

# ELMENDORF AIR FORCE BASE VOLUME I

## HISTORIC CONTEXT OF WORLD WAR II BUILDINGS AND STRUCTURES

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## Acknowledgements

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In 1995 Elmendorf Air Force Base (AFB) in Anchorage, Alaska, contracted with the National Park Service (NPS) Alaska Support Office to assess the eligibility of its World War II-era facilities for the National Register of Historic Places. Under that contract, a team of NPS historians and partners prepared, researched, and compiled this study of World War II history and resources. They had the assistance of archivists, property managers, and peers who contributed both their time and knowledge to the two volumes of building history that comprise this study.

First, thanks to the members of the team. Intern Brian Coffey spent the summer of 1996 devising the best strategy to inventory the initial list of almost 200 buildings. In three months, Brian took on the task of designing the survey methodology and completing the inventory for most of the buildings. He examined files located in the base Real Estate Management Office, the map vault, and the photographs and reports available at the Office of History, Eleventh Air Force. Brian amassed a broad range of primary research materials from which to write summaries of the Flightline and Alaska Air Depot historic districts and create the inventory presented in Volume II.

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Linda Cook

## Preface

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The World War II history and historic properties at Elmendorf AFB, northeast of Anchorage, illustrate an engaging period in the local, state, and national history of Alaska. Established in June 1940, the base expanded during the war years to include hundreds of permanent and temporary mobilization-style buildings, hangars, and tactical runways. Housing could accommodate thousands of transient and permanent troops. Originally named Elmendorf Field as part of Fort Richardson, Elmendorf AFB served as the principal army air facility and base for the Eleventh Air Force. Beginning in 1942, the Eleventh Air Force gained notoriety for the role it played in the defense of the Aleutian Islands in the Aleutian Campaign. The military redesignated the Eleventh Air Force, the Alaskan Air Command (AAC) on December 18, 1945. Headquarters of the AAC relocated from Davis Field, Alaska, on October 1, 1946. In the 1950s, the Army relocated its operations to the eastern extremity of the military reserve; the original base came under Air Force jurisdiction and was officially named Elmendorf Air Force Base in March 1948.

The World War II National Register Eligibly Study of Elmendorf AFB is part of a series of reports dedicated to documenting the base's cultural resources. For this study, Elmendorf AFB contracted (contract/purchase order F65501-95-C0067) with the NPS in 1995 to assess, inventory, and perform significance determinations in accordance with the National Register of Historic Places criteria. The NPS applied those criteria to buildings and structures constructed between 1940 and 1945, as well as five potentially eligible Cold War facilities, Buildings 5-800, 41-755, 41-759, 43-250, and the ALCOP Train. The National Register criteria specified in the scope of work included a determination of eligibility for buildings and structures that have one or more of the following:

- a. A relationship to the conduct of World War II operations and events during the Cold War;
- b. A relationship to a person of historic significance in World War II or the Cold War;
- c. Representation of a unique or significant architectural style; and
- d. A likelihood of yielding information important to history or prehistory.

The contract also requested descriptions for the World War II Flightline Historic District and the General's Quad Historic District. As a result of the study, another significant district, the Alaska Air Depot, was identified. Descriptions of these districts are found in Chapters 2, 3, and 4.

The study is presented in two volumes. The first is a World War II historical context for the base; the second is a building-by-building inventory of all those structures we found to be constructed between 1940 and 1945. The context addresses base construction by property type and/or general location, of which there are seven: Flightline, Alaska Air Depot, Residential, Fuel and Water Pump, Ammunition Storage and Defense, Post Engineer Yard, and Recreation and the Base Chapel. These groupings



include the three eligible historic districts. It is important to note that it is not the intent of this study to develop a historic context of Elmendorf AFB's role in the events of the Cold War. The scope of work did not request a Cold War survey or context.

The preparation of this World War II eligibility study responds to the Air Force's responsibility under Section 110 of the National Historic Preservation Act of 1966, as amended, to assess its cultural resources. The act requires that federal agencies "assume responsibility for the preservation of historic properties which are owned or controlled by such agency" and that "each Federal agency shall establish in consultation with the Secretary [of the Interior], a preservation program for the identification, evaluation, nomination to the National Register of Historic Places, and protection of historic properties."

The preparation of this study coincides with an Air Force initiative to better incorporate historic preservation into its management policies and procedures. At the September 27, 1995, meeting of Advisory Council on Historic Preservation in Washington, D.C., the Air Force signed a proclamation to preserve and manage historic properties in the Department of the Air Force. In the agreement, the Air Force proclaimed its intent to "work cooperatively to preserve the functionality, integrity and historic character of Air Force buildings, districts, and other properties in a cost effective manner that supports the military mission, protects the health of the occupants and employees, and preserves historic properties for the benefit of future generations."

There are currently eight World War II National Historic Landmarks in Alaska. Landmarks possess "exceptional value or quality in illustrating and interpreting the heritage of the United States." The historic mission of Elmendorf AFB is tied to the same national investment of funds and personnel directed at the defense the Alaska territory against foreign attack during World War II. Preservation, protection, interpretation, and appreciation of base resources should take into account Elmendorf AFB's role in the broader historic context of Alaska during the war and its relationship to the state's other World War II National Register properties.

## **National Register Criteria and Recommendations**

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The National Register of Historic Places is the “national list of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture.” The Secretary of the Interior maintains the list of approximately 65,000 properties under authority of Section 101 of the National Historic Preservation Act of 1966, as amended. A determination of eligibility to the National Register is a decision by the Department of the Interior that a district, site, building, structure, or object meets the National Register criteria, although it does not mean the property is formally listed on the National Register. The NPS team applied the National Register criteria for eligibility to the National Register of Historic Places to more than 200 World War II era buildings and structures at Elmendorf AFB. These criteria can be found in National Register Bulletin Number 15: *How to Apply the National Register Criteria for Evaluation*. There are four categories of eligibility for districts, buildings, structures, sites and objects, generally more than 50 years old that may be of national, state, or local significance. To be eligible for the National Register, the resource must meet one of the following criteria:

- A. Association with events that have made significant contribution to the broad patterns of history; or
- B. Association with lives of persons significant in our past; or
- C. Distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. Have yielded, or may be likely to yield, information important in prehistory or history.

Resources that are eligible for the National Register under one of these criteria and retain integrity of location, design, setting, materials, workmanship, feeling, and association are protected under the guidelines of the National Historic Preservation Act of 1966, as amended. Most importantly, Sections 106 and 110 of the act require federal agencies to consider the effect of federally funded, permitted, or assisted projects to properties eligible for the National Register of Historic Places. After consultation with the State Historic Preservation Officer, projects found to threaten or harm these properties in any way require consultation with the Advisory Council on Historic Preservation, an independent federal agency. Consultations must occur in a process designed to promote consideration of ways to avoid or mitigate harm.

### **Recommendations**

Of the 200 buildings, sites, and structures surveyed, seventy-two are eligible to the National Register because of their association with the events of World War II. (See pages eight through ten for a listing of these properties) These buildings or structures are more than 50 years old, with the exception of four of the structures associated with the

Cold War, and have association with either National Register criterion A or C, or both.

At the time this study began and during its preparation, Elmendorf AFB made some eligibility determinations in consultation with the Alaska State Historic Preservation Officer. These determinations concerned Buildings 42-350, 73-402, 5-504, 52-650, 52-651, 5-800, 32-129, 5-510, 5-540, and 5-550. Elmendorf AFB staff also made determinations for structures with no Elmendorf AFB building number. These structures are listed by Alaska Heritage Resource Survey number and include: ANC-655, ANC-777, ANC-788, and ANC-790. The teams have incorporated these determinations into this study.

Some of the buildings listed above are eligible as individual structures, such as the Base Chapel (Building 8-760), the Band Building (Building 4-810), and the Davis Building (Building 5-800). Most are eligible as contributing elements of the three historic districts - the Flightline Historic District, the Generals' Quad Historic District, and the Alaska Air Depot Historic District. The definition of a National Register "district" is a geographically definable area, urban or rural, possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development. A district may also comprise individual elements separated geographically but linked by association or history. When Elmendorf AFB formally nominates these districts to the National Register, the boundaries should be reviewed.

## **Historic Districts Eligible for the National Register**

### **1. The Flightline Historic District**

This district includes thirteen buildings associated with the original mission, construction, and development of the base as a World War II airfield. The district has eligibility under criterion A for its role in the events of World War II. The Old Headquarters Building (Building 11-530) and the Photo Lab (Building 11-620) are eligible under criterion C for the Neo-Georgian style of architecture. The authors could not identify the names of the architects who designed these buildings. Hangars One through Four (Buildings 11-670, 11-570, 11-470, and 11-140) also have architectural significance for representing period building technology and engineering.

### **2. The Alaska Air Depot Historic District**

Called the "most important unit located at Elmendorf Field,"<sup>1</sup> the Alaska Air Depot, built 1943-1944, housed maintenance activities for Eleventh Air Force planes. The district is eligible under criterion A for its association with the events of World War II. Twenty-six hangars, Butler buildings, and other types of mobilization or knockdown-type buildings comprise the district. Buildings 22-047, 32-233, and 32-235 could be

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<sup>1</sup> Henry E. Fleischer, *History Elmendorf Air Base, 1940-1944* (unpublished manuscript, 1944), 36.

included within district boundaries, but are not contributing because of loss of integrity. Building 32-375 was not included in the list of World War II buildings provided by the base to the NPS because it was built in 1948. However it is eligible and is included as part of the district because of its architecture, location, and historic function and role. The runway between the flanking rows of hangars is also eligible as a contributing “landscape” feature of the district.

### **3. The Generals’ Quad Historic District (Residential)**

The Generals’ Quad historic district includes buildings located on the square block known as the Generals’ Quadrangle in the heart of the residential area. The four historic field-grade officers’ houses (Buildings 5-500, 5-502, 5-504, 5-530), their associated detached garages (Buildings 5-501, 5-503, 5-505, 5-515, 5-535), and Building 5-560, known as the “Alaska Chateau,” are eligible under criterion A for their association with the base’s original World War II mission. The General’s Quarters (Building 5-504), may also be eligible under the context of the Cold War as the site of meetings between President Richard M. Nixon and Japanese Emperor Hirohito in 1971. The 1996 demolition of several houses originally on the “Quad” detracts from the district, but the overall integrity is still intact.

## Elmendorf Air Force Base World War II Facilities Eligible for the National Register of Historic Places

### Easy Reference Chart

<b>Table 1: Flightline District</b>				
<b>COMMON NAME</b>	<b>Bldg #</b>	<b>AHRS #</b>	<b>Year Built</b>	<b>Eligible</b>
Jet Engine Shop	11-110	ANC-913	1942	No
Jet Engine Shop	11-130	ANC-914	1943	No
Hangar 4; Cope Thunder	11-140	ANC-915	1941	Yes
3 <sup>rd</sup> OSS; Operations	11-200	ANC-916	1943	Yes
Cold Storage	11-230	ANC-917	1942	Yes
Life Support	11-300	ANC-918	1943	Yes
Dry Cleaning	11-310	ANC-919	1945	Yes
Medical Supply	11-320	ANC-920	1943	Yes
Heating Facility	11-330	ANC-921	1942	Yes
Laundry Facility	11-420	ANC-922	1941	Yes
Hangar 3	11-470	ANC-923	1942	Yes
Old Headquarters	11-530	ANC-924	1942	Yes
Hangar 2, Cope Thunder	11-570	ANC-925	1942	Yes
Photo Lab	11-620	ANC-926	1943	Yes
Hangar 1	11-670	ANC-927	1942	Yes

<b>Table 2: Alaska Air Depot District</b>				
<b>COMMON NAME</b>	<b>Bldg #</b>	<b>AHRS #</b>	<b>Year Built</b>	<b>Eligible</b>
Indoor Firing Range	22-007	ANC-928	1944	Yes
Hazardous Storage	22-009	ANC-929	1944	Yes
Maintenance Shop	22-021	ANC-930	1944	Yes
Engineering Maint. Shop	22-023	ANC-931	1943	Yes
3 <sup>rd</sup> CES Prime Beef	22-039	ANC-932	1944	Yes
Housing Office	22-041	ANC-933	1944	Yes
Parachute Shop	22-047	ANC-934	1944	No
Vehicle OPS	31-360	ANC-935	1944	Yes
Hangar	31-375	ANC-1087	1948	Yes
Corrosion Control	32-050	ANC-936	1944	Yes
Hangar 5	32-060	ANC-937	1944	Yes
Mobile Refueling	32-069	ANC-938	1944	Yes
Outdoor Rec. Bldg.	32-079	ANC-939	1944	Yes
AGE Flight	32-127	ANC-940	1944	Yes
Battery Shop	32-129	ANC-819	1944	Yes
Welding Shop	32-139	ANC-941	1944	Yes
Heavy Equipment	32-141	ANC-942	1944	Yes
Cryogenics	32-167	ANC-943	1944	Yes
Machine Shop Office	32-177	ANC-944	1943	Yes



Hangar 6	32-179	ANC-945	1944	Yes
Plant Maintenance	32-181	ANC-946	1944	Yes
Hobby Shop	32-184	ANC-947	1945	Yes
Carpenter Shop	32-185	ANC-948	1944	Yes
Snow Barn	32-187	ANC-949	1944	Yes
Start-up Power Plant	32-189	ANC-950	1945	Yes
Armament Shop	32-207	ANC-951	1944	Yes
Hangar 7-Aero Club	32-209	ANC-952	1944	Yes
Air Passenger Terminal	32-233	ANC-953	1944	No
Passenger Terminal	32-235	ANC-954	1944	No
Air Depot Taxi and Runways			1943-45	Yes

**Table 3: Residential District Buildings**

COMMON NAME	Bldg #	AHRS #	Year Built	Eligible
Boise Housing	2-700 to 2-799	ANC-958- to 970	1942	No
Seattle Housing	3-700 to 3-750	ANC-971 to - 977	1942	No
Seattle Housing	4-700 to 4-790	ANC-978 to - 988	1942	No
F/O Housing	5-202 to 6-570	ANC-989 to - 1039	1942	No
F/O Housing	5-500	ANC-995	1942	Yes
Auto Garage	5-501, 503, 505, 515, 535	ANC-996, 998, 999, 1000, 1002	1942	Yes
FO/CO Housing	5-502	ANC-997	1942	Yes
"Quarters One"	5-504	ANC-43	1942	Yes
F/O Housing	5-530	ANC-1001	1942	Yes
"Alaska Chateau"	5-560	ANC-42	1942	Yes
Family Housing	5-700 to 5-770	ANC-1003 to -1010	1942	No
Family Housing	6-700 to 6-750	ANC-1040 to -1047	1942	No

**Table 4: Fuel and Water Pump Buildings**

COMMON NAME	Bldg #	AHRS #	Year Built	Eligible
Farm #1	11-031	ANC-1048	1945	No
Pumping Station	22-013	ANC-1049	1945	No
Water Pump House	23-990	ANC-1050	1943	No
Fuel Pump Station	31-600	ANC-1051	1944	No
Warehouse	42-350	ANC-1052	1942	No
Pump House	42-450	ANC-1053	1945	No

<b>Table 5: Ammunition Storage and Defense</b>				
<b>COMMON NAME</b>	<b>Bldg #</b>	<b>AHRS #</b>	<b>Year Built</b>	<b>Eligible</b>
<b>Ammo Storage Igloo (17 total)</b>	34-800 to 826 43-010 to 024	ANC-1054 to -1070	1942	Yes
<b>Pill box (incomplete)</b>	N/A	ANC-1071	1940-45	
<b>Anti-Aircraft Defense</b>	N/A	ANC-1072	1940-45	No
<b>Observation Post</b>	N/A	ANC-1073	1040-45	No

<b>Table 6: Post Engineer Yard Buildings</b>				
<b>COMMON NAME</b>	<b>Bldg #</b>	<b>AHRS #</b>	<b>Year Built</b>	<b>Eligible</b>
<b>Carpenter Shop</b>	34-600	ANC-1074	1942	No
<b>Sheet Metal Shop</b>	34-602	ANC-1075	1942	No
<b>Warehouse</b>	34-618	ANC-1076	1945	No
<b>Warehouse</b>	34-620	ANC-1077	1941	No
<b>Warehouse</b>	34-624	ANC-1078	1945	No
<b>Warehouse</b>	34-628	ANC-1079	1945	No
<b>Maintenance Shop</b>	34-636	ANC-1080	1941	No
<b>Maintenance Shop</b>	34-638	ANC-1081	1943	No

<b>Table 7: Recreational Buildings and Chapel</b>				
<b>COMMON NAME</b>	<b>Bldg #</b>	<b>AHRS #</b>	<b>Year Built</b>	<b>Eligible</b>
<b>Family Support Club</b>	1-890	ANC-790	1942	No
<b>Wildlife Museum</b>	4-803	ANC-1082	1945	Yes
<b>Band Building</b>	4-810	ANC-1083	1942	Yes
<b>Log Cabin; MiniMall</b>	4-830	ANC-1084	1945	Yes
<b>Sports Store</b>	4-850	ANC-1085	1943	No
<b>Base Chapel</b>	8-760	ANC-788	1942	Yes
<b>Grn Lk Chalet -Emil Savola Cabin</b>	52-560	ANC-425	1947	No
<b>Six-Mile Log Cabin-Iver Nottviet</b>	52-650	ANC-908	1941	No
<b>Green Lake Cabin-composite cabin</b>	52-651	ANC-426	1945	Yes*
<b>First-Aid Hut</b>	52-796	ANC-1018	1941	No

<b>Table 8: Cold War - Era Buildings</b>				
<b>COMMON NAME</b>	<b>Bldg #</b>	<b>AHRS #</b>	<b>Year Built</b>	<b>Eligible</b>
<b>Col. Everett Davis Building</b>	5-800	ANC-818	1948	Yes
<b>Power Building</b>	41-755	ANC-955	1952	No
<b>Elephant Cage</b>	41-759	ANC-956	1962	Yes
<b>Hangar 16</b>	43-250	ANC-957	1952	Yes
<b>ALCOP TRAIN</b>	N/A	ANC-777	1982 ca.	Yes

\* Determined eligible for the National Register under the Cold War historic context.

## Methodology

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This study is a composite of archival research, site investigation, and photographic analysis. The first step required an understanding of which buildings were constructed during the period of significance, 1940 to 1945. The team worked from a master list provided by the base entitled *World War II Era Structures Potentially Eligible for Inclusion on the National Register of Historic Places*. This list included the building number and the date of construction for each structure. With building numbers in hand, the next step was an extensive examination of the Real Estate Management Office files on base. These files contain individual folders for each building, which in most cases include as-built descriptions, lists of alterations, and sometimes sketches and elevations. These property folders constitute the main source of research information on Elmendorf AFB's historic buildings. Copies of these forms, organized by building type or era, are included in the project research materials transmitted to project directors Allen Richmond and Tom Liebscher.

Once a property record was established for each building, the team grouped the buildings by function or location. This allowed us to classify the more than 200 buildings by their historic context. These contexts include the Flightline, the Alaska Air Depot, Residential Buildings, Fuel and Water Pump Buildings, Ammunition Storage and Defense, Buildings of the Post Engineer Yard, Recreational Buildings and the Base Chapel, and selected Cold War Structures. Many buildings, especially the residential units, were found to be identical in construction and type. In many instances, especially once a determination of "not eligible" for the National Register was made, we grouped these buildings together by types and chose one as representative of the entire housing type - a process that greatly reduced redundancy in the survey.

Fieldwork in the summer of 1996 included a site visit, completion of an inventory card, and photography of every building and structure built between 1940 and 1945. All additional historical information was incorporated into the significance statements or the larger descriptions written for each district. To date the exact location of all the pillboxes and ground defense structures still needs to be documented. Weather, demolition, and the fact that these structures are not mapped have made it especially difficult to locate them. We conducted our own site investigation for the defense resources that once existed on Knik Bluff. We plan to provide an addendum to this study after the summer of 1998 to confirm the locations of all known base ground defense structures.

Repositories on base containing historic building information are the map vault, the archives of the Office of History, the Eleventh Air Force, and the building drawings at the 3<sup>rd</sup> Civil Engineering Squadron. The team used original drawings and early maps of the base to confirm historical descriptions. The Office of History contained several unpublished manuscripts about the early years of base, notably the works of James D. Bush, Henry E. Fleischer, and Vincent Ignico and Ralph G. Hoxie. Researchers consulted the collections at the National Archives, Alaska Region, the Z.J. Loussac Library, the University of Alaska Anchorage and Fairbanks Archives, the Anchorage



Museum of History and Art, and the Fort Richardson Library. Copies of all relevant historical photographs and as-built drawings were made. The team included some of these photographs and drawings to illustrate the two volumes of this study and transmitted others separately to the base.

Finally, the survey methods for the study were designed to comply with the *Secretary of the Interior's Standards for Preservation Planning, Identification and Evaluation* (See 48 Federal Register 44716-28, September 29, 1983, and *National Register Bulletins 15, 16A, 24.*).



## Introduction

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*[E]xtended study . . . shows definitely that the most important strategic missions could be carried out effectively only when based in the area between the mountains and the sea, with the best location in the vicinity of Anchorage. This conclusion was based not only upon strategic considerations and maintenance and operating costs but also upon weather conditions, which indicate that an air force can operate against the most probable hostile threats from the Anchorage area for a much greater portion of the time than it could from a base inland from the mountains.*

Testimony of General Marshall, Army Chief of Staff before the House Subcommittee on Appropriations, February 23, 1940.

Elmendorf AFB, the largest airfield in Alaska, is located on a high, flat expansive bluff overlooking Anchorage, Alaska. This impressive air force base serves as the Headquarters of the Alaskan Command, the Alaskan NORAD Region, the Eleventh Air Force, and the 3<sup>rd</sup> Wing. In 1940, the Constructing Quartermaster configured the earliest permanent buildings on a semicircular plan, nestled within the intersection of two runways. To the north and west of Elmendorf, the inland tidal waters of Knik Arm provide open airspace for pilots taking off and returning to the base's grid of runways. To the east, the jagged peaks of the Chugach Mountains form the horizon and backdrop for the base's most impressive World War II structures: the expansive barrel-domed hangars and Neo-Georgian rooflines of the historic Flightline. Also, the Alaska Railroad and the Glenn Highway are close to its east boundary.

When Colonel Simon Oliver Buckner arrived in Anchorage on July 22, 1940, to oversee the buildup of Alaska defense forces, he reported to the Anchorage Chamber of Commerce that "we are starting from scratch and it will be a most interesting job."<sup>2</sup> Ever-enthusiastic about his new commission and determined to make the most of the situation, Buckner turned down a more hospitable billet in Anchorage in favor of lodgings in the earliest form of base housing - a canvas tent in the company of his men.

The army was hardly the first to lay claim to the lands within the new military reservation. Between 1914 and 1939, forty residents had applied for homestead parcels within the 13,125 acres that would become Elmendorf AFB. The glacially modeled flat

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<sup>2</sup> John Haile Cloe, *The Aleutian Warriors: A History of the 11<sup>th</sup> Air Force & Fleet Air Wing 4*, Part I (Missoula, Mont.: Anchorage Chapter - Air Force Association and Pictorial Histories Publishing Company, Inc., 1990), 15. Quoting *The Anchorage Daily Times*, 22 July 1940.

lands on the edge of the burgeoning railroad town of Anchorage appealed to farmers looking to clear fields and raise families in Southcentral Alaska in the early 1900s. By the early 1940s, some of the original homesteads had been subdivided, thus creating a complex labyrinth of ownership for military appraisers charged with purchasing the land for the war effort.<sup>3</sup> The transition between farmland and military reserve eventually required the involvement of an independent jury to rule on price fairness in every transaction between the United States government and the landowner.

Elmendorf AFB was designed as an Army post with an airfield. The base's original mission was to serve as a defensive outpost for North America, particularly Alaska, against Japanese invasion. Elmendorf AFB's mission changed as World War II developed. In June 1942 the Japanese invaded Kiska and Attu islands in the Aleutian Islands and began an occupation that lasted a year. During that time, Elmendorf was no longer a defensive outpost, but a rear-staging area for battles fought in the Aleutian Islands and headquarters of Army Air Force operations in Alaska. Following World War II, unstable relations between the United States and the Soviet Union led to the "Cold War." Elmendorf AFB, because of its proximity to the Soviet Union, became a major center for Cold War operations, earning it the motto "Top Cover for North America."<sup>4</sup>

Military planners chose to build the state's first air base near Anchorage for several reasons. Foremost among them was its accessibility to the Alaska Railroad and the waters of Cook Inlet. In June 1940 when construction started, few building materials could be locally obtained - nearly everything had to be shipped to Alaska. The infancy of air transportation and lack of land routes necessitated the use of railroad and water transportation, which were already somewhat established at the Anchorage site. Additional considerations in choosing the site were the area's level topography and moderate weather conditions, at least compared to the frigid Interior and Arctic.

For more than half a year the military project was informally known as the Anchorage Air Base. On November 9, 1940, it was announced that the Army post was designated Fort Richardson, in honor of Brigadier General Wilds P. Richardson.<sup>5</sup> General Richardson was an officer in the Army during the gold rush and the first president of the Alaska Road Commission, an agency created by Congress to construct public roads, trails, and bridges. The airfield at Fort Richardson was named Elmendorf Air Field in honor of Captain Hugh M. Elmendorf, a promising Air Corps officer killed in an air accident at Wright Field, Ohio, on January 13, 1933. Captain Elmendorf had no connection with Alaska.<sup>6</sup>

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<sup>3</sup> Paula Daugherty and Becky M. Saleeby, *Elmendorf Air Force Base Homestead Study*, (Anchorage, Alaska: National Park Service, Alaska Support Office, 1998), 15.

<sup>4</sup> Originally, the motto "Top Cover" applied only to Elmendorf AFB. Later it expanded to all of Alaska. In the mid-1980s it became "Top Cover for North America" and then to "Top Cover and Global Power" in the mid-1990s.

<sup>5</sup> John Haile Cloe, *The Air Force in Alaska Part II: Buildup to Dutch Harbor June 1940-June 1942* (Elmendorf AFB, Alaska: Office of History, Alaskan Air Command 1986), 24.

<sup>6</sup> *Ibid.*, 25.



*Figure 1. Captain Hugh M. Elmendorf, for whom Elmendorf Air Force Base is named.*

Elmendorf construction was put into high gear after the Japanese attacked Pearl Harbor on December 7, 1941. Seven major divisions of structures associated with World War II comprised the military landscape. They are differentiated by their roles, locations, and construction dates. The first parts of the airfield to be constructed were the runways and hangars, collectively called the Flightline along with other groups of support structures, such as the Fuel and Water Pump Buildings and the Buildings of the Post Engineer Yard. As action intensified in the Aleutians, the mechanics and engineers at Elmendorf assumed responsibility for all planes in the Alaska theater. The Alaska Air Depot, a collection of structures designed to accommodate these heightened obligations, sprang into existence. Enlisted and nonenlisted men and their families were housed in the Residential Buildings. In the event of an invasion, ammunition was stored and men were stationed in the Ammunition Storage and Defense area. Finally, while off duty, men were encouraged to use Elmendorf's Recreational Buildings and the Base Chapel. Narratives and historic contexts for each of these districts are included in this report.

The military air forces were initially a part of the Army and were known as the Army Air Corps. The Army redesignated the air corps, the Army Air Forces in July

1941.<sup>7</sup> After the Air Force became a separate division of the United States Armed Forces on September 18, 1947, the Army agreed to vacate the original Fort Richardson and Elmendorf Field and move to a new location. The transition was completed by the early 1950s, and Elmendorf AFB was formally dedicated on June 8, 1960 - twenty years to the day after construction started.<sup>8</sup> In this report, the name "Elmendorf AFB" will be used to designate the post, unless otherwise specified, although until September 1947, the installation's official name was Elmendorf Field at Fort Richardson.

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<sup>7</sup> Cloe, *The Aleutian Warriors*, 33.

<sup>8</sup> John Haile Cloe and Michael F. Monaghan, *Top Cover for America: The Air Force in Alaska 1920-1983* (Missoula, Mont: Anchorage Chapter – Air Force Association and Pictorial Histories Publishing Company, 1984), 160.

# Chapter One - Development of Elmendorf Air Force Base

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## Anchorage History

The temperate, resource-rich shores of Knik Arm at the head of Cook Inlet attracted a succession of Alaska Native people over several thousand years. The ancestors of the Dena'ina Indians established villages in this region approximately a thousand years ago along the shores of Knik Arm at what is now Anchorage and Elmendorf AFB. The archeological record indicates that both permanent village sites and transient seasonal camps were established to harvest the area's abundant fish, game, marine mammals, and berries.

The first European contact with these early inhabitants probably occurred in the late 1770s, when the English explorer Captain James Cook sailed into Cook Inlet in his unsuccessful search for the Northwest Passage trade route between the Pacific and Atlantic Oceans. Russian trade networks evolved with Native people living on the southern shores of the Kenai Peninsula, in Prince William Sound, and in Resurrection Bay.

In the early 1900s, white immigrants began to flock to Anchorage's present location seeking construction jobs on the Alaska Railroad. The proposed route connected Seward and Fairbanks, going through Anchorage. In 1915 these workers created a "tent city" on a bluff overlooking Anchorage's present location. At about the same time, homesteaders came to the area to stake land claims. To alleviate the crowded tent city, the Anchorage town site plan was prepared and lots were auctioned.<sup>9</sup>

Between completion of the railroad in 1923 and commencement of war construction in 1940, Anchorage was a supply center for fishermen, trappers, and miners. Funds from the federal government contributed significantly to the local economy. In the mid 1930s, about 200 Midwestern families were transplanted to the Matanuska Valley north of Anchorage to develop an agricultural base as part of a Depression-Era New Deal program.

During that era, the primary means of transportation to Alaska was by boat. Within Alaska, travel options included the Alaska Railroad, the Richardson Highway connecting Fairbanks and Valdez, some unpaved roads, and airplanes. Intrastate transportation, for the most part, was the providence of the renowned bush pilot. The airplane became a common form of transportation to Alaskans before it was generally accepted in the continental United States. Anchorage's first airfield was the 15-acre

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<sup>9</sup> Michael Carberry and Donna Lane, *Patterns of the Past: An Inventory of Anchorage's Historic Resources* (Anchorage, Alaska: The Municipality of Anchorage, 1986), 1-7.

“Park Strip,” a series of blocks between Ninth and Tenth Avenues in the downtown area left vacant for both a fire break and park. This was used from 1923 until the construction of Merrill Field in 1929.<sup>10</sup>

In 1940 when defense construction began, Alaska was a sparsely populated and remote territory of 72,524 persons. Anchorage was home to about 4,000 people and was the third largest city in the territory. Juneau, the territorial capital, was the largest city with 5,720 people. The next largest city was Ketchikan, and Fairbanks ranked fourth. Population centers were located in the southeastern part of the territory where more than 20 percent of the people lived in five towns. More than 60 percent of Alaska residents lived in scattered villages, camps, and fishing, mining, and logging enclaves.<sup>11</sup>

During World War II, Anchorage was a boomtown as construction funds and workers flowed in. Hotel rooms were difficult to come by, and the prices of goods and services rose sharply. Merchants were charged with gouging consumers in response to the military's high wages. Liquor demand skyrocketed. One year, deposits in small banks near the bases tripled. Soaring demand caused the local telephone company to stop accepting new business.<sup>12</sup> Jean Potter, sent to Alaska in the early 1940s by *Fortune* magazine to describe the defense situation and wartime life in Alaska, writes:

As fast as boats could be loaded, they steamed to Alaska jammed to bursting with defense workers and supplies. Over twenty thousand construction workers migrated north in two years. Soldiers swarmed up faster than barracks could be built to house them. The towns near the bases were thronged with officers and privates from all over the States. Trucks and jeeps tore up and down the streets. The crowded bars and restaurants looked like canteens. It seemed as if Alaska were one great army camp, with most of its population in uniform.<sup>13</sup>

Mildred Mantle describes her impression of Anchorage when she arrived in 1941:

It's like a dusty Montana town with distant snow-covered mountains east and west alongside a dirty gray inlet. A sleepy little town of about 3,500 people, just beginning to stir as military construction at Fort Richardson [now Elmendorf AFB] gets under way. Just one short paved street – Fourth Avenue. Dirt roads lead east to the military establishment and to the Matanuska Valley with a road going south ending at Lake Spenard. . . The town's main structures are the Federal Building, Providence Hospital and a modern Anchorage Hotel. . . Because of the war threat, work was readily available at Fort Richardson, then under construction. I was hired by the Corps of Engineers at a salary of \$2,300 a year. President Roosevelt had declared a national emergency and by July we were

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<sup>10</sup> *Ibid.*, 193-194.

<sup>11</sup> Penny Rennick, ed., *World War II in Alaska* (Anchorage, Alaska: Alaska Geographic Society, 1996), 9.

<sup>12</sup> Jean Potter, *Alaska Under Arms* (New York: The MacMillan Company, 1942), 88-89.

<sup>13</sup> *Ibid.*, 39-40.



working seven days a week. A questionnaire was circulated asking about dependents who should be evacuated in the event of war.”<sup>14</sup>



Figure 2. Until March 1941, news about the Alaska troops was published in detail, and civilians freely visited the base and took photographs. Wartime restrictions prohibited everyone from taking pictures without permission.

Photograph courtesy of the Anchorage Museum of History and Art

## The Military Presence in Alaska until World War II

Alaska's importance to United States defense was recognized by Secretary of the State William H. Seward when purchase of the territory was debated: "If we would provide an adequate defense for the United States we must have Greenland and Iceland to dominate the North Atlantic and Alaska to dominate the North Pacific," he said. The United States took advantage of Russia's economic strain following the Crimean War by accepting its offer to purchase the Alaska territory in 1867 for \$7.2 million. The purchase was motivated as much by the concept of "manifest destiny" and the desire to take advantage of Alaska's rich, yet essentially untapped resources as to establish a post for the defense of the continental United States.<sup>15</sup>

The discovery of Klondike gold in 1896 brought a stampede of prospectors to Alaska lured by the promise of quick riches. To combat lawlessness, the Army

<sup>14</sup> Pioneers of Alaska, Igloo 15, Auxiliary 4, *Fond Memories of Anchorage Pioneers*, Vol. 1 (Anchorage, Alaska: Pioneers of Alaska, 1996), 140-141.

<sup>15</sup> Jonathon M. Nielson, *Armed Forces on a Northern Frontier: The Military in Alaska's History, 1867-1987* (New York: Greenwood Press, 1988), 5-7.

established small posts at prospectors' travel routes.<sup>16</sup> At the close of the eighteenth century, the Army's duties of defense and law enforcement were extended to include exploration and construction. During this period the Army constructed a 3,728-mile telegraph line called the Washington Alaska Military Cable and Telegraph System (WAMCATS). The communications line linked Army garrisons in the interior of Alaska with those along the coast.<sup>17</sup>

Alaska's primary contribution to World War I was manpower. Twelve percent of Alaska's Caucasian population enlisted. By 1918, more than 11,000 Alaskans had registered, and another 1,500 men left Alaska to register in their home states.<sup>18</sup> Within the state, the Army's main duties were to facilitate the expansion of communications and transportation systems and to construct the Alaska Railroad.<sup>19</sup>

After World War I, the military presence in Alaska declined. All forts, except one, closed.<sup>20</sup> Although the Navy maintained a presence patrolling the oceans, many Army personnel were reduced to desk jobs.<sup>21</sup> In 1922, the United States entered into the Naval Disarmament Treaty in which it agreed not to fortify the Aleutian Islands and to dispose of a large part of its naval forces.<sup>22</sup> Ernest Gruening, governor of Alaska from 1939 to 1953, comments on this period:

The purpose for which these outposts had been established - to maintain law and order during the gold-rush days in the absence of any civil government equipped to do so - had ceased to exist. The idea of establishing in Alaska an outpost for national defense was not entertained. There is no evidence that it even occurred to the military or congressional authorities of that time.<sup>23</sup>

## Development of Elmendorf Air Force Base

Alaska's voteless delegate to Congress, Anthony J. Dimond, made the initial attempts to gain support for an Alaska air base. In 1934, Representative Dimond stood before the House of Representatives, requesting funds for defense forces in Alaska. He believed that Alaska's importance to the defense of the United States could not be underestimated. Representative Dimond's position is summed up in his often-quoted statement, "Establish bases at Anchorage or Fairbanks, also in the Aleutians. I say to you, defend the United States by defending Alaska." He illustrated to Congress

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<sup>16</sup> *Ibid.*, 65-68.

<sup>17</sup> *Ibid.*, 74.

<sup>18</sup> *Ibid.*, 81.

<sup>19</sup> *Ibid.*, 85.

<sup>20</sup> Ernest Gruening, *The State of Alaska* (New York: Random House, 1954), 279.

<sup>21</sup> John Haile Cloe, *The Air Force in Alaska Part I: Early Flights and Strategic Importance 1920-1940* (Elmendorf AFB, Alaska: Office of History, Alaskan Air Command, 1983), 39.

<sup>22</sup> Gruening, *The State of Alaska*, 309.

<sup>23</sup> *Ibid.*, 279.

that the shortest distance between Japan and the United States, the "Great Circle Route," lay less than 300 miles south of Alaska's Aleutian archipelago. Nevertheless, Representative Dimond's bill authorizing \$10 million for construction of an air base in Alaska died in the House Military and Naval Affairs Committees.<sup>24</sup>

Although Congress was hesitant to provide funds for base construction, the Army realized Alaska aviation's potentially immense role in the brewing war. Between July 19 and August 20, 1934, 14 officers and 16 enlisted men in 10 B-10 bombers made a 7,360-mile flight from Bolling Air Field, near Washington, D.C., to Fairbanks. Stops were made in Edmonton (Alberta, Canada) and Anchorage. The entourage, headed by Lieutenant Colonel Henry H. Arnold conducted reconnaissance flights to investigate flying conditions, photograph the terrain, and examine potential locations for future airfields.<sup>25</sup>

The Wilcox Bill, introduced in January 1935 by Representative J. Marc Wilcox of Florida, authorized air base expenditures in six areas, including Alaska. The bill incorporated many aspects of Dimond's bill. During hearings, General William "Billy" Mitchell, who was familiar with Alaska conditions, passionately testified to the House Military Affairs Committee concerning Alaska's strategic location: "Alaska is the most central place in the world for aircraft and that is true either of Europe, Asia, or North America. I believe in the future, he who holds Alaska holds the world, and it is the most important strategic place in the world."<sup>26</sup> The act passed, but funds were not appropriated at that time for an Alaska base.

In the Pacific, Japanese warlords had been waging war against China since 1937 and were looking toward expanding their empire through East Asia and Indonesia. War broke out in Europe in the fall of 1939. The American government believed that a Japanese attack of Hawaii or Panama was a possibility, but occupation unlikely. The greater perceived threat was the fall of France or England to Germany and the expansion of Nazi powers in the Atlantic.<sup>27</sup>

In mid-1939, the United States Army, although stronger than it had been earlier that decade, was far smaller than the army of any other world power.<sup>28</sup> Hawaii, Panama, Puerto Rico, and Alaska were considered part of the United States' first line of defense.

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<sup>24</sup> *Ibid.*, 309-310.

<sup>25</sup> Cloe, *The Air Force in Alaska, Part I*, 43-60.

<sup>26</sup> Cloe, 62-64. General Mitchell participated in the development of air transportation in Alaska and was a strong advocate for construction of an Alaska air base. He served in the Signal Corps and as Assistant Chief of the U.S. Army Air Service during World War I. General Mitchell participated in the first military flight to Alaska in 1920. His crew flew 9,000 miles round trip from New York to Nome. General Mitchell died at the age of 56 the year after he testified before the House.

<sup>27</sup> Stetson Conn and Bryon Fairchild, *The Western Hemisphere: The Framework of Hemisphere Defense* (Washington, D.C.: Office of the Chief of Military History, Department of the Army, 1960), 411-412.

<sup>28</sup> *Ibid.*, 19.



*Figure 3. General William "Billy" Mitchell.*

Photograph courtesy of the Anchorage Museum of History and Art

The primary mission of the military outposts in these territories was to protect Navy bases. But while the Hawaii forces numbered more than 21,000 men two years before the Pearl Harbor attack,<sup>29</sup> the only military establishment in Alaska was Fort Seward. The post had the strength of 200 men armed with nothing but World War I Springfield rifles<sup>30</sup> and was clearly not up to the task of defense against a foreign force.

In 1939, Representative Dimond again appeared on the floor of the House, requesting funds for an air base. Executive Order dated #7596 dated March 31, 1937 had withdrawn 960 acres near Fairbanks for an airfield. Finally in August 1939 work began to build an airfield, which consisted of a runway, hangar, support facilities, and barracks for 561 men. At the airfield troops could be trained in severe weather conditions. Although not an air base, the station, eventually named Ladd Field, was a start. In February 1940, the Army's Chief of Staff, General George C. Marshall, and Major General Henry H. Arnold, Chief of the Air Corps, testified before the Subcommittee on the War Department of the House Appropriations Committee to the importance of an Alaska air base, requesting \$12,734,000 for construction. The subcommittee's budget deleted the base.<sup>31</sup>

On April 9, 1940, Hitler invaded and occupied Denmark and Norway with little resistance. A month later Germans occupied Belgium and Holland, and shortly thereafter

<sup>29</sup> *Ibid.*, 15-16.

<sup>30</sup> Gruening, *The State of Alaska*, 308.

<sup>31</sup> Cloe, *The Air Force in Alaska, Part I*, 79-80.

France surrendered. As Hitler became increasingly successful in his crusade to dominate the European continent, Americans became concerned about their country's defense. After meeting with President Roosevelt, General Marshall submitted the first billion-dollar Army budget, which included nearly \$13 million for construction of an Anchorage air base. Both the Senate and the House approved the bill.<sup>32</sup>

## Construction Begins at Elmendorf and the First Troops Arrive

The sites of Elmendorf Field and Fort Richardson were withdrawn by Presidential Proclamation on April 22, 1939. Most of the 43,490 acres had been in the public domain, and portions were homesteads. The original plan for the air base included two runways (a north-south one of 5,000 feet and an east-west runway of 7,500 feet) with one temporary and three permanent hangars. Also included were Air Corps facilities (consisting of a 600,000-gallon storage and fueling system and a 1,000,000-gallon reserve system), concrete bomb and ammunition storage igloos for the Air Corps and ground troops, and a 294-bed hospital. The base was to have sufficient administration and housing for approximately 7,000 men. Utilities included a water-borne sewage system, a 7-million-gallon-per-day water system, a 6,000-kilowatt central heating and power plant, and a bomb-proof radio transmitter building.<sup>33</sup>

The Army's Constructing Quartermaster, Major Colonel E.M. George, arrived from Ladd Field to oversee base construction on June 7, 1940. The next day a crew of about 25 locally hired men started clearing land. Within a few days 40 to 50 men were working on the base. Soon the demand for workers exceeded the local supply, and laborers had to be brought to Alaska.<sup>34</sup> During the first month, work centered on clearing, grading, and the construction of tool shacks and the temporary field headquarters. The Army, except for workers obtained through two contracts hired all laborers. One contract was with the Bethel-McCone-Parsons Corporation for construction of the central heating and power plant and the coal storage building. The other was to the Pittsburgh-Des Moines Steel Company for the erection of a 500,000-gallon steel water tower.<sup>35</sup>

On June 26, 1940, the first troops bound for Fort Richardson, 761 men from the 3<sup>rd</sup> Infantry Division at Fort Lewis, Washington, arrived in Seward aboard the U.S.S. *St. Mihiel*. The men, which included the base's first engineering company and various infantry and artillery units, were under the command of Lieutenant Colonel Earl Landreth. The group was divided into two contingents. Traveling from Seward on the Alaska Railroad, the first contingent arrived in Anchorage the morning of June 27, where they were met by townspeople. The remaining men arrived the next day. At the time,

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<sup>32</sup> *Ibid.*, 82-86.

<sup>33</sup> James D. Bush, *Narrative Report of Alaska Construction 1941-1944* (unpublished manuscript, 1944), 26-27.

<sup>34</sup> Cloe, *The Air Force in Alaska Part II*, 6.

<sup>35</sup> Richard W. Fagen, *History of Fort Richardson (Original Post)* (unpublished manuscript, 1944), 16.

this was the largest military force ever sent to Alaska.<sup>36</sup>

The soldiers arrived at a post without living quarters or support facilities. Soldiers lived in tents in an old hay field, enduring rain, mosquitoes, and an early snowfall, before they moved into the first barracks on November 9.<sup>37</sup> A two-inch pipeline ran from Ship Creek camp to provide water.<sup>38</sup> Rugged soldiers bathed in the frigid waters of Ship Creek until townspeople complained about their water source being used as bath water. The high school locker room was opened for soldiers' showers. Soldiers participated in Anchorage's Fourth of July parade.<sup>39</sup>



*Figure 4. The U.S.S. St. Mihiel.*

Photograph courtesy of the Office of History, Alaskan Air Command

The first materials, equipment, and laborers from the continental United States starting arriving at the end of July.<sup>40</sup> By the end of August, there were 1,250 workers employed and by the end of October, the number rose to 2,000.<sup>41</sup> Laborers worked seven days a week, and every moment of the long Alaska summer was used to its full advantage. As winter approached, work was put in high gear to get as much done as possible before the snow flew.

<sup>36</sup> Cloe, *The Air Force in Alaska Part II*, 7-9.

<sup>37</sup> Fleischer, *History Elmendorf Air Base*, 21.

<sup>38</sup> *Ibid.*, 15.

<sup>39</sup> *Ibid.*, 17.

<sup>40</sup> Fagen, *History of Fort Richardson*, 20.

<sup>41</sup> Cloe, *The Air Force in Alaska Part II*, 6.



*Figure 5. Troops arrive at the Alaska Railroad Depot, Anchorage.*  
 Photograph Courtesy of the Anchorage Museum of History and Art



*Figure 6. Newly arrived soldiers participate in Anchorage's Fourth of July parade.*  
 Photograph courtesy of the Anchorage Museum of History and Art



*Figure 7. Field kitchen.*

Photograph courtesy of the Anchorage Museum of History and Art, Russ Dow Collection



*Figure 8. Field kitchen.*

Photograph courtesy of the Anchorage Museum of History and Art, Russ Dow Collection





*Figure 9. Salmon caught in local streams supplemented soldiers' diets.*  
Photograph courtesy of the Anchorage Museum of History and Art, Russ Dow Collection



*Figure 10. Soldiers exercise near tents.*  
Photograph courtesy of the Anchorage Museum of History and Art

Jurisdiction of the Anchorage Air Base rested with General John C. DeWitt, Commanding General of the Army's IX Corps. The IX Corps was later redesignated the Western Defense Command. The War Department established the Alaska Defense Force with headquarters at Anchorage on June 17, 1940.<sup>42</sup> On June 9, 1940, General DeWitt chose Colonel Simon Bolivar Buckner, Jr. to be the first Commander of the Alaska Defense Force. Colonel Buckner arrived at the base, which was equipped without a single plane or air field, on July 22.<sup>43</sup> General Buckner commanded all military activity within the territory and had at his hands a budget in excess of \$100 million. In contrast, the Territorial Legislature's budget during this same time was barely \$3 million per year.<sup>44</sup>

General Buckner spent two years at the Virginia Military Institute and graduated from West Point in 1907. Although he never saw combat, he earned his wings during World War I.<sup>45</sup> He was promoted to Brigadier General on August 31, 1940,<sup>46</sup> and to Lieutenant General shortly before the end of the Aleutians Campaign.<sup>47</sup> General Buckner, whose father was both a Confederate general and a Kentucky governor, was known for his pragmatic, yet imaginative, style. At the same time, though, he favored segregation within the Army and discouraged bringing minority soldiers to Alaska.<sup>48</sup> General Buckner left Alaska in June 1943 with intentions to return at his retirement, but he was killed at Okinawa on June 18, 1945.<sup>49</sup>

Construction at the airfield was divided into three priorities, each termed either "permanent" or "temporary." Temporary structures were made of wood or another material designed to be used for 10, 15 years, or more before being replaced by permanent structures.<sup>50</sup> The largest temporary structure at Elmendorf is Hangar 4, and most base structures are of this type of construction.<sup>51</sup> Permanent structures were of steel and concrete, stone, or brick with life expectancies up to 100 years. James Bush describes the original construction plan:

This project provided for 2 concrete runways (N/S 5,000' long and E/W 7,500' long) and aprons, one temporary and 3 permanent hangars, Air Corps gasoline facilities consisting of a 600,000 gallon tactical storage and fueling system, a 1,500,000 gallon operations reserve storage system, concrete igloos for both Air

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<sup>42</sup> Karl C. Dod, *The Corps of Engineers: The War Against Japan* (Washington D.C.: Center of Military History, United States Army, 1987), 16.

<sup>43</sup> Cloe, *The Air Force in Alaska Part II*, 17, 20.

<sup>44</sup> Nielson, *Armed Forces*, 99-100.

<sup>45</sup> Cloe, *The Air Force in Alaska Part II*, 17.

<sup>46</sup> Fagen, *History of Fort Richardson*, 22.

<sup>47</sup> Cloe, *The Air Force in Alaska Part II*, 16.

<sup>48</sup> Nielson, *Armed Forces*, 101.

<sup>49</sup> Cloe, *The Air Force in Alaska Part II*, 16.

<sup>50</sup> Fagen, *The History of Fort Richardson*, 15.

<sup>51</sup> Cloe, *The Air Force in Alaska Part II*, 128.

Corps and ground troop bomb and ammunition storage, and other essential technical facilities. Also included in the construction were administration units and housing for a garrison of approximately 7,000 men and a 294 bed hospital. The major utilities include a water-borne sewage system, outfall sewer and mains, a 7,000,000 gallon per day gravity water system with reservoir and chlorinator, a 6,000 KW central heating and power plant and bombproof radio transmitter building. Harbor facilities provide for the rehabilitation and extension of the ocean deck, which was leased, from the Alaska Railroad.<sup>52</sup>

The site's spongy muskeg and abundant mosquitoes hampered summer construction work. Muskeg is an accumulation of small plants, moss, and roots that may extend down several feet and which covers the topsoil. Before construction could begin, the muskeg was stripped to expose a base of bedrock or other stable material. This task required power equipment, which was in short supply and prone to becoming stuck in the muck. As winter approached, the shortened days frustrated progress. While frozen muskeg was easier to work with, tools had to be thawed. Winter frost, penetrating deeply into the ground, necessitated burying the water lines to a depth of seven to nine feet.<sup>53</sup> Additionally, numerous low spots necessitated filling and grading.

Because only a limited amount of equipment, parts, and food could be obtained in Alaska, nearly all supplies were shipped from the contiguous United States by boat. The waters of Cook Inlet are navigable only during about half of the year, necessitating the delivery of supplies and personnel months in advance. Captains were forced to negotiate the dangerous channels of the Inside Passage, the water route to Alaska, as well as the 30-foot tides of Cook Inlet on battered, crowded boats. All oil and fuel had to be shipped up to Alaska.<sup>54</sup> Local resources, particularly lumber, were used as much as possible.<sup>55</sup> Farm produce and dairy products from the Matanuska Valley north of Anchorage met a fractional part of the troops' food requirements.

Materials shortages were a persistent problem. Construction could be held up for weeks, waiting for the smallest parts to arrive. Difficult ground conditions and lack of trained operators necessitated constant machine repairs.<sup>56</sup> After the Corps of Engineers assumed construction responsibilities in January 1941, parts requests were radioed to the District Office in Seattle, and procurement would be made. The parts were transported to Alaska by boat, which, depending on weather conditions and sailing schedules, often required at least 10 days.<sup>57</sup> As overseas wartime needs increased, cargo ships became increasingly scarce. This situation was not remedied by the recruitment of Alaska fishing boats. Japanese submarines in Alaska waters were a constant threat.<sup>58</sup>

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<sup>52</sup> Bush, *Narrative Report of Alaska Construction*, 26-27.

<sup>53</sup> *Ibid.*, 28.

<sup>54</sup> Potter, *Alaska Under Arms*, 100.

<sup>55</sup> Dod, *The Corps of Engineers*, 280.

<sup>56</sup> *Ibid.*, 279.

<sup>57</sup> Potter, *Alaska Under Arms*, 52.

<sup>58</sup> Dod, *The Corps of Engineers*, 280.



*Figure 11. Before the first temporary structures were completed, soldiers lived and worked in Quonset huts similar to these.*

Photograph courtesy of the Anchorage Museum of History and Art

Additionally, labor scarcities grew so dire that soldiers and non-commissioned officers from Fort Richardson were assigned to such duties as handling freight, excavation, clean up, and signal work. Construction employed 2,144 hired laborers in June 1941 in addition to 164 army men (which included 13 non-commissioned officers).<sup>59</sup> The number of construction workers at Elmendorf AFB reached its peak in August 1941 at 3,415.<sup>60</sup>

When the United States entered World War II in December 1941, enlistments and the draft cut into the number of men available for work; and deferments were generally not granted to men for base work. At some bases, fishermen and cannery workers, unemployed due to war conditions, were hired.<sup>61</sup> The original Elmendorf plan was expanded to include housing and facilities for an additional 250 officers and 7,500 enlisted men. The hospital was expanded and extra warehouses and technical facilities were also provided. A reserve gasoline system, consisting of four 24,000-barrel tanks, was authorized in 1942, as well as four 5,000-foot satellite airfields with revetments and taxiways. Construction of a 400-unit air depot consisting of hangars, warehouses,

<sup>59</sup> Fagen, *History of Fort Richardson*, 40.

<sup>60</sup> Bush, *Narrative Report of Alaska Construction*, 27.

<sup>61</sup> Dod, *The Corps of Engineers*, 279.

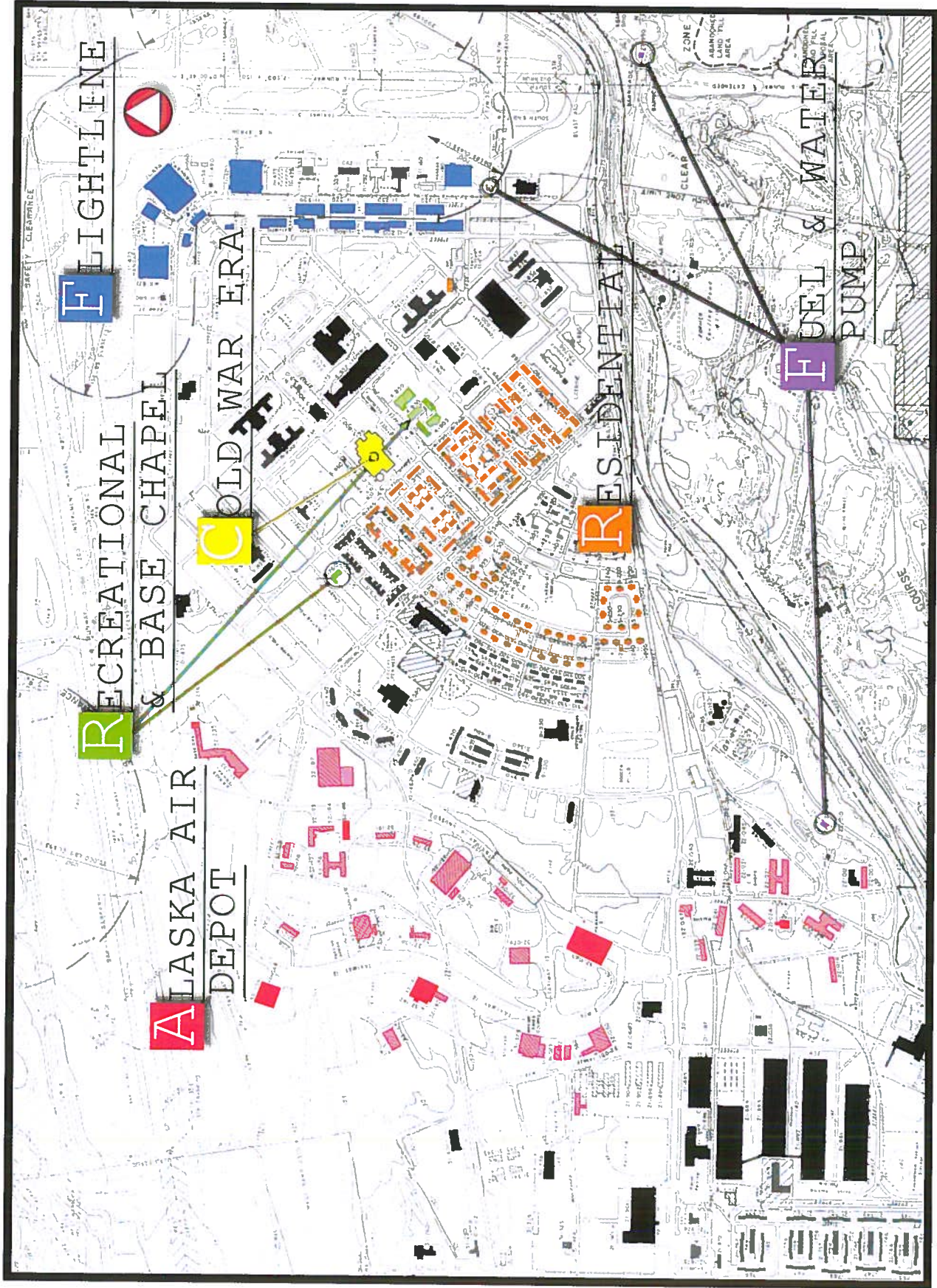
technical facilities, and administration was authorized in the spring of 1943.<sup>62</sup>

The structures at Elmendorf AFB are arranged in logical patterns grouped by function and construction date. For instance, the buildings of the Flightline, the initial buildings to be built geared toward supporting air base operations, are located close to the runways. Residential buildings and several recreational buildings, as well as the Base Chapel, branch out in an arc-shaped pattern to the west. Elmendorf AFB's involvement in World War II heightened after the Japanese began occupying two Aleutian Islands, giving birth to construction of the Alaska Air Depot. The plane maintenance warehouses and hangars of the Alaska Air Depot are located adjacent to the west end of the east-west runway, and many are connected to the runway by a taxiway. Support structures, such as Fuel and Water Pump buildings and the Buildings of the Post Engineer Yard, are scattered and located where needed. Defense structures and ammunition storage buildings are positioned along the edge of Knik Bluff. Each of the major divisions of structures is examined in the following chapters on World War II and the Cold War.

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<sup>62</sup> Bush, *Narrative Report of Alaska Construction*, 27.





MAP 1: Major Districts Elmendorf Air Force Base

## Chapter Two - The Flightline

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*After flying over the greater part of Alaska below the Arctic Circle, landing at various places so far removed and isolated as to make one feel he was back in the dark ages, the real value of air transportation was realized. Alaska is an air theater. . . .*

Report on Inspection of Alaskan Activities by Emil C. Kiel, Lt. Colonel, Air Corps, to the Chief of the Army Air Forces, December 4, 1941.

Alaska's terrain necessitates reliance on air transportation, and planes were common before air base construction was contemplated. Pioneer bush pilots explored and revolutionized air travel in the late 1920s and 1930s. Single engine "puddle-jumpers" became the lifeblood of many communities. In the late 1930s, the Civil Aeronautics Administration began an ambitious program to develop an infrastructure of airfields and navigational facilities throughout the state.<sup>63</sup> By 1940, Alaska boasted more than 100 scattered airfields, but none was large enough to accommodate a warplane.<sup>64</sup>

The four hangars, runway aprons, and associated aircraft maintenance and testing structures that abut Elmendorf's two runways are known as the Flightline. The Flightline was the nucleus of the original base plan. Flightline personnel provided plane maintenance and related duties until activities in the Aleutian Islands necessitated the expansion of these facilities; and construction of the Alaska Air Depot began in 1943.

Flightline structures are neatly layered in an "L" shaped pattern within the junction of the two runways. Aprons separate the buildings from the runways. The base's largest hangar, Hangar 2, directly faces the runways' intersection. It is known as the Base Hangar and is flanked by Hangars 1 and 3, called Operational Hangars. Hangar 4, also called the temporary hangar, is located south of Hangar 3. The other Flightline structures are located south of the hangars in two strips parallel to the north-south runway.

The Flightline structures include:

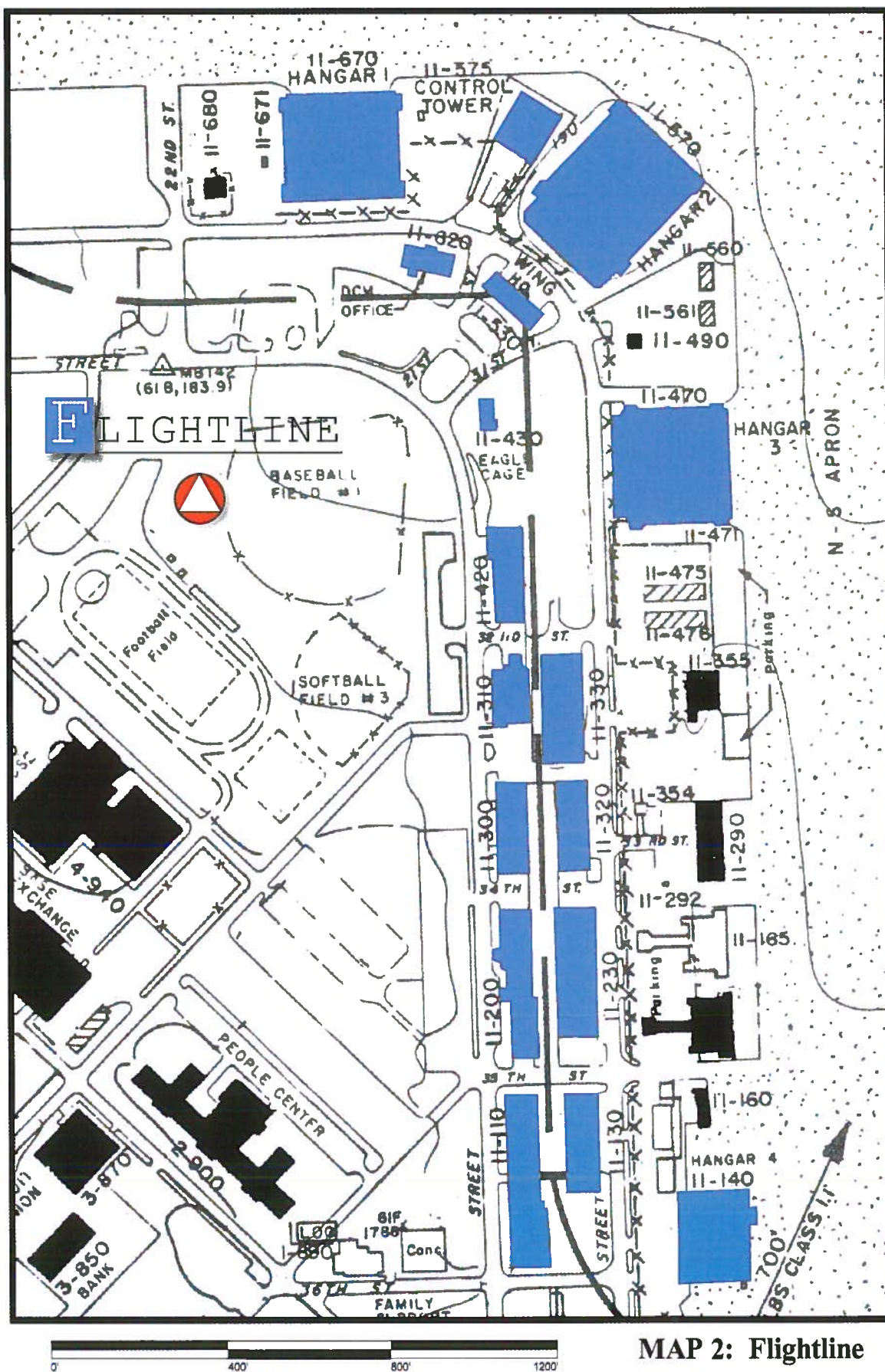
- Building 11-110 - Jet Engine Shop
- Building 11-130 - Jet Engine Shop
- Building 11-140 - Hangar 4
- Building 11-200 - 3rd OSS Operations
- Building 11-230 - Cold Storage

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<sup>63</sup> Cloe, *The Aleutian Warriors*, 9.

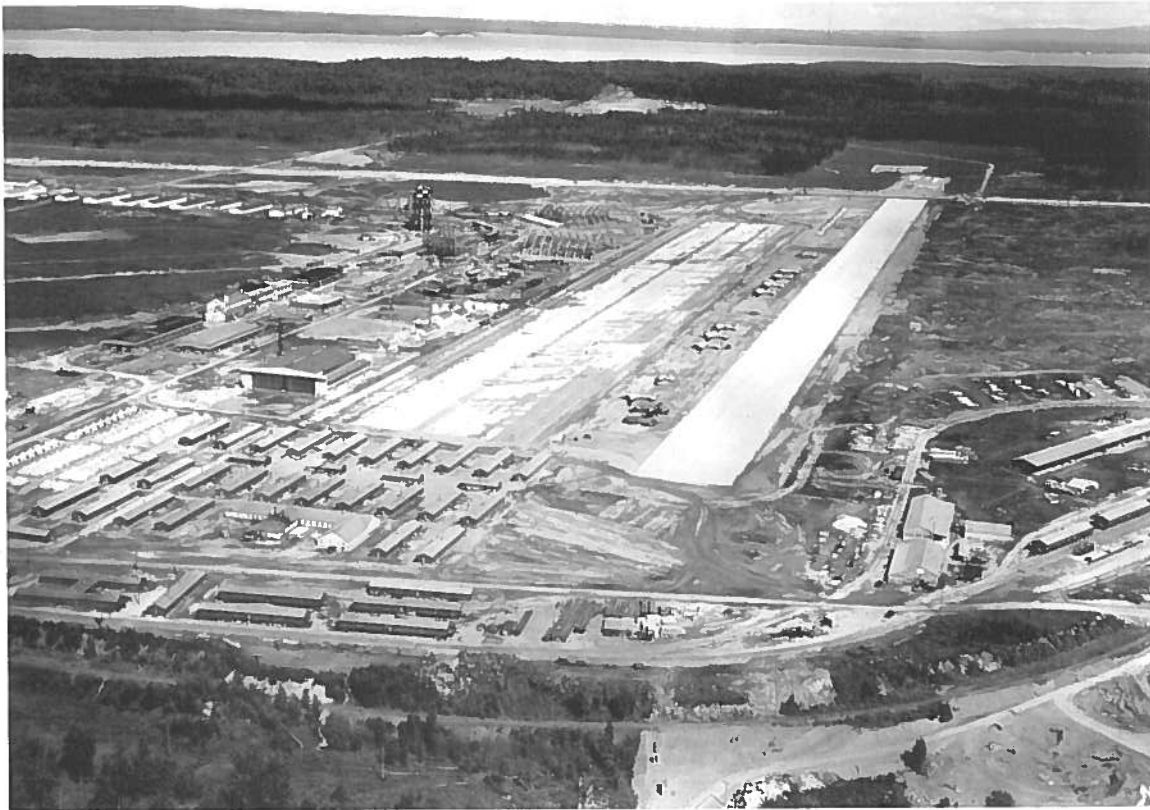
<sup>64</sup> Potter, *Alaska Under Arms*, 59.







Building 11-300 - Life Support  
Building 11-310 - Dry Cleaning  
Building 11-320 - Medical Supply  
Building 11-330 - Heating Facility  
Building 11-420 - Laundry Facility  
Building 11-470 - Hangar 3  
Building 11-530 - Old Headquarters  
Building 11-570 - Hangar 2  
Building 11-620 - Photo Lab  
Building 11-670 - Hangar 1



*Figure 12. The Flightline under construction. Photographed July 1941.*

Photograph courtesy of the Office of History, Alaskan Air Command

## **Arrival of the Air Corps Personnel at Elmendorf Field**

Major Everett S. Davis and two enlisted men arrived at Merrill Field on August 12, 1940, in a B1OB plane from Ladd Field. These men were the first Air Corps personnel to arrive at the base. When they arrived, work at Elmendorf Field had only just started. Because there were no office buildings, a one-room cabin on sled runners, called a “wanigan,” at Merrill Field functioned as base headquarters and housed air field

operations and engineering sections, general storage, and sleeping quarters.<sup>65</sup> Much of the Air Corps personnel's time was spent segregating their supplies from those bound for Fort Richardson. At night the crew tended to plane maintenance.<sup>66</sup> Because there was no extra room to store supplies under cover, equipment was often heaped in the open field.<sup>67</sup>



*Figure 13. Military supplies in an open field because of the lack of storage facilities.*

Photograph courtesy of the Anchorage Museum of History and Art

Major Davis, ultimately promoted to colonel, entered the Army in 1918 and spent the 1920s and 1930s in a series of aviation units. He was named the first Commanding Officer of Elmendorf Field on December 1, 1940, and was Chief of Aviation, Alaska Defense Command, from July 1941 to December 1941. Colonel Davis' primary contribution to Elmendorf Field was founding the Eleventh Air Force in January 1942, which he commanded until February 1942. He served as the Air Force's chief of staff from February 1942 until his death in November 1942 in a plane crash in southwest Alaska. At the time, his nomination for brigadier general was pending. Colonel Davis was posthumously awarded the Distinguished Service Medal in February 1943.<sup>68</sup>

Elmendorf Air Field's original plans called for three runways: a north-south, an east-west, and a diagonal. Following a July 1940 inspection by General Henry Arnold, Chief of the Army Air Forces, the diagonal runway was abandoned, and direction of the

<sup>65</sup> Cloe, *The Air Force in Alaska, Part II*, 20, 22.

<sup>66</sup> Vincent A. Ignico and Ralph G. Hoxie, *History of the Alaska Air Depot and Earlier Development of Aircraft Supply and Maintenance in Alaska, 12 August 1940 - 31 July 1944* (unpublished manuscript, 1944), 7.

<sup>67</sup> Fleischer, *History Elmendorf Air Base*, 39.

<sup>68</sup> *Ibid.*, Appendix.

east-west runway was altered to its present direction slightly north of the perpendicular, in order to avoid a ridge.<sup>69</sup> By the middle of September 1940 the east-west runway was graded to a width of 100 feet and paving had commenced. Runway concrete was poured in 20-foot sections with an expansion joint every 60 feet.<sup>70</sup>

Construction of Elmendorf runways was relatively simple, despite severe weather and an abundance of spongy muskeg. No permafrost or drainage problems were encountered.<sup>71</sup> Major Davis' men were also responsible for runway maintenance. Until markers were established, cut spruce trees lined the runways' edges, which continually had to be cleared of snow during the winter.<sup>72</sup> The construction of housing facilities, permanent buildings, utilities, and aprons was underway during September 1940. In October, reinforcing steel for the temporary Hangar 4 was set and the walls poured.<sup>73</sup>

By November 8, 1940, the runways were serviceable enough to allow the first plane, a Douglas OA-5 Pelican, to land. Also by November, Major Davis had moved out of the wanigan at Merrill Field and established a temporary headquarters in one of the Flightline garages until the headquarters building was completed. Because no hangars were finished, plane maintenance during the winter of 1940-1941 was performed outdoors. Luckily, there were only three planes at the air field and no combat missions to support. The three planes were the B10B Major Davis had flown to Elmendorf that summer, the OA-5, and an OA-38 on loan from Ladd Field.<sup>74</sup>

Major Davis was designated Commanding Officer of Elmendorf Field on December 1, 1940, and by February 1941 the Alaska Defense Force was redesignated the Alaskan Defense Command, and Davis was named its Chief of Aviation.<sup>75</sup> Nevertheless, his role was only that of advisor concerning air base activities; and he reported to General Buckner at Fort Richardson.<sup>76</sup>

Sending aircraft and tactical units to Alaska was delayed until airfield construction was well underway. The first Air Corps unit assigned to Alaska, the 18<sup>th</sup> Pursuit Squadron under the command of Captain Norman D. Sillin, arrived at Elmendorf on February 21, 1941, with 20 crated P-36A Hawks they had transported aboard the U.S.S. *St. Mihiel* and the Alaska Railroad. The 18<sup>th</sup> Pursuit Squadron quickly assembled the 20 P-36A planes in the uncompleted Hangar 4 under miserable conditions - the hangar was unheated, the windows had no glass, and the floor was frozen mud.<sup>77</sup>

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<sup>69</sup> *Ibid.*, 18.

<sup>70</sup> *Ibid.*, 20.

<sup>71</sup> Bush, *Narrative Report of Alaska Construction*, 227.

<sup>72</sup> Cloe, *The Aleutian Warriors*, 19.

<sup>73</sup> Fagen, *History of Fort Richardson*, 23.

<sup>74</sup> Cloe, *The Aleutian Warriors*, 19.

<sup>75</sup> Cloe, *The Air Force in Alaska Part II*, 48-49.

<sup>76</sup> Fleischer, *History Elmendorf Air Base*, 26.

<sup>77</sup> Cloe, *The Aleutian Warriors*, 19-20.



*Figure 14. Construction of Hangar 4, the temporary hangar.*

Photograph courtesy of the Office of History, Alaskan Air Command

Air Corps personnel arrived at Elmendorf in full force in late February. Included were 653 men of the 23rd Air Base Group, 350 men of the 28th Composite Group, 41 men of the 55th Signal Maintenance Company, and 23 men of the 18th Signal Platoon. The new arrivals brought the total enlisted strength to 3,917 persons,<sup>78</sup> while Major Davis had 1,301 men under his command. Major Davis' and his men's duties included training air forces personnel, maintaining aircraft, and planning and executing Alaska air defense. In March, the 73rd and 36th Bombardment Squadrons supplemented these units. The 73rd arrived with eight B-18 planes; and the 36th, under the command of Major William O. Eareckson, landed with six B-18A planes.<sup>79</sup>

<sup>78</sup> Fagen, *History of Fort Richardson*, 31.

<sup>79</sup> Cloe, *The Aleutian Warriors*, 22-23.

## The Eleventh Air Force

The first move toward centralizing the Alaska air forces was made in May 1941 when the air units were merged into the Air Field Forces, Alaskan Defense Command, which became the Air Force, Alaskan Defense Command in October. This centralized command was responsible for training Air Corps personnel, maintaining aircraft, and planning and executing air defense plans for Alaska. Major Davis assumed command, although he was still junior to General Buckner, and therefore was handicapped from exercising complete control over the ground units supporting his flying operations. Major Davis was promoted to lieutenant colonel on November 7. Although his duties became increasingly complex and demanding, Major Davis was constantly understaffed and lacked supplies.<sup>80</sup> At the beginning of December 1941, Colonel Davis' small command consisted of approximately 2,300 officers and soldiers in four flying units.<sup>81</sup>

A War Department directive on January 15, 1942, called for the activation of the Alaskan Air Force as part of the Western Defense Command. This change placed Colonel Davis' air forces on a level par with the ground troops. "It legitimized the new command."<sup>82</sup> The Western Defense Command included an immense area of nine western states and the Alaska territory. Three air forces were initially assigned to it - the Second Air Force, the Fourth Air Force, and the Alaskan Air Force.<sup>83</sup> The Alaskan Air Force was the smallest of the three.

The Alaskan Air Force was short-lived. On February 5, the War Department redesignated it the 11<sup>th</sup> Air Force; and later, on September 18, its name changed again to the Eleventh Air Force. Colonel Davis was the first commanding officer of the Eleventh Air Force. Although he had spent nearly two years building the Army's air forces in Alaska, Colonel Davis was considered too junior for the post. Colonel Lionel H. Dunlap replaced him on February 17, 1942, after serving as commander for only two days. Brigadier General William O. Butler replaced Colonel Dunlap less than a month later. Colonel Davis became General Butler's Chief of Staff.<sup>84</sup>

The Eleventh Air Force, at its conception, consisted of a headquarters and headquarters squadron, a provisional interceptor squadron with two fighter squadrons, the 28<sup>th</sup> Composite Group (consisting of three bombardment squadrons), and the 23<sup>rd</sup> Air Base Group. The Alaska Air Depot provided maintenance and administrative support.

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<sup>80</sup> Cloe, *The Air Force in Alaska Part II*, 69-72.

<sup>81</sup> Cloe, *The Aleutian Warriors*, 63.

<sup>82</sup> Cloe, *The Air Force in Alaska Part II*, 116.

<sup>83</sup> Wesley Frank Craven and J.L. Cate, eds., *The Army Air Forces in World War II: Plans and Early Operations January 1939 to August 1942* (Washington, D.C.: Office of Air Force History, 1983), 294.

<sup>84</sup> Cloe, *The Air Force in Alaska Part II*, 116-118.

Like Colonel Davis before him, General Butler was faced with substantial shortages of pilots and planes. By the end of February 1942, the command consisted of 3,067 persons, far short of what was authorized.<sup>85</sup>

On June 6 and 7, 1942, Japanese forces landed on the remote western Aleutian Islands of Kiska and Attu days after bombing Dutch Harbor on Amaknak Island. With Navy support, the Eleventh Air Force launched an air offensive against the Japanese, and Elmendorf Field served as a logistical hub supporting the air fleet. Maintaining headquarters at Elmendorf, so far removed from the field and Navy operations, was cumbersome. An air base was built on Adak Island, located about 250 miles east of Kiska. It was eventually named Davis Field after Colonel Davis. In March 1943 headquarters for the Eleventh Air Force was relocated to Adak, where it remained through the conclusion of World War II. The Eleventh Air Force's mission in the Aleutians culminated in an attack on Kiska Island on August 15, 1943. The American troops discovered that the Japanese had secretly evacuated the island three weeks earlier.

## Construction of the Flightline Buildings

Initially, Army's Quartermaster Corps carried out all the construction at Elmendorf. In January 1941 this responsibility was transferred to the Army Corps of Engineers, and Major Benjamin B. Talley was named the resident Area Engineer. At the time of the transfer, the original Elmendorf construction plan was approximately 80 percent accomplished.<sup>86</sup> Both runways and aprons were cleared of trees and brush. The east-west runway was graded and about half paved. Most temporary construction was complete, and foundations had been laid for several of the permanent structures.<sup>87</sup>

General Talley entered the military in the mid-1920s as a reserve officer in the Coast Artillery. He entered the Corps of Engineers in 1926 and began his Alaska career in Yakutat as the resident engineer. From January 1941 to May 1942, General Talley was the resident engineer in Alaska for the Corps' Seattle District and was in charge of all Corps military construction in Alaska. In May 1942 the area engineer became known as the Officer in Charge, Alaska Construction. General Talley became a member of the Alaskan Defense Command, although he maintained the same duties he had with the Corps. General Talley left the Anchorage office in June 1943 to participate in the European Theater, where he received numerous awards. He retired in Anchor Point, Alaska in 1964.<sup>88</sup> General Talley died November 28, 1998, at the age of 95.

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<sup>85</sup> Cloe, *The Aleutian Warriors*, 75.

<sup>86</sup> Lisa Mighetto and Carla Homstad, *Engineering in the Far North: A History of the U.S. Army Engineer District in Alaska 1867-1992* (Seattle and Missoula, Montana: Historical Research Associates, Inc., 1997), 27-28, 38.

<sup>87</sup> Cloe, *The Aleutian Warriors*, 25.

<sup>88</sup> Mighetto and Homstad, *Engineering in the Far North*, 28.



*Figure 15. Hangar 4, the temporary hangar, nearly complete.*

Photograph courtesy of the Office of History, Alaskan Air Command

Hangar 4 (Building 11-140), also called the temporary hangar, was the first completed hangar at Elmendorf and was ready for use in April 1941.<sup>89</sup> During World War II, Hangar 4 housed aircraft, plane maintenance activities, and base engineering offices. The design of Hangar 4 is based on a temporary, mobilization structure known as a “tropical” hangar, because this type of hangar was used extensively in the equatorial regions of South America. This large, gabled-roof hangar is wood-framed and built on a concrete foundation. Large, sliding aircraft doors are located on the north and south ends, and lean-tos run the entire length of both long sides. Hangar 4 is a temporary building because its bolt construction, which connects the steel trusses, roof members, and columns, allows it to be dismantled and re-erected.<sup>90</sup>

<sup>89</sup> Fagen, *History of Fort Richardson*, 34.

<sup>90</sup> Bush, *Narrative Report of Alaska Construction*, 314.





*Figure 16. Construction of one of the permanent hangars.*

Photograph courtesy of the Office of History, Alaskan Air Command

Hangars 1, 2, and 3 were among the first permanent buildings constructed at Elmendorf. Hangar 2 (Building 11-570), also called the Base Hangar, was completed the first week of June 1942.<sup>91</sup> Construction of Hangar 1 (Building 11-670) commenced on March 20, 1941, and concluded June 23, 1942. Hangar 3 (Building 11-470) was started at the same time and was completed on June 27, 1942.<sup>92</sup> The three hangars are essentially the same design, although Hangar 2 is the largest of the three. Perhaps the hangars' most impressive features are the spans of their large, yet graceful, steel arch roofs. These steel arches are set in concrete abutments and provide 35 feet of head clearance.<sup>93</sup> Equally impressive, at least in retrospect, is the fact that the roofs were originally made of copper. These cavernous structures were heated by the central heating plant that was located a short distance from the Flightline, but which is now gone.

<sup>91</sup> Fagen, *History of Fort Richardson*, 59.

<sup>92</sup> Fleischer, *History Elmendorf Air Base*, 27.

<sup>93</sup> Bush, *Narrative Report of Alaska Construction*, 313.



*Figure 17. The Flightline, illustrating the one temporary hangar, the three permanent hangars, and the associated buildings. Circa 1950.*  
Photograph courtesy of the Office of History, Alaskan Air Command

Flightline construction was not completed as quickly as hoped, due to the remote location and the military's unfamiliarity with Alaska-style construction. Nevertheless, the Flightline became operational in time to respond to what was considered Alaska's greatest threat: a Japanese invasion. After the original base plan was enlarged to meet the Eleventh Air Force's enhanced duties during the Aleutians Campaign, the Flightline was no longer the center of air base operations. Nevertheless, it was an important site during the Aleutian Campaign because plane maintenance was undertaken in Flightline hangars; and Flightline personnel were instrumental in providing logistical assistance to the Eleventh Air Force.

Elmendorf AFB's Flightline includes buildings associated with the development and construction of the first air base in Alaska. (Ladd Field, although constructed before Elmendorf AFB, was designed primarily for cold weather testing.) Ranging from large hangars to blocky warehouses to Neo-Georgian structures, the buildings of the Flightline are varied and represent the original, encompassing defense mission of Elmendorf Field.



*Figure 18. Construction of the Heating and Power Plant (now destroyed) and Building 11-420, the Laundry Facility.*

Photograph courtesy of the Office of History, Alaskan Air Command



*Figure 19. Elmendorf runways and the Flightline under construction.*  
 Photograph courtesy of the Anchorage Museum of History and Art



*Figure 20. Building 11-530, the old Headquarters.*  
 Photograph courtesy of the Office of History, Alaskan Air Command



*Figure 21. Building 11-530, the old Headquarters.*  
*Photograph taken from the roof of Hangar 2.*  
 Photograph courtesy of the Anchorage Museum of History and Art



*Figure 22. Building 11-620, the Photo Lab.*  
 Photograph courtesy of the Office of History, Alaskan Air Command

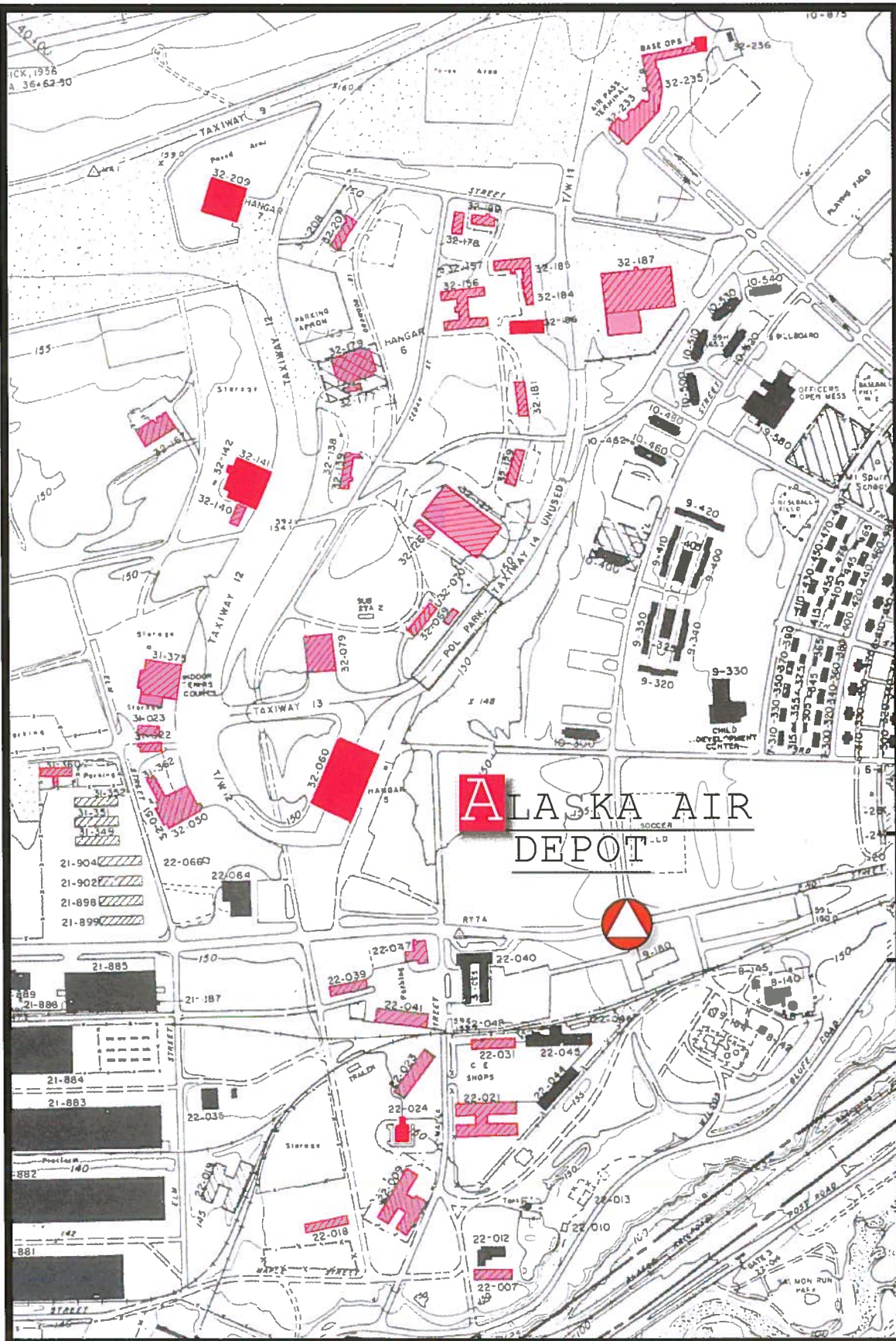


*Figure 23. General Buckner making a presentation at the Flightline.*  
 Photograph courtesy of the Anchorage Museum of History and Art



*Figure 24. The Flightline, illustrating Hangar 1, the Photo Lab, the old Headquarters Building, Hangar 2, and Hangar 3.*  
 Photograph courtesy of the Office of History, Alaskan Air Command





MAP 3: The Alaska Air Depot



## Chapter Three - The Alaska Air Depot

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*[T]he problem confronting the XI Air Force Service Command in July, 1942, was to support the operations of the Eleventh Air Force combat elements in their operations against the Japanese who had invaded the Aleutian Islands. In this undertaking we were fighting against time and flying to make up in a few short months the errors of omission committed during a period of over twenty years.*

Brigadier General Vincent A. Ignico,  
Memorandum, July 8, 1944.<sup>93</sup>

The United States' entrance into World War II and the Eleventh Air Force's involvement in repelling the Japanese from Kiska and Attu islands radically expanded Elmendorf AFB's mission. Bases sprang up along the Alaska Peninsula, on Kodiak Island, and in the Aleutians. Overnight, Colonel Everett S. Davis and his personnel became responsible for the maintenance of more than 350 constantly used aircraft distributed throughout 16 bases and a geographical area of 3,000 miles.<sup>94</sup>

Not only were Colonel Davis and his personnel responsible for Elmendorf AFB planes, but all planes in Alaska. When the United States entered World War II in December 1941, Air Force planes in Alaska consisted of six medium bombers and 12 pursuit planes.<sup>95</sup> By the end of July 1943, at the height of World War II combat operations, 369 aircraft flew in the Alaska theater and were serviced at the Alaska Air Depot at Elmendorf Field.<sup>96</sup> During this peak period, both storage facilities and men were scarce. To keep up with maintenance duties, the depot's engineering personnel worked 24 hours a day in three shifts, seven days a week.<sup>97</sup>

Authorization for construction of an Alaska Air Depot consisting of hangars, warehouses, technical and administration facilities, and a civilian housing compound for nearly 900 employees was received in the spring of 1943.<sup>98</sup> Before the Alaska Air Depot was operational, planes and supplies were transported as needed from the Sacramento Air Depot, and maintenance and testing were performed at Ladd Field or in the Flightline buildings at Elmendorf Field. As the number of planes serviced in Alaska increased, this system became inadequate. The old distribution network could not be depended upon to bring parts to Alaska quickly enough. The lack of trained Air Corps personnel was a continuing problem, and there were no facilities in Alaska where they could be trained.

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<sup>93</sup> Ignico and Hoxie, *History of the Alaska Air Depot*, 32-33.

<sup>94</sup> *Ibid.*, 29-30.

<sup>95</sup> Rennick, *World War II in Alaska*, 19.

<sup>96</sup> Ignico and Hoxie, *History of the Alaska Air Depot*, 31.

<sup>97</sup> *Ibid.*, 43.

<sup>98</sup> Bush, *Narrative Report of Alaska Construction*, 27.

Additionally, space constraints necessitated the construction of new facilities.

A significant part of the emerging role of the Alaska Air Depot was based on equipment testing. Air depots in Alaska were needed because the peculiar qualities of cold weather air operations in Alaska could not be simulated in the continental United States. Of particular concern was the testing of various hydraulic and fuel systems. In addition, offensive air strategy in the Aleutian Theater developed its own requirements for aircraft modifications. The Alaska Air Depot at Elmendorf AFB responded to these difficulties.



*Figure 25. Construction of the Alaska Air Depot.*

Photograph courtesy of the Office of History, Alaskan Air Command

The World War II mission of the Alaska Air Depot was to support the Eleventh Air Force in the Alaska theater by maintaining aircraft and related equipment and providing improved and adapted equipment for new planes. To maintain newer aircraft, the Alaska Air Depot supplied improved equipment; a continuous supply of parts,

blueprints, and technical instructions; and personnel training.<sup>99</sup> Any type of airplane maintenance could be performed at Elmendorf's Alaska Air Depot.<sup>100</sup> This depot was the only site in Alaska providing higher, fourth echelon maintenance, such as hydraulic, carburetor, radio repair, parachute, propeller, bombsight, and instrument repair.<sup>101</sup>

In addition to plane maintenance, the Alaska Air Depot was responsible for distributing supplies to Elmendorf and all air bases in Alaska. Supplies were not limited to military equipment, as the following quote illustrates:

By Christmas of 1943 . . . three planes were put into service to carry fruitcakes, turkeys, candy, cigarettes, games, and Christmas trees and other items to the troops in all parts of Alaska. A large supply depot was inaugurated at Fort Richardson, with a sub-depot at Adak. These agencies filled requisitions of supplies ranging from books, garden seeds, musical instruments, athletic equipment, radios, instruction manuals, training literature, decoration, games, and magazines to plays and scripts.<sup>102</sup>

The Alaska Air Depot is an amoeba-shaped network of taxiways, aircraft hangars, and warehouses dispersed over a two-mile area and set apart from the rest of the base. The depot is located just south of the furthest west portion of the east-west runway. An "S" shaped taxiway connects hangars and other plane maintenance facilities to the east-west runway. Supply warehouses and sections not requiring location along the taxiway are located to the south and west of the taxiway area.

The buildings of the Alaska Air Depot include:

- Building 22-007 - Indoor Firing Range
- Building 22-009 - Hazardous Storage
- Building 22-021 - Maintenance Shop
- Building 22-023 - Engineering Maintenance Shop
- Building 22-039 - 3rd CES Prime Beef
- Building 22-041 - Housing Office
- Building 22-047 - Parachute Shop
- Building 31-360 - Vehicle OPS
- Building 32-050 - Corrosion Control
- Building 32-060 - Hangar 5
- Building 32-069 - Mobile Refueling
- Building 32-079 - Outdoor Recreation Building
- Building 32-127 - AGE Flight
- Building 32-129 - Battery Shop

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<sup>99</sup> Ignico and Hoxie, *History of the Alaska Air Depot*, 35.

<sup>100</sup> *Ibid.*, 56.

<sup>101</sup> Fleischer, *History Elmendorf Air Force Base*, 37-38.

<sup>102</sup> Arthur Rosien, untitled, unpublished manuscript describing the facilities and conditions at Fort Richardson during World War II. The manuscript is at Z.J. Loussac Library in Anchorage, and this excerpt is from Chapter 19, entitled "Monotony vs. Morale."

Building 32-139 - Welding Shop  
Building 32-141 - Heavy Equipment  
Building 32-167 - Cryogenics  
Building 32-177 - Machine Shop Office  
Building 32-179 - Hangar 6  
Building 32-181 - Plant Maintenance  
Building 32-184 - Hobby Shop  
Building 32-185 - Carpenter Shop  
Building 32-187 - Snow Barn  
Building 32-189 - Start-up Power Plant  
Building 32-207 - Armament Shop  
Building 32-209 - Hangar 7, Aero Club  
Building 32-233 - Air Passenger Terminal  
Building 32-235 - Passenger Terminal

## Formation of the Alaska Air Depot

Major Davis' and his two enlisted men's arrival at Elmendorf Field on August 9, 1940, marked the inauspicious beginnings of the Alaska Air Depot. The men went to work immediately, separating Air Corps supplies from those bound for Fort Richardson and tending to plane maintenance in the evening. The lack of trained officers and enlisted men was a constant hindrance even after the first supply service units, the 23<sup>rd</sup> Service Group, arrived in full force the following February.<sup>103</sup> Due to a lack of facilities, most plane maintenance was performed outdoors until the temporary hangar was completed in April of 1941. Equipment was crude. Various small shops, such as the machine, welding, sheet metal, carpenter, propeller, electric, parachute, and engine installation, developed in tents or small frame buildings.<sup>104</sup>

The Eleventh Air Force was organized in January 1942 to undertake Elmendorf AFB's tactical air base responsibilities. Sub-depots, under the direction of the Sacramento Air Depot, were activated at Elmendorf and Ladd Fields on February 15, 1942, to serve the Eleventh Air Force. Colonel J.L. Davidson, who had commanded the 23<sup>rd</sup> Service Group, was named commander of the Elmendorf Sub-Depot. The sub-depots were responsible for the maintenance and testing of airplanes in the Alaska theater. Initially, six officers, 135 enlisted men, and three civilian employees were assigned to the Elmendorf Sub-Depot.<sup>105</sup>

In March 1942, ninety trained mechanics, metal workers, armament mechanics, electricians, and other trained civilian personnel were transferred to the Elmendorf Sub-Depot from the Sacramento Air Depot. This augmentation allowed the depot to expand engineering activities and establish new departments that were necessary in order to

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<sup>103</sup> Ignico and Hoxie, *History of the Alaska Air Depot*, 7-8.

<sup>104</sup> *Ibid.*, 10-11.

<sup>105</sup> *Ibid.*, 14-15.



Figure 26. The sub-depot's old Paint Shop was located in a Quonset hut.

Photograph courtesy of the Anchorage Museum of History and Art

service the increasing number of aircraft in the Alaska Theater.<sup>106</sup> The Elmendorf Sub-Depot moved into the newly completed Hangars 1, 2, and 3 in June 1942, and all planes could finally be brought indoors for maintenance. "But by this time the United States was at war and an entirely new depot area . . . envisioned as necessary."<sup>107</sup>

The XI Air Force Service Command was officially activated in July 1942 to assume "command, technical control and supervision of all Eleventh Air Force Depots, Sub-Depots, Posts, Camps, Stations, and personnel."<sup>108</sup> As activities in the Aleutian Theater intensified, the construction of and supplying of remote bases presented logistical problems that could only be remedied by the establishment of a central service command in Alaska. The XI Air Force Service Command severed the relationship between the Alaska sub-depots and the Sacramento Air Depot in August 1942 by announcing that the two depots were no longer satellites of the Sacramento Air Depot, but service organizations under the direction of and responsible to the Eleventh Air Force.<sup>109</sup>

The sub-depot at Ladd Field was redesignated the Alaska Air Depot on August 9, and on September 14 the Elmendorf Sub-Depot was redesignated the 342nd Sub-Depot. Problems with this disposition emerged from the onset. Ladd Field originated as a cold weather testing site and had become a center for the Lend-Lease program, in which

<sup>106</sup> *Ibid.*, 43.

<sup>107</sup> *Ibid.*, 11, 41, 47.

<sup>108</sup> *Ibid.*, 18.

<sup>109</sup> *Ibid.*, 19.

aircraft and materials were flown to Russia. These activities complicated the ability of Ladd Field personnel to fully service the Eleventh Air Force.<sup>110</sup>

In response to these difficulties, the War Department ordered, in November 1942, that a substantial number of Alaska Air Depot personnel at Ladd Field be transferred to Elmendorf. Elmendorf underwent a tremendous expansion. In December, 73 civilian employees were transferred from Ladd Field, and 75 skilled civilian employees were transferred from Patterson Field in Ohio. Thirty-eight officers and 510 enlisted men of the 39<sup>th</sup> Air Depot Group from San Bernardino, California, arrived at Elmendorf on February 16, 1943, to replace the 23<sup>rd</sup> Air Base Group, which had been transferred to the Aleutian Islands. The 39<sup>th</sup> Air Depot Group was the first group to arrive in Alaska specifically trained for operation of a full-scale general depot.<sup>111</sup>

On March 12, 1943, the transfer of the Alaska Air Depot from Ladd to Elmendorf Field was formally announced, and Ladd Field personnel were rapidly transferred to Elmendorf. The Alaska Air Depot was directed to operate in 342<sup>nd</sup> Sub-Depot buildings and "simply take over all the duties, on an expanded basis . . . being performed by the 342<sup>nd</sup> Sub-Depot." As a precautionary measure, the 342<sup>nd</sup> Sub-Depot remained an authorized organization, prepared to become fully operative if the need arose.<sup>112</sup>

## Construction of the Alaska Air Depot

Major Davis and his men constantly suffered from a lack of space for Air Corps supplies. At times, supplies were stored outdoors under tarpaulins. There was such a shortage of warehouse space that in 1940 that Major Davis requested that Air Corps materials remain in the continental United States. By the time the air depot moved into the Flightline hangars, the Aleutians Campaign was underway, and the Elmendorf Sub-Depot had already outgrown its new facilities. To avoid concentration of personnel or materials, in the spring of 1942 the Air Corps took over buildings and built 19 new warehouses at the state fairgrounds in Palmer, about 50 miles north of Elmendorf AFB. Quantities of a particular item were located throughout numerous warehouses and in different places in each. A complicated system of locator cards was implemented to track materials.<sup>113</sup>

Plans for construction of the Elmendorf Sub-Depot developed in the summer of 1941. After surveying a variety of Alaska sites, a board concluded that Elmendorf Field was the most suitable site for the depot. Original plans called for a \$1.5 million project consisting of two small hangars, nine small shop buildings, and equipment and utilities.<sup>114</sup>

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<sup>110</sup> *Ibid.*, 19-20.

<sup>111</sup> *Ibid.*, 21-24.

<sup>112</sup> *Ibid.*, 26-28.

<sup>113</sup> *Ibid.*, 35-38.

<sup>114</sup> *Ibid.*, 57.



*Figure 27. Air depot personnel at Elmendorf were responsible for maintenance of all planes flown by the Eleventh Air Force.*

Photograph courtesy of the Office of History, Alaskan Air Command

More extensive facilities were needed after the Alaska Air Depot was relocated to Elmendorf. On July 27, 1943, the Western Defense Command directed that an air depot consisting of nearly 1.5 million square feet of hangar, shop, and warehouse space with troop housing be constructed. Construction was to be in two cycles, with half of the construction completed by March 1944.<sup>115</sup> Depot plans were constantly modified, and the size of the Alaska Air Depot was ultimately decreased.

Construction did not commence until October 1943 due to delays in procuring materials and personnel and the competing erection of Aleutian bases. Difficulties similar to those at the Flightline hampered progress. Before laying foundations, steel pipes had to be driven into the ground to thaw it out. Constant labor shortages existed. In April 1944, sections began moving into air depot buildings as they were finished, and by the end of that summer, construction was basically complete.<sup>116</sup> By August, 18 of the Supply Section's warehouses were operating. Previously, the Supply Section materials had been disbursed over a large area requiring hauling 15 miles to the new depot. When

<sup>115</sup> *Ibid.*, 64.

<sup>116</sup> *Ibid.*, 65-69.





*Figure 28. The responsibilities of depot personnel included maintenance of the base motor pool.*  
 Photograph courtesy of the Office of History, Alaskan Air Command

the new supply system was in place, parts could be delivered to the plane mechanics in just a few hours. Formerly, supplying parts could require from four days to a week.<sup>117</sup>

During September 1944 the Machine, Welding, Sheet Metal, Parachute, and Hydraulic Shops all moved into the new facilities; and the Engineering Shop sections were nearly all moved.<sup>118</sup> The Alaska Air Depot began to function as designed - aircraft were routed through the depot, and parts were fed to the various shops for repair. This process is described below:

Aircraft now assigned to the Depot first come to the Flight Test Section where the ship is received, steam cleaned and all cowlings and loose equipment is removed. This equipment is turned over to the shops concerned for inspection and repair. The airplane then is turned over to the Inspection Section for shake down inspection and correction of the airplane forms, if necessary. When inspection has

<sup>117</sup> Ignico, Vincent, *History of the Alaska Air Depot, 1 August 1944 - 31 August 1944* (unpublished manuscript, 1944), 3-4.

<sup>118</sup> *Ibid.*, 5.

completed its work, the plane is then turned over to the shop sections for necessary work to be accomplished. When all work is completed, the plane is turned back to Inspection for final inspection and then to Flight Test for a final run up and flight check. So far, this system has worked out very well.<sup>119</sup>

## Butler Buildings

Butler Manufacturing Company of Kansas City, Missouri, manufactured several buildings at the Alaska Air Depot. These include Building 32-127 (the Aero Repair Hangar), Building 32-069 (the Issue Warehouse), Building 32-079 (the Propeller Shop), Building 32-209 (Hangar 7), and Building 32-141 (the Heavy Equipment Shop).

Before the war, the Butler Manufacturing Company filled orders for various sheet metal structures, including grain bins, stock watering tanks, water storage tanks, well casings, and houses for the engineer-philosopher R. Buckminster Fuller. It became readily evident to the military, especially the Army Air Force, that Butler's corrugated sheet metal structures could easily be translated into buildings for wartime use. Aircraft hangar designs, especially, were easily adapted to the sheet metal fabrication process. Warehouse construction was a staple of the Butler Company,<sup>120</sup> and both types of buildings make up a substantial portion of the buildings at the air depot.

Termed variously as "knock-down" or "demountable" construction, the design of the Butler buildings have the benefit of being highly adaptable to additions and alterations, not to mention the ease with which entire buildings could be disassembled and rebuilt at another location. The combat hangar could be erected in 12 to 18 hours.<sup>121</sup> Its construction is described in a 1944 article in the *Engineering News Record*:

For use in the war zones a light weight steel, demountable hangar claimed to possess the 'mobility of a circus tent' was developed . . . Using three hinged, steel arch trusses of 130 feet span tied at the base as the principal framing . . . a cleverly designed hinge bolt reducing erection time to a minimum. Normally the hangar is enclosed by a flame proof, light weight canvas, suspended from the arches. . . .<sup>122</sup>

Many of the Butler buildings at Elmendorf AFB have additions, and they should be considered the rule rather than the exception. For example, several of the arch-roof Alaska Air Depot hangars have lean-to office wings abutting the main structure. In some cases the hangars were built with the additions, and sometimes they were added later. Warehouses also could be modified to suit specific operational roles. It is rare to find a

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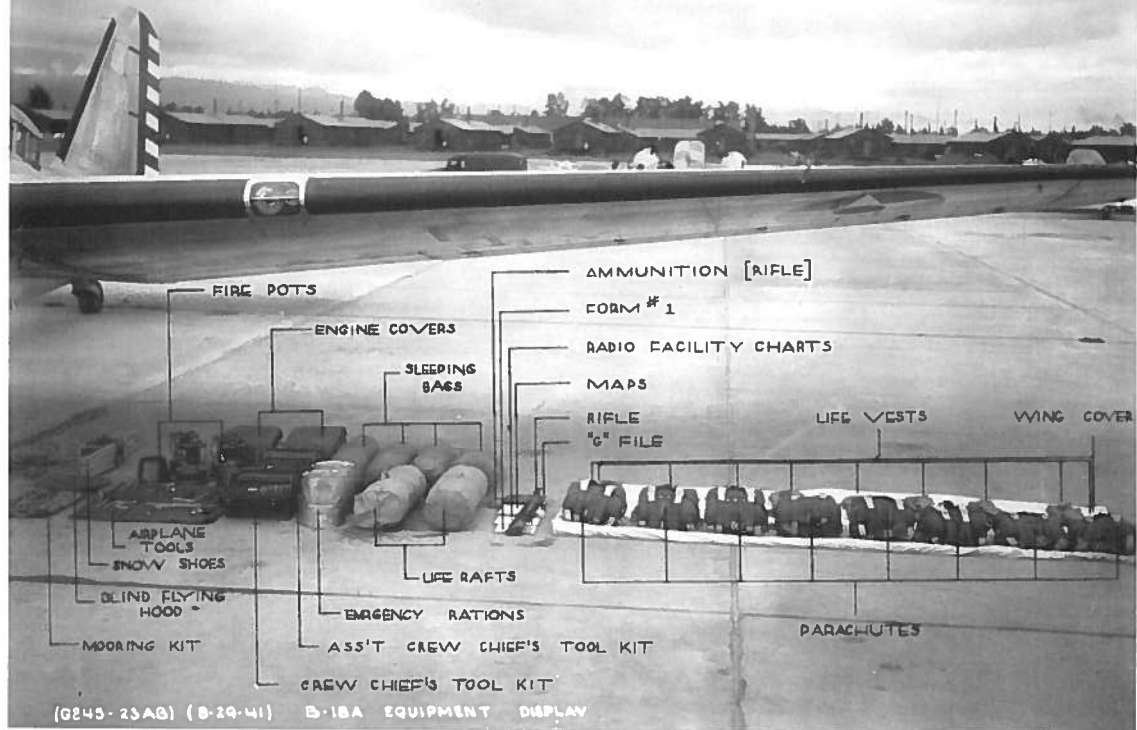
<sup>119</sup> *Ibid.*, 6-7.

<sup>120</sup> "Brave New World, F.O.B.," *Fortune* 28, no. 2 (February 1943): 125.

<sup>121</sup> *Ibid.*, 127.

<sup>122</sup> Kevin Mallory and Arvid Ottar. *The Architecture of War* (New York: Pantheon Books, 1973), 85. Quoting "These Buildings were Significant," *Engineering News-Record* (October 19, 1944): 111.

ANNEX #2  
OPERATIONS MEMO #19  
SEPTEMBER 2, 1941  
RESTRICTED



*Figure 29. The Alaska Air Depot was responsible for supplying all facets of plane maintenance, including survival gear.*

Photograph courtesy of the Office of History, Alaskan Air Command

“pure” Butler structure - adaptability is intrinsic to their design.

While Butler building designs make few concessions to aesthetics, the numerous arch-roof hangars at the depot are visually engaging. The Alaska Air Depot has resulted in a unique collection of historic architectural forms. The arrangement of buildings and taxiways reflects the requirements of an integrated supply, testing, and maintenance facility for air operations as well as the scientific planning of an important World War II air theater.

Built at a time of global crisis in a theater where air power was predominant, the buildings of the Alaska Air Depot reflect an intense period of rapid decision-making, planning, and construction. In such a wartime environment, architectural design bowed to speedy, efficient construction. Therefore, the builders of the Alaska Air Depot utilized prefabricated buildings that could be assembled and put into service quickly. But the air depot also represented a commitment to a long-term concept, that of a permanent and centrally located military aircraft servicing facility for the Alaska theater.

The Air Depot has been called the “most important unit located at Elmendorf Field.”<sup>123</sup> Consolidation of the maintenance and storage activities within a concentrated geographical area improved the efficiency of plane maintenance at Elmendorf. Placed in the larger context of aviation history, Elmendorf’s Air Depot was built at an unforeseeable junction in the chronology of aircraft development.

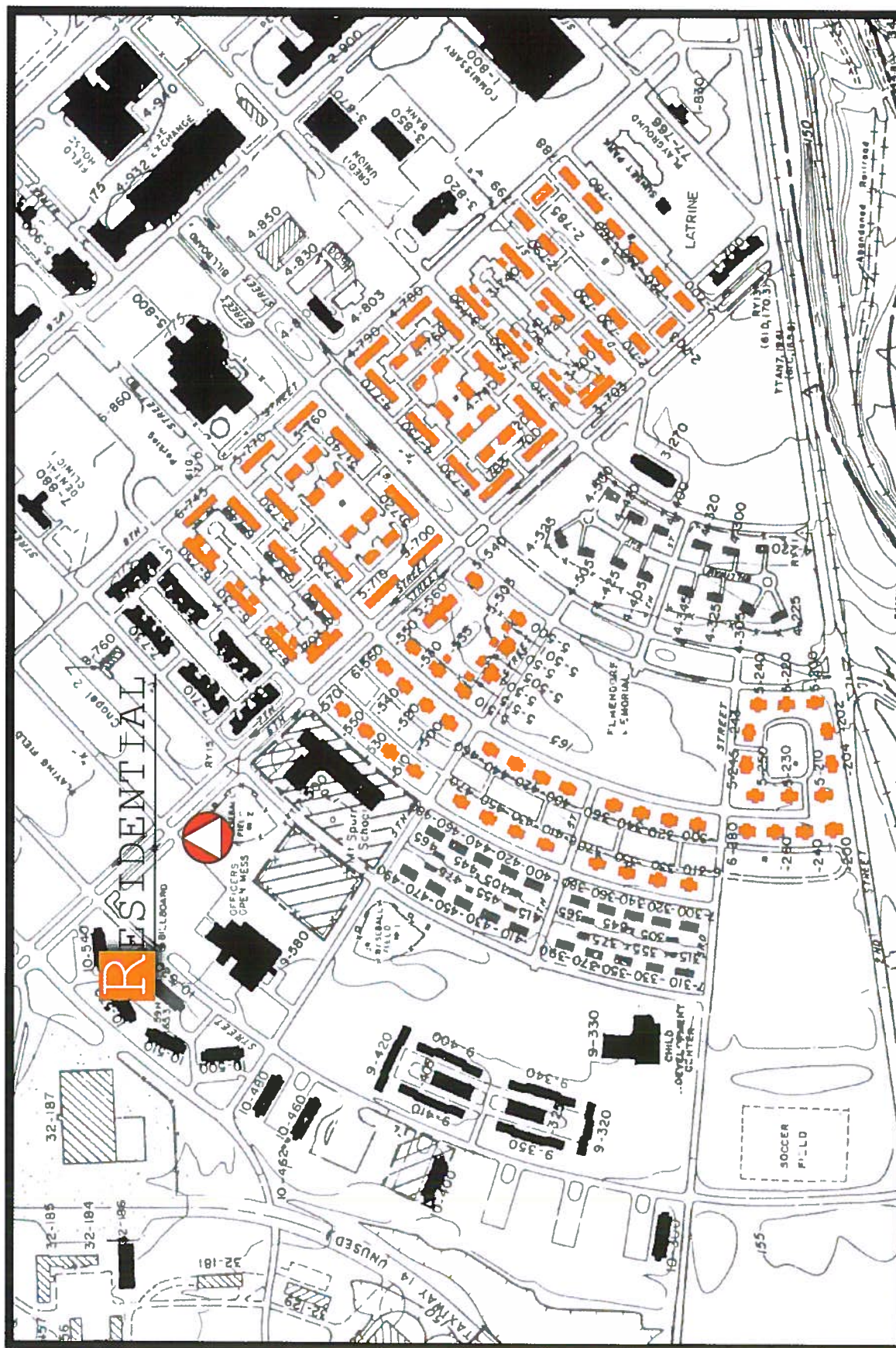
Based entirely upon piston-driven aircraft, the Alaska Air Depot was equipped and ready to handle such aircraft just as the “jet age” was dawning. While made not entirely obsolete, the Alaska Air Depot became a somewhat anachronistic model, both materially and conceptually, in an age of modern change. Nevertheless, the arrangement of the original taxiways and the varied orientation of many structures give an impression that speaks to the scientific planning of an important World War II theater.



*Figure 30. Left, Building 32-235 (the Passenger Terminal) and right, Building 32-233 (the Air Passenger Terminal). Photograph courtesy of the Office of History, Alaskan Air Command*

<sup>123</sup> Fleischer, *History Elmendorf Air Base*, 36.





## MAP 4: Residential Buildings

## Chapter Four - Residential Buildings

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The typology of the residential buildings in this inventory reflects basic size and style differences, as well as the occupant's rank. Place names, such as Boise, Seattle, Boston, Houston, and Chugach, were assigned to various residential building styles designated for noncommissioned officers. Housing for field-grade and commissioned officers was designated FO and CO. Four of these housing units are part of a grouping called the Generals' Quadrangle, or Generals' Quad.

The residential buildings at Elmendorf AFB include:

- Buildings 2-700 to 2-799 - Boise Housing
- Buildings 3-700 to 4-790 - Seattle Housing
- Buildings 5-200 to 5-250 - FO Housing
- Building 5-502 - FO/CO Housing
- Building 5-503 - Auto Garage
- Building 5-504 - "Quarters One"
- Building 5-505 - Auto Garage
- Building 5-515 - Auto Garage
- Building 5-530 - FO Housing
- Building 5-535 - Auto Garage
- Building 5-550 - FO Housing
- Building 5-560 - VOQ "Alaska Chateau"
- Buildings 5-700 to 5-770 - Family Housing
- Buildings 6-200 to 6-570 - FO Housing
- Buildings 6-700 to 6-750 - Family Housing

The multiple-unit Boise (Buildings 2-700 to 2-799) and Seattle (Buildings 3-700 to 4-790) residential structures were originally constructed as four- and eight-unit quarters for non-commissioned officers during the great burst of military activity that followed the Pearl Harbor attack. At the war's end, Fort Richardson witnessed an exodus of men returning home to the contiguous United States and at the same time an influx of women and children as career airmen could finally bring their families to live on base. As a result of this demographic change, the eight-unit Seattle quarters were converted to four-unit family quarters. The four-unit Boise housing remains so today and is designated "Transient Lodging."

The designs of the Boise and Seattle Housing stress functionality rather than design. These long, blocky rectangular structures have been extensively renovated including new roofs, windows, and vinyl siding. The siding is arranged in a two-color motif, alternating sections of vertical and horizontal panels. Despite these updates, the general form and profile of the buildings reflect their original design.

In contrast, the FO/CO and CO Housing exhibits the architectural landscape and feeling of an American suburb. Detached two-car garages, white picket fences, and the



central base area's greatest concentration of large trees provide this neighborhood with an intimacy not found in Elmendorf's other housing areas. Enclosed front porches, a central fireplace chimney, and an enclosed rear entryway are also original features of these structures. Not coincidentally, this housing is assigned to higher ranking Air Force officers and their families. Through the years, the front porches have been altered, and attached garages have been added. Because occupants now commonly enter their homes through the garage, the streetscape has been reoriented and the historic integrity lost. Other renovations have removed or changed many of the FO/CO and CO buildings' original windows, roof materials, and exterior finishes.

## The Generals' Quad

Originally, the Generals' Quad consisted of eight FO Housing buildings and their accompanying detached garages that were reserved for high-ranking Elmendorf AFB officers. Four of these houses have been demolished. The buildings of the Generals' Quad are arranged on a single block in the base's residential section. Surviving buildings are numbered 5-500, 5-502, 5-504, 5-530, and 5-560. Each building, except for 5-560 has a detached garage.



*Figure 31. Field Grade Officers' (FO) Housing. Photographed in 1956.*

Photograph courtesy of the Office of History, Alaskan Air Command

Building 5-504 is more commonly known as the General's Quarters, or Quarters One. Building 5-504 was completed in 1942 as a duplex for field-grade officers. It later was converted to quarters for the Commander-in-Chief, Alaskan Command. Otherwise, the General's Quarters is similar to other FO/CO Housing. Besides serving as quarters to the Commander-in-Chief, Building 5-504 is notable for its association with the historic meeting of President Richard M. Nixon and Emperor Hirohito on September 26 and 27, 1971. On those dates, the President and Mrs. Nixon stayed overnight at Building 5-504. Both heads of state and their wives held formal meetings in the residence, marking the first time a reigning Japanese monarch met with an American president.<sup>124</sup>



*Figure 32. General and Mrs. Ruegg with President Nixon at the General's Quarters in September 1971.*

Photograph courtesy of the Office of History, Alaskan Air Command

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<sup>124</sup> Carberry and Lane, *Patterns of the Past*, 205.

Building 5-560 is commonly known as the "Alaska Chateau." Another name for it is the VOQ, Visiting Officers-Quarters. The structure, completed in 1942 at a cost of \$96,650, was originally designed as a multi-family unit for general officers. At both ends of the building's central portion are two wings with sharp rooflines, providing a chateau-like appearance. Due to the lack of suitable accommodations in Anchorage, Building 5-560 was modified in 1950 to serve as the guesthouse for distinguished visitors. Dignitaries who have stayed at the Chateau include President Dwight Eisenhower, General and Mrs. Douglas MacArthur, Senator John F. Kennedy, Secretary of State Henry Kissinger and Bob Hope. In 1973 the Chateau was converted to senior officers quarters as better hotel facilities were available in Anchorage. A subsequent renovation took place in the late 1980s.<sup>125</sup>

The residential structures in this inventory represent Elmendorf Air Field's transition from temporary to permanent military construction. Unlike the many mobilization-type barracks that once occupied the central base area, Elmendorf's Boise, Seattle, FO/CO, and CO Housing reflect the Army's commitment to long-term planning. Though regularly scheduled renovations and numerous floor plan changes are what most characterize the architectural history of these structures, their basic form and profile remains evident.

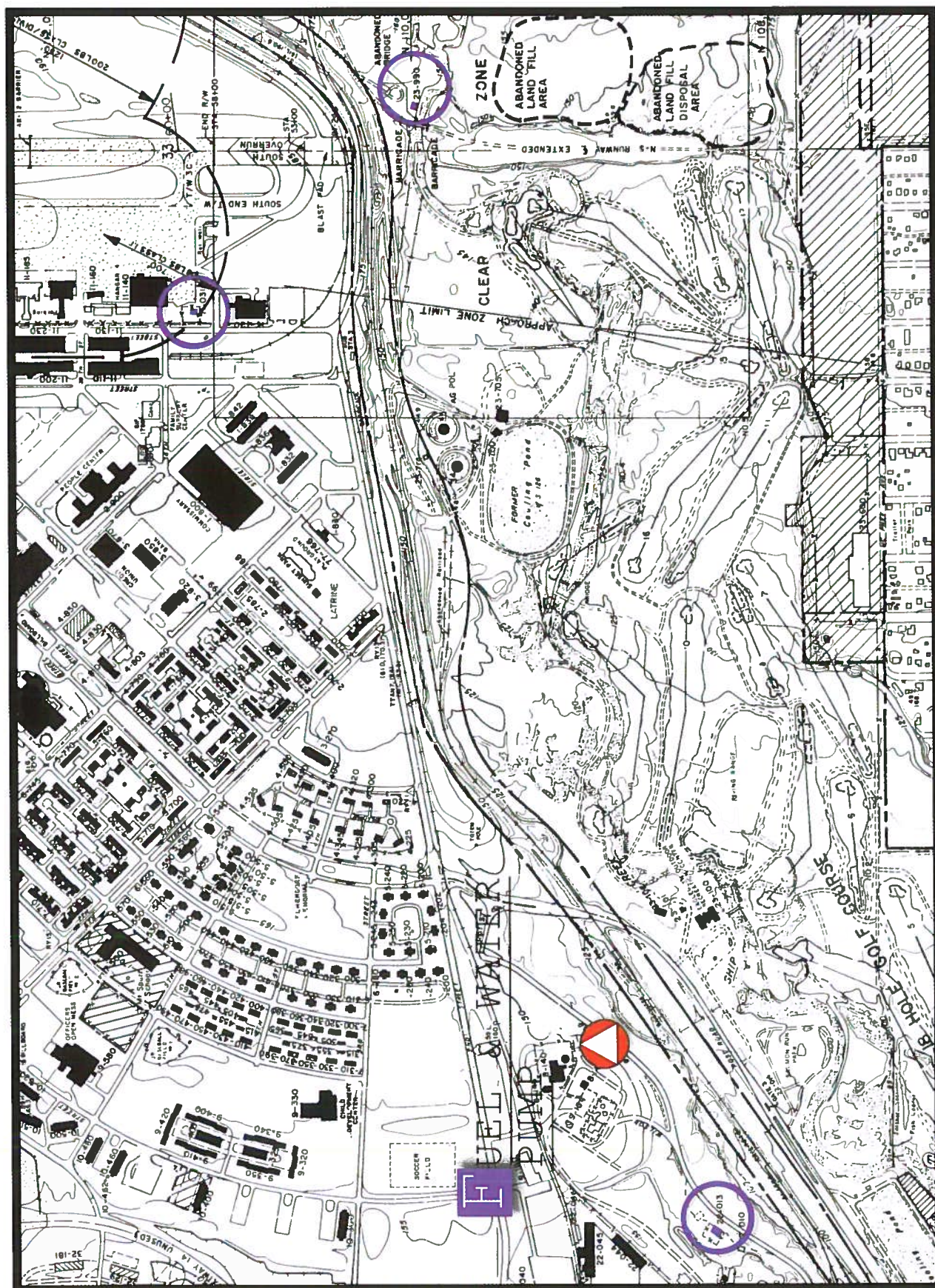
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<sup>125</sup> United States Air Force, "Fact Sheet: The Chateau." Unpublished paper received from the 3<sup>rd</sup> Wing, Office of History, Alaska Air Command.



*Figure 33. Building 5-560, the "Alaska Chateau," ca. 1950s.*  
Photograph courtesy of the Office of History, Alaskan Air Command





## MAP 5: Fuel and Water Pump Buildings

## Chapter Five - Fuel and Water Pump Buildings

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The functioning of Elmendorf Field was dependent upon fuel and water systems to supply plane fuel and water to the base. Water and fuel systems were related to the mission of the original base. A seven-million-gallons-per-day gravity water system was part of the base's original construction schedule. A reserve gasoline system consisting of four 24,000-gallon tanks was authorized in 1942.<sup>126</sup> The six Fuel and Water Pump structures are simple, austere, rectangular, and square. The buildings are small - ranging from 120 square feet to just over 1,000 square feet. As more information becomes available about these buildings, the context for this grouping can be developed. These buildings are determined ineligible for the National Register of Historic Places.

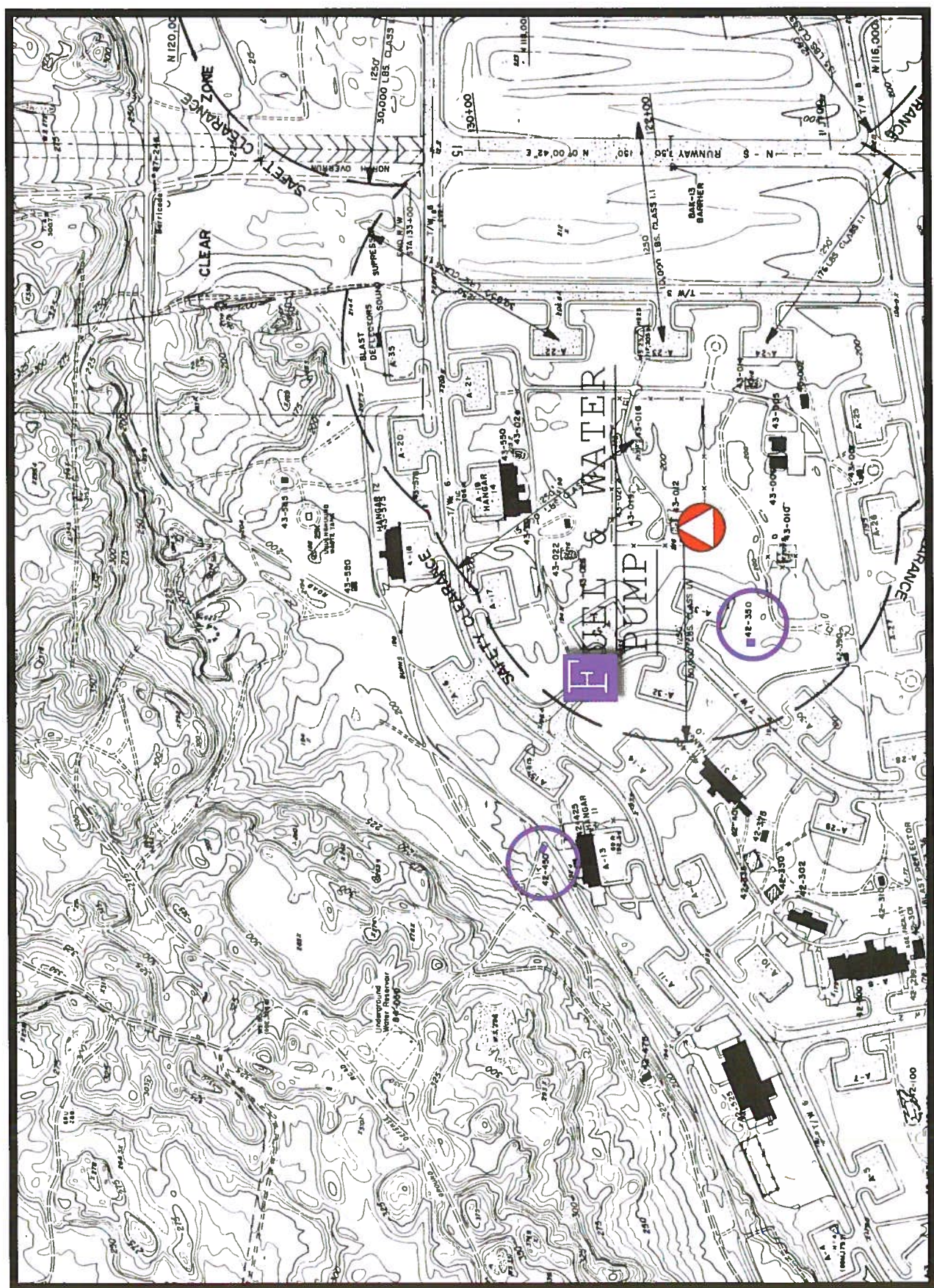
This section includes the following buildings:

- Building 11-031 - Farm #1
- Building 22-013 - Pumping Station
- Building 23-990 - Water Pump House
- Building 31-600 - Fuel Pump Station
- Building 42-350 - Warehouse
- Building 42-450 - Pump House

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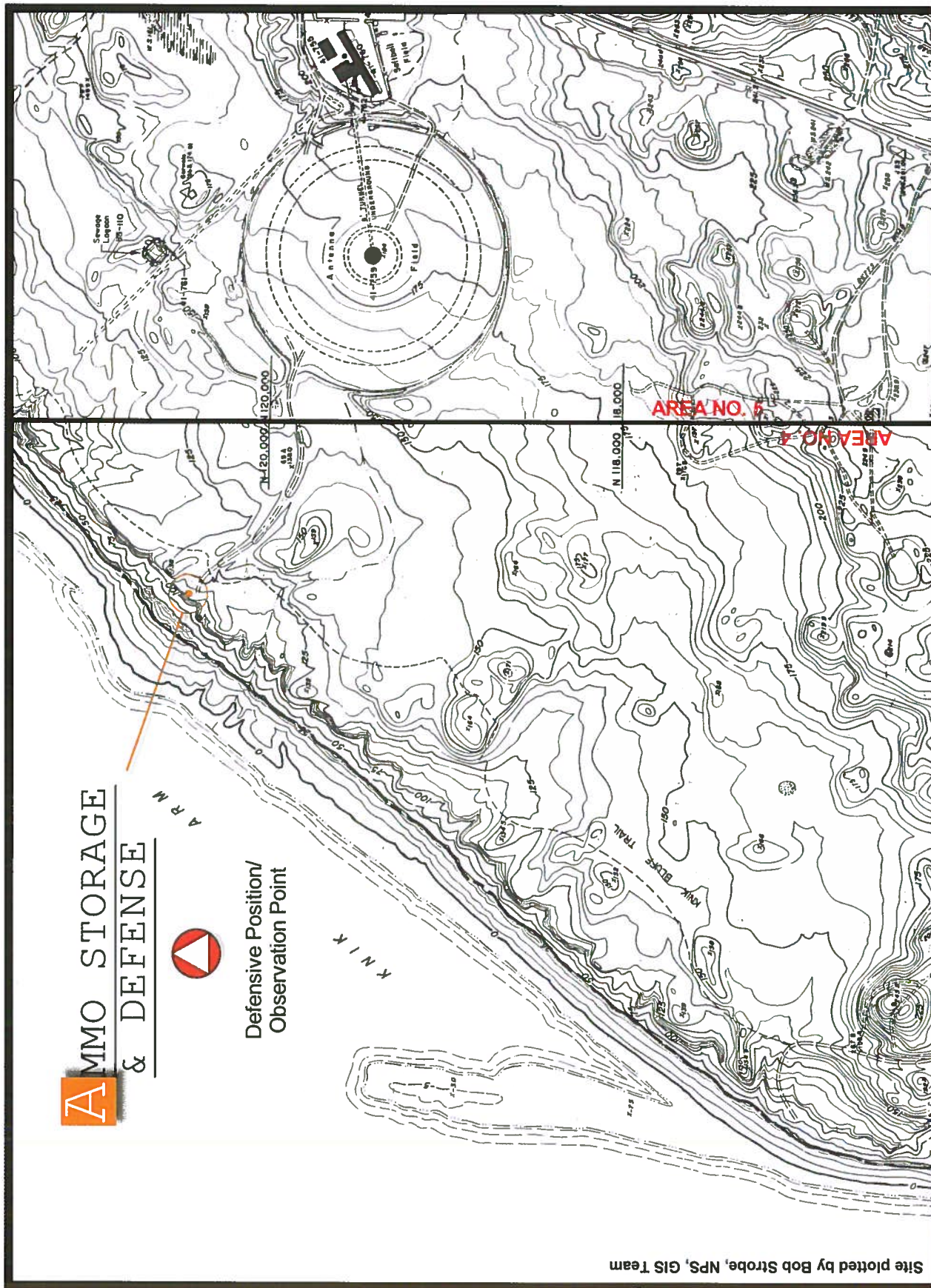
<sup>126</sup> Bush, *Narrative Report of Alaska Construction*, 27.





## MAP 6: Fuel and Water Pump Buildings

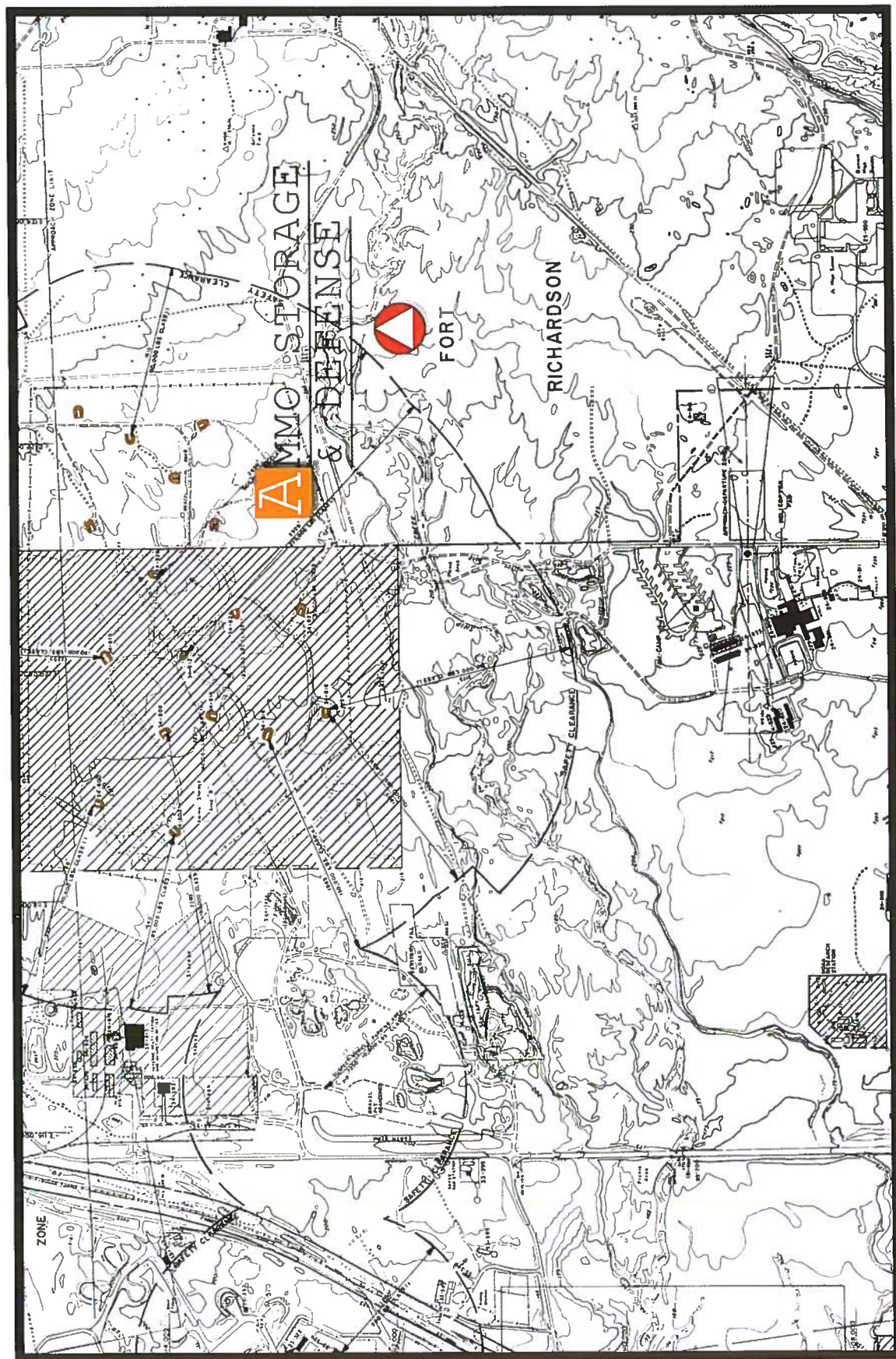




MAP 7: Ammunition Storage and Defense

Site plotted by Bob Strobe, NPS, GIS Team





MAP 8: Ammunition Storage and Defense

## Chapter Six - Ammunition Storage and Defense

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During World War II, Elmendorf AFB and Anchorage were considered susceptible to a Japanese attack. For their protection, military men's families were sent to the contiguous United States; and Anchorage residents were encouraged to do the same.

Pillboxes and Ammunition Igloos are included in the Army's original construction schedule to provide defense at key locations. Pillboxes housed gun crews who would provide defense by firing at enemy marauders, while Ammunition Igloos were magazines.

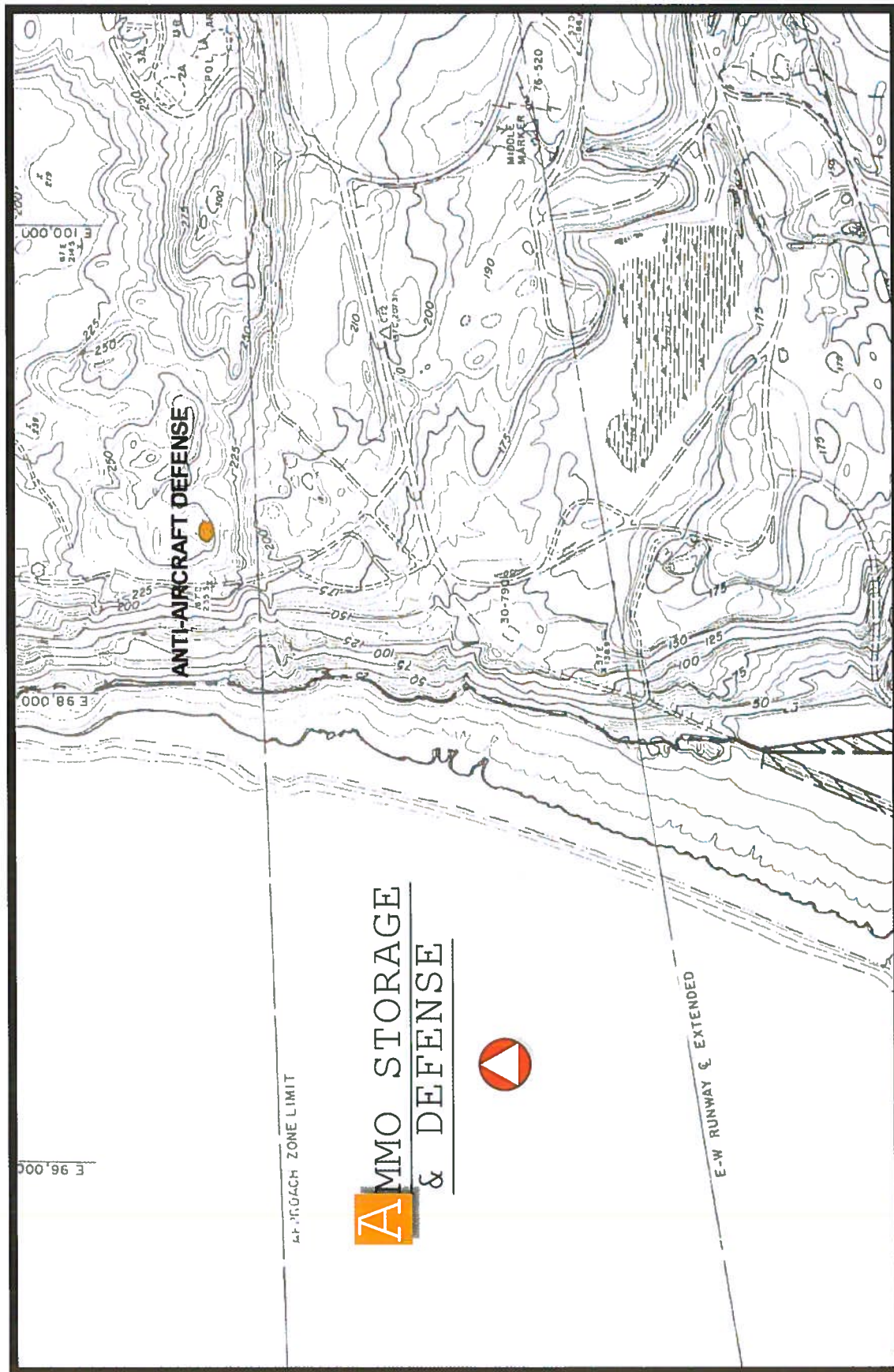
The buildings of the Ammunition Storage and Defense area include:

- Building 34-800 - Ammunition Igloo
- Building 34-802 - Ammunition Igloo
- Building 34-808 - Ammunition Igloo
- Building 34-810 - Ammunition Igloo
- Building 34-812 - Ammunition Igloo
- Building 34-814 - Ammunition Igloo
- Building 34-816 - Ammunition Igloo
- Building 34-818 - Ammunition Igloo
- Building 34-822 - Ammunition Igloo
- Building 34-824 - Ammunition Igloo
- Building 34-826 - Ammunition Igloo
- Building 43-010 - Ammunition Igloo
- Building 43-012 - Ammunition Igloo
- Building 43-014 - Ammunition Igloo
- Building 43-016 - Ammunition Igloo
- Building 43-022 - Ammunition Igloo
- Building 43-024 - Ammunition Igloo
- Pillbox
- Anti-Aircraft Defense
- Observation Post

Seventeen existing ammunition storage "Igloos" are grouped along Knik Bluff. The Igloos are arranged in one extensive group at the northern end of the base. The Ammunition Igloos, each 60 feet long and 26 feet wide, are constructed of concrete with an earth shell. Each provides nearly 1,600 square feet of ammunition storage space. Their bowed shape somewhat resembles Quonset huts. Ammunition Igloos reflect a theme common to most military construction: the need for hasty construction in an economical manner. To facilitate this, all construction work for the Igloos was done on site, and all are identical.

The first step in constructing the Igloos was laying concrete floor slabs. Next, concrete was poured into curved forms to produce six panels, each 19 feet long and 13 feet wide and weighing 16 tons. These panels were tilted into an upright position with a





MAP 9: Ammunition Storage and Defense

crane, joined with bolts, and fit into guides in the floor slabs. While the panels were temporarily supported with wood shoring, concrete columns were poured between the panels. Concrete was then poured to form the roof section and the end walls. The final steps in constructing the Igloos were covering them with a layer of soil and pouring a concrete apron at each entrance.<sup>127</sup> The soil covering, besides acting as a camouflage, would absorb most of the striking energy of any shells.

In addition to the Ammunition Igloos, at least one Pillbox remains of many that were scattered along the bluffs of Ship Creek and Knik Arm. The 1964 earthquake demolished some Pillboxes;<sup>128</sup> others have been destroyed since then. Pillboxes are generally rectangular-shaped subterranean structures of precast reinforced concrete. A slit-shaped opening runs just above the ground on at least one side for machine guns. Pillboxes characteristically maintain a low profile close to the slope of the earth for camouflage and to protect inhabitants from shelling. Similar to the Ammunition Igloos, prefabricated structural members were used to simplify and expedite building. Each Pillbox housed two men. Although protection was the primary function of the Pillbox, soldier comfort was not ignored. Canvas with narrow plastic windows covers the gun slit on this Pillbox to protect inhabitants from wind and cold.

The use of underground dugouts was common to both the Germans and the Allied forces in World War I. Rough below-ground shelters were built in the field with just enough concrete, timber, or earth cover to resist shells. The Germans' use of reinforced concrete in their World War I Pillboxes was probably the first application of the material on a vast scale. The strength of these structures is evident in photographs taken after heavy bombings in which the entire area is obliterated except for the pillboxes.<sup>129</sup>

Pillboxes provided an extremely effective defense to an attack, in part because capturing them was difficult - it required an infantryman placing a bomb in the firing slot.<sup>130</sup> But if the enemy could place a bomb in a Pillbox, more damage was caused than if it had exploded in the open, due to the constricted space. Besides the initial explosion, smoke would obscure the gun crew's view. Another consideration was that once a Pillbox was identified, it was an easy target for a bomb drop. The underground nature of the Pillbox greatly reduced the gun crew's field of fire and required a large number of emplacements to cover a comparatively small area.<sup>131</sup>

In addition to the Ammunition Igloos and the Pillbox, there are the remains of Anti-aircraft Defense Placements scattered on the base. Like the Pillboxes, these installations housed soldiers who would fire during an enemy attack. Little remains of these, but it is evident that similar to the Ammunition Igloos and the Pillbox, they were constructed of precast, reinforced concrete.

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<sup>127</sup> "New Method Speeds Alaska 'Igloos,'" *The EM-Kayan* (September 1954): 3-4.

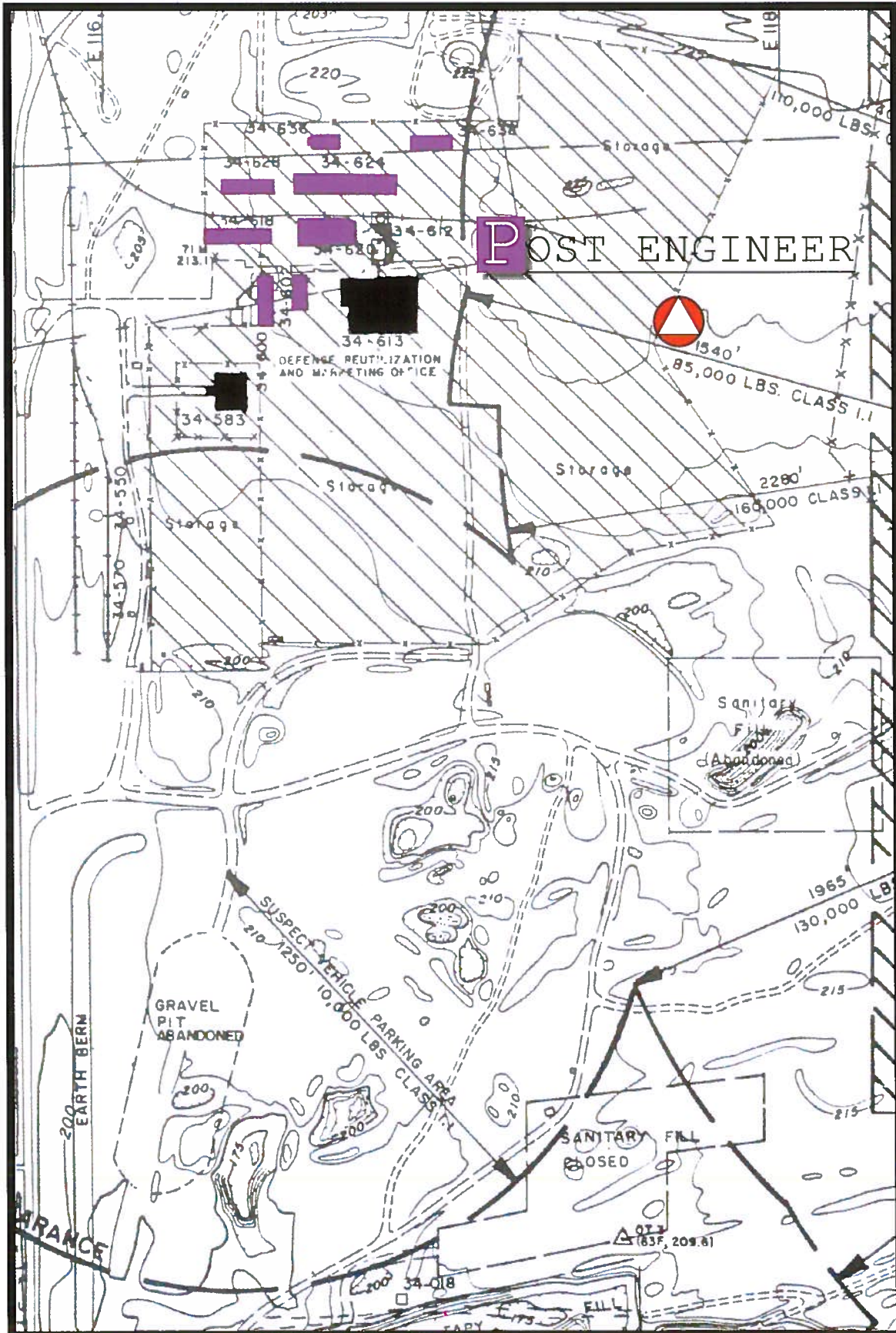
<sup>128</sup> Carberry and Lane, *Patterns of the Past*, 208.

<sup>129</sup> Mallory and Ottar, *The Architecture of War*, 51.

<sup>130</sup> *Ibid.*

<sup>131</sup> *Ibid.*, 69.





**MAP 10: Buildings of the Post Engineer Yard**

## **Chapter Seven - Buildings of the Post Engineer Yard**

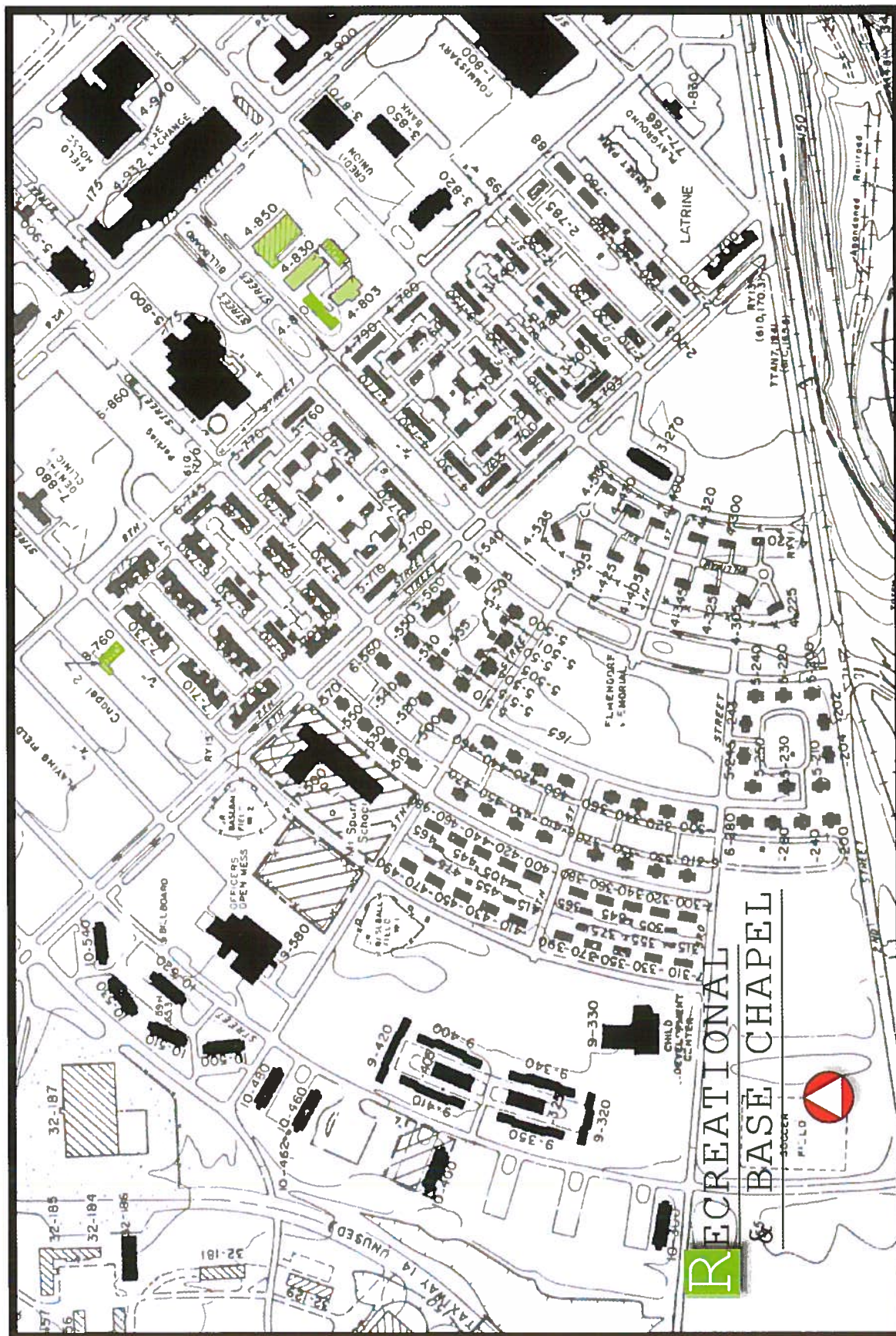
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Little information is available about this collection of steel and wood-framed warehouses. Presumably the post's engineers used them as they carried out maintenance of Elmendorf AFB's fleet of planes and automobiles. They are among the oldest buildings on the base. Known functions are listed in Volume II. The Butler Manufacturing Corporation designed some of these buildings. As more information is discovered about these structures, further contexts can be developed.

Eight buildings are included in the Post Engineer Yard:

- Building 34-600 - Carpenter Shop
- Building 34-602 - Sheet Metal Shop
- Building 34-618 - Warehouse
- Building 34-620 - Warehouse
- Building 34-624 - Warehouse
- Building 34-628 - Warehouse Disposal & Salvage
- Building 34-636 - Maintenance Shop
- Building 34-638 - Maintenance Shop





## MAP 11: Recreational Buildings and the Base Chapel

## Chapter Eight - Recreational Buildings and the Base Chapel

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Many soldiers had difficulty acclimating to Elmendorf AFB's winter cold climate, lack of female companionship, slow and unreliable mail system, and isolation. The limited recreational facilities in Anchorage were inadequate for the large Army influx. Some men found few recreational activities in the Alaskan wilderness, while others eagerly grasped the new adventures the territory offered. Soldiers were encouraged to become familiar with the surrounding terrain, and they used military vehicles for fishing and hunting expeditions.<sup>132</sup> General Buckner announced in 1943 that the Army had taken over the McKinley Park Hotel and would run it as a vacation spot for soldiers.<sup>133</sup> In the summer baseball and football games were played with Anchorage teams. Soldiers were issued fur parkas and discovered winter sports. Jean Potter, a correspondent from *Fortune* magazine reporting on war conditions in Alaska, noted that two soldiers from Arkansas discovered skiing in Alaska and competed in cross-country races in Nome.<sup>134</sup>

Some of the most important operational components of any military installation are its recreational facilities. Especially in Alaska, recreational opportunities and the buildings that house them are crucial elements in maintaining morale. As the base grew in size and importance during the war, larger and more conventional structures were built to provide adequate opportunities for entertainment, exercise, and informal socialization. The Army was concerned about providing troops with comforts and conveniences at least similar to those in their home communities. For this reason, many of Elmendorf's recreational buildings reflect activities common to the American experience – playing basketball, bowling, camping, and fishing.

At the same time, a number of these buildings mirror the regional identity by incorporating log cabin architecture. The use of log cabins at Elmendorf AFB dates back to the first headquarters building, which was a log cabin. Probably the best-known log structure on the base is the original Kashim, which now serves as the Family Support Center or Building 1-890. "Kashim" is an Eskimo word meaning "meeting place for men only."<sup>135</sup> The Kashim was a model for Buildings 4-803 and 4-830, which were constructed about three years after the Kashim.

The log structures in this inventory include Buildings 4-803 and 4-830 in the central base area and Buildings 52-560, 52-650, and 52-651 located adjacent to Green Lake, which is north of the base. Logs for the newer Buildings 4-803 and 4-830 were milled at an Elmendorf-established mill in nearby Palmer<sup>136</sup> and utilized homesteaders'

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<sup>132</sup> Fagen, *History of Fort Richardson*, 20.

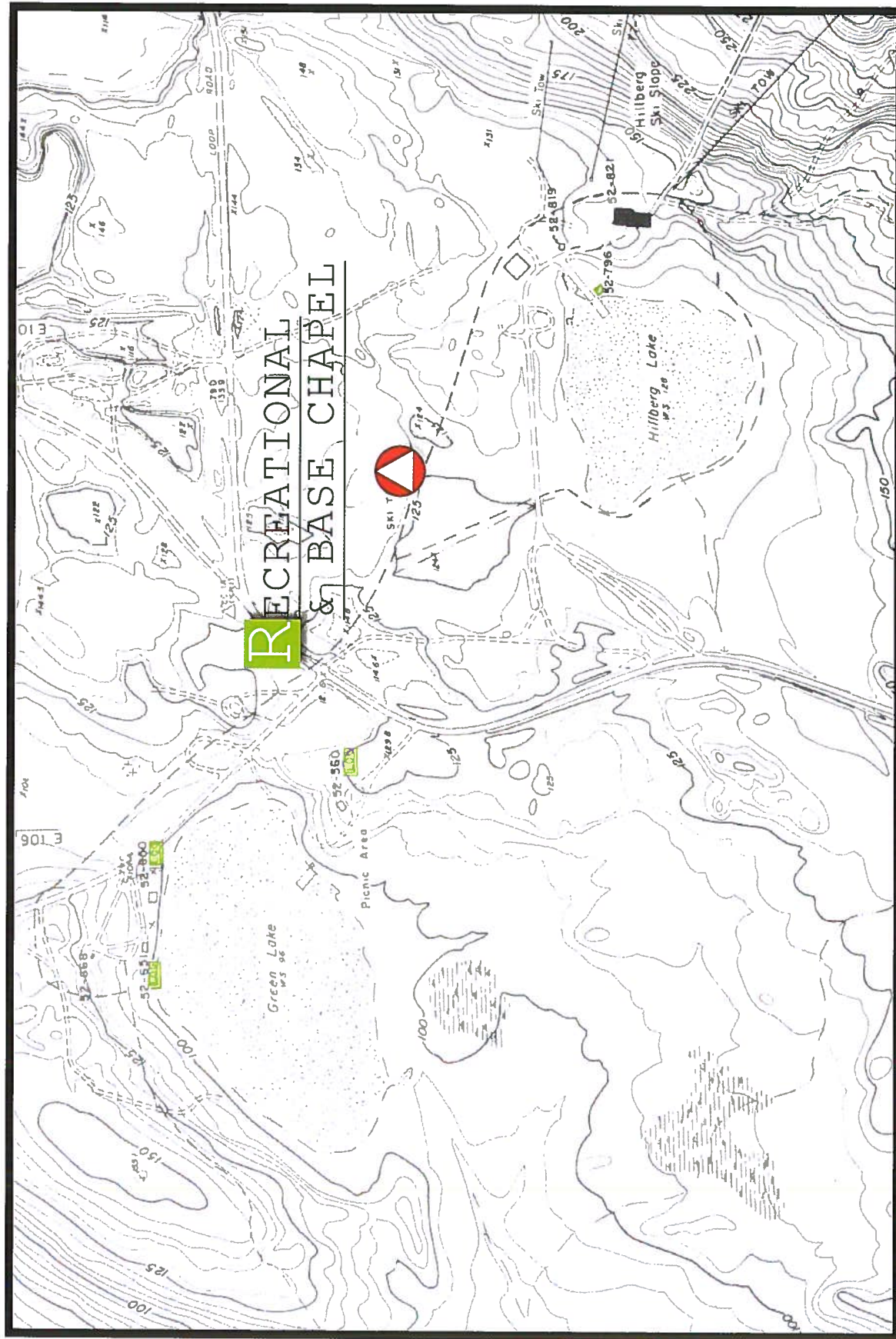
<sup>133</sup> *Ibid.*, 68.

<sup>134</sup> Potter, *Alaska Under Arms*, 53-54.

<sup>135</sup> Fagen, *History of Fort Richardson*, 71.

<sup>136</sup> *Ibid.*, 71.





MAP 12: Recreational Buildings and the Base Chapel

cabins as models. The other structures are actual homesteaders' cabins modified for Army use.

The recreational buildings at Elmendorf AFB include:

Building 1-890 -	Family Support Club
Building 4-803 -	Wildlife Museum
Building 4-810 -	Band Building
Building 4-830 -	Log Cabin; Mini Mall
Building 4-850 -	Sports Store
Building 8-760 -	Base Chapel
Building 52-560 -	Green Lake Chalet
Building 52-650 -	Six-Mile Log Cabin
Building 52-651 -	Six-Mile Log Cabin



Building 52-796 - First-Aid Hut

*Figure 34. Fort Richardson maintained a ski facility for use by Army personnel.*

Photograph courtesy of the Office of History, Alaskan Air Command

The first recreational facility at Elmendorf Field was the Post Exchange (often called the PX). It opened on July 1, 1940, days after the first troops arrived and originally consisted of three storage tents placed end to end. The PX stocked tobacco, toilet articles, soda, and beer. The Post Exchange remained in tents until November, when it moved to a permanent building called the Igloo.

Building 4-803 currently houses the base's Wildlife Museum, and it is likely that the building was also at one time the "Tap Room" for the Northern Lights Service Club. Building 4-810, the current Band Building and headquarters for the Alaska Air Command Band, was formerly the Northern Lights Service Club. The crews completed the building in 1942. In contrast to Building 4-803, Building 4-810 is a Neo-Georgian two-story





*Figure 35. Army personnel were issued "Alaskan" clothing.*

Photograph courtesy of the Office of History, Alaskan Air Command

structure with a hip roof. It appears that an enclosed hallway once connected Buildings 4-803 and 4-810. Building 4-830, located directly across from 4-803, is the other log structure in the base's central area. Building 4-830 has a curious history as both a post office and a bowling alley. When opened in February 1944, Building 4-830 was said to have been "shed by bowling enthusiasts." Bowlers were charged 15 cents a line; 10 cents went to the pin-setters and five cents to the bowling fund. It now serves as a "Mini-Mall."

The design of the Base Chapel (Building 8-760) was based on a standardized Army chapel plan. Chapel excavation began in June 1942; and although not quite complete, the chapel was dedicated on October 4, 1942.<sup>137</sup> During World War II, Protestant and Jewish services and Catholic masses were regularly held at the Base Chapel. The Base Chapel contains the features of most churches (a steeple, gable roof,

<sup>137</sup> *Ibid.*, 59, 62.



*Figure 36. Building 4-810 (currently the Band Building) is at the far right and Building 4-830 (currently the Mini Mall) is to its left.*

Photograph courtesy of the Anchorage Museum of History and Art



*Figure 37. Building 4-830 as it opened as the post Bowling Alley.*

Photograph courtesy of the Anchorage Museum of History and Art



*Figure 38. The Base Chapel painted in camouflage.*  
 Photograph courtesy of the Anchorage Museum of History and Art

pews, and lectern); and its simple design facilitated this diversity of faiths. However, its camouflage paint scheme differentiated it from most churches in the contiguous United States. The chapel was repainted white after the war ended.

The Army's efforts to create recreational facilities with their own regional identity is evidenced in the Green Lake Recreational Park, located approximately three and a half miles north of the central base area. It was designed to be a family-oriented facility that offered opportunities for swimming, boating, badminton, archery, volleyball, softball, dancing, and picnicking. The Post Exchange operated a snack bar at the resort, and bus service from Elmendorf was provided. After purchase by the government, former homesteaders' cabins in the Green Lake area became an integral part of Elmendorf personnel's recreational activities at Green Lake.

The Green Lake Chalet (Building 52-560) and two cabins, each called the Six-Mile Log Cabin (Buildings 52-650 and 52-651), were adapted to new recreational roles from their previous functions as log frame homesteaders' cabins. Building 52-560 was purchased by the military in 1942 as an unfinished log cabin. Emil Savola, a homesteader in the Green Lake area since 1920, began construction of the cabin in the



*Figure 39. Entertainers and musicians - such as Bob Hope, Errol Flynn, Ingrid Bergman, Olivia DeHaviland, and Yehudi Menuhin - visited Elmendorf to enliven the troops. Olivia DeHaviland visited in February 1944. She spent much of her time visiting with patients at the hospitals. This photograph shows her at Shemya AFB in the western Aleutian Islands.*

Photograph courtesy of the Office of History, Alaskan Air Command

1930s. His earlier cabin was destroyed in a 1931 fire in which his wife and daughter perished. Outbuildings, including a log barn that originally accompanied Building 52- 560 have not survived.<sup>138</sup>

Building 52-650 is a smaller log cabin that was built by Iver Nottviet in 1941. It is located on the north side of Green Lake across from Emil Savola's cabin. Iver Nottviet purchased about an acre of Emil Savola's subdivided parcel in 1939. After the federal government bought it in 1942, the cabin was used as a general's weekend retreat, a recreational cabin for Air Force service squadrons, and a Girl Scout cabin.<sup>139</sup>

<sup>138</sup> Carberry and Lane, *Patterns of the Past*, 188.

<sup>139</sup> Daugherty and Saleeby, *Elmendorf Air Force Base Homestead Study*, 77.

Building 52-651 is not a homesteader's cabin in the true sense of the word because it is the combination of two homesteaders' cabins, neither of which was original to the site. Building 52-651 is located on the north shore of Green Lake, close to the Nottviet cabin. Little is known about this structure.<sup>140</sup>

The recreation buildings at Elmendorf reflect both an adoption of vernacular Alaskan architecture and a connection with traditional forms. For instance, while the design of Buildings 4-830 and 4-803 are loosely based on homesteaders' cabins, the adjacent Band Building closely adheres to a Neo-Georgian syntax, and the Base Chapel exhibits elements common to New England churches. The base log cabins were inspired by, but did not copy, traditional log cabins, because no homesteader would construct a log cabin as large as one of these buildings. It is clear that the designers of these recreational buildings, for the most part, were granted some latitude in producing buildings that would add variety to the base landscape and accommodate recreational activities.

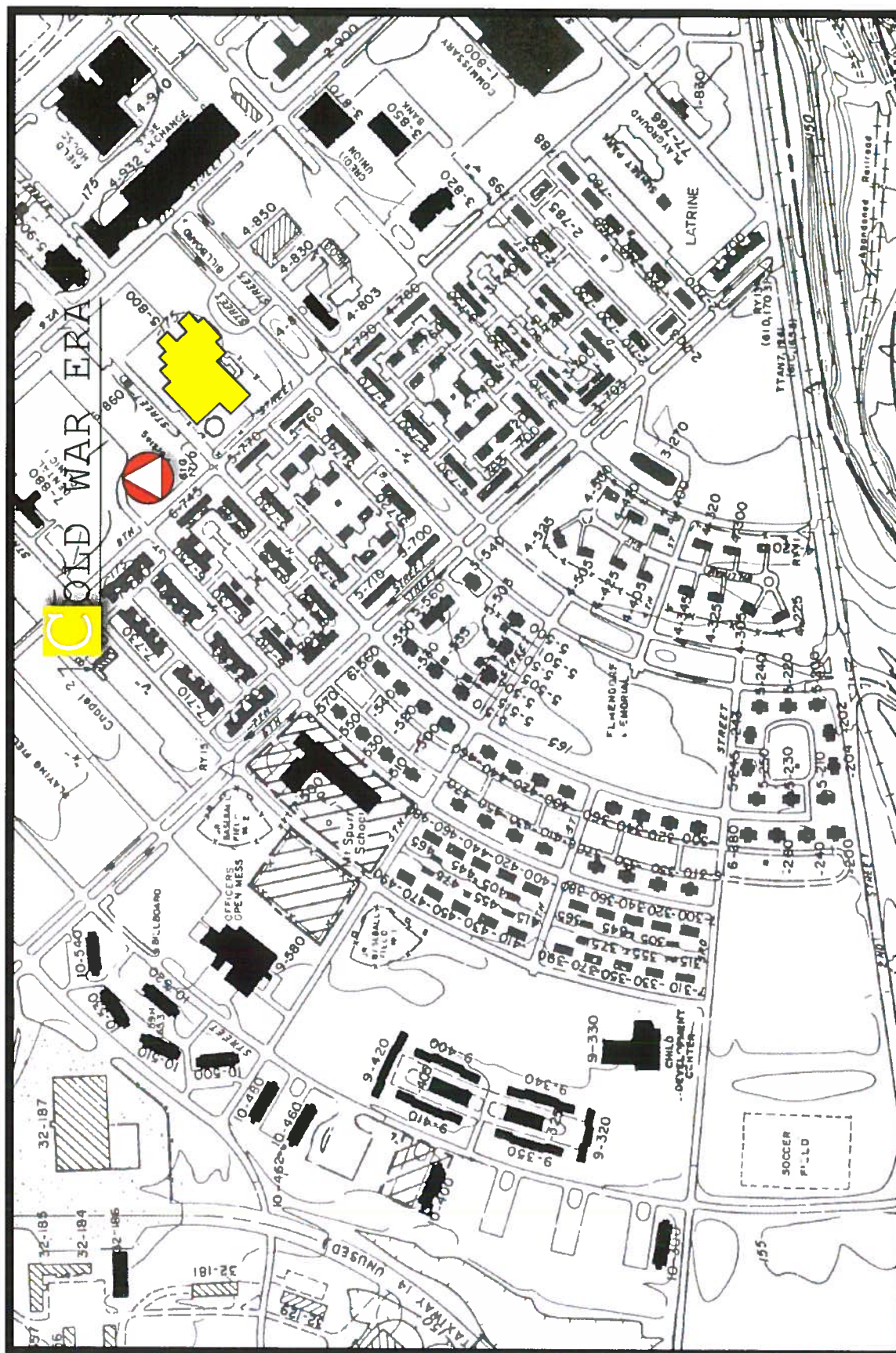
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<sup>140</sup> *Ibid.*, 79.



*Figure 40. Bob Hope (left) and his troupe visited Anchorage, Fairbanks, Nome, and Cordova in the summer of 1942. This is a photograph of him at Elmendorf.*  
Photograph courtesy of the Office of History, Alaskan Air Command





MAP 13: Cold War Structures

## Chapter Nine - Elmendorf AFB Cold War Summary

### Elmendorf AFB's Role in the Cold War

Although the Soviet Union and the United States combined forces during World War II, the opposite ideologies of communism and democracy led to an uncertain relationship following the war. This period, where both countries regarded each other with suspicion and mistrust, is called the "Cold War." The year 1946 is typically considered the beginning of the Cold War. This was the year of George Keenan's "Long Telegram" and English Prime Minister Winston Churchill's "Iron Curtain" speech at Westminster College. During the Cold War, the United States was concerned with the "containment" of Communist forces - that is, preventing them from gaining a more substantial foothold in the world. The fall of the Berlin Wall in 1989 and the collapse of the Soviet Union in 1991 are commonly regarded as concluding events of the Cold War.

The Eleventh Air Force was redesignated the Alaskan Air Command (AAC) on December 18, 1945, and Brigadier General Edmond C. Lynch was appointed Commander. His first headquarters was at Davis AFB on Adak Island in the Aleutians.<sup>141</sup> During World War II, the primary military threat to Alaska was a Japanese invasion. In contrast, merging Russian technologies, including intercontinental ballistic missiles and long-range bombers capable of delivering nuclear weapons shifted the focus of Cold War defense. Because of its proximity to the Soviet Union, Alaska was considered highly vulnerable to attack. The perceived threat was that a few well-placed Soviet bombs would destroy Alaska's defenses and allow the Russians to occupy the territory and target contiguous United States.<sup>142</sup>

Soviet long-range bombers and missiles reduced the defensive value of Alaska. Forces were gradually closed or put on caretaker status. Forces perceived Soviet bomber routes over the state's far northern tip. As a result, Alaska military personnel shrunk from a peak of 144,000 in 1945 to 10,000 in 1955. On October 1, 1946, Headquarters, AAC was transferred to Elmendorf.<sup>144</sup> Elmendorf AFB became the center for Cold War defense. A period of rapid modernization followed. These shifts transformed Elmendorf from a World War II flying field to a full-fledged air force base. Due to its role in the Cold War and its northern location, Elmendorf AFB was designated "Top Cover for America."<sup>145</sup>

<sup>141</sup> Edmond C. Lynch, *Top Cover for America*, 157.

<sup>142</sup> *Forces*, 195.

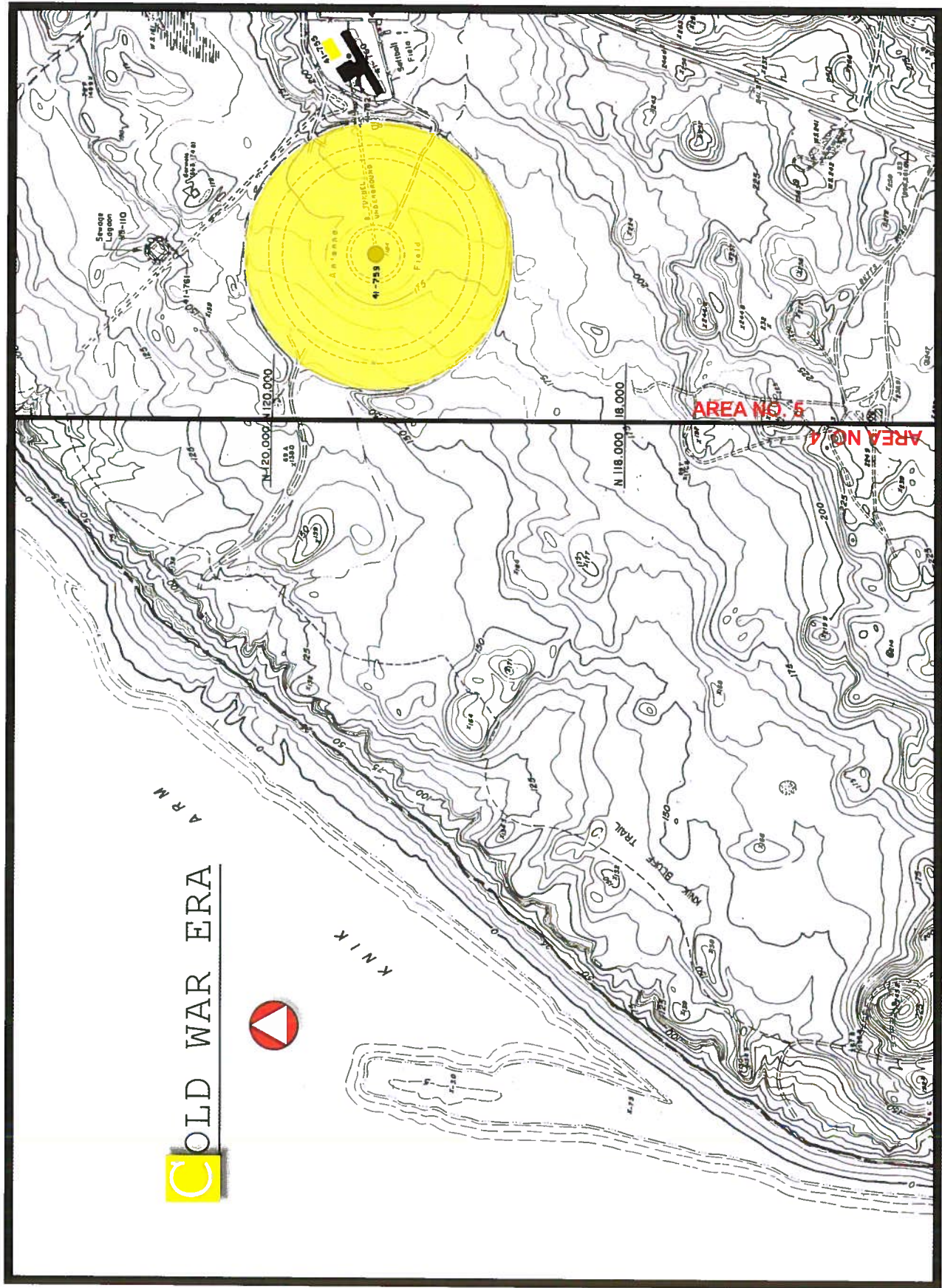
<sup>143</sup> *Cold War in Alaska: A Management Plan for Cultural Resources, 1994-*

*Alaska District, U.S. Corps of Engineers, 1994), 10.*

<sup>144</sup> Edmond C. Lynch, *Top Cover for America*, 158-159.

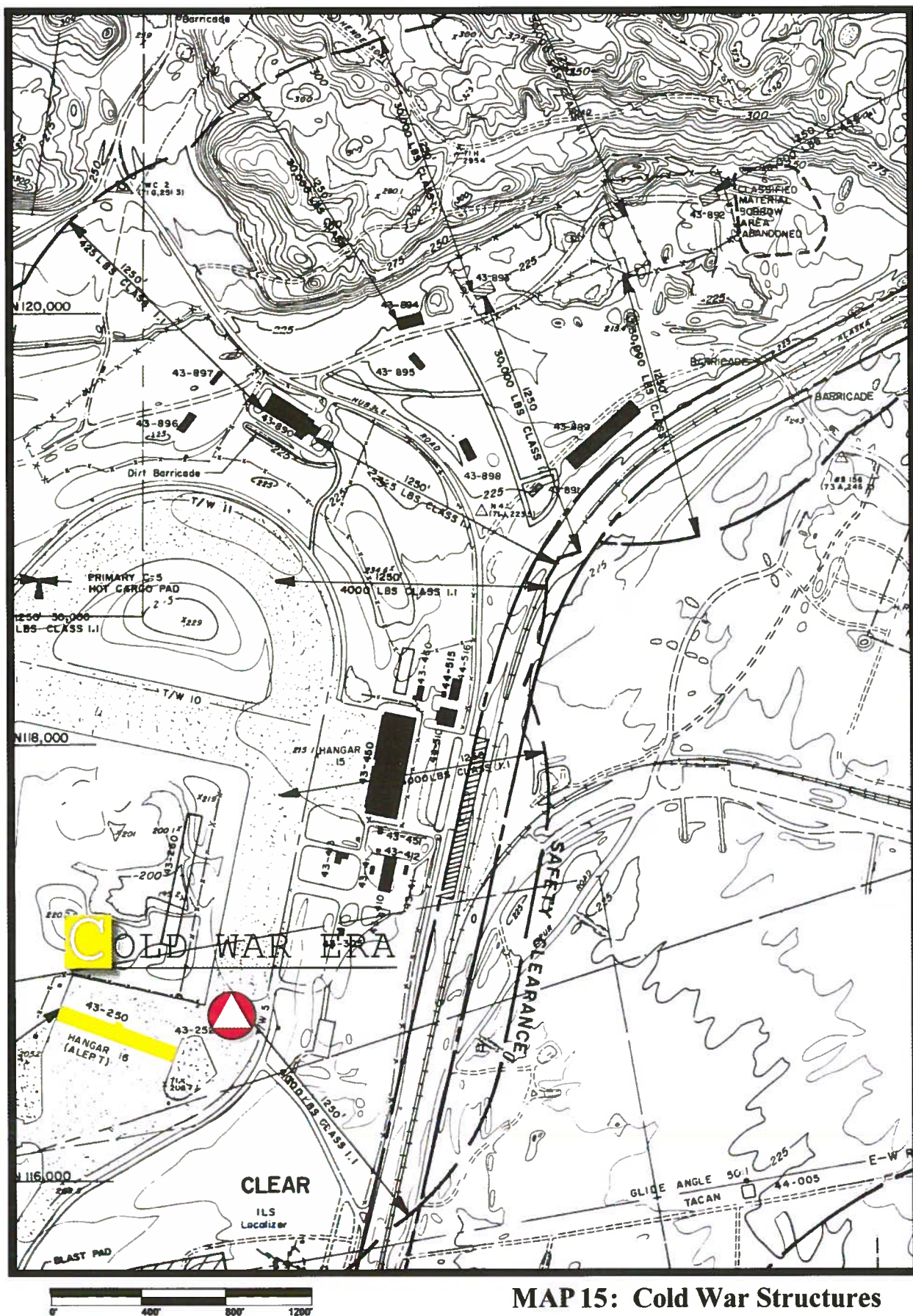
<sup>145</sup> The motto "Top Cover" applied only to Elmendorf AFB. Later it expanded to all of Alaska. In the mid-1980s it became "Top Cover for North America" and "Top Cover and Global Power" in the mid-1990s.





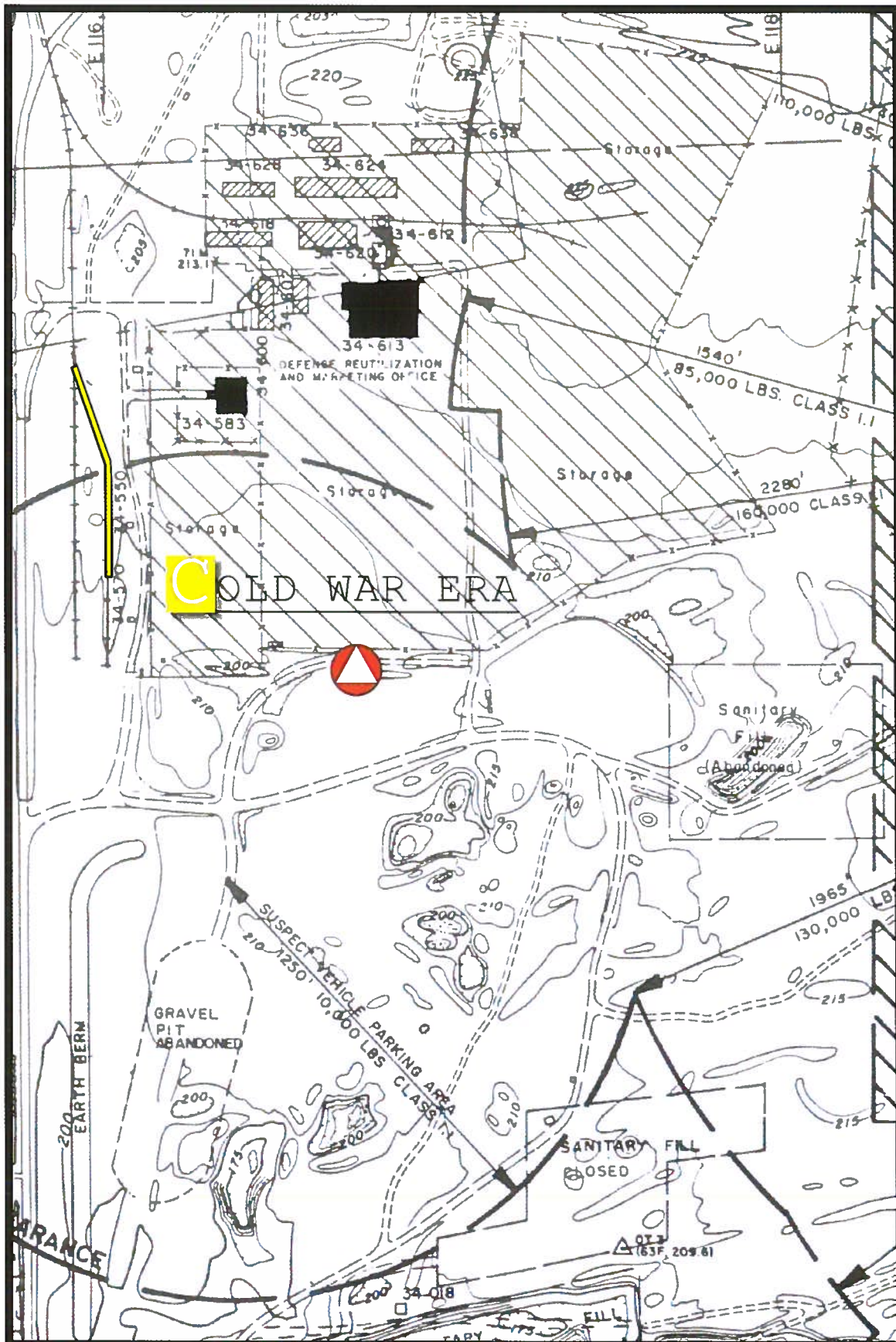
MAP 14: Cold War Structures





MAP 15: Cold War Structures





COLD WAR ERA

MAP 16: Cold War Structures



During the campaign to drive the Japanese from the Aleutian Islands of Attu and Kiska, the Army and the Navy worked together, but not harmoniously. To coordinate forces, a unified Alaska command was formed on January 1, 1947, called the Alaskan Command, or ALCOM. The ALCOM was among the first unified commands established after World War II. Lieutenant General Howard A. Craig was named its first commander-in-chief. The three initial components of ALCOM were the Alaskan Air Command, the Alaska Sea Frontier, and the Alaskan Department.<sup>146</sup> ALCOM's most important duties included maintaining a defense against the Soviet Union and continuing to test cold weather combat operations. Air units were charged with maintaining radar surveillance and intercepting Russian aircraft and missiles coming across the Bering Sea.<sup>147</sup>

The United States Air Force was created on September 18, 1947, and the Alaskan Department was renamed the United States Army on November 10, 1947. To further separate the army and air forces, in the early 1950s the Army began vacating the original Fort Richardson and Elmendorf Field and relocating to a site just north of its first post. Elmendorf AFB was formally dedicated on June 8, 1960, twenty years to the day after construction started.<sup>148</sup>

The Soviets' first atomic bomb tests occurred in the fall of 1949, far sooner than most American intelligence experts had expected.<sup>149</sup> American military leaders were concerned whether an adequate defense could be supplied, because at that time there were almost no Army antiaircraft artillery units in the United States or Alaska and the Air Force had no access to these weapons.<sup>150</sup> The initial Soviet hydrogen bomb tests transpired in August 1953.<sup>151</sup> Closer to Elmendorf, other events, such as visual contact of Soviet aircraft near St. Lawrence Island in August 1950<sup>152</sup> and the April 1952 detection of vapor trails over Nunivak Island in the Bering Sea,<sup>153</sup> alerted American military powers to the possibility of a confrontation close over the horizon. The Soviet Union detonated its first hydrogen bomb in September 1954 on Wrangell Island, 500 miles northwest of Nome. In June 1955 the Soviets shot down a Navy patrol plane near St. Lawrence Island.<sup>154</sup>

Planning for a comprehensive communications and enemy warning system began in early 1946, immediately following World War II. Initially, the AAC depended on series of temporary radar sites. The radar system was broken into two sectors, divided by the Alaska Range. The southern sector was centered at Elmendorf AFB, and the northern

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<sup>146</sup> *Ibid.*, 158.

<sup>147</sup> Denfeld, *The Cold War in Alaska*, 19.

<sup>148</sup> Cloe and Monaghan, *Top Cover for America*, 158, 160.

<sup>149</sup> Martin Walker, *The Cold War: A History* (New York: Henry Holt and Company, 1993), 58.

<sup>150</sup> Kenneth Schaffel, *The Emerging Shield: The Air Force and the Evolution of Continental Air Defense 1945-1960* (Washington, D.C.: Office of Air Force History, United States Air Force, 1991), 116.

<sup>151</sup> Walker, *The Cold War*, 96.

<sup>152</sup> Denfeld, *The Cold War in Alaska*, 19.

<sup>153</sup> Schaffel, *The Emerging Shield*, 169-170.

<sup>154</sup> Nielson, *Armed Forces*, 184.

sector was focused at Ladd AFB. Fighter interceptor squadrons were established to quickly respond to Soviet missiles or planes entering American airspace. In the late 1940s, studies were undertaken to plan a permanent, comprehensive radar system that would improve communications and track aircraft entering Alaska air space. This system became known as the aircraft control and warning (AC&W) system and it became operational in 1951.<sup>155</sup>

The radar system was placed on round-the-clock operation on June 27, 1950, at the outbreak of the Korean War.<sup>156</sup> Military expenditures in Alaska rose in response to the Korean War. By December 1950 AAC's strength had increased to 16,909, including 2,725 civilians.<sup>157</sup> In 1952, construction began on the Distant Early Warning (DEW) line across the northern regions of Alaska and Canada. Completely operational by 1957, the DEW line was an array of radar and radio equipment that would operate in extreme temperatures amidst the fluctuating currents of the North Pole. It was eventually linked with the AC&W sites by the White Alice system into a cohesive network relaying communications to Elmendorf AFB.<sup>158</sup>

In 1957, Alaska's air defense came under the operational control of the North American Air Defense Command (NORAD). NORAD was created to coordinate and direct air defenses in Alaska, the continental United States, and Canada. Its headquarters was located at ENT Air Force Base in Colorado Springs. Components of NORAD included the U.S. Army Air Defense Command, the U.S. Naval Forces CONAD, the Air Force Air Defense Command, and the Air Defense Command of Canada. In October 1957, within weeks after NORAD began functioning, the Soviet Union launched Sputnik, the first Earth-orbiting satellite.<sup>159</sup> Also in 1957, the concentration of air defense forces in Alaska reached their peak when nearly 200 fighter aircraft were assigned to the six Alaska fighter interceptor squadrons.<sup>160</sup>

The late 1950s and the 1960s marked a gradual decline of military forces in Alaska. Elmendorf personnel began providing extensive support to other Air Force commands. The development of more sophisticated American interceptor jets and the realization that a Soviet bomber attack was unlikely also precipitated the decline. Additionally, the Vietnam conflict diverted resources. The Army constructed the eight-site Nike Hercules missile system from 1957 to 1959 to defend Elmendorf AFB/Fort Richardson near Anchorage and Ladd Field AFB in Fairbanks. Anchorage had three of these sites and Fairbanks had five.<sup>161</sup>

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<sup>155</sup> Cloe and Monaghan, *Top Cover for America*, 160-161, 167.

<sup>156</sup> *Ibid.*, 167.

<sup>157</sup> *Ibid.*, 160.

<sup>158</sup> Denfeld, *The Cold War in Alaska*, 22, 24, 28.

<sup>159</sup> Schaffel, *The Emerging Shield*, 254.

<sup>160</sup> 3<sup>rd</sup> Wing, Office of History, "History Elmendorf Air Force Base" (unpublished paper, February 7, 1995), 2.

<sup>161</sup> Cloe and Monaghan, *Top Cover for America*, 192.

The Alaskan NORAD Region became a separate division in 1958 and was headquartered at Elmendorf. The region assumed control over Alaska's air defense system, which at that time included numerous radar communications sites and three fighter interceptor squadrons. Scattered radar sites collected information and relayed it to the Alaskan NORAD Region Command and Control Center at Elmendorf. The Commander-in-Chief, Alaskan Command, served as the center's commander.<sup>162</sup>

During the Vietnam War, Elmendorf served as a support base for planes en route to South Vietnam. The first Military Airlift Command C-141 landed at Elmendorf on December 1, 1965, and a squadron was activated to support the effort. As conditions in Southeast Asia intensified, Elmendorf was used more frequently, reaching a peak of 1,000 to 1,200 landings a month by 1969. A \$10.8 million pipeline was constructed between Anchorage and the protected port at Whittier to ensure that sufficient amounts of fuel would reach Elmendorf if the Port of Anchorage ever froze. The number of landings declined in the early 1970s as American forces were withdrawn from the conflict.<sup>163</sup>

On September 26, 1971, President Richard M. Nixon met with Japanese Emperor Hirohito at Elmendorf. Emperor Hirohito's plane stopped in Anchorage to refuel during a trip to Europe. President and Mrs. Nixon made a special trip to Alaska to meet the Emperor, and they spent the night in Building 5-504, the Alaska Chateau. This meeting marked the first time a reigning Japanese emperor had set foot on American soil or met with an American president. A ceremony was held in Hangar Five.<sup>164</sup>

During the 1970s and 1980s, Alaska's air defenses were modernized. The distant communications and surveillance system outposts no longer required extensive manpower. An enhanced Regional Operations Control Center was completed in 1983, which relayed radar information from satellite to the Regional Operations Control Center at Elmendorf. Fighter wings and squadrons were reactivated and received upgraded aircraft. After closing in 1975, the Alaskan Command was reestablished at Elmendorf in 1989 as a joint service command under the Pacific Command.<sup>165</sup> The emergence of Mikhail Gorbachev in May 1985 brought new leadership to the former American/ Soviet conflict. Gorbachev initiated significant changes to both Russian domestic and foreign policy, ultimately leading to the collapse of the Soviet Union and the conclusion of the Cold War.

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<sup>162</sup> *Ibid.*, 187-188.

<sup>163</sup> *Ibid.*, 218-219.

<sup>164</sup> *Ibid.*, 222.

<sup>165</sup> 3<sup>rd</sup> Wing, "History Elmendorf Air Force Base," 2.



*Figure 41. The historic meeting between President Nixon (at the lectern) and Emperor Hirohito.*  
Photograph courtesy of the Office of History, Alaskan Air Command

## **Cold War Era Buildings and Structures**

In anticipation of a larger study of Elmendorf AFB's role in the Cold War, this report provides only a snapshot of five of the base's Cold War-era buildings and structures. Several of these structures, such as the Alert Hangar, are typical of other Cold War military structures in Alaska and the contiguous United States. Others, such as the ALCOP Train, had unique functions specific to Elmendorf AFB's environment. These buildings and structures are:

- Building 5-800 - Colonel Everett Davis Building
- Building 41-755 - Power Building
- Building 41-759 - Elephant Cage
- Building 43-250 - Hangar 6
- ALCOP Train

The 1946 relocation of the Alaskan Air Command Headquarters from Davis AFB to Elmendorf and the emergence of the United States Air Force in 1947 symbolized the military embracing its Cold War role of furnishing air power. Elmendorf AFB provided a central locale for Cold War activities. Building 5-800, completed in 1948, housed the



headquarters of the Alaskan Command and the Alaskan Air Command.<sup>166</sup> Dick and Ernie Boyd, architects with the Army Command's Alaska Department<sup>167</sup> designed the building at a cost of \$1.6 million.<sup>168</sup> Building 5-800 is composed of a central three-story block flanked by two-story recessed wings, all in reinforced concrete. An addition on the south end dates to the late 1950s.

Colt Denfeld, historian for the Alaska District, U.S. Army Corps of Engineers, writes that Building 5-800 is "[t]he most important early Cold War construction project at Elmendorf. . . . It is the heart of the air base."<sup>169</sup> In fall of 1977 the building was named the Davis Building in honor of Colonel Everett S. Davis.<sup>170</sup> Colonel Davis was the first Commanding Officer of Elmendorf Field. His most important accomplishment was organizing the Alaskan Air Force, which was redesignated the Eleventh Air Force in 1942. Colonel Davis was Chief of Staff of the Eleventh Air Force under Major General William Butler. He died in a plane accident before final action could be taken upon his nomination for Brigadier General.

The Davis Building is in the art deco style and is one of the most architecturally interesting structures at Elmendorf AFB. "Headquarters Alaska Command" is carved into the central block in stylized art deco lettering. Typical to most art deco style buildings, ornamentation is sparse, but remarkable. A chevron pattern runs across much of the top of the building, operating as a cornice. An international design style in the 1920s, by the late 1930s art deco's fashionableness had pretty much played itself out.<sup>171</sup> For this reason, it seems likely that the plans for the 1948 Davis Building had been drawn earlier for another site and were reused at Elmendorf.

The building's interior features extensive tile work, most notably the multi-colored symbol of the Alaskan Command imbedded in the terrazzo floor of the lobby. These features draw the eye to the building, staging it as the centerpiece of the base, architecturally, geographically, and militarily.

The ongoing purpose of Building 41-755 has been to supply power to its two neighboring structures, Building 41-760 and the Elephant Cage. Because these three buildings are isolated from the main base area, an independent power source was probably necessary when these structures were constructed. Drawings illustrate that power cables from the Power Building ran underground, most likely to prevent interference with the antenna elements of the Elephant Cage.

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<sup>166</sup> Cloe and Monaghan, *Top Cover for America*, 160.

<sup>167</sup> Carberry and Lane, *Patterns of the Past*, 206.

<sup>168</sup> Cloe and Monaghan, *Top Cover for America*, 160.

<sup>169</sup> Denfeld, *The Cold War in Alaska*, 105.

<sup>170</sup> *Ibid.*

<sup>171</sup> Alastair Duncan, *Art Deco* (New York: Thames and Hudson, Inc., 1988), 8.



*Figure 42. Building 5-800, the Alaskan Command.*

Photograph courtesy of the Anchorage Museum of History and Art

The Power Building's original drawings are included in the 1951 drawings of Building 41-760. Building 41-760 was initially known as the Office Structure, Converted 500 Man Barracks. These drawings indicate that the Power Building, known as the Boiler Plant and Garage, contained boiler, tool, and generator rooms, as well as a garage facility and a few offices. It is a one-story building with a basement and a flat roof. If further study is made of the Power Building, it should be done in conjunction with Building 41-760. The fact that both of these buildings are within the same set of original drawings indicates the close relation and similar functions they historically shared.

Building 41-759, commonly called the "Elephant Cage," consists of two parts. The part that is most visible is a massive antenna called a circularly disposed antenna array (CDAA). Within the CDAA is a concrete polygon-shaped structure. The Elephant Cage is located near the edge of a bluff overlooking Knik Arm on the eastern side of the base. Other than the Power Building and the adjoining Building 41-760, there are few structures in the vicinity. The interior concrete structure is sixteen-sided and measures 90 feet in diameter and 27 feet in height. The most outer circle of antenna elements extends to a diameter of 1,200 feet and covers over 25 acres. The immensity of this facility, with its wire strung between element supports, makes the nickname "Elephant Cage" apt. The

Air Force completed construction of the Elephant Cage in 1966. The Air Force, the Coast Guard, and the Navy have operated it.

The primary purpose of the CDAA was to collect search and rescue information, and it presumably was also used to collect intelligence information from the Soviet Union. The CDAA only receives signals; it does not transmit. It uniquely meets the military need to collect a number of signals in varying directions simultaneously. The CDAA's location - up on a bluff, partially exposed, and isolated from competing signals - is logical for receiving the clearest frequencies.

The antenna's design is based on technology developed by the Germans during World War II. A CDAA is commonly also called a "Wullenweber," after the German code name for the project. Wullenweber was a historical figure, although he had no contact with the antenna, or any electronics for that matter. Jurgen Wullenweber was born in Hamburg in 1488 and was known as a martyr for his Robin Hood-like ideals. After the war, Americans disassembled one of the two CDAA's the Germans built and studied it at the University of Illinois. The U.S. Air Force and Army, the U.S. Navy, and the British designed three adaptations for use. The Air Force and Army design is called an AN/FLR-9, or Flare Nine.<sup>172</sup> This is the type at Elmendorf AFB.

A CDAA consists of antenna elements supported on wooden structures spaced in a circular pattern. A CDAA is capable of receiving frequencies from the HF to UHF ranges. When a radio signal passes over one element, adjoining elements are excited in different phases, that is, at different times. Noise and undesirable signals are canceled because of the elements' configuration. The signal passes through an amplifier at each element and outputs are combined. The signal is then directed to the interior concrete structure where it is recorded. Due to the CDAA's large dimensions and the high number of elements, signals are received over an extremely narrow beamwidth of between three and five degrees. This allows the CDAA to achieve a high sensitivity, and distant signals can be heard.<sup>173</sup>

At Elmendorf, access to the interior concrete structure is gained through a driveway on the antenna's eastern side. The interior concrete structure houses the CDAA's operational equipment. A guardhouse was added to the center of this structure in the late 1970s. Power cables are housed in an eight-foot-wide tunnel that runs partially underground from the interior concrete structure to the Power Building.

The CDAA system at Elmendorf was custom designed and installed by the Sylvania Corporation of California. Only three examples of this design are still in operation in the world, and the one at Elmendorf AFB is the only one in the United States.<sup>174</sup> Although CDAA technology dates back to World War II, the CDAA at

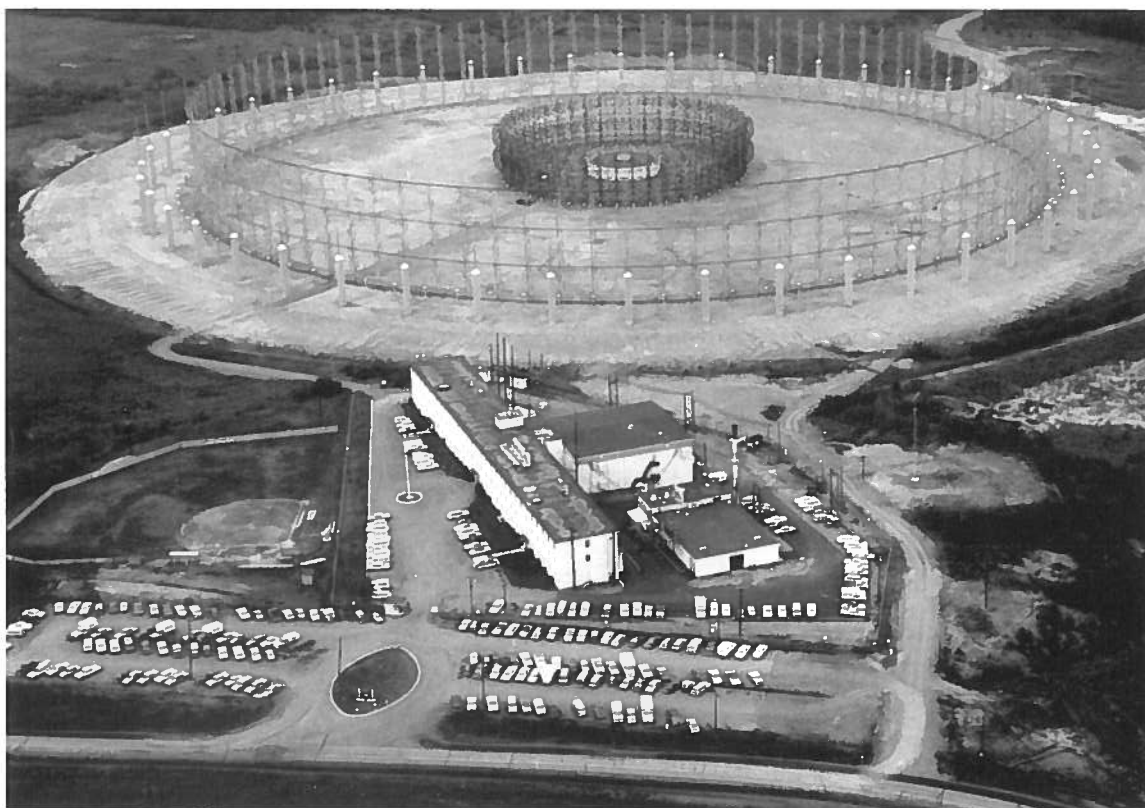
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<sup>172</sup> "The History of the AN/FLR-9 Circularly Disposed Antenna Array: The World Famous 'Elephant Cage'" (unpublished pamphlet received from the 381<sup>st</sup> IS/LG, Elmendorf AFB).

<sup>173</sup> Raggett, RJ, ed., *Jane's Military Communications* (New York: Jane's Publishing Incorporated, 1981), 436.

<sup>174</sup> The History of the AN/FLR-9.

Elmendorf is a “textbook” system that is rarely seen in real life. The Elephant Cage’s unique design makes it an important and remarkable Cold War structure.



*Figure 43. Building 41-759, the Elephant Cage.*

Photograph courtesy of the Office of History, Alaskan Air Command

Alert Hangars, commonly called Combat Alert Cells (CACs), are typically prefabricated, self-contained units that include aircraft hangars, a maintenance facility, and pilots’ living space. The pilots of the Alert Hangars were on continuous air defense alert, prepared at a moment’s notice to intercept a Soviet plane in American airspace. While most Cold War interceptions were launched from the alert hangars at the forward operating bases (FOBs) of Galena Air Force Station and King Salmon Airport, Elmendorf AFB and Eielson AFB were back-up bases called into action when missions could not be launched from the main bases. Between 1961 and 1991, nine interceptions were launched from Elmendorf AFB out of a total 306 interceptions by Alaska jets.<sup>175</sup>

The Alert Hangar at Elmendorf is located northeast of the junction of the two main runways. It measures 68 by 574 feet and was built in 1954. The Alert Hangar includes eight hangars, or “cells.” The location of each cell is expressed on the building’s

<sup>175</sup> William J. Allen. *Hunting the Soviet Bear - A Study of Soviet Aircraft Intercepts Near Alaska 1961-1991*. Elmendorf AFB, Alaska: Eleventh Air Force Office of History, Headquarters Eleventh Air Force, 1992, 12, 16.



exterior by large, numbered doors on both sides of the building that open vertically along an arc-shaped track system. According to a 1952 *Architectural Record* article, the doors were designed to achieve full opening in 30 seconds so fighter planes would be air borne within 90 seconds.<sup>176</sup> As models evolved, jets typically became longer. The doors of the Elmendorf Alert Hangar have been retrofitted with cutaway additions to accommodate longer noses and extended tails and to meet requirements specifying the minimum distance between the aircraft and the building.

At Building 43-250, four cells are located on either side of a three-story central section that housed the pilots' living quarters. This section includes a lobby, offices, bedrooms, a lounge, recreation room, briefing room, and utilities. A "scramble" pole, similar to those found in fire stations, allows pilots hasty access to their jets from an upper story. Aprons and a taxiway surround the building. The Alert Hangar's placement adjacent to the main runways is logical in order to minimize time in getting planes in the air. A guardhouse, fence, and security system were added in the 1960s.

Alert hangars are common Cold War structures that can be found throughout Alaska and the continental United States. The large size of the Elmendorf Alert Hangar, however, represents an earlier, more unusual design. As Alert Hangar plans evolved, only a total of four plane bays were commonly constructed. Military planners realized that an enemy strike would probably be by missile rather than by plane, and it was unnecessary to keep as many planes on alert. Additionally, as plane reliability improved and radar became increasingly commonplace, the likelihood was high that four planes could accomplish the same mission as eight once did.

The advent of more sophisticated aircraft and missiles reduced the necessity of maintaining the six fighter interceptor squadrons assigned to Alaska up to 1957. During this time, three each were stationed at Elmendorf AFB and Ladd AFB. In late 1957 the total number in Alaska decreased to three, with two at Elmendorf and one at Ladd. Within a year, the 317<sup>th</sup> Fighter Interceptor Squadron at Elmendorf and the 449<sup>th</sup> at Ladd were the only squadrons in Alaska.<sup>177</sup> The 449<sup>th</sup> was deactivated in August 1960, leaving Elmendorf's 317<sup>th</sup> the only fighter interceptor squadron in Alaska.<sup>178</sup>

Alternative command posts were designated to serve as control centers of the Alaskan Air Command (AAC) and the Alaskan Command (ALCOM) if Elmendorf was destroyed. After utilizing alternative command post (ALCOP) sites at Tok Junction and Wildwood and Murphy Dome Air Force Stations,<sup>179</sup> the ALCOP Train came into use in 1982. The ALCOP Train was designed for use by the Air Force, Army, or Navy<sup>180</sup> to communicate with almost any base, defense system, or command in Alaska or the

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<sup>176</sup> "Air Force Buildings," *Architectural Record* 182 (January 1952): 98.

<sup>177</sup> Cloe and Monaghan, *Top Cover for America*, 192-193.

<sup>178</sup> *Ibid.*, 211.

<sup>179</sup> William J. Allen, *An Ace in the Hole - A Study of Alaska's Railmobile Command Post*. Elmendorf AFB, Alaska: Eleventh Air Control Wing, Elmendorf Consolidated History Office, 1993, 8.

<sup>180</sup> Denfeld, *The Cold War in Alaska*, 217.

contiguous United States. The ALCOP Train operated from points along the Alaska Railroad where it would connect with land-based communications. Problems with the facility occurred from the onset, and it was some years before the train was substantially operable. Because the 1945-vintage cars had been previously used by the Alaska Railroad, they reached the close of their 50-year life span soon after military acquisition, and the ALCOP Train made its final deployment in 1992.

The possibility of using railroad cars equipped with communications equipment, as an alternative command post was first explored in 1981. This option was attractive because the cars could be maintained at Elmendorf AFB and be available for immediate deployment to various positions on the Railbelt between Seward and Fairbanks, including Eielson AFB or Fort Wainwright. Initial estimated budgets ran from \$4.6 million to \$29.8 million. In January 1982 Frank Jones, General Manager of the Alaska Railroad (ARR), offered to provide at cost five free cars from his surplus stock, in addition to free access to the Alaska Railroad's system and locomotive service. The offer was accepted, and teams from the 21<sup>st</sup> Civil Engineering Squadron and 1931<sup>st</sup> Communications Group renovated the cars' electrical, heating, and ventilation systems, and installed communications equipment. ARR personnel rebuilt the undercarriages to meet current federal standards.<sup>181</sup>

By October 1982, all five cars were converted at a total cost of approximately \$303,000, half of which was spent on communications equipment. The first of the two 80-foot passenger cars was converted into a command and control center. Its communications equipment included high frequency radios providing voice and secure teletype communications, multichannel UHF transceivers, teletype transceivers, and microcomputers. The second passenger car was refurbished with 14 sleeping bunks, a kitchen and dining area, and bath facilities. An insulated boxcar was installed with storage tanks for fresh and wastewater. A utility car housed electric generators and fuel for heating, lighting, and power production. The last car was a tank car that carried fuel for long-term deployments.<sup>182</sup> The train could sustain operations for one month with a crew of 24 people.<sup>183</sup>

The train's first deployment was in October 1982 to Talkeetna to test communications systems and evaluate operations. The system was officially dedicated on January 14, 1983. After September 1, 1986, the 11<sup>th</sup> Air Control Wing accepted responsibility for the ALCOP Train's logistical and maintenance functions.<sup>184</sup>

As late as 1987, the ALCOP Train constantly failed to establish communications links with other command centers; and as one historian remarks, it "was lucky to be able to talk across Elmendorf."<sup>185</sup> Reasons for this can be traced to space limitations, limited manpower, monetary constraints, and the shortcomings of early 1980s technology.

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<sup>181</sup> Allen, *An Ace in the Hole*, 3-5.

<sup>182</sup> *Ibid.*, 5-6.

<sup>183</sup> Denfeld, *The Cold War in Alaska*, 217.

<sup>184</sup> Allen, *An Ace in the Hole*, 6-8.

<sup>185</sup> *Ibid.*, 9.

Communications and antenna upgrades were made in the late 1980s; and the ALCOP Train communicated with Elmendorf, NORAD, and other control centers.<sup>186</sup>

The ALCOP Train participated in military exercises through the early 1990s. A 1990 inspection disclosed the train's deterioration resulting from advanced age and outdoor storage.<sup>187</sup> In September 1991, the tank car was withdrawn from service. Six railcars previously used in the mobile Peacekeeper MX Missile program were shipped up from Vandenberg AFB in California to replace the 45-year-old railcars. The new cars, valued at \$20 million, arrived at Elmendorf on August 7, 1992. Like their predecessors, the Peacekeeper railcars required modification before being operational.<sup>188</sup>

The ALCOP Train was the only rail-mobile command post in the Air Force, and the original train cars have been found eligible for inclusion on the National Register of Historic Places. Computer equipment and staff facilities have been removed, and the cars are nearly empty.<sup>189</sup> Although the cars are heavily altered, the historic integrity of the Alaska Railroad cars is still evident.

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<sup>186</sup> *Ibid.*, 7-15.

<sup>187</sup> *Ibid.*, 16-17.

<sup>188</sup> *Ibid.*, 20-25.

<sup>189</sup> Denfeld, *The Cold War in Alaska*, 217.

## Chapter Ten – Conclusion

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During World War II, army and naval bases sprang into existence on the Alaska mainland, along the Alaska Peninsula, on Kodiak Island, and in the Aleutian Islands. War construction had a tremendous impact on the territory's economy, and few Alaskans were untouched by the rush of military activity. Wartime spending brought an economic boom to the territory, stimulating prices and wages. The federal government spent more than \$3 billion in Alaska between 1941 and 1945.<sup>190</sup> Between 1941 and 1945 more than 300,000 troops had been stationed in Alaska, in addition to numerous civilian construction workers and other service personnel. The military's influence did not conclude at the war's end. Some military personnel settled in Alaska after the war. In a 10-year span between 1940 and 1950, the state's population surged by nearly 78 percent, from 72,524 people to 128,600.<sup>191</sup>

World War II expanded the scope of civilian services in Alaska. The construction of substantial airfields boosted the commercial airlines industry. Communications systems stepped into the twentieth century, and the territory was mapped.<sup>192</sup> Federal funds were provided to assist communities with the wartime expansion of services. To this end, community hospitals, schools, streets, fire stations, water works, sewage systems, and electric power plants were constructed.<sup>193</sup> World War II spurred a road construction program that built the Glenn Highway, and the Alaska-Canadian Highway, or ALCAN, which provides an overland link with the contiguous United States.

The construction of Elmendorf AFB and other military bases throughout Alaska transfigured the state on local, national, and international levels. No longer would Alaska be considered a valueless, desolate wasteland. Although Alaskans were accustomed to a military presence, World War II brought to Alaska the first military establishments geared toward national defense.

The Cold War structures and their associated histories represent only a snapshot of Elmendorf AFB's role during this period of history. Further analysis is needed of the base's Cold War historic contexts; an important junction in the relationship between Alaska and its close neighbor, Russia.

Volume II of this study provides an inventory of the World War II facilities and structures at Elmendorf AFB constructed from 1940 to 1945. Each building is inventoried and determinations of eligibility for the National Register are made based on this inventory and the site work it represents.

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<sup>190</sup> Nielson, *Armed Forces*, 147.

<sup>191</sup> *Ibid.*, 179.

<sup>192</sup> Gruening, *The State of Alaska*, 316.

<sup>193</sup> Nielson, *Armed Forces*, 146-147.

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