCAF) pilots] against Kiska Island, bombing and strafing North Head AA batteries, the runway, Main Camp, and Little Kiska Island. HQ 343rd Fighter Group transfers from Adak Island to Amchitka Island. The 406th Bombardment Squadron (Medium), 41st Bombardment Group (Medium), based at Elmendorf Field, Anchorage, begins operating from Adak Island with B-25's.
Jul 26, 43	3 bombers, 5 fighters	fly 5 armored reconnaissance missions to Kiska Island. 32 B-24's, 38 P-40s, and 24 P-38's fly 13 attack raids, bombing and scoring hits on numerous Kiska Island and Little Kiska Island targets, including North Head, Main Camp, the runway, Gertrude Cove, AA batteries, and on a suspected submarine in Kiska Island harbor. A submarine is sighted near Rat Island. AA fire claims 1 P-40 (pilot rescued), and damages 3 others. 1 B-25 and 15 v's fly 2 air cover missions to Kiska Island for the U.S. Navy. Over 1O4 tons of bombs are dropped on Kiska Island this day, highest one-day bomb load so far dropped by the Eleventh Air Force.
Jul 27, 43	12 bombers, 20 fighters	take off on 5 attack missions to Kiska Island. Several of the fighters jettison bombs. The other aircraft hit Main Camp, North Head and Little Kiska Island. The 21st Bombardment Squadron (Heavy), 30th Bombardment Group (Heavy) transfers from Umnak Island to Shemya, Island. The air echelon is operating from Amchitka Island.
Jul 29, 43	1 B-17	scouts Kiska Island and bombs the Main Camp area.
AUGUST 1943		
Aug 1, 43	7 B-24s	bomb the Main Camp area on Kiska Island through the overcast.
Aug 2, 43	8 B-24s, 9 B-25s, 8 B-24s	hit Kiska Island in 2 waves, bombing and strafing North Head, and coast guns on Little Kiska Island, scoring several hits.
Aug 3, 43	B-24s, B-25s, P-38s, P-40s	6 attack missions, 2 of which abort, are flown to Kiska Island by numerous targets hit and strafed include installations at North Head and South Head.
Aug 4, 43	48 B-25s, 22 B-24s, 16 A-24s, 8 P-40s, 40 P-38s	fly 17 bombing and strafing attacks to Kiska Island; targets hit include buildings near the radio station, and the gun battery area on North Head. Little Kiska Island and Segula Island are also strafed.
Aug 4, 43		between 0855 and 1846 hours, 153 tons of bombs are dropped on Kiska Island, a new one-day record.
Aug 4, 43	3 B-24s, 2 P-40s, 2 F-5As	6 armored weather, photo and reconnaissance missions, bomb through clouds, take photos and observe fires in Main Camp and on Little Kiska Island.
Aug 9, 43	1 v	flies photoreconnaissance over various Kiska Island sites.
Aug 10, 43	P-38s, P-40s, A-24s, B-24s, B-25s	bomb and strafe various targets on Kiska Island; direct hits are scored on revetments W of the Wheat Grove and on gun emplacements, as well as on buildings on Little Kiska Island.
Aug 11, 43	B-24s, B-25s, A-24s, P-38s	pound Kiska Island targets in 11 attack missions.
Aug 11, 43	3 B-24s, 26 P-40s, 4 F-5As, 1 B-24	10 reconnaissance, strafing and photo missions to Kiska are flown.
Aug 12, 43	P-40s, P-38s, B-24s, B-25s, A-24s	From Amchitka Island fly 70 bombing sorties over the island; Targets include the runway, harbor and shipping installations, army barracks, and the Rose Hill area.
Aug 12, 43	B-24s, B-25s	fly 26 bombing, strafing, and radar and photoreconnaissance sorties over Kiska Island targets from Adak Island.
Aug 12, 43	B-24s, P-40s, F-5As	flying 6 reconnaissance and photo sorties.

Aug 13, 43	1 B-24	flies a special reconnaissance mission.
Aug 13, 43	7 B-25s	from Adak Island bomb targets at Main Camp and North Head on Kiska and Little Kiska Islands.
Aug 14, 43	2 B-24s	fly a special radar ferret and reconnaissance mission.
Aug 14, 43	1 B-25, 8 B-24s, 10 P-38s	then fly 2 attack missions to Kiska Island, bombing with unobserved results.
Aug 15, 43	1 P-38	bombs and strafes Sniper Hill.
Aug 15, 43		U.S. and Canadian troops invade Kiska Island and discover that the Japanese, under the cover of fog, evacuated their garrison.
Aug 16, 43	v	reconnaissance flight reconnoiters North Head, Main Camp, and northern Kiska Island, and observes friendly forces' unopposed advance into Main Camp.
Aug 17, 43	1 B-24	flies over Kiska Island watching friendly forces land on the shore of E Kiska Lake.

Appendix 4: Organization of the Eleventh Air Force during the Aleutian Campaign 1942-1943

There is no single source that has hitherto compiled the Organization and Order of Battle of the Eleventh Air Force during the Aleutian Campaign 1942-1943. We have in hand an organizational chart for the aerial operations during the final months of the campaign (Fig. 418) but this does provide any locational data for the bases the squadrons operated from.

As an interim measure, all data accessible have been compiled. The tabulated data set out below have been culled from a range of sources[1] and are as comprehensive as could be achieved within the available time frame. It should be noted that this has been culled from secondary sources only, and this compilation may be prone to some inaccuracies.

It needs to be stressed that detachments of various bomb and fighter squadrons appear to have operated for short periods of time from different bases adding to the complexity.

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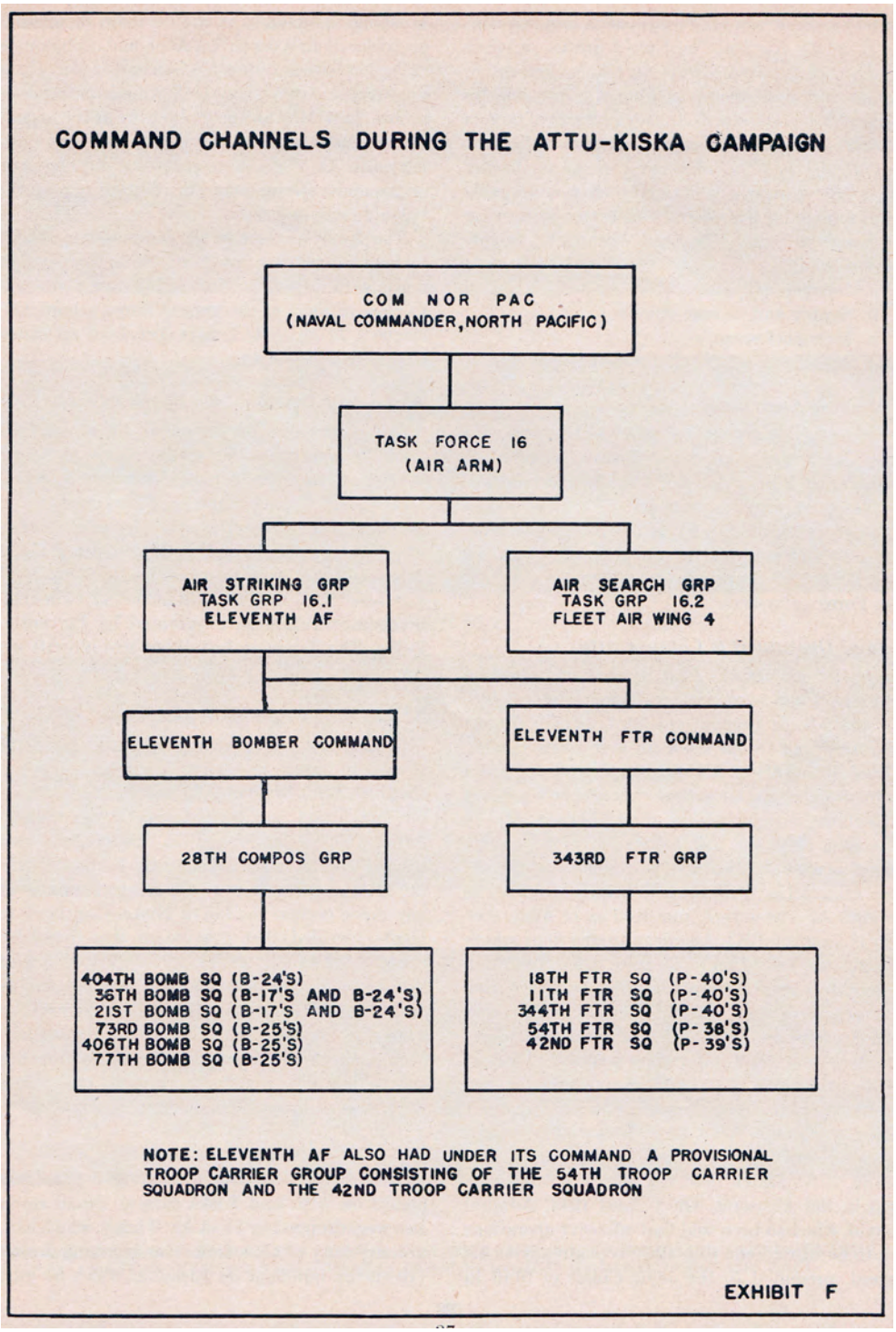

Fig. 418. Organzational chart for the aerial operations during the final months of the campaign.[2]

Eleventh Air Force	Base/Period	Aircraft operated
28th Composite Group		

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36th Bombardment Squadron (Heavy)	Based at: Fort Greely, AK 9 Feb 42–28 May 43 Operating from: Nome June-early July 42 Umnak: Kodiak: Feb 42 Adak: Amchitka: 4 May-14 Sep 43 Adak: 1 Jun-4 Aug 43	B-17 Flying Fortress: 1942-43 LB-30 Liberator: 1942 B-24 Liberator: 1942-45
73rd Bombardment Squadron (Medium)	Based at: Elmendorf Field, AK 14 Mar 41– Operating from: Umnak: Apr 43 Adak: Amchitka: Jun –30 Aug 43	B-18: 1939-1942 B-25 Mitchell: 1942-43 B-26 Marauder: 1942–43
77th Bombardment Squadron (Medium)	Based at: Elmendorf Field, AK 29 Dec 41–19 Oct 45 Operating from: Umnak: 30 May 42 Adak:12 Dec 42 Attu: 22 Jul 43 Amchitka: 11 Sep 43–11 Feb 44	B-25 Mitchell: 1942-43 B-26 Marauder: 1941–42
404th Bombardment Squadron(Heavy)	Based at: Elmendorf Field, AK Operating from: Umnak: 18 Jul–30 Aug 42 Adak: 13 Sep 42– ? Adak: 22 Mar–4 Jun 43 Amchitka: 4 Jun 43–25 Feb 44 Shemya: 26 Feb 44–5 Jan 47	B-24 Liberator: 1941-47
406th Bombardment Squadron	Based at: Paine Field, WA: 21 Jan 42 – 14 Nov 42 Elmendorf, AK 15 Nov 42–18 Oct 43 Operating from: Yakutat Naknek Kodiak Adak: 25 Jul 43–13 Aug 43	A-29 Hudson: 1941-42 B-24 Liberator: 1943-45 B-25 Mitchell: 1943
30th Bombardment Group		

21st Bombardment Squadron (Heavy)[3]	Based at: March Field, Riverside, CA Operating from: Nome, AK Umnak, AK: 24 Aug 42 – 13 Sep 42 Adak: 21 Sep 42 - 15 Nov 42 Umnak: 15 Nov 42-15 Dec 42 Adak: 16 Dec 1942-13 Aug 43 Amchitka: 18 Feb-Jul 43 Shemya: 27 Jul-c.19 Sep 43	A-29 Hudson: 1941-42 LB-30 Liberator: 1942 B-24 Liberator: 1942-43
407th Bombardment Group		
632nd Bombardment Squadron (Dive)	Based at: Drew Field, FL Operating from: Amchitka: 1 Jul – ? 1943	A-36
633th Bombardment Squadron (Dive)	Based at: Drew Field, FL Operating from: Amchitka: 1 Jul – ? 1943	A-24 A-36
634th Bombardment Squadron (Dive)	Based at: Drew Field, FL Operating from: Amchitka: 19 Jul – ? 1943	A-24
635th Bombardment Squadron (Dive)	Based at: Drew Field, FL Operating from: Amchitka: 19 Jul – ? 1943	A-24
343rd Fighter Group		
11th Fighter Squadron[4]	Operating from: Adak ca 31 Aug 42–20 Feb 43 Ft Glenn 20 Feb 43– 11 Mar 43 Amchitka: 12 Mar – 17 Oct 43 Shemya: 18 Oct–20 Nov 43	P-36: 1942 P-40: 1942 P-43: 1942 P-38: 1942-43 F-5A: 1943
18th Fighter Squadron	Operating from: Ft Greely: 18 Apr –23 Nov 42 Adak 6 Dec 42–14 Feb 43 Amchitka: 15 Feb – 28 Mar 44	P-30: 1943 P-38: 1943–44 P-40: 1942-44
54th Fighter Squadron	Operating from: Ft Randall: 6 Jun–31 Jun 42 Ft. Glenn: 6 Jun–19 Sep 42 Adak ca 31 Aug 42–11 Mar 43 Amchitka: 12 Mar – 17 Oct 43 Shemya: 18 Oct–20 Nov 43	P-36: 1942 P-40: 1942 P-43: 1942 P-38: 1942-43 F-5: 1943
344th Fighter Squadron	Operating from: Ft Randall: 12 Nov –25 Dec 42 Ft. Glenn: 8 Mar–23 May 43 Amchitka: 24 Mar – Jul 43 Attu: 12 Jun–Dec 43 Shemya: 25 Jun 43–15 Aug 46	P–38: 1944-46 P–40: 1942–45

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54th Fighter Group		
42nd Fighter Squadron[5]	Based at: Harding Field, Baton Rouge, FL Operating from: Kodiak: 12 Jun–8 Sep 42 Adak 10 Sep - 12 Dec 1942	P–39: 1941–43
Royal Canadian Air Force		
N° 14 Squadron (F)	Operating from: Umnak: 3 Mar–15 Sep 43 Adak: 31 Mar 42–16 Apr 43 Amchitka: 17 Apr –15 May 43 Adak: 3–8 Jul 43 Amchitka: 9 Jul–29 Aug 43	P-40K1
Navy PBY		
VP-41	Based at: Sand point Naval Air Station, WA Operating from: Sitka, Kodiak, Dutch Harbor	PBY: Consolidated PBY -5
VP-42	Based at: Sand point Nava Air Station, WA Operating from: Sitka, Kodiak, Dutch Harbor	
Patrol Wing 4	Operating from: May 1942 for duration of war	

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Appendix 5:
Order of Battle for Operation Cottage

There is no single source that has hitherto compiled the Order of Battle for Operation Cottage. While the order of battle for the U.S. Navy has been compiled,[1] the same cannot be said for the U.S. Army. The data set out below have been culled from a range of sources.[2]

U.S. Navy

Attack Force Command Group

One battleship:
Pennsylvania, (F, Rear Admiral Rockwell)[3], Capt. William A. Corn.

One destroyer:
Ammen, Lt. Comdr. Henry Williams, Jr.

Support Group (TG 16.22)

Two battleships:
Idaho, Capt. Horace D. Clarke.
Tennessee, (F, Rear Admiral Kingman), Capt. Robert S. Haggart.

One heavy cruiser:
Portland, Capt. Arthur D. Burhans.

One light cruiser:
Santa Fe, Capt. Russell S. Berkey.

Six destroyers:
Abner Read, Comdr. Thomas Burrowes.
Bache, Comdr. Frank M. Adamson.
Beale, Comdr. Joe B. Cochran.
Brownson, Comdr. Joseph B. Maher.
Hutchins, Lt. Comdr. Edwin W. Herron.
Phelps, (F, Capt. Ruthven E. Libby), Lt. Comdr. John E. Edwards.

Transport Group

Five attack transports:
Zeilin (APA-3), Comdr. Thomas B. Fitzpatrick.
Doyen (APA-1), Comdr. Paul F. Dugan.
Harris (APA-2), Comdr. Albert M. Van Eaton.
Heywood (APA-1), Capt. Herbert B. Knowles.
J. Franklin Bell (APA-16), Capt. John B. McGovern.

One attack cargo vessel:
Thuban Comdr. James C. Campbell.

Two transports:
St. Mihiel (AP-32), Comdr. Edward B. Rogers.

U.S. Grant (AP-29), Capt. Charles L. Hutton.[4]

Two fast transports:
Kane, Lt. Comdr. Freeman D. Miller.
1 LST.

Eight merchant ships used as transports:
Richard March Hoe
George Flavel
Tjisadane
President Fillmore
Henry Failing
Perida (w Canadian forces)
Chirikof (w Canadian forces)
David W. Branch (w Canadian forces)

Three merchant ships used as cargo vessels:
Sacajawea (w Canadian supplies)
George W. Julian
Josiah D. Whitney

Nine screening destroyers:
Farragut, Lt. Comdr. Edward F. Ferguson.
Aylwin, Lt. Comdr. Ray E. Malpass.
Monaghan, Lt. Comdr. Peter H. Horn.
Dewey, Lt. Comdr. Joseph p. Canty.
Hull, Lt. Comdr. Andrew L. Young, Jr.
Dale, Lt. Comdr. Charles W. Aldrich.
Bush, Lt. Comdr. Thurmond A. Smith.
Daly, Comdr. Richard G. Visser.
Mullany, Comdr. Baron J. Mullaney.

Control unit--two light minelayers:
Pruitt, Lt. Comdr. Richard C. Williams.
Sicard, Lt. Comdr. William J. Richter.

Salvage unit--two tugs:
Cree, Lieut. Percy Bond.
Ute, Lieut. William F. Lewis.

LANDING SHIP GROUP

Three destroyers:
Bancroft, Lt. Comdr. Ray M. Pitts.
Caldwell, Lt. Comdr. Horatio A. Lincoln.
Coghlan, Lt. Comdr. Benjamin B. Cheatham.

13 LSTs.

9 LCI(L)s.

19 LCT(5)s. of the LCT Flotilla 3

among them[5]
LCT 71
LCT 81

LCT 82
LCT 319
LCT 320
LCT 366
LCT 353
LCT 354
LCT 355
LCT 356
LCT 357
LCT 358

1 harbor tug: *Woban*

MINESWEEPER GROUP

Three destroyer minesweepers:
Chandler, Lt. Comdr. Harry L. Thompson.
Long, Lt. Comdr. Paul F. Heerbrandt.
Perry, Lt. Comdr. Bernhart A. Feitsch.

Ground Forces

Amphibious Training Force 9 / Kiska Task Force[6]

Major General Charles H. Corlett

COMBINED FORCES

1st Special Service Force

1st Regiment

2nd Regiment (held in reserve on Amchitka)

3rd Regiment

U.S. FORCES[7]

53rd Infantry Regiment

10th Light Division (Alpine)

87th Mountain Infantry Regiment

1st Batallion

2nd Batallion

3rd Batallion

7th Infantry Division

17th Infantry Regiment

184th Infantry Regiment

Colonel Curtis D. O'Sullivan

862nd Antiaircraft Artillery

Alaska Scouts

601st Field Artillery Battalion (Pack)

602nd Field Artillery Battalion (Pack)

CANADIAN FORCES[8]

6th Infantry Division

Brigadier Harry Wickwire Foster

Major W. S. Murdoch (Brigade Major)

13th Infantry Brigade

14th Canadian Combat Team

Forward Combat Team

1st Battalion Canadian Fusiliers[9]
49th Battery, 24th Field Regiment, R.C.A.[10]
section, 24th Field Company, R.C.E.
Platoon, 1st Company, St. John Fusiliers M.G.
detachment of 13th Infantry Brigade Signals Section RC Sigs
detachment of 24th Field Regiment Signals Section RC Sigs
detachment of 25th Field Ambulance R.C.A.M.C.

Beach Combat Team

rifle company, Régiment de Hull[11]
troop, 46th Light AA Battery, R.C.A.
LAD (Type B) R.O.C.
Section, 99th Detachment R.C.A.S.C.
clearing platoon, 6th U.S. Field Hospital
detachment of 13th Infantry Brigade Signals Section RC Sigs
detachment of 24th Field Regiment Signals Section RC Sigs
detachment of 25th Field Ambulance R.C.A.M.C.
detachment of 30th Ordnance Store Company R.C.O.C.
detachment of 19th Section Canadian Pro Corps
detachment of 24th Field Company, R.C.E.
detachment of 14th Dental Detail C.D.C.

15th Canadian Combat Team

Forward Combat Team

1st Battalion Winnipeg Grenadiers
65th Battery, 24th Field Regiment, R.C.A.[12]
section, 24th Field Company, R.C.E.
Platoon, 1st Company, St. John Fusiliers M.G.
detachment of 13th Infantry Brigade Signals Section RC Sigs
detachment of 24th Field Regiment Signals Section RC Sigs
detachment of 25th Field Ambulance R.C.A.M.C.

Beach Combat Team

rifle company, Régiment de Hull[13]
troop, 46th Light AA Battery, R.C.A.
LAD (Type B) R.O.C.
Section, 99th Detachment R.C.A.S.C.
clearing platoon, 6th U.S. Field Hospital
detachment of 13th Infantry Brigade Signals Section RC Sigs
detachment of 24th Field Regiment Signals Section RC Sigs

detachment of 25th Field Ambulance R.C.A.M.C.
detachment of 30th Ordnance Store Company R.C.O.C.
detachment of 19th Section Canadian Pro Corps
detachment of 24th Field Company, R.C.E.
detachment of 14th Dental Detail C.D.C.

16th Canadian Combat Team
Forward Combat Team
1st Batallion Rocky Mountain Rangers
85th Battery, 24th Field Regiment, R.C.A.[14]
section, 24th Field Company, R.C.E.
Platoon, 1st Company, St. John Fusiliers M.G.
detachment of 13th Infantry Brigade Signals Section RC Sigs
detachment of 24th Field Regiment Signals Section RC Sigs
detachment of 25th Field Ambulance R.C.A.M.C.
Beach Combat Team
rifle company, Régiment de Hull[15]
troop, 46th Light AA Battery, R.C.A.
LAD (Type B) R.O.C.
Section, 99th Detachment R.C.A.S.C.
clearing platoon, 6th U.S. Field Hospital
detachment of 13th Infantry Brigade Signals Section RC Sigs
detachment of 24th Field Regiment Signals Section RC Sigs
detachment of 25th Field Ambulance R.C.A.M.C.
detachment of 30th Ordnance Store Company R.C.O.C.
detachment of 19th Section Canadian Pro Corps
detachment of 24th Field Company, R.C.E.
detachment of 14th Dental Detail C.D.C.

MEXICAN FORCES

Observer/Liaison Group aboard *USS Grant* (AP-29).[16]

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[2]. Composed of 5th Kure SNLF and 5th Yokosuka SNLF.

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3. As a rule of thumb, to convert Tokyo times and dates to Kiska local time (ie USA Hawai'i/Aleutian Time zone), 19 hours need to be deducted.

4. Cloe, John Haile (1991)*The Aleutian Warriors. A history of the 11th Air Force & Fleet Air Wing 4.* Missoula: Pictorial Histories. p. 245.—Note that based on current available data, the presence of the vessel *Osada Maru* can not be verified for the Aleutian waters.

*). Culled from: Carter, Kit C. & Mueller, Robert (1991) *U.S. Army Air Forces in World War II Combat Chronology 1941 - 1945.* Washington, DC: Center for Air Force History.

1. The data in Appendix 4 have been compiled from: Carter, Kit C. & Mueller, Robert (1991) *U.S. Army Air Forces in World War II Combat Chronology 1941 - 1945.* Washington, D.C.: Center for Air Force History.—Cloe, *Aleutian Warriors op. cit.*—Additional data by: 11th Air Force World War II History <www.oocities.com/tempelhof.geo/index.html>.—History of War. 30th Bombardment Group <www.historyofwar.org/air/units/USAAF/30th_Bombardment_Group.html>.

2. United States Strategic Bombing Survey (1947) United States Strategic Bombing Survey, *The Seventh and Eleventh Air Forces in the war against Japan.* Washington: Naval Analysis Section, United States Strategic Bombing Survey. P. 37.

3. Apparently detachments temporarily based at various locations.

4. Also known, apparently in the early period, as the 11th Pursuit Squadron.—Apparently detachments temporarily based at various locations.

5. Also known, apparently in the early period, as the 42nd Pursuit Squadron.

1. Jameson, Colin G. and Smith, L.C. (1993) United States Navy Combat Narrative. The Aleutians Campaign. June 1942--August 1943. Washington, D.C.: Naval Historical Center, Department Of The Navy.

2. Sources: Jameson, Colin G. and Smith, L.C. (1993) United States Navy Combat Narrative. The Aleutians Campaign. June 1942--August 1943. Washington, D.C.: Naval Historical Center, Department Of The Navy.—Stacey, C.P. (1955) Official History of the Canadian Army In the Second World War. Volume: Six Years of War The Army in Canada, Britain and the Pacific. Ottawa: Queen's Printer. 498ff.—Nicholson, G.W.L (1944) Canadian Participation In The Kiska Operation. 16 Oct 1944. AHQ Report Nº 6 http://www.cmp-cpm.forces.gc.ca/dhh-dhp/his/rep-rap/ahqrd-drqga-eng.asp?txtType=3&RfId=194.

3. For the Kiska landings Rear Admiral Rockwell flew his flag aboard *U.S. Grant* (AP-29) which served as a communications vessel. Naval History Division (1981) *Dictionary of American Naval Fighting Ships*. Entry USS U.S. Grant II (AP-29). Washington, D.C.: Office of the Chief of Naval Operations, Naval History Division. vol. 7, p. 385.

4. *U.S.S. Grant* served as communications vessel and also carried the journalists and the Mexican observer group.

5. as identified on photographs.

6. Total force: 34,426 men.

7. This listing is bound to be incomplete given the scattered nature of sources.

8. 4831 men with 165 AWOL at embarkation in Canada.

9. City of London Regiment MG.

10. shared with the 7th Canadian Infantry Division.

11. A French-speaking unit.

12. shared with the 7th Canadian Infantry Division.

13. A French-speaking unit.

14. shared with the 7th Canadian Infantry Division.

15. A French-speaking unit.

16. Naval History Division (1981) *Dictionary of American Naval Fighting Ships*. Entry USS U.S. Grant II (AP-29). Washington, D.C.: Office of the Chief of Naval Operations, Naval History Division. vol. 7, pp. 385-386.

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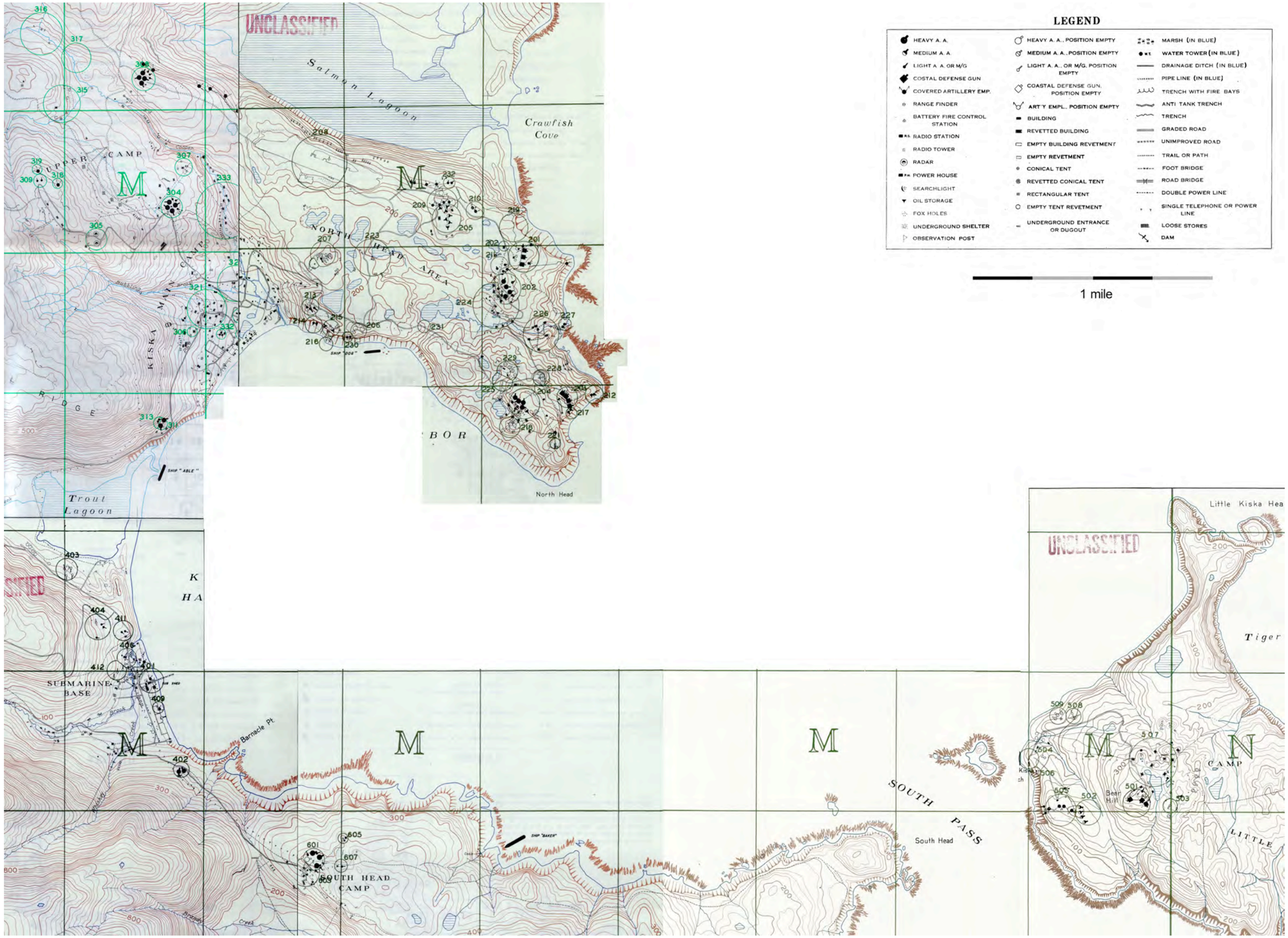

Fig. 70 Pastiche of target maps drawn up in preparation for the U.S./Canadian invasion of Kiska, covering the Kiska Harbor area. The concentration of sites is evident.

Fig. 395. Composite panorama showing the Trout Lagoon Area seen from Mercy Point looking southwest

Fig. 396 Composite panorama showing the southern edge of Trout Lagoon Area as seen from the road from Mercy Point to Majority Canyon

Fig. 397. Composite panorama showing Majority Canyon looking southwest. Trout Lagoon can be seen at the left

Fig. 398. Composite panorama showing the Main Camp area as seen from the southwest (the Japanese Shinto Shrine area)

Fig. 399. Composite panorama showing the Main Camp area as seen from the northwest (the track up to North Head).

Fig. 400. Composite panorama showing the Canadian Camp Area.

Fig. 401. Composite panorama showing the Canadian Camp Area.

Fig. 402. Composite panorama showing the Canadian Camp Area.

Fig. 403. Composite panorama showing the Canadian Camp Area.

Fig. 404. Composite panorama showing the area of the Japanese submarine base and US Navy Town (looking south and west). For the continuation of the panorama see Fig. 405 (note the telephone-cum-power pole in the foreground)

Fig. 405. Composite panorama showing the area of the Japanese submarine base and US Navy Town (looking west and north). For the continuation of the panorama to the north-east, see Fig. 404 (note the telephone-cum-power pole at th eright)

Fig. 406. Composite panorama showing the area of the Japanese submarine base and US Navy Town (looking lagoon-ward / east). The midget submarine is in the center foreground.

Fig. 407 Composite panorama showing the central area of North Head to the west of the 120mm dual purpose gun battery.

Fig. 408. Composite panorama at Gertrude Cove looking southeast from the US Barracks area (Series of base photos by Janet Clemens)

Fig. 409. Composite panorama of the US hospital, Main valley

Fig. 410. Composite panorama of a U.S. revetment for a small Quonset hut. Main Camp area. Seen from northwest.

Fig. 411. Composite panorama of a U.S. revetment for a small Quonset hut. Main Camp area. Seen from northeast.

National Park Service
Heritage Preservation Services
American Battlefield Protection Program
1201 Eye Street NW, 2255
Washington, DC 20005