



**US Army Corps
of Engineers
Alaska District**

**THE COLD WAR IN ALASKA:
A MANAGEMENT PLAN FOR CULTURAL RESOURCES**



THE COLD WAR IN ALASKA:
A MANAGEMENT PLAN FOR CULTURAL RESOURCES,
1994-1999

D. COLT DENFELD, Ph.D.
Program Manager/Historian
Alaska District, U.S. Army Corps of Engineers

With Contributions By: Jennifer Abel
Dale Slaughter, Archaeologist

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Alaska soldiers train on glacier.

I. INTRODUCTION

COLD WAR DOMINATED OUR LIVES

The Cold War held us captive, dominating our lives. It had a profound influence on American public opinion and government policy for four decades. We lived in fear of a nuclear holocaust which would destroy our society. In response to these fears, we became accustomed to large military expenditures and numerous defense projects. Alaska received more than its share of military construction. Its strategic location served North America as an advance warning location.

The Cold War was marked by great scientific and technological advances in both the military and civilian worlds. It was also a time where secrecy often ruled. There were situations in Alaska and elsewhere in which military "necessity" was considered more important than openness and individual rights. One such situation was Project Chariot, at Cape Thompson near the village of Point Hope, which included experiments with low levels of radioactive waste. While dangers to the local community were insignificant, the lack of honesty has created local uncertainty and fear. Because of the absence of open communication, a safe situation appeared dangerous, at least to the deceived local citizens. During the summer of 1993 the radioactive soil was removed at a cost of six million dollars.

CLOSED AND ABANDONED FACILITIES

The end of the Cold War and the accompanying military drawdown has resulted in a dramatic increase in the number of closed and abandoned Alaskan military facilities. However, even before the collapse of the Berlin Wall and Communism in 1989, there were about 150 closed and abandoned Cold War facilities in Alaska.

The main causes for the closing of facilities prior to 1989 were improved technologies, new weapons systems replacing obsolete systems, cost reduction goals, and changes in strategy. For example, improved radars with greater range allowed for the closing of a number of DEW Line stations in the 1960s.

The White Alice tropospheric communications system was "state of the art" when introduced in 1955, but became obsolete with the introduction of satellite communications in the 1970s. The White Alice tropospheric stations were deactivated and abandoned.

Other Alaska defense systems which have become obsolete or replaced by new systems include AAA (Antiaircraft Artillery), replaced by Nike Hercules which was in turn made obsolete by Intercontinental Ballistic Missiles, manned AC&W (Aircraft Control and Warning) replaced by minimally attended or automated radars; U-2 spy planes replaced by other data gathering, and aircraft replaced by more advanced planes. Given their often remote locations and that many facilities were completely intact when abandoned, they have been popular targets for looting and vandalism.

A very few bright spots can be found in the preservation of Cold War installations in Alaska. The Nike launch structures at Site Point, in Anchorage, have been saved and are in current use. One Site Point launch structure has been modified into an attractive community center and warm-up lodge for cross country skiers. The Wildwood Air Force station, located in Kenai, Alaska, has been converted into a state correctional center and local housing facility. Some other examples of reuse are described later in this report. They demonstrate what can be done to preserve abandoned sites.

Unfortunately, serious flaws in the closing process have reduced opportunities for preservation and have driven up environmental restoration costs. When the military closed and abandoned facilities, they left behind equipment and supplies. Among the supplies were containers of hazardous substances such as brake fluid, fuel drums containing petroleum products, anti-freeze, and even containers of 100 per cent Polychlorinated Biphenyls (PCBs). Above and underground fuel tanks containing fuel were abandoned in place. Left on site were transformers which have since been shot-up or broken open to remove copper from inside, letting cooling oils containing PCB's spill onto the ground. Environmental restoration costs would be much lower today had these sources of contamination been removed upon closure.

A second serious problem impacting preservation has been the property excess and transfer process which has resulted in land and improvements sitting idle for years after the military presence. Vandalism and the severe Alaskan climate combined to reduce the value of many of the sites. Numerous sites have a large clean up cost due to vandalism, theft, and deterioration. In such cases, demolition becomes the only option. A large number of former military properties were granted to Alaskan native corporations. These cash-strapped native groups found themselves faced with unexpectedly high costs for cleanup. The Defense Environmental Restoration Program - Formerly Used Defense Sites (DERP-FUDS) program has funding available for some restoration, but it is often slow and incomplete.

The Army Nike sites Jig and Love, located near Fairbanks, which cost together ten million dollars to construct, were in the disposal process for over eight years. This slow disposal process was common according to a General Services Administration's (GSA) study of Alaska real estate disposal. GSA (1980) describes what happened at these sites and the problems of abandonment as follows:

The Army withdrew the land in 1956 for Nike Site Jig which is located about 34 miles south of Fairbanks. When constructed, buildings and other improvements cost \$5 million. The Army closed the site and declared it excess to their needs on June 30, 1970. The land and improvements were reported to BLM on August 19, 1971.

The Army reported that the property was in good condition when it abandoned the site in 1970. Since leaving the site, the Army has not protected or maintained the facilities. GSA visited the site in November 1979 and found that it had been almost totally destroyed by vandals and the elements; all windows were broken or removed, most of the roof was gone, most of the doors were missing, and all electrical fixtures were removed or broken. Nothing in the building was salvageable.

Other property left at the site has been stolen, including telephone poles, transformers, and floodlights. In addition, most of the 7,785 lineal feet of chain link fencing and both 16-foot gates have been stolen

Nike Site Love is located about 11 miles northwest of Fairbanks, Alaska. The site's 1,060 acres were withdrawn from the public domain in May 1958. Buildings and other improvements cost (in 1959) about \$5.4 million. The Army reported the site was in good condition when it closed, with the land and improvements reported to BLM as excess in 1971. Since leaving the site, the Army has not protected or maintained it.

GSA visited the site in October 1979 and found it in similar condition as Nike Site Jig. Improvements had been totally destroyed by vandals and the elements.

By 1984, when the Defense Environmental Restoration Program visited Sites Jig and Love, they looked as if they had been bombed. The Nike sites in the Anchorage area, which had security patrols, survived with somewhat less vandalism.

However, the cost of security at these Anchorage sites reduced funds for other important Army missions. The closure process has been improved, what is now needed is greater attention to preservation concerns.

INTENT OF THE PLAN

During the Cold War, the military in Alaska played a significant role in the development of the territory and state. The relationship was probably closer than in any other state. This management plan is an effort to maximize preservation of Cold War features within the framework of fiscal and other restraints.

This management plan will set goals for the preservation of Cold War military facilities in Alaska. One goal is to preserve at least one of each major type of operational facility. If it cannot be physically preserved, the type shall be preserved on paper through recordation.

For military installations, the three tyrannies of Alaska - distance, remoteness, and climate, make preservation more difficult. These tyrannies often make preservation cost prohibitive. Given their remoteness and distance from population centers, few of the installations are suitable for recreation or adaptive reuse. Even if provided to new owners at no cost, there are few if any takers. The energy inefficient designs scare away potential new users. These same high costs discourage retaining facilities as museums of their former military functions.

The mechanism to realize our Cold War preservation goals is the direct and extensive involvement of the military. The military must take a leading role in preservation. This should include effective use of Legacy program grants. Exemplary programs in other states can be analyzed for their application in Alaska. The military role should include long range planning and advance notice of closure to plan for preservation. One recent example of this type of planning is the Alaska Army Garrison FY 94 Legacy proposal to develop Nike Site Summit into a recreation-historic park. This is an outstanding preservation activity on the part of the Army. They have started the preservation process before any plans to excess the property or to demolish the facilities.

The State of Alaska can also do more to preserve and to locate new uses for military installations. One example, which is described in this plan, is the conversion of a well-preserved 1950s antiaircraft gun battery and garrison into a military park. Antiaircraft guns and equipment could be located and installed to return the site to its original character. The restored gun battery, since it is near Fairbanks, would have tourism and historical value.

The Cold War in Alaska should be recognized as one of the most important forces in the historical development of the territory and state. In many areas, military improvements concurrently supported civilian economic development. This was especially true in the areas of highway construction (largely World War II), port construction (Whittier, Seward), airfield/airport expansion, and communications.

The military in Alaska, was until replaced by tourism and oil production, the main economic force in the state. On a psychological level, the fears of the Cold War were strongly perceived in Alaska because of our closeness to the former Soviet Union. While the military and civilian communities were sensitive to the frontline or "trip wire" function of Alaska, students of the Cold War have paid little heed to the state. When Alaska is mentioned in Cold War studies it is but a brief mention of the air reconnaissance detection of the Soviet atomic bomb explosion. Therefore, the documentation of the Cold War is critical to correct the European bias as the center of the political and military Cold War agenda. In this plan we will discuss Alaska in the worldwide Cold War context.

Cold War property types and sites representing each will be identified. The lateness of developing this plan, relative to the demolition which has already been accomplished, creates an additional challenge to preserve significant property types before they have disappeared.

Most of the distinct property types are significant and are already listed on the National Register of Historic Places. National Register targeting for additional property types will be discussed. For each property type, a brief history will be provided, indicating the defining characteristics and the surviving features at sites around the state. The extant features are assessed to determine historical integrity. Evaluations of significance will be accomplished.

Finally, we consider possible grants and special projects to preserve the legacy of the Cold War. For good or bad, the Cold War has significantly shaped Alaska's history.

CHAPTER ONE

HISTORICAL OVERVIEW

THE COLD WAR ERA

The starting date of the Cold War is open to debate. One view is that the Soviet Union and the United States were uncomfortable allies in World War II. However, the greater good of the war masked the underlying conflict. Those wanting a specific date and clear delineation, the famous Winston Churchill speech at Westminster College, Fulton, Missouri, is a popular choice. In this March 5, 1946 speech, Churchill spoke of the Iron Curtain descending upon Eastern Europe. The end of the Cold War is also open to debate, a frequently used date is 1989, with the tearing down of the Berlin Wall and the fall of Communism.

The March 1946 to 1989 period of the Cold War era does not effectively match the Alaska situation. There was an earlier perception of Cold War tensions and a somewhat slower turning off of Cold War operations. In Alaska, the accomplishment of World War II Lend-Lease activities brought the Soviet and American militaries into close contact. The Lend-Lease activities in Alaska involved the transfer of aircraft and ships. The transfer route of Lend-Lease aircraft began at Great Falls, Montana, stopping in Alaska, with the final destination being the Soviet Union. To effect the United States' part, the 7th Ferrying Group, Air Transport Command, Great Falls, Montana, was established to get the aircraft to the Russians. Aircraft were transferred to the Soviet Union at Ladd Field, Fairbanks. From here the aircraft, with Russian crews, were flown to Siberia, a route which became known as the Alaska-Siberia ferry route (ALSIB). The first transfers occurred in September 1942 and ended in 1945 after the delivery of 7,956 planes.

The relationships between the Russians and Americans were stiff but cordial with underlying tension and distrust. General Hap Arnold wrote, in his book entitled Global Mission, of Americans working overtime to get the planes in top condition, but not receiving even a thank you from the Russians. American pilots at Ladd were also upset over Russian care of the aircraft, including taking off without proper warmups or correct procedures. There were other areas of tension and possible Soviet misbehavior. Cloe (1984:154) reports that:

The route, according to one source, provided a conduit over which the Russians moved intelligence agents and classified information obtained illegally from American sources. The Soviets, claiming diplomatic immunity, shipped back suitcases in batches of 50 or more. Maj. George R. Jordan, who was assigned to Great Falls, later claimed that he had opened and inspected several. He found road maps marked with industrial plant locations, copies of reports submitted by the American attaches in Moscow, documents from

the Aberdeen Proving Grounds, and various other documents of intelligence value to the Soviets.

It became increasingly clear, as the war in the Pacific wound down, that the wartime marriage between the capitalistic and communistic countries was ending. The honeymoon, such as it was, was nearly over. The United States was about to embark on a cold war with Russia which would have special meaning for Alaska, and particularly for the Air Force in Alaska.

A second Lend-Lease program in Alaska was HULA 2 at Cold Bay, where naval vessels were transferred to the Soviet Union. Russian crews arrived at Cold Bay, were trained on the vessels, and then sailed them to Russia. In January 1945, the Chief of Naval Operations had directed that a North Pacific harbor be selected for use as a transfer point for vessels going to Russia under the Lend-Lease program. Located at Cold Bay was the largely vacant Fort Randall, a naval Auxiliary Air Facility, and an excellent harbor. The original plans called for the transfer of 180 of the 500 vessels destined for Russia under Lend-Lease.

The transfer program was abruptly terminated on September 5, 1945, and vessels en route to Cold Bay were ordered back to Seattle. A total of 149 of the planned 180 vessels had been transferred at the time the cessation notice was received.

HULA 2 was similar to the aircraft transfer in creating or fostering bad feelings toward the Soviets. Both Lend-Lease operations exposed the underlying hostility. The two allies were clearly uncomfortable, brought together by a greater good - that of winning the war against Germany and Japan.

THE SOVIET UNION AS THE ENEMY

A secret Alaskan project, in January 1945, hints that the Soviet Union was already recognized as the future enemy. This secret project was Operation NAM, code-named for three airfield sites: Noxapaga, American River, and Collins-Hannum. The code-name NAM was derived from the first letters of the first two sites and the last letter of Hannum.

Proposed for each of these Seward Peninsula sites were large airfields to guard the northern approach to Alaska. Allegedly, the perceived enemy was the Soviet Union, with airfields at nearby Siberia.

Interceptor aircraft could be assigned to these fields to protect Alaska in the post-war years. The Seward Peninsula was the initial point on the enemy bomber penetration route. Air defense became the most important element of the Alaska defense. Although Operation NAM airfield plans were developed and surveys conducted, the construction was never authorized. The intention of Operation NAM has not yet been clearly determined.

On a national level, the spring of 1945 marked a shift in attitudes. President Franklin D. Roosevelt, who was seen as an integrationist, was replaced by a more confrontational Harry S. Truman. Quickly, the Truman attitude became anti-Soviet and containment oriented.

There is also contrary evidence, a Joint Chiefs of Staff study conducted in December 1945 concluded that the Soviet Union was of little danger to Alaska. This study argued that the probability of trouble developing in the Alaskan area as a result of conflict between U.S. and USSR policies was fairly remote.

The Soviet capability to launch a major operation against the Alaska Area in the next five years is estimated to be almost nil; ...it does not appear necessary to station air forces or ground force combat troops in the Alaskan Area except for training, acclimatization, experimental purposes, limited reconnaissance and surveillance, and for limited local defense of selected bases (Farquhar, 1993:1).

AIRFIELDS MOVED FROM THE ALEUTIANS

Late in 1945, the operational airfields were located in the Aleutians, Anchorage, Fairbanks, and Nome. The 57th Fighter Group was equipped with P51H Mustangs with two squadrons assigned to Shemya and one to Ladd Field, Fairbanks. There was also a P61 Black Widow Squadron (449th Fighter Squadron) assigned to Davis Field, Adak.

The Aleutians had become less important and the new threat was Soviet aerial attacks coming over the polar regions. Brigadier General Joseph Atkinson, Commander of the Alaskan Air Command (October 1, 1946 - February 25, 1949), started to close down the Aleutian bases in late 1946. Air power was moved closer to the perceived Soviet bomber routes.

NEW ARMY ROLE

During World War II, a port was built at Whittier with two railroad tunnels blasted through the mountain to connect it to bases at Anchorage and Fairbanks. The port and garrison, which housed 1,100 troops, was closed in 1945. In August 1946, the Port of Whittier was briefly reopened as a troop embarkation point for troops arriving as part of Task Force Frigid, the first Cold War Army exercise in Alaska. Troops also arrived here for the first large scale cold weather maneuver mock battle between large units, Exercise Yukon, during the winter of 1947-1948. Exercise Yukon tested four companies of the 2d Infantry Division in maneuvers at Big Delta. For the first time, Army troops of a combat experienced division trained for land defense against an enemy arriving from the north. The defense had shifted from the coast and Aleutians to central and northern Alaska.

Exercise Yukon was conducted on the World War II Air Transport Command field, known as Station 17, ATC, or Big Delta Field. The field was reactivated in May 1948 as Big Delta Army Air Field, home to the new Army Arctic Indoctrination School. It was an ideal choice as there are mountains, plains, forests, muskeg, tundra, glaciers, rivers, lakes, swamps, and extreme cold. The facility was renamed Fort Greely on August 6, 1955, in honor of Major Adolphus W. Greely, arctic explorer and founder of the Alaska Communications System. The school trained personnel in far northern military operations during both the winter and summer seasons. Among the courses were: a four week winter operations, a five-week summer operations, and a mountain instructors course.

On March 22, 1949, after a difficult struggle, the Alaska National Guard was established. By the end of the year, the Guard had enrolled 25 officers and 292 enlisted men in Scout units. The natives or "Eskimo Scouts" were well suited to be the eyes and ears of the northern observation and warning. They would be the first to observe activity on the northern tier. The Korean War and Cold War tensions brought an increased personnel authorization for the National Guard. By March 1951, the homeland Guard had grown to 1302 men. Armories were constructed in many remote villages, often of surplus World War II Quonset huts.

There was not another large Army exercise until February 1953, Exercise Snow Shoe, at Tanacross, with the 4th and 196th Regimental Combat Teams. That August, the 196th RCT carried out a summer exercise, Web Foot, on the Kenai Peninsula. Other exercises and maneuvers followed: Snow Bird (1955), Moose Horn (1956), Northern Light (1957), Cold Bay (1958), Caribou Creek (1959), Little Bear (at Lake Louise to Sourdough) and Arctic Shore II (at Point Barrow) (1960), Willow Freeze and King Crab III (at Kodiak) (1961), Arctic Shore III and



Troops training in the frozen north during the 1947 Task Force Frigid exercises.

Great Bear at Nome (1962), Timberline (1963), Polar Siege (1964), Northern Hills and Polar Strike (1965), Dall Sheep I (1966), Frontier Assault and Big Bear II at Nome (1967), Jack Frost (annually in the 1970s), and in more recent years, Brim Frost and Northern Ridge biannual exercises.

Most of these exercises were held during the winter to provide realistic northern and arctic environment problems and challenges - to test men, materials, and tactics. Frequent participants were units from Forts Richardson and Wainwright, the Alaska National Guard (Army and Air), and units from the continental United States. Supporting roles were played by the Alaskan Air Command and flying outfits of other stateside commands, both Regular and Reserve Forces.

The Navy also reviewed their Alaska role. In 1946, a Pacific wide base study was completed. The plan had eleven major bases from World War II remaining open: Kodiak, Adak, Pearl Harbor, Canal Zone (Panama), Guam, Saipan, Tinian, Iwo Jima, Okinawa, Manus, and the Philippines. In the Aleutians, Adak, Tanaga, and Attu would remain open; Adak would be the main air and naval base, Tanaga was an emergency field, and Attu would function as a small weather station. The Naval Operating Base at Dutch Harbor was to be retained in caretaker status.

Funds were appropriated for permanent construction at Adak with limited work at Attu. The Navy issued a contract to a firm with considerable World War II construction experience. Contract NOy-13913 (June 1946) was a Cost-Plus-A-Fixed-



Permanent barracks being built at Davis Air Force Base, Adak.

Fee Contract, under the cognizance of the Bureau of Yards and Docks, with Johnson, Drake and Piper, Incorporated, of Minneapolis, Minnesota, and Puget Sound Bridge and Dredging Company of Seattle, Washington, a joint venture operating under the name of Drake Puget Sound. The original scope of the contract included: surveys, field investigations, foundation studies, schematic plans and layouts for the post-war development of Adak and Attu, and plans and specifications for the construction work authorized under the contract. The estimated cost of the design work was \$828,000.

The designs were for personnel housing, community facilities, and the utilities required for construction at Adak and Attu. The estimated cost of the construction phase of the contract was \$13,009,700. Construction at Adak included five barracks buildings, in the Naval Air Facility personnel area, to accommodate 486 men on peace-time space standards, with galley and messing facilities for 1,000 men, and a recreation building. Additional barracks were authorized in 1947. In the joint married housing area, four married officers' quarters, eight married enlisted men's quarters, and bachelor officers' quarters were constructed.

Construction at Attu included an Aerological Station with barracks, messing facilities, and recreation facilities for 20 men and two officers. This facility consisted of two buildings connected by a covered passage. One building contained the aerological and radio facilities, offices, messhall, galley, officers and enlisted men's quarters, sick bay, food storage, heating plant and recreation rooms. The

second building contained a garage, radio transmitters, electric generators, and aerological balloon launching facilities.

ALASKAN COMMAND FORMED

On January 1, 1947, the Alaskan Command (ALCOM) was formed as one of the first unified commands by the Joint Chiefs of Staff. The Alaskan Command was responsible for military operations in Alaska. It was comprised of the Alaskan Air Command (AAC), Alaskan Sea Frontier, and Alaskan Department which became the U.S. Army, Alaska, or USARAL on November 10, 1957.

Headquarters of the Alaskan Air Command had relocated from Adak to Elmendorf AFB on October 1, 1946. Within a year, many of the Aleutian bases were closed. The air bases at Amchitka, Umnak (Cape AFB), and Cold Bay (Thornborough) were inactivated. By 1950, the transition to new Cold War realities was complete. In July 1950, the Air Force transferred Adak Island (Davis Air Force Base) to the Navy. The surviving operational Air Force base in the Aleutians was Shemya, which served as a refueling stop.

The Air Force then turned Shemya over to the Civil Aeronautics Administration, who then leased the facility to Northwest Orient Airlines for use as a refueling station on the Great Circle Route. The Air Force returned in 1958 to share the base with Northwest Orient until 1961. In 1961, Northwest Orient removed its operations, leaving the base to the Air Force who developed the facility into an important intelligence center.

AIRCRAFT WARNING SYSTEMS

In the early postwar years the aircraft warning systems consisted of World War II installations which were inadequate to meet the new realities; the equipment and communications systems were outdated and ineffective. The radar orientations covered routes which the Japanese would have used, not the more northern approach expected of the Russians.

An investigation of base requirements and radar stations was performed in 1946. A Joint Army-Navy Board headed by Major General William Hoge, Deputy Commander of the Engineer Center, Fort Belvoir, visited Alaska in January that year. The Board toured the Aleutians, making recommendations on base operations. Among their recommendations was to place most World War II radar sites on standby, only to be opened in the event of war (Hoge, 1993).

The Alaskan Air Command, in its own study, recommended 58 radar facilities. Another investigation by Air Force headquarters in 1947 urged the construction of 13 radar sites. A fourth study, in late 1947, determined that 37 sites were required in Alaska. Funding realities reduced the 37 sites to 10 radars and two control centers.

Funding for radars was appropriated in 1949 and site planning was started. It divided the air defense into two sectors, one north and the second south of the Brooks Range. Ladd AFB was the central point of the north, and Elmendorf AFB the south. The initial system had temporary radars at Elmendorf, Ladd, King Salmon, and Gambell, located on St. Lawrence Island. The Gambell radar was used to track Soviet shipping.

AIR DEFENSES AND STRATEGIC BOMBERS

In the late 1940s, Alaskan air intercept capability was comprised of a fighter group at Elmendorf with F-80 Shooting Stars. F-82 Twin Mustangs, stationed at Ladd AFB, were used for air to ground missions.

The 1947 Joint Emergency War Plan, code-named Pincher, had strategic bombers based in Alaska to attack Soviet targets (Farquhar, 1993:1). The former Mile 26 (26 miles southeast of Fairbanks) satellite field was expanded, in 1948, into a major field. The runway was lengthened to 14,518 feet, the longest in North America, and a large hangar was built for bomber maintenance.

During 1946, the Air Force carried out secret reconnaissance to support operational plans. The transpolar route was studied as a short route to Soviet targets. The 46th Reconnaissance Squadron was sent to Ladd Field in 1946 to map the arctic. For the next two years, planes from Ladd and Eielson photomapped the polar route and solved navigational problems. The 46th was redesignated the 72d Reconnaissance Squadron on October 13, 1947.

There were also intelligence flights to the Soviet Union, using electronic means and oblique photography. Converted B-29 aircraft, in 1947, flew reconnaissance flights to learn about Soviet radars in Siberia. These efforts detected gaps in the Soviet radar networks (Farquhar, 1993:8).

On March 29, 1948, a United Press news release informed the public as to the Cold War role of Eielson Field. The base described as "hitherto highly-secret"



Largest hangar in Alaska is erected at Eielson AFB.

was one of only four in the United States capable of launching B-36 flights. The other three were: Wright Field, Ohio; Eglin, Florida; and Fort Worth, Texas.

The B-36 was announced to carry an atomic bomb to any inhabited region and return home without refueling; it had a range of 10,000 miles. The Air Force had 100 of them on order.

In November 1948, atomic bomb capable B-50As were rotated to Eielson. One of the five B-50As sent to Alaska crashed, while the other four were grounded until faulty equipment was replaced.

Another significant activity at Eielson Air Force Base was aerial reconnaissance of Soviet atomic bomb testing. The first Soviet explosion was detected by an Eielson based airplane on September 2, 1949. The Cold War had taken on a more frightening reality. Evidence of the Soviet test increased the strategic importance of Alaska as the advanced warning tier for the North America defense. Initial proposals for radar lines to fill the Far North gap were rejected as too expensive.



Fort Greely under construction in the early 1950s

THE 1950S: Fear of a Communist Attack, The Korean War, and Northern Confrontation

Given the increased tensions and fears, the 1950s became a decade of intense military build-up in Alaska. Over one billion dollars in construction was accomplished with much of it occurring between 1951 and 1955. This Alaska defensive expansion was a response to Soviet military expansion and the Korean war. Alaska had assumed the role of advance warning for the continental United States.

The 1950s were especially tense. Following the Soviet explosion of an atomic bomb on September 2, 1949, U.S. intelligence experts spoke of an impending war. In November 1949, the 925th Engineer Aviation Group destroyed Aleutian airfields to prevent their use by Communist enemies. Airfields were made inoperable by digging ditches across them or bending the steel landing mat. The aviation engineers did their work at Amchitka, Attu, Kiska, Tanaga, and other islands.

In 1950, temporary search radars, which identify unfriendly aircraft and height-finding radars and direct fighters to intercept them, were installed at Farewell, Middleton Island, and a number of other sites. These were mobile radars which would be replaced by permanent facilities.

Military basing was enhanced in 1950 when the post at Anchorage was split between the Army and Air Force. The Air Force took over the southern portion and



The first barracks goes up at the new Fort Richardson in 1951.



The early 1950's military buildings created a housing shortage. Surplus military buildings are converted into Anchorage apartments.

renamed it Elmendorf Air Force Base. A new post was built for the Army on the northern portion and was named Fort Richardson.

The three military organizations were present in Alaska. The Army was responsible for ground and anti-aircraft defense of Alaska, with particular attention to Anchorage and Fairbanks. Additionally, the mission included cold weather training and doctrine development, operating the cold weather and mountain school at Fort Greely, training for the National Guard, and emergency readiness for nuclear attack recovery. Navy activity included aerial maritime patrols based at Kodiak and Adak. The Air Force had radar and aerial intercept duties. The first recorded

Cold War visual contact of Soviet planes was on August 1, 1950. Two U.S. F-82 Mustangs (twin engine version) were on reconnaissance over Anadyr Gulf, carrying out aerial photography of Chaplina airfield, when they saw four Soviet fighters. Later that day, a B-17 flying near St. Lawrence Island recorded about twenty Soviet planes in two formations. On September 2, 1950, a Navy P2V Neptune on patrol encountered two Soviet fighters off St. Lawrence Island. The fighters, possibly Yak types, approached to within one mile of the Neptune before disengaging.

There was also the volunteer civilian Ground Observer Corps (GOC) formed in 1953 to watch the skies for enemy aircraft. The GOC had 1,000 observers in Alaska and about 250,000 nationwide. One was John E. White, of Glennallen, who built an observation tower on his home for his watch duties; this tower still stands (see Chapter IV).

A hostile aerial encounter happened on March 15, 1953, when a MIG-15 fighter fired on a U.S. WB-50 weather plane. The WB-50 was on a mission near the Kamchatka Peninsula when attacked. The WB-50 returned fire and the MIG-15 retreated.

With the Korean War, which started on June 25, 1950, an emergency military construction program was authorized. The Chief of Engineers delegated authority to engineer divisions to negotiate contracts and to proceed with projects under 'public exigency' conditions. In the all-out defense effort many millions of dollars were committed quickly to expansion and improvement of our military installations, communications systems, aircraft and missile warning systems, and the Haines-Fairbanks petroleum pipeline (Woodman, 1975:45).

Early in the Cold War, the need for secure transportation of fuel products was recognized. Planning for pipeline movement of petroleum was started in 1947, but not funded until the Korean War. In 1952, a construction contract was awarded for a year-round pipeline from Haines to Fairbanks. The Haines-Fairbanks petroleum pipeline was 626-miles long and eight-inches in diameter. The line was sited in both Alaska and Canada, with 280 miles in the latter. This joint siting led to another name, ALCANGO, for Alaska-Canada Gas-Oil fuel pipeline. Its construction and operation required the cooperation of the Canadian government.

Construction was initiated in October 1953 and continued during the winter in the face of cold weather, deep snow, and harsh winds.

The 40-foot sections of steel pipe came from two sources. That used in Canada came from Great Britain, the rest from Pennsylvania. Terminal docks, pumping stations, and a huge tank farm were built at Haines, with other stations and storage facilities along the line. Stations were linked by telephone and teletype networks constructed by our Army's Alaska Communication System.

Mud and permafrost, plus extremes of weird weather, were the main headaches experienced by the line's Resident Engineer, Lt. Col. John E. England. From sea level the steel line was built through 3,700-foot high Chilkat Pass, and gradually descended to 425-feet above sea level at Fairbanks. At the time, this was the most northerly major pipeline in the world and one of the first military multipurpose lines ever built. It had a delivery capability of 16,000 barrels of product per day as originally designed. Later (1962) a supplementary \$3 million project was executed under the Alaska District, Army Corps of Engineers supervision in which six more pumping stations were built along the line, greatly increasing its carrying capacity.

When the basic installation was dedicated at Haines on 12 October 1955, CINCAL (Lt. Gen. J.H. Atkinson) remarked: 'The ALCANGO has both an economic and strategic significance, and although we have built it because of its strategic importance, let us hope we never have to use it as a tool of war.' Commenting on its economic value he said: 'This pipeline cost the American people \$40 million; however, what makes this project unusual from the military-economic standpoint is that it is expected to pay for itself.' (Woodman, 1975:47).



The King Salmon Aircraft Control and Warning Station when completed in 1951.

An Alaska Air National Guard airbase was built on the south side of the Anchorage International Airport in 1955. The base included a hangar and warehouse. Even as the base was under construction, the 144th Fighter-Bomber Squadron reported for duty with their F-80s. In May 1955, the airbase was named Kulis ANG Base in honor of 1st Lieutenant Albert Kulis, who had been killed in a F-86 mission.

Construction of permanent aircraft control and warning stations was launched in 1950. The plan was to create a protective system, giving early warning of enemy air attack. There were five stations for the coastal areas or outer ring: Cape Lisburne, Cape Newenham, Cape Romanzof, Tin City, and Northeast Cape on St. Lawrence Island. In the interior or inner ring, were three intermediate ground-controlled intercept stations: Campion, Tatalina, and King Salmon. Finally, there would be two control center sites: Murphy Dome, near Fairbanks, and Fire Island, Anchorage. Gaps in the interior were closed by two more stations, Indian Mountain and Sparrevohn, that were added in 1951.

Construction at the more accessible sites like Fire Island, Murphy Dome, and King Salmon went quickly; whereas, the more remote sites took longer. Murphy Dome became operational in September 1951. The stations at Sparrevohn and Cape Newenham did not become operational until March and April 1954 respectively. With their completion, the AC&W system was fully operational at a total cost of 46 million dollars.

Construction of the AC&W stations required overcoming numerous engineering obstacles. The first problem was logistics, how to transport supplies and equipment to the remote and harborless construction sites. Materials had to be lightered ashore and then moved to the hill top locations. Roads were built, but were most often not passable because of snow, ice, or rain. Aerial tramways were a solution, but they were unstable during high winds or icy conditions. One tram car at Cape Newenham fell to the ground; fortunately, not killing anyone.

The original building designs at the AC&W stations were wood-frame construction with steel radomes. In recent years, earlier designs have been replaced by minimally attended radar (MAR) facilities, geodesic domes or steel construction. A typical facility, Cape Newenham, cost \$4,176,660 and included one airman and NCO barracks, administration and dispensary building, operations building, recreation building, transmitter building, receiver building, messhall, Quartermaster warehouse, oil and paint storage building, garage, vehicle storage, supply warehouse, heat and powerplant, water storage building and water treatment system and storage tanks, water pump station, covered walks, bulk liquid fuel tanks of three different sizes, fuel pumphouse, tramway, tower, flagpole, antenna system, ammunition storage, airstrip with parking area, video cable installation, roads, parking area, and all utilities, including electrical, water, steam, and sewer. The entire facility was located at an isolated spot on the coast overlooking the walrus of the Bering Sea.

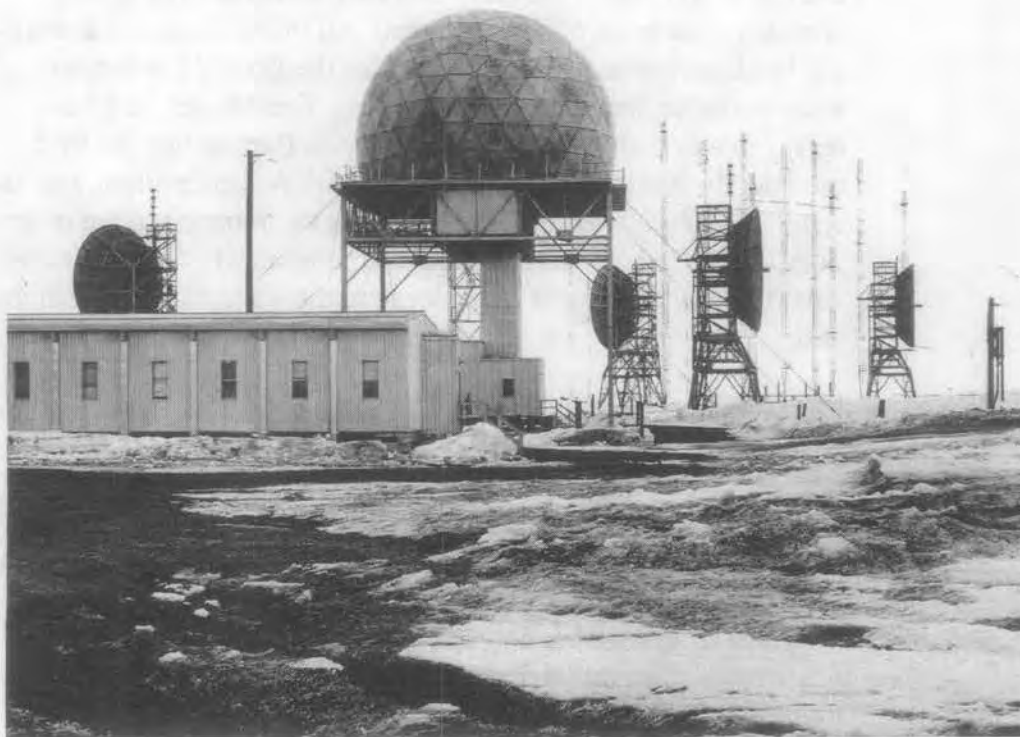
Six more AC&W sites were added in the mid-1950s, they were: Middleton Island, Ohlson Mountain (near Homer), Bethel, Fort Yukon, Unalakleet, and Kotzebue. They were all completed by the summer of 1958.

While the Distant Early Warning (DEW) Line was very expensive, the need finally justified the expenditure. A study group of American scientists was formed in 1952 to develop this advance warning system. Their immediate requirement was to create radar, radio equipment, and associated electronic systems which would operate in an environment of -60⁰F, vicious summer electric storms, constantly fluctuating currents of the North Magnetic Pole, and the strange phenomena of the northern lights. The scientists designed and constructed at the same time, solving problems as they were encountered. The radars performed well in tests, but the real challenge would be on-site in the Arctic environment.

The Air Force airlifted the necessary materials, equipment, and machinery 240 miles north of the Arctic Circle to Barter Island. A test station was erected here and code-named BAR-M for main station Barter Island.



On December 22, 1952, Dorothy Gibson performs at the Barter Island Outpost - an outpost designed to track Soviet movements.



Advance warning of Soviet bombers was still the prime duty of the DEW Line main station at Barter Island.

Following tests at BAR-M and the accomplishment of the indicated changes in design and format of equipment the inventors and planners were satisfied that they had created a feasible and practical solution for all of the initial DEW Line technical equipment problems. Among other things developed at Barter Island were automatic alarm circuits which provided audio alerts whenever a target was trapped by the radar (Federal Electric, N.D. 1-1).

The DEW Line was created in record time, by December 1952 the system was ready and a Distant Early Warning (DEW) line was planned to extend across the northern regions of Alaska and Canada. The warning line was in place in two years and completely operational in 1957. Western Electric became the primary contractor of the project, which was code-named Project 572. The actual construction was accomplished by Johnson, Drake and Piper, Inc. and Puget Sound Bridge and Dredging Company.

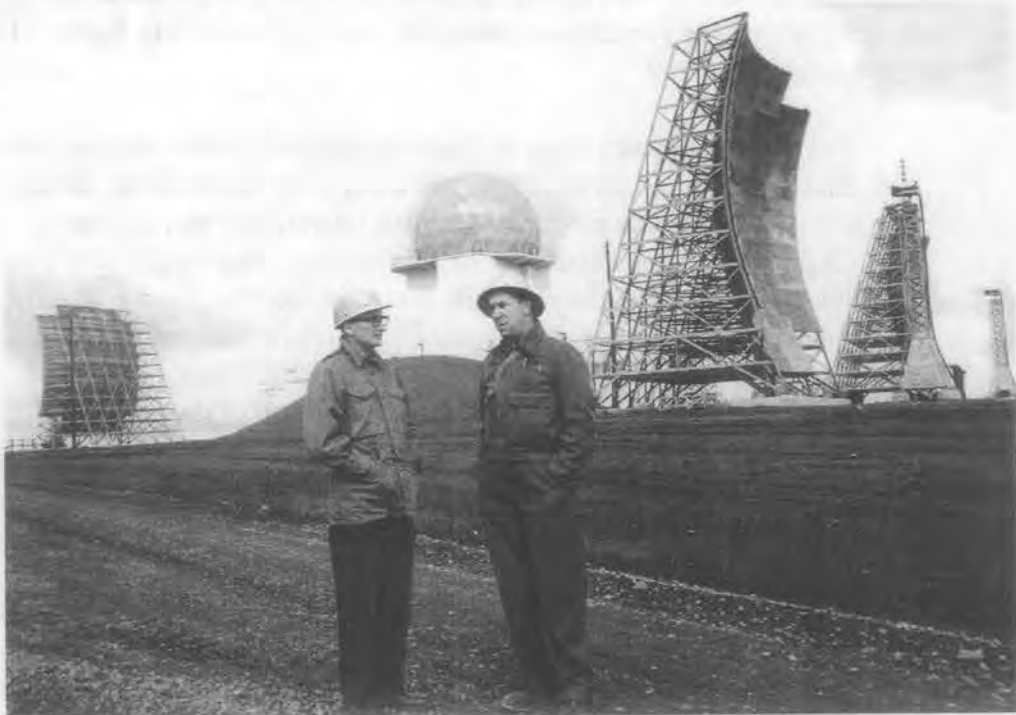
Point Barrow was selected as the headquarters for construction.

During World War II the Navy had established a camp at this northern most point of our continent. All the essentials of a working headquarters and base of supply for the DEW Line project were available, including a landing strip, warehouses, and barracks. It was in the heated hangar at Point Barrow that the first module, the basic building block of the DEW Line station, was assembled and mounted on sled-like bases for transport to the more than 18 sites, which were located at approximately 50-mile intervals from Cape Lisburne in the west, to the Canadian border in the east.

The module evolved following experiments with almost every possible type of building material. As indicated by its name, it turned out to be a very simple and thoroughly practical modular unit which, when assembled, was 16 feet wide, 28 feet long, and 10 feet high, of prefabricated and pre-insulated panels. The modules were air shipped and reassembled at Point Barrow. As a general rule, five modules were coupled together along with a caboose-like wanian behind Caterpillar tractors to form 'Cat' trains. The trains and their construction crews departed for the various sites along the coast, cutting directly across the frozen tundra, along trails marked by air-dropped flags.

Three types of stations were constructed: the Main station consisted of roughly two 25-module building trains bridged together, equipped with rotating radar to facilities (individual warehouse-like buildings for garages, shops, and bulk storage) for providing full service and logistics support for its 'sector;' each of the five Auxiliary stations consisted roughly of a single 25-module train, equipped with rotating radar and self support facilities such as garages, warehouses, bulk POL storage tanks, etc.; and the seven Intermediate stations each consisted of a single 5-module train and essential support facilities. 'I' sites, as they were called, were not equipped with rotating radar. They served as gap filling anchor points for radar fences between rotating radar equipped stations. Scopes at neighboring Main or Auxiliary stations recorded either north-to-south or south-to-north penetrations of the fence by low flying aircraft.

An interesting construction feature at Main and Auxiliary stations was the inclusion of a fire-barrier module about



Engineers discuss the final phase of construction for the Driftwood Bay DEW Line extension radar and White Alice station.

every eighth module along the main train. The fire barrier was metal clad on the roof and sides, with the bottom exposed to the weather, except an enclosed corridor connecting the standard modules can be pushed out of the train and away from other modules by a bulldozer (Federal Electric, N.D: 1-3/1-4).

The DEW Line construction was begun at Barter Island in 1953 with a prototype AN/FPS-19 search radar. The line would stretch across the north coast of Alaska and Canada. There were six main stations (two in Alaska: Point Barrow and Barter Island), 20 auxiliary, and 28 intermediate stations. The entire system was operational by November 1957.

DEW Line extensions, Operation Stretchout, were authorized in 1957. One was at the Alaska Peninsula-Aleutian Islands and the second across Greenland. Construction of the Aleutian extension was started in early 1957 with a main station at Cold Bay and auxiliary stations at Port Heiden, Port Moller, Cape Sarichef, Driftwood Bay, and Nikolski. The Aleutian extension stations had standardized plans. The Aleutian extension stations included a composite building with radome and condenser tower, waveguide supports, four towers with feed horns, two VHF antennas, two UHF antennas, cable, electric, water, and sewer systems, POL storage, pumphouse and related piping. Four of the sites also required runways and runway lighting. The Aleutian extension became operational in April 1959 and was deactivated in 1969.

The Manson-Osberg crew at Cape Sarichef experienced some conditions a bit more unusual than the other contractors faced. This site was on the western tip of Unimak Island, part way out the Chain. Two things made life here interesting, exciting, and miserable. One was that the radar site had to be built on the top of a red volcanic hill. Nearby was Mount Pogromni, an extinct volcano; 50 miles away was 10,000-foot Mount Shishaldin--not extinct at all. In the process of slicing 65-feet off the top of the cinder hill, the contractor soon ran into the solidified lava core and had to blast his way down. Throughout the work, men had to wear goggles while outdoors as protection from the storm-blown volcanic ash and cinders which sand-blasted everything and stung workers' skin like needles. The winds came frequently in hurricane force (Woodman, 1975:53).

The DEW Line system made the north coast of North America a top cover for its defense. The defense of the United States became strongly dependent upon Alaska for advance warning and initial interception. The system was also signifi-

cant as an engineering accomplishment, for it required new technologies in radar and communications. Actual construction and operation required solutions to cope with arctic conditions. The modular construction was an effective answer to difficulties of transportation and erection. The system was also remarkable in its rapid development and deployment. Few major systems have gone from conceptual to operational status in such a short time. Additionally, it was a military system created by civilian scientists, built by civilian contractors, and operated by civilian contract employees. In 1965, the Air Force awarded a contract to Federal Electric to operate the DEW Line. This was the start of employing civilian firms to operate important military facilities.

The engineering firsts were numerous. The arctic environment was a new challenge for designers. There were the obstacles of logistic resupply in remote areas, travel across the tundra, extreme weather, and placing buildings on permafrost soils. The resupply and movement of supplies and materials was resolved by airlifting to Barrow. From Barrow, prefabricated modules and materials were towed across the frozen tundra on sleds to over 18 sites, located at 50-mile intervals from Cape Lisburne to the Canadian border.

The communications needs of the Aircraft Control and Warning (AC&W) and DEW Line systems required a new communications network. Experiments with VHF failed as the radars jammed the signals. To solve the communication problems, a research group was formed in 1954. They reviewed the needs and problems and then turned to the Bell System to create adequate communications for the radar systems.

The demands placed on such a system would be large. It had to span long distances in inaccessible areas. It had to be dependable despite frequent storms, long winters, intense cold, wind and heat, and the disturbance of the Northern Lights. Because the system was to function for the military and civilian sectors, it had to have the ability to carry many voice and telegraph channels simultaneously. Bell recommended to the Defense Department the construction of a relatively new system, the forward propagation tropospheric scatter system. Because of the tremendous cost involved in constructing and managing a remote tropo site, more traditional, smaller and easily manageable microwave facilities would be used where possible. These would be constructed along the road system every 50 miles or so. This recommendation was accepted by the Air Force, and Western Electric Company (WECO) was

awarded the contract in 1955. The U.S. Army Corps of Engineers, Alaska District, selected and surveyed all original White Alice Communications Systems (WACS) sites, handled all contracting, and constructed 11 of the original 31 sites. The saga of surveying the sites is a story in itself. Consider the fact that experimental transmission towers had to be set up at each potential WACS site during the winter months, and that the tower and accompanying equipment weighed 14 tons. WECO constructed 20 stations and installed the electronics equipment in all White Alice installations. (Reynolds, 1988:5-6)

White Alice successfully linked AC&W sites and DEW Line sites into a cohesive network, and relayed communications back to Elmendorf AFB and Eielson AFB. Additionally, two routes linked the Ballistic Missile Early Warning Site (BMEWS) at Clear AFB to North American Air Defense (NORAD) headquarters in Colorado. The cost of the system was formidable; the estimated cost to build it was 38 million dollars. However, the first phase of construction actually cost 3 and 1/2 times that, or 113 million dollars.

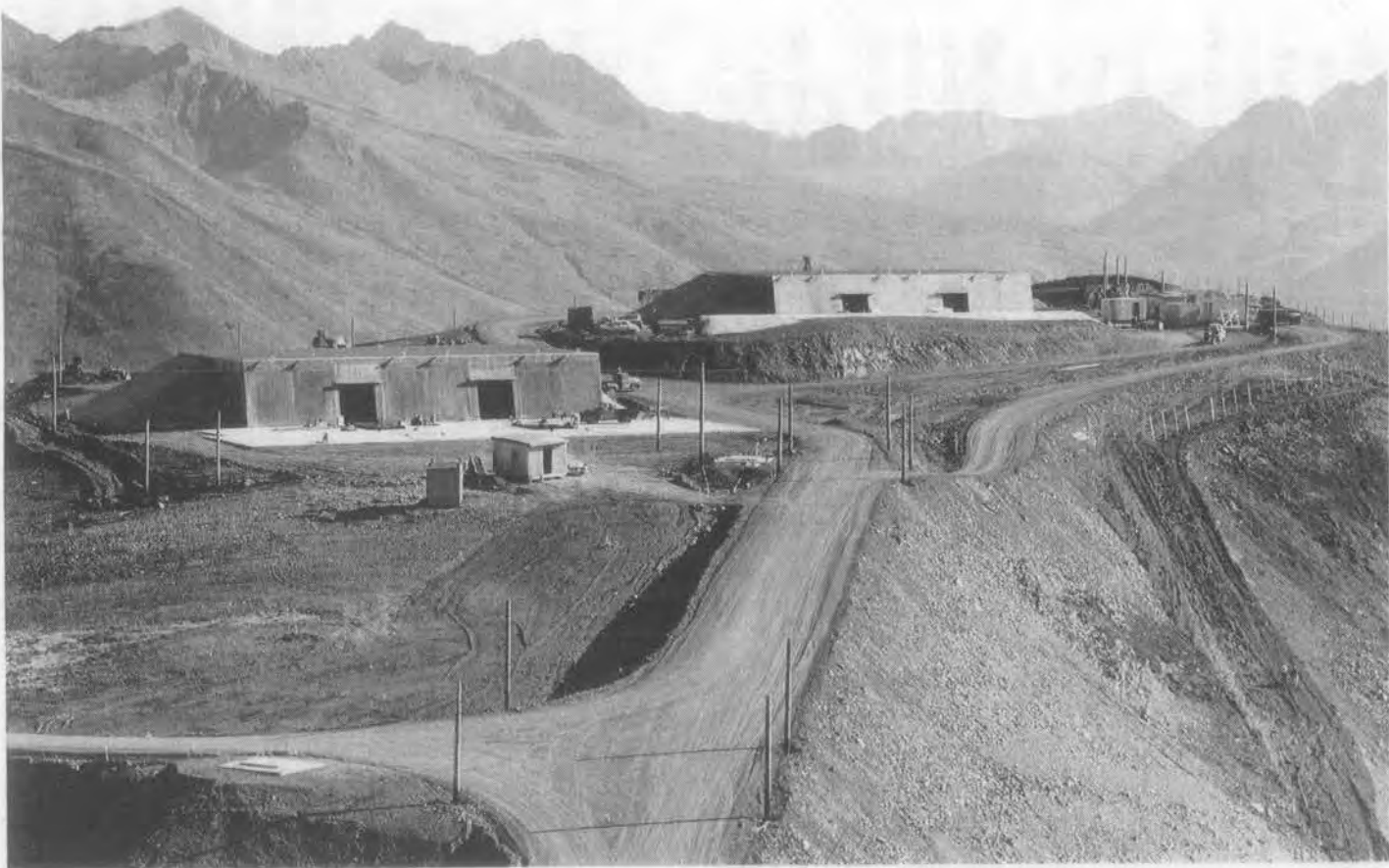
The first White Alice stations were linked on November 29, 1956, with Lieutenant General Frank A. Armstrong, Jr., Commander in Chief, Alaska, calling Middleton Island. The system was fully operational in March 1958 at a cost of over 140 million dollars. Later there would be additions for the Ballistic Missile Early Warning System and Aleutian Islands line.

White Alice construction was complex, hazardous, and frustrating, calling for imagination and ingenuity in solving problems and finding ways of overcoming weather and terrain obstacles. The Sparrevohn installation is a good example. Here, under a \$2,162,000 contract, Northern Corporation was putting in a White Alice site. At the same place and time, Gaasland Company was building an AC&W station. Sparrevohn, 165 miles west of Anchorage, is a small, highly developed island of civilization 'in the middle of nowhere,' as some airmen have observed. It is one of the few places in the world that can claim that everything in it arrived by airplane. Every stick, wire, bag of cement, case of beer, gallon of fuel, generator, workman, piece of construction equipment, and so on, had to come by air. And just the flying aspect had its special feature; the airstrip slanted upward at a 12 percent grade, with a rocky cliff wall for an overrun.

Begun originally by the Air Force in 1951, the initial gear was parachuted in to clear land for a pioneer airstrip. Camp buildings were erected and a road was hacked to the summit of the mountain above the camp. Thereafter, the Corps of Engineers took over, contracting for completion of the AC&W site and development of the White Alice installation. The base camp here was 1,500 feet below the radar and antenna location on the mountain. A six-mile connecting road zig-zigzagged to the top, its sharp corners caused drivers to back up and turn at least twice for each one. The winding road, with its eleven switchbacks, was often impassable in the winter after a snowstorm. Therefore, it was essential that the men running the stations had enough water, food and fuel to last them all winter. Later, a tramway was built extending from the camp to the mountain top for use in emergencies to send up food and needed supplies. The contractors, meanwhile, had to rely on trucks to haul things up the steep twisting road. There was much to be hauled, yet the contractors had to keep their rolling stock as light as possible because it, too, had to be brought in by aircraft.

White Alice projects involved the construction of towers and antennas, equipment buildings, dormitories, roads and bridges, water and sewer distribution systems, wells, pump-houses, septic tanks, communications cable installations, storage tanks for water and fuel, powerplants, microwave relay facilities, parking areas, and snow fences. (Woodman, 1975:49)

The Navy also expanded its Alaska operations in 1950. In July of that year, the Navy acquired the former Adak air base, constructed a Naval Communication Station (NCS), and established antisubmarine activities, reconnaissance flights, search and rescue activities, and cold weather training. The base strength at Adak was 4,400 by August 1951. The Navy also operated out of the Kodiak Naval Station. Its base population in August 1951 was 4,684. Kodiak aircraft and ships performed air reconnaissance and sea patrols. Following the Korean War, Alaskan defenses were modernized and upgraded. The Air Force improved its interceptor capability, and the Navy established an air-sea "picket line" patrol on the Great Circle Route. There were daily patrol and weather reconnaissance missions from Adak. The Army presence was also expanded.



Nike Site Summit construction in July 1958.



Missilemen of Battery B, 562d Artillery, launch a live Nike Hercules missile on December 16, 1959, from Site Peter, near Eielson AFB.

By 1957, Air Force fighter strength had reached its all time high, 200 planes in eight squadrons. Alaska became part of the North America Air Defense (NO-RAD) in 1958 as the Alaska NORAD Region (ANR). This figure would be reduced with ICBMs replacing bombers as the main Soviet threat and efforts to cut spending.

During the Korean War, in 1952, anti-aircraft artillery (AAA) gun batteries had become operational. AAA positions, with 90mm and later 120mm guns, were sited at Anchorage and Fairbanks. The AAA batteries were replaced by Nike Hercules at Anchorage and Fairbanks. The 4th Missile Battalion, 43d Artillery (Anchorage), 2d Missile Battalion, and 562d Artillery (Fairbanks) became operational in 1959. The Nike Hercules batteries were sited to defend Ladd-Eielson AFBs and Fort Richardson-Elmendorf AFB.

Battery B, 2d Missile Battalion, 562d, was the first Nike battery to fire a missile from its own site. This live-fire took place on December 16, 1959. During 1959-1960, the other batteries at Fairbanks and Anchorage traveled to Site Peter, outside Fairbanks, to conduct live firings. In 1960, Battery B, 4th Missile Battalion, 43d Artillery, made a live firing at Site Summit. Over the next few years, Anchorage batteries conducted live firings from Site Summit.

By 1959, the tension between Alaska air defenses and the Soviet Union had heated up. Four years earlier, on June 22, 1955, a P2V Neptune flying out of Ko-

diak, on patrol in the Bering Strait, was attacked by two Soviet MIGs. The Neptune was hit, setting the port engine and fuel on fire, but the Soviet jets did not pursue, allowing the pilot to crash land on nearby St. Lawrence Island. Villagers rushed to the crashed Neptune to aid the injured crew and to bring them to Gambell; all survived the attack and crash landing. The Neptune today rests where it crashed. The pilot returned to Gambell in 1991 for a reunion with the villagers who had saved his crew.

During the 1950s, the defense of Alaska was to warn of a bombing attack by TU-4 Bull bombers (copy of the U.S. B-29 Superfortress). The key targets to be defended were the bases at Anchorage and Fairbanks. The AC&W and DEW Line systems, backed up by interceptor planes, comprised the warning and intercept system.

The radars would, on March 5, 1958, track the first known Soviet long-range bombers flying a reconnaissance mission in the Alaska theater. Radar would track sixteen more flights between 1958 and December 1961. Two TU-16 Badgers were intercepted off the northwest coast of Alaska in the Bering Sea by two F-102s of the 317th Fighter Interceptor Squadron on alert at Galena on December 5, 1961. This was the first of 306 intercepts to occur until 1991.

During 1959-1960, U-2 spy planes operated out of Eielson Air Force Base, a common mission was to measure atmospheric radiation over the Soviet Union. The U-2 flights also collected considerable intelligence data on Soviet radars and bases. The Pentagon, hungry for higher budgets, did not release information that would indicate that they had been inflating the Soviet threat.

The years 1959-1960 witnessed the expansion of military and commercial air service to Alaska, reducing the need for Port Whittier. More and more troops were moved to Alaska by air, rather than by troop ships and trucks carrying supplies.

THE 1960S: Technology Improvements and the Military Shift to Southeast Asia

The Army had requested, in 1947, funds for a permanent port to be constructed at Whittier. Construction started in 1948 and included rail yards, two docks, warehouses, and a powerplant. The next year, a petroleum terminal and tank farm were built. In 1951, construction was started on a massive composite building - an army post under one roof. The building housed 1,700 soldiers and all necessary support activities. The seven-story building contained snack bars, library,

classrooms, barber shops, post office, theater, hospital, mess halls, post exchange, commissary, and stockade. The building, costing \$6.5 million, was completed in August 1953 and named the Buckner building.

Soon after the Buckner building was finished, a fire destroyed the Whittier dock and warehouses. Temporary steel replacements were rushed to Whittier and installed by December 22, 1953. A permanent dock and warehouses were built in 1957. Additionally, a fourteen-story family housing apartment house had been built and opened in November 1956 and named the Hodge building.

On December 1, 1960, the Port of Whittier was closed and placed on caretaker status. Something had to be done with two nearly new structures - the seven-story Buckner building and fourteen-story Hodge apartment house. The total cost for both buildings exceeded 11 million dollars.

After negotiations, the Hodge building was turned over to the City of Whittier and is now used as a condominium complex. The massive Buckner building was



Interceptor aircraft in Alaska included the F-102A Delta Dagger, flown by the 317th Fighter Interceptor Squadron in Alaska during the 1960s. This F-102A has been preserved on Elmendorf AFB.



The Alaska Air National Guard, 144th Fighter Bomber Squadron, received 14 F-80s in 1953. This F-80 is displayed at Kulis ANG Base.



The Alaska National Guard began flying the F-86 in 1955. This F-86 is on display at Kulis ANG Base.



T-33 jet trainer, used to train Alaskan aircrews in air interception, is displayed on Elmendorf AFB.

sold to a private developer who never found a customer for the structure; it stands abandoned today.

Shemya, "The Black Pearl of the Aleutians," was returned to active service in 1957. This tiny island, eight-square miles, had served as a refueling stop for Northwest Orient Airlines on its Tokyo route. During World War II, it had been an important base in the attacks on Japanese installations in the Kurile Islands. Projects in 1958 rehabilitated the facilities for secret operations. The base would become a significant intelligence resource of the Cold War.

The 317th Fighter Interceptor Squadron was stationed at Elmendorf in 1960. The 317th was equipped with F-102 and F-106s on rotational support from the lower 48 to augment the Alaska forces. In 1966, the 21st Composite Wing was activated, it was renamed the 21st Tactical Wing in 1979 (it would become the 21st Wing in September 1991, replaced by the 3d Wing in December 1991).

In 1959-1960, the Alaska Army National Guard was provided with armories at 48 villages. A standard design of 20-foot wide, 60-foot long insulated galvanized steel building on timber pilings was used. They were of a simple but effective design and improved village life as they also served as community centers.

Armories were placed at:

Alakanuk
Akiachak
Akiak
Barter Island
Chefornek
Chevak
Deering
Dillingham
Eek
Elim
Fort Yukon
Hooper Bay
Kasigluk
Kiana
King Island
Kipnuk

Kivalina
Kotzebue
Koyuk
Kwethluk
Kwigillingok
Little Diomedede Island
Mekoryuk
Mountain Village
Napakiak
Napaskiak
Newtok
Noatak
Noorvik
Point Hope
Quinhagak
Saint Michael

Scammon Bay
Selawik
Shaktoolik
Shishmaref
Shungnak
Stebbins
Teller
Teller Mission
Togiak
Tuluksak
Tuntutuliak
Tununak
Unalakleet
Wainwright
Wales
White Mountain



Midnight baseball game at Ladd AFB during the longest day of the year.



First Lieutenant Thomas Nunn, MP Platoon leader, gives instructions to Sp3 Walter Johnson before he goes on patrol at Ladd AFB in February 1956.



General Michael "Iron Man" Michaelis, a Korean War hero, displays his tactical skills in a 1960 Little Bear exercise.



On January 1, 1961, Ladd AFB was transferred to the Army and renamed Fort Wainwright. General Wainwright's jacket and personal items are now displayed in the headquarters building. (photograph by Brian Allen)



The first M-113 armored personnel carrier to arrive in Alaska is tried-out in November 1961.

Ingenuity was the password for getting heavy supplies to their destinations. Some of the supplies had to be manhandled to the armory locations; some also were 'woman-handled.' At Saint Michael, for example, women helped their husbands haul materials up a steep slope. Villagers elsewhere waded across a high tide flat, carrying loads in their arms and on their backs. Movements to Little Diomed and King Islands involved the use of walrus-skin boats. Dog teams pulling carts helped move supplies in several places. The armories at Wales and Little Diomed had views of Siberia across the Bering Strait. Erection of the prefabricated buildings was done by Eskimo and Indian villagers under the direction of the contractor's carpenter foremen. For many of the native Alaskans, this was their first use of a number of basic carpentry tools that were familiar to most Americans in the other states; they learned rapidly and worked conscientiously. (Woodman, 1975:67-68)

For most of the Cold War, ground defense had been composed of two regiments or a brigade of Army infantry (about 10,000 soldiers). In the early 1950s, the 71st Infantry Division was divided between Fort Richardson, Eielson and Ladd Air Force bases. The 2d Infantry Division (minus one regiment), the famed Indianhead Division, was moved from Fort Lewis to Alaska in 1956. The 71st Infantry Division was rotated to Fort Lewis and deactivated.

In December 1957, the 2d Infantry Division was deactivated, but its regiments remained in Alaska - the 9th at Eielson and Ladd, and the 23d at Fort Richardson. Ground defense capability was improved in 1958 with the arrival of the first helicopter company equipped with H-21s.

On August 26, 1957, the Soviet Union announced to the world its successful launch of an intercontinental ballistic missile. A short time later, on October 4, they launched Sputnik, generating even more concern for the defense of the United States.

Missile tracking assumed great importance from 1959-1960. A satellite ground link station was constructed in 1959 at Donnelly Flats, near Donnelly, as part of MIDAS. It was used to gather satellite information regarding the launching and tracking of Soviet missiles. The tracking and data acquisition station included a radar building. The troop housing was located at Fort Greely. Named MIDAS, Missile Identification, Detection, and Alarm System, it was in use only two years and then removed.



The Ballistic Missile Early Warning Station at Clear nears completion in 1959.

Alaska was a likely locale for missile warning and basing; there were investigations and studies for both. Consideration was given to the siting of defensive Matador missiles (with a range of several hundred miles) at Willow, Cold Bay, Bethel, and Galena. The Matador was never received.

During 1958, the Alaska District conducted field studies to locate a site for an ICBM detection station. Clear, 60 miles south of Fairbanks, was selected and construction was started in August 1958. Work included a railroad spur, dormitory, transmitter and computer building, radar buildings, fire station, radar antennas, and fuel facilities.

The construction of the Ballistic Missile Early Warning System (BMEWS) site was, as one news reporter commented was, "well coordinated and well planned." He noted that "responsibility for checking and double checking all of the construction operations is vested in the Army Engineer District--and their inspectors are right on the job." Lt. Col. Joseph A. Bacci was the Clear Resident Engineer. At the peak of construction there were 1,500 men working at Clear, with a 54-hour week being normal. Housing was tight; some men commuted to the little community of Nenana, 17 miles distant, while Fairbanks, 79 road miles northeast, was their shopping place. Like all large projects, this one had its labor problems but

they were not crippling. In 1958, carpenters walked off in a dispute with plumbers; in 1959, carpenters departed in a wage disagreement; and in 1960, there was a work delay when ironworkers and teamsters could not agree on who should unload steel from freight cars. Additionally, there was a fire in May 1960 in the transmitter-computer building. Some 250 distorted structural steel members were straightened in place by a unique flame heat treatment process requiring twenty-two 9-hour shifts. The unique solution saved both time and money over the alternative - removal and replacement."

The magnitude of the Clear project is difficult for the layman to comprehend. Some key features contained in a District fact sheet, prepared in October 1960, are these: (1) the three large detection antennas--capable of 'seeing' an object in space 3,000 miles away-- are 165-feet high and 400-feet long, installed like three football fields standing on edge, but in such fashion as to resist 180-mph winds and earthquakes; (2) each antenna has 40 concrete piers, each 20-feet high and containing 45 cubic yards of concrete and steel, and each pier being on a foundation of 5,400 cubic yards of concrete and steel reinforcing bars; (3) for construction in the technical areas, a million yards of gravel were excavated; (4) a mile of passageways giving access to all technical buildings protected employees from radiation; (5) part of the radiation shielding system involved the use of 692,000 square feet of copper screening and 25-1/2 tons of solder to seal it in place; (6) one of the two composite buildings accommodates 600 personnel; the other provides 24,000 square feet of electronic equipment storage space; and (7) District-supervised construction at Clear would have a total value (1960) of \$60 million.

The basic purpose of all this--and of more additions and improvements to follow--was expressed in a Department of Defense release on 20 April 1959. It said, in part, 'The BMEWS is an electronics system to provide detection and early warning of attack from enemy intercontinental ballistic missiles. The present objective is to provide a minimum warning time of 15 minutes (with 4,800 mile range radars).' (Woodman, 1975)

A second BMEWS was built at Thule, Greenland, and a third at Flyingdales Moor in Yorkshire, England.

An improved missile, the Thor, was considered for Alaska basing in 1957. Thor bases were planned for Eagle River, Eklutna, Pioneer Peak, Bird Creek, and Girdwood. Instead of Alaska, the Thor was sent to Turkey. There was no construction connected with the planned Thor basing.

The basing of ICBMs in CONUS reduced the need for Alaskan defenses; therefore, base reductions could be carried out. In September 1959, the closure of Ladd Air Force Base was announced. Instead of closing, the base was transferred to the Army on January 1, 1961, and renamed Fort Wainwright. Air squadrons were also inactivated.

The Statehood measure was passed by Congress in 1958. It did not alter the military situation in Alaska. At a Christmas show at Ladd Air Force Base, in Hangar One, the comedian Bob Hope joked that with statehood, "You could be sent to Alaska without a court martial." This joke drew upon the long standing belief, among soldiers, that assignments to Alaska were punishment for trouble-makers. There is no known record that, in fact, this was the case.



Carrier exercises were held to prepare for patrol and combat duties in Alaska.

During 1958, the Atomic Energy Commission (AEC) initiated studies on the peaceful use of nuclear denotation under the Plowshare Program. One project in the program was Chariot, which would carve a harbor with an atomic blast. The harbor site selected was near Point Hope. While the project was never realized, a base camp and research center was established at Cape Thompson. The base and research camp contained three airstrips and nine buildings, it was in operation from 1958 to 1962. After 1962, the camp had irregular use by the Naval Arctic Research Laboratory (NARL) until it was abandoned in 1980. Also abandoned at the camp was a mound of low level radioactive waste, which was discovered and removed in 1992-1993.

During the 1960s, the native citizen soldiers, the Eskimo Scouts, along the Bering Sea, were busy watching Soviet movements. They kept the Alaskan Command posted on Soviet activities along the barren northern tier. The Scouts were to provide an advance warning of any over-the-pole land attack.

The Eskimo Scouts participated in the winter exercise, Willow Freeze, in 1961. The Scouts demonstrated great skills in movement, so they were requested to participate in the 1962 Great Bear exercises. The Scouts, comfortable with the cold and tough terrain, often surprised the regular forces.

In March 1962, the carrier USS Ranger conducted exercises in Alaskan waters. Two years later, the P-3A Orion, submarine patrol attack plane, arrived at Adak to improve anti-submarine defenses.

Further Air Force closures came in 1963. AC&W stations at Bethel, Middleton Island, and Ohlson Mountain, near Homer, were abandoned on May 15, 1963.

Improved radars were installed over the next few years. This included improvements at the control centers of Fire Island, King Salmon, Murphy Dome, and Campion. A few years later, ground control was stopped at Campion, and Fire Island was closed in 1969.

The first Soviet plane to be recorded in U.S. airspace was on March 14, 1963. Two Soviet bombers flew 30 miles into U.S. airspace over the southwest area of Alaska. Two F-102s were launched from King Salmon to intercept, but were too late. This penetration caused great public concern and demand for improved aircraft in Alaska.

The Army brigades in Alaska in 1963 were the 171st and 172d. The 171st Infantry Brigade was assigned to Fort Wainwright and the 172d to Fort Richardson. These brigades were tested in the 1964 winter exercise, Polar Siege, which had

10,000 troops over a 2,100 square mile maneuver area in central Alaska, the largest winter exercise to date.

The 171st Infantry Brigade from Fort Wainwright, reinforced by Company C (Airborne), 4th Battalion, 23d Infantry, of Fort Richardson, assumed the role of Aggressor force while the Friendly side was composed of the 2d Infantry Brigade, 4th Division, from Fort Lewis and Airborne Company C, 2d Battalion, Princess Patricia's Canadian Light Infantry.

The Aggressor made the first offensive of the mock war, leaping into the center of the maneuver area to establish an airhead. After building up supply routes to this airhead, he struck out for Eielson Air Force Base near Fairbanks, his objective. The Friendly force reacted with nuclear weapons and rapid troop movement to head off the drive. The Aggressor was forced to retreat to a defensive line near Quartz Lake. Exercise Polar Siege terminated on the Quartz Lake defensive line.

Alaskan National Guard scouts and men from the Special Warfare Training Center, Fort Bragg, North Carolina, added a note of guerrilla warfare realism to the combat test. Both forces were plagued with propaganda leaflets and 'Tokyo Rose' broadcasts produced by the six-man team of the 1st Psychological Warfare Battalion. (U.S. Army, 1976:110)

At 5:36 p.m. on Good Friday, March 27, 1964, Alaska was hit by a powerful earthquake measuring 8.5 on the Richter scale; damage was extensive. The military responded immediately to assist the civilian communities. The Army supplied food, water, and guarded downtown Anchorage where businesses had been damaged.

The control tower at the Anchorage Airport crumbled, while the tower at Elmendorf was also heavily damaged. The Air Force hospital was hit hard and had to be closed; a temporary hospital was quickly established. Nike Site Point, on Point Campbell, sustained heavy damage in the fire control and launch areas. One battery of this dual battery was not returned to service. The only Army death was a soldier killed by a falling ceiling in the Fort Richardson service club.

Kodiak, a small town about 200 air miles south of Anchorage on Kodiak Island, site of the Kodiak Naval Station, was the hardest hit of all communities. Eleven city residents and three dependents

of Navy personnel were killed. Damage amounted to \$24 million -- 108 homes, 45 fishing boats, eight industrial and 45 commercial structures, plus various public utilities were completely destroyed. In addition, 34 boats were sunk or grounded and 17 others were unaccounted for. Physically, the land surrounding the station dropped more than five feet.

A triple punch -- earthquake, a series of seismic sea waves, and fire -- left Seward, a major Alaskan port and rail terminus, helpless. Her utilities were battered, harbor wiped out, rail and road transportation lines wrecked and communications, including the town's only radio station, gone. The only remaining major facility in usable condition was the airstrip, which was to be her only transportation link to outside civilization for several critical days.

The Seward Highway, some 140 miles long, is one of the two main transportation arteries running from Anchorage around the Turnagain Arm and down the Kenai Peninsula to Seward. The other is the Alaska Railroad which parallels the highway most of the way. Both suffered extensive damage; 17 highway bridges were lost and roadbeds were destroyed or blocked by avalanches or flooded by rising waters. (U.S. Army, 1976:112)

At Whittier, an Army tank farm and the Union Oil Company tank farm were destroyed. Of all the towns in Alaska, Whittier was the quickest to recover. Cargo was shipped out of town by train within a week after the quake.

The military provided disaster relief for weeks after the earthquake. Army and Air Force aircraft delivered supplies. Military communications were used to handle increased needs.

Twenty-one soldiers from various USARAL units were in Seward when the earthquake struck. They were there on special duty to ready the Army Recreation Center for opening during the Seward All-America City celebration. After recovering from the initial shock and resultant seismic sea waves, many soldiers went to Seward hospital to help in any way they could. Three Army cooks set up field ranges at the Jesse Lee Orphanage and fed the children and many others for the next day. At daybreak, the soldiers and city police searched the smashed and twisted dock area and other hard-hit sections of the town for dead and injured.

On Saturday morning, March 28, 1964, 139 officers and men from Company A, 4th Battalion, 23d Infantry, 172d Infantry Brigade (Mechanized) and a demolitions expert from the 562d Engineer Combat Company were flown to Seward. In addition, 36 men of the Seward detachment of the 216th Transportation Truck Company, Alaska National Guard, who were stationed at Fort Richardson for their two-week tour of active duty, were flown to Seward. A radio-telephone unit was set up in Seward, giving the community its first communications with the rest of Alaska. About 60 messages a day were transmitted from Seward during the next few days. The U.S. Army District Engineer responded to a call from Seward to restore the water and sewage systems.

At 10:30 p.m. on Good Friday, an element of the reconnaissance platoon of the 1st Battalion (Mechanized), 60th Infantry, left Fort Richardson to move down the Seward Highway towards the city, which at the time was believed to be hard-hit by the quake, even though there were no communications. The reconnaissance Platoon was followed by Company B of the 1st Battalion, 60th Infantry, and two platoons from the 562d Engineer Company (Combat), equipped with two bulldozers. It soon became evident that reaching Seward via the highway would be a monumental task.

The column picked its way down the highway, meeting only minor obstacles until it reached Rabbit Creek, where it was necessary to fill a large fissure with earth and snow. Near Girdwood, the column came across a massive landslide which had covered the road. The bulldozers, with the help of three Department of Highway dozers, cleared the trail. Once past this obstacle, the men came across a bridge which had collapsed near Glacier Creek. Company B, less one platoon, was recalled to Fort Richardson at mid-day Saturday. The remaining platoon, with 50 engineers of the 562d, put a 150-foot Bailey Bridge across Glacier Creek. It took two more bridges to get past Girdwood and another to pass Virgin Creek.

Between Girdwood and Portage - some 12 miles - there were 15 landslides cutting the road - some were up to 300-feet long and 30-40-feet deep. The bulldozers went to work clearing a one-lane strip through the slides, while the engineers built another temporary bridge at 20-Mile Creek. The concrete decking of the original bridge was lying in the creek bed, and wooden pilings had been

driven through the concrete by the force of the quake. A new bridge was built over the creek, and on Tuesday the advance party entered Portage. The Army took in the first drinking water the people in Portage had had since the earthquake struck 4 days before. (U.S. Army, 1976:114-115)

The Alaska District, Army Corps of Engineers, assumed a major role in the rebuilding of the infrastructure. During the two years after the quake, the District awarded contracts totaling \$110 million.

On April 25, 1964, a C-123 Provider departing Valdez crashed, killing General Thomas Carroll, Adjutant General of the Alaska Army National Guard. A section of the National Guard camp on Fort Richardson was named in his honor. The training area is now divided into Camp Denali and Camp Carroll.

Population growth in Anchorage/Eagle River in 1965 brought a halt to the live firings at Site Summit. At that time, live firings were only conducted from Site Peter near Eielson Air Force Base, Fairbanks. The Army in Alaska had a troop strength of 12,500 and 2,500 civilian employees who were stationed at three main posts and the fuel pipeline system.

In 1965, the Alaska District, Army Corps of Engineers, started construction of a camp and dock at Amchitka Island in the Aleutians. Amchitka, which had been a World War II airfield, had been selected as the site for underground nuclear testing.

The first test, an 80-kiloton detonation code-named Long Shot, was a Department of Defense project accomplished by the Defense Atomic Support Agency of the Atomic Energy Commission (AEC).

The AEC awarded a contract for drilling the shot hole for a 32-inch inside diameter casing to go down 2,350-feet. Other lesser holes for instrumentation use were in the same order. The purpose of Long Shot was to provide data that would improve U.S. capability to detect, identify, and locate underground nuclear explosions. The spot was well chosen, this being in an active earthquake zone, and the result was highly satisfactory, producing the desired shock readings at the October 29, 1965 detonation. (Woodman, 1975:79)



In 1965, engineers unload equipment at Amchitka for the atomic bomb tests.

Eight additional deep holes were drilled at Amchitka for more tests, code-named Milrow. Three of the holes would be the deepest ever for 90-inch casings, two would go down 6,200-feet, and the third to a depth of 4,700-feet.

Milrow was a 1-megaton detonation fired 4,000-feet down in rock on October 2, 1969. The powerful blast registered 6.5 on the Richter scale. AEC claimed no harmful effects on wildlife, but the claim was questioned by conservation groups.

An even larger detonation, code-named Cannikin, was planned for late 1971. The detonation, in a cavern 6,100-feet below ground, was a test of the 5-megaton Spartan warhead of the Safeguard Anti-Ballistic Missile System.

By 1971, opposition to the tests had become widespread. Opposing the AEC were federal and state elected officials, and various conservation groups. The Sierra Club threatened to "blockade" the island with a vessel. A protest was made in the State Legislature by the Alaska Village Council. Numerous other groups protested. In spite of vigorous protests, the Cannikin test was carried out on November 6, 1971. The blast registered 7.0 on the Richter scale. It marked the end of Amchitka as a nuclear test site. The drill holes were capped, camp equipment removed, a monument was erected at the test site and Amchitka was abandoned, except for annual visits to monitor the test area.

Construction of a fuel pipeline between Whittier and Anchorage was requested in 1965. The increased fuel requirements to support C-141 flights to Southeast Asia made a continuous and reliable petroleum resupply system necessary.

There was some local opposition; the Alaska Railroad was concerned over lost revenues as its tank cars had been carrying the fuel. Also, conservationists worried over the pipeline going through the Campbell Creek watershed in Anchorage. Revisions were made to protect the watershed. In March 1966, construction monies were authorized and work started that summer. The pipeline was activated on October 2, 1967.

A second major natural disaster during the Cold War period was the Chena River flood of August 1967. Again, as in the 1964 earthquake, the military provided considerable assistance to civilian residents. In addition to considerable local damage, the flood also damaged facilities on Fort Wainwright - the bowling alley was destroyed, numerous other buildings were damaged, the two powerplants required repairs, and utilidor and tunnels had to be pumped dry.

The 1960s witnessed numerous projects at Shemya for new construction and to rehabilitate and improve facilities. During the decade, about \$25 million was spent on construction, bringing the total construction effort for Shemya to \$113 million. Work on this tiny island in the 1980s and 1990s would far exceed this total.

Three more National Guard armories were built in the 1960s, these were located at Kwiguk, Nightmute, and Barrow. An Army Reserve Center was built on Fort Richardson. During the Vietnam War, regular Army construction funds were limited, moneys were bound for Asia. There was sufficient funding to improve equipment in Alaska. Army modernization in the late 1960s and early 1970s included receiving new M551 General Sheridan tanks, and 155mm self-propelled guns to replace the 105mm guns. The CH-21 Shawnee helicopter was replaced by UH-1 Huey's; also received were CH-47A Chinooks, CH-54B "Flying Crane" helicopters, and OH-58 Kiowa helicopters.

Two F-102s from Galena intercepted an AN-24 Coke off the west coast of Alaska. This, May 19, 1968, intercept was the first in U.S. airspace (Allen, 1992).

THE 1970S: An Era of Training and Military Force Reductions

In June 1970, F4E Phantoms arrived to replace F-102s. The Phantom represented a major improvement in interception capability.

During 1970 and 1971, the Nike Hercules batteries at Anchorage and Fairbanks were inactivated. The missiles capable of downing bombers had become obsolete in the intercontinental missile age. More importantly, cost-cutting forced closure.

The arctic ability of the Army in Alaska received more attention in the 1970s. A ranger and airborne qualified company was activated in August 1970. The Arctic Rangers were trained in arctic survival and operations. Also, regular units conducted special arctic training, involving practice patrols and reconnaissance missions. Often, these were joint efforts with the Eskimo Scouts. This successful program continues to the present.

What is believed to have been the first mass paradrop on the ice of the Arctic Ocean was performed on March 4, 1971, by 123 men of Company O (Arctic Ranger) 75th Infantry. The event, labeled Ace Band Polar Cap, was an exercise designed to train men to conduct joint operations on the ice field, such as might be employed for search and rescue in the event of a forced aircraft (commercial, military, or private) landing in the frozen north.

The "joint" aspect of this unique effort took the form of contributions in ice expertise and facility support (Naval Arctic Research Laboratory camp at Point Barrow) from the Navy - weather reconnaissance, navigational aid, and transport (C-130) aircraft for the jumpers and cargo from the Alaskan Air Command, as well as troops and logistical support from USARAL.

The Rangers established an overnight camp on the ice about 100 miles north of Point Barrow. The surface temperature was 35 degrees below zero. They were evacuated the next day to Point Barrow by CH-47 Chinooks of the 19th Aviation Battalion. They had simulated the rendering of assistance (clothing, food, blankets, first aid) to the passengers and crew of a supposed downed commercial liner. (U.S. Army, 1976:125)

Most of the Haines-Fairbanks fuel pipeline was inactivated in August 1971. There was a reduced demand for fuel in the north and the pipeline was old and in need of replacement. Railroad and road movement of fuel was now more cost effective. The line between Tok and Eielson Air Force Base remained in service until September 15, 1973. The 27-mile Fairbanks to Eielson fuel line was kept in service.

In 1973, as part of worldwide military reductions, the Army military population in Alaska was cut. The 171st Infantry Brigade at Fort Wainwright and some

small units were inactivated. Total Army strength was down to 8,000 soldiers and about 1,900 civilian employees.

The post Vietnam War military reemphasized training. In Alaska, a new look was taken during the winter training exercise of 1975; tactical operations for similar climates around the world were tested (the annual exercises were named Jack Frost). The Alaska Command also turned its attention to training for offensive use in other world arenas.

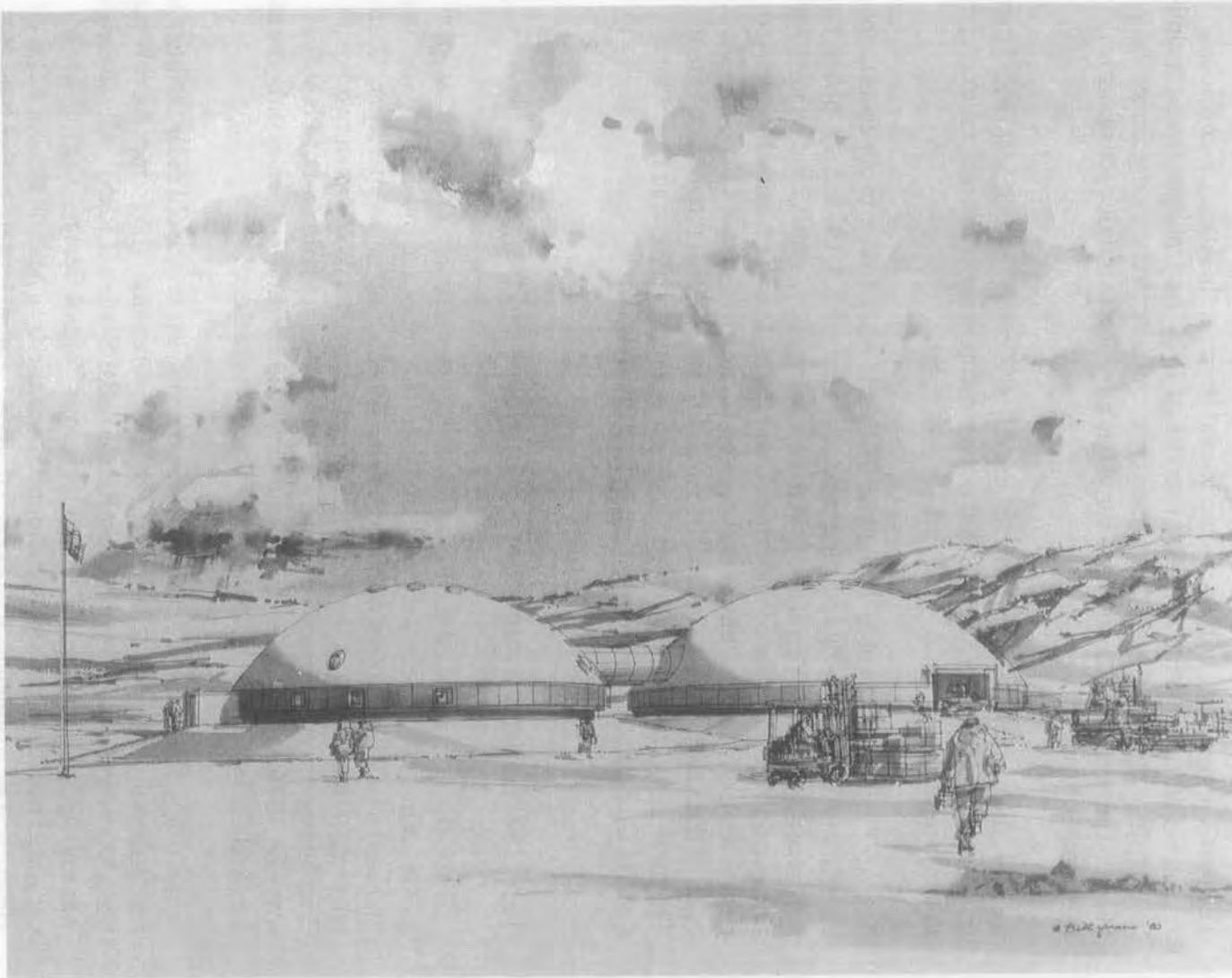
In 1981, the annual exercises were renamed Brim Frost. The toughest Brim Frost to date occurred in 1989. The 10,000 troops participating conducted the exercises in temperatures lower than -70° .

The Air Force was also able, in the late 1970s and early 1980s, to cut costs to the expensive AC&W sites by reducing personnel strength. A 1974 study, Saber Yukon, recommended modernization. Among the improvements would be joint Air Force and FAA surveillance and control, and the addition of minimally-attended radars. In 1977, construction was started on Minimally Attended Radars (MAR). Each of the new and improved radars required a much smaller operations group. The more powerful radars allowed for the closing of two Regional Operations Control Centers with their duties transferred to Elmendorf.

THE 1980S: Improvement of Air Intercept and Quality of Life

In 1982, the F-15 replaced the F-4s. The E-3 Sentry airborne radar was assigned to Alaska in 1986. There were also land radar advances and increased flying time because of KC-135 tankers which refueled F-15s on long range intercepts. Of the long range intercepts, the longest occurred, in September 1986, when two Soviet Bear bombers were intercepted about 340-nautical-miles northeast of Point Barrow. By 1986, with the new radars and improved aircraft (E-3 Sentry airborne radars and F-15s), complete control of airspace was realized.

In the 1980s, the Air Force completed the transition from the old radar facilities to new minimally-attended radar (AN/FPS-117) operations. The former AC&W stations had been replaced by the Long Range Radar System (LRRS). All radar data was remoted to the Alaskan Region Operations Control Center. The number of personnel needed at each station dropped dramatically. At each station, a few civilian contract maintenance workers remained. Approximately twelve buildings of the AC&W stations were demolished, leaving behind two radomes and a new steel operations building and steel garage/shop.



An artist's conception of a geodesic dome lunar station. Four were built in the 1980s



F-4 Phantom jets served in Alaska, arriving in June 1970. They were replaced by the F-15 in 1982. This F-4 is on exhibit on Elmendorf AFB.

The Seek Igloo program was successful in cutting costs. Personnel strength was reduced from 1,500 in 1975 to only 120 contract workers. Total expenditures dropped to 10 per cent of the 1975 expenditures (in present day dollars).

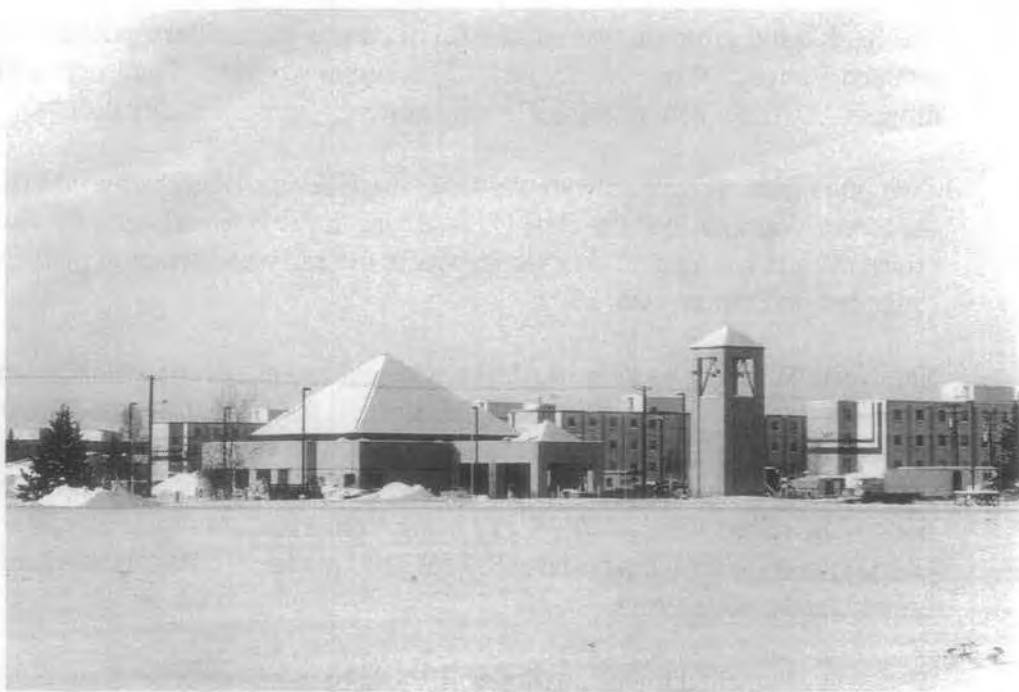
Two other radar programs were the Over the Horizon-Backscatter (OTH-B) and the North Warning System. The OTH-B was to provide early enemy aircraft and cruise missile warning. This system was in the early construction phase when cancelled on February 28, 1991.

The North Warning System in Alaska was realized as part of a North American radar modernization joint program of Canada and the United States. The program was developed in 1985 and included new radars on the DEW Line, E-3 airborne warning and command systems (AWACS) aircraft, and improved communications. The radars were AN/FPS 117 Long Range Radars (Point Lay, Barrow, Oliktok, and Barter Island) and AN/FPS 124 Unattended Radars at Wainwright, Lonely, and Bullen Point.

The Army launched major quality of life and base improvements in 1986 for the 6th Infantry Division (Light) at Fort Wainwright. Construction at Fort Wainwright, from 1986 through 1993, included a new post exchange, bowling alley, clubs, gymnasium, commissary, medical center, dining halls, battalion headquar-



A massive base improvement was launched at Fort Wainwright in the mid-1980s. Among the projects to accommodate the arrival of the 6th Division (Light) (LID) was a new physical fitness center. (photograph by Brian Allen)



One of the final projects of the Fort Wainwright 6th LID was the Battalion Chapel completed in 1994. (photograph by Brian Allen)

ters, training facilities, repair shops, and a chapel. The existing barracks as well as numerous other facilities were upgraded.

On March 23, 1986, the 6th Infantry Division (Light) was activated in Alaska, replacing the 172d Infantry Brigade. The mission of the 6th LID was to be ready for worldwide deployment and to defend Alaska. Two brigades were activated, the 1st Brigade at Fort Richardson and the 2d at Fort Wainwright. A roundout brigade, the Army Reserve 205th in Minnesota, was available when needed.

The headquarters of the 6th LID was established at Fort Richardson, with gradual movement to Fort Wainwright planned.

Historic units were returned to Alaska as part of the activations of the 6th LID. The 4th and 5th Battalions of the 9th Regiment were assigned to Fort Wainwright. The 9th had a long connection with Alaska, including raising the United States flag at Sitka during the October 18, 1867 American purchase. The 17th Infantry Regiment, which fought at Attu with the 7th Infantry Division in May 1943, was returned. Two battalions, the 1st and 2d, were activated at Fort Richardson.

Experience in the Gulf War, in 1991, questioned the value of Light Infantry Divisions. With limited armor and less heavy artillery, they would not be up to challenging enemy forces with heavy firepower.

As part of the 1993 military drawdown, it was announced that the 6th Infantry Division would be inactivated. Additionally, the Air Force transferred King Salmon to the National Guard, Galena was placed in caretaker status, and operations at Eareckson Air Station (Shemya) were reduced.

During the Cold War, Alaska was a relatively unrecognized "trip wire" in the northern defense, especially air and ICBM detection and warning. The focus and interest of social scientists was on Europe (the Berlin Wall, Eastern Bloc, etc.), Korean War (1950-1953), Southeast Asia (1960s-1975), and the end of the Cold War in Europe in 1989.

The Alaska Air National Guard has provided humanitarian aid to Alaska and various other problem spots around the world; in 1992, emergency supplies were flown to Florida after hurricane Andrew, Hawaii for recovery after hurricane Iniki, and famine relief in Kenya and Somalia.

While not recognized as a central element in the Cold War, Alaska was a silent forward base. The construction and operation of the Cold War facilities had a

powerful influence on the territory and state economic picture. Military operations and presence also shaped civilian communities, and in some cases made a direct impact.

CHAPTER TWO

INVENTORY LIST

In this chapter we define the Cold War property types, identifying the heart of each type of complex. The search is for the defining elements of Cold War installations in Alaska. Once the essential physical features are defined it is possible to evaluate historical integrity for the complexes listed in the next chapter. Also discussed are the associations of the complex to the historic context - the Cold War.

ACS: Alaska Communication System, 1900-1971, Communications

The ACS was built by the Army in the early 1900s to provide communications to the military and civilian communities of Alaska. It was operated by the Army Signal Corps until 1962, when it was transferred to the U.S. Air Force. The Air Force operated this communications system until 1971, when it was sold to RCA/Alascom.

The original stations, located across Alaska, were most often housed in two-story wood-frame structures, about 20' x 40'. These buildings were constructed between 1900 and 1940. Stations built in the 1950s and 1960s were still 20' x 40' but often of concrete construction. In very small communities, the early construction was a one-story wood-frame building, about 12' x 20'. When built or replaced in the 1960s, prefabricated metal buildings were used. The ACS building at each station contained a radio transmitting/receiving room for customers, offices, and operator break or living facilities. At the larger stations, homes were provided in the town or city (Anchorage, Seward, Juneau, and Fairbanks).

There would also be metal towers and antenna poles. The heart of an ACS station was:

- Station building: wood frame, concrete, or prefabricated metal.
- Radio towers
- Homes for operators (in larger towns)

ACS built or operated by the military during the Cold War:

- Anchorage
- Bethel
- Cordova
- Delta Junction
- Fairbanks
- Glennallen
- Haines
- Johnson River
- Juneau

Kenai
Ketchikan
Kodiak
Kotzebue
Mentasa
Nome
Northway
Palmer
Petersburg
Sheep Mountain
Skagway
Tazlina
Tok
Unalaska
Valdez

GROUND OBSERVER CORPS (GOC). Intelligence, Observation

The GOC was a civilian volunteer group to watch Alaska skies, serving a gap filler function in the 1950s until radar systems became operational. The sky watchers had no particular physical facilities, they observed while at home, while out hunting, or otherwise during their daily routine. The district observers reported by telephone or radio to the Air Force. Mr. John White, of Glennallen, and maybe other GOC watchers constructed observation towers. Some also received sound locating equipment to obtain more advance warning of aircraft. The potential central features of a GOC district leader were:

- observation tower
- radio
- sound locating equipment

TEMPORARY RADARS - GROUND CONTROL INTERCEPT. Intelligence, Radar. 1950-1953

While the permanent radar stations were under construction, mobile units were installed at various airfields. The mobile units were comprised of vans, so the central features would be:

- radar van
- control van
- temporary operator housing

Locations for temporary radars included:

- Bethel Air Force Station
- Farewell Airport
- Gambell, St. Lawrence Island
- Ladd Air Force Base
- Middleton Island Air Force Station

AIRCRAFT CONTROL AND WARNING (AC&W), 1949-1984. Intelligence, Radar.

The Aircraft Control and Warning system was designed to provide advance radar warning of enemy aircraft and to assist in the control of friendly planes in the Alaskan skies. While the AC&W stations were of a standardized design, they were not identical.

The design was a complex of ten to fifteen wood-frame buildings connected by enclosed walkways. The buildings were both one- and two-story. They included operations, administration, officer's housing, enlisted housing, gymnasium, garages, shops, warehouses, and storage. There would also be a power plant and three steel tower radomes for the radars. An airstrip and weather station was also necessary. At some stations, the radar and living/administration areas were divided into two camps. These separated camps were, in some cases, linked by tramways.

The central features of an AC&W were the radomes and operations building. The following elements comprise a complete complex, identifying its radar role and remote operating conditions:

- one or two radomes
- operations building
- administration building
- quarters and dormitories
- recreation buildings
- enclosed walkways
- power plant and water systems
- garages, shops, warehouses, and storage
- airstrip
- weather building
- tramway



Aircraft Control and Warning (AC&W) radome at Campion station near Galena in 1954.



Aerial view of King Salmon AC&W.



Sparrevohn AC&W radar site, upper camp.

AC&W stations were located at:

- Bethel Air Force Station
- Campion Air Force Station, NORAD Control Center (NCC)
- Cape Lisburne Air Force Station, NORAD Surveillance Station (NSS)
- Cape Newenham Air Force Station, NSS
- Cape Romanzof Air Force Station, NSS
- Fire Island Air Force Station, NCC
- Fort Yukon Air Force Station, Ground Contact Intercept Station (NGCI)
- Indian Mountain Air Force Station, NGCI
- King Salmon Airport, NCC
- Kotzebue Air Force Station, NGCI
- Middleton Island Air Force Station, NSS
- Murphy Dome, NCC
- Northeast Cape, St. Lawrence Island, NSS
- Ohlson Mountain Air Force Station, Homer, NSS
- Sparrevohn Air Force Station, NGCI
- Tatalina Air Force Station, GCI
- Tin City Air Force Station, NSS
- Unalakleet Air Force Station, NSS



Tin City composite building.



Tramway connecting upper and lower camp Tin City, 1972.

MINIMALLY ATTENDED RADAR FOR THE LONG RANGE RADAR SYSTEM

Over time the personnel needs were reduced at the AC&W stations. First, a contract with RCA in 1977 cut military strength by 70 per cent at each station. In 1982, the FPS-117 eliminated the need for military personnel, reducing the need for barracks, recreation facilities, and such a large facility. Minimally Attended Radars (AN/FPS-117) were installed in 1984-1985, reducing staff to six or fewer per station. The AC&W complexes were abandoned and demolished. With improved radars, some stations were no longer needed and were abandoned. Campion was closed with a new radar installed at Galena. The radar dome from Granite Point was relocated near the runway at Cold Bay.

The AC&W complexes were too large and inefficient to remain in service; the Air Force buried a number of them in situ. New MAR stations were constructed, using steel buildings and on radome. The new radar system was named the Long Range Radar System (LRRS). The defining elements of a LRRS are:

- radome
- operations building, steel
- garage/shop, steel

The fifteen Long Range Radar System stations all use one radome. Four of the eleven active sites have composite buildings that were constructed in the 1970s and 1980s. Four more LRRSs are at former DEW Line locations, and the final three active stations at Cold Bay, Kotzebue, and Murphy Dome do not have composite facilities.

MINIMALLY ATTENDED RADAR (Geodesic Dome). LRRS; Intelligence, Radar

At four of the former AC&W stations, geodesic dome structures were built in the mid-1980s for the new MAR LRRS. One dome housed the industrial maintenance and the second was for living quarters, dining, and recreation. An enclosed walkway linked the two domes. A radar was installed in a radome on the top of each mountain of the four sites.



Geodesic dome Long Range Radar station.



Artist's view of geodesic dome living area.

The critical features of a geodesic dome MAR are:

- industrial maintenance dome
- housing dome
- connecting walkway

Geodesic dome LRRS were erected at:

- Cape Romanzof
- Indian Mountain
- Sparrevohn
- Tatalina

ANTIAIRCRAFT ARTILLERY, 1952-1959. Operational, Ground Air Defense

Approximately 20 antiaircraft artillery (AAA) batteries and garrisons were constructed employing a standardized design of Quonset huts, Army radars, and 90mm and 120mm guns.

The AAA battery would include twelve Quonset huts for a garrison and administration area. The Quonset huts were lined-up in an orderly fashion creating a small camp. Usually, a short distance away was a splinter-proof radar shelter con-



Practice fire of 90mm "skysweeper" antiaircraft guns near Anchorage.

structed of 55-gallon drums filled with earth. Also nearby were three revetments, with earth filled drum walls for the guns. Between the radar and gun emplacements was a semi-underground ordnance shop. Two ammunition magazines and a fuse storage shelter completed the facility.

The components central to an AAA were:

- guns and emplacements
- radar shelter
- ordnance shop
- battery headquarters building, two joined Quonset huts
- garrison Quonset huts

The AAA batteries were divided between the Fort Richardson and Ladd Air Force Base (Fort Wainwright) areas. A number of the batteries were located on the bases, they have all been removed with some of their locations unknown. Elements of AAA batteries at off-base locations have survived and/or the locations have been identified by real estate documents, they are:

- Anchorage 90mm AAA
- Anchorage AAA Airport
- Anchorage AAA No. 7
- Anchorage AAA No. 12
- Fairbanks AAA No. 1
- Fairbanks AAA No. 2
- Fairbanks AAA No. 3
- Fairbanks AAA No. 4

Fairbanks AAA No. 8

DISTANT EARLY WARNING (DEW) LINE, 1953-1985. North Warning, Intelligence, Radar.

There were three types of Distant Early Warning (DEW) Line stations. They were main stations with main radars and control centers, auxiliary stations with radars to fill gaps, and intermediate stations with doppler radar fences.

The identifying features of a main station were:

- radome

- 4 module trains, prefabricated plywood panel. For operations and living

- power building, steel

- hangar, steel

- air terminal, steel

- recreation building, steel



Office staff at NARL, Point Barrow, Alaska, 1949.

radio building
storage warehouses, and maintenance shops

Main station locations:

Barter Island
Point Barrow

The auxiliary stations were comprised of:

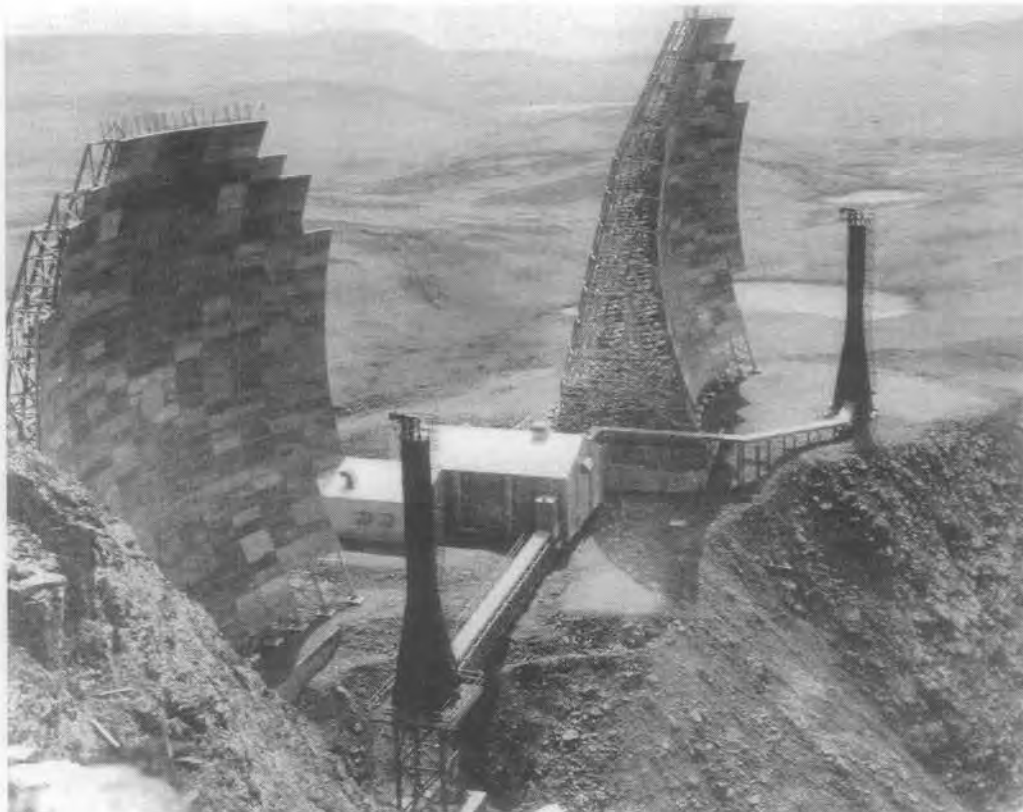
radome
module train, prefabricated plywood panels
hangar, steel
garage
warehouse
storage sheds

Auxiliary and intermediate stations locations:

Brownlow
Bullen Point (Auxiliary)
Cape Lisburne
Cape Sabine
Cape Simpson
Collinson Point
Demarcation Point
Griffin Point
Icy Cape
Kogru River
Lonely (Auxiliary)
McIntyre
Nuvagapak
Oliktok (Auxiliary)
Peard Bay
Point Lay (Auxiliary)
Wainwright (Auxiliary)

ALEUTIAN EXTENSION, DEW LINE - WHITE ALICE

The Aleutian extension to the DEW Line involved constructing radar and communications facilities on eight Alaska Peninsula and Aleutian Islands. The DEW Line radar and White Alice facilities were combined into a composite building.



Billboard antennas at Nikolski White Alice station.

The composite buildings were of poured concrete construction. The buildings were 179' x 162', with a four-story tower in the center, a two-story dorm area, and a one-story administration portion. The radar was installed on the four-story central building portion. At the building were also four billboard steel antennas for White Alice transmission and reception. Additionally, there were Butler steel building garages, two ammunition bunkers, water pumphouse, airstrip, and air terminal weather building.

The components of an Aleutian DEW/White Alice included:

- composite building, concrete
- 4 billboard antennas
- steel garage
- 2 ammunition bunkers
- airstrip
- weather/terminal building
- water pumphouse

Aleutian DEW Line and White Alice stations were built at:

- Adak (White Alice only)
- Cape Sarichef
- Cold Bay
- Driftwood Bay
- Nikolski

Port Heiden
Port Moller
Shemya (White Alice only)

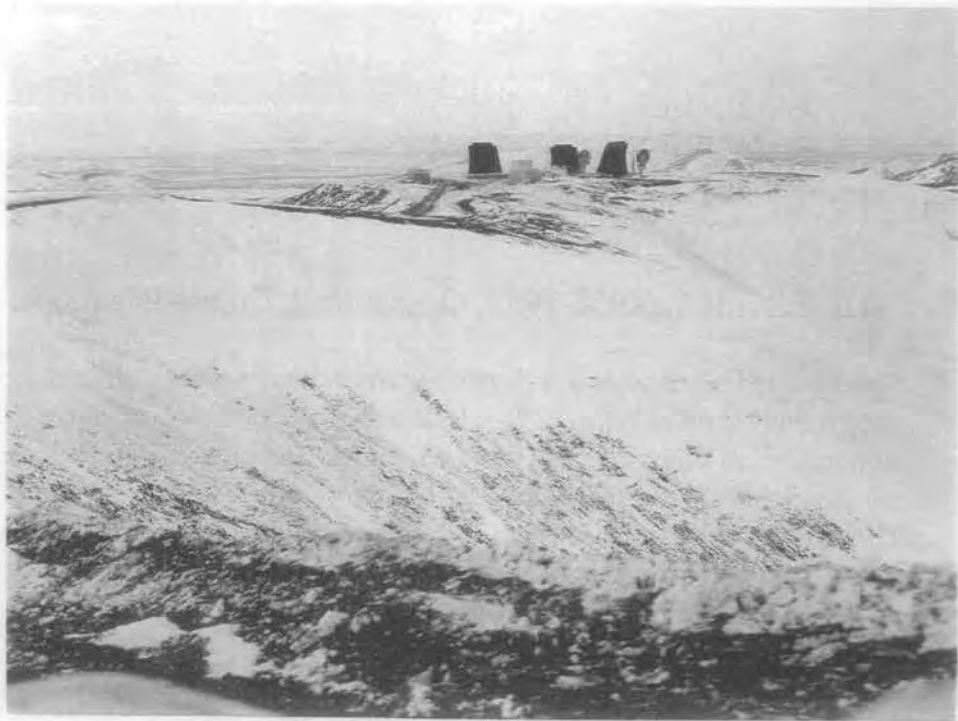
WHITE ALICE, 1955-1979. Operational, Communications.

Standardized plans were developed for five types of White Alice complexes. One design, built only at Boswell Bay, was a steel operations building. A second design, and most common, was of wood-frame construction. These were one-story rectangular shaped communications buildings with a standard width of 40-feet. The length varied from 104-feet to 256-feet. Depending upon local needs, a dormitory was included, this was either attached to the communications building or a separate structure. The dormitories were 5,200 square-feet to house 16 persons. Dormitories were not built at stations located near communities with available housing (Nome, Kodiak) or when the White Alice was located near an AC&W or DEW Line station (such as Northeast Cape, Cape Lisburne, and Cape Newenham).

The communications buildings were as small as 4,160 square-feet, the 40' x 104' model, to 10,240 square-feet for the 40' x 256' feet version; models in between were 40' x 124', 40' x 132', 40' x 144', 40' x 168', 40' x 180', 40' x 188', 40' x 228', and 40' x 256'.

Twenty-three White Alice stations had this standard wood-frame design, which included all the tropo stations except Boswell Bay, Diamond Ridge, Neklasson Lake, and the Aleutian Islands extension stations.

A third design was a 6,100 square-foot concrete block building at tropospheric/microwave stations at Diamond Ridge and Neklasson Lake. The fourth design was a smaller concrete block, 1,200 square feet. They were located at Clam Gulch, Naptowne, Rabbit Creek, and Starisky Creek. Microwaves at Anchorage and Seldotna were located at existing ACS communications stations. The fifth standard design was that used for the Aleutian extension. These six stations, collocated with DEW Line facilities, were poured concrete composite buildings, housing the dormitory, communications, power plant, and garage. This design was employed at Cold Bay, Driftwood Bay, Nikolski, Port Heiden, Port Moller, and Cape Sarichef. The poured concrete structures were two-stories for housing and administration, and five-stories in the center to serve as a radar tower. Housed in the composite building were all the activities: offices, housing, communications section, radar operations, and two 350-KW generators.



White Alice communication station, Sparrevohn.

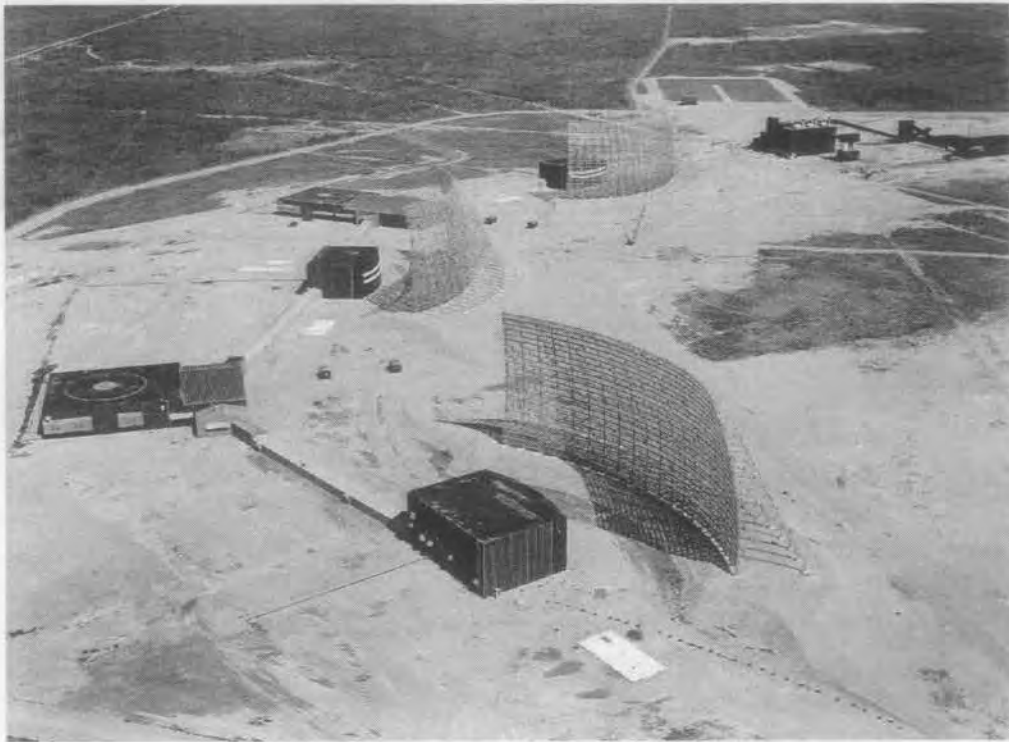


Kotzebue White Alice equipment building.

Adjacent to the composite building were four White Alice billboard type antennas. They were composed of galvanized steel on large concrete foundations. There would also be a concrete storage bunker nearby (14'8" x 10'8") and water pump house (17' x 20'), constructed of concrete with a wood roof.

The White Alice system was comprised of the following facilities:

- Adak
- Aniak
- Anvil Mountain, Nome
- Bear Creek, Tanana
- Bethel
- Big Mountain
- Boswell Bay
- Cape Chiniak (not built, became Kodiak Tracking Station)
- Cape Lisburne
- Cape Newenham
- Cape Romanzof
- Cape Sarichef
- Cold Bay
- Diamond Ridge
- Driftwood Bay
- Fort Yukon
- Granite Mountain
- Indian Mountain
- Kalakaket Creek
- King Salmon
- Kotzebue
- Middleton Island
- Nikolski
- Neklasson Lake
- North River, Unalakleet
- Northeast Cape, St. Lawrence Island
- Pedro Dome
- Pillar Mountain, Kodiak
- Port Heiden
- Port Moller
- Sitkinak
- Sparrevohn
- Tatalina
- Tin City



Ballistic Missile Early Warning System at Clear, Alaska, 1962.

BALLISTIC MISSILE EARLY WARNING SYSTEM (BMEWS). Intelligence, Radar

The Clear BMEWS facility is comprised of three large antenna fields with receiving equipment, operations buildings, administration and living area, and power plant.

The BMEWS installation was located at Clear Air Force Station.

OVER THE HORIZON BACKSCATTER AND RELOCATABLE OTH (ROTHR), Intelligence, Radar

The OTHB radar was cancelled in February 1991 before construction. However, the Navy ROTHR was constructed and has been closed at Amchitka Island.

Constructed Over the Horizon Radars:
Amchitka Island, ROTHR

Planned Over the Horizon Radars:
Gakona transmitter site
Tok receiver site

WORLDWIDE MILITARY TELEPHONE, Wildwood AFS, Communications.

The Army constructed a long range communications (worldwide) station at Kenai in 1953. The building designs were of the standard Alaska plans for that time period. They were two- and three-story concrete operations, administration, and barracks. The buildings were the same design as employed at Fort Richardson and Fort Wainwright. Family housing was two-story wood-frame multiple units.

The Army transferred the facility to the Air Force on December 31, 1965. It was inactivated in July 1972.

LORAN, U.S. Coast Guard, Navigational

The U.S. Coast Guard has supported military and civilian maritime activities with their worldwide LORAN system.

Cold War LORAN stations have been located at:

- Adak
- Attu
- Cape Sarichef
- Juneau
- Kodiak
- Narrow Cape
- Port Clarence
- Shoal Cove
- Skull Cliff
- St. Paul Island
- Tok

The current LORAN operations are located at:

- Juneau
- Kodiak
- Narrow Cape
- Port Clarence
- St. Paul
- Shoal Cove
- Tok



Camp Carroll, Alaska National Guard, camp at Fort Richardson.



Alaska Army National Guard armory at a remote village.

ALASKA NATIONAL GUARD, Operational, Ground and Air Defense

- Alaska National Guard Armory, Fort Richardson, Alaska
- Anchorage, various locations
- Bethel
- Camp Carroll, Fort Richardson
- Camp Denali, Fort Richardson
- Fairbanks Armory
- Kotzebue Armory
- Kulis, Alaska Air National Guard
- Nome
- Village Armories
- Wasilla

TACAN, 1954-1956, TACTICAL AIR NAVIGATION

The Tactical Air Navigation system facilities were limited in size. They included a wood-frame house, 20' x 40', adjacent to an airport. A radio tower was attached to this frame building. The heart of a TACAN is:

- wood-frame building, 20' x 40'
- radio tower

TACAN's were located at:

- Aniak
- Bethel
- Gulkana
- Homer
- McGrath

WAR MATERIAL PRE-POSITION AND SAFE HAVENS, Operational Support

Both the Army and the Air Force had dispersed sites for the storage of supplies and locations for pre-positioning in the event of war. The Army location at Gulkana did not include any construction, the war materials and equipment would be stored in the heavy forest of the former Gulkana Staging Field. The Air Force dispersed storage at Silvertip included relocatable structures for supplies.

There were also Air Force "Safehaven" locations to preposition supplies to support the emergency relocation of noncombatants in the event of war. There were

only a few Theatre of Operations buildings for staff, the noncombatants would be housed in hotels, and the Seward recreation camp.

The features of dispersed storage and evacuation are:

- relocatable buildings
- Theatre of Operations, wood-frame

The locations of dispersed war material storage and noncombatant evacuation were:

- Gulkana, Army Preposition
- Palmer Safe Haven, Air Force
- Seward Safe Haven, Air Force
- Silvertip Storage, Seward Highway

AIR FORCE CACHES, Operational Support

In 1958, the Air Force built 23 emergency survival caches in remote areas of Alaska. Each site had an orange 10' x 12' log structure. Stored inside the cache were food supplies, sleeping bags, and other survival gear. Aircrews had maps identifying the survival cache locations in the event of a crash landing. Theft from the caches made it impossible to maintain them, and they were abandoned in 1961. The heart of the cache was:

- log structure, 10' x 12'
- survival gear

Twenty-three caches were established, locations are indicated in the next chapter.

AIR DEFENSES, 1950-1992, Operation, Air Defense

The air defense of Alaska included air units at Elmendorf, Eielson, and Ladd Air Force Bases. Forward intercept responsibilities were located at Galena and King Salmon. Air intelligence was obtained by flights out of Shemya (now known as Eareckson Air Station).

The central elements of Alaska operational airfields are:

- runway
- combat alert cell (CAC)
- hangars
- control tower/operations
- radar facilities

aircrew support
maintenance/nose hangars
armament and weapons storage
administration
barracks
recreation

Operational airfields were located at:

Eielson AFB
Elmendorf AFB
Eareckson Air Station, Shemya Island
Galena Airport
King Salmon Airport
Ladd Air Force Base

NAVAL BASES, 1945-1992, Operational Sea Defense



Permanent barracks construction at Sweeper Cove, Adak.

Alaskan sea patrols have been supported by shore facilities with docking, shops, warehouses, air facilities, housing, and personnel support.

Key elements of the northern sea frontier bases were:

- docks
- shops
- warehouses
- radio facilities
- ships store
- administration
- housing
- recreation
- runway
- hangars
- seaplane ramps

The Alaska naval bases were located at:

- Adak
- Kodiak
- Southeast Alaska Testing Facility (SEAFAC), Back Island

NAVAL SECURITY GROUP, Intelligence, Listening Stations

Naval Security Group listening stations provide long distance intercept of communications. To accomplish this, there is a large field antenna operations building, and an administration/barracks building. The three features of a listening station are:

- antenna field
- operations building
- administration/barracks

Naval Security Group facilities have been located at:

- Adak
- Elmendorf AFB
- Kodiak

AIR FORCE STATIONS, Operational, Air Defense

A number of airports located in remote areas were designated dispersal airfields. In times of emergency, these fields could be employed as outer air defenses. There was little construction except improved runways suitable for fighter aircraft. Therefore, the central feature is:

improved runway

Dispersed fields included:

- Umiat AFS
- Walseth AFS, McGrath
- Marks AFB, Nome

HAINES-FAIRBANKS PETROLEUM PIPELINE, 1955, Operational, Support

The Haines-Fairbanks pipeline included a steel pipeline and pump stations. The central elements are:

- pipeline
- pump stations

NIKE HERCULES, Operational, Ground Air Defense

The Nike Hercules missile system was divided into two operational areas which had to be line of sight from each other for the radars. The two areas were launch and control. At the launch area the key structures were:

- 2 launch structures
- control building
- missile assembly building
- warhead storage
- dog kennel

The control area contained the following essential parts:

- 3 radars
- administration/barracks building

Along the road connecting the two areas were two missile storage bunkers.

Nike Hercules installations guarded military installations at Anchorage and Fairbanks, they were:

- Site Bay, Anchorage
- Site Point, Anchorage
- Site Summit, Anchorage
- Site Fox, Fairbanks
- Site Jig, Fairbanks
- Site Love, Fairbanks
- Site Mike, Fairbanks
- Site Peter, Fairbanks
- Site Sugar, Fairbanks
- Site Tare, Fairbanks



Missilemen ready a Nike Hercules missile for live firing at Site Summit, Anchorage.



Nike Hercules lifts off launch pad at Site Summit.



Winter day, 1962, at control building at a Nike installation near Fairbanks.

THOR MISSILE BASES, Operational, Tactical, Offensive-Defensive

Plans in 1958 to base Thor (intermediate range) missiles in Alaska proceeded only to the study and site selection phase. No missile basing was accomplished.

Sites selected, but never built, were:

- Bird Creek (Indian Creek)
- Eagle River
- Eklutna
- Girdwood
- Pioneer Peak, Palmer

NUCLEAR AND SEISMIC, Material Development and Intelligence

Nuclear activities in Alaska included a small nuclear power plant at Ft. Greely, nuclear tests at Amchitka, nuclear experiments at Cape Thompson, and seismic stations to monitor Soviet nuclear explosions. The Fort Greely nuclear power plant is a single building containing a reactor and necessary equipment.



Camp for nuclear tests in 1965, Amchitka.

The nuclear tests at Amchitka required:

- deep test holes
- base camp of trailers
- hangar/storage (used existing World War II Birchwood hangars)
- runway (existing World War II)

Seismic stations were comprised of:

- ground shaft
- seismic monitor

Locations for nuclear activities were:

- Amchitka Island Nuclear Tests
- Attu, Seismic station (nuclear test detection)
- Burnt Mountain, Seismic
- Cape Thompson, Project Chariot
- Eielson ALPA Sites, Seismic stations
- Ft. Greely, Power Plant
- Indian Mountain, Seismic station
- Tatalina, Seismic station



SM-1A nuclear power plant, Fort Greely.

NORTHERN REGIONS RESEARCH, Support, Research

Research activities have included ice tunnels to study permafrost, laboratory buildings, and environmental programs. The two main research organizations are:

- Arctic Aeromedical
- Cold Regions Research Laboratory (CRREL)

ATMOSPHERE RESEARCH, Material Development, Research

The HAARP (High Frequency Active Auroral Research Program) at Gakona, to study radio beams into the ionosphere, used the unfinished OTH-B radar site. Constructed was a large gravel pad with a transmitter building. The Navy is also engaged in HAARP research at Fairbanks. Central elements are:

- gravel pad
- research building

Atmospheric research was located at:

- Fairbanks, Navy HAARP
- Gakona, HAARP
- Ohlson Mountain, Homer

ARMY/LIGHT INFANTRY, Operational, Ground Defense

Army posts in Alaska are visually dominated by 1950's permanent concrete construction. Starting in 1986, an improvement and expansion of Fort Wainwright changed its appearance, adding buildings that diverted greatly from the plain rectangular look. The new construction is closer to modern western suburban style.

The Cold War Army in Alaska has functioned under two themes; cold weather training and rapid deployment. Given these themes the central elements are:

- training and maneuver areas
- administration buildings
- barracks
- dining halls
- shops and garages for tracked winter vehicles

Army/Light Infantry stations were located at:

- Black Rapids Training Center
- Fort Greely
- Fort Richardson



801 Family Housing at Fort Wainwright. (photograph by Brian Allen)



New club at Fort Wainwright, 1994. (photograph by Brian Allen)



Service Club at Fort Richardson.

Fort Wainwright
Fort Wainwright Maneuver Area

ARMY PORTS, Operational, Support

The Army port at Whittier was a critical transportation hub until 1960 when air and road shipping replaced it. The heart of the port was the:

- docks
- railroad
- two railroad tunnels
- composite building, 7-story
- family housing high rise, 14-story

Space limitations forced vertical construction which was contrary to Army design thinking. The large composite building and high rise family housing are unique. Army port location:



The Port of Whittier. The large building is the Buckner Building.



Hodge Building under construction at Whittier.



Cpt. Edward Kelley and his wife, Joyce, wash dishes in their new apartment in the 14-story Hodge Building.

Whittier

ARMY MANEUVERS AND EXERCISES, Training

In addition to the training areas located on base or adjacent, such as the Fort Wainwright maneuver and Tanana Flats, there were annual exercises. These annual exercises required huge land masses whose use was obtained by permit.

There was only temporary tent housing and no permanent construction. Some exercise areas have been:

- Campbell Creek
- Clearwater Lake
- Eagle River
- Glennallen - Gulkana - Lake Louise - Sourdough

AIR FORCE RANGES, Training

Alaska, with its huge land mass, has the space needed for air gunnery practice. This availability of land has been balanced against wildlife protection and recreational usage. An Air Force range includes:

- targets
- electronic building and target control
- control towers

Ranges have been located at:

- Blair Lake Range
- Cook Inlet Air Force Range
- Eagle River Flats
- Lake Louise
- Oklahoma Low Threat Range
- Susitna Gunnery Range
- Yukon Electronic Warfare Range, near Eielson AFB

ALASKA SEA FRONTIER, Intelligence, Sea

The Navy has operated a number of special facilities for intelligence purposes. Further research is necessary to delineate the equipment and installations. Operations were conducted at:

- Adak

Cape Lisburne
Northeast Cape, Saint Lawrence Island
Prince of Whales Anti-Submarine activity

RECREATION, Morale, Welfare, Recreation

Recreation camps in Alaska range from small camps with a few Quonset huts to large complexes such as Seward. The key elements have been:

Quonset hut housing
boat docks

Recreation camps include:

Afognak Island, Kodiak
Anchorage USO/YMCA
Fairbanks USO
Fielding Lake Recreation Camp
King Salmon Lake Camp
King Salmon Rapids Camp
Lake Louise Recreation Camp
Porcupine Recreation Annex, Fort Yukon
Salchaket Lake (Harding Lake)
Seward Air Force Recreation Camp
Seward Army Recreation Camp
Skilak Lake Recreation Camp
Ugashik Lake Recreation Camp
Unalakleet Recreation Annex
Unalakleet Recreation Fish Camp

FORT RICHARDSON NATIONAL CEMETERY

This national cemetery, established during the Cold War, indicates the inclusion of Alaska in nationwide memorial activities. It marks the transition from an outpost to a mainstream American role.

This cemetery is unique in containing foreign allied and enemy burials.

CHAPTER 3

RESOURCES INVENTORY AND RECOMMENDATIONS

IMPLEMENTATION PLAN

The Cold War military construction in Alaska was unique, the territory and then state was considered the "frontline," all facilities had a direct combat or supporting mission; there were no rear bases. For this reason, virtually each type of Cold War facility is directly connected to the historic context of Cold War defense. Today, the installations vary most in terms of integrity. Some are nearly intact and still contain the main contributing elements, while others have been stripped or demolished, destroying the character of the installation.

The recommendations in this plan are to realize three goals: (1) preservation of at least one example of each major type of installation, (2) sympathetic reuse when feasible, and (3) documentation to include histories, Historic American Engineering Record (HAER) projects, and archival retention of records. The recommendations to realize these goals are offered for either installation type or specific facility.

This plan is for a period of five years. At the end of that time it shall be reviewed and updated. This will be an opportunity to evaluate success in achieving recommendations and to reconsider Cold War facilities preservation in light of changed conditions. It is anticipated that any further military drawdown will create new preservation needs.

We first propose some recommendations for the Cold War as an event, not related to specific sites, they are:

1. Prepare and publish histories of the Cold War in Alaska. The Air Force History Office on Elmendorf AFB has produced a number of excellent histories and have scheduled more. In August 1993, the Alaska District contracted with a team of professional historians to research and write its history. It will be a history of the Corps of Engineers in Alaska, 1867-1992. A fine history of the National Guard has been published. The Army's history in Alaska is described in Lyman Woodman's massive chronicle.

2. The Army, Air Force, National Park Service, and Alaska Office of History and Archaeology should together prepare an Inventory List of the major Cold War facilities in the state. This listing will include Universal Transverse Mercator (UTM) identifications and site plans for larger facilities. The UTM numbers should be consistent locations, such as the administration or operations building. A sufficient number of UTM numbers will be provided, so even if the entire facility has been demolished, its original site plan could be laid out on the ground. This will prevent the disappearance of former sites. Complexes destroyed in

1984-1985 have already disappeared from memory or local knowledge. In 1993, archaeologists working in the Murphy Dome area, near Fairbanks, contacted the Corps for information on cultural materials found there. The materials (foundations, etc.) are what remain of Nike Site Love which was demolished in 1985. Already, this has become a lost site. An inventory listing with UTM's and availability of site plans will aid in present day and future cultural resources investigations.

This inventory list will be provided to appropriate federal and state agencies such as U.S. Fish and Wildlife, U.S. Forest Service, and major libraries in the state and other agencies that perform cultural resources surveys and identification work. The estimated cost for this inventory listing is \$40,000, the project should be scheduled for completion by December 1996. The SHPO Cold War coordinator should lead in getting this project underway.

3. We recommend that the Alaska District accession its Cold War as-built drawings into the collection of the National Archives, Alaska Region. In 1993, the Alaska District microfilmed its collection of 9,000 World War II engineering drawings and transferred the originals to the National Archives, Alaska Region. The microfilm copies were retained by the Corps. The transfer of the Cold War drawings could begin with Nike and Aircraft Control and Warning (AC&W) installations which have been demolished. Drawings for active facilities will be transferred as those installations are closed. The estimated cost is \$25,000 with a completion date of December 1997.

4. The Air Force Office of History on Elmendorf AFB has published a 300-page finding guide to Cold War research studies. This finding guide is available in local libraries.

5. The State of Alaska and U.S. National Park Service are urged to consider development of Cold War parks. Some of the most appropriate locales would be the launch area of Nike Site Bay, at Goose Bay, owned by the University of Alaska; a well preserved antiaircraft gun battery near Fairbanks; an AC&W location, Granite Mountain White Alice, and other locations identified in this plan.

There exist sites which are in excellent condition and have great potential as parks or recreational areas. The responsible Department of Defense program must first clear the installation of all fuel, fuel containers, transformers and any other potential sources of contamination.

6. The Air Force, Army, and the Corps of Engineers should acquire for their libraries copies of Lyman Woodman, Duty Station Northwest: A Chronicle of the U.S. Army in Alaska, Anchorage, Alaska, 1994.
7. In 1999, the Alaska District, in consultation with the State Historic Preservation Office, will revise this management plan to accommodate changed conditions and accomplishments of the preservation efforts.
8. Alaska Heritage Resource Survey (AHRS) data cards should be completed by the investigating agencies for all inventoried Cold War sites.

SITE SPECIFIC RECOMMENDATIONS

1. Adak Naval Base will be studied by the Navy to identify cultural resources. This investigation should identify and evaluate Cold War features and include preservation options and opportunities. Adak will be included in the inventory list of Cold War sites.
2. Galena Airport should be inventoried and evaluated by the Air Force to determine its National Register of Historic Places eligibility. HAER documentation may also be appropriate. Immediate investigation is required on this site, with specific attention given to the World War II Birchwood hangar. It should be determined if this hangar was used as an early alert hangar complex. The hangar should also be evaluated for National Register of Historic Places eligibility as a World War II and Cold War feature.
3. A detailed chronology of the Alaska Communications System (ACS) is available at the Air Force Office of History on Elmendorf AFB. Alascom should be urged by the SHPO Cold War coordinator to document its history to include a statewide property inventory. This inventory would identify the historic structures.
4. The SHPO Cold War Coordinator should consider a Legacy proposal for the study of the Ground Observer Corps program.
5. The Air Force should inventory and evaluate the Fort Yukon AC&W site. An architectural study of reuse should be accomplished. The Cold War coordinator at SHPO and Air Force should work together to locate a new use for this site. Acceptable reuses include summer camp, retreat center, and other possibilities. The Air Force should Historic American Engineering Record (HAER) document Fort Yukon.

6. Middleton Island is a good example of the AC&W system, therefore, preservation in some form is appropriate. However, preservation of the AC&W system may focus on Fort Yukon due to the private ownership of Middleton Island.
7. The Alaska District should consider HAER documentation for the Minimally Attended Radar System. Documentation should include as-builts, history of the design, issues surrounding siting, and HAER photography. Consideration should be given to the psychological impacts of working in isolated domes.
8. The Fairbanks Army AAA No. 2 site should be considered by the State of Alaska, Department of Natural Resources, Division of Parks and Outdoor Recreation, for development as a state park. The complex could be restored to original character. The Alaska District should expand and republish the Nike history to include AAA, describing Army ground to air defense of Alaska.
9. Consideration should be given to the preservation strategies for the Collinson Point DEW Line station.
10. The Nuvagapak Point DEW Line station is to be left as is, with exception to the shop building which has been removed in order to extract fuel contamination under the building.
11. The Cape Sarichef DEW Line station is a prime candidate for preservation. This facility should be left as a representative of this type of radar station. This site may require hazardous waste cleanup. A preservation strategy should be developed for this site.
12. The Air Force should develop a preservation plan for the Granite Mountain Radio Relay Station (White Alice). Preservation possibilities include remote lodge or housing for fire fighting mission.
13. The U.S. Navy might consider documenting their North Slope oil exploration activities and intelligence operations.
14. Remediation projects at the Site Bay Nike launch should be limited to removal of hazardous and toxic wastes with no building demolition. This Nike site has potential for state park usage. The Alaska District should rewrite its history of Nike Hercules to include anti-aircraft artillery defenses and additional photos. The report will then be donated to libraries and interested persons.
15. Nike Site Summit is currently under investigation by the Army for use as a historic natural park. The Cold War coordinator should consult with the Army to

create a plan to protect the site from vandalism. The site is located adjacent to a ski recreation area. A reuse possibility may be to become part of a larger recreation site. Site Summit will be included in the inventory list of Cold War sites.

16. The Begich Towers and Buckner Building, located on the Port of Whittier site, should be carefully evaluated in future cultural resources studies of Whittier. They are unique former Army structures.

17. The Air Force, in consultation with SHPO, should prepare a cultural resources inventory, base historic preservation plan, and National Register determinations for Elmendorf Air Force Base.

18. The Air Force History Office may prepare a history of Eielson Air Force Base and completion of on-going cultural resources surveys.

19. Barrow, POW-Main station, DEW Line should be documented by the Air Force at some time in the future and considered for preservation. Parks-Canada has accomplished a preservation program of a Main station which can be used as an example.

20. The Navy, in consultation with the SHPO, should review preservation concerns at Amchitka. The Department of Energy should inventory and evaluate the historic significance of nuclear tests at Amchitka.

21. Internationally as well as locally, the Coast Guard should evaluate the historical significance of LORAN and the tremendous impact it has had on air and sea navigation.

22. The Air Force should conduct an inventory and permanent record of King Salmon as an intercept facility.

23. The Air Force has scheduled a cultural resources survey for the BMEWS station at Clear in 1994.

24. The SHPO and the Coast Guard should consult concerning a cultural resources survey of Kodiak Naval Base.

25. The Air Force should search its records of the 1035th Technical Operations Group for details on construction and operation of the Eielson Alpha Research Sites. Copies of these records should be placed in the files of the Office of History, Elmendorf AFB.

26. An Alaska-wide overview survey of Army facilities at Forts Greely, Richardson, Wainwright and Black Rapids Training Camp is appropriate. The SHPO Cold War Coordinator and the Army should consult regarding Cold War features in Alaska.

27. A determination of the small nuclear power plant, SM-1A, eligibility at Fort Greely should be accomplished by the Army during the tenure of this plan.

28. The Air Force, in consultation with the SHPO, should conduct a cultural resources survey of Shemya Island.

SITE DESCRIPTIONS AND RECOMMENDATIONS

OPERATION NAM

The records regarding Operation NAM are not presently available. A retired surveyor, of the Alaska District, Army Corps of Engineers, has provided some details concerning this early secret Cold War project (Wendell Moore, telephone interview, December 20, 1993).

The code-name NAM derives from the place names of three airfield sites; Noxapaga, American River, and Collins-Hannum. NAM was a composition of the first letter of the first two sites and last letter of Hannum. This was a common code and brevity designation technique, i.e. POW for the DEW Line station at Point Barrow.

NAM was a January 1945 plan to construct at least three large airfields on the Seward Peninsula at Noxapaga (Lava Lake), American River, and Collins-Hannum. Each airfield would have one to three 10,000-foot long runways. At Noxapaga, hangars were to be cut into a lava ridgeline. These airfields were sited for fighter interception of Soviet aircraft.

Base plans and soil survey work were accomplished, but construction funding was not authorized. The runway layout and soil profile sheets have been transferred from the Alaska District to the National Archives, Alaska Region.

Current Status: Site Abandoned, never constructed.

Historic Context: The NAM airfield projects were possibly the earliest Cold War efforts in Alaska. These airfields would have been advanced intercept fields to defend against Soviet intrusion. The Cold War shifted the air defenses from the Aleutians to the northern tier to protect the polar route. The Aleutian bases were abandoned and new facilities were built on the northern approach.

Significance: If it can be determined that Operation NAM was in fact a January 1945 Cold War project, before the end of World War II, it is highly significant on the national level. This was an early recognition of future realities, one that included planned military construction in response. The site's significance is its association to the event - the Cold War.

Integrity: There are no surviving features of the NAM project.

National Register of Historic Places Status: A weather station at Lava Lake, which may be associated with the NAM project, has been accepted into the National Register of Historic Places. The register nomination identifies it as a World War II weather station constructed in support of Nome aerial operations. Artifacts at Lava Lake include the skeleton frame of a Jamesway hut, a stove, mess items and 55-gallon fuel drums; except for drums containing oil products these artifacts will remain and be avoided during planned environmental restoration.

Recommendations: The NAM base plans discovered in the map vault of the Alaska District, Army Corps of Engineers, have been placed in the Alaska Region, National Archives, Anchorage.

The NAM project needs to be more thoroughly researched. This topic will be studied and then detailed in the District history, which will be published as a book in 1995. It is not clear if the installation at Lava Lake, which is known as a weather station, was part of Operation NAM.

Alaska Heritage Resource Survey (AHRIS): **AHRIS data cards should be completed for all documented Cold War sites by the responsible DOD agency.**

Priority and Level of Preservation: This is a priority A site (priority A sites are scheduled for 1994-1995; priority B, 1996-1997; priority C, 1998-1999). Cultural resources associated with the weather station should be preserved.

Lava Lake Weather Station

A weather station was established at Lava Lake in April 1945 to supply weather data for pilots on the Seward Peninsula, especially Lend-Lease flights. The station opened in April 1945 and closed in November of that year. A detachment of four soldiers operated the station. A small airfield was constructed at the station.

Lava Lake (Noxapaga) was also considered as an airfield location during Operation NAM. Proposed in January 1945 was a 10,000-foot long runway with a hangar blasted out of the Lost Jim Lava Flow.

While the records on Project NAM have not yet been located, the location of this airfield suggests that it was to defend Alaska from Soviet attack. The proposed locations of the NAM airfields, on the Seward Peninsula, were poor locales for

bases in the war against Japan. Also, such large fields were not needed for Lend-Lease.

The physical remains at the Lava Lake Weather Station include a Jamesway hut with the fabric blown away, an unassembled Jamesway hut, a skid wagon, stove, coal tent heaters, and mess gear.

The site has been determined eligible for the National Register of Historic Places as a weather station associated with the U.S. Lend-Lease aircraft program.

The site of the Lava Lake Weather Station remains relatively intact albeit 'weathered.' Other weather stations associated with the Lend-Lease program were either dismantled or moved from one place to another after their abandonment (Noxapaga and Imuruk, for example). The abandoned airstrip at Noxapaga remains today. As a result, the Lava Lake Weather Station is one of the last satellite weather stations that supported the Lend-Lease operations during World War II. (Beckstead, 1992:7)

The Lava Lake Weather Station site is located within the Bering Sea Land Bridge Natural Preserve, set aside by the U.S. Congress to protect prehistoric evidence of man's migration from the eastern to the western hemisphere. Most of this evidence is located along the coast and low-lying areas. Prehistoric use in the vicinity of Lava Lake was probably limited to hunting and fishing activities. The Alaska Heritage Resource Survey does not list any archaeological sites near Lava Lake.

Current Status: Abandoned weather station, within National Preserve.

Historic Context: Historically, Alaska has been one of the most dangerous flying regions. During World War II and early in the Cold War, remote weather stations supplied critical data to aviators. The weather station at Lava Lake was one such facility.

Significance: The Lava Lake weather station illustrates the role of weather data for safe flying. Improved weather data during World War II and the Cold War resulted in fewer accidents. The significance of this weather station is its association with Cold War aviation.

Integrity: Extant are the skeleton of a Jamesway Hut and personnel equipment.

National Register of Historic Places Status: This site is National Register listed.

Recommendations: The cultural artifacts at Lava Lake are to be left in-situ. Environmental restoration will be restricted to removal of fuel drums containing fuel products and removal of soil contamination.

Priority and Level of Preservation: This is a priority A site, which is scheduled for environmental restoration in 1994. Cultural resources at the site will be protected.

AHRS number: BEN-084

AIR DEFENSES

The Alaskan air defense was slowly reorganized following the Japanese surrender in September 1945. The Eleventh Air Force was redesignated the Alaskan Air Command (AAC) with headquarters at Davis Field, Adak Island. While there was command reorganization, the initial Cold War basing followed the World War II model when Japan was the enemy and the main threat was in the Aleutians. The 57th Fighter Group was assigned to the airfield on Shemya Island with P-51H Mustangs. One squadron was assigned to Ladd Field.

By the fall of 1946, the threat was viewed as Soviet bomber penetration over the polar regions. In line with this perceived threat, the Eleventh Air Force was withdrawn from the Aleutians. On October 1, 1946, the Alaskan Air Command moved from Davis Air Force Base, Adak, to Elmendorf Air Force Base, Anchorage. From 1947 to 1950, the airfields in the Aleutians were closed. On July 1, 1950, Adak, with its Davis AFB, was transferred to the Navy. Shemya was the only surviving Aleutian air base, serving as a fueling stop on the Great Circle Route to Asia.

Alaska air defenses were lean during the early Cold War days. The Alaskan Air Command, with an authorized strength of 7,651, had only 2,000 assigned in 1946. The Soviet explosion of an atomic bomb in September 1949 and the start of the Korean War in June 1950 generated increased military funding including new Alaska defenses. Among the projects was a new Fort Richardson adjacent to the old. The existing World War II Army installation was then transferred to the Air Force and became known as Elmendorf AFB, named in honor of Captain Hugh Elmendorf, who was killed in a 1933 test flight in Ohio.

Additional permanent facility construction was funded at Eielson AFB, the former Mile 26 satellite field. The field received the longest runway in North America, 14,518-feet. This airfield was used for aircraft monitoring of atomic bomb development in the Soviet Union, an intercontinental bomber field and weather reconnaissance activities. The field was renamed Eielson on January 13, 1948, in honor of the famous Alaska bush pilot Carl Ben Eielson who had been killed in a 1929 crash. Among Eielson's many exploits was the first air mail flight in Alaska.

Cloe (1984:60) has summarized the 1950s Cold War realities:

By December 1950, AAC's strength had increased to 16,909, including 2,725 civilians. Most of the early problems had been corrected. The major construction programs at the main bases were well under way, and work was begun to establish an extensive air defense system. For once, funding was no longer a problem. Russian aggression, the loss of China to the communists, and the outbreak of the Korean Conflict opened the purse strings. During the late 1940s, the military had received from \$11.7 to \$14.4 billion annually to support its needs. By 1953, the amount had jumped to \$50.4 billion, or 13.5 percent of the gross national product. The Alaskan Air Command shared in the wealth.

Adak, Davis Air Force Base

On August 31, 1942, the 807th Engineer Aviation Battalion landed at Adak Island, in the Aleutians, to build an airfield and garrison. Survey teams searched the island for suitable runway locations, but could not locate an adequate site. An innovative solution to the problem was to drain the tidal marsh near Sweeper Cove, leaving a base of gravel and sand for runway construction.

Engineers were at work at the tidal marsh site two days after arrival. They built gates to control the tidal action and water movement, and drained off the water. A steel mat runway was partially completed by September 10 and received combat aircraft over the next few days. Operations were launched from Adak on September 13, and the island replaced Umnak as the forward base in the Aleutians for aerial attacks on the Japanese at Kiska.

The Hoge Board, in the spring of 1946, recommended retaining Adak Island as headquarters for the Eleventh Air Force. Adak had the advantage of a good harbor and airfield, while other bases at Dutch Harbor, Cold Bay, Amchitka, and Umnak were deficient in one or the other. Dutch Harbor had a fine harbor, but a terrible airfield site, and Amchitka had a fine paved runway, but a poor harbor.

For the early postwar years, the Alaska Air Command retained its headquarters at Davis Air Force Base, Adak Island. The field had been named in honor of Colonel Everett Davis, Chief of Staff, Eleventh Air Force, who had died in a C-53 crash near Naknek on November 28, 1942 while enroute to Elmendorf Field from Naknek Field (King Salmon).

Davis Air Force Base employed the World War II facilities. There was permanent facility construction in 1947 and 1948, with additional construction after the Navy takeover of the base on July 1, 1950 (see Adak Naval Station for construction details).

Current Status: In 1993, the Navy reduced Adak from 4,000 to 1,000 personnel, with termination of anti-submarine patrols and other duties. A number of operations were remoted to Hawaii.

Historic Context: Adak was the location of an early postwar intercept airfield. With the shift of air facilities to central and northern Alaska, Adak became a North Pacific naval base. Davis Field was a poor location for the new needs of air defense during the Cold War, but Adak was a fine choice for North Pacific patrol operations. This island would be the most important naval base in Alaska.

Significance: Adak Island is significant in the transition of Alaska air defenses from World War II, with Japan as the enemy, to the Cold War, with threat of attack from the north. It was, however, the shift from Japan to the Soviet Union as our enemy which ended the importance of Adak as an interceptor airfield. The island is more significant as a Cold War naval base and naval intelligence center for the North Pacific. The significance of the Adak Naval Base is its association with Cold War North Pacific naval patrols. This role is discussed later.

Integrity: Permanent concrete construction of barracks, offices, and facilities was started in 1948. Over the years, this permanent construction has replaced the World War II temporary construction. Navy environmental restoration, in recent years, has included the removal of hundreds of Quonset huts and other World War II structures. There were, in 1993, forty-seven World War II structures, but with the extensive removal and major modifications, the wartime integrity of the base has been lost. Features surviving from its role as an interceptor field, Cold War era, are hangars, air operations facilities, the improved Sweeper Cove runway, headquarters buildings, and aircraft.

National Register of Historic Places Status: Adak Island is a National Historic Landmark site for its role in World War II.

Recommendations:

1. The Navy is engaged in a systematic study of Adak Island cultural resources. This survey should include an analysis of early Cold War Air Force activities, especially the 1947-1950 permanent construction, as well as later Navy uses. This investigation should identify and evaluate Cold War features. This study will also indicate preservation options and opportunities.
2. Adak Island and other Cold War installations and facilities will be recorded in the Alaska District Inventory List of Cold War sites. This listing will provide pre-

cise locational data (UTMs) so future researchers can identify on the ground Cold War facilities, even if they have been demolished.

3. As various installations are reviewed and studied, AHRS cards shall be completed.

Priority and Level of Preservation: Adak Island is a priority A area.

Cold Bay Airfield

In January 1946, an Army Air Force detachment of twenty men was assigned to the Cold Bay airfield as a caretaker force. As a service stop for transient aircraft, an average of fifty-five aircraft used the airfield each month. The most common transient aircraft were B-29s, C-47s, and B-17s. In 1948, to service these aircraft, the base was assigned nine officers and 123 enlisted men who were housed in facilities near the runway, leaving other large areas of Quonset huts from World War II abandoned. There was little new construction from 1947 to 1948; one project was to construct a new radio station, replacing the Armed Forces Radio Station, WXLJ, which was destroyed by fire on February 18, 1948.

Plans to consolidate housing and upgrade the facilities were developed in April 1949. The construction effort would be accomplished by Company C of the 807th Engineer Aviation Battalion; new housing and recreational facilities were included in the plans. Construction was begun on the Tundra Inn Service Club and Library in the summer of 1949 and was completed on November 9, 1949. The construction of housing was delayed as the Joint Chiefs of Staff reviewed the military presence in the Aleutians. In late 1949, the JCS directed the Air Force to abandon the Aleutians. Thornbrough Air Force Station was closed and abandoned in January 1950.

The military returned to Cold Bay in the 1950s. A review of the Alaska Air Command offensive and defensive capability suggested the potential value of intermediate-range ballistic missiles (IRBMs).

In arguing their case, the AAC planners emphasized that Alaskan-based IRBMs could hit Soviet targets within a 2,000 mile radius quicker and with greater accuracy because of Alaska's proximity to the Soviet Union. Finally, the IRBM would serve as a deterrent, preventing the Soviets from launching an attack against Alaska.

The search for an offensive mission had begun in 1955, when AAC looked into the possibility of acquiring the Martin TM-16 Matador, which was a jet-propelled, self-guided cruise missile de-

signed from the German V-1 buzz bomb. Plans were made to base it at Cold Bay, Bethel, and Galena, where its 690-mile range would permit it to reach targets on the Chukotsk Peninsula from these locations. Serious consideration was also given to positioning it near Willow, north of Anchorage. From that location, it would be in a good position to support Army ground operations throughout the state. (Cloe, 1984:209)

The effort to obtain Matador and later Thor missiles for Alaska was not successful. Thornbrough would not be reactivated as a missile base.

Current Status: Active international airport.

Historic Context: The Cold Bay Airfield was active in the early Cold War era and during the Vietnam War it was a busy staging field.

Significance: Cold Bay was a transitional field from WWII to the Cold War. Its location on the Great Circle Route made it a significant Vietnam era airport.

Integrity: The WWII and early Cold War structures have been demolished.

National Register of Historic Places Status: The Cold Bay Airfield lacks the integrity to be eligible for the National Register.

Recommendations: No further preservation required.

Priority and Level of Preservation: No further preservation required.

Elmendorf Air Force Base

On October 1, 1946, the Headquarters, Alaskan Air Command, was moved from Adak Island to Elmendorf, realigning the air defenses of Alaska. With new construction, and then the move of the Army from the old Fort Richardson (now Elmendorf AFB) to its new post, the future of the airbase was ensured. Elmendorf was named in honor of Capt. Hugh M. Elmendorf who was killed in 1933 when a new fighter he was testing crashed while on a flight from Wright Field, Ohio.

The most important early Cold War construction project at Elmendorf was a new headquarters building (5-800). This Art-Deco style building was completed in 1948 and named the Davis Building in honor of Colonel Davis in the fall of 1977. This historical building stands out with its distinctive architecture and vista viewscape. It is the heart of the air base.

A number of new structures have been built in recent years including a base exchange, commissary, CAC (Combat Alert Cell or ready hangars) and maintenance hangars. There are also significant mobile features such as the ALCOP - a train car used as an alternate command post.

Current Status: Active Air Force Base.

Historic Context: Elmendorf AFB has been the Cold War center of Alaskan defense. This base was the control center of Cold War operations in Alaska. The base was also an important defense locale for fighter and air warning planes.

Significance: Elmendorf was at the center of the huge Air Force buildup in Alaska, starting in 1948. The Davis Building was the locale for major military decisions during the Cold War. There were also many political decisions made here, especially concerning ways to sell the Alaskan public on defense needs in the territory and gaining the assistance of Alaskan political figures. Elmendorf AFB is significant for its crucial association to the Cold War. There were also significance of persons who have visited or were stationed at the base.

Integrity: There are World War II and Cold War features on Elmendorf Air Force Base, including: base operations hangars, a Birchwood hangar, CAC alert hangars, the 11th Air Force Headquarters building, commanders quarters, "Alaska Chateau," Pyle building, Kashim, photo lab (bldg 11-620), and the rail-mobile command post.

A number of World War II hangars remain in use. The oldest, known today as Hangar 4, is a temporary hangar completed in 1941. There are five 1942 Operations-type hangars (Hangar 1, 2, 3, 7, and 16) still in use. One Birchwood hangar was built in 1944, "Hangar Five." Located some distance from the runways, Hangar 5 is used for logistics. It has also been used as a large meeting and ceremonial hall. President Richard Nixon and Emperor Hirohito addressed a crowd here during their historic 1971 meetings. A bronze plaque on the hangar recalls the Nixon and Hirohito meetings. Other well-known elected officials have addressed large crowds gathered in this hangar. The alert hangars were erected in recent years and recall the intercept and aerial defense role.

The Commander's quarters is a two-story, wood-frame with aluminum siding. In front of its enclosed porch is a stone monument with a bronze plaque, recording the historic meetings of President Richard Nixon and Emperor Hirohito of Japan in September 1971. President and Mrs. Nixon stayed in the house during the two days of meetings. The Commander's quarters continues in this role today.

Building 5-504, a duplex, was finished in 1942. Field grade officers lived in the homes until 1947 when it was converted to a single resident quarters for General Nathan Twining, Commander-in-Chief of the Alaskan Command at the time.

Extensive remodelling has altered the character of the Alaska Chateau, building 5-560. These quarters, which were constructed in 1942 for Commanding Officers, were converted into visitors housing in 1950. The two-story, wood-frame, guest quarters has had numerous significant guests including President Dwight D. Eis-

enhower, General of the Army and Mrs. Douglas MacArthur, Bob Hope, and Senator John F. Kennedy.

Another significant building from World War II is 11-530, the Pyle Building. The building served as wing headquarters during the Cold War. The former photo lab is another concrete building of the original World War II base. It is of the same architectural, "neo-Georgian," style as the Pyle Building. Today, this building is occupied by maintenance.

Two traditional Alaskan structures are the building housing the Wildlife Museum and the former Kashim. This log house was dedicated on February 12, 1942, as a recreation center. More recently, it has served as the Family Support Center.

The early intercept duties at Elmendorf employed the existing World War II hangars, runway, control tower, communications, and air operations facilities. The major new construction during the early intercept days was the headquarters building. Some of the early Cold War facilities remain in use while others have been replaced.

National Register of Historic Places Status: Elmendorf AFB has not been evaluated for National Register eligibility.

Recommendations: In consultation with the SHPO, the Air Force should prepare a cultural resources inventory, base historic preservation plan, and National Register determination.

Priority and Level of Preservation: Elmendorf AFB should be considered for a cultural resources survey within the next two years. The base has accomplished the preservation of significant aircraft by placing the following Cold War aircraft on display: an F-4 Phantom fighter, T-33 jet trainer, and F-104 fighter. Restoration is also underway on an H-21B helicopter.

Farewell Ground Interceptor Site, Farewell

In 1951, a ground control interceptor (GCI) station was established at the Civil Aeronautics Administration (CAA) airport at Farewell, Alaska, located 64 miles south of McGrath.

The Farewell GCI was a temporary installation with a radar and camp site in operation until permanent Aircraft Control and Warning (AC&W) facilities were completed in 1954. The temporary facility was located at an existing World War II airport. The GCI at Farewell was closed on October 8, 1954.

In an October 24, 1954 letter from the CAA to the Alaska District, Corps of Engineers, Real Estate Division, it was reported that the Air Force had "completed res-

toration." A September 21, 1985 site inspection found no evidence of a radar shed or campsite.

Current Status: Abandoned airfield.

Historic Context: The Farewell airfield was a temporary forward warning and ground control facility. This airfield illustrates a quick and temporary response to perceived Cold War threats.

Significance: The mobile GCI was a stopgap program while the permanent AC&W program was under construction. It was an important temporary measure. This site, however, contains no features from this period. The GCI had a significant association with the Cold War as a temporary defense.

Integrity: A GCI facility directs intercept aircraft to their targets. They require radars, communications, and an operations staff. A temporary or mobile operation, such as at Farewell, had a radar van, radio shack, and troop housing. The records and a field survey suggest that no surface evidence of the GCI survives.

National Register of Historic Places Status: The Farewell GCI site lacks integrity, it is probably not National Register eligible.

Recommendations: This site will be entered into the listing of Cold War facilities.

Priority and Level of Preservation: Farewell is a priority B project.

Galena Airport

In August 1940, the Civil Aeronautics Administration (CAA) launched a survey to locate airfield sites in Alaska. These would be civilian constructed with military application considered. Eleven sites were selected, and construction began in late 1941. One airfield was sited to the east of West Ruby village on the Yukon River. This location was discovered to be too swampy, so the field was moved to nearby Galena, also on the Yukon River.

The next year, 1942, the Alaska-Siberian (ALSIB) route for the transfer of Lend-Lease aircraft to the Soviet Union was established with Galena as a refueling stop. Construction of a garrison and support services was started in September 1942, but was slowed by winter conditions. Further expansion was accomplished in 1943.

Galena was returned to CAA control in December 1945. It operated as a civil airport until early 1951, when the Alaska Air Command negotiated an agreement with the CAA for joint military and civil use. The Alaskan Air Command planned to base a squadron of fighter interceptors at Galena.

The airport facilities were upgraded, but the squadron of fighters was not assigned. Instead, it became a forward operating base for fighters from Ladd Air

Force Base. Four F-94s from the 449th Fighter Interceptor Squadron arrived on March 30, 1951.

Additional improvements, including lengthening the runway from 6,500- to 7,250-feet and a new Combat Alert Cell hangar, were accomplished in 1954. These upgrades were to ready Galena for the F-89 fighter, replacing the F-94. Later, F-102, F-106, and F-4E fighters would serve forward intercept duties at Galena. In October 1982, the arrival of the F-15 enhanced intercept capabilities. Between 1961 and 1991, aircraft from Galena made 198 intercepts of Soviet aircraft.

The 1989 mission statement summarizes operations at that time.

Galena Airport is a northern-most forward operating base of the 21st Tactical Fighter Wing (21TFW) of the Alaskan Air Command (AAC). It is one of two forward operating bases within AAC and is closest to the Soviet Union. Its primary mission is to function effectively as an alert base. Two F-15s are presently stationed in Galena. Their purpose is to intercept and observe unauthorized activities within United States air space. In peacetime, their function is to maintain air sovereignty; in wartime, it is to provide air defense. The number of intercepts has increased steadily over the past ten years and is expected to continue increasing. Currently, the F-15s are sent on intercept missions on the average of once a week. Base activities undertaken by the 5072 Combat Support Squadron (5072 CSS) and the 5099 Civil Engineering Squadron (5099 CEOS) at Galena provide support for this base mission.

The second mission at Galena is the Minimally Attended Radar (MAR)(#1771). The MAR is a joint use system between the Alaskan North American Air Defense (NORAD) and the Federal Aviation Administration (FAA). It provides long range radar for NORAD and Air Navigational Radar for the FAA.

Galena Airport is small and contained. The cantonment area, the primary area of military housing, administration, and operations, is 84 acres in size. In 1989, there were approximately 318 people on base, including 303 assigned officers and enlisted personnel on a one-year assignment, and 15 civilian personnel who are permanent employees and

live in Galena. All housing for military personnel is located on base.

Current Status: Galena Airport has been placed in caretaker status.

Historic Context: The intercept of Soviet aircraft in Alaska airspace was a critical element in the Cold War.

Significance: The intercept facilities are amongst the most significant military installations in Alaska.

Integrity: The Galena Airport is intact and well preserved.

National Register of Historic Places Status: A National Register eligibility determination is necessary.

Recommendations: The Air Force should conduct a cultural resources inventory and management plan for Galena. Special attention must be paid to the World War II Birchwood hangar. This hangar may be significant for its World War II architecture or Cold War use. The history of its use, especially 1951 to 1954 before the CAC was built, is needed to evaluate its significance.

Priority and Level of Preservation: This project has a high priority, so that a preservation management plan can be developed while the facilities are intact.

King Salmon Airport

The King Salmon forward alert airfield was originally constructed during World War II as a CAA, later becoming an Army staging field. The airfield and garrison were sited about 15 miles east of Naknek village and 290 air miles southwest of Anchorage. The airfield, at that time, was known as Naknek Field.

Construction included facilities for 93 officers and 1,280 enlisted men, motor repair shops, hangars, and support facilities. The two runways were 2,500-foot and 5,000-foot long. The garrison was built of Quonset huts, Cowin huts, and Theatre-of-Operations buildings.

After World War II, the airfield was transferred to the Civil Aeronautics Administration and later, in 1959, to the State of Alaska. The Alaskan Air Command began using Naknek as a forward operating base in 1948. The 57th Fighter Wing deployed F-80s to the base in September 1948. Following the F-80s were F-94s, F-89s, F-102s (1956), F-106s (1963), F-4Es (October 1970), and in October 1982, the F-15s arrived.

The airfield was renamed King Salmon in 1954. It has since served as a forward airfield to intercept Soviet flights approaching Alaska. From 1961 to 1991, aircraft from King Salmon intercepted 69 Soviet planes.

The World War II facilities have been removed. Base administration and housing are now located at the former AC&W station at Eskimo Creek. Only five buildings of the AC&W survive, one is used as an administration building, while the others are in use as shop buildings. In recent years, dorms, a composite PX, library, theaters, dining hall building, and officers quarters have been built. The alert hangar and aircraft support buildings are at the King Salmon airport. The runway is 8,500-feet long.

An Air Force mission statement in 1989 summarized the King Salmon operations. The 5071st Combat Support Squadron (CSS), of the 21st Tactical Fighter Wing, was the host unit for King Salmon, and administered the activities and maintenance of the installation. The 5071 CSS was redesignated the 643d Support Squadron and has been realigned under the 11th Air Control Wing. The mission was primarily concerned with the support of tactical fighter aircraft stationed at the airport, and communications associated with the minimally attended radar and other priority communications assets. The 5071st also supported the following tenant units: 616th Aerial Port Squadron (OL-C); DET 1, 1930th Communications Squadron; 11th Weather Squadron (OL-1); and staff from the 5099th Civil Engineering Operations Squadron (CEOS). The installation was home to approximately 300 Air Force personnel who served a one-year, unaccompanied tour-of-duty and about 15 civilian employers from the local area.

Current Status: The King Salmon Airport is being prepared for caretaker status under the control of the Alaska Air National Guard.

Historic Context: The intercept of Soviet aircraft in Alaska airspace was a critical element in the protection of airspace. The Soviet Union testing of Alaska defenses was a dangerous element in the Cold War; any intercept mission could have turned deadly.

Significance: The intercept facilities are amongst the most significant military installations in Alaska. King Salmon and Galena were on the aerial frontline.

Integrity: The King Salmon Airport is intact and well preserved.

National Register of Historic Places Status: A National Register eligibility determination is necessary.

Recommendations: The Air Force should conduct an inventory and permanent record of King Salmon as an intercept facility. In comparison with Galena, King Salmon is not as clearly representative, given the use of the former AC&W station. Galena has greater potential to recall the intercept mission.

Priority and Level of Preservation: This project has a high priority, so that a preservation management plan can be developed while the facilities are intact.

Ladd Air Force Base

Construction was started in 1940 for a cold weather air test station near Fairbanks. During World War II, Ladd Field was the transfer point for Lend-Lease aircraft enroute to the Soviet Union.

During the Cold War, fighter aircraft were assigned here. It was also a resupply base for DEW Line construction. Ladd Air Force Base was transferred from the Air Force to the Army on January 1, 1961, and renamed Fort Wainwright.

The original north garrison of the Cold Weather Experimental airfield, Ladd Field, has been registered as a National Historic Landmark. This Landmark status protects the World War II construction which was also used as Cold War facilities for early intercept and intelligence operations. This protection includes the hangars, control tower, headquarters, housing, and facilities used during the Cold War.

The newer area of the post is the south post, an Army expansion program of the 1950s. Construction here included permanent barracks, administrative buildings, and recreational facilities; these are discussed in the Fort Wainwright section. Current Status: Ladd Air Base became Ft. Wainwright in 1961 and continues as an active Army post.

Historic Context: The early Cold War interceptor fields demonstrate the transition from World War II to the Cold War. They were unique in the quickness of the transition. By 1948, steps had already been taken to create a well-planned and organized "frontline" against the newly perceived enemy attack route across the polar regions. These early airfields are examples of the initial but rough response to a changing world situation.

Significance: The former Ladd field, the North Post area, is a good representation of an early intercept field. It effectively illustrates intercept airfield design and construction. The significance is its association with the intercept operations of the Cold War.

Integrity: The contributing elements of the early Cold War interceptor airfields are the World War II features and the National Landmark Lend-Lease activities. Until 1948, Cold War defensive missions were conducted from World War II bases, using the wartime facilities. Given the reductions in personnel strength, only small portions of the World War II bases were required. Hundreds of Quonset huts and other temporary buildings were unneeded and removed. There was very little new construction, but some rehabilitation of the World War II buildings.

The critical features at the interceptor field were the runways, hangars, ground-control operations, and housing.

National Register of Historic Places Status: Ladd field, the north garrison of Fort Wainwright, is a National Historic Landmark, designated for its World War II Lend-Lease activities.

Recommendations: The Army must continue to protect the National Landmark area. Recommended activities for the remainder of the Army Post are those of Fort Wainwright - the Cold War installation discussed later.

Priority and Level of Preservation: The Army shall continue to consider the National Landmark status of its North Post area.

Marks Air Force Base, Nome

The World War II airfield at Nome included three runways constructed, under contract, by the CAA. There were two runways at the main field and a satellite field at Moonlight Springs. Garrisons were constructed at both airfields.

The main airfield was named Marks Field to honor Captain Jack Marks, who was shot down in Alaskan skies and died on July 17, 1942. Today, the former Marks Air Force Base is the Nome Airport. The State of Alaska, Department of Transportation, has removed the World War II structures which had also served during the Cold War. The former military base is no longer identifiable.

Current Status: The Marks Field is the present day Nome Airport.

Historic Context: Marks Field had a limited role in early intercept duties.

Significance: This airfield was important in World War II, but made only a small contribution to the Cold War defense.

Integrity: The site lacks integrity, the State of Alaska, Department of Transportation, has demolished all the facilities at Marks Field.

National Register of Historic Places Status: This airfield lacks the integrity necessary for National Register eligibility.

Recommendations: Record this base in the listing of Cold War facilities.

Priority and Level of Preservation: No preservation required.

Shemya Air Force Base

During the final days of the battle for Attu, the decision was made to survey nearby Shemya Island as an airfield site. An initial inspection was made by Alaskan Scouts in May 1943. They were followed by a detachment of the Fourth Infantry on May 21, 1943. Construction of the airfield was soon underway. A steel mat runway was ready to receive a C-53 on June 24. Later, Shemya's facilities were upgraded and the runway was paved to accommodate B-29s. The only B-29

ever to use the base was a special event on May 11, 1945. The B-29 also landed at Amchitka Island, the second B-29 capable Aleutian base.

The main World War II use of Shemya Island was for the bombing of Japanese bases in the Kuriles.

The most successful raid in the history of the Shemya-based 404th Bombardment Squadron was flown on 11 May 1945. A 12 plane flight, led by Capt Robert Wichman and Lt Charles Weigher, found a shipping isle, visible through a rare clear sky. Several direct hits were scored on a destroyer escort and much damage was done to shipping in the harbor of Katsoka Naval Base.

On June 19, 1945, Lt David Long and Lt Paul Clinkerbeard of the 404th flew 2700 miles over water as far as the island of Urruppu in the Kuriles on a photo reconnaissance mission. They were aloft 15 hours and 30 minutes. This ranked with the longest overwater combat mission flown anywhere in the world. The Japanese knew that the planes attacking them so regularly were Aleutian based, but they couldn't guess which island was their home base. (USAF, N-D. 5)

The Shemya airfield was kept open following the end of World War II. Fighter aircraft were assigned to Shemya, and its long runway was available for planes flying the Great Circle Route to Asia to land and refuel. The Air Force withdrew from Shemya Island in 1954 and the airfield was leased to Northwest Orient Airlines as a refueling stop on the Great Circle Route.

The Air Force returned in 1958. Extensive modernization and new construction has removed nearly all the World War II features. The runway was damaged in the 1964 earthquake and rebuilt. Two of the World War II Birchwood hangars have been demolished, and two survive. The Birchwood Hangars had their roofs raised during the Cold War to accommodate larger aircraft. World War II Quonsets have been replaced by permanent barracks. Known surviving World War II features are: a 90mm anti-motor torpedo boat (AMTB) gun displayed at the headquarters building, and two Birchwood hangars.

Shemya AFB was renamed Eareckson Air Force Base in 1993 and then Air Station in 1994. The naming honors Colonel William O. Eareckson, commander of the 11th Air Force Bomber Command during the Aleutian campaign in World War II and one of Alaska's most famous wartime aviators. Eareckson Air Station is headquarters of the 673rd Air Base Group, the 16th Space Surveillance Squad-

ron, and the 55th Operations Group. The base population in late 1993 was 550 active duty personnel and 15 civilians.

Current Status: Eareckson is an active air station, under consideration for reduced operations or closure.

Historic Context: Shemya Air Force Base was initially a refueling stop on the Great Circle Route to Asia. The base had little importance in early intercept duties. In the more recent Cold War years, the base was a critical intelligence operation.

Significance: Shemya has much greater significance as a critical intelligence operation, this is discussed later. The base's significance is its association with Cold War intelligence.

Integrity: The early Cold War activities at Shemya were performed with World War II facilities, including hangars, runway, air operations, and garrison. A survey has not been conducted to determine what survives at Shemya from the early Cold War years. It is believed that only two World War II Birchwood hangars used during that time period exist, other World War II construction has been demolished.

National Register of Historic Places Status: Shemya has not been evaluated for its National Register eligibility.

Recommendations: The Air Force, in consultation with the SHPO, should conduct a cultural resources survey of Shemya Island. Classified activities at the base will make the cultural resources survey more difficult.

Priority and Level of Preservation: Shemya is a priority B base.

AIR INTELLIGENCE

Eielson AFB

Eielson Air Force Base, formerly Mile 26, has played an important role in air intelligence. Aircraft from Eielson detected the first Soviet atomic bomb explosion. Numerous flights from Eielson collected air samples to monitor Soviet atomic bomb testing. U-2 aircraft flew from the Air Force Base in the early 1960s; more recently, RC-135 planes conducted aerial reconnaissance. Details on these activities are restricted, so there is little available information.

Current Status: In recent years there has been extensive construction in support of Alaska Air National Guard refueling missions.

Historic Context: Air intelligence at Eielson AFB was a central feature in the Alaska participation in the Cold War analysis of the Soviet Union's offensive capability.

Significance: Eielson AFB has been one of the most significant bases in Alaska. Aircraft from this base detected the first Soviet Union atomic bomb explosion.

Strategic bombers and U-2 intelligence aircraft also operated from this base. Eielson AFB is closely associated with the advent of the atomic fears, discovery of the Soviet bomb capability. Its significance is the association with the Cold War. Integrity: The intelligence operations, hidden in classified papers, are not clear. As these records are declassified, the functions of buildings and offices can be defined.

National Register of Historic Places Status: Cold War activities and facilities at Eielson require National Register determination.

Recommendations: The Air Force History Office should request declassification of intelligence records and then publish a history of this important base.

Priority and Level of Preservation: Eielson is a priority B base.

Shemya AFB, Intelligence Operations

The Air Force returned to Shemya in 1958 in support of Air Force strategic intelligence collection activities. The 5040th Air Base Squadron was activated on July 15, 1958, to provide base support. The Squadron was redesignated from an Air Force Station to an Air Force Base on June 21, 1968.

A Cobra Dane phased array radar was built here in 1977 to track Soviet missile testing on the Kamchatka Peninsula. RC-135 aircraft conducted aerial intelligence. There is also a seismic nuclear detection site.

Current Status: Eareckson Air Force Station is an active base with an uncertain future.

Historic Context: Shemya, during the Cold War, was the main base for intelligence gathering of the Eastern Soviet Missile Testing Program.

Significance: Intelligence operations from Shemya were central in our evaluation and knowledge of Soviet North Pacific missile testing. The significance is its association with intelligence gathering during the Cold War.

Integrity: Because of the lack of information regarding the classified missions, we do not know of the integrity of Shemya facilities.

National Register of Historic Places Status: Eareckson AS should be evaluated for National Register eligibility.

Recommendations: An Air Force inventory and evaluation of cultural resources at Eareckson AS is urged.

Priority and level of Preservation: As records are declassified, a history and preservation plan can be developed. The priority will be determined by base activities. The priority will be low unless the base is scheduled for drawdown or closure.

ACS, ALASKA COMMUNICATIONS SYSTEM

A Congressional Act of May 26, 1900, provided for the development of military telegraph and cable lines to serve both Alaskan military and civilian needs. The telegraph and cable systems were superseded by radio communications over the years. The operation of the Alaska Communications System (ACS) was assigned to the Army until July 1, 1962, when it was transferred to the Air Force.

The original stations were comprised of a small wood-frame building, usually 20-feet by 40-feet, and a radio transmitting tower. Over the years, more modern structures were built.

In 1971, the ACS system was sold to RCA, and is now owned by Alascom, Inc. Today, most of the sites are offices and operations centers for Alascom. Stations which are no longer needed have been sold or transferred to private ownership. For example, the Mentasta station, constructed in 1953, is now owned by the Mentasta Village Council. There were also repeater sites, submarine cable facilities, and family housing at the larger stations such as Anchorage, Fairbanks, and Juneau.

Current Status: Alascom and other private ownership.

Historic Context: The ACS was, until 1971, the main communications link between Alaska and the rest of the world. It was a military system to provide military linkage, but also offered communications services to the civilian community.

Significance: The ACS is a fine example of the close interdependence of the military and civilian life in Alaska into the 1970s. Alaska, probably more than any other state, owes its development to the military.

Integrity: The operations building and radio tower were the defining elements of these communications stations. Some of the early buildings remain in use today as Alascom offices. For example, the original station building in Unalaska survives as offices. However, the radio tower is gone, replaced by a satellite dish.

National Register of Historic Places Status: The ACS system has not yet been evaluated for National Register of Historic Places eligibility.

Recommendations: A history of communications in Alaska is needed. Alascom should be urged by the SHPO Cold War coordinator to document its history and include property inventory. This inventory would identify the historic structures. National Register nominations may be appropriate.

Priority and Level of Preservation: The ACS system should be a priority A effort.

TEMPORARY RADARS AND GROUND CONTROL INTERCEPT

In May 1950, temporary radars were emplaced at some of the future AC&W stations, including Bethel, Middleton Island, and other sites. These mobile radars

were removed with the completion of the AC&W stations. No trace of these operations could be found at known mobile radar sites at Bethel and Middleton Island.

Current Status: Abandoned.

Historic Context: The mobile radar systems and Ground Observer Corps were less than ideal warning systems, but were all that was available as the AC&W system was being developed and constructed.

Significance: Temporary radars were important transitory attempts at advance warning. The Korean War and fears of Communist attack added to their importance.

Integrity: The temporary radars, used from May 1950 to 1954, were mobile, located in vans. Once the vans were removed and the sites revegetated, there was little remaining to identify them. The vans and radars were the central elements.

National Register of Historic Places Status: There is not sufficient integrity for this site to be National Register of Historic Places eligible.

Recommendations: The temporary radar sites will be recorded in the inventory listing of Cold War sites.

Priority and Level of Preservation: The preservation recommended in recording these sites.

GROUND OBSERVER CORPS (GOC)

While the DEW Line and AC&W systems were under construction, a stopgap detection force was used. There were temporary radars and the Ground Observer Corps (GOC).

The United States GOC, some 250,000 civilians, was established in 1953. The citizen aircraft watchers spotted and reported aerial activity in their area. There were over one thousand volunteers in Alaska who kept track of all flights, telephoning or radioing information to military control centers.

It was GOC observers at Saint Lawrence Island who spotted the Soviet downing of a Navy P2V and then saved the crew. Many other northern tier and remote villages had GOC units. Their activities were recalled in an Alaskan newsletter, Skywatch.

The GOC was, to many citizen volunteers, an important obligation which they accomplished with resolve. One such GOC observer, John E. White, of Glennallen, joined the GOC in 1953. Mr. White, with the assistance of his wife, Marceline; mother-in-law, Mrs. Willard A. Bourdeau; son, Paul; and daughter, Clare, spotted aircraft above their roadhouse at milepost 166. They would record up to 19



Ground Observer Corps tower attached to former Glennallen roadhouse.

planes a day. To improve their spotting ability, Mr. White built an observation platform on the water tower attached to the roadhouse. Spotting was made easier in 1955 with the arrival of sound ranging sets which gave advance detection of aircraft.

When the DEW Line became operational in 1957 the GOC was shut down. Mr. White's observation platform still stands at the former roadhouse in Glennallen to recall civilian involvement in the Cold War defenses.

Current Status: Private ownership.

Historic Context: The GOC provided citizen observation of possible enemy penetration. It was a repeat of the observation activities of World War II.

Significance: This volunteer activity is a powerful example of citizen involvement in the defense of Alaska.

Integrity: Unknown.

National Register of Historic Places Status: This activity has not been evaluated for National Register eligibility.

Recommendations: The SHPO Cold War Coordinator should consider a Legacy proposal for the study of the GOC program.

Priority and Level of Preservation: This project is a priority A.

AIRCRAFT CONTROL AND WARNING (AC&W), LONG RANGE RADAR

The World War II air defense and radar net was oriented on the Aleutians. With the Cold War, the threat was seen as coming from the north. The Soviet Union, the new enemy, had a long-range bomber program and, in a few years, a nuclear capability.

Headquarters of the Air Force in Alaska was moved from Adak to Elmendorf. Temporary radars were established at Ladd AFB (now Fort Wainwright), Elmendorf AFB, King Salmon, Nome, and Gambell on St. Lawrence Island. Two aircraft control and warning (AC&W) groups were formed at Ladd and Elmendorf. The air defense system was expanded in 1952 and 1953 to meet the perceived threat from the north.

The radars in use directly after World War II were inadequate to meet the new danger. New and expanded radar coverage was required. To determine what was needed to protect the northern approach, a Joint Army-Navy Hoge Board, in 1946, studied the radar requirements. This board recommended 36 AC&W sites for Alaska, with 10 operating during peacetime and 26 on standby.

The Alaskan Air Command, unaware of the Hoge Board's actions, completed its own study in 1947. It called for 58 sites. This figure was revised in 1948 to 22 sites after the Air Force Supremacy Plan was released in early 1947 outlining the nation's air defense needs. The plan recommended 36 sites for Alaska. However, because of budget restrictions, only twelve sites were funded.

Contracts were awarded during the spring of 1950, and work was started shortly afterwards on constructing a line of coastal surveillance, interior ground control and intercept and control center radar sites known as the AC&W system. (11th Air Force, Office of History)

The construction of the radar sites, which began in 1950, turned into a monumental project, plagued by labor problems, transportation delays, and severe weather conditions. The men, both military and civilian, experienced many privations. A typical situation was experienced by members of a radar installation team from the 1st Communications Squadron, Griffis AFB, N.Y. One airman recalled at the time that:

The team has been living in tents with mud up to our knees, working 12 to 14 hours a day, and eating B rations (canned food). We had to haul the radar equipment seven miles over dangerous mountain roads to the tower. There were times we had to walk up the mountain due to lack of transportation. We have worked in snow, sleet and fog until we were either soaked to the skin or our hands got so cold that we could hardly work. Many times the team returned from their work too late for chow and had to eat peanut butter and jelly sandwiches. (Cloe, 1984:176)

With the Korean War, further improvements were funded. Two more ground control intercept stations were added, one at Sparrevohn and the other at Indian Mountain. Construction was started at these sites during the summer of 1951.

The AC&W stations went on duty in September 1951. The operational dates were: Murphy Dome, September 1951; Fire Island, September 1951; King Salmon (control center), November 1951; Tatalina, April 1952; Campion, April 1952; Cape Lisburne, February 1953; Cape Romanzof, April 1953; Tin City, April 1953; Northeast Cape, April 1953; Indian Mountain, November 1953; Sparrevohn, March 1954; Cape Newenham, April 1954.

More AC&W stations were added; Kotzebue and Ohlson Mountain started radar operations in February 1958, Fort Yukon in April 1958, Middleton Island in May 1958, Unalakleet in April 1958, and Bethel in July 1958.

In addition to the AC&W system, the Distant Early Warning (DEW) Line was constructed across northern Canada and Alaska during the mid-1950s. A prototype DEW Line AN/FPS-19 Search radar was installed at Barter Island in 1954 and tested. Construction of the DEW Line started shortly afterwards. Radars were located in Alaska at Point Lay, Wainwright, Point Barrow, Lonely, Oliktok and Barter Island. Initially, the Alaskan Air Command was responsible for the operations and maintenance of the Alaskan Sector. However, it was later transferred to the Air Defense Command which became responsible for the entire northern system. Radar surveillance data was passed to the Alaskan NORAD region Control Center. The Tactical Air Command assumed responsibility for the DEW Line when the Air Defense Command was inactivated. With the implementation of the North Warning Program, responsibility for the Alaska radars was transferred to the Eleventh Air Force on 1 October 1990. (The Alaskan Air Command had been redesignated the Eleventh Air Force in August 1990).

In January 1957, the Joint Chiefs of Staff approved the extension of the DEW Line into the Aleutians. Construction started shortly afterwards. The main site was at Cold Bay with auxiliary sites at Nikolski, Port Heiden, Port Moller, Cape Sarichef, and Driftwood Bay. Work was completed in early 1959, and the sites were turned over to AAC control on 1 May 1959. The Alaskan Air Command was responsible for the operations and maintenance of the sites. Unlike the contractor manned northern sites, the Aleutian sites were manned by military personnel. (11th Air Force, Office of History)

The summer of 1958 witnessed command changes. In August 1958, Alaska was incorporated into the North American Air Defense (NORAD) command. Three years later, the central control for the Alaskan NORAD was moved into the Region Control Center in Building 5-800. A new and improved center was built in this building in 1961.

A second center, covering the north, was located at Ladd AFB. When Ladd was transferred to the Army in 1961, the Elmendorf center served the entire state.

A labor-intensive and time-consuming manual system was used at the time to track and plot aircraft data. The command's attempts to obtain the computer-driven semiautomatic ground environment (SAGE) system used in other NORAD regions was not successful. However, an AN/FYQ-9 Data Processing and Display System was installed which provided a semiautomatic capability. It became operational in 1965, and remained in operation until the Alaskan Region Operations Control Center (ROCC) became operational in 1983. (11th Air Force, Office of History)

Military reductions in 1969 forced closure of the Fire Island NORAD control center and NORAD surveillance stations at Northeast Cape and Unalakleet. Also shut down was the Aleutian DEW Line extension, with Cold Bay left as a NORAD surveillance station. There were also dramatic cuts in aircraft assignments and the Nike Hercules batteries in the north were inactivated in 1970. With the closure of Fire Island, the station at King Salmon took over NORAD duties for all of the southern region.

Efforts to reduce personnel costs in Alaska led to more changes. Campion was converted from a NORAD control center to a ground-controlled intercept station in 1973. Kotzebue was changed from a ground-controlled intercept site to a surveillance station.

In the 1970s, satellite communications replaced the once state-of-the-art White Alice tropospheric scatter and microwave system. The obsolete White Alice stations were abandoned.

Not only was the tropospheric communications out of date but the AC&W system needed replacement; it was obsolete and too expensive to operate. In 1974, the Saber Yukon study recommended an overhaul of the Alaska AC&W system. The new operation was to be a joint use USAF-FAA Region Operations Center/Joint Surveillance System (ROCC/JSS). Also, the report suggested replacement of radars by minimally-attended radars. This was known for a few years as the Seek Igloo program.

By the mid-1980s, the Alaska system had been upgraded. An Alaskan Regional Operations Center became operational on September 15, 1983. This northern radar system ROCC included Canadian stations.

The goals of reduced manpower were also realized, with radar data remoted from 13 stations to the ROCC. Large numbers of operators and station personnel were no longer required. Large cuts in personnel strength followed. Only a few contract civilian personnel were needed at each site.

The final phase of the radar modernization phase was completed in 1985 with the change out of the radars for the AN/FPS-117 minimally attended radars (MARs). As denoted by the acronym MAR, the new radar required far less personnel than the old ones. Additionally, they had both a search and height-finding capability. The change outs were accomplished in:

<u>SITE</u>	<u>INSTALLATION</u>	<u>OPERATIONAL</u>
Kotzebue	Apr-Jun 1984	9 Jun 1984
Sparrevohn	Apr-Jun 1984	29 Jun 1984
Galena	May-Jul 1984	16 Jul 1984
Fort Yukon	Jun-Aug 1984	14 Aug 1984
Indian Mountain	Jul-Sep 1984	10 Oct 1984
Tin City	Aug-Sep 1984	24 Sep 1984
Cape Newenham	Aug-Oct 1984	16 Oct 1984
Tatalina	Apr-May 1986	24 May 1985
Cape Lisburne	May-Jul 1985	3 Jul 1985
Cold Bay	May-Jun 1985	6 Jul 1985
Cape Romanzof	Jun-Jul 1985	14 Jul 1985

Campion was closed in favor of locating the new radar to Galena where it would require less personnel to maintain. The old Cold Bay site was also closed, and a new site was built nearer the Cold Bay Airport. Both relocations were done to save personnel and transportation costs.

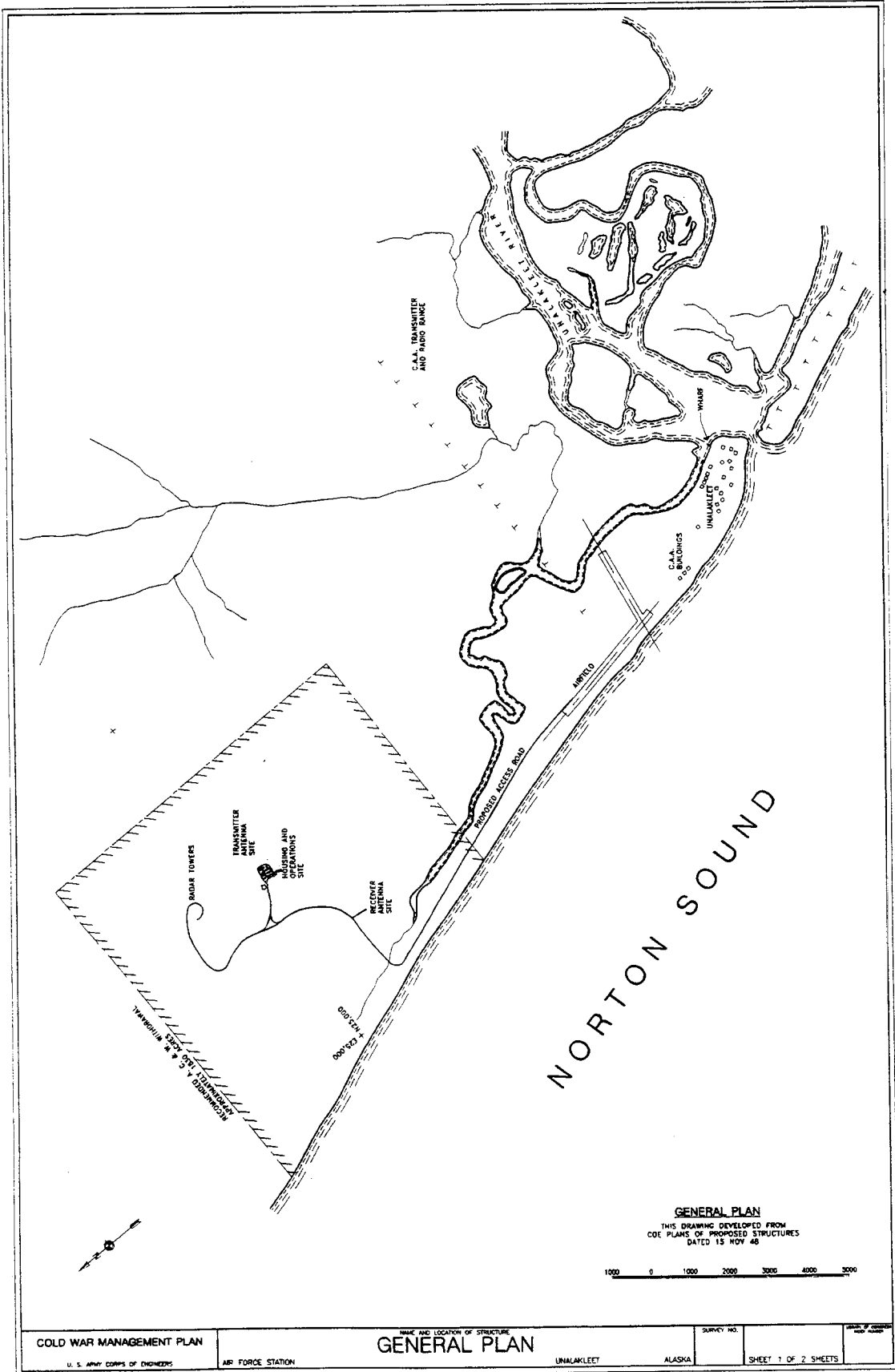
The FPS-117 intended for Murphy Dome was diverted to a demonstration program and the AN/FPS-97 surveillance was left in place. Because of the Seek Igloo program, Murphy Dome could no longer be used as an alternate command center. The Alaskan Air Command, as a replacement, acquired donated rail cars from the Alaska Railroad and converted them into an alternate command center. (11th Air Force, Office of History)

The new stations allowed for dramatic personnel reductions. Required personnel dropped from 1,500 to 370 civilian contractors in 1984. Further reductions, to 140 personnel, took place in 1985. There have been additional cuts since 1985.

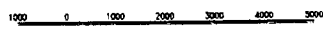
Plans for an Over-the-Horizon Backscatter (OTH-B) were developed, but the program was cancelled on February 29, 1991. It would have been one element of an integrated radar system, the North Warning System. The North Warning System included the DEW Line (equipped with new radars), new radars at the AC&W (now Long Range Radar Stations), use of E-3 AWACS planes, and better control and communications.

The North Warning System consisted of thirteen AN/FPS-117 Long Range Radars, four of which were in Alaska, and thirty-nine AN/FPS-124 Unattended Radars, three of which were in Alaska. The long range radars were installed during 1989-1990 at Point Lay, Point Barrow, Oliktok and Barter Island. The last installation was at Barter Island, which became operational on 15 November 1990. Installation and acceptance of the FPS-124 at Wainwright, Lonely and Bullen Point was programmed for 1994. (11th Air Force, Office of History)

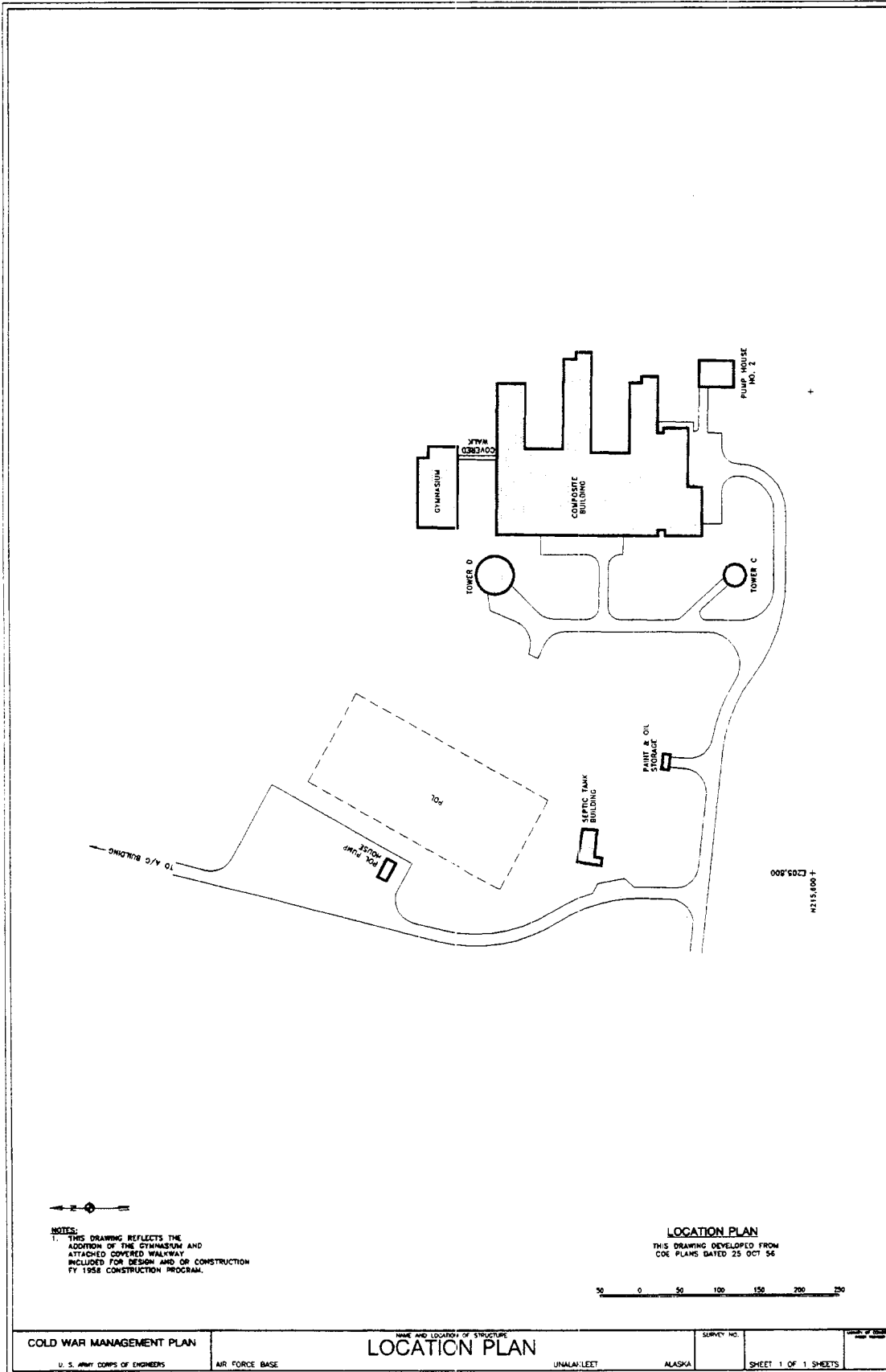
The following drawings are site plans of AC&W stations.



GENERAL PLAN
 THIS DRAWING DEVELOPED FROM
 COE PLANS OF PROPOSED STRUCTURES
 DATED 15 NOV 48



COLD WAR MANAGEMENT PLAN	NAME AND LOCATION OF STRUCTURE		SURVEY NO.	DATE OF CONSTRUCTION
	GENERAL PLAN			
U. S. ARMY CORPS OF ENGINEERS	AIR FORCE STATION	UNALAKLEET	ALASKA	SHEET 1 OF 2 SHEETS



COLD WAR MANAGEMENT PLAN

NAME AND LOCATION OF STRUCTURE
LOCATION PLAN

SURVEY NO.

U. S. ARMY CORPS OF ENGINEERS

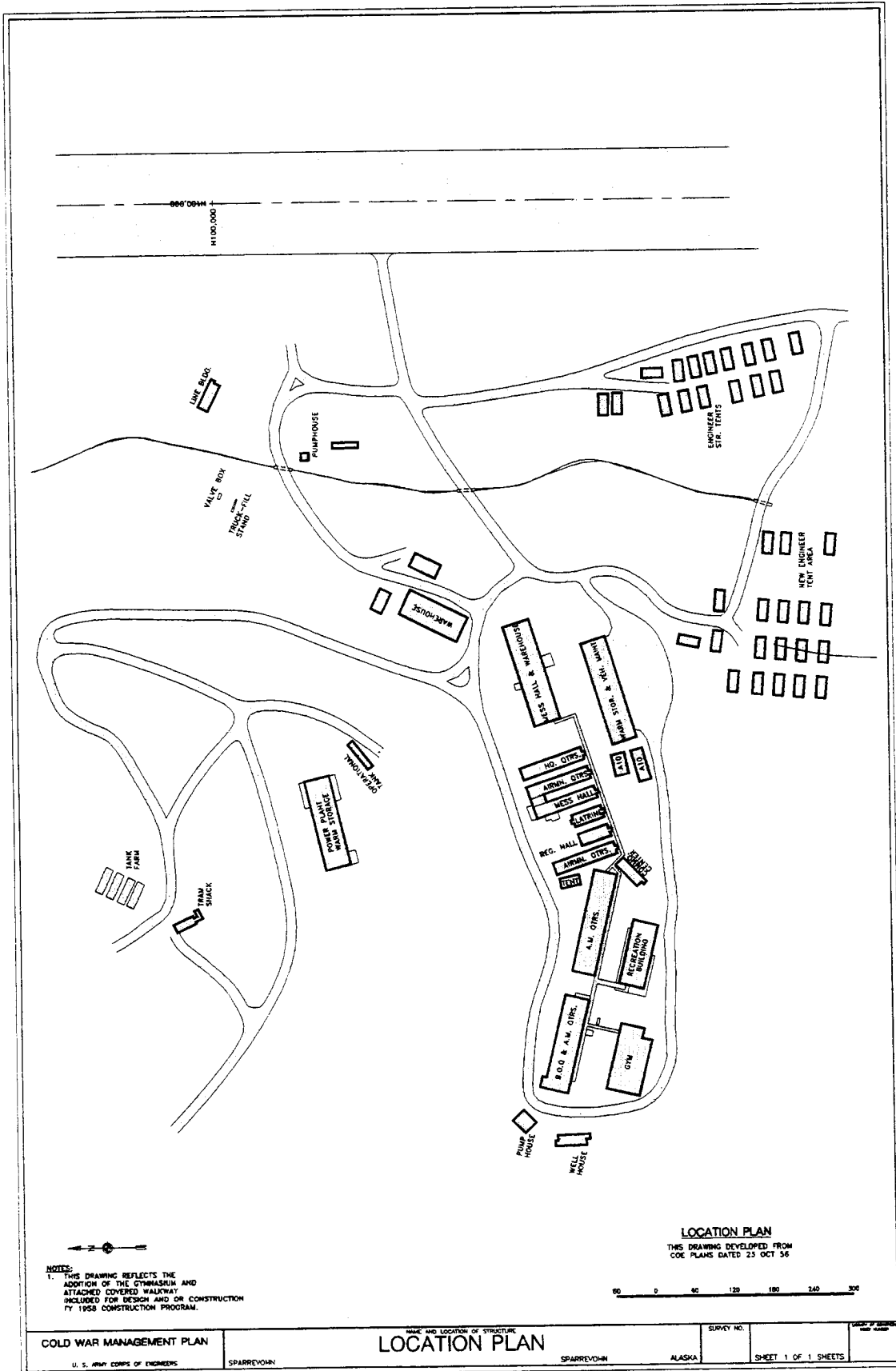
AIR FORCE BASE

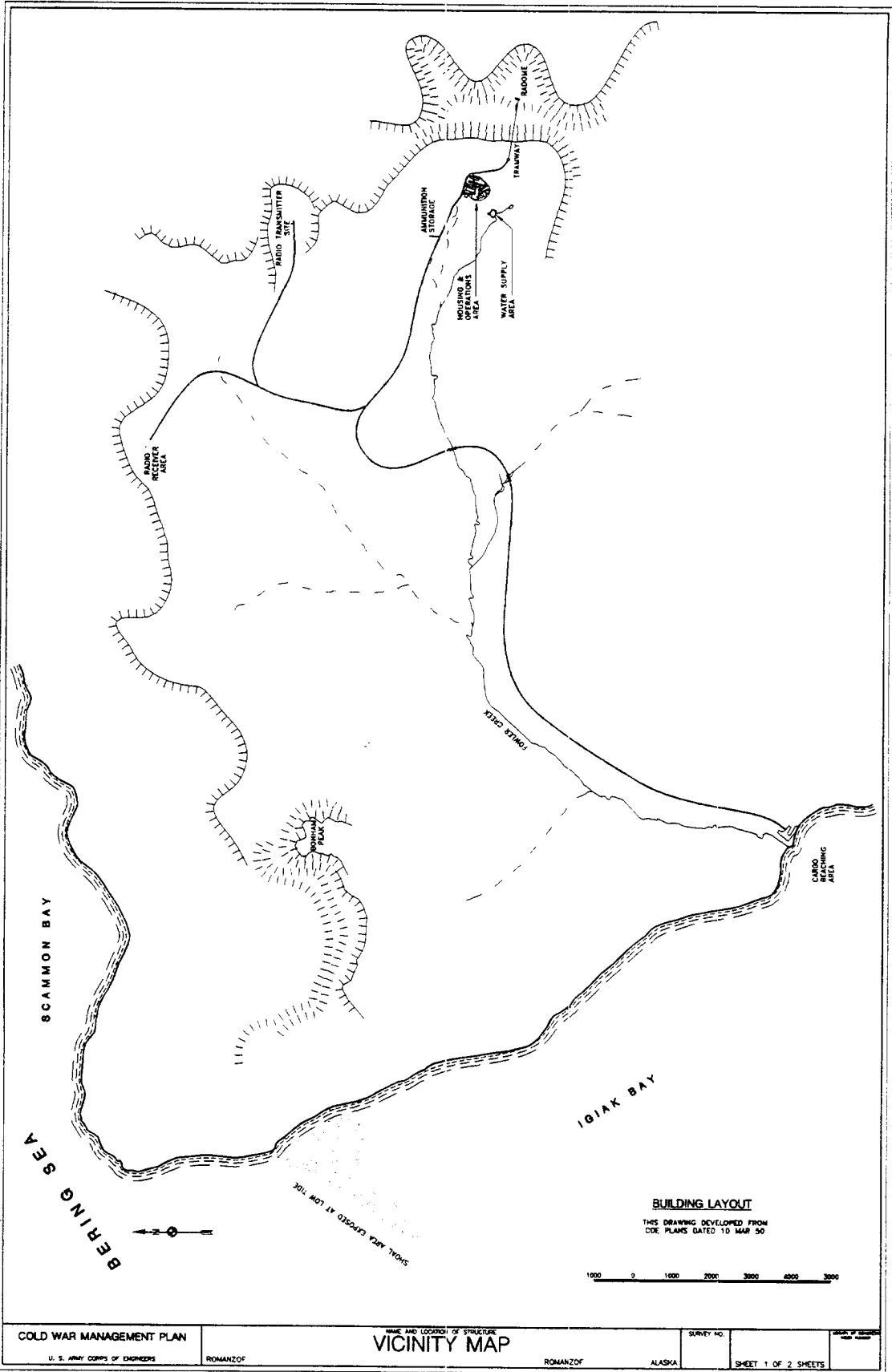
UNALASKA LEET

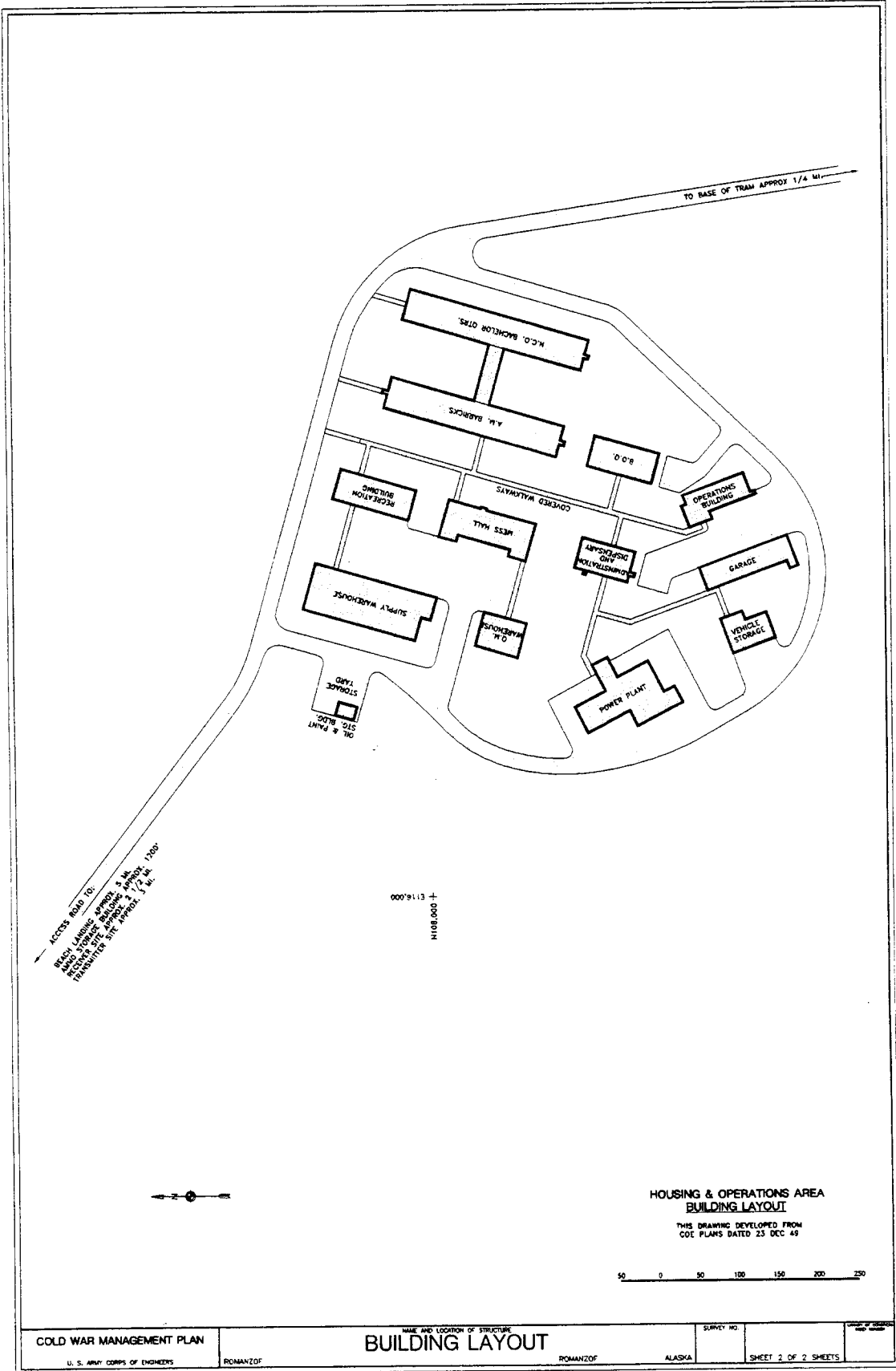
ALASKA

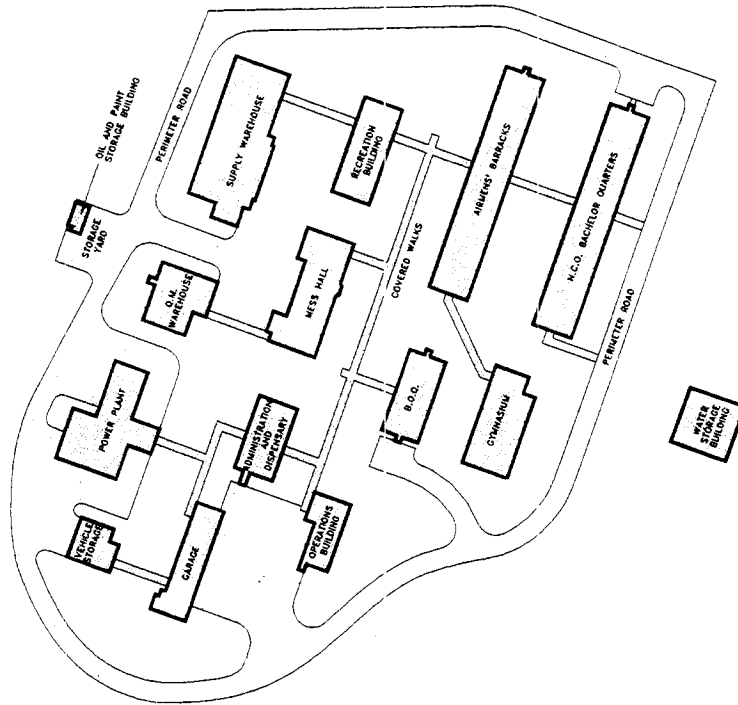
SHEET 1 OF 1 SHEETS











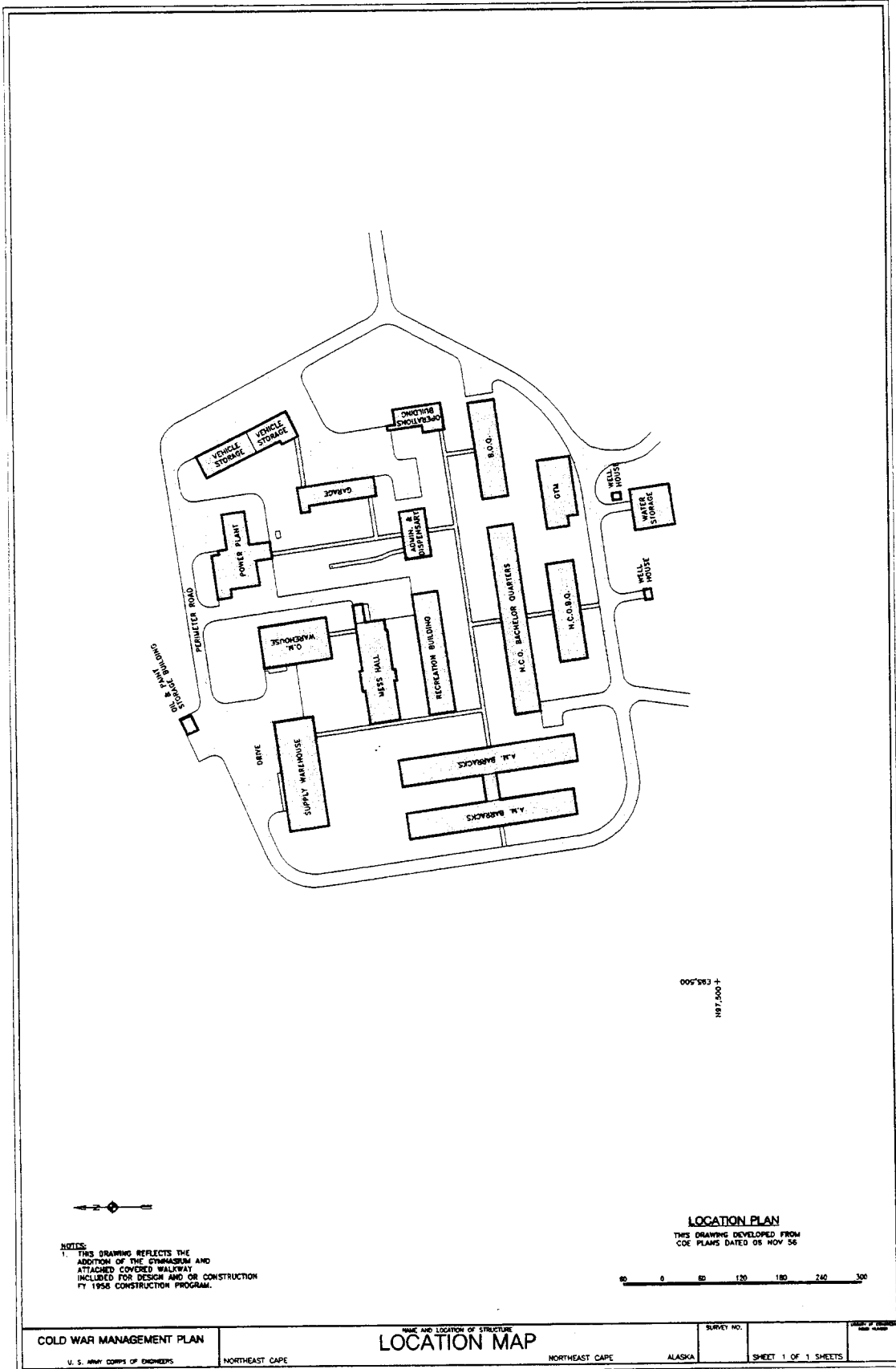
NOTES:
 1. THIS DRAWING INCLUDES PERMANENT TYPE STRUCTURES (GYMNASIUM AND ATTACHED COVERED WALK) AUTHORIZED FOR DESIGN AND OR CONSTRUCTION FY 1958 CONSTRUCTION PROGRAM.

BUILDING LOCATION PLAN

THIS DRAWING DEVELOPED FROM CDC PLANS ENTITLED "1956 CONSTRUCTION PROGRAM" DATED 24 OCT 56



COLD WAR MANAGEMENT PLAN U. S. ARMY CORPS OF ENGINEERS	NAME AND LOCATION OF STRUCTURE BUILDING LOCATION PLAN		SURVEY NO. ALASKA	SHEET 1 OF 1 SHEETS
	NEWENHAM	NEWENHAM		



NOTES:
 1. THIS DRAWING REFLECTS THE ADDITION OF THE GYMNASIUM AND ATTACHED COVERED WALKWAY INCLUDED FOR DESIGN AND OR CONSTRUCTION FY 1956 CONSTRUCTION PROGRAM.

LOCATION PLAN
 THIS DRAWING DEVELOPED FROM
 CDE PLANS DATED 08 NOV 56



COLD WAR MANAGEMENT PLAN

NAME AND LOCATION OF STRUCTURE
LOCATION MAP

U. S. ARMY CORPS OF ENGINEERS

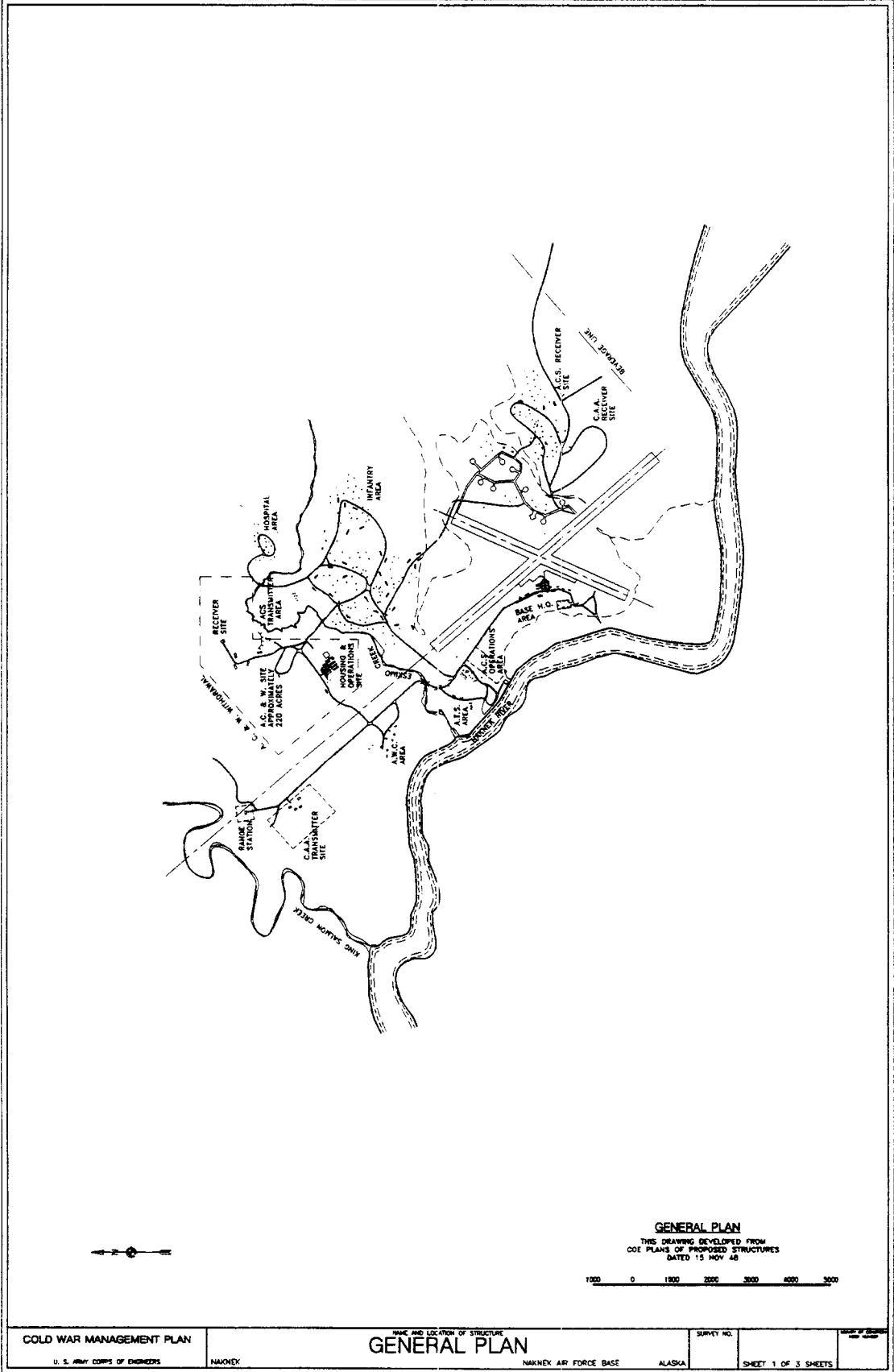
NORTHEAST CAPE

NORTHEAST CAPE

ALASKA

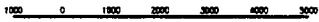
SURVEY NO.

SHEET 1 OF 1 SHEETS



GENERAL PLAN

THIS DRAWING DEVELOPED FROM
COE PLANS OF PROPOSED STRUCTURES
DATED 15 NOV 48



COLD WAR MANAGEMENT PLAN

U. S. ARMY CORPS OF ENGINEERS

NAME AND LOCATION OF STRUCTURE
GENERAL PLAN

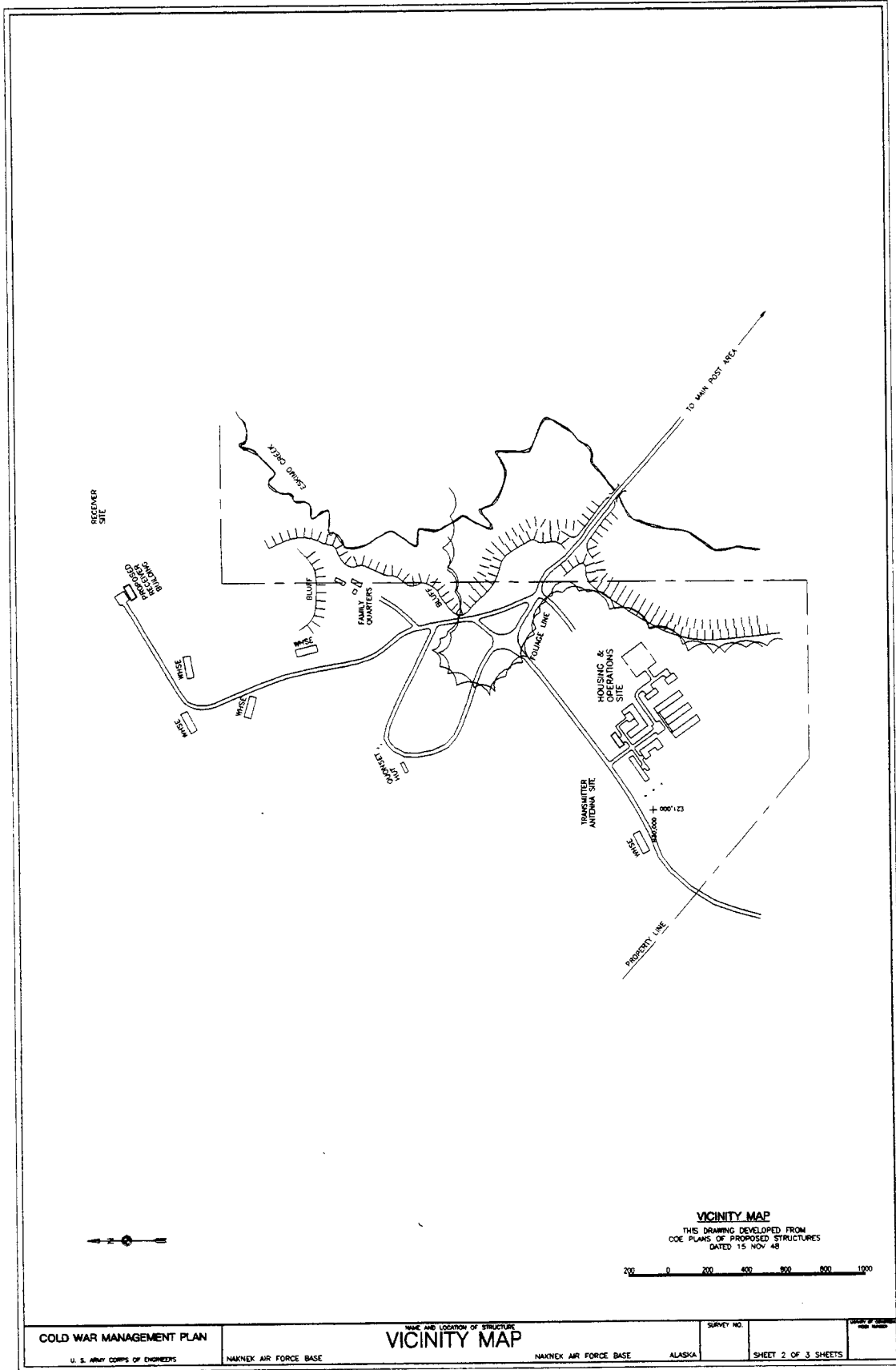
NAKNEK

NAKNEK AIR FORCE BASE

ALASKA

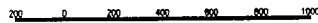
SURVEY NO.

SHEET 1 OF 3 SHEETS

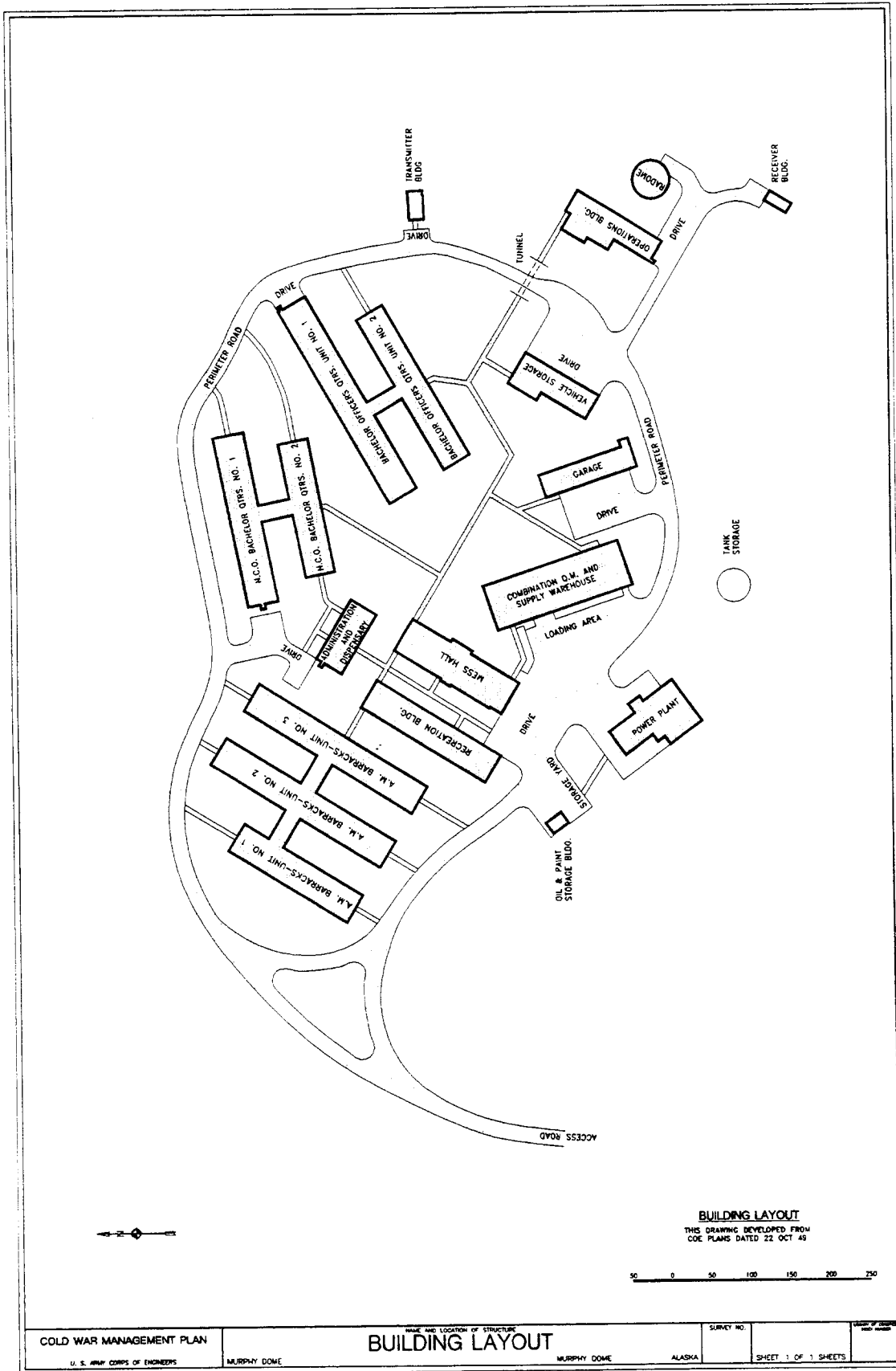


VICINITY MAP

THIS DRAWING DEVELOPED FROM
COE PLANS OF PROPOSED STRUCTURES
DATED 15 NOV 48



COLD WAR MANAGEMENT PLAN		NAME AND LOCATION OF STRUCTURE VICINITY MAP		SURVEY NO.	DATE OF SURVEY
U. S. ARMY CORPS OF ENGINEERS	NAKNEK AIR FORCE BASE	NAKNEK AIR FORCE BASE	ALASKA	SHEET 2 OF 3 SHEETS	



COLD WAR MANAGEMENT PLAN

U. S. ARMY CORPS OF ENGINEERS

MURPHY DOME

NAME AND LOCATION OF STRUCTURE
BUILDING LAYOUT

MURPHY DOME

ALASKA

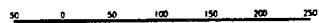
SURVEY NO.

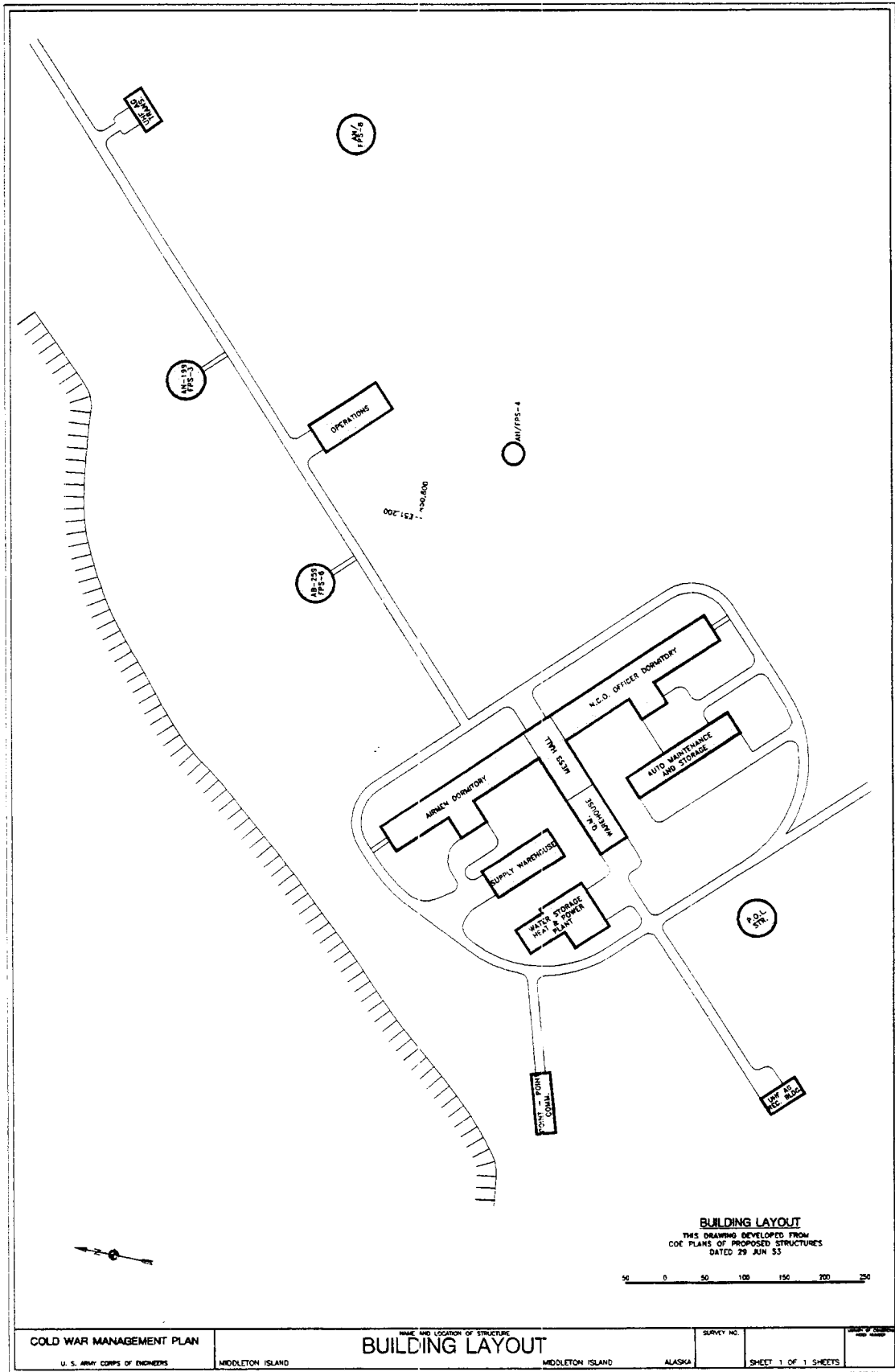
SHEET 1 OF 1 SHEETS

DATE OF SURVEY

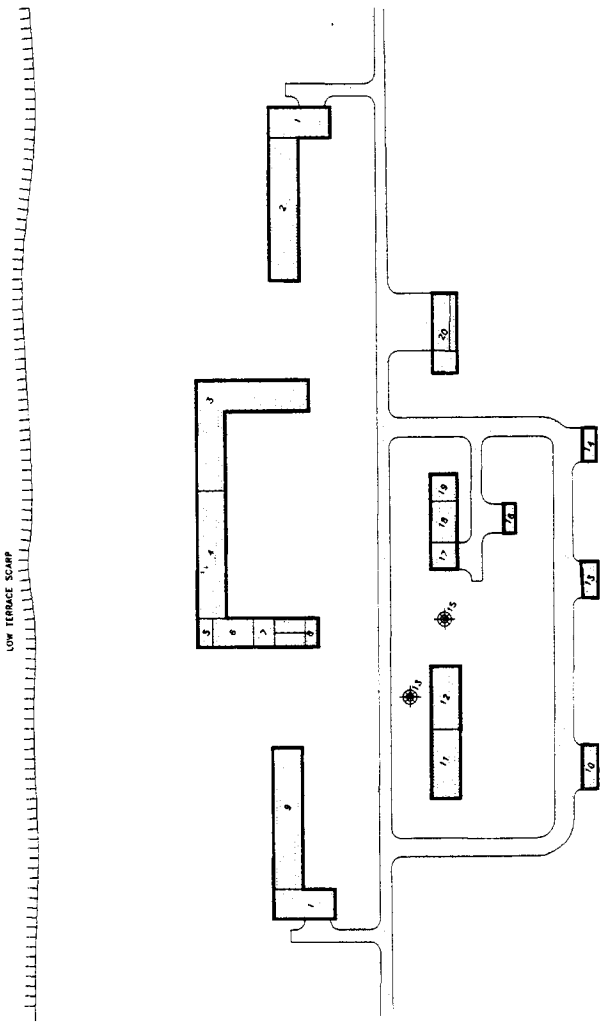
PROJECT NUMBER

BUILDING LAYOUT
 THIS DRAWING DEVELOPED FROM
 COE PLANS DATED 22 OCT 49





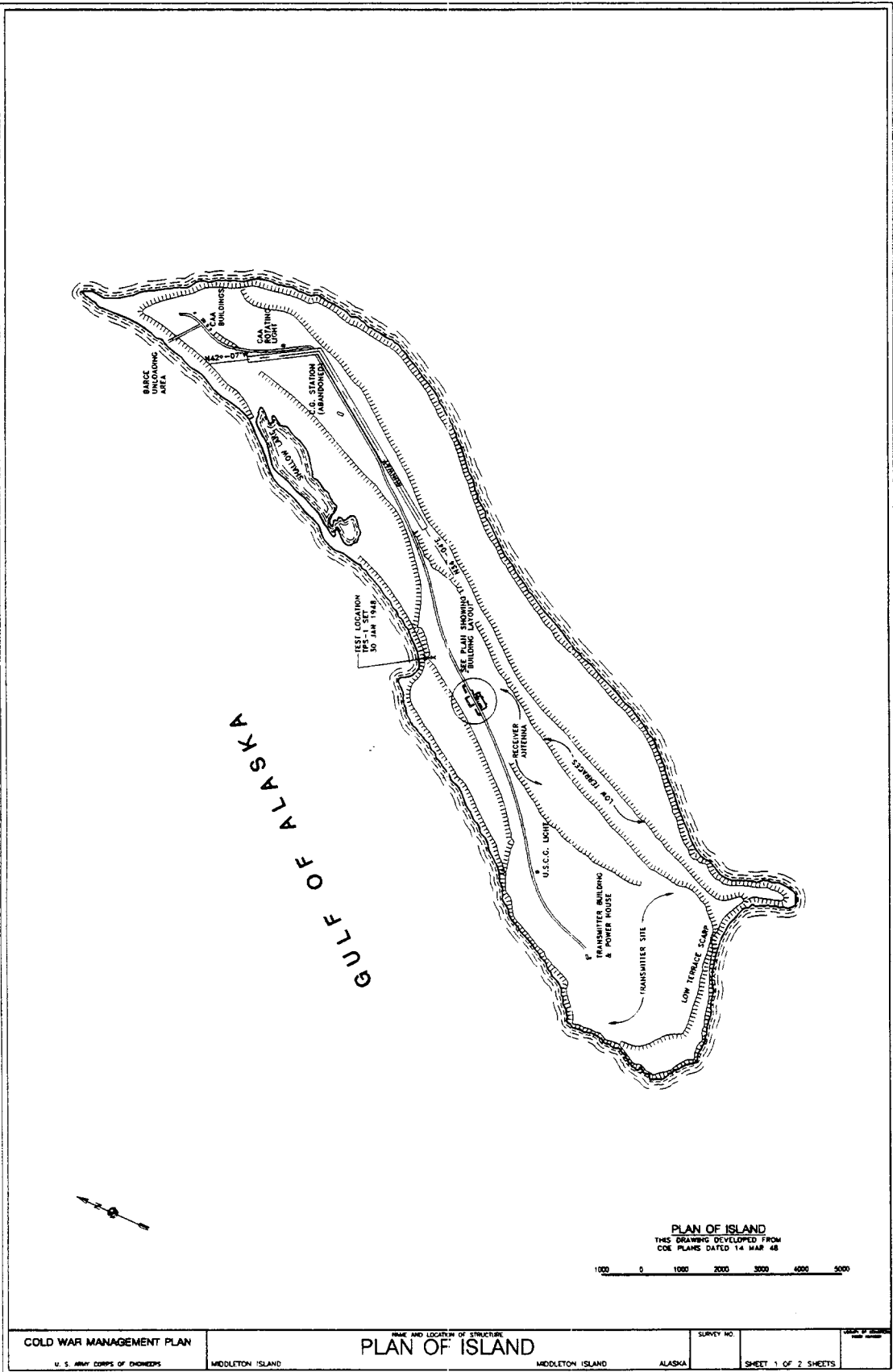
- 1 CLUB
- 2 NCO QUARTERS
- 23 NCO'S, TOP 3 GRADES
- 3 ENLISTED MEN'S QUARTERS
- INCLUDES NCO LOWER GRADES.
- 63 ENLISTED MEN (GRADE 4 & 7)
- 4 ENLISTED MEN'S RECREATION
- 5 OFFICERS' MESS
- 6 MESS
- 7 KITCHEN
- 8 STORAGE
- 9 B.O.G.
- 10 OFFICERS (ASSIGNED)
- 4 OFFICERS (VISITING)
- 10 P.O.L.
- 11 RECEIVER
- 12 RADAR OPERATIONS
- 13 60' HIGH TOWER - SEARCH RADAR
- 14 UNHEATED STORAGE
- 15 25' HIGH TOWER - FINDER RADAR
- 16 HEAT & POWER
- 17 SUPPLY
- 18 ADMINISTRATION, C.O., & MEDICAL
- 19 SICK WARD
- 20 GARAGE & SHOPS



NOTES:
 1. THESE FACILITIES INCLUDED IN FY 1949 BUDGET.
 2. QUARTERS AND LIVING FACILITIES BASED ON STRENGTH OF 100 OFFICERS AND MEN AS PER INSTRUCTIONS FROM DEPUTY CHIEF OF STAFF, COMMUNICATIONS, ALASKAN AIR COMMAND.

BUILDING LAYOUT
 THIS DRAWING DEVELOPED FROM
 COE PLANS DATED 14 MAR 48

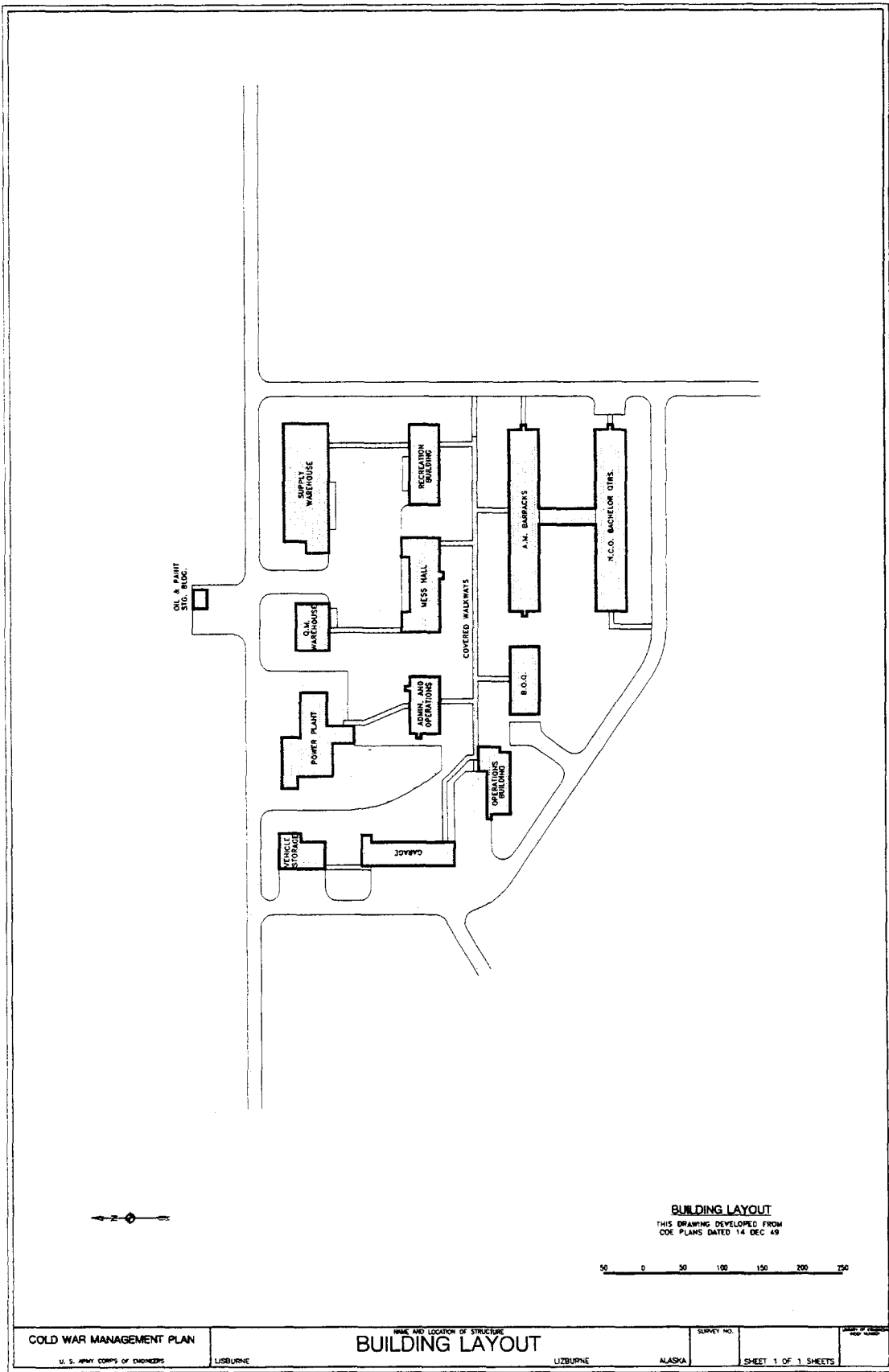
COLD WAR MANAGEMENT PLAN	NAME AND LOCATION OF STRUCTURE		SURVEY NO.	SHEET 2 OF 2 SHEETS
	U. S. ARMY CORPS OF ENGINEERS	MIDDLETON ISLAND		



PLAN OF ISLAND
THIS DRAWING DEVELOPED FROM
CDE PLANS DATED 14 MAR 48

1000 0 1000 2000 3000 4000 5000

COLD WAR MANAGEMENT PLAN	NAME AND LOCATION OF STRUCTURE		SURVEY NO.	DATE OF SURVEY
	U. S. ARMY CORPS OF ENGINEERS	MIDDLETON ISLAND		
PLAN OF ISLAND			SHEET 1 OF 2 SHEETS	



COLD WAR MANAGEMENT PLAN

U. S. ARMY CORPS OF ENGINEERS

LISBURNE

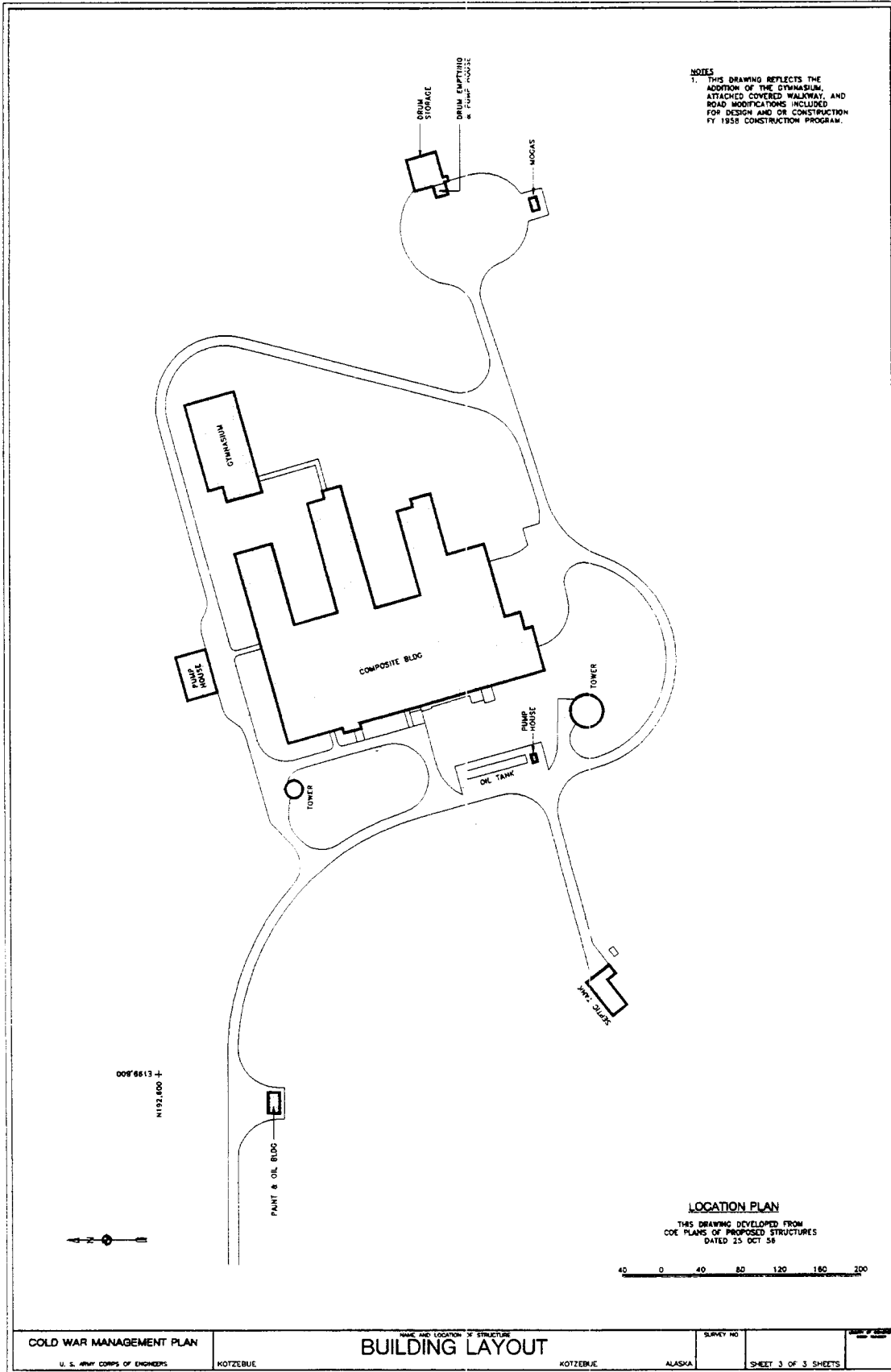
NAME AND LOCATION OF STRUCTURE
BUILDING LAYOUT

LISBURNE

ALASKA

SURVEY NO.

SHEET 1 OF 1 SHEETS



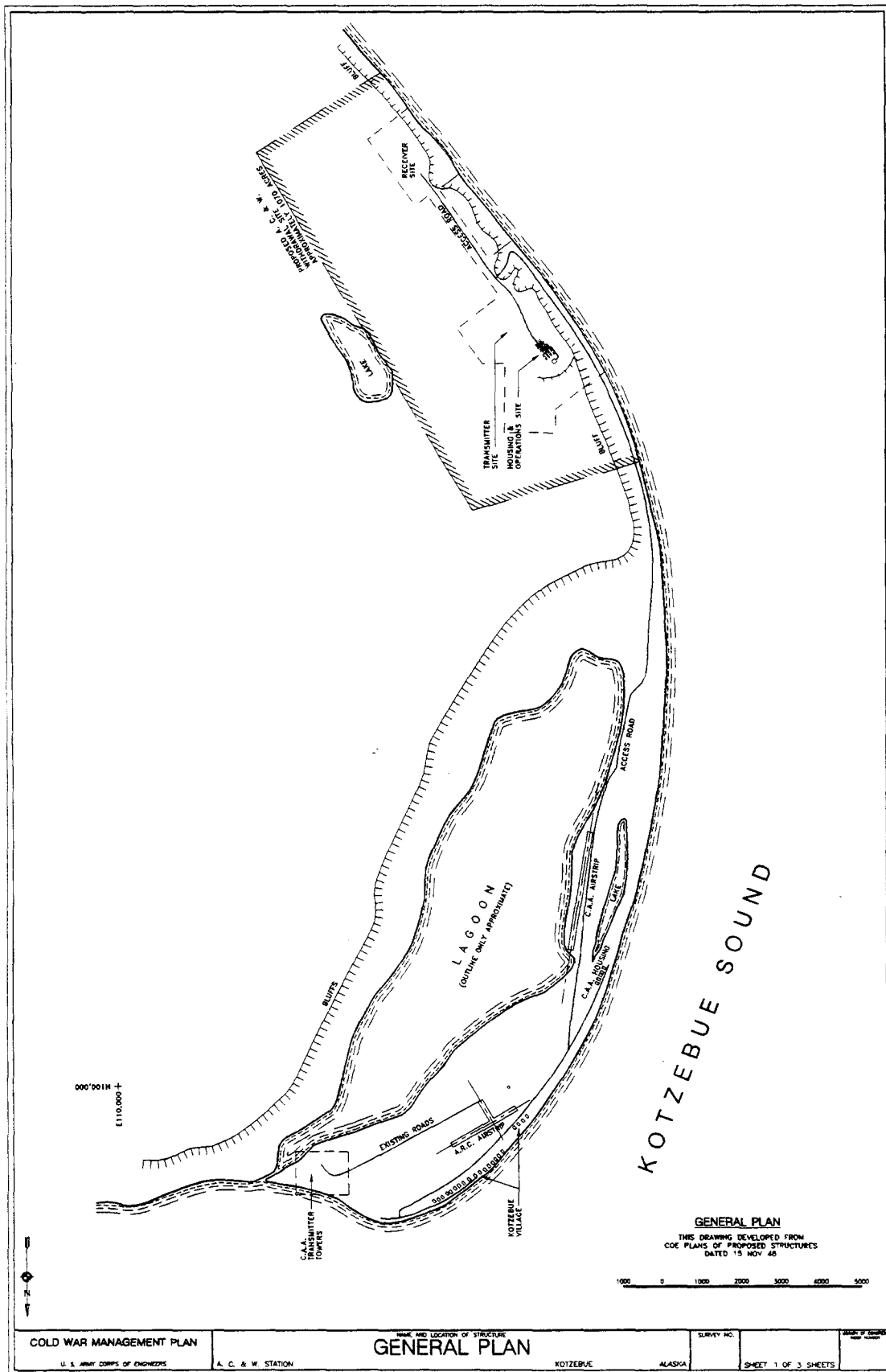
NOTES
 1. THIS DRAWING REFLECTS THE ADDITION OF THE GYMNASIUM, ATTACHED COVERED WALKWAY, AND ROAD MODIFICATIONS INCLUDED FOR DESIGN AND OR CONSTRUCTION FY 1958 CONSTRUCTION PROGRAM.

LOCATION PLAN

THIS DRAWING DEVELOPED FROM COE PLANS OF PROPOSED STRUCTURES DATED 25 OCT 58



COLD WAR MANAGEMENT PLAN U. S. ARMY CORPS OF ENGINEERS	NAME AND LOCATION OF STRUCTURE BUILDING LAYOUT		SURVEY NO.	SHEET 3 OF 3 SHEETS
	KOTZEBUE	KOTZEBUE, ALASKA		



COLD WAR MANAGEMENT PLAN

U. S. ARMY CORPS OF ENGINEERS

A. C. & W. STATION

NAME AND LOCATION OF STRUCTURE
GENERAL PLAN

KOTZEBUE

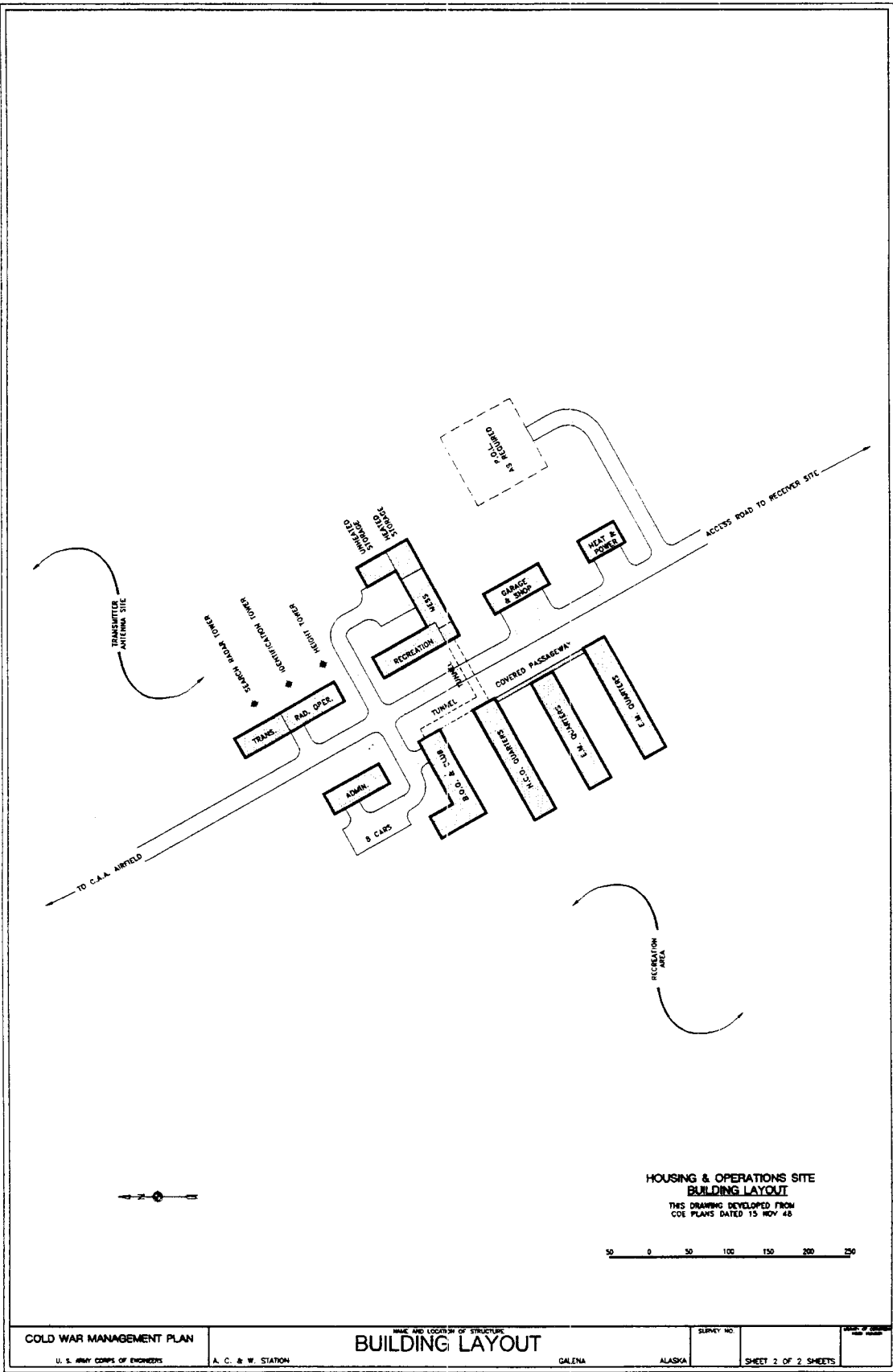
ALASKA

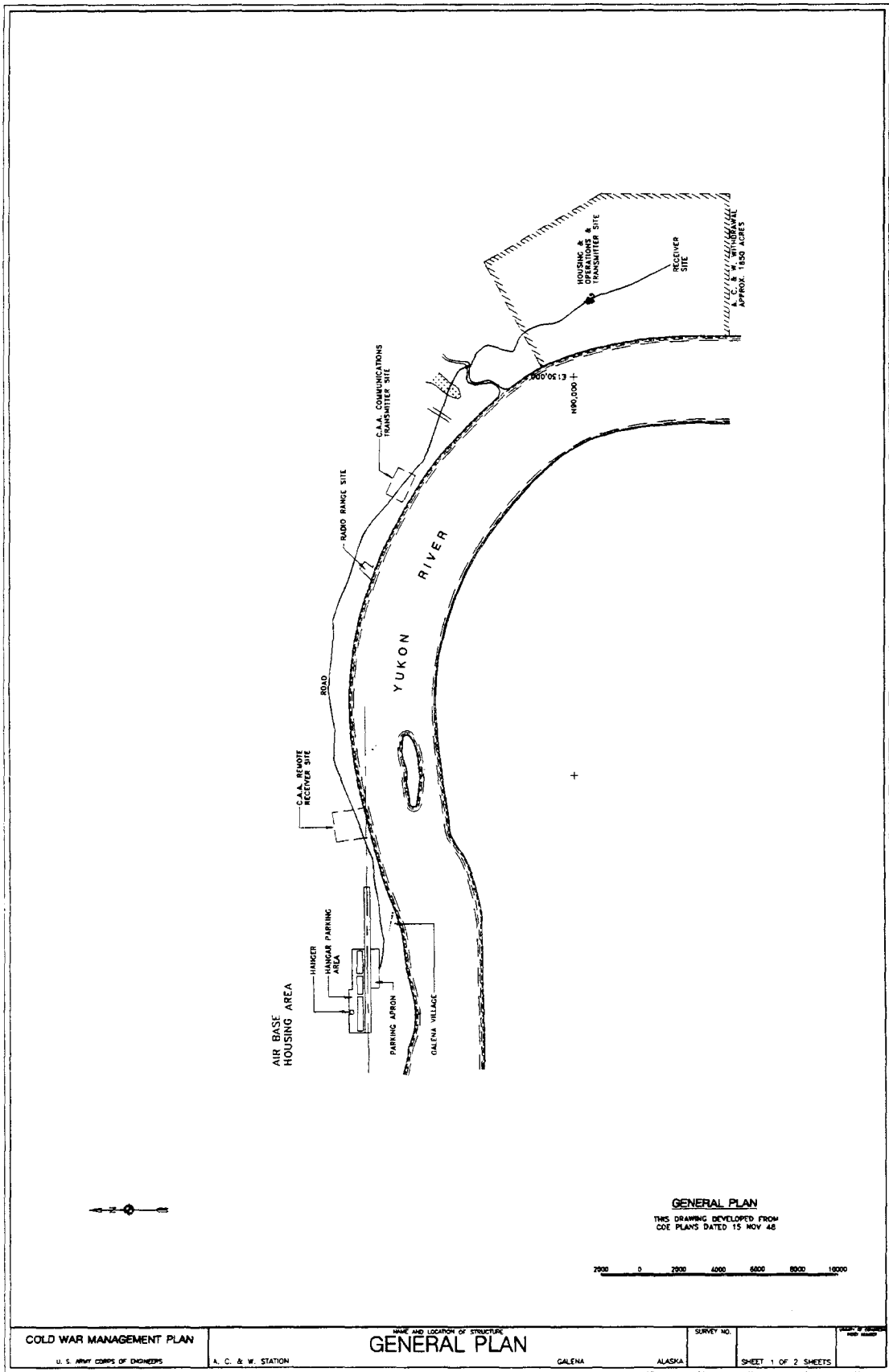
DATE OF SURVEY

NOV 48

SHEET NO.

1 OF 3 SHEETS





COLD WAR MANAGEMENT PLAN

NAME AND LOCATION OF STRUCTURE
GENERAL PLAN

U. S. ARMY CORPS OF ENGINEERS

A. C. & W. STATION

GALENA

ALASKA

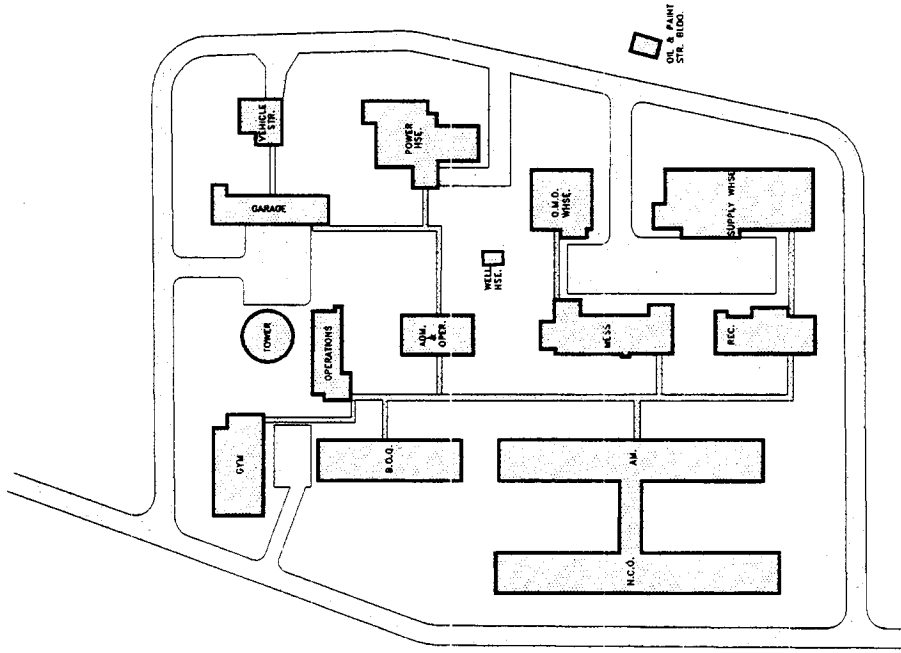
SURVEY NO.

SHEET 1 OF 2 SHEETS

GENERAL PLAN
 THIS DRAWING DEVELOPED FROM
 COE PLANS DATED 15 NOV 48



NOTES:
 1. THIS DRAWING REFLECTS THE ADDITION OF THE GYMNASIUM AND ATTACHED COVERED WALKWAY INCLUDED FOR DESIGN AND OR CONSTRUCTION FY 1958 CONSTRUCTION PROGRAM



LOCATION PLAN

THIS DRAWING DEVELOPED FROM COE PLANS DATED 6 NOV 56



COLD WAR MANAGEMENT PLAN

U. S. ARMY CORPS OF ENGINEERS

AIR FORCE STATION

NAME AND LOCATION OF STRUCTURE
LOCATION PLAN

CAMPION

ALASKA

SURVEY NO.

SHEET 1 OF 1 SHEETS

DATE OF SHEET

Bethel

The Bethel AC&W started operations in 1958. The layout at this site was a composite building plus shop and storage building. The facility was closed on May 15, 1963, and the Bureau of Indian Affairs (BIA) was granted a permit to use the site and buildings. The BIA established its Bethel headquarters in the composite building. The GSA transferred the property to the BIA on October 29, 1964.

Since the transfer, the BIA has put new siding on the buildings and made interior alterations. The radar towers are standing, but have not been reused. When the site was inspected in 1992, the buildings were boarded-up and in good condition, but not in use.

Current Status: The BIA headquarters is closed and is scheduled for conveyance to the Yukon Kuskokwim Health Corporation.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System (LRRS).

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Bethel were critical in the development of an aircraft "trip wire." The AC&W are significant for their association with Cold War advance warning.

Integrity: The central features of an AC&W are its radars, radar towers, operations facilities, housing, and recreational buildings. Alterations to the Bethel buildings have seriously impacted its integrity. The radar towers are however an important reminder of its AC&W use.

National Register of Historic Places Status: The AC&W system has not yet been investigated for National Register of Historic Places eligibility.

Recommendations: A National Register determination of the AC&W system is appropriate. Also, consideration should be given to the preservation of the most intact AC&W facility, Fort Yukon.

Priority and Level of Preservation: Bethel AC&W is a priority A site. The site will be investigated by the Alaska District in 1995.

Campion

The Campion AC&W, eight miles southeast of Galena Airport, was one of only two AC&W stations named to memorialize someone. It was originally named Galena II and later renamed Campion in honor of Lieutenant Allen J. Campion, an F-94 radar operator who was killed in a crash at Galena in November 1950.

Shipping of construction materials and equipment was by barge. The shipments first arrived at Galena, via the Yukon River, and were then trucked to Campion.

The station was resupplied annually from 1951 until its closure. The resupply was originally known as Mona Lisa, and in 1967 the name was changed to Cool Barge (11th Air Force, Office of History).

Campion AFS became operational in April 1952 as a ground controlled intercept site. It was initially equipped with an AN/FPS-3 Search Radar. A labor-intensive and time-consuming manual system was used at the time to track and plot aircraft data. An AN/FPS-8 Height Finding Radar was added in mid-1955. Controllers at the site could direct fighters launched from other bases in Alaska to intercept aircraft picked up on the site's radars. Campion's activities were integrated into the overall Alaskan air defense system managed by a control center at Elmendorf Air Force Base.

During the first half of 1953, Campion was changed from a ground controlled intercept site to an air defense direction center (later NORAD Control Center). It exercised control over Tatalina AFS (until July 1959), Cape Lisburne AFS, Northeast Cape AFS (closed in 1969) and Tin City AFS. Kotzebue and Unalakleet were added in 1958. Unalakleet was inactivated in 1969. Campion reverted back to a ground controlled intercept site on 13 June 1973 as the result of an Alaskan NORAD Region study to reduce manpower costs. The coastal sites and Campion were realigned under the Murphy Dome NORAD Control Center. This status continued until 1985, when Alaskan Air Command elected to close Campion and place a Minimally Attended Radar (MAR) at Galena.

The Campion site closed on 30 September 1985. Plans were made to turn buildings not needed elsewhere by the Air Force and the land at Campion over to the Bureau of Land Management. Although Campion was later considered as a possible location for an Over-the-Horizon Backscatter (OTH-B) radar, it was rejected because not enough land was available at the site. (11th Air Force, Office of History)

Campion had the standard building schedule, with twenty-one wood-frame buildings connected by covered walkways. There were also three radar domes and fuel tanks. Campion was one of ten original Aircraft Control and Warning (AC&W) sites constructed in the early 1950s as a permanent air defense system. This station was active from 1952 to 1984. Communications were provided by a high frequency radio system until 1958 when a White Alice Communications System (WACS) became operational.

In 1977, the Alaskan Air Command (AAC) implemented a contractor operating program in order to reduce remote tours. There were 76 military positions eliminated. The WACS system was also replaced with a commercially owned and operated satellite communications system (Alascom). Installation of a Joint Surveillance System (JSS) in 1982 allowed further staff reductions. In 1984, a Minimally Attended Radar (MAR) unit was installed at Galena AFS, and the Campion installation was deactivated and the facility was demolished. The buildings were buried and the surface area was graded smooth.

Current Status: This station has been demolished and the site restored.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar system.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Campion were critical in the development of an aircraft "trip wire."

Integrity: Demolished, site restored.

National Register of Historic Places Status: The station has been bulldozed and buried, so it is probably not eligible for the National Register of Historic Places.

Recommendations: We recommend listing the location of this demolished facility in the listing of Cold War facilities.

Priority and Level of Preservation: No preservation required.

Cape Lisburne

Construction of the Cape Lisburne station was completed at the end of 1952 and it became operational in February 1953, reporting by high frequency radio to Murphy Dome. A White Alice station replaced the high frequency radio in 1957. The White Alice was replaced by satellite communications in 1979.

The building schedule at Lisburne was the standard AC&W plan of twenty-one buildings. One difference is that Cape Lisburne had a tramway between the operations and administration, and the radar site as it was separated into two camps. The radars were on the mountain top upper camp and administration, support, and

runway were at a lower camp. Cape Romanzof and Sparrevohn were the other facilities with divided operations, lower and upper camps.

In 1977, the Alaska Air Command contracted for the operation of the AC&W system. This contracting reduced the 711th Aerospace Defense Squadron personnel strength at Cape Lisburne from 93 to 14. In 1982, a Joint Surveillance System (JSS) was installed, with radar data transmitted via satellite from the various stations to the Anchorage Regional Control Center. All military personnel were recalled from the station in 1983, leaving only contractor personnel. A MAR was operational in 1985, reducing operating personnel to 12. In 1993, a staff of six operated the it as a Long Range Radar Site.

Only three boarded-up buildings of the original White Alice and AC&W station survive.

Current Status: Active LRRS as part of the Alaska Radar System of the North American Air Defense (NORAD) mission.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the LRRS.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Cape Lisburne were critical in the development of an aircraft "trip wire."

Integrity: Cape Lisburne has only three structures of the original AC&W station. It does provide some hints of the progression of the Alaska radar systems, although, the original Cape Lisburne station has been largely demolished. It is no longer representative of the history of frontline radar in Alaska. The MAR geodesic domes identify it as a modern Long Range Radar Site. The dome construction is discussed in the next section.

National Register of Historic Places Status: The dome construction is important, but is of recent origin. A determination of National Register eligibility is needed.

Recommendations: This facility should be identified in the listing of Cold War facilities. Describe the MAR geodesic dome construction in the Alaska District history.

Priority and Level of Preservation: Describe dome use in the history of the Alaska District, Army Corps of Engineers, which is currently in progress.

Cape Newenham

Construction of the Cape Newenham station was started in 1950, but was not operational until April 1954. The remote mountainous site created numerous construction obstacles, delaying its completion. When completed, it was the only station with the radar site completely dependent upon a tramway.

The Cape Newenham LRRS is part of the Alaska Radar System of the North American Air Defense (NORA) mission. It is located on a small peninsula on the southwest coast of Alaska, about 450 miles southwest of Anchorage. The site is divided into an upper and lower camp connected by a tramway and road. An air-strip is located at the lower camp and gravel roads connect the buildings to the camp. The upper camp contains a terminal tramway and radar facility. The composite building here is a concrete structure, different than the geodesic dome at Cape Romanzof.

The 794th Aerospace Defense Squadron used the adjacent White Alice communications network to relay data to King Salmon until 1979 when satellite communications became available. RCA was contracted in 1977 to operate the station, relieving 80 military personnel. During 1975-1978 there was major reconstruction. A Minimally Attended radar was installed in 1984, with further personnel reductions. The White Alice and AC&W stations have been demolished. A radar tower, the tramway, and a few AC&W structures have survived.

Current Status: Cape Newenham is an active LRRS.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Cape Newenham were critical in the development of an aircraft "trip wire."

Integrity: The AC&W has been largely demolished.

National Register of Historic Places Status: The AC&W facility is probably not National Register eligible given the level of demolition.

Recommendations: A National Register determination of the AC&W system is appropriate. Consideration should be given to the preservation of the most intact AC&W facility.

Priority and Level of Preservation: This is a priority A site.

Cape Romanzof

Cape Romanzof became operational in April 1953, under the control of the 795th Aerospace Defense Squadron reporting to King Salmon RCC.

Cape Romanzof LRRS (Long Range Radar Site) is located 535 miles west of Anchorage on a small peninsula which extends into the Bering Sea. The original building plans were the same as Cape Lisburne. Two camps were built and connected by a road and a tramway. The lower camp provided the necessary support facilities including housing, power plant, and bulk fuel storage. The upper camp

had the radars and White Alice. One radome at the upper camp remains in service for the LRRS. A runway serving the installation is located approximately four miles away from the lower camp. The nearest town is Hooper Bay which is 15 miles south. Hooper Bay is not accessible to Cape Romanzof by road.

Cape Romanzof was one of the original 10 Aircraft Control and Warning (AC&W) sites in the Alaska Air Defense System. The installation construction was finished in 1952 and operations began in 1953. Communication was initially provided by high frequency radio. This was replaced, in 1958, by a White Alice Communications System (WACS). In 1979, a commercially owned and operated communications system (Alascom), using a satellite earth terminal, replaced the WACS operations. This became a contractor-operated facility in 1977, enabling elimination of 81 military positions, leaving 14 personnel in operations. A Joint Surveillance System (JSS), which allows the transmission of radar and beacon data to the Elmendorf Regional Operations Control Center (ROCC) by satellite, eliminated the remaining military positions in 1983. Completion of the Minimally Attended Radar (MAR) unit further reduced staff levels.

The White Alice and AC&W were demolished in 1988. The tramway is no longer used.

Current Status: Cape Romanzof is an active LRRS as part of the Alaska Radar System of NORAD, with approximately six assigned station personnel.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Cape Romanzof were critical in the development of an aircraft "trip wire."

Integrity: Cape Romanzof has lost its AC&W and White Alice features through demolition.

National Register of Historic Places Status: The AC&W elements have been lost, making it not eligible.

Recommendations: Record in the listing of Cold War facilities.

Priority and Level of Preservation: Recording the former AC&W should be done.

Fire Island

Fire Island, located at the entrance to Knik Arm, off Point Campbell, Anchorage, was selected as the site for the Southern Region Control Center (RCC). Construction was started in 1950 and completed in September 1951. The building list and design was identical to Murphy Dome, but the site layout was altered to fit the terrain. The Air Force demolished the Fire Island facility in 1985.

Current Status: The Fire Island RCC has been demolished.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as a Long Range Radar.

Significance: The AC&W system indicates the important function of enemy aircraft identification. Fire Island was the Southern Region Control Center functioning to collect and interpret data from other stations.

Integrity: This station has been demolished and the site restored.

National Register of Historic Places Status: The site is probably not National Register eligible.

Recommendations: A National Register determination of the AC&W system is appropriate. Consideration should be given to the preservation of the most intact AC&W facility.

Priority and Level of Preservation: Fire Island is a priority A project.

Fort Yukon

During the 1950s, the Alaskan Air Command (AAC) built a permanent air defense system in Alaska. The initial system included five coastal surveillance sites and five ground controlled intercept sites. The AAC later expanded the radar coverage both north and south of the original sites, with one of the two new northern sites being Fort Yukon. In 1958, the installation construction was completed and it became operational as a ground controlled intercept site.

Fort Yukon AFS became operational as a ground controlled intercept site in April 1958. Controllers at the site could direct fighters launched from other Air Force bases in Alaska to unidentified and hostile aircraft tracked by the site's radars. Fort Yukon's activities were integrated into the overall Alaskan air defense system managed by a control center at Elmendorf Air Force Base.

The site was initially equipped with the AN/FPS-3 Search and AN/FPS-6 Height Finder Radars. Fort Yukon AFS was later equipped with the AN/FPS-93 Search and AN/FPS-90 Height Finder Radars. The later was a modified version of the AN/FPS-6.

The AN/FYQ-9 Semiautomatic Data Processing and Display System became operational in July 1965, eliminating the need to pass aircraft track data manually.

Initially, communications were provided by the Air Force-owned and contractor-operated White Alice Communications System, a

system of tropospheric scatter and microwave radio relay sites constructed during the mid-1950s to provide reliable communications to AAC's aircraft control and warning system. The Fort Yukon White Alice site was activated on 25 November 1957. It was inactivated on 10 July 1980 and replaced by an Alascom-owned satellite earth terminal as part of an overall Air Force plan to divest itself of the obsolete terrestrial system and replace it with a commercially owned and operated satellite communications system. The Fort Yukon site was the last White Alice site inactivated.

On 1 October 1977, AAC, after a trial period, implemented a site support contract with RCA Services as part of an Air Force-wide effort to reduce remote tours. Sixty-nine military positions were deleted at Fort Yukon AFS. The remaining 27 were primarily in operations.

The Fort Yukon AC&W is comprised of a two-story wood-frame composite building with barracks, recreation, operations, and shop and storage buildings.

A new steel operations LRRS building has been built at Fort Yukon. The former AC&W composite building is standing and boarded-up. Also, the White Alice power plant building, billboard antenna, and the original water and sewage systems are intact. One of the two original radar domes was modernized, and the MAR was installed in 1985. Only the foundation remains from the other original radome. Personnel needs dropped from about 200 to 12 in 1985 with the MAR, and later equipment improvements reduced staff to five. Fort Yukon is part of the Alaska Radar System of the North American Air Defense (NORAD) mission.

Current Status: The AC&W station is abandoned but standing. Fort Yukon is an active LRRS located adjacent to the former AC&W.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: This is a good representative example of the 1950s AC&W stations. It effectively illustrates the radar detection and remote location operations. The station is significant for its association with the Cold War and advance radar warning.

Integrity: The Fort Yukon AC&W is intact, surviving are the administration, barracks, and recreation buildings. At least one original radome survives.

National Register of Historic Places Status: The Fort Yukon AC&W is potentially eligible for the National Register. The AC&W system is poorly docu-

mented in comparison to the other major systems which have been HAER documented.

Recommendations: The Air Force should inventory and evaluate Fort Yukon AC&W and the AC&W system. The Fort Yukon AC&W should be considered for reuse. The Cold War coordinator at the SHPO office and the Air Force could work together to locate a practical new use for this well preserved facility. The station could be a summer camp, retreat center, or other reuse.

Priority and Level of Preservation: Fort Yukon is a priority A effort.

Indian Mountain

Indian Mountain LRRS is located in interior Alaska, about 195 miles northwest of Fairbanks. The community of Hughes is located 15 miles west of Indian Mountain. The installation is not connected to Hughes by road and is accessible only by air.

In 1951, the Indian Mountain AC&W location was selected to be one of two additional ground controlled intercept sites needed to cover radar gaps in interior Alaska. It became operational in November 1953. Initially, a high frequency radio system supplied communications. The system proved unreliable due to atmospheric disturbances, and a White Alice Communications System (WACS) was activated in 1958. This terrestrial system eventually became obsolete and was replaced in 1979 by an Alascom-owned satellite earth terminal. In 1977, as part of an Air Force-wide effort to reduce remote tours, a site-support contract was implemented with RCA Services, eliminating 103 military positions at Indian Mountain AFS. Installation of a Minimally Attended Radar (MAR) unit in geodesic domes in 1984 allowed for further reductions in the number of personnel needed to operate the facility. Indian Mountain AC&W was operated by the 708th Aerospace Defense Squadron, who reported to Murphy Dome RCC.

Buildings at Indian Mountain were of the type used at other sites. Most of the AC&W and all the White Alice structures were demolished in 1987. All that remains of the AC&W is a collapsing wood-frame weather station building.

Current Status: Indian Mountain remains an active LRRS as part of the Alaska Radar System of NORAD, with six contractor personnel assigned to the installation.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Indian Mountain were critical in the development of an aircraft "trip wire."

Integrity: The Indian Mountain AC&W installation has been demolished.
National Register of Historic Places Status: Probably not National Register eligible.

Recommendations: A National Register determination of the AC&W system is appropriate. Consideration should be given to the preservation of the most intact AC&W facility.

Priority and Level of Preservation: Indian Mountain AC&W is a priority A facility.

King Salmon

The King Salmon AC&W was completed in October 1951, one month after Fire Island and Murphy Dome. While it was not as easy to reach as the Fairbanks and Anchorage sites, it was located at the airport, near the village of Naknek, which provided limited services to ease construction problems.

The building program at King Salmon included one enlisted barracks, one NCO bachelor quarters, BOQ, administration and dispensary building, operations building, recreation building, heat and power plant with water treatment and storage, covered passageways, radar domes, and fuel tanks. The King Salmon AC&W was operated by the 705th Aerospace Defense Squadron.

The present day U.S. Air Force base housing and administration occupies the AC&W site at Eskimo Creek. The operations activities are located at the airport and include a CAC (alert hangars) and war materials buildings. The AC&W structures have been largely demolished for the construction of new structures. There is a modern steel composite building containing the base exchange, theater, library, club, and dining hall. There are also new dormitories and officers quarters. Five buildings of the AC&W survive; one is the administrative headquarters and four are used for base maintenance purposes (buildings 615, 616, 624, and 636). Two radar domes survive, one for radar and the other in new use.

Current Status: King Salmon is an active LRRS of the Alaska Radar System of NORAD.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in services as a Long Range Radar Site.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as King Salmon were critical in the development of an aircraft "trip wire."

Integrity: A few buildings of the original AC&W facility survive at King Salmon. One of the two original radar domes was modernized and the MAR was installed. The tower for the other radome was converted to another use after the

dome was removed. New construction has invaded the original complex and destroyed its character.

National Register of Historic Places Status: King Salmon requires evaluation as an intercept facility for National Register eligibility. The AC&W facility is no longer identifiable.

Recommendations: An inventory and assessment of the King Salmon facility is required.

Priority and Level of Preservation: King Salmon is a priority A facility.

Kotzebue

Kotzebue LRRS is located approximately 450 miles west-northwest of Fairbanks. The community of Kotzebue is four miles north of the AFS and is connected by a road. The community of Kotzebue can be reached only by air or sea.

The Kotzebue AFS was originally built as a temporary Aircraft Control and Warning (AC&W) site to fill a radar coverage gap while two permanent sites were being built at Cape Lisburne and Tin City. Kotzebue was equipped with a limited



The Kodiak AC&W was completed as a tracking station.

search radar when it first became operational in 1950. In 1954, the Alaskan Air Command (AAC) decided to convert the site to a permanent station. Construction of the facility was completed in 1958. The site operated as a GCI (ground control intercept site) until 1973 when it was converted to a NORAD surveillance station. A White Alice station provided communications from 1957 until 1979 when a commercial satellite earth station replaced it.

A contractor took over operation in 1977 as part of an Alaskan Air Command program to reduce the number of remote tours. Sixty-nine military positions were eliminated and 16 operations positions remained. In 1982, installation of Joint Surveillance System (JSS) equipment was completed, enabling radar and beacon data to be transmitted via satellite to the Elmendorf Regional Operations Control Center (ROCC). This left only contractor personnel to maintain the radar.

A MAR was installed in 1984, allowing for deactivation, with the exception of the radome. Two contract technicians operate the site and live in nearby Kotzebue. The AC&W composite building is standing.

Current Status: The Kotzebue LRRS is part of the Alaska Radar System of NORAD. The AC&W station is abandoned, the Air Force has scheduled demolition.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Kotzebue were critical in the development of an aircraft "trip wire."

Integrity: This site is in a very deteriorated condition. The Air Force has scheduled demolition of the facilities and restoration of the site.

National Register of Historic Places Status: Since this site retains little of its original character, it is probably not eligible for the National Register.

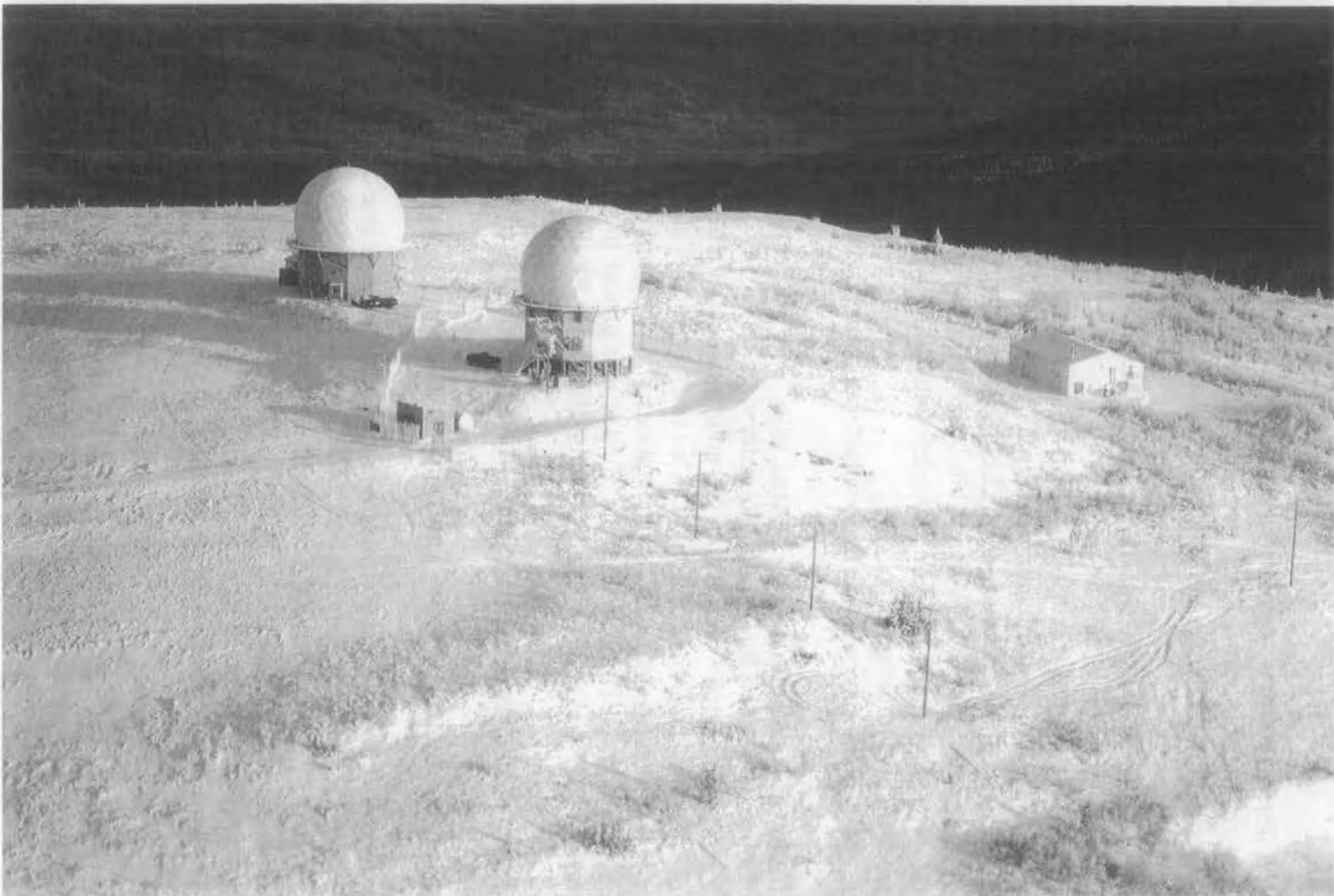
Recommendations: A National Register determination of the AC&W system is appropriate. Consideration should be given to the preservation of the most intact AC&W facility.

Priority and Level of Preservation: Kotzebue AC&W is a priority A facility.

Middleton Island

A second group of six AC&W stations were authorized in 1955. They were sited at Middleton Island, Ohlson Mountain (Homer), Bethel, Fort Yukon, Unalakleet, and Kotzebue.

The Middleton Island AC&W was collocated with the White Alice, with construction starting in 1955. The White Alice opened on November 29, 1956, while the AC&W was declared operational in May 1958.



Murphy Dome AC&W installation after removal of the buildings. (photograph by Brian Allen)

A different design was employed for this later radar program. The buildings were two-story, wood-frame. There was an administration building, dormitory, transmitter building, receiver building, power plant, and radar domes.

The Middleton AC&W was inactivated on May 15, 1963.

Current Status: Privately owned.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: The AC&W and White Alice at Middleton Island are important as they were early stations. The first telephone call to use the WACS was transmitted through Middleton Island.

Integrity: The station is relatively intact, but there has been some vandalism and deterioration.

National Register of Historic Places Status: The Middleton Island complex has not been evaluated for National Register eligibility.

Recommendations: This station is a good example of an AC&W. Options other than demolition should be sought. This station remains representative of the wood-frame, two-story AC&W operations. Preservation of AC&W facilities should focus on Fort Yukon since Middleton is private property; they are the last representative examples. The Air Force should HAER document one of these stations.

Priority and Level of Preservation: Middleton Island is a priority A site.

Murphy Dome, Northern Control Center

Murphy Dome, located 25 miles west of Fairbanks, was one of the easier AC&W stations to build because it is accessible by road. Construction was started in 1950 and was completed the following year, with the facility becoming operational in the spring of 1952. Murphy Dome was originally equipped with Search and Height Finding Radar of the 744th Aerospace Defense Squadron. In 1977, the Air Force contracted for operation of the facility, thereby eliminating 88 military positions.

The facilities at Murphy Dome included twelve one-story, wood-frame buildings, radar domes, and fuel tanks. There were three enlisted barracks, two NCO bachelor quarters, two BOQs, administration building with dispensary, operations building, recreation center, messhall, quartermaster and supply warehouse (210' x 60'), intransit storage warehouse, garage, transmitter building, receiver building, heat and power plant, passageways, tower, ammunition storage, vehicle storage, oil and paint storage, and fuel tanks.

A minimally attended radar unit was installed in 1986, allowing for further staff reductions. All the buildings, except a for a couple storage units and generator buildings, have been removed. Two radar domes survive, one for an Air Force radar and the other for FAA flight service garage and storage unit.

Current Status: The site is presently used by the FAA for Fairbanks area flight control operations and one contract person operates an Air Force radar. Murphy Dome LRRS is part of the North American Air Defense (NORAD) mission.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as a Long Range Radar Site.

Significance: Murphy Dome is significant as the first AC&W, the Northern Region Control Center. The station has been demolished, leaving only the more modern MAR.

Integrity: The facility has been demolished and the site restored.

National Register of Historic Places Status: The AC&W system has not yet been investigated for National Register eligibility.

Recommendations: A National Register determination of the AC&W system is appropriate. Consideration should be given to the preservation of the most intact AC&W facility. All AC&W complexes shall be recorded in the listing of Cold War facilities.

Priority and Level of Preservation: Murphy Dome is a priority A site.

Northeast Cape, Saint Lawrence Island

Construction of the AC&W at Northeast Cape was started in 1951 and the station became operational in April 1953. The 712th Aerospace Defense Squadron, with 212 men, operated the site. There were nineteen buildings, eighteen of which were of wood-frame construction and one of steel-frame construction, functioning as an emergency power plant.

Current Status: Abandoned.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Northeast Cape were critical in the development of an aircraft "trip wire."

Integrity: There has been extensive removal of building materials and vandalism. The AC&W at Northeast Cape has lost its historic character because of wood removal and vandalism since 1969. Some buildings have been reduced to only the floors and foundations. Asbestos is scattered around the site.



AC&W building ruins at Northeast Cape.

National Register of Historic Places Status: This facility is probably not eligible for the National Register.

Recommendations: A National Register determination of the AC&W system is appropriate. An effort should be made to preserve the Fort Yukon AC&W.

Priority and Level of Preservation: This is a priority A site.

Ohlson Mountain

The Ohlson Mountain AC&W was located near Homer. Its design was similar to that of Middleton Island, with eleven two-story, wood-frame buildings constructed. The Ohlson Mountain station was built during 1956 and 1957 and became operational in February 1958.

The AC&W was inactivated on May 15, and sold to a private party who leased a portion of the facility to the Defense Nuclear Agency from November 8, 1965 to December 1, 1978. Stanford Research Institute (SRI) conducted auroral studies here. The auroral research site was off the southwest edge of the building site. A van from this research project remains on the site, but it is not known if SRI used the AC&W buildings.

When the AC&W site was inspected in 1985, the buildings were in poor condition, as noted in the field report. The major structures included:

Composite Building: Large two-story structure with poured concrete foundation and wood-frame construction. Structure was barracks for 210 men; containing a radar control room, central power/heating plant, garage, laundry, library, warehouse, mess, PX and officers' lounge. Two large radar foundation structures were located adjacent to this structure. This building has been heavily vandalized (approximately 240' x 220' size).

Water Treatment Building: Structure with a 50,000-gallon steel-welded water-tank (empty) and miscellaneous piping and pumphouse equipment (30' x 30'). **Small Wooden Storage Building:** One-half collapsed (20' x 30'). **Building 104:** A fueling building that housed a small generator set (15' x 20'). Radar domes, steel.

In 1985, the Corps of Engineers did a cleanup of hazardous waste left at the site.

Current Status: Abandoned.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System. This was also a

scientific research center, but information is lacking on the use of the former AC&W facility.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Ohlson Mountain were critical in the development of an aircraft "trip wire."

Integrity: The integrity of this complex has been lost through vandalism and removal of buildings.

National Register of Historic Places Status: This AC&W has lost its integrity so it is probably not National Register eligible.

Recommendations: This site shall be listed in the listing of Cold War facilities.

Priority and Level of Preservation: Preservation of this site will include listing and possible documentation of the AC&W system.

Sparrevohn

Sparrevohn LRRS is located in interior Alaska, about 200 miles west of Anchorage. The property is 15 miles south of Stony River, a glacially fed tributary of the Kuskokwim River. Hook Creek, a tributary of the Hoholitna River, runs directly south of the installation. Three large lakes, the largest of which is Tundra Lake, are located 10 miles north of the installation. The nearest community is Lime Village, 18 miles to the northeast. The station is not connected to Lime Village by road and is accessible only by air.

AC&W operations began at Sparrevohn in March 1954. The 719th Aerospace Defense Squadron collected radar data and transmitted the information to the King Salmon RCC. A White Alice Communications System was installed in 1957 and deactivated in 1978, at which point an Alascom-owned earth terminal became operational. Eighty military positions were eliminated. Installation of a MAR unit in 1984 allowed for further staff reductions.

Sparrevohn had divided siting; the radars were on a mountain top, while the administration support facilities and runway were at a lower camp, connected by a tramway. Wood-frame buildings were constructed at the site. The two camps and tramway have been removed.

The White Alice and AC&W functions are no longer visible. The extant features are those of a Long Range Radar Site, a radome at the top camp, two geodesic domes at the lower camp, and a weather building.

Current Status: The Sparrevohn LRRS is part of the Alaska Radar System of NO-RAD, with six civilian contractor personnel assigned to the site.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Sparrevohn were critical in the development of an aircraft "trip wire."

Integrity: The AC&W site was demolished in 1985.

National Register of Historic Places Status: This demolished site is probably not eligible for the National Register. The AC&W system should be evaluated for National Register eligibility.

Recommendations: A National Register determination of the AC&W system is appropriate. Consideration should be given to the preservation of the Fort Yukon AC&W.

Priority and Level of Preservation: Sparrevohn AC&W is a priority A site.

Tatalina

The 717th Aerospace Defense Squadron operated this surveillance and ground control intercept (GCI) station which reported to the King Salmon RCC. Communications were first by high frequency radio, then White Alice (1957-1979), with Satellite communications beginning in 1979. King Salmon received a Minimally Attended Radar in 1984, and all military positions were eliminated.

The site was constructed in 1953 as one of the ten original Aircraft Control and Warning sites. Its original building program was comprised of one enlisted barracks, BOQ, NCO bachelor quarters, supply warehouse, recreation building, messhall, QM warehouse, operations building, heat and power plant with water treatment and storage, garage, vehicle storage, administration and dispensary building, transmitter building, receiver building, oil and paint storage, covered walks, radar domes, and fuel tanks. There are also five seismic stations at Tatalina. As with the others, they include a vault (1'x 1'x 2'), cable to the vault, and concrete circle pad.

This station was demolished in 1987 except for a pumphouse, weather station building, modernized radar dome, and the two geodesic domes of the MAR.

Current Status: Tatalina remains an active LRRS of the Alaska Radar System of NORAD, which is attended by 10 contractor positions.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Tatalina were critical in the development of an aircraft "trip wire."

Integrity: This complex has been demolished and the site restored.

National Register of Historic Places Status: The AC&W elements of this facility are gone. The AC&W system and intact facilities should be investigated for National Register eligibility.

Recommendations: A National Register determination of the AC&W system is appropriate. Consideration should be given to the preservation of the most intact AC&W facility.

Priority and Level of Preservation: Tatalina preservation will include listing of the site in the Alaska District listing of Cold War facilities and more general AC&W documentation.

Tin City

Tin City LRRS is located approximately 700 miles northwest of Anchorage and 590 miles west-northwest of Fairbanks. It is accessible only by air or sea. It is near the end of the Seward Peninsula and adjacent to an Alaska Maritime National Wildlife Refuge. The installation consists of an upper camp and lower camp. The lower camp is located 1/2 mile west of the Tin City Mine site at the mouth of Cape Creek. This station is another with a tramway connecting the operations area to the mountain-top radars. A new tramway was constructed in 1989. The upper camp is located west of the lower camp on the top of Cape Mountain. The site is five miles southeast of the community of Wales. There is no road connecting Tin City LRRS and Wales.

One of the 10 original sites constructed as an air defense system in Alaska during the early 1950s, Tin City LRRS became operational as a coastal surveillance site in 1953. Communications were initially provided by high frequency radio and subsequently, in 1958, by a White Alice Communications System. The White Alice site was deactivated in 1975 and replaced with an Alascom-owned satellite earth terminal. In 1977, the Alaskan Air Command (AAC) implemented a site support contract with RCA Services. This resulted in the elimination of 81 military positions, leaving 14 positions in operations. Installation of the Joint Surveillance System (JSS), completed in 1982, enabled radar and beacon data to be transmitted via satellite to the Elmendorf Regional Operations Control Center (ROCC). This eliminated the military AC&W operations and left only contractor personnel at the installation to maintain the site radar. In 1983, the Navy started operations at the White Alice facility. In 1984, a Minimally Attended Radar (MAR) unit was installed, which further reduced personnel requirements at the site.

The AC&W at Tin City was unique as a single three-story, concrete-composite operations building. Additionally, this was the closest active military base to the Soviet Union.

A MAR was installed at Tin City in 1984. At that time, two floors of the composite building were mothballed.

Current Status: Tin City LRRS is part of the Alaska Radar System of NORAD, with six contractor personnel stationed at the installation.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: Tin City is significant as a very forward facility, near the former Soviet Union. It is also of unique construction, with a large composite building.

Integrity: The partially mothballed composite building is still present and the MAR is operational. The White Alice facility was transferred to the Navy and is intact.

National Register of Historic Places Status: This highly significant complex should be evaluated for its National Register eligibility.

Recommendations: The Air Force should consider a HAER Level I documentation of the composite building.

Priority and Level of Preservation: Tin City is a priority A site.

Unalakleet

The Unalakleet AC&W was constructed as one of the second phase standardized designs. There was a two-story, wood-frame composite building; a second wood-frame, two-story building; two concrete buildings; a wood-frame, concrete building; and two radar dome towers.

The Unalakleet station was inactivated on May 15, 1963. The BIA expressed interest in the station, but a transfer was not realized.

Current Status: The buildings were demolished and the site restored.

Historic Context: The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

Significance: The AC&W system indicates the important function of enemy aircraft identification. AC&W stations such as Unalakleet were critical in the development of an aircraft "trip wire."

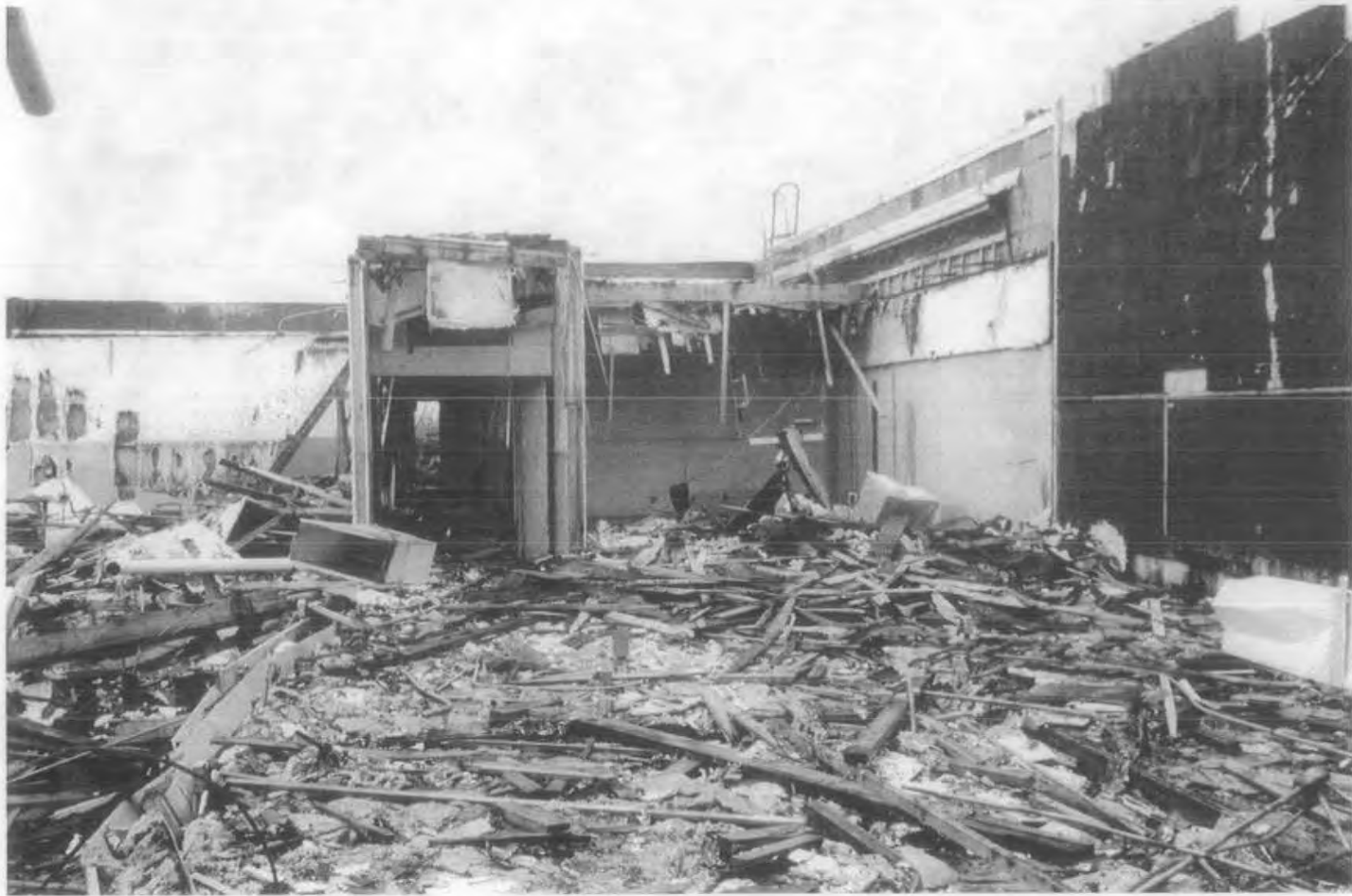
Integrity: The facility had been heavily vandalized, leading to its removal and site restoration in 1993.



Garage of AC&W station at Unalakleet before 1994 demolition.



AC&W station subjected to vandalism.



National Register of Historic Places Status: This complex is not eligible for the National Register.

Recommendations: Record in the listing of Cold War facilities.

Priority and Level of Preservation: The site will be entered into the listing of Cold War facilities and should be preserved through the documentation of one station.

MINIMALLY ATTENDED RADARS, MAR (Dome construction)

In the early 1980s, a program was launched to install new and more effective radars. These radars required a much smaller operational staff. With a smaller staff, fewer buildings were necessary. A more economical facility could be used.

The Air Force's answer at four sites was to replace most of the AC&W facility with two aluminum domes - one dome for radar operations and the second for housing. These domes were to be constructed at Indian Mountain, Sparrevohn, Cape Romanzof, and Tatalina.

The Alaska District, Army Corps of Engineers, reviewing the design, voiced opposition to the aluminum domes. The main deficiency was the properties of aluminum which cause it to expand and contract dramatically in extreme temperature. An aluminum dome would be exposed to warm sun rays on one side while the other side was cold, creating pulls and pressures on the many seams, resulting in seam leakage.

The Air Force remained impressed with the domes; their high tech appearance certainly fit a frontline combat image. The four dome facilities, each with two joined domes, were constructed between 1982 and 1984. Air Force representatives have claimed that the Alaska District forced the domes on the Air Force. Further research is needed regarding the decision to build inappropriate designs.

Current Status: These are Active LRRSs, part of the Alaska Radar System of NO-RAD.

Historic Context: The geodesic domes provided self-contained structures for radars in isolated locations.

Significance: The MAR domes were innovative designs used only in Alaska. Their use was controversial, with the construction team opposing their employment, but the customer or design organization (Corps) was strongly committed to them. MAR domes made a dramatic impact on base facilities, producing economies of scale.

Integrity: The central feature of the MAR is the radar and its installation. For the aluminum domes, its central feature is construction material, design, and real world operation.

National Register of Historic Places Status: Although of recent construction, the geodesic domes should be evaluated for National Register eligibility as exceptional engineering designs, albeit failures.

Recommendations: The Air Force, in the future, should accomplish a cultural resources survey of geodesic domes.

Priority and Level of Preservation: These active sites are not in present danger of closure or loss of integrity, therefore, the priority is C.

AAA

Anchorage Army AAA No. 7.

The available records regarding AAA gun positions in the Anchorage area are limited. A number of batteries were sited on Fort Richardson and Elmendorf AFB. There may have been twelve gun batteries in Anchorage, but records exist for only five batteries.

AAA gun position No. 7 was located on East Government Hill Road, near the cliffline. The gun position was to the south of Hollywood Drive, on Alaska Railroad property (Tract A). The gun position was used from 1952 to 1958. The AAA guns were made obsolete by the Nike Hercules missile system.

There is no trace of this position today; the site now functions as a parking lot adjacent to the Panorama Vista Apartments.

Current Status: Demolished, site now parking lot.

Historic Context: The anti-aircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.

Significance: The bases at Fairbanks and Anchorage were well defended by 90mm and then 120mm guns. These defenses were viewed as important elements in the protection of the Alaskan defenses.

Integrity: There is no trace of this AAA complex.

National Register of Historic Places Status: This site is probably not eligible for the National Register.

Recommendations: The best preserved AAA site, in Fairbanks, is recommended for documentation and preservation.

Priority and Level of Preservation: The AAA system is a priority B project.



Row of Quonset huts in AAA camp. (photograph by Brian Allen)

Anchorage Army AAA No. 12.

Gun position No. 12 was located at the edge of Elmendorf Air Force Base at Plum and Bluff Street. The position was in operation from 1952 to 1958.

This site currently functions as a vacant lot just outside the base perimeter fence. There is no trace of the gun position, except for a defensive pillbox on the cliffline in front of the Army Corps of Engineers building (21-700). There may have been additional AAA gun positions in this area of Elmendorf AFB.

Current Status: Vacant lot, no trace of AAA complex.

Historic Context: The anti-aircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.

Significance: The bases at Fairbanks and Anchorage were well defended by 90mm and then 120 mm guns. These defenses were viewed as important elements in the protection of the Alaskan defenses.

Integrity: There is no trace of this AAA complex.

National Register of Historic Places Status: This site is probably not eligible for the National Register.

Recommendations: The best preserved AAA site, in Fairbanks, is recommended for documentation and preservation.

Priority and Level of Preservation: The AAA system is a priority B project.

Anchorage Army AAA, 90mm.

The gun position number for this site is not known. The position was operational from 1952 to 1958. The site was south of the Grandview Gardens subdivision. Located on the site today is the Whaley Special Education Center, Anchorage School District.

Current Status: School grounds.

Historic Context: The anti-aircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.

Significance: The bases at Fairbanks and Anchorage were well defended by 90mm and then 120mm guns. These defenses were viewed as important elements in the protection of the Alaskan defenses.

Integrity: There is no trace of this AAA gun battery.

National Register of Historic Places Status: This site is probably not eligible for the National Register.

Recommendations: The best preserved AAA site, in Fairbanks, is recommended for documentation and preservation.

Priority and Level of Preservation: The AAA system is a priority B project.

Anchorage Army AAA Gun Positions, Anchorage International Airport.

There were several AAA positions within the airport boundaries. The main camp area was at the south end of the north-south runway, to the east of the Air National Guard base, at Sand Lake Way. Today, this site serves as airport operations for ERA Air and Alaska Airline's shops. The gun positions were located around the airport and on Point Campbell; exact locations are not known.

There are no known surviving features. Real estate records indicate that the improvements were removed prior to transfer of the land to the FAA in 1959. Point Campbell was retained as a military reservation and used as Site Point, a Nike Hercules base.

Current Status: Public park and airport facilities.

Historic Context: The antiaircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.

Significance: The bases at Fairbanks and Anchorage were well defended by 90mm and then 120mm guns. These defenses were viewed as important elements in the protection of the Alaskan defenses.

Integrity: There is no trace of the airport antiaircraft positions.

National Register of Historic Places Status: These sites are not eligible for the National Register.

Recommendations: The best preserved AAA site, in Fairbanks, is recommended for documentation and preservation.

Priority and Level of Preservation: The AAA system is a priority B project.

Fairbanks, Army AAA No. 1

The Fairbanks Army AAA No. 1 site is located at Mile 3, Chena Hot Springs Road, approximately 6 miles northeast of Fairbanks. The site was part of the U.S. Army's antiaircraft perimeter defense system for Ladd Air Force Base. The original 40 acres of the site was acquired on May 9, 1952.

On December 19, 1958, the Army transferred 16 Quonset huts, for off-site removal, to the State of Alaska, Civil Defense Agency, and four Quonset huts were sold to private individuals for off-site removal. The gun emplacement bunkers and underground utilities were abandoned on the site. The Bureau of Land Management accepted accountability for the 45 acres on March 28, 1960; road and utility easements were returned to the original owners.

The six gun emplacements are of circular construction using 55-gallon fuel drums as revetment walls; they survive. There is also a drum constructed radar structure and six drum-walled ammunition bunkers.

Current Status: Privately owned.

Historic Context: The antiaircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.

Significance: The bases at Fairbanks and Anchorage were well defended by 90mm and then 120mm guns. These defenses were viewed as important elements in the protection of the Alaskan defenses.

Integrity: The gun emplacements, radar structure, and ammunition bunkers survive.

National Register of Historic Places Status: A review of the AAA system is needed, to include evaluation of this site.

Recommendations: The best preserved AAA site, in Fairbanks, is recommended for documentation and preservation.

Priority and Level of Preservation: The AAA system is a priority B project.

Fairbanks Army AAA No. 2

The Fairbanks Army AAA No. 2 site is located at mile 3 of Farmers Loop Road, Fairbanks, Alaska.

The Fairbanks Army AAA No. 2 site was part of the U.S. Army's antiaircraft perimeter defense system for Ladd Air Force Base. The site was leased from a private party beginning on June 10, 1952. The lease was cancelled, effective June 30, 1958, and returned to the owner.

Current Status: The site is currently owned by Mr. George Dornath of Fairbanks, Alaska, and is being leased to the Alaska Feed Company.

Historic Context: The antiaircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.

Significance: The bases at Fairbanks and Anchorage were well defended by 90mm and then 120mm guns. These defenses were viewed as important elements in the protection of the Alaskan defenses.

Integrity: The improvements, constructed by the Army, encompassed three acres of the site and included 19 Quonset huts, three wood-frame buildings, bunkers, and utility lines. The Feed Company is using the majority of buildings abandoned by the military for storage and office space.

This is one of the best preserved formerly-used military sites in Alaska. Virtually the entire facility is present and is in good condition. The extant features are:

- 10 Quonset huts for housing and storage
- 1 administration building (three Quonset huts combined)
- 6 gun positions, constructed of fuel drums
- 1 shop, constructed of fuel drums and wood frame building
- 1 radar building (wood frame and fuel drum construction)



Radar shack protected with sand-filled fuel drums at AAA battery. (photograph by Brian Allen)

- 1 generator building
- 1 timber warehouse
- 4 ammunition bunkers
- 2 fuse bunkers

National Register of Historic Places Status: This site is potentially eligible for the National Register.

Recommendations: It is recommended that this site be considered by the State of Alaska, Department of Natural Resources, Division of Parks and Outdoor Recreation, as a state park. The AAA complex could be restored to its original character.

The Alaska District, Army Corps of Engineers, should expand and republish its history of Nike to include AAA defenses. This new publication would describe Army ground to air defense of Alaska.

Priority and Level of Preservation: This is a priority A project.

Fairbanks Army AAA No 3

The Fairbanks Army AAA No. 3 site is located at 3970 South Cushman Street, Fairbanks, Alaska.

The Fairbanks Army AAA No. 3 site was part of the U.S. Army's anti-aircraft perimeter defense system for Ladd Air Force Base. The site was leased from a private party beginning on April 1, 1952. The lease was cancelled, effective July 15, 1958, by a supplemental agreement, whereby the improvements were sold to the lessor, who accepted them at the price paid in lieu of restoration by the government.

The improvements, constructed by the Army, included 18 Quonset huts, two wood-frame buildings, gun emplacements, bunkers, and utility lines.

Current Status: Privately owned.

Historic Context: The anti-aircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.

Significance: The bases at Fairbanks and Anchorage were well defended by 90mm and then 120mm guns. These defenses were viewed as important elements in the protection of the Alaskan defenses.

Integrity: Surviving AAA features are: 12 Quonset huts and an administrative unit (made up of four Quonset huts). The radar position, garage, ammunition bunkers, and gun positions have been removed.

National Register of Historic Places Status: The loss of the gun positions and radar structure have stripped this complex of its main elements, it is not eligible for the National Register.

Recommendations: The best preserved AAA site, in Fairbanks, is recommended for documentation and preservation.

Priority and Level of Preservation: The AAA system is a priority B project.

Fairbanks Army AAA No. 4

This AAA site is located on the Richardson Highway, seven miles southeast of Fairbanks. AAA sites No. 5-7 were located on Ladd Air Force Base (now Fort Wainwright).

The Fairbanks Army AAA No. 4 site was part of the U.S. Army's anti-aircraft perimeter defense system for Ladd Air Force Base. The site was leased from a private party beginning on April 1, 1952, and the lease was cancelled on March 29, 1957.

Current Status: Privately owned.

Historic Context: The anti-aircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.

Significance: The bases at Fairbanks and Anchorage were well defended by 90mm and then 120mm guns. These defenses were viewed as important elements in the protection of the Alaskan defenses.

Integrity: Today, the administrative area is intact and includes nine Quonset huts in good condition; these were used for housing, supply, and warehouses. Three Quonset huts were combined into one unit as an administration building, which survives and is in good condition. The garage and a recreation building are also intact.

National Register of Historic Places Status: This site may be eligible for the National Register.

Recommendations: The best preserved AAA site, in Fairbanks, is recommended for documentation and preservation.

Priority and Level of Preservation: The AAA system is a priority B project.

Fairbanks Army AAA No. 8

Fairbanks Army AAA No. 8 site is located one mile northeast of Fairbanks, adjacent to the north side of the Alaska Railroad tracks, and can be reached from the Old Steese Highway via an access road.

Fairbanks Army AAA No. 8 was part of the Army anti-aircraft perimeter defense system in support of Ladd Air Force Base.

Current Status: The property is privately owned.

Historic Context: The anti-aircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.



Aerial view of anti-aircraft artillery battery (AAA #4) near Burbanks in 1994. (photograph by Brian Allen)



Headquarters building (on left) at AAA battery #4. (photograph by Brian Allen)

Significance: The bases at Fairbanks and Anchorage were well defended by 90mm and then 120mm guns. These defenses were viewed as important elements in the protection of the Alaskan defenses.

Integrity: Three Quonset huts exist, but modern construction on the site has destroyed its historical character.

National Register of Historic Places Status: This site is probably not eligible for the National Register.

Recommendations: The best preserved AAA site, in Fairbanks, is recommended for documentation and preservation.

Priority and Level of Preservation: The AAA system is a priority B project.

Fairbanks Army AAA, International Airport

This site appears to have been a control center, but records have not been located.

Current Status: Fairbanks International Airport.

Historic Context: The antiaircraft gun defenses were designed to protect the major bases at Fairbanks and Anchorage.

Significance: The AAA batteries in Alaska played an important role in the defense of air bases. With the arrival of missiles they were abandoned. To date there has been little recognition of this defensive system.

Integrity: There is no trace of this installation.

National Register of Historic Places Status: This site is probably not eligible for the National Register.

Recommendations: The Alaska District's history of Nike will be expanded to Army air defense and republished. The identified AAA batteries will be recorded in the listing of Cold War facilities.

Priority and Level of Preservation: The AAA system is a priority B project.

DEW LINE (Distant Early Warning Radars)

The Soviet detonation of its atomic bomb in August 1949, plus their improved bomber fleet in the early 1950s presented new challenges. The United States and Canada, under threat of atomic warfare, sought the maximum advance warning for interception and counterattack.

To realize an advance warning radar system, a team of American scientists went to work in 1952. The group, code-named the "Summer Study Group," was formed at the Massachusetts Institute of Technology's Lincoln Laboratories.

This group, after studying the danger, recommended the invention, installation, and maintenance of a distant early warning radar with communication system. The advance warning was to be positioned as close to the threatening enemy air bases as possible. Data collected would be transmitted to control centers.

The initial obstacle was to create a radar, radio equipment, and associated electronic systems which would function in temperatures often as cold as minus 60 degrees Fahrenheit. There were other challenges, including violent electric storms in the summer, constantly fluctuating currents of the North Magnetic Pole, and the strange phenomena of the northern lights. The scientist were able to overcome all the problems, inventing and building as needed. The final laboratory tested equipment worked well, but had to be subjected to actual Arctic conditions to determine its 'real life' capabilities.

Ignoring the fact that there wasn't enough time and that it couldn't be done, the Air Force airlifted the necessary materials, equipment, and machinery 240 miles north of the Arctic Circle to Barter Island, Alaska, and set up the first experimental DEW Line outpost for the Summer Study Group. A tight security lid was clamped on the activities on 'BAR-M.' Even the families of those doing the work were unaware of the kind of activity being carried out or its location.

Following tests at BAR and the accomplishment of the indicated changes in design and format of equipment, the inventors and planners were satisfied that they had created a feasible and practical solution for all of the initial DEW Line technical equipment problems. Among other things developed at Barter Island, there were automatic alarm circuits which provided audio alerts whenever a target was trapped by the radar. (Federal Electric, N.D. 1-1)

The development and planning stages were compressed, and by December 1952 the system had been created. A Distant Early Warning (DEW) line was planned to extend across the northern regions of Alaska and Canada. Western Electric became the primary contractor of the project, which was code-named Project 572. The actual construction was accomplished by Johnson Drake and Piper Inc. and Puget Sound Bridge and Dredging Company - two firms with considerable Alaska military construction experience. Point Barrow became the control center for field construction.

During World War II the Navy had established a camp at this northern most point of our continent. All the essentials of a working headquarters and base of supply for the DEW Line project were available; including a landing strip, warehouses, and barracks. It was in the heated hangar at Point Barrow that the first module, the basic building block of the DEW Line station, was assembled and mounted on sledlike bases for transport to more than 18 sites, located at approximately 50-mile intervals from Cape Lisburne in the west, to the Canadian border in the east.

The module evolved following experiments with almost every possible type of building material. As indicated by its name, it turned out to be a very simple and thoroughly practical modular-unit which, when assembled, was 16 x 28 x 10 feet high, constructed state-side of prefabricated and pre-insulated panels. The modules were disassembled to facilitate air shipment and were then reassembled upon arrival at Point Barrow. As a general rule, five modules were coupled together along with a caboose-like wanigan behind Caterpillar tractors to form 'Cat' trains. The trains and their construction crews departed for the various sites along the coast, cutting directly across the frozen tundra, along trails marked by air-dropped flags.

Three types of stations were constructed: (1) the Main station, consisting of roughly two 25-module building trains bridged together, equipped with rotating radar, garages, shops, and warehouses (individual warehouse-like buildings for garages, shops, and bulk storage) for providing full service and logistics support for its 'sector;' (2) the Auxiliary station, consisting roughly of a single 25-module train, equipped with rotating radar and self support facilities such as garages, warehouses, and bulk fuel storage tanks; (3) the Intermediate station, consisting of a single 5-module train and essential support facilities. 'I' sites, as they were called, were not equipped with rotating radar. They served as gap filling anchor points for doppler type radar fences between rotating radar equipped stations. Scopes at neighboring Main or Auxiliary stations recorded either north-to-

south or south-to-north penetrations of the fence by low flying aircraft.

An interesting construction feature at Main and Auxiliary stations was the inclusion of fire-barrier modules placed about every eighth module along the main train. The fire barrier was metal clad on the roof and sides, with the bottom exposed to the weather, except for an enclosed corridor connecting the standard modules which could be pushed out of the train and away from other modules by a bulldozer. (Federal Electric, N.D.: 1-3/1-4)

The DEW Line construction was begun at Barter Island in 1953 and stretched across the north coast of Alaska and Canada. There were six Main stations (two in Alaska: Point Barrow and Barter Island), 20 Auxiliary, and 28 Intermediate stations. The entire system was operational by November 1957.

DEW Line extensions were authorized in 1957. One was extended across the Alaska Peninsula-Aleutian Islands and the second across Greenland. Construction of the Aleutian extension was started in early 1957, with a Main station at Cold Bay and Auxiliary stations at Port Heiden, Port Moller, Cape Sarichef, Driftwood Bay, and Nikolski. Permanent concrete buildings were constructed in the Aleutians since there was not the problem of building on permafrost. The Aleutian extension became operational in April 1959 and was deactivated in 1969. The intermediate stations had been closed in 1963.

The DEW Line on the north coast of the continent was used as a top cover for the defense of North America. The defense of the United States became strongly dependent upon Alaska for its advance warning and initial, but limited, interception. The system was also significant as an engineering accomplishment, requiring the use of new technologies in radar and communications to meet unique arctic conditions. The modular construction was an effective answer to difficulties of transportation and erection.

The system was remarkable in its rapid development and deployment. Few major systems have gone from concept to operational status in such a short time. Additionally, it was a military system created by civilian scientists, built by civilian contractors, and operated for years by civilian contract employees.

The engineering firsts were numerous. The arctic environment was a new challenge for designers; there were the obstacles of logistic resupply in remote areas, travel across the tundra, extreme weather, and placing buildings on permafrost soils. The resupply and movement of supplies and materials was resolved by air-

lifting to Barrow. From Barrow, prefabricated modules and materials were towed across the frozen tundra on sleds to over 18 sites.

The Main stations had rotating radar and support services for its sector, Auxiliary stations had rotating radar, and Intermediate stations were equipped with gap-filling Doppler radar fences. The two Main stations in Alaska were at Point Barrow, (brevity code of POW - for the first two letters of Point and the last letter of Barrow), and Barter Island, BAR.

The BAR sector had the normal radar facilities, an AN/FPS-19 radar with gap-filling FPS-23 radar at Demarcation Bay, BAR-A, data acquired at BAR-M was forwarded to the data center at Campion and Murphy Dome.

The POW sector had an AN/FPS-19 and FPS-23 until July 21, 1963. Supporting radars FPS-23 were at Cape Simpson POW-A, Kogru POW-B, McIntyre POW-C, Brownlow Point POW-D, Lonely POW-I, Oliktok POW-2, and Flaxman Island POW-3.

The DEW Line was renamed the North Warning System in 1985, when the advanced radars of Alaska were integrated into one system.

ALASKA DEW LINE

SITE	LOCATION	OPERATIONAL	RADAR	INACTIVATION
BAR-MAIN	Barter Island	Aug 1957	FPS-19 FPS-23	
BAR-A	Demarcation Bay	Aug 1957	FPS-23	July 21, 1963
POW-Main	Point Barrow, AK	Aug 1957	FPS-19 FPS-23	
POW-A	Cape Simpson, AK	Aug 1957	FPS-23	July 21, 1963
POW-B	Kogru, AK	Aug 1957	FPS-23	July 21, 1963
POW-C	McIntyre, AK	Aug 1957	FPS-23	July 21, 1963
POW-D	Brownlow Point, AK	Aug 1957	FPS-23	July 21, 1963
POW-1	Lonely, AK	Aug 1957	FPS-19 FPS-23	
POW-2	Oliktok, AK	Aug 1957	FPS-19 FPS-23	
POW-3	Flaxman Island, AK	Aug 1957	FPS-19 FPS-23	Oct. 1, 1971
LIZ-1	Cape Lisburne, AK	Aug 1957	FPS-20	June 1, 1969
LIZ-A	Cape Sabine, AK	Aug 1957	FPS-23	July 21, 1963
LIZ-B	Icy Cape, AK	Aug 1957	FPS-23	July 21, 1963
LIZ-C	Peard Bay, AK	Aug 1957	FPS-23	July 21, 1963
LIZ-2	Point Lay, AK	Aug 1957	FPS-19 FPS-23	

LIZ-3	Wainwright, AK	Aug 1957	FPS-19 FPS-23	
COB-Main	Cold Bay, Ak	Apr 1959	FPS-19	June 1, 1969
COB-1	Nikolski, AK	Apr 1959	FPS-19	June 1, 1969
COB-2	Driftwood Bay, AK	Apr 1959	FPS-19	June 1, 1969
COB-3	Cape Sarichef, AK	Apr 1959	FPS-19	June 1, 1969
COB-4	Port Moller, AK	Apr 1959	FPS-19	June 1, 1969
COB-5	Port Heiden, AK	Apr 1959	FPS-19	June 1, 1969

Facilities Description. The buildings at the DEW Line stations were standardized wood-frame modules with steel garages. The maintenance required constant attention. Building types, maintenance, and operations were summarized by Federal Electric as:

- a. Building Trains
- b. Garages
- c. Dormitories
- d. Warehouses
- e. Hangars
- f. Roads
- g. Pads
- h. Electrical Generating Plants and Distribution Systems
- i. Heating and Ventilating Systems
- j. Fuel Storage and Distribution Systems
- k. Water Supply and Treatment
- l. Sanitary and Storm Water Systems
- m. Refuse Collection and Disposal
- n. Airfields and Taxiways
- o. Refrigeration Plants and Systems
- p. Ground Powered Equipment

Building or Module Trains. These were the main buildings, they were constructed of prefabricated plywood insulated panels, sheathed with aluminum siding, and contained dormitories for personnel, administrative offices, radar and communications equipment, power, heating and ventilating equipment, kitchen and dining room areas, recreation areas and certain small shops. A typical Main station contained two module or building trains connected by an overhead bridge.

Dormitories. The number of dormitories at each site varied. Dormitories were provided at certain Main and Auxiliary sites to house station and transient personnel. A typical dormitory had 24 rooms which included a utility room with the hot air heating plant, potable water storage tank, waste tank, laundry and sanitary facilities.

The AHRS number for the Alaska segment of the DEW Line system is XDP-000.

Barrow Camp, Naval Petroleum Reserve (NPR-4)

Another military tenant on the north slope was the U.S. Navy Oil Exploration Program. In April 1944, the Navy was authorized to explore and test well drill in the huge (23,680,000 acre) Naval Petroleum Reserve No. 4. In late 1944, a Seabee battalion built a base camp and airfield near Point Barrow for the exploration headquarters.

Operations were launched in 1945. These efforts included geological and geophysical investigations and test drilling. Petroleum exploration resumed in 1960 on the North Slope, east of NPR-4. In February 1968, Atlantic Richfield Company brought in its first well at Prudhoe Bay. The huge estimated reserve of oil at Prudhoe Bay generated great interest in North Slope oil exploration.

The Organization of Petroleum Exporting Countries (OPEC) oil embargo of 1973 renewed interest in the NPRs (NPR-1 Elk Hills, California; NPR-3, Teapot Dome, Wyoming; NPR-4 in Alaska). Exploration and test drilling followed. A hut camp was built near Barrow at Pitt Point and became known as Camp Lonely. As the Navy realized the size and complexity of the program, they decided to contract with a private oil firm, Husky Oil. A new Camp Lonely, of Alberta Trailer Company (ATCO) units, was erected in February-March 1976. In 1978, a 130-foot by 130-foot steel aircraft hangar was built at Camp Lonely. Camp Lonely was base camp for an extensive testing and exploration program. The program ended in December 1981, with the first oil lease sale in the Reserve. Camp Lonely was closed on December 5, 1981, and the buildings were boarded-up and secured. The DEW Line station was made caretaker and watchman for the closed camp. This camp is largely intact today.

Current Status: Barrow Camp is closed but intact.

Historic Context: The NPR-4 program was an important step in the oil discoveries in Alaska. The NPR operations shared the north slope with the DEW Line. The DEW Line was an early and technologically advanced radar system. This system was central to the main Cold War function of Alaska - the early detection of enemy bombers.

Significance: A draft of the National Register nomination reports the following regarding significance of the DEW Line:

The Alaska DEW Line stations are nationally significant in the following areas: military, politics and government, invention, engineering, and communications. The radar system, promulgated by the United States and subsequently

expanded for North American defense through international cooperation, was an important early military response to the insecurities generated by Cold War politics. Deployment required development of new technologies in radar, communications, and engineering to cope with the constraints of the Arctic environment as well as the surveillance requirements at the dawn of the jet-age. The DEW Line system is associated with and has made a significant contribution to the broad patterns of history. In addition, although subsequent upgrading has modified interiors and replaced outdated equipment, the original architectural-engineering layouts and characteristics remain relatively intact and are representative types of early modular arctic military construction.

The development of the DEW Line represents an early and innovative system to deal with Cold War conditions following World War II. The United States found it necessary to provide early-warning defense against long-range aircraft approaching the continent from northern polar regions. Study and construction of the initial experimental line, which corresponds to the northern Alaska segment, was initiated by the Department of Defense through a civilian study group and private-sector construction and development contracts. The success of the experimental line proved the military feasibility of the system and instigated expansion across the entire North American continent. Arrangements between the United States and Canada for the deployment of the line represent a high point in international cooperation and mutual trust because they were made rapidly and simply. In 1956, just prior to completion of the primary system, the Air Force awarded an Operation and Maintenance contract to the Federal Electric Corporation (FELEC) to operate the facilities. This was the first instance where a major military mission was contracted to civilian management.

In the area of scientific invention, the DEW Line stations represent significant contributions from conception through operation of this defense system. The work took place during an extremely short period of time between the summer of 1952, when the concept was forwarded, and the end of 1953 when the Alaska segment was put into operation. The system was conceived by a research team of top American scientists; much of the radar and radio equipment and associated electrical systems had to be invented and handmade or adapted as the work progressed to function under severe cli-

matic conditions as well as fluctuating currents of the North Magnetic Pole and the changing northern lights. Major innovations included automatic alarm circuits for audio alerts when targets were trapped by radar.

Engineering the DEW Line involved overcoming numerous obstacles associated with construction in Arctic environments, including the problem of logistic resupply in remote areas, transportation across the tundra, harsh weather conditions, and establishing foundations in permafrost. Logistics were handled by airlifting to Barrow much of the initial materials, prefabricated in the lower-48 and staged through Seattle, Washington, 2,800 miles distant. Resupply of bulky and heavy items has been handled through annual summer 'sealifts'. Air-dropped flags were used to mark trails across the tundra, although progress was halted during whiteout conditions. Prefabricated modules were designed as the basic building blocks of the system, including unoccupied units to serve as fire barriers. Development of this early form of modular construction included experiments with numerous types of building materials and configurations before arriving at a simple and practical solution to withstand arctic conditions and meet mission requirements. Early construction failed to consider permafrost conditions, so a technique was developed to separate heated modules from ground surfaces.

In communications, methods were developed for 'scatter' radio broadcasting, a procedure which pushed radio waves into the troposphere where they bounced back to the receiver after bypassing unpredictable Arctic magnetic forces and other ground interference. Experiments demonstrated the practicality of applying such principles to future long haul communication circuits.

The prototype installation at Barter Island and the remainder of the Alaska installations including Main, Auxiliary, and Intermediate stations represent the original experimental segment of a military installation that provided the first comprehensive defensive warning system for possible attacks aimed at the North American continent.

Integrity: The Barrow Camp is sufficiently preserved to illustrate a remote construction camp. The Point Barrow DEW Line is an active main station which has been altered and changed over time.

National Register of Historic Places Status: The DEW Line has been determined eligible for the National Register of Historic Places. The Air Force should formally nominate the DEW Line system to the National Register.

Recommendations: Further research on the Barrow Camp is required. The main station should be documented by the Air Force POW-main.

Priority and Level of Preservation: The Barrow Camp and Point Barrow sites are priority B projects.

Barter Island

Barter Island was constructed in 1953 as a Main station. Barter Island radar is the easternmost of the Alaska DEW Line stations and is located adjacent to Kaktovik Lagoon on the Beaufort Sea. The native village at Kaktovik, with a population of 250, is located approximately 1/2 mile southeast of the site. An airstrip is located east of the site. Several gravel roads connect the airstrip to the buildings, fuel tanks, landfills, fuel storage area, dump sites and the village of Kaktovik. The site is located within the Arctic National Wildlife Refuge.

Current Status: In 1957, the Barter Island main station and the remainder of the DEW Line was turned over to a civilian contractor for operation and maintenance. Today, it is operated by a contractor with a staff of seven as a LRRS as part of the North Warning Sites of NORAD's mission Alaska Radar System.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This facility is largely intact, but has been modernized over the years.

National Register of Historic Places Status: National Register listed.

Recommendations: The Air Force will have to evaluate preservation strategies as the functions of this radar facility change.

Priority and Level of Preservation: As an active facility, this is a priority B project.

AHRS number: BRL-023

Brownlow Point, POW-D

Brownlow Point is about 65 miles east of Prudhoe Bay in the Arctic National Wildlife Refuge. The site supported the Intermediate station at Collinson Point, which became operational in 1957 and was inactivated on July 21, 1963. One wood-frame building survives.

Brownlow Point, as are the DEW Line stations, is located on extremely fragile tundra which is easily damaged by foot traffic. Permafrost is continuous in the area, with an active layer of approximately one foot. During June-August, the area receives continuous sunlight; however, during the winter months there is near total darkness, which restricts investigation and construction time.

A sizable historic Native settlement is located at Brownlow Point, the western limit of which is within 100 feet of the DEW Line support facility. This site has been described and sketch-mapped by Libbey (1981). Three native buildings are still standing, and the collapsed remains of at least five other structures were observed as well. Associated with these were ice cellars and a variety of other structures. In the vicinity of the standing native structures, bone artifacts and other cultural debris have been exposed by wind action (Libbey, David: 1981 The Mid-Beaufort Sea Region: Cultural Resource Site Identification).

Current Status: Abandoned DEW Line support site.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This station is intact, but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This site is scheduled for environmental restoration. The intermediate stations, such as nearby Collinson Point, have been HAER documented.

Priority and Level of Preservation: No preservation required.

AHRS number: XFI-009

Bullen Point, POW 3

An Auxiliary DEW Line station was established at Bullen Point, POW 3 (listed as Flaxman Island on official Air Force records). The station was constructed in 1954 and became operational in 1957. An Air Force historical overview indicates that:

POW-3 was one of the few sites constructed according to the original Air Force design and site plan. Once constructed, the Air Force realized that the configuration of modules and some construction materials were not conducive to the harsh conditions of the Arctic. The Air Force subsequently modified the design at the remaining sites in Alaska.

Unlike the remaining sites, POW-3 was abandoned in 1972. Because it did not undergo the design modifications in the 1950s and some of the technological and structural modifications that other sites did during the last 20 years, it is more representative of what the original sites looked like, and how they operated. (Air Force, 1993:1)

The Air Force abandoned the site in 1972. Since then it has been used as a shelter for hunting and fishing parties. The Coast Guard operated a navigational radar beacon from a 120-foot high tower at the site. This tower is presently used by a private firm for navigational assistance to offshore oil drill vessels.

The Air Force has completed HAER documentation of Bullen Point. (Air Force, 1993). This mitigation also applies to the other auxiliary stations. An unattended radar has been constructed at the site.

Current Status: An unattended radar is planned for activation in November 1994.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: New radar equipment has altered the viewscape of the former auxiliary station.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: The Air Force has HAER documented this station.

Priority and Level of Preservation: No further preservation required.

AHRS number: XFI-001

Cape Sabine, LIZ-A

The Cape Sabine Intermediate station site is located about 250 miles southwest of Barrow on the Arctic Ocean. The site was operational from 1957 to 1963.

Cultural resources at the site are:

- operations building (3,172 square foot)
- shop building, steel
- warehouse, steel
- 1 Quonset hut
- 2 Jamesway huts
- 240-foot tower
- fuel pumphouse 8' x 8'
- 3 vehicles (Sno-Cats)

No archaeological sites were observed during a 1985 investigation, which is somewhat surprising since the area appears to be favorably located for settlement.

It is noteworthy that North Slope Borough cultural resource personnel also failed to find archaeological materials at this locality. Occasional pieces of cultural material were observed on the gravel runway, which may indicate that an archaeological site (or sites) was destroyed during the construction of this station. Additionally, the wreckage of a relatively late model twin-engine aircraft (not military) was observed.

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This station is intact, but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This site is scheduled for environmental restoration. The intermediate, I, stations, such as Cape Sabine, have been HAER documented.

Priority and Level of Preservation: Collinson Point I station will be left as an example.

Cape Simpson, POW-A

The Cape Simpson Intermediate station is located about 50 miles southeast of Barrow. This DEW Line station became operational in 1957, and was deactivated on July 21, 1963.

The cultural resources found here in 1987 were:

- operations building, composite wood-frame.
- warehouse, steel
- shop, steel
- 240-foot tower and hut
- pump house
- concrete building foundations

The site has a serviceable runway that is used by scientists, fishermen, and a native subsistence camp. There are no known archaeological sites at Cape Simpson.

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This station is intact, but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This site is scheduled for environmental restoration. The intermediate stations, such as Cape Simpson, have been HAER documented.

Priority and Level of Preservation: The Collinson Point station will be left.

Collinson Point, POW-D

An intermediate station with a doppler radar operation was at Collinson Point, located at Simpson Cove, an embayment of the Beaufort Sea, within the Arctic National Wildlife Refuge.

The station became operational in 1957, and closed on July 21, 1963.

The following cultural resource materials were discovered at the site during a 1985 site investigation:

- operations, composite building

- warehouse, steel

- shop, steel

- 2 Jamesway huts

- pumphouse

- 5 vehicles: Sno-Cat, D-4 tractor, M29 Weasel (has been extensively reworked)

M37 3/4-ton truck, aircraft engine (radial), and collapsed 240-foot tower.

No archaeological sites have been reported near this facility. However, archaeological testing in a series of thermocast mounds located immediately south and east of the operations building produced a small amount of non-diagnostic cultural material. Thorough investigation of these deposits was prevented by permafrost, which occurred approximately 10 inches below the surface. Three additional archaeological sites have been recorded within two miles of the facility.

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: The station is intact, and has been used as temporary shelter. The exterior characteristics are little changed, except for the removal of the Doppler radar.

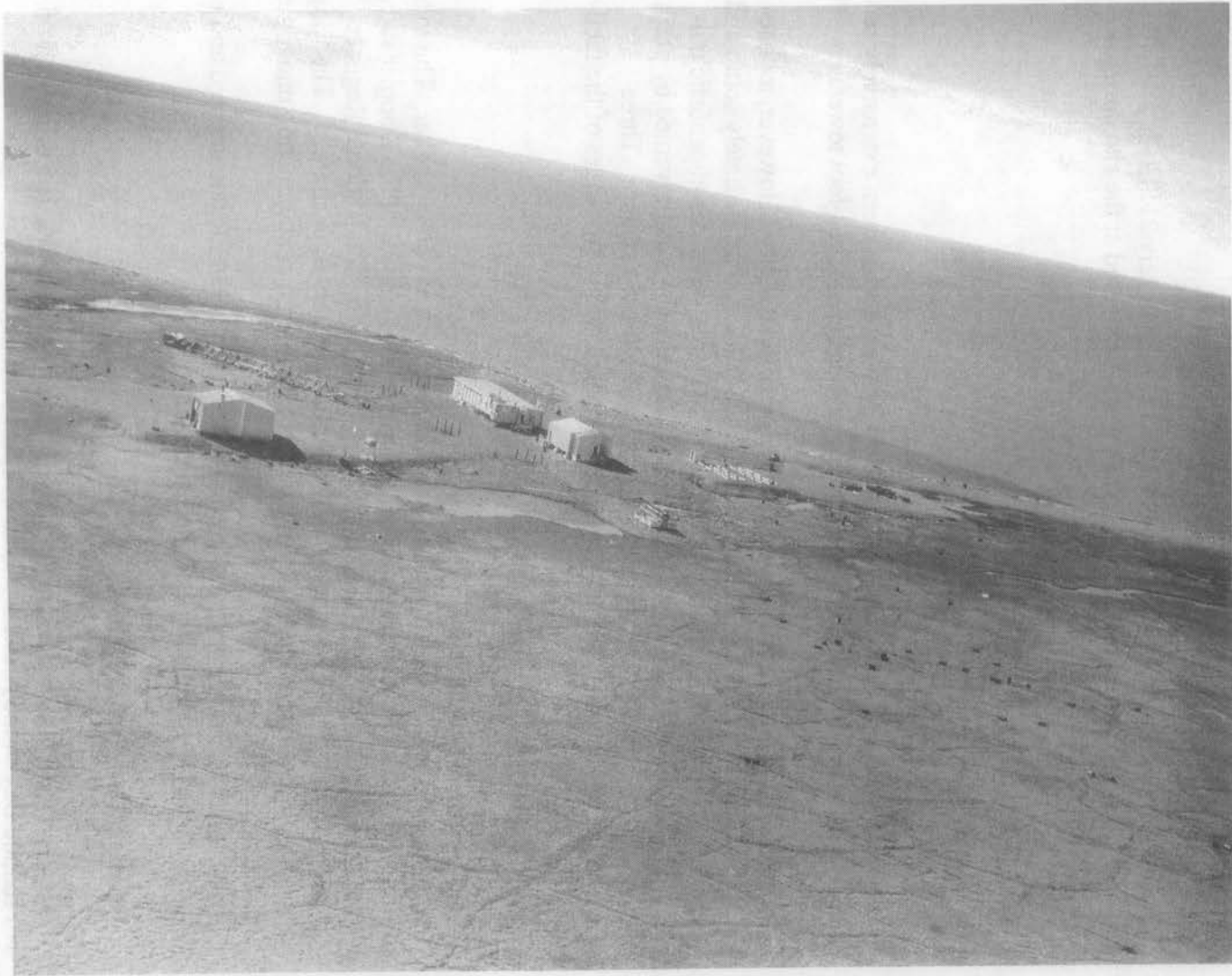
National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This station will be left as a preservation strategy. The shop building must be removed to reach extensive petroleum contamination under the building.

Priority and Level of Preservation: This site has been HAER documented and is to be limited to removal of fuel contamination.

Demarcation Point, BAR-A

Demarcation Point was an Intermediate station, located about 165 miles east of Prudhoe Bay in the Arctic National Wildlife Refuge.



The station was opened in 1953. On July 15, 1963, the United States and Canada announced the closing of 28 DEW Line stations including Demarcation Point; twenty of them were in Canada and eight in Alaska, leaving 48 radar posts along a 5,000-mile northern line (Associated Press, July 16, 1963). The 28 closed stations were Intermediate, with doppler radar fences for the detection of low flying aircraft. Improvements in the rotating radars allowed for these closings.

An operations building survives at the site at Demarcation Point and nearby is a beached LST 642. The LST (Landing Ship Tank) 642 is a World War II which was used to transport materials to DEW Line stations. It was beached during a storm and abandoned.

Three archaeological sites have been reported in the vicinity of Demarcation Point. The most conspicuous site is located about 4,000-feet south of the DEW Line facility. A standing two-room structure and the collapsed remains of three additional structures were observed. Additional house and/or tent camp remains were found along the shore of Demarcation Bay, between the above archaeological site and the DEW Line facility. In addition to the structures noted above, Libbey has described and briefly sketched the history of two additional sites in this vicinity in his report entitled *1983 Kaktovik Area Cultural Resource Survey*.

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This site is scheduled for environmental restoration. The intermediate stations, such as Demarcation Point, have been HAER documented.

Priority and Level of Preservation: The LST will be left.

Griffin Point Staging Area

A staging area for DEW Line construction at Bullen Point was established at Griffin Point. The site was used to store materials enroute to Bullen Point. These materials and supplies were barged to the coastline here.

Griffin Point was abandoned once Bullen Point was completed and is today used as a fish camp. There is one Jamesway hut frame and a log hut shelter at the site.

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This station is intact, but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: Eligible for the National Register.



LST 642 at Deception Bay.



Native house at Demarcation.

Recommendations: This site is scheduled for environmental restoration. The intermediate stations, such as Griffin Point, have been HAER documented.

Priority and Level of Preservation: The Collinson Point station will be retained as a reminder of the I stations.

Icy Cape, LIZ-B

The Icy Cape Intermediate station is located about 150 miles southwest of Barrow. The station became operational in 1957 and was inactivated on July 21, 1963.

The following structures are extant:

- operations building, 3,172 square-feet
- shop building, steel
- warehouse, steel
- 1 Quonset hut
- 240-foot tower
- fuel pumping station

The Icy Cape facility is located about one mile north of the abandoned settlement of Akeonik. Two Christian burial sites were identified off the south end of the landing strip. A larger number of burial sites are located near the north end of the strip. There does not appear to have been a settlement in the vicinity of these graves. The burials may be associated with the abandoned settlement of Otukkuk (Icy Cape) on a nearby barrier island or with the above mentioned site of Akeonik. Isolated patches of cultural material, consisting primarily of debitage, were observed on a relic shoreline, south of the runway.

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This station is intact, but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This site is scheduled for environmental restoration. The intermediate stations have been HAER documented.

Priority and Level of Preservation: The Collinson Point I station will be retained as an example of this type of DEW Line operation.

Kogru River, DEW, POW-B

Kogru was an Intermediate station that opened in 1957 and was inactivated on July 21, 1963. The site is located 150 miles of Point Barrow.

Extant is the operations building and the steel warehouse. There are no known archaeological sites in the immediate area of the Kogru River DEW Line Station. The Kogru River DEW Line Station site lies within the original Naval Petroleum Reserve-4 (NPR-4).

The site was included in the U.S. Geological Survey (USGS) cleanup of military sites on the North Slope in the late 1970s. Kogru River DEW Line Station was partially cleaned up in 1976 but a stockpile of debris was created. In 1977, the drums were crushed, and in 1980, the stockpiled debris was buried. The disposal site was seeded and fertilized in 1981. The revegetation effort was only slightly successful.

The site is remote and currently abandoned, but the airfield is serviceable. Kogru River has been used as a staging area for oil exploration and scientific field crews. The buildings have been periodically occupied by these crews in emergencies.

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This station is intact, but has been subjected to vandalism and deterioration. Its use as temporary housing has prolonged its life.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This site is scheduled for environmental restoration. The intermediate stations have been HAER documented.

Priority and Level of Preservation: The Collinson Point I station is to be retained as an example of I stations.

Lake Peters Naval Arctic Research Laboratory

Lake Peters is located in a valley on the north face of the Brooks Range, about 125 miles southeast of Prudhoe Bay and 45 miles south of Collinson Point. The facility was opened in 1958 as a research annex of the Naval Arctic Research Laboratory at Barrow. The research at Lake Peters was terminated in the 1960s.

The following artifacts were discovered in a 1985 site inspection:

- Quonset hut
- bunkhouse
- laboratory
- mess hall
- storage shed
- tracked trailer
- outhouse

generator house
weather station

There are no known archaeological resources at this site.

Current Status: Abandoned.

Historic Context: Lake Peters was used for a short time as a research center. The nature of the research is unknown.

Significance: This research center is not known to have been a significant facility and was only used a short time.

National Register of Historic Places Status: The Lake Peters facility is probably not eligible for the National Register.

Recommendations: This center will be recorded in the listing of Cold War facilities.

Priority and Level of Preservation: Lake Peters is a priority B site.

McIntyre, POW-C

The McIntyre DEW Line station is located about 12 miles north of Deadhorse Airport on the Beaufort Sea coast. This Intermediate station was inactivated on July 21, 1963.

The station was built on a five-foot-thick gravel pad, which was laid on the permafrost. The McIntyre DEW Line station consists of an operations building (2,700 sq. ft.) with living accommodations for three persons, communication facilities, power generation equipment, a garage/shop (1,500 sq. ft.) with generator, a warehouse (1,500 sq. ft.), fuel tanks, and airstrip.

In 1965, the 1,100-acre site was transferred to the U.S. Navy. The land and facilities are now claimed by the State of Alaska, Department of Natural Resources, and four federal agencies. The buildings on the site are frequently used by seismic crews, biologists, and others as a staging area and summer field camp. There are no known archaeological sites at the McIntyre DEW Line station.

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This station is intact, but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This site is scheduled for environmental restoration. The intermediate stations have been HAER documented.

Priority and Level of Preservation: The Collinson Point I station is to be left as an example of this type of station.

AHRS number: XBP-040

Nuvagak Point, BAR

The Intermediate station at Nuvagak Point was completed in 1953, deactivated in 1962, and transferred to the Navy. The Navy relinquished the property in 1985. Today, the former facility is within the Arctic National Wildlife Refuge.

The area is typically flat with gravel and sandy soils. The immediate habitat is arctic coastal plain with grass tundra and marshlands. The site is located on the shore of Beaufort Lagoon and contains a single, large, gravel pad and an airstrip. Cultural resource materials remaining on the site include:

- Operations building composite, type 2,700 square-foot
- One warehouse building, 35' x 40'
- One shop building, 30' x 40'
- One pumphouse, 8' x 8'
- One wood building, 8' x 12'
- One water tank, 65,000-gallons
- Two fuel tanks, 10,000-gallons each
- One bunkhouse, 8' x 24'
- One Quonset hut frame
- Earth moving crane, grader, and tractor
- One tower, approximately 240' long, laying on the ground
- Several wooden CAT-train sleds

No archaeological sites have been reported from the vicinity of this station, nor were any observed during a July 1985 visit by Dale Slaughter, archaeologist. A grave marker was observed immediately seaward of the facility; however, the proximity of the marker to the beach suggests it was washed ashore from another location.

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This station is intact, but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This station is to be left as is, except for the removal of hazardous and toxic waste. This will be one of two intermediate stations preserved. The building must be removed to get at fuel contamination. The shop building must be removed to get at fuel contamination.

Priority and Level of Preservation: This is a priority A project.

Oliktok Point, POW-2

An Auxiliary station was constructed at Oliktok Point in 1955. Oliktok Point is located directly south of Spy Island on Simpson Lagoon, to the north of the Ugurayik River, and is isolated from any native village. An airstrip is located in the northern half of the installation. Several gravel roads connect the buildings and provide access to the beach diesel fuel storage area. Roads are extended both east and south to the Kuparuk Camp.

Current Status: Oliktok LRRS is now part of the North Warning Sites of NO-RAD, with an average of seven contractor personnel stationed at the installation.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: Not evaluated, active site.

National Register of Historic Places Status: National Register listed.

Recommendations: No further preservation required.

Priority and Level of Preservation: This type of facility has been HAER documented by the Air Force.

AHRS number: XBP-039

Peard Bay, LIZ-C

The Peard Bay Intermediate station opened in 1957, and was closed on July 21, 1963. The site is located about 80 miles southwest of Barrow.

Cultural materials of the abandoned station are:

- operations building
- 2 32' x 34' concrete foundations
- 240-foot tower
- fuel tank pumphouse, 8' x 8'

The Peard Bay facility is located approximately one mile inland on what appears to be a relic shoreline. Examination of the area failed to produce archaeological remains. The presence of a large whale skull near the radio transmission tower may be of cultural significance, although test pits in this vicinity failed to produce cultural remains. There are no known archaeological sites at the Peard Bay DEW Line station (according to the Alaska Heritage Resources Survey).

Current Status: Abandoned.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This station is intact, but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: This site is scheduled for environmental restoration. The intermediate stations have been HAER documented.

Priority and Level of Preservation: The Collinson Point station is to be left to recall the intermediate stations.

Point Barrow

The Point Barrow main station is in operation as a LRRS, North Warning Sites. It is located adjacent to the North Salt Lagoon on the Chukchi Sea, and within NPR 4. The native village of Barrow is about four miles to the southwest.

Current Status: Point Barrow is an active site with seven contractor personnel.

Historic Context: See Barrow (Camp).

Significance: See Barrow (Camp).

Integrity: This is an active facility and has undergone modernization and upgrading.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: The Air Force will have to evaluate preservation strategies as the functions of this radar facility change.

Priority and Level of Preservation: As an active facility, this is a priority B project.

AHRS number: BAR-041

Point Lay, LIZ-2

An Auxiliary DEW Line station was constructed at Point Lay in 1955. Point Lay was the westernmost of the DEW Line sites, located adjacent to Kasegaluk Lagoon on the Chukchi Sea, one mile south is Point Lay, a village of 40. Two airstrips are located in the area and several gravel roads connect the buildings and provide access to the village and airstrips. Roads also extend to the fishwater lake and sealift area.

Current Status: The Point Lay LRRS is part of the North Warning Sites of NO-RAD, with five contractor personnel stationed at the installation.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: Point Lay is an operational site which has undergone substantial modification over the years.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: The Air Force will have to evaluate preservation strategies as the functions of this radar facility change.

Priority and Level of Preservation: As an active facility, this is a priority B project.

AHRS number: XPL-113

Point Lonely, POW-1

An Auxiliary station was constructed at Point Lonely in 1953. The 2,830 acres of property is located on the Beaufort Sea, halfway between Point Barrow and Oliktok. Point Lonely is isolated from any native village. An airstrip is located between the lagoon and the site. Several gravel roads connect the buildings to the airstrip, beach tanks, fuel storage area, and lake. The site is located within NPR 4.

Current Status: The Point Lonely station is inactive, a short range radar is scheduled for activation in November 1994.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: Condition of the site is unknown.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: The auxiliary stations have been HAER documented by the Air Force; see Bullen Point.

Priority and Level of Preservation: The Bullen Point HAER documentation accomplishes preservation of this auxiliary site.

AHRS number: TES-048

Wainwright, LIZ-3

Wainwright, or LIZ-3, is adjacent to Wainwright Inlet on the Chukchi Sea. The native village of Wainwright, with a population of 492, is located approximately five miles northeast of the site. Access to the site is via airstrip or boat landing. Several gravel roads connect the buildings and provide access to the airstrip, boat landing storage areas, and freshwater lake. The site is located within the Naval Petroleum Reserve #4.

This auxiliary station was constructed in 1953 and abandoned in 1989. In 1992, the Air Force commenced construction of an unattended radar at the station with completion scheduled for November 1994

Current Status: Inactive site, short range radar to be activated November 1994.

Historic Context: See Barrow.

Significance: See Barrow.

Integrity: This facility has not been evaluated.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: The Air Force will have to evaluate preservation strategies as the functions of this radar facility change.

Priority and Level of Preservation: As an active facility, this is a priority B project.

AHRS number: WAI-082

DEW Line, Aleutian Extension

In 1959, the U.S. advance warning system was expanded, including an extension of the DEW Line westward into the Aleutian Islands. Six new stations were built on the Alaska Peninsula and the Aleutians during Operation Stretchout. The DEW Line stations were collocated with White Alice stations. Another White Alice extension to Adak and Shemya plugged radar data from these bases into the NORAD defense network.

The stations were at: Cold Bay (COB-Main), Nikolski (COB-1), Driftwood Bay (COB-2), Cape Sarichef (COB-3), Port Moller (COB-4), and Port Heiden (COB-5). The stations became operational in April 1959, with FPS-19 radars. This radar extension was inactivated on June 1, 1969, but the White Alice function continued until November 1978.

Adak Radio Relay

Extending the radar data communications to Adak and Shemya was code-named Project Bluegrass. This White Alice extension was completed in 1968 and deactivated on November 1, 1978.

Current Status: The White Alice facility on Adak has been demolished by the Navy.

Historic Context: See White Alice.

Significance: See White Alice.

Integrity: Facility has been removed.

National Register of Historic Places Status: White Alice has been determined eligible for the National Register.

Recommendations: This site should be identified in the listing of Cold War facilities so as not to lose its location. The Army Corps of Engineers should formally nominate the White Alice Communications System.

Priority and Level of Preservation: The Cold War facility listing is scheduled for completion in 1995.

Cape Sarichef, COB-3

Cape Sarichef is located on the southwest tip of Unimak Island in the eastern Aleutians. The DEW Line station was operational from 1959 to 1969, and the White Alice remained in service until November 1978.

The DEW Line/White Alice was built near Raven Point, 3 miles southwest of a 3,500-foot gravel airstrip. The DEW Line buildings and site layout were identical to Driftwood Bay and the other Aleutian extension stations; there was a 28,000 square-foot composite building, four billboard antennas, water pump house, storage bunker, and fuel system. The facility is in good condition, as it is remote and difficult to reach. There is an abandoned Coast Guard LORAN station nearby (see below). Archaeological and historical sites have been identified at Cape Sarichef.

Two archaeological sites are near the Cape Sarichef lighthouse and the U.S.C.G. Loran station. Additionally, the remains of the Cape Sarichef lighthouse are of historical interest. The original lighthouse was constructed in the 1900s and was the westernmost lighthouse in North America. It was swept away in the tsunami of April 1, 1946, and later rebuilt. The early Russian site of Progomoge (abandoned 1828-1831), as well as a prehistoric archaeological site, are located slightly seaward from the Cape Sarichef DEW Line/White Alice facility.

A few miles to the southeast of Cape Sarichef was the Scotch Cap lighthouse and support buildings, which were destroyed by the April 1, 1946 tsunami. The buildings were swept into the sea, killing five attendants. Two lighthouses have followed since. A monument to the victims is here.

Current Status: Abandoned.

Historic Context: See White Alice and DEW Line.

Significance: The lighthouse and prehistoric sites are especially significant. Since the DEW Line station is well preserved, it is a good example of the Aleutian extension.

Integrity: This facility is well preserved and most of its features are intact.

National Register of Historic Places Status: White Alice and DEW Line are eligible for the National Register.

Recommendations: The remoteness of this site and its prehistoric and historic significance make it a prime candidate for preservation. The facility should be left and not removed under the DERP-FUDS program. No cleanup, except for hazardous waste, is recommended.

Priority and Level of Preservation: This is a priority A facility.

Cold Bay, COB-MAIN

The Air Force returned to Cold Bay in 1957 for Project Stretchout to extend the Distant Early Warning Line into the Aleutians with Cold Bay as the main station site. The 714th AC&W Squadron and the White Alice Communications Station shared a composite building at Grant Point.

The Cold Bay WACS and DEW Line operations went into service in 1959. After the DEW Line extension was inactivated, Cold Bay remained as a radar station, but the White Alice station was closed in November 1978. A minimally attended radar station (MARS) was built at a location nearer the airport in 1985. The composite building, which had served WACS, DEW Line, and 714th AC&W, was demolished and buried in place in 1986.

Current Status: The Cold Bay White Alice and DEW Line composite building has been demolished and the site restored. The LRRS is part of the Alaska Radar System of NORAD.

Historic Context: See White Alice and DEW Line.

Significance: See White Alice and DEW Line.

Integrity: The station was demolished in 1986.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: The site UTM location should be entered on the listing of Cold War facilities. The composite building was of the same design as the other Aleutian extension stations.

Priority and Level of Preservation: No further preservation is required.

Driftwood Bay, COB-2

Driftwood Bay is on Unalaska Island, 13 miles west of the airport at Dutch Harbor. Construction of the DEW Line station was started in 1957 and completed in 1959. The radar and communications station was housed in a composite building, on a cinder dome, at about 1,350 feet above sea level, and three miles by road from an airstrip in Driftwood Bay valley. The building was of poured concrete construction. The radar was installed in a dome on the center five-story section, while the remainder of the building was two stories.

Housed in the composite building were all the activities: offices, housing, communications section, radar operations, and two 350-KW generators. Adjacent to the composite building were four White Alice billboard type antennas. Two were 60-feet high and two 30-feet tall of galvanized steel on large concrete foundations.

There was also a concrete storage bunker (14'8" x 10'8") on the road about one-half mile from the composite building. Another 1 1/2 miles down the road is a water pump house (17' x 20'), constructed of concrete with a wood roof. At the airstrip was a 24' x 100' wood storage building and concrete runway lighting generator vault (21' x 12').

Current Status: The Driftwood Bay DEW Line station was demolished in place under an Army Corps of Engineers contract in 1991.

Historic Context: See White Alice and DEW Line.

Significance: See White Alice and DEW Line.

Integrity: This facility has been demolished and the site restored.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: The Driftwood Bay site should be recorded in the listing of Cold War facilities.

Priority and Level of Preservation: No further preservation required.

Nikolski, COB-1

Nikolski is to the west of Fort Glenn on Umnak Island. This was a DEW Line and radio relay with additional functions to handle Navy and FAA communications.

Nikolski had one composite and several support buildings, all of the Aleutian standard design. The DEW Line operated from 1959 to June 1, 1969, and the radio relay to November 1, 1978. Nikolski communicated with Driftwood Bay some 100 miles eastward, and with Atka and Adak to the west.

There are no known archaeological sites at the mountain top on which the station is located.

Current Status: The Air Force demolished the Nikolski station in 1988.

Historic Context: See White Alice and DEW Line.

Significance: See White Alice and DEW Line.

Integrity: The facility has been demolished.

National Register of Historic Places: Eligible for the National Register.

Recommendations: The Nikolski station will be recorded in the listing of Cold War facilities.

Priority and Level of Preservation: No further preservation required.

Port Heiden, COB-5

The Port Heiden DEW Line station was located on a flat coastal plain of Bristol Bay, about halfway along the northern side of the Alaska Peninsula, near the small village of Meshik. The station was constructed in 1957-1959 as part of Project Stretchout. The DEW Line was operational from 1959 to 1969. After the DEW Line was inactivated on June 1, 1969, the radio relay remained in service until November 1978.

The facility was identical to the others in the Aleutian extension. There was a concrete cast-in-place composite building of 28,000 square-feet. Also, there were four billboard antennas, concrete storage bunker, water pump house, and fuel system.

There are no known archaeological sites at the Port Heiden DEW Line station site.
Current Status: The Port Heiden DEW Line and White Alice station was demolished in place in 1990.

Historic Context: See White Alice and DEW Line.

Significance: See White Alice and DEW Line.

Integrity: The facility has been demolished.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: Record station location in the listing of Cold War facilities.

Priority and Level of Preservation: No further preservation required.

Port Moller, COB-4

The Port Moller DEW Line is on the Bristol Bay coastal plain at Port Moller Bay, 100 miles west of Port Heiden. The standard Aleutian extension type station was erected at Port Moller. There is a composite building, four antennas, gravel air-strip about four miles northwest of the station, concrete storage bunker, water pumphouse, and fuel system.

Its history matches that of the other Aleutian extension stations; it was opened in 1959 and deactivated on June 1, 1969. The radio communications activities continued to November 1978.

A field investigation by the Alaska District's archaeologist failed to locate any archaeological sites.

Current Status: Abandoned and scheduled for demolition.

Historic Context: See White Alice and DEW Line.

Significance: See White Alice and DEW Line.

Integrity: The composite building is extensively vandalized and deteriorated.

National Register of Historic Places Status: Eligible for the National Register.

Recommendations: Demolition of the facility and cleanup of the extensive contamination is required. The site will be identified in the listing of Cold War facilities.

Priority and Level of Preservation: No further preservation required.

Shemya Radio Relay

The Shemya White Alice station building has been reused. The two billboard antennas were buried on site.

Current Status: The building has a new use.

Historic Context: See White Alice.

Significance: See White Alice.

Integrity: Unknown.

National Register of Historic Places Status: White Alice is National Register listed.

Recommendations: This facility should be evaluated as part of the Eareckson Air Station cultural resources investigation.

Priority and Level of Preservation: The Air Force will need to conduct a survey and evaluation of historic features of this air station.

OVER-THE-HORIZON RADARS

Amchitka, ROTHR

In 1988, the military returned to Amchitka Island, the site of a World War II base and Cold War nuclear testing by the Atomic Energy Commission.

The Navy deployed a relocatable over-the-horizon radar (ROTHR) to detect Soviet bombers and surface ships up to 1,500 miles away. The ROTHR was a key element in the outer-air battle strategy, dramatically reducing the number of fruitless maritime patrols.

The Amchitka ROTHR was one of three constructed, others were built at Virginia and England. A fourth unit scheduled for Tinian, in the Northern Marianas Islands, was not built - the Cold War ended first.

ROTHR was not a new technology, but the idea of a relocatable system was. The Navy desired a system that could move as the tactical situation changed. The over-the-horizon radar bounces a long radio wave (35-foot long) off the ionosphere at a point about 500 miles distant. The radio wave then descends down and stretches another 1,000 miles. Operators can search one 60 degree arc at a time, about half the total area. Areas within the arc can be singled out for closer detail.

The ROTHR was built by Raytheon and tested near Norfolk, Virginia. Following the testing, the radar was dismantled and shipped to Amchitka. New equipment was sent to Norfolk to maintain the radar search of the Caribbean.

The Navy Times reported, on February 8, 1988, that:

Although the system is designed to be relocatable within weeks of making a decision to move it, that would be easier said than done. A ROTHR facility consists of three elements: the operations control center, the transmit site and

the receiver site. Typically, the transmit and receiver sites will be separated by 50 to 100 miles. Each total system includes 42 transmitter power amplifiers housed in 10 shelters and some 400 receivers housed in 13 shelters. Even if that equipment is moved, the antenna fields would remain because of their vast size.

For example, each transmitter array is more than 1,000-feet wide and 125-feet high. A receiver array consists of 372 pairs of 19-foot-high poles stretching about two miles. Data that comes in at the receiver site is then transmitted by fiber-optic cable to the operations center for analysis. The information is then sent out to U.S. ships.

Current Status: The over-the-horizon radar was closed on September 30, 1993, and facilities removed.

Historic Context: Further research is required.

Significance: Significance needs to be determined.

Integrity: The ROTHHR has been at least partially removed, details are not known.

National Register of Historic Places Status: National Register Status should be determined.

Recommendations: The Navy, in consultation with the SHPO, should review preservation concerns at Amchitka. The Department of Energy should inventory and evaluate the historic significance of nuclear tests at Amchitka.

Priority and Level of Preservation: This is a Navy project which requires SHPO consultation.

Over the Horizon Backscatter (OTHB) Radar, Gakona

In 1988, the Air Force launched a study in preparation for improved radar detection in Alaska. This was to be an Over the Horizon Backscatter radar. The transmitting station was to be north of Gakona, with a receiving station in the vicinity of Tok.

It was a massive construction effort, which included a screen 160-feet high and approximately three miles long. Heavy electric power requirements required construction of a coal-fired generating plant at Gakona. The power plant building and roads were built at the Gakona site, but construction was halted when military realities changed. Work was not started on the receiving station near Tok.

The Air Force now uses the Gakona site for High Frequency Active Auroral Research Program, with the celestial acronym of HAARP. This experimental radio communications punches holes through the ionosphere. The goal is to realize a

communications system of powerful transmitting stations (command) which would direct a radio signal through the ionosphere above a low powered receiver anywhere in the world (combat station). The combat station, say a tank or ground commander, could receive the message. HAARP is also engaged in other research studies.

Current Status: The Gakona OHTB site is now a HAARP site.

Historic Context: The OHTB was not constructed.

Significance: The OHTB was not constructed.

Integrity: This HAARP site should be evaluated in terms of its current research activities.

National Register of Historic Places Status: The National Register status has not been determined.

Recommendations: This research center and former OHTB site should be listed and identified in the listing of Cold War facilities.

Priority and Level of Preservation: As an active site, the priority of preservation is low. The station may undergo major construction in the near future.

BALLISTIC MISSILE EARLY WARNING

BMEWS, Clear, Alaska

Even as the Nike Hercules missile defense was being emplaced in 1959, a new master plan for continental air defense called for reduced anti-aircraft missile spending; instead, there was a proposed funding increase on anti-missile missiles and advanced detection of enemy missile attack.

The DEW Line, as well as other radar lines and defense systems, had been designed to warn of long range bomber penetration. DEW Line, the mid Canada and Pine Tree (along the northern U.S. border), could detect and alert Nike and BOMARC missile bases with sufficient time. However, the warning systems were inadequate against missiles.

To provide more adequate warning of ballistic missiles, a Ballistic Missile Early Warning System was constructed, with one station planned for Clear, Alaska, and a second for Thule, Greenland. The total cost was over one billion dollars, in 1959 dollars. Both stations had a 3,000-mile range and could detect a Soviet ICBM about five minutes after launch.

The radar line was backed up in the continental U.S. by the Semi-Automatic Ground and Environmental System (SAGE). All the missile warning systems were tied into NORAD headquarters at Colorado Springs.

Current Status: The BMEWS is an active advanced warning radar facility.

Historic Context: The Clear BMEWS was an important addition to the top cover for North America, providing some time to launch a counter attack. It represented the most frightening reality of the Cold War - total destruction of the major combatants.

Significance: The BMEWS is closely associated to the core of the Cold War - missile retaliation.

Integrity: The Clear facility is intact but has been modernized since construction.

National Register of Historic Places Status: The National Register status has not been determined.

Recommendations: A cultural resources survey is scheduled for 1994.

Priority and Level of Preservation: This active site has a low priority until closure or drawdown occurs.

Donnelly Flats, MIDAS

In 1959-1960, a Missile Identification, Detection, and Alarm System (MIDAS) station was constructed at Donnelly Flats. This facility provided a ground link to missile tracking satellites. Housing and messing was on nearby Fort Greely.

Shortly after completion, this classified facility was closed. Information as to location or construction has not been found. The Alaska District history may uncover details.

Current Status: This facility has been removed.

Historic Context: The MIDAS was evidently an inadequate early warning missile system. The station recalls the need for missile warning and possibly difficulties in siting or operation of missile warning. Additional research is required to determine why it was so quickly abandoned.

Significance: The MIDAS is associated with missile warning, at the core of the Cold War total war footing.

Integrity: The facility has been removed but site conditions are unknown.

National Register of Historic Places Status: The National Register status has not yet been determined.

Recommendations: Further research is required on the Donnelly Flats MIDAS project. This research will be included in the Alaska District, Army Corps of Engineers, history. This information will then be included in the listing of Cold War facilities.

Priority and Level of Preservation: This is a priority B project.

ARMY/AIR FORCE COMMUNICATIONS

ALCOP - Alternate Command Center

The rail-mobile command post was designed to take over duties from the primary control complex at Elmendorf, should it be destroyed. The five-car train was the only rail-mobile command post in the Air Force. Command functions in the train would be multiform - Army, Navy, and Air Force. The Alaska Railroad provided the locomotive to pull the Alaskan alternate command post (ALCOP). It would be moved to secret locations along the Alaska rail system where it could plug into land-based communications lines. The ALCOP also had radio and satellite communications.

The ALCOP carried one month's worth of food and water for a crew of 24. The five cars were:

- fuel car
- generator car (2 100-KW generators)
- command car, computers and battle staff facilities
- dining/sleeping car
- boxcar, carrying spare parts and food

The equipment, including computers and battle staff facilities, has been removed. Today, the cars are nearly barren. The ALCOP mobile command post rail cars have been found to be eligible for inclusion in the National Register of Historic Places. Department of Defense Legacy Resource Management funds have been requested for a historic preservation plan to determine approaches and alternatives for preservation. The history of these rail cars has been compiled by the 11th Air Force Office of History in their report entitled *An Ace in the Hole*.

AHRS number: ANC-777

Wildwood Air Force Station

The former Wildwood Air Force Station is located three miles northwest of Kenai. The station is today a state correctional center.

Wildwood AFS was named Seward Station when it opened in 1953 as an Army communications facility linking Alaska to Hawaii and Japan. In May 1954, it was renamed Wildwood station.

Wildwood Station was part of the Army's automatic telephone network of high frequency transmissions. This communications responsibility was transferred to

the Air Force in the 1960s. In light of this change, the facility was transferred to the Air Force and designated the Wildwood Air Force Station.

Military construction was confined to 70 acres and consisted of 66 buildings. There were 48 concrete structures for communications, shops, barracks, and offices, plus 18 family housing units. Military strength at the base was about 200.

Satellite communications rendered Wildwood obsolete, so it was closed in July 1, 1972.

Current Status: This facility is in use as a State of Alaska correctional center. Large portions of the facility were demolished in 1993.

Historic Context: The Wildwood communications facility linked the military in Alaska with the rest of the Pacific command. The facility, during the 1950s and 1960s, reduced the communications barriers. In the 1970s, satellites produced a huge jump in communications technology, leaving Wildwood an antique.

Significance: The Wildwood facility was an important communications center for nearly 20 years. This operation improved contact for the Pacific wide defense.

Integrity: The demolition of structures in 1993 dramatically reduced its integrity.

National Register of Historic Places Status: The Wildwood Station is not eligible for the National Register given its loss of integrity.

Recommendations: No further preservation required at Wildwood.

Priority and Level of Preservation: None.

WHITE ALICE COMMUNICATIONS

The DEW Line and AC&W systems required a reliable communication network to relay radar information to control centers in Alaska and the continental United States. Bell Electric was contracted to design such a communications system - one that could master long distances and operate from remote areas during extreme cold and northern electrical interference.

Bell Electric recommended a tropospheric scatter system with microwave stations where feasible. The Alaska District, Army Corps of Engineers, did the site survey work and contracts for construction of 11 of the original 31 stations.

It is not known how the system came to be code-named White Alice. Reynolds (1988:6) relates two stories concerning the name:

The first is that Alice was an acronym for Alaska Integrated Communications Enterprise. Because the code name had to consist of two words, White was selected because it seemed appropriate for

long Alaskan winters. However, Alice White tuned out to be the name of a silent screen actress. Rather than scrap the name, the two words were transposed. 'White Alice' seemed more suitable. Another story simply maintains that the Air Force chose White Alice for no particular reason and that it was not an acronym for anything. The association with snow, ice and white has made White Alice a memorable name--one easily associated with remote mountain tops and man-made structures framed in ice and snow.

Standardized plans were used for White Alice stations. There were five types used, but in actual construction they were varied in size and layout. The variations in layout were usually a function of terrain and local conditions. The first type, of which there is only one example, was the early station at Boswell Bay. The steel communications building was larger, and later buildings were most frequently wood-frame with a few built of concrete. The National Register of Historic Places nomination for Boswell Bay provides a description of its design.

The communication site is located at the top of an unnamed hill about 780 feet in elevation above sea level and about 1.5 miles from Kenny Cove. It is comprised of six tropospheric scatter antennas, four antenna feed horns, two buildings connected by an enclosed walkway, a radio tower, a fire control building with a water storage tank, and a diesel fuel storage tank.

Four of the six antennas are 60' square tropospheric (tropo) scatter antennas (reflectors) commonly known as 'billboards' and their associated antenna feed horns. Each antenna is made up of individual 2' x 4' panels bolted together, as are all other components of the antennas. Made of heavily galvanized steel set upon reinforced concrete foundations, they are massive in scale and in excellent condition, even the bolts. There are also two smaller disk-shaped tropo antennas, commonly known as 'orange peels.' The name indicates the surface character of the antenna, which is made up of wedge shaped panels bolted together to form a concave dish.

The communication building contains the ante-room, radio equipment room, storage room, and power house. The building measures 36' x 212', is steel framed with insu-

lated walls and corrugated aluminum siding on a concrete foundation. The roof is tarred corrugated steel, over wood sheathing and steel girders. Its low profile, general lack of windows, and extraordinarily sturdy construction provide testimony to its ability to withstand snow loads and violent storms with winds up to 140 miles per hour.

There is a large radio relay building, with an enclosed walkway connecting it with the communications building. The residential living area is composed of a dormitory building, a transient personnel building, a diesel fuel storage tank, and a fresh water well.

"The Dormitory Building is a one-story building that measures 36' x 141' and contains a kitchen, a dining and recreation area, a food storage room, a walk-in freezer, a walk-in cooler, nine 2-man bedrooms, a community bathroom, a storage room, a library room, and a linen room."

The Boswell Bay White Alice has been determined eligible for the National Register of Historic Places and demolished by the U.S. Forest Service following Historic American Building Survey (HABS) documentation. In addition to the HABS project, as-built drawings of the station are now in the collection of the library and archives of the University of Alaska, Anchorage.

The most common White Alice station design was of wood-frame construction. These were one-story rectangular shaped communications buildings with a standard width of 40-feet. The length varied from 104-feet to 256-feet. Depending upon local needs, a dormitory was included. The dormitory was either attached to the communications building or was a separate structure. The dormitories were 5,200 square-feet with the capacity to house 16 persons. The dormitories had ten bedrooms, a community bathroom, dining room, kitchen, cooler and freezer, and laundry facilities. The interior of the dormitory had asbestos tile floors, sheetrock walls, acoustical tile ceilings, candescent lighting, and double hung metal windows with storm sash. Dormitories were not built at stations located near communities with available housing (Nome and Kodiak) or when the White Alice was located near AC&W or DEW Line stations (such as Northeast Cape, Cape Lisburne, and Cape Newenham).

Twenty-three White Alice stations had this standard wood-frame design, including all the tropo stations except Boswell Bay, Diamond Ridge, Neklasson Lake, and the Aleutian Islands extension stations. The wood-frame design was used at the following tropo stations:

Aniak	Kalakaket Creek
Anvil Mountain	King Salmon
Bear Creek	Kotzebue
Bethel	Cape Lisburne
Big Mountain	Middleton Island
Fort Yukon	Cape Newenham
Granite Mountain	North River
Indian Mountain	Northeast Cape
Pedro Dome	Pillar Mountain
Cape Romanzof	Sparrevohn
Tatalina	Tin City

The tropo/microwave stations at Diamond Ridge and Neklasson Lake had concrete block buildings. The Diamond Ridge communications and equipment building was 6,100 square-feet. There was no dormitory or garage. The Neklasson Lake station equipment building was 5,710 square-feet, with no dormitory or garage.

The microwave stations included an equipment building and microwave tower. The standardized equipment building was 1,200 square-feet, concrete block. They were located at Clam Gulch, Naptowne, Rabbit Creek, and Starisky Creek. Microwaves at Anchorage and Soldotna were located at former communications stations.

The fifth standard design was that used for the Aleutian extension. These six stations, collocated with DEW Line facilities, were composite buildings housing the dormitory, communications, power plant, and garage. This design was employed at Cold Bay, Driftwood Bay, Nikolski, Port Heiden, Port Moller, and Cape Sarichef.

The poured concrete structures were two-stories for housing and administration and five-stories in the center to serve as a radar tower. Housed in the composite building were all the activities: offices, housing, communications section, radar operations, and two 350-KW generators. Adjacent to the composite building were four White Alice billboard type antennas composed of galvanized steel on large concrete foundations. There would also be a concrete storage bunker nearby (14'8" x 10'8") and a water pump house (17' x 20'), constructed of concrete with a wood roof.

White Alice was expanded to support the Ballistic Missile Early Warning System (BMEWS) at Clear. A dual communications system to NORAD was built, one route (A-Route) was on the southeast coast and a second (B-Route) on the east to

the Canadian border. Many of the TD-2 microwaves were installed at existing White Alice facilities, but some new sites were built.

The new TD-2 communications stations were constructed in 1960. They were of the same design as the early TD-2 stations. A few had garages and bathrooms unlike the earlier TD-2 stations.

The White Alice program grew from 31 to 71 stations, reflecting the addition of stations for the Ballistic Missile Early Warning System (BMEWS) and extensions into the Aleutians. Construction difficulties and additions drove the final cost to over 300 million dollars. Final completion of the original phase was delayed from 1957 to March 1959. The original network first transmitted on March 26, 1958, when it went on the air in a special ceremony at Elmendorf AFB. Even as White Alice was being completed, new technologies were being developed which made it obsolete. The Soviet Union had launched a satellite in October 1957. Communications satellites were tested in 1962, and with available satellite communications in 1973, White Alice was no longer needed.

Prior to the transition to satellite communications, the White Alice system was transferred to a private operator. Bids were solicited in 1968, and RCA Alaska Communications, Inc., (ALASCOM) was the successful bidder. Alascom began operating the system in 1970.

Six of the original 31 stations were microwave and three more were combined microwave and tropo stations. When tropo stations were collocated with radar stations, dormitories, mess halls, shops, and warehouses were shared. Fourteen of the 31 stations were with Aircraft Control and Warning or DEW Line operations. Twenty-two of the original 31 stations were tropo. At each tropo station, radio messages were sprayed by a feed horn onto a parabolic antenna which beamed the signal to the troposphere. The signal was deflected off the troposphere to the receiving station; here the signal was caught by the antenna and sent on to the next station. The tropo stations were abandoned in the early 1970s, but microwave stations were retained and are today still in use.

ORIGINAL WHITE ALICE

TROPO

Aniak

Anvil Mountain

Bear Creek

Bethel, AC&W

Big Mountain

Boswell Bay
Fort Yukon, AC&W
Granite Mountain
Indian Mountain, AC&W
Kalakaket Creek
King Salmon, AC&W
Kotzebue, AC&W
Cape Lisburne, DEW
Middleton Island, AC&W
Cape Newenham, DEW
North River, AC&W
Northeast Cape, AC&W
Pillar Mountain
Cape Romanzof, DEW
Sparrevohn, AC&W
Tatalina, AC&W
Tin City, AC&W

MICROWAVE

Clam Gulch
Naptowne
Rabbit Creek
R1-N
Soldotna
Starisky Creek

TROPO/MICROWAVE

Neklasson Lake
Diamond Ridge, AC&W
Pedro Dome

THE BMEWS NETWORK

A Route

Aurora
Black Rapids
Boswell Bay
Cape Yakataga
Clear
Donnelly Dome
Duncan Canal

McCallum
Murphy Dome
Neklasson Lake
Ocean Cape
Paxson
Pedro Dome
Sawmill

B Route

Beaver Creek
Canyon Creek
Cathedral
Delta Junction
Gerstle River
Gold King Creek
Knob Ridge

Glennallen	Sheep Mountain	Tok Junction
Harding Lake	Smuggler Cove	
Hoonah	Tahneta Pass	
Tolsona		

Five of the BMEWS stations on the A Route had tropo capabilities, they were: Duncan Canal, Hoonah, Ocean Cape, Smuggler Cove, and Cape Yakataga.

ALASKA PENINSULA-ALEUTIAN EXTENSIONS

Alaska Peninsula-Aleutian Extensions were located at:

Adak
Cape Sarichef
Cold Bay
Driftwood Bay
Nikolski
Port Heiden
Port Moller
Shemya

Stations at Sitkinak Island, off Kodiak Island, near Cape Chiniak, Kodiak Island, were not completed. The Kodiak Island site was completed as a satellite tracking station.

Pedro Dome, built in 1957, is a typical station, which consists of a 15,024 sf communication center, an auto maintenance shop, a water fire pump station, a small warehouse, and diesel and motor vehicle fuel storage tanks.

There were three sizes of antennas, with the smallest being a 30' circular dish. The mammoth 60' and 120' antennas were "billboard" or "movie screen" shaped, and while they may have appeared flat at first glance, they were actually parabolic. The 30' antennas operated at 1 KW, and the 60' and 120' antennas operated at 10 KW and 50 KW, respectively. In front of each antenna was a "feedhorn" which directed the signal onto the antenna where it was then projected out and up. Tropo antennas were always found in pairs and sited slightly one behind the other. This was because the altitude of the troposphere varies, and depending on the position of the bottom most layer, either one transmitter or the other, depending in turn on its distance relative to the receiving antenna, would carry the signal more effectively than the other at a given time. A single 60' antenna weighed 15 tons.

The TD-2 microwave facilities were much smaller and are simpler to describe. Most generally consisted of one power and equipment building and one microwave tower topped by 'cornucopia' shaped antennas. The towers beamed telephone and telegraph signals by line of sight. Each tower was constructed only as high as necessary to see the station antennas adjacent to it in the network. To ensure the two antennas were of compatible height, they were suspended from helicopters until the signal beamed from one to the other; only then were the cornucopia antennas placed on the towers.

Aniak

Aniak was a tropo station to link Bethel and Sparrevohn. Construction was initiated in 1955 and the station was activated on January 14, 1958. The facility was closed in 1979 and transferred to the State of Alaska.

The main buildings consisted of a 6,080 square-foot equipment and power building, and a dormitory; additionally, there were the four large billboard antennas. The buildings have received new exterior siding and other modifications.

Current Status: This former White Alice is now an educational facility.

Historic Context: The White Alice system was a state-of-the-art communications program, developed to cope with the Alaska climatic conditions. This innovative network effectively supported the DEW Line and BMEWS radars.

Significance: The National Register nomination for the White Alice system identifies its significance as the communication link between the radar stations of the Distant Early Warning (DEW) Line and the military command centers and air fields in Alaska and CONUS. Although less than 50 years old, it is significant because of the vital role it played in national defense. It remains an example of a technology that evolved so rapidly that its development, achievement peak, and obsolescence was contained within one generation. Militarily, the White Alice and DEW Line systems are significant examples of the extent to which the nation would go to avoid a surprise attack.

Integrity: The Aniak station is today representative of this smaller wood-frame type of station.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: The State of Alaska should undertake an evaluation of the Aniak facility.

Priority and Level of Preservation: This is a priority B project.

AHRS number: RUS-099

Anvil Mountain, Nome

Anvil Mountain was a tropo station linking Granite Mountain and Northeast Cape. Construction was started in 1957 and completed in January 1958. The facility was deactivated in 1978.

The main building was 6,720 square-feet, with wood-frame design and asbestos-cement shingles. A dormitory was not constructed, as operators lived in nearby Nome.

Current Status: The operations building is abandoned and boarded-up.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The station is largely intact with limited vandalism.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: We recommend that one White Alice station be retained and a new use found. The recommended station is Granite Mountain. All the White Alice stations should be identified in the listing of Cold War facilities.

Priority and Level of Preservation: This is a priority A project since the facility is under review for demolition.

AHRS number: NOM-099

Bear Creek, Tanana

Bear Creek was a tropo facility linking Indian Mountain, Kalakaket Creek, and Pedro Dome. Construction was started in 1956, with the station officially activated on January 6, 1958. The facility closed in 1979.

The station included a 7,200 square-foot equipment building and a 5,200 square-foot, 16-person dormitory. One set of two antennas linked to Kalakaket Creek and two to Pedro Dome. A microwave linked to FAA facilities at Tanana.

Current Status: Abandoned, some land leased by Alascom.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: Unknown.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: Additional research is required to determine the condition of this site.

Priority and Level of Preservation: This is a priority A facility.

AHRS number: TAN-030

Beaver Creek

The Beaver Creek site is currently leased by the Air Force to Alascom. The microwave site is unattended.

Current Status: This is an Alascom unattended facility.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This station is probably in good condition, as it is active.

National Register of Historic Places Status: White Alice is National Register listed.

Recommendations: Additional research is required.

Priority and Level of Preservation: This is a priority A facility.

AHRS number: TNX-031

The microwave stations are virtually identical, therefore, we will not describe every installation.

Bethel

Construction of the tropo station at Bethel was launched in 1957 and completed on January 18, 1958. The station was closed in 1979. Since the station provided links to three stations, Aniak, Cape Romanzof, and Cape Newenham, it had three pairs of antennas.

There was a 6,720 square-foot equipment building, but no dormitory. Personnel lived at a nearby radar (AC&W) site.

Current Status: Abandoned.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: Unknown.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: Additional research is required to determine the conditions of this site.

Priority and Level of Preservation: This is a level A project.

AHRS number: BTH-142

Big Mountain, Iliamna

The Big Mountain site is located on the east shore of Iliamna Lake. Construction at Big Mountain was started in 1956, opened on September 7, 1957, and closed on April 27, 1979. There was an equipment and power building and a 7,200 square-foot, 16-person dormitory.

This is Air Force property.

Current Status: Abandoned.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This station is intact, but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: One White Alice of the most common design should be retained, Granite Mountain is recommended.

Priority and Level of Preservation: The preservation of White Alice is by documentation and reuse of one station.

AHRS number: ILI-055

Boswell Bay, Hinchenbrook

This was one of the first White Alice tropo stations. Construction was started in 1955 and it was activated in 1957.

Current Status: This White Alice has been demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: Site has been environmentally restored.

National Register of Historic Places Status: White Alice is National Register listed.

Recommendations: No further preservation required at this site. A project to document the site was accomplished by the U.S. Forest Service in 1987. Historic American Building Survey photographs were deposited in the HABS collection. Original as-built drawings were turned over to the University of Alaska, Anchorage, archives.

Priority and Level of Preservation: This site has been documented and recorded.

AHRS number: COR-312

Canyon Creek

The Canyon Creek Radio Relay station is located in a remote area approximately 1.7 miles north of the Tanana River and approximately 50 miles south of Fairbanks, just off the Richardson Highway at Milepost 302. The station consists of a communications site with a radio relay building, a microwave tower, a diesel generator, a 300-gallon day fuel tank, 2 steel underground storage tanks, and 2 diesel tanks.

The site was constructed in 1959 as part of the Ballistic Missile Early Warning Systems (BMEWS). BMEWS linked Clear AFB to the North American Air Defense (NORAD) headquarters in Colorado. The site was leased to RCA Alascom in 1976 and was eventually closed on March 29, 1982.

Current Status: Canyon Creek RRS is an inactive site. The site is abandoned and the closest residence is located 1.8 miles west of the site.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This station is intact but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No additional preservation is required at this site.

Priority and Level of Preservation: Preservation activities are recommended for the system. They include listing of station sites and reuse of Granite Mountain.

AHRS number: XBD-127

Cape Chiniak, Kodiak Tracking Station (Satellite Tracking Station), also called Chiniak AFS.

The White Alice tropo/microwave and AC&W station at Cape Chiniak, 40 miles from the City of Kodiak, was completed for use as a satellite tracking station. The Air Force acquired the site in 1957.

The Kodiak Tracking Station was part of the Air Force Satellite Control Facility (AFSCF) with headquarters in Los Angeles. The AFSCF provided tracking, telemetry recording, and command services for U.S. satellites.

The station was operated by Philco Corporation. In March 1975, the decision was made to close the facility for budget and operating reasons. Other tracking stations in the system could assume its tracking duties. Closing the operation saved over \$5 million annually. The station was closed in July 1975, and in December the property was transferred to the Leisnoi Native Corporation.

The tracking station included a two-story composite radar and operations building, a communications building, automotive maintenance shop, dormitory and 20 portable housing trailers, power plant, and shop building.

The buildings have experienced extensive vandalism and removal of usable materials. There is exposed friable asbestos in the buildings, PCB contamination, and other hazardous waste at the site. Cleanup under DERP-FUDS is scheduled.

Current Status: Abandoned.

Historic Context: The Kodiak Tracking Station was part of the Pacific Tracking network. As the radars were improved, the station was no longer needed.

Significance: The Kodiak Tracking station was an important part of the international tracking network.

Integrity: This facility has been subject to extensive vandalism and materials scavenging.

National Register of Historic Places Status: The site has been determined not eligible for the National Register of Historic Places.

Recommendations: No further preservation is required.

Priority and Level of Preservation: None.

AHRS number: KOD-361

Cape Lisburne

The Cape Lisburne White Alice station opened on August 29, 1957, after one year of construction. Reynolds (1988) notes that:

Lisburne was the only seasonal WACS, not in use during the winter. The equipment and power building was 2,960 sf. This was replaced by a 'showplace' composite building in 1968-70, which boasted a two-story foyer, 'Simulating an airy summer atmosphere.' It had a colorful interior and lavish lighting. The building cost 6.5 million dollars to build in 1968-70. A tramway was added in 1963 for 1.35 million dollars. Lisburne was the northernmost WACS facility.

Current Status: The Air Force has demolished this facility.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The station has been largely demolished, some debris and antenna remain.

National Register of Historic Places Status: White Alice is National Register listed.

Recommendations: No further preservation is required.

Priority and Level of Preservation: The preservation activities are system-wide and at Granite Mountain.

AHRS number: XPH-107

Cape Newenham

Cape Newenham was a tropo station, transmitting DEW Line data to Bethel and finally NORAD. Construction was started in 1957 and the station became operational on January 18, 1958.

Construction at Cape Newenham included a 5,280 square-foot operations building, a 12-person dormitory, and a tramway. The composite operations building was modernized in 1974 with a six-million dollar contract. Cape Newenham closed in 1979.

In 1984, a Minimally Attended Radar (MAR) replaced the 1952 constructed AC&W station.

Current Status: The White Alice facility and original AC&W has been demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The Cape Newenham White Alice has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action is required at this site.

Priority and Level of Preservation: The preservation activities are at other sites.

AHRS number: XHI-062

Cape Romanzof

A White Alice tropo station was opened at Cape Romanzof on February 15, 1958, to support the existing AC&W. There was a 5,280 square-foot composite building and 12-person dormitory collocated with the AC&W.

A MAR replaced the AC&W and the White Alice was inactivated in 1978.

Current Status: The White Alice has been demolished and the site restored.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The facility has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action is required at this site.

Priority and Level of Preservation: The preservation activities are system wide and at Granite Mountain.

AHRS number: XHB-090

Cape Yakataga Radio Relay

The Cape Yakataga RRS communications station started operations in 1960. Three buildings and four tropo antennas were built. A composite building, 18,042 square-feet, contained communications, dormitory, and shops.

Yakataga RRS was closed in 1974 and sold to Alascom in 1980. The site is currently owned by a Native Corporation.

Current Status: Abandoned.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The site is intact but has been subjected to vandalism and deterioration.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: This site is scheduled for a 1995 inventory.

Priority and Level of Preservation: The preservation needs will be evaluated in a 1995 survey.

AHRS number: XBG-116

Clam Gulch, Kenai

This TD-2 microwave station was opened on March 30, 1957. It is an active station owned by Alascom.

Current Status: Clam Gulch is an active microwave station.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This facility is intact and in use.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: The microwave facilities were documented in Reynolds report.

Priority and Level of Preservation: None.

AHRS number: KEN-223

Diamond Ridge, Homer

Construction was started on the combination tropo/microwave station in 1956 and the station opened on March 30, 1957. There is a 6,100 square-foot equipment building and an automotive maintenance shop.

Current Status: The billboard antennas have been removed, but the site is in use by Alascom.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This White Alice is in use and intact.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No preservation requirements at this operational facility.

Priority and Level of Preservation: None.

AHRS number: SEL-162

Duncan Canal, Radio Relay

The Duncan Canal Radio Relay station was demolished by the Air Force in 1992.

Current Status: The site has been restored.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This facility has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further preservation required.

Priority and Level of Preservation: Preservation of the White Alice is system-wide, with site action at Granite Mountain.

AHRS number: PET-322

Fort Yukon

This tropo station, linked to Pedro Dorne and Barter Island, started operations in 1957. A 4,960 square-foot equipment and power building was constructed.

Current Status: Abandoned.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The operations building has been removed, the power building and antenna survive.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action at this site.

Priority and Level of Preservation: The preservation of this type of White Alice station will be accomplished at Granite Mountain.

AHRS number: FYU-046



Foundation of White Alice equipment building at Fort Yukon. Antenna is still standing.

Gold King Creek RRS

The Gold King Creek RRS is located in a remote area approximately 80 miles south of Fairbanks and 40 miles east of the Nenuana River. The station originally consisted of a radio relay building, a microwave tower, and a 2,050 foot runway.

The site was constructed in 1959 as part of the Ballistic Missile Early Warning System of the WACS. BMEWS linked Clear AFB to NORAD in Colorado. The site was leased from the Air Force by RCA Alascom in 1976, and was closed on March 30, 1982.

Current Status: The Gold King Creek RRS site is currently inactive and abandoned.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: Unknown.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: An Air Force assessment of this site is appropriate.

Priority and Level of Preservation: Not known at this time.

AHRS number: FAI-340

Granite Mountain

Granite Mountain RRS is located on the isthmus of the Seward Peninsula, north of Norton Bay, approximately 120 miles northeast of Nome and 12 miles north of Dime Landing, with access by air.

Granite Mountain RRS was built in 1956-57 and activated on May 25, 1957. This RRS was a combined tropospheric scatter/TD-2 microwave station. It provided links to: North River RRS, 108 miles away, with two 60-foot antennas; Anvil Mountain RRS, 130 miles, with two 60-foot antennas; and Kotzebue RRS, 105 miles away, with a pair of 30-foot dish antennas.

Granite Mountain RRS was leased to Alascom in 1976. On June 3, 1981, a notice of intention to relinquish Granite Mountain RRS was forwarded to the Bureau of Land Management. The BLM utilizes various facilities at the site during the summer months as a headquarters for firefighting operations conducted in the interior of Alaska. The Federal Aviation Administration operates a single frequency outlet (SFO) at the communications facility. The southern-most tropospheric antenna (Antenna No. 1) at the facility houses the SFO equipment.

The Granite Mountain RRS site is currently owned by the Air Force.

Current Status: Limited new uses.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This station is believed to retain much of its original integrity.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: Further study is required by the Air Force to develop a preservation plan for this site. The station might be preserved as a remote lodge and housing area for fire fighting missions. Attention must be directed at preserving its character.

Priority and Level of Preservation: Since this station retains a significant amount of integrity, its preservation has a high priority.

AHRS number: CAN-028

Hoonah Radio Relay

The Hoonah Radio Relay station, located six miles northeast of Hoonah, was opened in 1961. It was a tropo station for BMEWS communications (Route A). The station included four tropo antennas, a 20,240 square-foot composite building, and a warehouse. The station was shut down in 1974 and leased by RCA Alaska until February 1980 when it was sold to Alascom who then sold it to a native corporation.

Current Status: This site is now native corporation property, its condition is unknown.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: Unknown.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: When this site is investigated by the DERP-FUDS program in 1995, its integrity can be determined.

Priority and Level of Preservation: A preservation plan is dependent upon the findings of the DERP-FUDS inventory.

AHRS number: JUN-377

Indian Mountain

Construction of this tropo station, which linked to Bear Creek, was started in 1956 and became operational on February 7, 1958. There was a composite building for the White Alice and AC&W. Indian Mountain is an Air Force site.

Current Status: This station was demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This facility has been demolished and the site restored.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action required at this facility.

Priority and Level of Preservation: None required.

AHRS number: HUG-156

Kalakaket Creek

Kalakaket Creek RRS is located approximately 20 miles south of Galena and 275 miles west of Fairbanks. Access is by air.

This was a combined tropo/microwave which opened on May 25, 1957. It provided a link to North River, 118 miles away, with 60' antennas; a link to Bear Creek, 155 miles away, with 60' antennas; and a link to Tatalina, 107 miles distant, with a pair of 30' dish antennas. A microwave link to Campion and Galena was added. By 1973, with the launch of the first viable communications satellite, SATCOM, the station was deactivated.

There was an equipment/generator building of 7,520 square-feet and a 16-person dormitory.

The site is currently under Air Force control.

Current Status: Abandoned.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The Kalakaket Creek RRS is believed to be in poor condition.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: Given the remoteness of this installation and its deteriorated condition, it is not a good candidate for preservation.

Priority and Level of Preservation: No further preservation required.

AHRS number: NUL-061

King Salmon

This tropo station was built in 1955-1956 and opened on May 25, 1957. An equipment and generating building was constructed, with housing available at the King Salmon airport.

Current Status: The White Alice communication building survives, boarded-up and has not been vandalized. The supporting buildings have been demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This facility retains much of its original character, however, the tropo antennas have been removed.

National Register Of Historic Places Status: The White Alice system is National Register listed.

Recommendations: An investigation of future use plans of this building is required.

Priority and Level of Preservation: Preservation options should be considered.

AHRS number: NAK-042

Kotzebue

Construction of this tropo station, collocated with an AC&W, was initiated in 1956 and the station opened on May 25, 1957. There was a 5,280 square-foot operations building with a power plant. The antennas have been buried on-site.

This is an Air Force site.

Current Status: The composite building survives but is abandoned.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The composite building is present but has been vandalized and is deteriorated. The tropo antennas have been buried on site.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: This station requires clean up and removal.

Priority and Level of Preservation: No further preservation is required at this site.

AHRS number: KTZ-037

Middleton Island

Middleton Island White Alice, linking Boswell Bay and Neklason Lake, was an early project, opening on November 29, 1956. There were the four billboard antennas, an operations building (4,300 square-foot), and an AC&W station.

Current Status: Abandoned, private ownership.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The White Alice facility has been reused by FAA for other communication purposes.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: The Middleton Island site, under review by the DERP-FUDS program, requires systematic investigation of the surviving features and an evalu-

ation of historical integrity. Along with Fort Yukon, it is the best preserved AC&W. The condition of the White Alice has not been determined.

Priority and Level of Preservation: This is a priority A project.

AHRS number: XMI-010

Naptowne, Kenai

Current Status: Active Alascom microwave.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This facility is in good condition, as it is an active site.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: The landowner should be notified of the potential historical significance of this site.

Priority and Level of Preservation: As an active site, the urgency of preservation is not so great.

AHRS number: KEN-224

Neklasson Lake, Wasilla

Another early station, tropo and microwave, opened on November 29, 1956.

Later, Neklasson Lake became a station on the BMEWs network. The operations building was 5,710 square-feet.

Current Status: This station is an active Alascom site.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The facility is in good condition, as it is an active site.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: The landowner should be notified of the potential historical significance of the site.

Priority and Level of Preservation: As an active site, the preservation priority is low.

AHRS number: ANC-649

Nikolski RRS

Nikolski RRS is located on Umnak Island, approximately 935 miles southwest of Anchorage. The site consisted of a fuel pumphouse, airstrip, road, runway apron, buildings, antennas, water tank, fuel storage tanks and day tanks. The site was de-

activated on December 10, 1977. In 1988, the site facilities were demolished, except for a fuel tank, pump station, and airstrip.

Current Status: The site is abandoned and the station has been demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This site has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action with this site.

Priority and Level of Preservation: None.

AHRS number: SAM-028

North River, Unalakleet

North River was a combination tropo/microwave station, built in 1957 and opened on September 13, 1957. Its links were to Granite Mountain and Kalakaket Creek. There was a 6,720 square-foot composite building and a 12-person dormitory. The White Alice was collocated with an AC&W. The station was abandoned in 1978 and is today heavily vandalized and unsafe. Buildings remaining at the site are the one-story, wood-frame operations building, dormitory, Butler-type steel hut, and four billboard antennas.

Current Status: North River is scheduled for demolition.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The integrity of the facility has been lost through vandalism and deterioration.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: North River and all other restored sites should be identified in the listing of Cold War facilities.

Priority and Level of Preservation: The preservation will be system-wide and at Granite Mountain.

AHRS number: UKT-043

Northeast Cape, Saint Lawrence Island

The first military-related activity was the construction of an Aircraft Control and Warning Station (AC&W) in 1951. In 1952, the AC&W was formally activated by the assignment of the 712th AC&W Squadron and the 6980th Security Squadron, with 212 men.

In 1957, the Air Force began construction of a White Alice radio relay here, which was opened on February 17, 1958.

In June 1969, the radar operations ceased and most military personnel were removed by the end of that year. The facilities were left intact, with minimal removal of equipment due to the high cost of transportation. The White Alice station area remained operational with minimal military staff until 1972 when it was closed. In 1982, the White Alice facility was transferred to the Navy for submarine monitoring activities. The Navy departed a few years later.

The AC&W and White Alice stations have been heavily damaged and vandalized, resulting in a loss of historical integrity. Demolition of the station is needed for reasons of safety.

Current Status: Scheduled for demolition.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The integrity of the Northeast Cape White Alice facility has been lost due to vandalism and decay.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further cultural resources action is required at this site.

Priority and Level of Preservation: None.

AHRS number: XSL-060

Ocean Cape Radio Relay

The Ocean Cape radio relay (White Alice) is located near Yakutat on the southeast entrance of Yakutat Bay.

The station was in operation from 1960 to 1974 with tropospheric communications. Operations were halted in June 1974 and the station leased to RCA. RCA closed the site in June 1976 when a satellite earth station was constructed nearby.

Current Status: The land was conveyed to a native corporation in 1983 and buildings on the site were abandoned.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The Ocean Cape station has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further cultural resources action required.

Priority and Level of Preservation: None.

AHRS number: YAK-047

Pedro Dome

This was a combined tropo/microwave station linked to Fort Yukon and Bear Creek. The microwave communicated with Fairbanks, Harding Lake, Murphy Dome, and Eielson. The station was activated on January 6, 1958 and became part of the A Route BMEWs in 1965. There is a one-story composite building with attached dormitory.

Current Status: The billboard antennas have been removed. The microwave and part of the operations building are in use.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The operations building is in fair condition, however, the billboard antennas have been buried on site.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: This site lacks sufficient integrity for it to be a preservation target.

Priority and Level of Preservation: Further preservation at this site is not required.

AHRS number: UV-177

Pillar Mountain, Kodiak

Construction of the tropo station on Pillar Mountain was started in late 1956 and opened on April 26, 1957, linking with Diamond Ridge, near Homer. A one-story, wood-frame composite building and a steel garage were erected.

Current Status: The facility was abandoned in 1978, and the operations building has since been heavily vandalized. The tropo antennas are still standing. The Air Force manages this property.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The facility has been heavily vandalized.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: Given the vandalism and decay of this site, demolition is necessary.

Priority and Level of Preservation: None.

AHRS number: KOD-360

Rabbit Creek

Current Status: Active Alascom microwave.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This is an active communications facility and retains its integrity as a microwave operation.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: The owner, Alascom, will be notified of the potential historic nature of the facility.

Priority and Level of Preservation: As an active site, preservation is not a critical issue at this time.

AHRS number: ANC-651

R1-N, Anchorage

Current Status: An active unattended microwave located on Elmendorf AFB.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This unattended microwave is maintained.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: Preservation issues should be addressed if this microwave is shut down.

Priority and Level of Preservation: Since this is an active microwave, there is a low priority regarding preservation.

AHRS number: ANC-650

Sitkinak

The White Alice station on Sitkinak Island was abandoned when it was less than 80 percent complete. It was made unnecessary by the Aleutian extension.

Current Status: The frame work of the abandoned station was demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This White Alice was never completed. It has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further cultural resources action required at this site.

Priority and Level of Preservation: None.

AHRS number: XTI-064

Smuggler Cove Radio Relay

Current Status: Unknown. Research and investigation is scheduled for 1995.
AHRs number: KET-281

Soldotna Radio Relay

The Soldotna Radio Relay, a White Alice station with two troposcatter antennas and microwave radio relay, was established in 1958. The site includes a communication/equipment building, dormitory, microwave tower and tropo antennas.

Current Status: The station is used by Alascom for modern microwave and dish satellite communications.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This active station has been modified by the addition of a satellite dish and other improvements.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: This site should be evaluated during the 1995 DERP-FUDS inventory.

Priority and Level of Preservation: The preservation effort will be determined in the 1994 survey.

AHRs number: KEN-225

Sparrevohn

This tropo station linked with three other stations, Aniak, Tatalina, and Big Mountain. Sparrevohn was opened on October 26, 1957. Construction included a 5,760 square-foot composite building and a 5,200 square-foot dormitory.

Current Status: The Air Force has demolished this site.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The station has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action is required.

Priority and Level of Preservation: None.

AHRs number: LIM-024

Starisky Creek, Homer

Current Status: Starisky Creek is an active unattended microwave.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This is a maintained unattended microwave.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: The owner will be notified of the microwave's potential historic value.

Priority and Level of Preservation: This operational site has a low priority at present.

AHRS number: SEL-163

Tatalina

This White Alice was located near the AC&W. Construction of the White Alice was started in 1956 and the station opened on October 27, 1957.

The AC&W was replaced by a MARS, and the White Alice was abandoned in 1979. The operations building (there was not a dormitory, as facilities at the AC&W were used) has been demolished.

Current Status: The station has been demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The facility has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further preservation activities are required at this site.

Priority and Level of Preservation: None.

AHRS number: IDT-051

Tin City

The Tin City White Alice was located near the AC&W. Communications were first transmitted on February 18, 1958. The composite building was 4,960 square-feet, with living and messing at the AC&W station.

Current Status: Demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The facility has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further preservation required at this site.

Priority and Level of Preservation: None.

AHRS number: TEL-141

Wainwright Radio Relay

The Wainwright RRS is adjacent to Wainwright Inlet on the Chukchi Sea and five miles from the village of Wainwright. There is a landing strip at the site. Wainwright was constructed in 1953 and is located within NPR 4.

Current Status: The site is abandoned and under investigation by the Air Force.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: Unknown.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: An evaluation of this site by the Air Force is necessary.

Priority and Level of Preservation: The appropriate level of preservation should be determined during forthcoming Air Force investigations.

ALASKA PENINSULA/ALEUTIAN EXTENSION

Adak

The Radio Relay station at Adak was added to the Aleutian extension under Project Bluegrass. The station went into service in 1968 and closed in 1978.

Current Status: The Navy has demolished this station.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: This White Alice station has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further preservation required.

Priority and Level of Preservation: None.

AHRS number: ADK-131

Cape Sarichef

The Radio Relay at Cape Sarichef linked with Driftwood Bay and Cold Bay. The facility included a two-story concrete composite building and four billboard an-

tennas. The station was located on a cinder dome at a 560-foot elevation. An airstrip was sited nearby. The DEW Line was inactivated in 1969, the White Alice in 1977, and the site was then abandoned.

Current Status: Abandoned.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The composite building and four billboard antennas are present and in good condition.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: This well preserved White Alice and DEW Line station should be left as is. Reuse or other preservation options should be sought.

Priority and Level of Preservation: The development of a preservation plan for this station has a priority A.

AHRS number: UNI-089

Cold Bay

Cold Bay was the main station of the Aleutian DEW Line extension. The station was constructed in 1958 and went into service in 1959.

The concrete two-story composite building and steel garage were demolished by the Air Force in 1987. A MARS station was constructed at a new location in 1984.

Current Status: This station has been demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The station has been demolished and the site restored.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action is required at this site.

Priority and Level of Preservation: The preservation of White Alice has been on a system with the physical preservation recommended for Cape Sarichef.

AHRS number: XCB-034

Driftwood Bay, Unalaska

The Driftwood Bay White Alice included a composite building, four antennas, and landing strip. The station was opened in 1959 and closed in 1977.

The facilities were demolished in 1991 under the DERP-FUDS program.

Current Status: This station has been demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The station has been demolished and the site restored.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action is required at this site.

Priority and Level of Preservation: The Cape Sarichef station, of the same design, should be studied for preservation.

AHRS number: UNL-202

Nikolski

Nikolski linked Driftwood Bay and Adak Island. It included a composite building and four billboard antennas. The station was completed in 1959 and closed in 1977. The Air Force has demolished this station.

Current Status: This station has been demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The station has been demolished and the site restored.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action required at this site.

Priority and Level of Preservation: See Cape Sarichef.

AHRS number: SAM-028

Port Heiden

The Port Heiden Radio Relay, providing a link between King Salmon and Port Moller, station went into service in 1959 and closed in 1977. The White Alice and DEW Line were housed in a two-story, 28,000 square-foot composite building. The Aleutian extension of the DEW Line was inactivated in 1969 and the White Alice station was abandoned in November 1978.

Current Status: Demolished.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The station has been demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: See Cape Sarichef.

Priority and Level of Preservation: See Cape Sarichef.

AHRS number: CHK-037

Port Moller

This installation is identical to Port Heiden.

Current Status: This station is scheduled for demolition by the U.S. Army Corps of Engineers.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The station will be demolished.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: No further action is required at Port Moller.

Priority and Level of Preservation: None.

AHRS number: XMP-053

Shemya

The Shemya White Alice was at the end of the Aleutian extension, built under Project Bluegrass, immediately following approval of the Aleutian extension.

The White Alice went into service in 1968 and was inactivated in 1978.

Current Status: The two antennas were removed in the 1980s and the equipment building was converted to new uses.

Historic Context: See Aniak.

Significance: See Aniak.

Integrity: The antennas have been removed and the building has been reused for new purposes. The extent of alteration is not known.

National Register of Historic Places Status: The White Alice system is National Register listed.

Recommendations: This former White Alice building should be evaluated as part of the Eareckson Air Station cultural resources survey.

Priority and Level of Preservation: At this time, this is a priority B project, but should drawdown or closure occur it must be a higher priority.

AHRS number: ATU-058

LORAN

The Coast Guard operates Long Range Aid to Navigation (LORAN) stations at Attu, Juneau, Kodiak, Port Clarence, St. Paul, Shoal Cove, and Tok. These are active C-type stations providing navigational assistance. The LORAN system is scheduled for closure at the turn of the century since the system is now obsolete, having been replaced by GPS (ground positioning system). Some LORAN stations will be retained to supply navigational assistance to aircraft. Internationally



U.S. Coast Guard station at Attu. This station remains active today.



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Closed U.S. Coast Guard lighthouse facility at Scotch Cap.

as well as locally, the Coast Guard should evaluate the historical significance of LORAN and the tremendous impact it has had on air and sea navigation.

There are abandoned A-type stations at Biorka Island (Sitka), Adak, Sitkinak Island, Scotch Cap, and Spruce Cape (Kodiak).

Cape Sarichef LORAN Station

The Coast Guard established a LORAN A station at Cape Sarichef in 1950. The station was closed in 1977, replaced by the longer ranged LORAN C system. The U.S. Fish and Wildlife Service used the station as a biology laboratory for two years, abandoning it in 1980.

The LORAN station and operations building is a two-story concrete structure. There was also a wood-frame garage and workshop (54' x 37'). Today, an Uni-mog truck sits in the garage. Other artifacts include a "honey wagon," transmitting poles, fork lift, and the grave of Mr. Rosenberg who died in 1918.

At the LORAN station are the remains of the lighthouse, which replaced the lighthouse destroyed in 1946. This facility is a concrete structure (20' x 34'), containing three generators. A new automated light is located in front of the old lighthouse.

The Coast Guard, in consultation with the SHPO, should inventory and evaluate its LORAN stations.

Ocean Cape LORAN

The Ocean Cape LORAN station has been demolished by the U.S. Coast Guard.

Skull Cliff LORAN Station

Skull Cliff is located about 28 miles south of Barrow on the Chukchi Sea. The site was a test well location during the 1947 Naval Petroleum Reserve-4 (NPR-4) program.

A Coast Guard LORAN annex was built at the site in 1951. Construction included 15 buildings and a 625-foot LORAN tower. The facility was abandoned in 1954.

The camp was demolished during a U.S. Geological Survey cleanup program in 1976. Today, only a 8-foot by 10-foot wood-frame building and concrete tower bases survive.

There are no known archaeological sites in the immediate area of the Skull Cliff LORAN Station. However, the Skull Cliff region has been an historically active area, with heavy subsistence use by the Inupiat people living in and around Barrow. Subsistence use of the Skull Cliff area continues today, with whale hunting and fishing along the shoreline and duck, goose, and caribou hunting further inland.

ALASKA NATIONAL GUARD

There are 90 National Guard facilities in Alaska. They have been constructed since the 1960s.

Camp Carroll

Camp Carroll is a National Guard Camp on Fort Richardson. The 30 plus buildings are of Quonset hut (with polyurethane covering) and concrete block construction.

The camp was named in honor of General Thomas Carroll who died in a C-123 crash at Valdez on April 25, 1964. There is a monument at the camp recalling General Carroll.

Current Status: This is an active National Guard camp.

Historic Context: The National Guard in Alaska is a Cold War product, formed to use the cold weather abilities, terrain knowledge and expertise of the native population. The fight to establish a National Guard in Alaska during the Cold War was a difficult one. This struggle is detailed in the history of the National Guard (see bibliography).

Significance: The National Guard has played a critical and significant role in local and native defense of Alaska. The National Guard is associated with the special and unique climate and terrain conditions of Alaska and native knowledge.

Integrity: The facility has not been evaluated.

National Register of Historic Places Status: The facility has not been investigated.

Recommendations: A survey and evaluation of National Guard facilities in Alaska is suggested.

Priority and Level of Preservation: The National Guard facilities have been constructed since the 1960s; their youth suggests that an immediate evaluation is not necessary.

Camp Denali

Camp Denali and Camp Carroll are located on Fort Richardson. In the Spring of 1990, construction was launched on a new Anchorage Armory at Camp Denali. The new armory was built at a cost of over \$27 million, with offices and training facilities within the 200,000 square-foot building.

There are also active Armory operations in Anchorage at Mountain View, Campbell Creek, and Spenard Road.

Current Status: This is an active National Guard camp.

Historic Context: The National Guard in Alaska is a Cold War product, formed to use the cold weather and terrain knowledge and expertise of the native population.

Significance: The National Guard has played a critical and significant role in the Cold War defense of Alaska.

Integrity: The facility has not been evaluated.

National Register of Historic Places Status: The facility has not been investigated.

Recommendations: A survey and evaluation of National Guard facilities in Alaska is suggested.

Priority and Level of Preservation: The National Guard facilities were constructed since the 1960s, therefore, an immediate evaluation is not necessary.

Fairbanks Armory

The National Guard in Fairbanks has an active Cold War era armory.

Current Status: This is an active National Guard camp.

Historic Context: The National Guard in Alaska is a Cold War product, formed to use the cold weather and terrain knowledge and expertise of the native population.

Significance: The National Guard has played a critical and significant role in the Cold War defense of Alaska.

Integrity: The facility has not been evaluated.

National Register of Historic Places Status: The facility has not been investigated.

Recommendations: A survey and evaluation of National Guard facilities in Alaska is suggested.

Priority and Level of Preservation: The National Guard facilities were constructed since the 1960s, therefore, an immediate evaluation is not necessary.

Kulis Air National Guard Base

The Kulis Base is an active facility located at the Anchorage Airport. This base is of recent construction. It is unique in having an excellent collection of aircraft that have been used by the Alaska Air National Guard. On display are: AT-6 trainer, F-80 fighter, F-86 fighter, T-33 trainer, and C-123 cargo aircraft. These aircraft have been well-maintained and of museum exhibit quality. Unfortunately, the base has restricted access so few people have the opportunity to view these aircraft.

The Alaska Air National Guard deserves commendation for this Cold War preservation.

TACTICAL AIR NAVIGATION (TACAN)

The Air Force, in 1954, installed a new air navigation system at various airports. The system was signal transmitted, providing navigational assistance to both military and civilian aircraft.

A TACAN station would include a tower for signal transmission and a small wood-frame equipment building.

The TACAN system was replaced between 1957 and 1963 by the Very High Frequency Omnidirectional Range Tactical Air Control (VORTAC), which had much broader signal capabilities.

TACAN stations were located at Aniak, Bethel, and McGrath.

Aniak TACAN

The Air Force placed TACAN equipment at Aniak in a temporary facility. No permanent improvements were constructed.

Bethel TACAN

A wood-frame building for the TACAN was constructed in 1956 and abandoned in 1957. Today, the building site is a vacant lot with no trace of the facility.

Gulkana TACAN

A TACAN station was planned at the northwest end of the airport. The site was acquired in 1955, but found unsuitable for a TACAN facility and was never constructed.

McGrath TACAN

The TACAN building has been converted into family housing, building 101. This building, as are the other family houses, is scheduled for demolition. The FAA housing program is the subject of an FAA project in 1995.

PRE-POSITION

Gulkana Pre-position and Maneuver Area

During World War II, a staging airfield and garrison was constructed at Gulkana. This World War II facility was abandoned at the end of World War II and the garrison buildings were sold and removed.

In the 1950s, the Gulkana airport was designated a preposition site, where U.S. Army war materials could be moved to in readiness for battle. Also, the former WWII airfield was used as a maneuver area for exercises in the 1960s.

There is only limited evidence of the maneuver and training activities at Gulkana. A few empty ammunition boxes and small amounts of debris recall training here. The most significant item is a late model M59 armored personnel carrier. The M59 was produced in about 1954 and was predecessor to the ubiquitous M113 armored personnel carrier.

Current Status: Abandoned.

Historic Context: The pre-positioning concept reflected fears of enemy attack and the need to disperse equipment.

Significance: The Gulkana Pre-position and Maneuver Area has few features to recall its Cold War use. The M59 APC is a significant relic requiring preservation.

Integrity: A field survey, in June 1993, located only one feature of the Cold War use of Gulkana airfield - a M59 (APC) armored personnel carrier. The APC, which had broken its tracks, appears to have been abandoned by the Army.

National Register of Historic Places Status: This site has little to recall its World War II or Cold War use, so it is probably not National Register eligible.



Army M-59 armored personnel carrier abandoned at the Gulkana training area.



An M-59 in its original configuration.

Recommendations: The APC should be left in place if there is no expectation of negative impact. If it becomes threatened by altered land use, the APC could be transferred to the Alaska Museum of Transportation.

Priority and Level of Preservation: This site is a priority B.

Palmer Safe Haven

The Palmer Safe Haven storage area was an Air Force program for dispersal of equipment and supplies, with war materials stored in warehouses. While the Palmer site was acquired in 1959, there is no record of its use. The Safe Haven area was on the old State Fairgrounds, at Colony Road and Fairview Avenue. Disposal of the property's parcels started in 1960 and all of it was released by 1966.

Current Status: Today, a Pioneer Home for Senior Citizens occupies the land. There is no evidence of previous Air Force activities.

Historic Context: See Gulkana.

Significance: See Gulkana.

Integrity: There is no evidence of this activity.

National Register of Historic Places Status: This site is probably not eligible for the National Register.

Recommendations: These sites, with no trace, should be identified in the listing of Cold War facilities as a permanent record.

Priority and Level of Preservation: None.

Seward Safe Haven

In 1959, the Air Force established a safe haven storage area at Seward, between 6th, 7th, and Monroe to B Street. This was a war materials storage facility. Twelve World War II wood-frame buildings were used for storage and administration. In 1961, the facility was made an Army Recreation Camp.

On March 27, 1964, this recreation camp was destroyed by the tsunami following the earthquake.

Current Status: Today, it is a greenbelt area within the City of Seward.

Historic Context: See Gulkana.

Significance: See Gulkana.

Integrity: The camp has been destroyed and there is no trace of it.

National Register of Historic Places Status: Probably not eligible for the National Register.

Recommendations: The history of the military in Seward should be permanently recorded by entries in the listing of Cold War facilities.

Priority and Level of Preservation: A permanent listing is scheduled for 1995.

Silvertip Storage Area

The Air Force, in the early 1960s, dispersed emergency supplies in a storage area on the Seward Highway, 65 miles southeast of Anchorage. The half-acre site, within the Chugach National Forest, was acquired by a Memorandum of Understanding (MOU) with the U.S. Forest Service.

Relocatable buildings were erected to store the emergency supplies. By 1971, this dispersal of supplies was determined not necessary and the relocatable buildings were removed, the site restored, and the MOU terminated.

Current Status: The site has been restored.

Historic Context: See Gulkana.

Significance: See Gulkana.

Integrity: There is no trace of this storage facility.

National Register of Historic Places Status: This site is probably not eligible for the National Register.

Recommendations: This site will be identified in the listing of Cold War facilities.

Priority and Level of Preservation: The listing of Cold War facilities is planned for completion in 1995.

SURVIVAL CACHES

Twenty-three survival caches were sited in Alaska for emergency use by downed air crews. Each cache contained medical supplies, food, clothing, shelter, fuel, and emergency supplies. These items were stored in a log shelter, 10' x 12', painted bright orange with all trees and shrubs within a 100' radius cleared for visibility. Some were underground facilities.

Some of the sites were never built and all were abandoned on October 30, 1961. Aerial efforts to locate surviving examples in 1989 were unsuccessful. It appears that they have been stripped of their emergency supplies and the log shelters have collapsed, hidden from aerial view.

The general location of cache sites are listed below; the exact locations are on file at the Alaska District, Real Estate Division.

Cache 1, approximately 11 miles east of Point Hope. Not constructed.

Cache 2, near Mt. Kusilvak.

Cache 3, approximately 30 miles north of Nome.

Cache 4, near Livengood.

Cache 5, approximately 25 miles southeast of Tanana.

Cache 6, Glacial Lake, 20 miles northwest of Nome.

Cache 7, approximately 20 miles northwest of Teller.
Cache 8, near Bendeleben, 60 miles northeast of Nome.
Cache 9, approximately 7 miles southwest of Golovin.
Cache 10, approximately 15 miles west of Lignite.
Cache 13, approximately 10 miles northeast of Rampart.
Cache 14, approximately 8 miles south of Hughes.
Cache 15, approximately 35 miles north of Galena.
Cache 16, approximately 10 miles south of Kokvines.
Cache 17, near Galena
Cache 18, near Kaltag
Cache 19, near Anvik
Cache 20, near Ungalik
Cache 21, approximately 50 miles north of Hokikichuck.
Cache 22, Cape Prince of Wales.
Cache 25, Near Chinitna Bay.
Cache 49, near Dry Creek, approximately 33 miles southeast of Fairbanks.
Cache 55, near Mt. Kusilvak.

Current Status: All caches have been abandoned and seem to have disappeared.

Historic Context: The caches were a response to the dangerous flying conditions in Alaska. They would provide emergency aid to downed air crews, however, theft from them destroyed their utility.

Significance: Emergency provisions for downed air crews gave military flyers some sense of security. They were an important element in Alaska military flying.

Integrity: Efforts to locate surviving caches have proven unsuccessful.

National Register of Historic Places Status: These sites, with integrity lost, are probably not National Register eligible.

Priority and Level of Preservation: None.

NAVAL BASES

Adak Naval Station

Naval activities in Alaska have included naval patrols and air antisubmarine patrols by P-3 aircraft. An antisubmarine operations center and various other communications systems were located at Adak.

An important intelligence activity at Adak was the SOSOS (Sound Surveillance System). This system was remoted to Hawaii in late 1993, with a drop in personnel strength from 250 to 10.

Current Status: Adak Naval Station activities have been remoted and the base population dramatically reduced.

Historic Context: Adak Island was the main naval base in the North Pacific from 1950 until its reduced activities in 1993.

Significance: Naval operations, including sea and air patrols, from Adak provided vigilance against Soviet ship movements in the Pacific.

Integrity: The Adak Naval Station is intact and secured.

National Register of Historic Places Status: A determination of eligibility of the Cold War Adak Naval Station is necessary.

Recommendations: The Navy should consider an inventory and evaluation of its Cold War features at Adak.

Priority and Level of Preservation: Preservation at Adak should be a high priority given its reduced activities and sealed buildings.

AHRS number: ADK128

Kodiak Naval Base

On September 5, 1945, the Navy completed its study of post war base requirements. The Navy decided to retain eight major navy bases in the Pacific, they were: Adak, Kodiak, Pearl Harbor, Panama, Guam, Iwo Jima, Okinawa, and the Philippines. The bases were existing World War II facilities.

It was a time of reduced budgets, so it would be years before there was new construction. At Kodiak, the World War II base was little changed when transferred to the U.S. Coast Guard in 1971. The Coast Guard was at Kodiak for ten years before a major building program was launched. However, since 1984 the base has undergone dramatic changes, including building demolition, new construction, and rehabilitation of existing structures. The Coast Guard operates sea and air rescue and patrol activities. There is also a Very Low Frequency (VLF) radio transmitter at the site.

The 17th Coast Guard District encompasses the entire state. There are about 2,100 active Coast Guard and civilian employees at 38 locations. District headquarters is in Juneau, but Kodiak is the largest base.

The Coast Guard has played an important role in the defense of Alaska by patrolling the Aleutian waters. The Coast Guard also operates the LORAN system, lighthouses, and buoys. They also enforce the 200-mile fisheries conservation zone. A dramatic Coast Guard activity is search and rescue, especially in the rough Aleutian waters.

The Kodiak base has been the subject of a number of cultural resources investigations. The Coast Guard should use these as the basis for a facility management plan.

Current Status: The former Kodiak Naval Base is presently a U.S. Coast Guard station.

Historic Context: The Kodiak Naval Base served as center of the North Pacific naval operations in the early Cold War years. It was the center of sea patrol and defense. Since 1971, the Kodiak base has been a Coast Guard facility, retaining important patrol functions.

Significance: An investigation to identify and evaluate the World War II, Cold War, and Coast Guard activities is necessary. This base is closely associated with the Cold War naval defense of Alaska.

Integrity: A base wide survey is appropriate to assess integrity.

National Register of Historic Places Status: The World War II Kodiak base features have been National Landmark listed.

Recommendations: A Coast Guard cultural resources inventory and management plan for this base is needed.

Priority and Level of Preservation: The Kodiak Coast Guard station is an active base. The preservation management plan should be developed in connection with ongoing activities.

AHRS number: KOD-124

SEA WARFARE

Prince of Wales Anti-Submarine Warfare Research Station

An anti-submarine warfare field station was located at Prince of Wales at the former Tin City AC&W station. The facility tracked sea and Arctic ice conditions, reporting to the Naval Ocean Systems Center in San Diego.

Current Status: This site has not been visited or studied. The Navy shall consult with the SHPO regarding this installation.

Southeast Alaska Testing Facility (SEAFAC), Back Island

In 1991, the Navy constructed its Southeast Alaska Testing Facility on Back Island, near Ketchikan. The facility conducts sound testing of nuclear submarines.

The status of this facility is not known. Documentation and preservation requirements are a responsibility of the Navy.

AIR FORCE STATIONS (AFS)

Mulgrave Air Force Station

A site northwest of Kotzebue was selected for a communications station, but site survey or construction was never initiated.

Umiat Air Force Station

The U.S. Navy constructed an airfield at Umiat in 1945 to support petroleum exploration in that region. In 1946, a civilian contractor took over the oil search effort and used Umiat as a staging area.

In 1954, the Air Force assumed control and planned for an AC&W station which was not built. Five years later, the airfield was returned to Navy control for use as a staging field for drilling and geophysical exploration.

The airfield has been transferred to the State of Alaska, Department of Transportation and Public Facilities. The DOT has removed the abandoned Navy buildings.

Cultural artifacts are two M29C Weasel tracked vehicles and two archaeological sites (AHRIS).

Current Status: Abandoned.

Historic Context: The Umiat Airfield was a support center for the Navy petroleum investigations.

Significance: Navy oil exploration in Alaska was a predecessor of Alaska's great Prudhoe Bay discovery.

Integrity: The State of Alaska, Department of Transportation, cleanup activities removed the defining features of the oil exploration activities. Two Tracked Weasels with U.S. Navy markings are present to recall overland travel to drill sites.

National Register of Historic Places Status: The determination of eligibility for this site should be part of a larger evaluation of the Navy petroleum program.

Recommendations: The U.S. Navy oil exploration activities deserve documentation by the Navy. The two M-29 Weasels at this site are to be saved and left in-situ.

Priority and Level of Preservation: The investigation and study of the Navy Petroleum Program deserves quick attention.

NIKE HERCULES MISSILE SITES

Towards the end of World War II, it became apparent that the oceans were no longer effective moats at our ramparts. Advances in aircraft capabilities to fly faster, higher, and further, outstripped the limited conventional artillery then guarding the United States.

Army Ordnance, recognizing the growing vulnerability in 1944, began studies on new air defense weapons. A guided missile system that could intercept and destroy attacking aircraft before they could reach the target area was agreed upon as the ground based air defense weapon of the future. After the war and the acquisition of the atomic bomb by the Soviet Union, it became critical that a 100 percent effective ground based air defense be realized. One aircraft breaking through the air defense could, with one atomic bomb, destroy a small city.

A research and development program for a guided missile air defense system was launched in February 1945. The prime contractor selected for the project was Western Electric and Bell Laboratories, with Douglas Aircraft, subcontractor, responsible for airframe development. Together they would manufacture a missile system which would be named Nike, for the winged Goddess of Victory of Greek mythology. The project was proceeding at a normal pace, then during 1948-1949 the United States was shocked by the Berlin Blockade and discovery of Soviet atomic bomb capability. Soon after, on June 25, 1950, there was the North Korean invasion of South Korea. The Nike program was given a much higher priority. With the accelerated program, a complete missile system, dubbed Nike I, was ready for test firing by November 27, 1951. In the test firings against aircraft, Nike I successfully intercepted a drone target.

By January 1953, the Nike I guided missile system was ready for system testing, with contractor tests held from January to May. Succeeding in the tests, the system was determined ready for Army testing, with a prototype battery delivered to the White Sands Proving Ground, New Mexico, on May 15, 1953. Nike I was next turned over to tactical Army troops for service evaluation tests at Redstone Arsenal, Alabama; Fort Bliss, Texas; and White Sands Proving Ground, in October 1953. Nike I (in November 1956 it was renamed Nike-Ajax) performed well in service tests with no major design changes required.

Conversion of the air defenses of the United States from conventional artillery, that might require up to 600 rounds to destroy an aircraft, to more effective guided missiles was begun in December 1953 with a Nike-Ajax battalion emplaced at Fort Meade, Maryland, as part of the Washington-Baltimore defense area (Binder, 1986). Within three years, Nike-Ajax units outnumbered conven-

tional artillery with conversion from conventional to missiles in the continental United States; conversion was completed by October 1958 (USATHMA, 1983:2-1).

The Nike-Ajax missile had a 141 kg payload in three warheads, a range of 40 miles and a ceiling of about 18 miles. Nike-Ajax was a two-stage, supersonic missile, armed with three large-radius, spherical-burst, high explosive warheads mounted in the nose, center, and aft sections of the missile (for weight distribution).

The first stage was powered by a solid-propellant booster. The initial booster design included a cluster of four solid-propellant rockets with large fins; the four boosters complicated the launch and missile-booster separation. The design was modified in 1948 to "provide more rapid guidance response by means of a single, small-finned booster. In the second stage, the missile was powered by a liquid-fueled sustainer motor. The missile itself displayed three sets of cross-shaped (delta) fins, in addition to those on the booster. The forward set was for steering, the middle set may have been used for sensing, while the rear set provided (roll) stability." (USATHMA, 1983:5-1)

The Nike-Ajax system was designed to have mobile capability, employing trailers for the various components, but in actual operational status it was a fixed system. The radar controls were housed in trailers. At the launch section, launch control was also in a trailer with the missiles either underground or above ground.

Even as Nike-Ajax was being deployed, its limitations forced continued research and development of a second generation of Nike. In 1953, the development of a Nike missile with greater range, a higher ceiling, and more powerful warhead was underway. This second-generation system was called Nike B, and was ready for testing in January 1955. It was renamed Nike-Hercules after the figure in Greek and Roman mythology known for feats of strength. Even as testing and system improvements were underway, Hercules was deployed beginning in June 1958. The Hercules was larger and more powerful with nuclear capability. A Hercules missile had a range of 120-128 miles and a ceiling of 56 miles. The Hercules "kill" ratio over Ajax was a considerable improvement, yet the system was similar enough that Hercules could be installed at existing Ajax batteries after some modifications were made.

Between 1958 and 1961, many Nike-Ajax batteries were converted to Hercules, and those not upgraded were closed. The site conversion to Hercules was completed by 1961. During this same time period, some Regular Army Hercules batteries were transferred to National Guard units. The Hawaii National Guard had

already manned Hercules batteries since 1960. The Hercules conversions had hardly been completed when deactivation began at numerous locations. By 1971, the Army had deactivated about one-half of the CONUS Hercules sites. Regular Army and National Guard units continued to maintain a substantial number of sites until the mid 1970s and a few sites, including some in Alaska, up to the late 1970s.

Nike-Ajax was not deployed in Alaska. The airbases at Anchorage and Fairbanks continued to be defended by 90mm and 120mm antiaircraft guns. In 1955, the planning was initiated to settle on new Alaska defenses. It was decided to emplace the Nike-Hercules system, which was then under development but expected to be on line in time for Alaskan deployment. From 1955-1956, the Alaska District, Army Corps of Engineers, conducted land surveys for Nike emplacements and in 1956 started to acquire the sites. The two Alaska areas to be defended were the Fairbanks region, with Ladd (Fort Wainwright) and Eielson Air Force Bases, and the Anchorage region, with Elmendorf Air Force Base and Fort Richardson.

Invitations to bid on construction of Alaska's portion of the current nationwide missile defense program was issued in March 1957. On April 5, the District awarded a contract to Peter Kiewit Sons Company for construction of four sites in the Fairbanks area that ultimately (with 36 modifications) cost \$12,771,000. On the same day, another contract was awarded to the joint venture Patti-McDonald and M-B Contracting Company that (with 33 modifications) cost about \$10 million. This group had three sites built in the Anchorage area, one of which, Site Point, near Anchorage International Airport, was to be a double firing battery. Fourteen months later, B-E-C-K Constructors received a contract, which cost \$3,033,000, to build a fifth site in the Fairbanks area. Before this stage of affairs, the District already had contracted, in August 1965, to obtain Nike missile carriage mechanisms for both complexes, costing \$1.4 million. Another preparatory step was its \$1,423,000 contract of March 1957, for special antenna covers needed at both complexes. (Woodman, 1976:54-55)

The Department of the Army announced, in November 1958, that the Alaska batteries would become operational in 1959. The first battery to be declared operational was Site Bay, in Anchorage, which assumed tactical duties on March 20, 1959. Site Bay was followed by the rest of the Anchorage batteries, and then the Fairbanks batteries in May 1959.

The Anchorage defenses were manned by the 4th Missile Battalion, 43d Artillery (redesignated the 1st Battalion, 43d in 1972), while Fairbanks was manned by the 2d Missile Battalion, 562d Artillery.

Site Summit, at an elevation of 1,185 meters, was the most difficult Nike battery to construct.

Much blasting had to be done to build the long, curving access road and to level the radar and missile launch areas on the rocky ridges. Persistent high winds, early snow that stayed long, and frequent clouding of the road leading to the work location were delaying factors. Concrete installations at all sites had to be at extremely close tolerances to insure accurate of the sensitive equipment functioning within them. (Woodman, 1976:55)

Construction of Site Summit was begun in May 1957 and completed in September 1958. The equipment had arrived by February 1959 and the battery was declared operational in May 1959.

During its service, Site Summit, on Mount Gordon Lyon, would experience its coldest night in February 1969 with -45°F temperature. This mountain site would also experience a maximum wind of 260 MPH. Nike batteries in Fairbanks would not experience such high winds, but did experience even colder temperatures.

CONSTRUCTION AND INACTIVATION OF ALASKA NIKE SITES

Ladd* - Eielson Air Force Bases

Fairbanks

	<u>BATTERY</u>	<u>BECAME</u> <u>OPERATIONAL</u>	<u>STAND</u> <u>DOWN</u>	<u>INACTIVATED</u>
TARE	A	1959	April 1971	May 31, 1971
PETER	B	1959	April 1971	May 31, 1971
MIKE	C	1959	April 1970	June 30, 1970
JIG	D	1959	April 1970	June 30, 1970
LOVE	E	1960	April 1971	May 31, 1971
SUGAR	(Land acquired, never constructed)			
FOX	(Land acquired, never constructed)			

*Ladd Air Force Base was transferred to the Army on January 1, 1961, and renamed Fort Wainwright.

Elmendorf Air Force Base - Fort Richardson

Anchorage

	BATTERY	BECAME OPERATIONAL	STAND DOWN	INACTIVATED
SUMMIT	B	May 1959	May 10, 1979	July 30, 1979
BAY	C	March 1959	May 10, 1979	July 30, 1979
POINT	(Dual)	April 1959	May 10, 1979	July 30, 1979

There were only minor deviations from a standard plan in the construction of each of the Alaska Nike installations, usually the result of terrain considerations. At each battery control area were three main buildings: an operations building that included the target tracking and missile tracking radars, the barracks, and a High Power Acquisition Radar (HIPAR) building with radar tower and a motor repair shop. There was also a guard house and security fencing surrounding the facility.

Located about one mile from the battery control area of each site was the launch area which was connected by a road. Alongside this road were sited the high explosive and guided missile magazines.

Within the launch area were facilities for the assembly, maintenance, and launching of the Nike-Hercules missiles. Structures included two missile launch and storage structures, launch control and general operations building, missile maintenance shop, motor repair shop, fuse and detonator magazine, warhead building and a dog kennel. This area was protected by a double fence, alarm intrusion system, two sentry stations, two guard towers and dog patrols. The total construction cost at Site Bay, at Goose Bay, built in 1958, was \$4,702,500 and was representative of the costs at the other batteries.

In CONUS, as well as Alaska, the development of Nike returned former coastal and other artillery battalions to the Army's active lineage. The 43d Air Defense Artillery (Nike) in Anchorage traced its lineage back to August 14, 1901, with the founding of the 107th Company of the Coast Artillery, Artillery Corps. In 1918, the 107th was redesignated Battery E of the 43d Artillery and on August 7, organized at Haussimont, France. Returning to the United States after World War I, it was inactivated on August 17, 1921, at Camp Eustis, Virginia. Three years later, on February 20, 1924, it was redesignated Battery E, 43d Coast Artillery.

During World War II, the 43d earned 11 campaign streamers, an addition to the three earned for World War I campaigns. Following distinguished World War II service, the 43d was disbanded on June 14, 1944.

The 43d was reconstituted, on June 28, 1950, in the Regular Army and broken up into various units, with the 1st Battalion and the 43d Field Artillery Battalion, an

element of the 8th Infantry Division, consolidated. During the Korean War, another six campaign streamers would be credited to the 43d. The 1st and 3d Battalions were again deactivated on February 1, 1957.

On August 12, 1958, the 43d was redesignated as Headquarters and Headquarters Battery, 1st Missile Battalion, 43d Artillery, and activated 20 days later at Fairchild AFB, Washington. From 1958-1959, the 43d Field Artillery was reorganized under the Combat Arms Regimental System, with the 1st Missile Battalion assigned to Fort Richardson in 1958. The 1st was redesignated the 4th Battalion, 43d Air Defense Artillery (ADA), in 1971.

Throughout its service in Alaska, until its inactivation on July 31, 1979, at Fort Richardson, the 1st Battalion worked to fulfill its motto of, "Sustinemus" or "We Support." The 1st Battalion, 43d ADA, was again activated on May 1, 1982, at Fort Bliss, Texas.

The 2d Battalion of the 562d Air Defense Artillery, assigned to the Fairbanks area batteries, traced its lineage back to September 5, 1928, with the formation of Battery B, 562d Coast Artillery of the Organized Reserves. Later, in 1928, the battery was redesignated as Battery B, 917th Coast Artillery until its inactivation and reassignment to the Regular Army on October 1, 1933. The Regular Army redesignated and activated that unit as Battery B, 70th Coast Artillery, at Fort Monroe, Virginia, on November 4, 1939.

During World War II, the battery was credited for campaign service in the Northern Solomons, Bismarck Archipelago, Leyte, and Luzon. In November 1943, the battery was reorganized and redesignated as Battery B, 70th Antiaircraft Artillery Gun Battalion. Battery B would be inactivated in 1947, and reactivated on January 15, 1949. For service in Korea, eight campaign streamers were awarded. Battery B was again inactivated on December 20, 1957.

The battery was redesignated on August 5, 1958, as Headquarters and Headquarters Battery, 2d Gun Battalion, 562d Artillery and activated on September 15, 1958, in Alaska. The next year, on May 15, 1959, it was reorganized and redesignated the 2d Missile Battalion, 562d Artillery. On March 31, 1968, it became the 2d Battalion, 562 Artillery, and remained that until inactivation at Fort Wainwright on June 30, 1971.

Nike soldiers would discover that Alaskan Nike bases were different than CONUS sites. The layout, design, and construction of Alaskan sites in response to the cold weather required some design modifications. Rather than dividing the sites into three areas of battery control, launch, and housing (as was the case at

many CONUS sites), Alaska sites were divided into battery control and launch, with housing at the battery control. The facilities at the battery control were consolidated into a single composite structure that included housing, dining area, PX, barbershop, dispensary, and tactical radar facilities.

The battery control at each Anchorage site was linked, by microwave communications, to the aircraft control center on Fire Island. Fairbanks sites were linked to the control center at Murphy Dome. Also, located off-site, were maintenance shops at Fort Richardson and Ladd Air Force Base. Additionally, NCOs and officers lived in base housing at Anchorage and Fairbanks. For a short period, personnel stationed at Site Summit and Site Bay were helicoptered to work from Fort Richardson.

The extreme weather confronting the Alaska District, Army Corps of Engineers, in deploying Hercules missiles required innovative designs for the tactical as well as the housing and support facilities. Nominally, Hercules would have to operate in temperatures as cold as -60°F as well as windy and icy conditions.

Special protection from icing was required if the radars were to operate properly. Mechanical radar covers, of welded steel stressed-skin construction that permitted periodic de-icing and sheltered maintenance, were specially designed. The radars attached to the composite building were heated to de-ice the radars and the operating mechanisms.

The launch facilities also required design innovation to cope with permafrost as well as ice and snow build-up. The above-ground launch structures avoided the difficulties of construction that were experienced by underground facilities due to permafrost. The snow and ice build-up on the launch pads was controlled by heating elements in the concrete apron.

The launch area of an Alaskan battery included two launch buildings each with two satellite launchers and two carriage launchers on an apron of the storage/launch structure, fed by the carriage (transport trailer). The carriage was driven by a cable housed in a tunnel beneath the apron. The launch transport elements were automatically operated, but with manual overrides.

Inside the launch structures a "system of missile racks was installed (for missile storage). An overhead crane in the building is provided for joining the booster assemblies to the missiles. Missiles and boosters are brought into the launching section on transporter trailers and are rolled on dollies over the racks to the carriage. They are brought into the structure on the carriage and moved onto the storage racks. For firing, the ready missiles are rolled onto the carriage from the racks,

and moved either to the firing position, or to the satellite launcher, the carriage being brought back inside to receive another ready missile." (Smith, 1980:109)

Nike batteries in Alaska were among the last in the United States to be deactivated. During their service, their role within the Alaskan Command for the defense of Alaska was summarized in an information bulletin prepared by the USARAL Air Defense Artillery Group Headquarters.

The Alaskan Command, one of seven unified military commands in the United States Defense Establishment, guards the polar gateway to the heartland of the USA. Established in 1947 by the Joint Chiefs of Staff, the Alaskan Command welds Army, Navy, Air Force, and Marine Corps men into a unified defense team.

Alaskan Command Headquarters is located at Elmendorf Air Force Base, adjacent to Anchorage. It is comprised of a relatively small and compact joint staff from the three services. U.S. Army, Alaska (USARAL), Alaskan Sea Frontier (ALSEAFRON), and Alaskan Air Command (AAC) are the major components of the unified command. Also located at Elmendorf Air Force Base, is another joint organization, Headquarters, Alaskan North American Air Defense (NORAD)/Continental Air Defense (CONAD) Region, established in 1961. The forces and weapons, operationally employed by the region for the joint air defense of Alaska, are provided by the supporting commands, USARAL and AAC, as directed by the Commander-in-Chief, Alaska, who serves in a dual capacity as Region Commander. USARAL provides Nike-Hercules missile units and AAC provides fighter-interceptors along with the necessary Aircraft Control Warning Squadrons. The joint staff for this organization is provided from the two services by officers, for the most part, performing in a dual capacity.

USARAL, with headquarters at Fort Richardson, is organized around two principal tactical forces - two independent infantry brigades (mechanized) for the conduct of ground defense and an air defense artillery group to participate in the joint air defense. Forces are distributed north and south of the Alaska Range to accomplish the missions assigned the command.

The tactical force for air defense, consisting of two Nike-Hercules missile battalions, comes under the command of the USARL Air Defense Artillery Group, a major subordinate command of USARAL, with headquarters at Fort Richardson. One missile battalion has its headquarters at Fort Richardson and the other at Fort Wainwright.

The USARAL Air Defense Artillery Group is the instrumentality through which the Commanding General, USARAL, discharges his responsibilities for USARAL participation in the active air defense of Alaska. The group command includes all USARAL air defense artillery organizations and all USARAL organizations charged with the direct support maintenance of mission equipment. Thus, all personnel assigned to USARAL whose primary job is active air defense or the direct support maintenance thereof, are in the group organization and conversely the sole mission of the group is air defense with the exception that the missile units have surface-to-surface capability which may be used in support of ground combat operations if released from the air defense role. Modern air defense weapons systems, to be effective, must be closely coordinated and integrated into one cohesive, effective air defense force. This is a most difficult task, and can be accomplished only through having a single line of operational control. The Alaskan NORAD/CONAD Region provides this single line of operational control for all air defense weapons systems in Alaska, the Nike-Hercules units from USARAL, and the fighter-interceptors from AAC.

For the missilemen at the isolated Nike sites, the organization of air defense in Alaska did not have as much importance as adjusting to duty at the remote sites.

Alaska was unique in having live missile firings. The first live firing of a Hercules missile in Alaska occurred on December 16, 1959, from Site Peter, B Battery, 2d Battalion, 562d Artillery, near Eielson Air Force Base. The firing, which was scheduled for 10:00 a.m. that day, was delayed five hours because of aircraft in the missile range, and problems with the tracking radar. Leaving the launch apron at 3:10 p.m., the missile climbed to 3,000 meters and self-destructed, disappointing the small group of reporters and VIPs who had waited in a warming hut.

The next day, a second missile was successfully fired at 11:11 a.m., followed by another 14 Hercules missiles over the winter of 1959-1960. Each battery fired

two missiles from the B Battery site, completing their annual service practice by March 15, 1960.

Live firings at Fairbanks preceded those at Site Summit, above the more populated Anchorage, by one year. The first Hercules to leave the launch pad at B Battery, Site Summit, lifted off the snow covered mountains at 2:14 p.m. on November 20, 1960. The missile, dubbed "Celebrity," intercepted its target signal (radar signal of an Air Force RB-57) above Mt. Witherspoon, 72 miles from Site Summit. The missile exploded at an elevation of 36,000-feet, "destroying" the target (tracking radar was programmed to make the intercept at a predetermined distance from the RB-57). A proud battery commander, Captain Erwin F. Tholl, Jr., reported to onlookers that the firing was 100 percent effective (Douglas, 1961). Addressing the assembled press, VIPs, and other spectators, General J.H. "Iron Mike" Michaelis, Commander of the U.S. Army, Alaska, told the crowd that, "The live-fire exercises were invaluable training in firing from actual combat sites, and at the same time demonstrating to the citizens of Alaska and the nation the power of this modern weapon." (Douglas, 1961)

In later years, missile firings were reduced to one missile per battery during the Annual Service Practice. Each year the live firing was held at Site Peter (Fairbanks) and Site Summit (Anchorage). A former missileman, Ken Sylvia, recalls live firings from C Battery (Site Mike), but this has not been confirmed. Mr. Sylvia remembers the excitement of the live firings and the work that went into them:

Each battery sent a team of soldiers to the firing site a few weeks early. The soldiers would assemble and test the missile, preparing it for firing. The radar and guidance controllers reported to the site on the big day to fire and guide the missile to the imaginary target.

The missiles were fired east of north of B Battery's site into the Yukon Missile Range. This nearly 100-mile long stretch of mostly barren land was guarded by military pilots and radar to protect civilian aircraft pilots. The Fairbanks community was often invited to attend the firings which were mentioned in Alaskan newspapers. (Yukon Sentinel, December 6, 1985:4)

The live firings from actual tactical sites were great opportunities to see how the system would work under combat conditions. During the live firings of 1960-1961, problems with the target tracking and acquisition radar that had been dis-

covered system wide were clearly evident in Alaska. Contracts with a value of \$4.3 million were issued in 1962-1963 for more powerful acquisition radars.

Ghemm Co., Inc., and Pacific General were the builders of the new High Power Radars in Alaska.

At each of four sites, a 90-foot steel tower was erected, and on top was assembled a radar screen cover that looked like a huge golf ball. That white globe was formed of 275 sections of plastic bolted together in a geometric pattern like neatly cut orange peels. Construction of radomes high above ground was hazardous when the wind blew...which was usually. (Woodman, 1976:80)

Data concerning the termination of live firings is not available so it is not certain when they were stopped. Population growth in Eagle River brought Anchorage live firings to an end in 1964. Live firings continued from B Battery, near Eielson, until at least 1968. They could not have continued much longer since the Fairbanks batteries stood down in 1970. In April 1970, Sites Nike and Jig stood down and were inactivated in June that year. Sites Tare (A), Peter (B), and Love (E) stood down in April 1971 and were inactivated in May 1971.

The Anchorage batteries continued in operation after the closing of the Fairbanks area Nike sites. One Anchorage battery, of the double-battery Site Point, which had been closed following damage in the earthquake of March 27, 1964, was not returned to service, leaving three fire units at Anchorage.

FAIRBANKS AREA:

Site Tare

Current Status: The launch area is now the Chena Rivers Lake Recreation area headquarters. The control area has been demolished and the site restored.

Site Peter

Current Status: This heavily vandalized and unsafe Nike installation is scheduled for demolition.

Site Mike

Current Status: This heavily vandalized and unsafe Nike installation is scheduled for demolition.

Site Jig

Current Status: The control center has been demolished and the site restored. The launch area is being used by a private contractor for dynamite storage.

Site Love

Current Status: Site Love has been demolished and the site restored.

Site Sugar

Current Status: Never went beyond the planning stage.

Site Fox

Current Status: Never went beyond the planning stage.

ANCHORAGE AREA:**Site Summit**

Current Status: This is the most intact and best preserved Nike site in Alaska. The launch and control sites are nearly complete, and to date vandalism has been limited.

Site Bay

Current Status: The launch site is intact and in fair condition. The control site has been reused as a correctional center, but abandoned since 1989, with extensive vandalism.

Site Point

Current Status: The control center has been demolished; the launch center has been demolished except for the four launch structures. One launch structure has been converted into a ski chalet.

Historic Context: The Nike Hercules missile system was an Army ground to air defense of important Air Force bases in Fairbanks and Anchorage.

Significance: The Nike Hercules installations were viewed as critical in the protection of Alaska bases. They are associated with the Cold War and Army ground to air defenses from the late 1950s into the 1970s.

Integrity: Many of the launch features, including the launch shelters, are intact.

National Register of Historic Places Status: A National Register determination should be accomplished in 1994-1995.

Recommendations:

Reuse of Site Tare (Chena Lake Recreation area) and Site Point (Kincaid Park, Anchorage) has caused some preservation. Army control over Site Summit, Anchorage, has held-down vandalism at this abandoned site. Hopefully, these sites

will continue to be used, and their original character retained. Remediation projects at any of these sites should be limited to removal of hazardous-toxic waste and not building demolition.

The Alaska District report on Nike Hercules should be rewritten to include anti-aircraft artillery defenses and additional photographs, especially of live firings. This publication will be donated to libraries and available to interested persons.

Site Summit is under investigation by the Army as a historic and natural park. The buildings should be protected from vandalism while this study is in progress. Since Site Summit is adjacent to a ski recreation area, it could become part of a larger recreation site.

The launch area at Site Bay (Goose Bay) is in good condition. The site will have potential as a recreational area following the removal of fuel tanks and contamination sources.

The control area at Site Bay, which was rehabilitated by the State of Alaska for use as a correctional center, and then closed in 1989, has been heavily vandalized. This control administration and barracks building has lost its historical integrity. It should be reused again or demolished.

The Nike sites locations shall be included in the listing of Cold War facilities. Priority and Level of Preservation: The Nike preservation effort should be accomplished as soon as possible to prevent further deterioration of surviving features.

THOR MISSILE BASES

Bird Creek Missile Site

In December 1954, the Alaskan Air Command started to plan for nuclear missile defense of Alaska. The Talos and Matador missiles were considered. Studies and site selection were accomplished, but funding for construction was not received. In 1957, a newer intermediate range missile, the Thor, was available. This missile could reach a number of important Soviet bases from Alaska.

In March 1958, Alaska was selected for Thor missile defense around Elmendorf AFB. Surveys conducted that month identified five potential locations:

- Birchwood (Cleo Lake)
- Pioneer Peak (Palmer)
- Indian Creek (Bird Creek)

Girdwood
Elmendorf Air Force Base (Otter Lake)

Other sites, Fishhook, Chikaloon, Gilpatricks, Eklutna, and Eagle River, were also investigated. The final site list was:

Eklutna
Pioneer Peak (Palmer)
Indian Creek (Bird Creek)
Girdwood
Eagle River

The main criteria in site selection was to be in the vicinity of Elmendorf AFB and protected by surrounding mountains. Each site was to receive 12 missiles with above-ground launchers.

Soil testing was conducted at Poineer Peak and Bird Creek. At Bird Creek, 20 miles south of Anchorage on the Seward Highway, trails, a road, tower, and test pits were accomplished at the site in 1959. Late in 1959, the Thor squadron planned for Alaska was assigned to Turkey. All work in Alaska was halted.

Today, the Bird Creek (also known as Indian Creek) missile site is within the Chugach State Park. A road, bridge, and trails from the exploratory site studies are still present. The test pits are overgrown and a wood tower from the site survey is gone.

The Pioneer Peak site could not be found in a 1986 field effort. It is believed to be at Mile 50 of the Glenn Highway, near Fishhook Junction, 10 miles south of Palmer.

This site is now private lots. Site selection had not been completed at the remaining three missile sites.

Current Status: The missile bases were never constructed.

Historic Context: The decision not to site the Thor missile in Alaska was part of internationally driven political decisions.

Significance: The five planned missile sites are important historical locations as evidence of decisions during the late 1950s and early 1960s regarding national defense.

Integrity: The Thor missile sites were not constructed, extant features are from soils investigation and site planning are a road, bridge, trails, and overgrown pits.

National Register of Historic Places Status: The Thor missile system was never realized in Alaska and probably did not go far enough to be National Register eligible.

Recommendations: The sites will be recorded on the Alaska District listing of Cold War facilities.

Priority and Level of Preservation: The preservation of the extremely limited Thor missile features does not have a high priority.

NUCLEAR

Amchitka

In 1965, the Alaska District, Army Corps of Engineers, launched construction of a nuclear test facility on Amchitka Island. Construction included a trailer camp, rehabilitation of a World War II Birchwood hangar, a dock, and very deep holes for nuclear detonation. The main shot hole was 32 inches in diameter and 2,350 feet deep.

The first detonation was Long Shot in 1966. Additional holes were drilled by the Corps for tests, code-named Milrow. Two of these holes would reach down 6,200 feet. Milrow, a 1-megaton explosion, was carried out on October 2, 1969. The blast shook the earth, measuring 6.5 on the Richter scale.

Opposition to the tests became strong after Milrow and the announcement of an even larger test planned for 1971. Despite protests, the 1971 tests were accomplished on November 6. Following the tests there was evidence of wildlife damage. This created so much opposition that the testing was halted. The holes were capped and the trailer camp was removed. Left behind at the last drill hole was a bronze plaque with a description of the test program. This drill hole is located at the center of the island. A recording bunker on the north end of the island remains from the testing. The Birchwood hangar, converted into a supply center and air support, was intact into the 1980s. A second Birchwood hangar from World War II was also present in the 1980s. There were other World War II structures saved from a Corps cleanup in 1985.

The Navy moved onto the island in 1989 to install its over-the-horizon radar. The Navy demolished one or two of the Birchwood hangars.

Current Status: Abandoned. The Navy has closed its radar.

Historic Context: The nuclear testing was a central element in the Cold War nuclear program. It also exhibits the notion that the testing was considered more important than other issues, such as the environment.

Significance: Amchitka was Alaska's main nuclear event.

Integrity: Unknown.

National Register of Historic Places Status: A determination of eligibility requires an assessment of the context and integrity.

Recommendation: A cultural resources study and history of atomic testing should be accomplished by the Department of Energy. The Navy should inventory the island as part of its closure.

Priority and Level of Preservation: This is a priority A (immediate concern) as the Navy has left.

Burnt Mountain Seismic Detection Station

The Burnt Mountain Research Site, 65 miles north of Fort Yukon at the edge of the Arctic National Wildlife Refuge, is a seismic detection station. The unmanned station contains five remote detection sites with radio isotope thermoelectric generators. There is 10.3 miles of specialized data transmission cables.

The seismic station here was established in 1972 to monitor international compliance with nuclear test ban treaties, and is part of a worldwide seismic detection system. There are also stations at Attu Island and Chena River. The Navy has three stations at Fairway Rock in the Bering Sea.

Current Status: The current operations of the seismic stations are not known.

Historic Context: The seismic stations were a sophisticated measure to identify Soviet nuclear explosions.

Significance: Covert measuring systems allowed for detailed intelligence on Soviet nuclear activities.

Integrity: Unknown.

National Register of Historic Places Status: A determination of eligibility has not been accomplished.

Recommendations: The Air Force should conduct a determination.

Priority and Level of Preservation: With the reduced intelligence activities directed towards Russia, the seismic stations may be closed; for this reason, study and preservation is appropriate in the near future.

Cape Thompson, Project Chariot

Project Chariot was a 1958 Atomic Energy Commission plan to create an instant harbor with a nuclear detonation. This was a demonstration project in a larger program, the Plowshare Program, for peaceful use of nuclear detonation.

The instant harbor project was to be sited at the Ogotoruk Creek Valley near Point Hope. Four 100-kiloton and 1-megaton detonations (equal to 160 Hiroshima bombs) would open the valley to the sea, creating a harbor.

Project Chariot was never realized, blocked by strong local and national opposition. Finally, in 1962, the AEC cancelled the plan. During the planning and research phase, the AEC established a camp and airstrip at Cape Thompson. Additionally, radioactive waste was buried at the site to measure its migration in arctic conditions. Scientists from the U.S. Geologic Survey brought about 15 pounds of radioactive waste from Nevada to Cape Thompson for this experiment.

The concept of Project Chariot came from the Lawrence Radiation Laboratory, under the guidance of Edward Teller who helped develop the hydrogen bomb. The laboratory viewed large excavation projects as effective uses of atomic detonation. The first would be Project Chariot, later there could be the blasting of a new Panama Canal (O'Neil, 1989). Edward Teller toured Alaska promoting this huge engineering project. It was seen by some as a demonstration of Alaska bigness and greatness, just the right project to usher in statehood.

Environmental concerns regarding radiation were soon raised and some scientists questioned the wisdom of Project Chariot. Opposition grew, including protests by the residents of Point Hope, which was 30 miles from ground zero. The AEC then moved its first cratering test to Nevada, while very limited research and studies continued at Cape Thompson until 1962.

The camp at Cape Thompson contained eleven buildings - Jamesway and Pacific huts. After Project Chariot folded, the Naval Arctic Research Laboratory (NARL) occasionally used the camp for oil exploration until 1980 when it was abandoned. The huts were collapsed and blown away, so NARL erected some temporary wood-frame buildings and portable sheds. All but one of the NARL buildings were collapsed or partially collapsed when inspected in 1987. An Army Corps of Engineers cleanup project removed these buildings and surrounding fuel contamination.

Eight NARL M29 Weasels were left in situ. A plan to transport two of the best examples to the Alaska Museum of Transportation was not realized.

In July 1993, the Department of Energy removed twenty truckloads of radioactive soil from Cape Thompson to be stored at the Nevada Test Site, located northwest of Las Vegas.

Current Status: Abandoned.

Historic Context: The Cape Thompson research activity was part of a larger study of peaceful uses of nuclear devices.

Significance: Cape Thompson is significant as the locale of an early conservation victory. Its association is with atomic development during the Cold War era.

Integrity: There are no remains of the original camp.

National Register of Historic Places Status: The National Register determination has not been made, the site may be significant for political events. It was here that conservationists had an early victory.

Recommendations: The Cape Thompson and Project Chariot site is the subject of a contemporary research project by Dan O'Neil, of the University of Alaska, Fairbanks. His research and publications will record the history of Project Chariot and the effectiveness of public opposition. O'Neil's work indicates the carelessness and disregard for the dangers of nuclear materials during the Cold War. This record is a fine tribute to the environmental victory at Cape Thompson.

Priority and Level of Preservation: Preservation of the Cape Thompson legacy is underway as documentation - the O'Neil publication.

AHRS number: XPH-108

Eielson Alpa Research Sites

Twelve remote seismic stations, Alaskan Long Period Array (ALPA), were sited in interior Alaska. These seismic stations were abandoned in 1976 with all equipment and buildings removed by the Air Force. The lands were relinquished to BLM in 1977.

Current Status: All sites have been abandoned and the land restored.

Historic Context: The seismic stations were sophisticated measures to identify Soviet nuclear explosions.

Significance: Covert measuring systems allowed for detailed intelligence on Soviet nuclear activities.

Integrity: The sites have been closed and the land restored.

National Register of Historic Places Status: A determination of eligibility has not been accomplished.

Recommendations: The Air Force should search its records of the 1035th Technical Operations Group for details on construction and operation. Copies of these records should be placed in the files of the Office of History, Elmendorf AFB. The ALPA site locations will be recorded in the listing of Cold War facilities.

Priority and Level of Preservation: The entire seismic operations require an early investigation.

Fort Greely

Fort Greely, 75 miles east of Eielson, became an important research location in the late 1950s when a multimillion dollar utility was built there. A small nuclear power plant was built here as a test unit for operations in the arctic. Also, the post needed additional heat and power. It was a SM-1A or Stationary, producing Medium range power, and was the first of its kind to be built in the field. The proto-

type for this SM-1A was the Army Package Power Reactor (APPR-1) at Fort Belvoir, Virginia, producing electricity for that post.

In December 1955, the Alaska District was directed to conduct a site selection for the nuclear powerplant. The District announced in December 1957 the Army's plan to construct a nuclear powerplant at Fort Greely. The news generated considerable public interest because Alaskans had been listening to, and reading about, the Atomic Energy Commission's Point Hope Project Chariot.

Design of the Fort Greely plant was completed in January 1958 for the Army by ALCO Products of New York which had built the APPR-1. Soon the Alaska District was empowered to seek a contractor to build this plant, and in April received bids from eight firms. The contract went to Peter Kiewit Sons Company for \$4.9 million. Construction commenced on June 4, 1958. The government furnished the \$184,000 nuclear "vessel."

The 11-week carpenter strike in 1959 delayed construction somewhat, and the project completion date was moved back to February 1961. Construction was essentially completed by July 1960, but the additional time required to test components, and the plant performance test of 720 hours operation, postponed the date for turning the plant over to the Army to the spring of 1961. SM-1A attained criticality (nuclear reaction) on March 13, 1962. It was turned over to the post commander on June 15, 1962 as a heat and power utility.

Current Status: The SM-1A is sealed and enclosed. Fort Greely is an active Army installation.

Historic Context: Fort Greely is closely associated with the Cold War theme of nuclear energy for weapons and peaceful uses.

Significance: Fort Greely was important in Army testing of small nuclear power plants.

Integrity: The Fort Greely facilities are in use and intact. The small nuclear power plant has been sealed.

National Register of Historic Places Status: The SM-1A may be eligible for the National Register.

Recommendations: A determination of eligibility for the SM-1A at Fort Greely is needed.

Priority and Level of Preservation: The determination of eligibility should be accomplished by the Army during the tenure of this plan.

RESEARCH

Chatanika Research Site

The Chatanika site is used in conjunction with Poker flats for research on the ionosphere. The Air Force geophysics lab operates this station. This facility has not been inventoried or studied.

Poker Flats Research Range

The Poker Flats range is used as an Air Force geophysics laboratory for the study of the disturbed lower ionosphere. There may also be a nuclear detection station at the site.

ARMY

Fort Richardson

Fort Richardson is located about four miles northeast of Anchorage, Alaska. The original Fort Richardson was on the site of what is now Elmendorf Air Force Base. Construction of the post was authorized in June 1940. It would be a permanent main air base, supply depot, and ground garrison for the defense of southern Alaska.

The fort was named for Wilds P. Richardson, a military officer who served three tours of duty in Alaska between 1897 and 1917. Richardson supervised construction of Fort Egbert, at Eagle, and Fort William H. Seward, at Haines. He also headed the Alaska Road Commission (ARC) from 1905 through 1917. The ARC surveyed and built Alaska's earliest trails and roads. He surveyed the Valdez-Fairbanks trail in 1904. This trail, now highway, is named in his honor.

In 1950, the World War II constructed Fort Richardson was transferred to the Air Force and became Elmendorf Air Force Base. A new Fort Richardson was built at its present location. Initial construction included a 500 soldier barracks, a hospital, and bachelor officer quarters. More barracks, family quarters, warehouses, shops, a service club, power plant, theatre, and schools were built in the early 1950s. The post was largely completed with additional projects in the 1950s, including medical and dental center, commissary, post exchange, and clubs.

The 6th Infantry Division's, or LID, construction program of the 1980s emphasized the headquarters at Fort Wainwright. There was less work at Fort Richardson. A new dental clinic was built and the Buckner Field House was renovated. Current Status: Fort Richardson is an active Army post. The post has been considered for closure, its future is uncertain.

Historic Context: The post reflected the Army's presence in southern Alaska. During the Nike Hercules era, it was headquarters and support facility for the Anchorage defenses.

Significance: Fort Richardson has been the main Army post in southern Alaska since 1942.

Integrity: The 1950s layout and designs are visible and intact.

National Register of Historic Places Status: The Army should inventory and evaluate its Cold War facilities in Alaska. Should Fort Richardson close or be greatly reduced in operations, this will be required.

Recommendations: An Army Alaska-wide inventory of Cold War facilities is recommended.

Fort Greely

The initial construction at this post was in 1942, when a refueling airfield was built for the Lend-Lease aircraft ferrying to the Soviet Union. This airfield was operational until 1945 when it was inactivated. A small caretaker force remained to maintain the runway and aircraft support building.

In the winter, 1947-1948, the Big Delta airfield, as it was then named, was used as a maneuver area for the first Cold War exercise, Exercise Yukon. That spring, in May 1948, the facility was reopened as an Army Training Center and was named the Arctic Training Center. It was ideal, as the area experiences extreme cold and has a wide variety of terrain - rivers, lakes, wetlands, plains, and nearby mountains.

The Arctic Indoctrination School was housed in the World War II buildings at the former Big Delta airfield. Training and equipment test programs were established. It would be a school to teach how to function and survive in the arctic. Trainees came from all branches of the service.

A permanent post, located one mile from the airfield, was built in 1953-1954. The program included post headquarters, post engineer facilities, auditorium, fire station, power plant, warehouses, photographic laboratory, maintenance shops, and the Cold Weather and Mountain School facilities. In addition, 96 sets of quarters and three 200-man barracks were constructed in order to provide space for a post office, provost marshal facility, dispensary, library and personnel office. Bar-



Fort Greely has an M-116 Husky amphibious carrier as the guardian. The Husky was tested here in the 1960s.

racks space was converted to what is now known as the Composite Building, Building 663.

This arctic center was renamed Fort Greely on August 6, 1955 in honor of Major General Adolphus Washington Greely, arctic explorer and founder of the Alaska Communications System (ACS). Greely was responsible for the construction of thousands of miles of telegraph lines throughout the United States, Puerto Rico, the Philippines, and Alaska. More than 45,000 miles of telegraph lines were completed in Alaska alone.

During 1955, a combined post exchange/theater building, service club, and gymnasium were constructed. In 1956-1957, an officers and NCO club, and 72 additional family quarters were built. The Arctic Indoctrination School was renamed the Army Cold Weather and Mountain School. The next year there was more permanent construction: a recreation building, post exchange, and post-wide landscaping. During the 1960s, 93 more family quarters, a new chapel, a barracks, and maintenance buildings were constructed.

As part of a national training program, the training operation was redesignated the Northern Warfare Training Center (NWTC) in April 1963. Each of the training centers in the Army system would have specialized missions, Fort Greely would train units in northern warfare.

In 1974, Fort Greely became part of the 172d Infantry Brigade. When the 6th Infantry Division (Light) and the U.S. Army Garrison, Alaska, was formed on March 23, 1986, Fort Greely became one of three posts within the Army Garrison, Alaska. In 1986, a major post improvement plan was launched. This included new family quarters and improved barracks.

Current Status: Fort Greely is an active Army post.

Historic Context: The Army, during the Cold War, emphasized training for combat in many different areas. Fort Greely and the NWTC was critical in cold weather familiarization.

Significance: Fort Greely was one of few national warfare training centers. It had a very specialized mission.

Integrity: A recent reconnaissance drive-through indicates that the 1950s main post, the standard Army permanent Alaska design, retains much of its original character.

National Register of Historic Places Status: A determination of National Register eligibility is needed.

Recommendations: The Army should inventory and evaluate its Cold War facilities in Alaska.

Fort Wainwright

Construction of an airfield at Fairbanks was urged by Alaskan officials and military leaders in the late 1930s. With the worsening international situation, Congress appropriated four million dollars in 1939 to build a cold weather training airfield at Fairbanks. The construction was to be permanent type buildings, specially designed by Austin Company. With the outbreak of war and Lend-Lease, the Cold Weather Experimental Field became the transfer point for aircraft headed for the Soviet Union. From 1942 to the end of the war, 7,956 planes were transferred via the Alaska-Siberia Lend-Lease route. During the war, hundreds of temporary buildings were constructed.

The field was renamed Ladd Field and later Ladd Air Force Base. In the first years of the Cold War, it was a 35 fighter and intelligence gathering base. During the construction of the DEW Line, it was used as a staging area. By the late 1950s, it was no longer needed by the Air Force; Eielson Air Force Base, 26 miles to the east, was sufficient for the northern air requirements. Ladd was scheduled for closure in 1959 but was instead transferred to the Army in 1960.

At the time of transfer, the post was divided into three areas, the north post which was the original cold weather field, the south post with Army and Air Force troop housing, and the family housing area nearest Fairbanks.

On January 1, 1961, Ladd Air Base was renamed Fort Jonathan Wainwright, in honor of the general who was forced to surrender the Philippines, spending more than three years in a Japanese prisoner of war camp. The Secretary of the Army, Wilbur M. Brucker, spoke at the naming ceremony. Brucker told the audience that, "Here on the continental frontier of the United States closest to the menacing power of the Soviet Union, the Army's Fort Jonathon M. Wainwright will deploy its sturdy and alert troops constantly ready for whatever may come."

Current Status: Fort Wainwright is an active Army post.

Historic Context: This post is home to arctic warriors and light infantry who could be rushed to trouble spots. The main activities at this post are cold weather training and maneuvers. Fort Wainwright soldiering is different, the soldier must cope with extreme weather conditions. The light infantry concept was an important doctrine revision in the Cold War, and the 6th Division was one of the light infantry divisions.

Significance: Fort Wainwright is significant in the Cold War as a cold weather training area and light infantry center. The post is associated with cold weather fighting and rapid light infantry deployment during the Cold War.



Aerial view of Fort Wainwright, the Cold War addition. (photograph by Brian Allen)

Integrity: Much of the 1950s Cold War construction survives. From 1986 to 1994 there was a huge construction program, changing the face of Fort Wainwright.

National Register of Historic Places Status: The north post is a National Historic Landmark location. The dramatic building program at the south post and housing areas has greatly altered the Cold War (1950s) appearance; these areas are probably not eligible.

Recommendations: The Fort Wainwright command should consider preparing a history of this important Alaska base.

Priority and Level of Preservation: The Army must consider the National Landmark status of north post. The Fort Wainwright Public Works Department has a manual to guide future alterations in north post.

ARMY PORTS

Port of Whittier

During World War II, two railroad tunnels were drilled through the mountains on the shore of Prince William Sound. These tunnels enabled the railroad linkage of the Army's port at Whittier to the Alaska Railroad line at Portage, south of Anchorage.

The Whittier port was expended to handle military cargo received at this year-round seaport. A supporting garrison for 1,100 men was constructed at the port. The port was declared excess in 1945 and closed.

Whittier port was reopened in 1948 with new construction including rail yards, two docks, warehouses, a powerplant, engine terminal, and supporting facilities. During 1949-1950 a fuel tank farm, petroleum terminal, and fuel dock were built.

A very unusual Army building was designed for Whittier. This was a "city under one roof," a strong deviation from Army practice of dispersed one- and two-story buildings. The seven-story Buckner Building (named for General Simon Buckner, World War II commanding general of the Alaska Command) provided housing and complete accommodations and services for 1,250 men. The building included a jail, theatre, bowling alley, PX, mess hall, snack bars, and barracks. Construction of the Buckner Building was started in April 1951 and completed in October 1952 at a cost of \$6.5 million. A second high rise, a fourteen-story family housing complex, was completed in 1956. The construction cost of this apartment house was \$4.2 million.



The long vacant Buckner Building, Whittier.



Whittier's Hodge Building, the Begich Condominiums.

By 1960, air flights were bringing troops to Alaska and trucks were carrying more cargo, so the need for the port at Whittier had declined. As an economic measure, in 1961, the Army abandoned the port, except the fuel terminal facilities. The port was taken over by the Alaska Railroad. The Buckner Building was sold to a developer, but has remained vacant since its closure, with its future uncertain. The apartment house has been converted into privately-owned condominiums, and is home to most of the residents of the present day city of Whittier.

A recreation camp for Whittier personnel was built at Pigot Bay, located ten miles northeast of the port. Two temporary cabins were built at the 185-acre camp. The camp was closed in 1961 and is now within the Chugach National Forest.

Current Status: The Whittier Army facilities have been abandoned, the Buckner Building is empty and unused, and the former family housing is now a condominium.

Historic Context: The Port of Whittier was a logistics center for Alaska until improved air service and road transportation made it obsolete.

Significance: The Begich Tower condominiums, former family housing, is an example of unusual Army housing. It is well maintained and may survive for some time, recalling the unique military family life at the Port of Whittier.

Integrity: The Begich Towers have been modernized, but still recall their use as family housing. The Buckner Building is another matter; while it is most unique, it has been long vacant and damaged by the 1964 earthquake and extreme weather conditions, making its future cloudy.

National Register of Historic Places Status: A National Register determination should be accomplished.

Recommendations: Both of these very significant buildings should be preserved in place. If the damaged Buckner building must be demolished, adequate HABS documentation is needed.

Priority and Level of Preservation: The Port of Whittier facilities are not threatened at this time, except the Buckner Building which is in poor condition.

MANEUVER/TRAINING

Black Rapids Training Camp

In 1957, a training camp was established at Black Rapids, on the Richardson Highway, south of Delta Junction.

Initially, temporary wood-frame structures and Quonset huts were used. In 1994, a two-story concrete composite building and barracks were completed at a cost of

8.6 million dollars. Three of the old wood-frame buildings survive as warehouses. The fifth structure is a generator building, erected in 1990.

The center is part of the Northern Warfare Training Center (NWTC). Some 200 students can train here at one time. Soldiers ski and mountain climb on Donnelly Dome and Gunnysack Mountain.

Current Status: Black Rapids is an active Army training center.

Historic Context: The Black Rapids training camp recalls the special training available in Alaska.

Significance: This training camp is one of a number of specialized areas to learn how to operate in mountainous terrain. Various training areas in Alaska provide for a range of training opportunities.

Integrity: Three of the original 1957 wood-frame buildings survive.

National Register of Historic Places Status: This active and new camp is probably not eligible for the National Register.

Recommendations: The Army should conduct a statewide cultural resources inventory of Cold War installations, construction, and activities.

Priority and Level of Preservation: The priority of preservation for Black Rapids is low.

Blair Lake Training Camp

The Army constructed a training camp at Blair Lake some 35 miles south of Fort Wainwright. The camp was built on the lake's north shore in the 1950's. There was one building, a wood-frame structure with two Quonset huts attached, which was used as a command post during training exercises. This building and debris in the lake were removed by the Army in 1987.

Current Status: The training camp has been demolished.

Historic Context: See Black Rapids.

Significance: See Black Rapids.

Integrity: There is no trace of this camp; the facility has been demolished.

National Register of Historic Places Status: This site lacks integrity or important events to be National Register eligible.

Recommendations: All training camp sites and exercise locations should be identified in the listing of Cold War facilities.

Priority and Level of Preservation: No further preservation required at this site.

Clearwater Lake Training Camp

The Clearwater Lake Army Training Camp is on the Tanana River, 8.5 miles northeast of Delta Junction. In 1961, the site was obtained for arctic and riverboat training, and a tent camp was constructed.

In 1969, the property was transferred to the State of Alaska, Department of Natural Resources, who then leased it to the Army. Riverboat training is conducted at the camp.

Current Status: Clearwater Lake is an active training center.

Historic Context: See Black Rapids.

Significance: See Black Rapids.

Integrity: This site has not been surveyed.

National Register of Historic Places Status: This limited facility is probably not eligible for the National Register.

Recommendations: No further action required.

Priority and Level of Preservation: None.

PIPELINE

Haines-Fairbanks Pipeline

The Fairbanks-Eielson Pipeline was constructed in 1953-1954 and became operational in 1955. The pipeline transported various fuels from Haines to Fairbanks, including jet fuel to Eielson Air Force Base. The pipeline was taken out of service between Fort Wainwright and the North Pole MAPCO refinery on July 1, 1992.

Current Status: The pipeline has been removed.

Historic Context: This pipeline is associated with the need for large quantities of aviation fuel at Eielson AFB.

Significance: The pipeline represented engineering challenges and accomplishments.

Integrity: The pipeline has been removed.

National Register of Historic Places Status: Little remains to identify the pipeline and its corridor.

Recommendations: The pipeline route should be noted in the listing of Cold War facilities.

Priority and Level of Preservation: None.

RECREATION

Afognak Island Recreation Camp

The Navy sited a radio station on the eastern shore of Afognak Lake in 1942, employing five or six buildings of a 1890's fish hatchery. In 1944, the radio station

was converted into a recreation camp for high ranking Navy officers from Kodiak Naval Operating Base.

The recreation camp remained in use until the transfer of the Kodiak Naval Station to the U.S. Coast Guard in 1971. The Coast Guard did not have sufficient funding to keep the station open and the area is now owned by the Ouzinkic Native Corporation.

Current Status: Abandoned.

Historic Context: Recreation camps in Alaska were important adjuncts to the military existence. The remote duty in Alaska and other hardships made these camps crucial in maintaining troop morale.

Significance: This camp area is more historically significant as an early fish hatchery.

Integrity: The structures of the fish hatchery survive, but some are collapsing.

National Register of Historic Places Status: This camp is National Register eligible.

Recommendations: There shall be no removal of structures or debris at this site.

Priority and Level of Preservation: The SHPO should obtain land owner information regarding this site. Consideration of preservation is required.

Anchorage USO/YMCA

The World War II Anchorage USO was located in a large log building at the southeast corner of 5th Avenue and H Street. The USO was closed in 1946 and the building was used as a museum. Today, a hotel occupies the site.

During the Cold War, until the late 1980s, the YMCA operated a serviceman's center at 609 F Street. This center became the Covenant House of Alaska, a home for youth.

Current Status: This facility is presently a home for youth.

Historic Context: This was a recreational center for servicemen in a high cost urban area.

Significance: Urban recreational centers, such as the YMCA, were valuable retreats for single soldiers in the days of low pay. The need for this type of recreational center has diminished with the increase in military pay and greater numbers of military families.

Integrity: The former YMCA center has been extensively remodeled.

National Register of Historic Places Status: The center is probably not eligible for the National Register.

Recommendations: The YMCA serviceman's center should be recorded in the listing of Cold War facilities.

Priority and Level of Preservation: None.

Fairbanks USO

The United Services Organizations, commonly known as the USO, began operations in Fairbanks, Alaska, in May 1942, in a building at 514 First Avenue. This building served as the USO center for personnel at Ladd Air Base (became Fort Wainwright in 1961) until December 7, 1983, when it was closed and the center moved to a new location. At the time of its closing, this USO club was one of the oldest USOs in continuous service in its original World War II club building. Not only was it still in its original character, but there had been few modifications to the building. A dormitory had been installed in the basement, a stone face had been added to the front of the building, and for a short period, a Greek restaurant occupied part of the social hall; otherwise, the building was little different than it had been in World War II. Entering this USO in 1983 was a visual step back to that of World War II.

In its first 37 months of operations, over 500,000 service men and women visited this center. Many had taken advantage of the numerous social activities or had come in to warm up and have an inexpensive snack in the basement canteen. Social activities included dances, movies, slide shows, bingo, and a number of games available in the game room. There was also a letter writing room and a library.

Unlike many USO centers around the world, the Fairbanks club was not closed after World War II or the Korean and Vietnam Wars. This facility continued in operation after each war, and into the late 1980s to help service people cope with life in the sub-arctic Fairbanks region. After each war, local assistance in Fairbanks increased as National funding was cut to enable the continued functioning of the center.

At the closing of World War II, a review of the world-wide USO services was undertaken with attention to the role that the USO should play in the immediate post-war days. It was concluded that the USO should play an important role overseas in the transition of servicemen to civilian life. The end of the war would not bring an instant end to problems of loneliness or boredom and in fact might increase the problems experienced by those waiting to go home. Alaska, which was considered an overseas assignment, had been closing down military facilities since late 1943, following the expulsion of the Japanese from the Aleutians. At the end of the war, hundreds of bases in Alaska were closed, but Ladd Field, at Fairbanks, and Fort Richardson, at Anchorage, were retained. The USO centers at each would remain open for at least one year and then a decision would be made as to the future of each.

The programs developed in the 1960s would serve well into the 1980s. Some activities would cease and sometimes reappear when a new person was found that could direct the program. Some new activities, such as a Hi-Fi club and coinclub, were started in 1961 and lasted four years. The advent of the volunteer military did not have as much impact on the Fairbanks USO as it did elsewhere.

The worldwide future of the USO was the subject of a study funded by the Department of Defense and the United Way in 1975. The study was initiated to determine the role of the USO in an all volunteer military. Following the study, there were some revisions in USO operations, closing some centers and expanding some services such as the airport terminal centers. Attention to family issues were restated and a number of new programs had begun. Some centers became local operations, while retaining the USO identity. The Fairbanks center went this route in 1977, with funds for the center coming from local sources, including the United Way. The budget for 1978 was \$96,296 plus \$3,000 collected in dormitory fees and \$8,000 profit from the snack bar. Over 80,000 visited the center in 1978.

Discussions between the Army, USO, and the City of Fairbanks were begun in 1982 to consider the transfer of the First Avenue USO property to the City for use as a river front park. Before accepting a transfer of property and new facility, the Army and USO required that it be equal in size or sufficient to provide the same services that had been offered at the First Avenue location.

A few available buildings were investigated, with the most suitable being the former Moose Hall at 507 Gaffney Road, near the main gate to Fort Wainwright. A transfer agreement was reached, with the assistance of Alaska Senator Ted Stevens, between the Army, USO, and City of Fairbanks, to exchange the properties.

The First Avenue USO center was closed on December 7, 1983, and the next spring the new center was functioning at 507 Gaffney Road. The new USO on Gaffney Road has since been closed. The First Avenue USO building was demolished by burning in September 1985, to make room for the Golden Heart Park, dedicated in July 1986.

Current Status: The USO site is now the Golden Heart Park.

Historic Context: See Anchorage YMCA.

Significance: See Anchorage YMCA.

Integrity: The USO building has been demolished, no trace of the facility exists.

National Register of Historic Places Status: Only the site survives, it is not eligible for the National Register.

Recommendations: This World War II and Cold War facility should be recorded in the listing of Cold War facilities.

Priority and Level of Preservation: The Fairbanks USO has been documented in an Alaska District history of the Nike system.

Fielding Lake Recreation Camp

In 1950, a fishing camp at the north shore of Fielding Lake, approximately 100 miles north of Glennallen, was acquired by the military. This fishing camp was used by military personnel from interior-Alaska bases. The camp was in use from 1954 to 1960.

There is no surviving surface evidence of this recreation center. Records are not available regarding military construction.

King Salmon, Lake Camp

A second King Salmon recreation camp, for officers, was constructed in 1956 on the Naknek River, one and a half miles from the river headwaters where it drains Naknek Lake. Today, the site is known as Lake Camp Boat Dock.

A camp site on the bluff, above the river, contained two Quonset huts, a generator shed, and a steel ammunition building (probably used for fuel storage). On the river was a small dock and three more Quonset huts (McChenahan, 1993). The camp was closed in 1976.

The facilities were removed in 1987, leaving behind only fragments of the dock, a pipeline, and small pieces of debris. A 1993 survey did not locate prehistoric or historic Native American cultural materials.

The Lake Camp site is used as a boat ramp and dock to serve the Katmai national Park. The Air Force allowed the park Service dock construction at the site in 1993.

A National Register nomination study concluded that the property lacks significance because it no longer possesses physical integrity - all structures have been removed (National Register evaluation).

King Salmon, Rapids Recreation Camp

The recreational needs of Air Force personnel at King Salmon Airport were enhanced with the construction of a camp on the Naknek River. This camp, called Rapids Camp, was located 15 miles east of Naknek.

Rapids Camp was comprised of three Quonset huts and a small dock. The Quonset huts were constructed of salvaged materials, two were 18' x 45' and one was 18' x 37'. Two of the Quonset huts were alongside the road, just above the dock, and the third was parallel to the River, across the road.

The date of construction is not known, but believed to have been about 1956. However, the site had been in use since 1952 as a camp. Rapids Camp was declared excess on July 29, 1976.

The Air Force removed the Quonset huts and dock in 1987. A few small pieces of the dock, including a slab with "Rapids Camp" etched in the concrete, survive. Current Status: The camp site is scheduled for conveyance to Cook Inlet Region Incorporated. The recreation camp has been removed.

Historic Context: See Afognak.

Significance: See Afognak.

Integrity: Little remains to identify this a former recreation camp.

National Register of Historic Places Status: The site has been evaluated by the National Park Service for National Register eligibility. This determination of eligibility concluded that loss of integrity made the site ineligible.

Recommendations: The site should be recorded in the listing of Cold War facilities.

Priority and Level of Preservation: The National Register investigation satisfies the required preservation needs.

Lake Louise Recreation Camp

On October 28, 1955, the Army and Air Force obtained property on Lake Louise for a recreation and training camp. The Lake Louise recreation camp was located about 40 miles west of Glennallen. The Army constructed twelve Quonset huts, log latrines, and a boat dock. Soldiers and families used the camp for fishing and relaxation. Occasionally, winter training was conducted here.

The camp was damaged in the 1964 earthquake and was closed in 1965. The site was relinquished to the Bureau of Land Management in March 1969, and finally to the State of Alaska, for park purposes, on October 16, 1981. By this time, the Quonset huts had collapsed and the dock was damaged by winter ice.

The State of Alaska has removed the collapsed Quonset huts, latrines, and the dock. The former camp is today a state park. The Air Force has a 25-acre parcel which is excess and scheduled for disposal.

Porcupine Recreation Annex, Fort Yukon

The Air Force set up a hunting and fishing camp on the Black River Slough of the Porcupine River, 12 miles northeast of Fort Yukon. Personnel assigned to the Fort Yukon Air Force Station used it as a recreational center. The facilities, consisting of tents and a small-boat dock, were completely destroyed by fire in 1970.

Salchaket Lake (Harding Lake) Recreation Area

The Army acquired five acres of land on Salchaket Lake (now Harding Lake) in April 1948. The site was used for recreation, and float and ski plane testing by the Army from Ladd Air Force Base. The lake is south of Fairbanks, near Big Delta, so it was accessible to personnel from Ladd, Eielson, and Fort Greely. From 1952 to 1960, the Air Force operated the recreation site. The Army re-assumed control in 1963 and continues to operate it today.

Seward Recreation Camps

The Army and Air Force operate recreation camps located in Seward. Both of these camps are active operations. The Army camp is comprised of Quonset huts. Active duty and retired military, some 20,000 visitors in 1993, come here to fish. A plan is under consideration to replace the Quonset huts with a 56-room hotel. Should this hotel be constructed, an evaluation of cultural resources will be necessary.

Skilak Lake Recreation Camp

The Air Force constructed a fishing camp on the Kenai River, 26 miles southeast of Kenai, in 1950. Construction at the camp included a wood-frame lodge, storage building, latrine, generator shed, and boat dock.

Skilak Lake Camp was closed in 1954 and the land was returned to the Kenai National Wildlife Refuge. The Youth Conservation Corps (YCC) removed the improvements in 1982. There are no defining characteristics remaining.

Unalakleet Recreation Fish Camp

The South River, or Unalakleet Recreation Fish Camp, was used by the Army's Yukon Command for recreational activities. The facility, located on the left bank of the Unalakleet River, four miles east of Unalakleet, was a seasonal tent camp (June 1 to September 15). The site was used by the Army from 1963 to 1967.

There are no surviving physical features from the Army's use. The land is now privately owned.

Unalakleet Recreation Annex

The Unalakleet Recreation Annex, or North River Recreation Site, was used by the Air Force from 1965 to 1969 as a fishing camp. The camp, located at North River, near the Unalakleet AC&W station, had a small dormitory, two portable buildings, a storage shed, and a small boat dock. The former camp is now privately owned. The dormitory building survives, in good condition, and is in use as a private residence.

Ugashik Lake Recreation

The Ugashik Lake Recreation camp was located southwest of King Salmon on Lower Ugashik Lake. This was a summer headquarters locale for hunting and fishing parties.

The Air Force leased the site, which had four wood cabins, a shed, and two out-houses. The lease was cancelled in August 1969 and its control was returned to private ownership. Current status of the facility is unknown.

FORT RICHARDSON NATIONAL CEMETERY

The Fort Richardson military cemetery was established as a temporary post cemetery in World War II. Soldiers' remains were interred until they could be returned to next-of-kin for local or National Cemetery of choice burial. Most remains at this cemetery were repatriated under the Return of World War II Dead Program.

The Fort Richardson Cemetery is unique in having many foreign burials, including Russians, Canadians, and Japanese. A burial plot of 235 Japanese soldiers who died on Attu Island recalls this Aleutian battle. In 1953, this mass grave was opened to identify the bodies, but only 18 could be identified. All 235 remains were cremated and reburied.

The Fort Richardson National Cemetery was dedicated on May 28, 1984. It is located on Davis Highway, near Camp Carroll, on Fort Richardson.

The AHRS number for the Fort Richardson National Cemetery is ANC-013.

CHAPTER 4

REUSE OF MILITARY FACILITIES

MILITARY DRAWDOWN AND HISTORIC PRESERVATION

Base Closings and Reuse in Alaska

The closure of bases, due to technological changes and military reductions, presents a tremendous preservation challenge. The end of the Cold War and contemporary efforts to reduce budgets forecast even more closures. At this time, the final number of base closures in the 1990s and early into the next century are not known. The number in the United States may be about 150, plus hundreds overseas.

Base closings and activity reductions are taking place in Alaska. In January 1994, the naval base at Adak was reduced in operations from 4,000 to about 1,000. There have been personnel cuts at Fort Richardson and Fort Wainwright and inactivation of the 6th Infantry Division (L). Galena has been closed and King Salmon transferred to the Alaska National Guard.

Many facilities, outmoded by technological advances or new weapons systems, had been closed and abandoned for years before the 1990s drawdown. There are many opportunities for preservation of former bases. Unfortunately, the record to date on preservation in Alaska has not been an overwhelming success. Part of the reason for this is the uniqueness of Alaska.

In the lower forty-eight, many closed bases can be converted to new economic uses, often industrial operations. These industrial conversions provide jobs and new taxes. However, Alaska does not have a favorable industrial or manufacturing base. High labor and transportation costs prevent industrial growth in the state.

In addition to the absence of an industrial market to take over Alaska bases, other uses are discouraged because of poor military designs. The military buildings were built in an era when heating fuel was plentiful and fuel costs were not a design factor. A college or other institutional use may not be viable given the high costs associated with operating these installations. The fuel costs make a new and better designed building a more economical alternative.

Some additional features of Alaska bases which make them difficult to reuse are: remoteness, they are great for bases but not condos; delays in land transfers, resulting in vandalism and theft; asbestos and safety hazards; and absence of economic conversion potential. For these reasons, the military has a greater responsibility for preservation.

A review of the history, reuse, and historical preservation of closed bases in the United States suggest some military roles and other options for Alaskan installations. These options should be reviewed as facilities are scheduled for closing.

Base Closings and Reuse in Continental U.S.

Between 1961 and 1990 there were 162 bases closed in the continental United States; of that number, 75 have been turned into industrial parks, 42 are airports, 33 are vocational or technical schools, and 12 are four-year colleges. There are 158,000 employees and 160,000 students at these former bases. Personnel at the bases totaled 93,000 when they were operational (Office of Economic Adjustment).

By accident and planned efforts, a number of the bases have retained much of their historical integrity. Fort Mason, San Francisco, is a planned preservation effort, with the National Park Service operating the post for offices and cultural activities, yet retaining its original character. The same can be anticipated at the Presidio of San Francisco. Fort MacArthur (upper reservation), Long Beach, is much the same today as when closed. Character retention was not planned, but the City of Los Angeles Parks Department, which operates it as Angels Gate Park, did not have the funds to make any changes. This has had a positive latent function; the post, with its coastal defense batteries and World War II barracks, is often used as a military setting for movies and television shows.

The following are some selected examples of closed bases in the continental U.S. and their new uses:

Benicia Arsenal, California: Private developers have turned this former arsenal into a port operation. Exxon, Sperry, and an automobile importing facility have created 5,510 jobs making it more economically valuable to Benicia than during its Army days. Historic buildings have been identified and preserved.

Brooklyn Navy Yard, Brooklyn, N.Y.: This yard was closed in 1968 to become a city-owned industrial park with 98 percent occupancy and 140 firms.

Brookley AFB, Mobile, Alabama: This former Air Force base has been converted into an industrial park and campus for the University of South Alabama. There are 3,500 employees plus students.

Charlestown Naval Shipyard, South Boston, Massachusetts: Charlestown Naval Shipyard has become a historic park and a commercial and residential complex.

The South Boston annex has become an industrial park. Boston Army Base has become a commercial office facility.

Connally Air Force Base, Waco, Texas: This base closed in the 1960s, with about 3,000 Air Force personnel departing. The base was turned into the first campus of Texas State Technical Institute. The World War II buildings remain in use as classrooms. Texas State Technical has opened campuses in Amarillo, Harlingen, and Sweet Water (all former Air Force bases).

Camp Crowder, Neosho, Missouri: This is another base which has been converted into an industrial center and college campus. Crowder College has its administrative offices in the camp headquarters building. Over 2,300 jobs have been created. The college also has a very active program to recall its former military origins, including reunions of people who served at the camp.

Donaldson Air Force Base, Greenville, South Carolina: This former B-25 training base closed in 1963. The city and county purchased the air base for \$421,000; converting it to an industrial complex that includes facilities for Union Carbide, 3-M Company, Norwich Pharmaceutical, and 84 others, for a total of 3,500 jobs.

Dow Air Force Base, Bangor, Maine: An aircraft-servicing facility and a satellite campus for the University of Maine were established at this base, which closed in 1958. The base was purchased for \$1, and with attractive low rents, firms moved-in creating 2,470 jobs.

Duluth Air Force Base, Duluth, Minnesota: This base is now a 30-acre industrial park. Some 50,000 square-feet of former military space is leased to private firms.

Ent Air Force Base, Colorado Springs, Colorado: The Ent Air Force Base has been converted into the National Olympic Training Center.

Geiger Air Force Base, Spokane, Washington: This former Air Force base is now known as the Spokane International Airport Business Park. Turned over to the city in 1948, it was a local airport until the 1960s when a new international facility was built. From the 1960s until 1982 the facility was underused. In 1982, an effort to develop it into a modern business park was launched. The former base, like others, represented instant space with only limited front-end costs. A complete infrastructure of roads, sewers, water, and electricity was available. The cost to build the same infrastructure would be prohibitive for most communities.

The plan included reusing existing buildings as well as new construction. New construction was needed for specific functions that did not fit into the military designed buildings.

Glasgow Air Force Base, Montana: A private retirement community uses part of this base. This reuse was slow in coming - the base stood empty for years. The local population was cut in half and many businesses failed.

Glynco Naval Air Station, Brunswick, Georgia: This is now home to the Federal Law Enforcement Training Center and a new municipal airport, for a total of 1,200 jobs.

Kincheloe Air Force Base, Sault St. Marie, Michigan: Geographically isolated, Kincheloe Air Force Base has provided 990 new manufacturing jobs and a state minimum-security prison.

McCoy Air Force Base, Orlando, Florida: McCoy Air Force Base is now a municipal airport and an industrial park, with a total of 3,049 new jobs.

Olathe Naval Air Station, Johnson County, Kansas: This former NAS is now Johnson Industrial Airport, a 1,901-acre general aviation and industrial park owned by the county. The NAS was closed in 1970 and transferred to the county in 1973. In the first ten years, there was \$125 million in new construction and 45 new businesses, creating 2,500 new jobs.

Presque Isle, Maine: The missile bunkers at Presque were converted to facilities for the manufacturing of plywood and potato products, creating 1,100 jobs.

Quonset Point Naval Station, Davisville, Rhode Island: A new general-aviation airport and port-authority industrial park provided 7,000 jobs. Quonset huts (the name of the hut derives from Quonset Point) located on the former base have been placed on the National Register of Historic Places and are protected.

Raritan Arsenal, Edison, New Jersey: Raritan Arsenal has been transformed into an industrial park with 13,100 employees. Companies include RCA, American Hospital Supply, Nestle, and Macy.

Rossford Arsenal, Toledo, Ohio: Rossford Arsenal is used by Hunt Foods, Owens Illinois, Ace Hardware, Michael Owens Junior College, and Penta County Vocational School, for a total of 3,900 jobs.

Schilling Air Force Base, Salina, Kansas: This former air base provides facilities for Beech Aircraft, a food production operation, and two vocational schools, for a total of 4,900 jobs.

Springfield Arsenal, Springfield, Massachusetts: Digital Equipment, Milton Bradley, and Smith & Wesson are now located here, providing 3,300 jobs. The Springfield Arsenal Museum is located in a historic building, recalling the history of this arsenal.

Stewart Air Force Base, Newburgh, N.Y.: This air base is used as an international airport and employs 1,000 workers.

Walker Air Force Base, Roswell, New Mexico: This is the locale for Greyhound's bus manufacturing facility and other private-sector firms, along with Eastern New Mexico University, for a total of 2,770 new jobs.

Westover Air Force Base, Chicopee, Massachusetts: In 1973, the DOD declared some 2,300 acres of land at the Westover Air Force Base excess. The property contained three schools, a 100-bed modern hospital, a complex of seven dormitories and a dining hall, 1,260 housing units, an 18-hole golf course, 315 acres of park and recreation area, some 772,000 square-feet of marketable industrial space in 42 buildings, and 1,300 acres of land suitable for industrial development. The Westover Metropolitan Development Corporation. (WMDC) was formed to administer the facility for the two communities of Chicopee and Ludlow, Massachusetts. Since then, capital investment in WMDC's two industrial airparks is in excess of \$325 million. Thirty-six companies, employing 1,300 people, occupy more than 700,000 square-feet of space.

Fort Wolters, Mineral Wells, Texas: Fort Wolters has been converted into an industrial park and the Weatherford College campus, producing 1,300 jobs. Recent decline of oil exploration and cutbacks in the oil business has facilitated personnel reductions.

For the current base closings, reconversion may be more difficult. A large number of bases will be forced onto communities during what may be a slow economic growth period. Additionally, environmental issues are more relevant and may impede conversion. Pease Air Force Base, Portsmouth, New Hampshire, the first base to close under the 1988 Military Base Realignment and Closure Act, suggests future trouble areas.

Pease was a 4,300-acre facility in the Great Bay Estuarine Reserve of New Hampshire. Its closure resulted in the loss of 650 civilian jobs and 3,500 military families, causing significant economic impact to the small city of Portsmouth.

The state created a re-use and development authority. Quickly, the authority came under fire for secret negotiations and closed-door meetings. The authority, the Pease Development Authority (PDA), contracted with a national firm to prepare a comprehensive plan, but the plan came under intense criticism by environmental and business groups. This plan called for a commercial airport, industrial park, and wildlife refuge. Environmentalists noted an inconsistency between vehicle use at the industrial park, airport, and protecting wildlife refuge functions. Air traffic alone is expected to experience a five-fold increase, with a negative impact on wildlife.

Environmental groups also worry that the base will be transferred while still containing environmental cleanup needs. The rush to reconvert may cause overlooking of environmental hazards. Efforts are being made to address all environmental issues, and ways to immediately transfer clean areas.

Saving Small Installations

Experience suggests that the larger bases are more attractive for redevelopment as industrial parks or schools. The reuse of small and especially remote installations requires creative conversion plans. Fortunately, hundreds of small installations have been saved through innovative reuse, often in ways which preserve the facility near its original appearance.

For the Cold War installations, history will be well served if at least one or more facility of each type is preserved as a time machine, saved as it was when operational. Other facilities of the same type can be reused in ways which respect their previous functions. This has happened at Nike missile installations. There were more than 200 Nike bases around major U.S. targets. One defense area, San Francisco, included a Nike battery on the Marin Headlands, on the north side of the Golden Gate Bridge. This battery was closed and abandoned in 1974 and transferred to the Golden Gate National Recreation Area.

The battery launch area stood vacant for ten years but the security fence was maintained with police patrols limiting vandalism. Volunteers then went to work to restore the underground bunker, and recovered Nike missiles for display.

The launch area has been restored and is open for tours as the only Nike restored launch site. There are about 40 Nike installations that have been reused, but many more sit empty and abandoned. A few have been demolished.



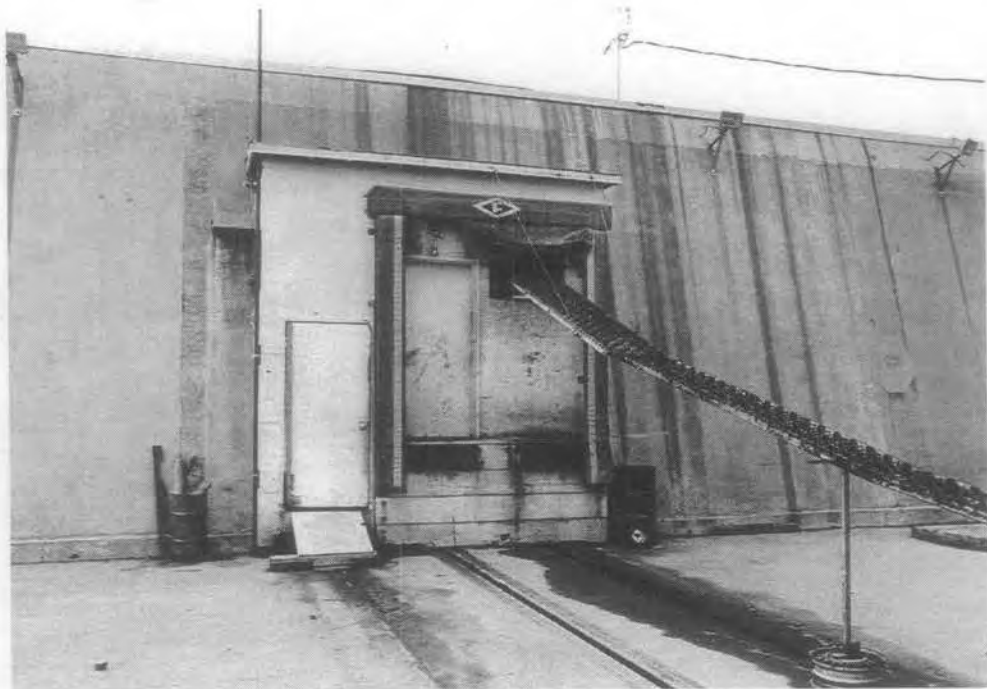
The control building at Nike Site Bay being remodeled for use as a correctional center.



The Site Bay correctional center was operated only a short time and then closed. Despite the high security fence, the building has been heavily vandalized.



Another view of the vandalized correctional center at Nike Site Bay.



One Nike launch structure at the former Site Jig is being used for the manufacture of dynamite.



Nike Hercules launch structure serves as a storage shed at the former Site Point, Anchorage.



A Site Point launch structure was effectively made into a lodge.

In Alaska, there were nine Nike batteries, four in Anchorage and five in Fairbanks. The Fairbanks Nike bases were boarded-up, secured, and closed in 1970-1971. The gates on the eight-foot high perimeter fences were padlocked. Almost immediately, the cyclone fencing at the Fairbanks sites was stolen (at each site this was about 7,000 lineal-feet). Thereafter, the sites were subjected to removal of usable items and heavy vandalism. The administration barracks buildings were trashed. The launch structures, designed to withstand a missile explosion, are relatively vandal proof and have survived.

At Anchorage, a security guard patrol monitored the abandoned sites for two years, while new uses were sought. None were found and most facilities were vandalized and stripped of usable materials. The Site Bay control center was saved for use as a correctional center.

The reuse of Nike bases is representative of what can be done at small, specialized Cold War installations and suggests options for other small Alaska facilities.

Site Jig, Fairbanks, Alaska: This former Nike launch site has been reused as a dynamite production and storage area. The only alteration to the original facility is a new door.

Site Point, Anchorage, Alaska: This former Nike launch site is now known as Kincaid Park. A ski lodge has been added to the front of the launch structure. The original launch structure is now a storage area and remains unaltered.

Three underground launch sites, Dighton, Massachusetts: These launch sites are now used to store computer data. Environmental humidity controls have been added to the structures.

Launch site, Garthersburg, Maryland (W94L): This former launch site has been reused as a solar test facility. Alterations to the original structure include placement of solar panels on missile elevators, raising of launch elevator into sunlight, and other underground alterations.

Underground launch site, Dillsboro, Indiana, (CD63L): This former launch site is now a private home. The home project was initiated in 1979 and completed in four years. The former missile magazine provided 6,000 square-feet of living space. Harold Whisman, the owner, reports that not only is it larger than other homes but brighter, with a 14-foot by 14-foot skylight which bathes the interior in sunlight. He installed glass panel interior walls to diffuse the light into most of the rooms.

The underground Nike magazine home has an energy saving advantage. The natural temperature is 58 degrees, so sunlight is all that is necessary for heating year round. There is no need for air conditioning, even during the hottest Indiana days. During the winter, the house is heated by one wood-burning stove which consumes only eight cords the entire season.

Underground launch site, Denton, Texas: This underground facility was converted into a darkroom for large-scale photographic reproduction. The open, large, and dark chamber was well suited for exposing and developing photographs of up to 30-feet wide and 11-feet tall. Photographs of this size were a creation of artist Bob Wade, who prepared photographs to cover an entire wall with one sheet of paper. No alterations were required.

Radar tower site, Westport, Connecticut (BR73C): This former radar tower site is now used as a high school observatory. The facility has experienced minor alterations.

Barracks, Nahant, Massachusetts (BO-17): This former barracks is now used as a marine laboratory by Northeastern University. The facility has been altered considerably.

Barracks, Fort Fuston, San Francisco, California: This former barracks facility has been converted into a youth center dormitory. The facility has experienced minor alterations.

Control building, Ansonia, Connecticut (BR04C): This former control building is now used as an insect laboratory. It is unknown if the facility has been altered.

Control building, Bloomfield Connecticut: This former control building has been reused as a science center. It is unknown if the facility has been altered.

Control building and barracks, Croom, Maryland: The control building and barracks now facilitate Croom Vocational School. The facilities have experienced extensive alterations.

Control area, Chesterton, Maryland: This former control area is now a park.

Administration building and barracks, San Rafael: The former administration building and barracks are now used as a correctional center. Alterations to the original facility have been minor.

Launch area, Rural Ridge, Pennsylvania (PI-02): This former launch area is now used by the Pennsylvania Department of Transportation as a heavy equipment training center. The extent of alterations is unknown.

Launch facility, Hingham, Massachusetts: This former launch facility is now a state road equipment storage area. The extent of alterations is unknown.

The correctional center at Goose Bay, in the former administration-barracks, was closed in 1986 because of asbestos problems, high travel costs to Anchorage, and high operating costs. The building was used as a training facility until 1989 and then secured. With its closure, vandals dug under the fence and have heavily damaged the facility.

At Kenai, the former Wildwood communications facility is in use as a correctional center. This is more cost effective as it is a larger installation with barracks, mess halls, and administration buildings, all of concrete construction. However, since these buildings were not designed for holding prisoners, guard costs are higher.



An above-ground fuel tank at Gulkana was given a door to convert it into a garage.

Preserving Coastal Defenses

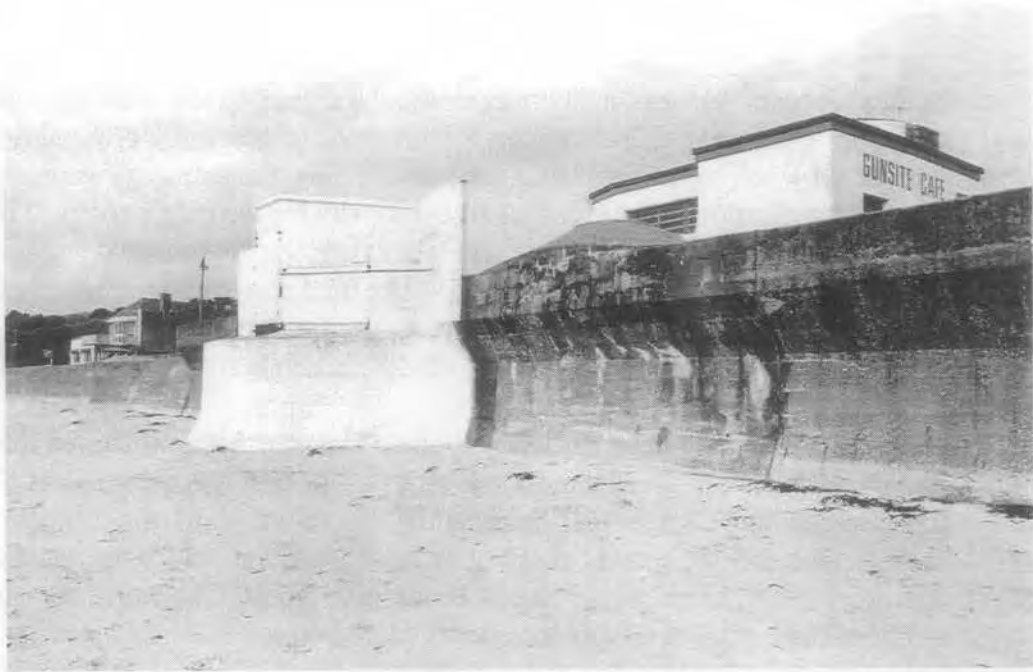
The World War II coastal defense battery at Fort Abercrombie, Kodiak, has been converted into a state park. Plans are to develop a museum within the battery magazine building. Fine examples of museums in coastal defense batteries are located at Fort MacArthur, San Pedro, California, and Battery Randolph, Honolulu, Hawaii.

Some reuses of coastal defenses include: disaster preparedness and communications, civil defense command posts, storage, offices, and restaurants. One restaurant which has protected the integrity of its former German use is the Gunsite Cafe, on Jersey, in the British Channel Islands. The Gunsite Cafe, a local cafe since 1946, was formerly a German 105mm casemate. An addition was added in 1979, but it was designed to blend into the casemate and a Tobruk gun pit at the corner of the casemate was left intact. The limited modifications to the casemate included closing the open gun embrasure with glass, new wiring, and the addition of necessary kitchen equipment. Records were not kept on the cost of remodeling, but the owners are certain that they were lower than new construction.

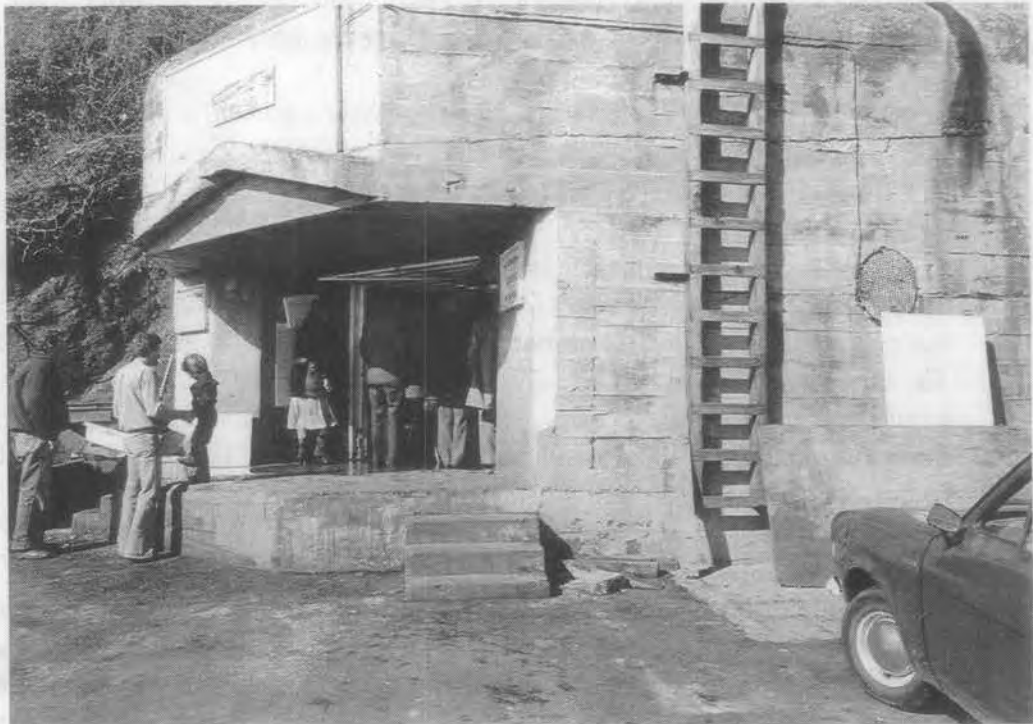
A few casemates in Germany and a bunker in France have been put to use as restaurants. A bunker at Sylt, Westerland Island, West Germany, now serves wurst and beer. A former German Atlantic Wall kitchen bunker at Cap Gris Nez, in the Calias region, has become the Cafe du Cap. This former hospital kitchen bunker has, unfortunately, undergone extensive modification.

Many structures present special difficulties such as high costs of conversion and questions as to potential uses. On Jersey, one of the large German observation and radar towers was refurbished to house the Jersey Radio, a ship to shore station. The radio room was placed in a new glass and steel structure on the top of the tower. The fifth floor of the tower (top floor) was made into a kitchen, with the remaining floors available for storage or other uses. There were few major changes, the catwalk was replaced with a stairway. The main problem was the high quality of World War II German construction; special hardened drills would last but one day in the task of removing the reinforced concrete necessary to install the stairs.

One of the most unusual conversions on Jersey Island is an anti-tank gun casemate which is now used as a public restroom. The government originally planned to demolish it and build a restroom. A local historic preservation group urged the conversion of the German World War II casemate to bathrooms and was able to sell the idea to Jersey Public Works. Public Works' architects now point out that



German gun emplacement is now a fish and chips cafe in Jersey Island, British Channel Islands.



Gun casemate was easily converted into a Jersey Island fish market.

the final product was less costly than razing the casemate and building a new structure. They were able to convert it with few changes to the original floor plan. A false ceiling, a raised floor, and modern accompaniments were added. The major alteration was the cutting of a doorway for the men's room. This task sounded easy, however, it required five weeks and the labor of two workers to cut through the strongly reinforced concrete. The total cost was a reasonable 15,000 pounds, and as Michael Ginns of the preservation group pointed out, "The casemate will bring relief to those who feared destruction and relief to many others."

Some other reuse examples on Jersey include two casemates converted into fish markets and a hatchery. The most ambitious of the two was the reuse of a large gun casemate into a vivier (fish farm) at the cost of one-third of new construction. The casemate has the added benefit of being close to the sea for the water and construction quality which would be cost prohibitive today. The walls, measuring up to 3.50 meters, provide a constant interior temperature.

The conversion was done by the owner, limiting modification to the 105mm casemate. The fish tanks, for example, utilize the existing walls of the fighting compartment, two ammunition rooms, the ejected shell casing room, and the extractor room. All that was required was the sealing of the walls and the building of barriers at the room entrances. The entry defense room became an office. The crew escape hatch was just the right size for the freezer motor.

Coastal defense batteries have also been employed as a solid pad on which to build a home. One battery magazine has been converted into a house. Fire control towers in the United States also serve as homes.

At Manchester, Massachusetts, and Rye, New Hampshire, fire control towers have become homes. Architect Craig Lentz, in 1974, purchased a World War II fire control tower and adjacent barracks, at Manchester, to be his dream home. The 60-foot tall concrete fire-control tower with 14-inch-thick concrete walls would be too expensive to modify, so Mr. Lentz designed rooms to fit the structure. For example, a library and recreation room were fitted into existing tower rooms.

Mr. Lentz used the 40' x 22' wood-frame barracks for bedrooms and bath. He reinforced the floors, added insulation, framed-out the open-bay interior, and converted the latrine into a bathroom. Because the barracks had not been vandalized, he was able to retain the original windows, adding storm window protection. Mr. Lentz reports that conversion was easy. The military open-bay design and the exposed stud walls made interior work a simple add-on proposition. Only wiring, insulation, and interior walls had to be installed; no removal was necessary.

In Galveston, Texas, the casemates of Fort Crockett's Battery Leonard Hoskins, which had previously housed a pair of 12-inch guns, presented architects and engineers with a special problem. When plans for the San Luis, a 15-story hotel/condominium complex, were developed, the fate of the casemates and their connecting battery magazine was considered. Demolition of the massive structures, with their two- to three-foot-thick walls, would have been very expensive, while with a creative design these walls could be integrated into the planned complex.

As built, one casemate was used as partial support for a four-story hotel wing, while the other casemate was landscaped into the grounds. The two casemates anchor a semicircular driveway entrance into the complex. The fire control room is now the landscape/maintenance shop, while the remainder of the underground battery magazine is used for storage.

One response, but costly, is to restore coastal defenses to their original roles. One example of this can be found on Jersey Island where a German battery has been restored to its World War II state. The Fort MacArthur Museum at San Pedro is restoring a World War II coastal battery.

The Jersey chapter of the Channel Island Occupation Society (CIOS) has restored a number of World War II German fortifications. One 150mm gun battery, 'Noirmont Batterie,' with its AA positions, searchlight emplacements, and command post bunkers, after thousands of hours of restoration is now open to the public. The bulk of the cost of this restoration was assumed by the CIOS, with some assistance cooperation from the Jersey Public Works department. The restoration of 'Noirmont Batterie' conformed to the highest standards of historical accuracy. The CIOS has restored and opened to the public other fortifications, and also takes an active role in the protection of World War II relics. The CIOS is especially concerned with World War II relics, as the public is less likely to consider them significant, while there is general consensus that earlier features such as Martello towers are recognized as historic. CIOS encourages citizens to preserve wartime features on private property and suggests how public agencies can protect fortifications.

An unusual approach to art and fortifications can be found in Dunkerque, France. What was once a German strongpoint is now a sculpture park (Cite Des Fortifications). The park, designed by Jean Arp, employs the casemates as sculpture bases. Soil and plants have been set around the casemates, creating round knolls. The total effect is quite impressive, but the casemates have been sealed. It would have been even more impressive if one or two of them could have been saved for a park related service.

On the islands of Micronesia, hundreds of fortifications and Japanese buildings are extant, but covered by jungle growth. A survey of these relics of the war determined that many are structurally sound and could be restored to function as museums or adapted to new uses.

Reuse of Buildings

Prior to the more recent historical preservation programs, a few Japanese buildings in Micronesia were converted to serve new purposes. Fortunately, these conversions were accomplished with very little modification and with sensitivity to their historical character. They suggest what can be done to preserve and use former military facilities and buildings.

A fine reuse example can be found at the Saipan International Airport. Adjacent to the terminal are airport authority offices surrounded by colorful hibiscus plants. The steel shutters on the windows and doors of this concrete building hint of its former use. Without these shutters, it would be difficult to realize that this had been the Air Operations building for Aslito Field, a Japanese airbase. After the American capture of Saipan, Aslito was expanded into a B-29 airbase and renamed Isely Field. The American occupants employed the Japanese Air Operations building in the same capacity. The damage to the building was patched-up, and after the 73d Bomb Wing departed, the Air Operations building was abandoned until the 1970s when the Saipan airport was constructed. When the new terminal was erected, the Air Ops building was rehabilitated for offices, with careful attention to original details. All of the extant elements were retained; this required obtaining special wire to fit within the smaller electrical conduit. To free the rusted shutters, it required many hours of effort and penetrating oil. The building did require new interior doors, new flooring, and painting. In general, however, it is little changed from its wartime appearance. Few people arriving at the airport are aware of its history.

A large Japanese building on Moen Island, in Truk, that was used as a radio communications center is now St. Xavier School. Following the American occupation of Truk, this radio station was turned over to the Jesuit Order to become a school. Because the Jesuit Order had few resources to rehabilitate the building, it is now little changed from its character at the end of the war. The radio equipment is gone and the rooms now contain desks and chairs, but with a little imagination and the wartime floor plans, one is taken back to World War II.

The Japanese Interisland Radio Stations, located on the Micronesian Islands, were of a standard design. Identical structures are to be found today on Chuuk (Truk), Kwajalein, Peleliu, and Tinian. The building on Tinian has been put to a new use

as a slaughter house. Reuse as a slaughter house saved the structure, but it also greatly reduced public access. This loss is not so serious since there are three other examples of this type of building, not to mention the considerable economic value of the slaughter house. The radio facilities on Kwajalein and Peleliu were used for a few years, but both were heavily damaged during the war and were not suitable for other uses. The Kwajalein Radio Station was used as a school, while the Peleliu building was a temporary home to the Cave Bar and movie house. Other standard design structures to survive the invasions and American bombing of the Micronesian Islands were Japanese lighthouse/observation posts (they were called lighthouses by the Japanese to hide their true use). These bombproof towers were used to guide shipping, as observation towers, and fire direction centers. Of the surviving observation posts, one has been put to a very effective new use, and is now the Lighthouse Restaurant on Saipan.

The Saipan Lighthouse has been repaired and, until a recent closing, was one of the finest restaurants on the island. Converting from a lighthouse/observation post, however, required alteration of its original character and appearance.

Now that the Micronesian Islands are moving forward as independent governments and growing economically, the empty Japanese fortifications and buildings are being looked at in a new light. The Islanders have always been creative in the reuse of war materials. As American forces departed, the Quonset huts were disassembled and the materials were used to build homes. Japanese war materials were also used in construction. A common Japanese material that found new uses was the rail from the narrow gauge railways, which was used to make roof lintels. On Peleliu Island, aircraft propellers make durable gravestones.

An ubiquitous World War II material is PSP, or Marston mat. This pierced-steel planking from American runways is seen in many uses today. A home in Kolonia, Ponape, is surrounded by a five-foot high PSP fence. The agricultural farm on Chuuk built its pig pens of concrete and used PSP as pen dividers. Marston mat can be used as the material for sheds, walkways, gates, and many other items. At the King Salmon Airport, PSP is used as guard rails at Eskimo Creek. The Alaskan uses of PSP are limited, unlike the Crete fishing village of Aghia Galini where it has found its way into nearly every building. The most usual placement of PSP in this village is balcony railings. Villagers report that an American transport sank in the harbor, and locals have dived it for years to recover tons of PSP matting steel.

In this chapter, only a few of hundreds of examples of effective reuse have been noted. Some additional uses of fortifications include: a cheese storage plant, pickle factory, outdoor theatre, tool shed, squash court, harbor control offices, fur-

niture store, antique store, customs building, wine cellar, and basement for a house.

Preservation of Historic Elements

There are also cases in which only significant features of a building or installation can be preserved. Artwork survives at the Alaska Nike sites. At a minimum, it should be recorded and, when possible, saved.

The U.S. Army did this in Germany where World War II artworks were identified and preserved. The status of this preservation is not known because many of the U.S. bases have been returned to the German government. In the halls of the 97th U.S. Army hospital, in Frankfurt, there are a number of artworks by Nazi artist Herr Voight. Herr Voight designed for this hospital (formerly the Hermann Goring Luftwaffe hospital) tile mosaics that portrayed military medicine during medieval times. Voight also contributed murals and masonry reliefs, all of which were restored in 1978. Also, there is preserved war art in the Abrams Hotel, Garmisch, which had been a German Army hospital. Additionally, stained-glass window murals have survived at the hospital in Bremerhaven, depicting German maritime history and naval preparations for World War II. Artists were also commissioned to provide artworks for troop barracks. Stuttgart Military Community had some of the most fascinating kaserne artwork in Germany. At Ludendorff Kaserne, standing guard at the gate is a statue of an oversized soldier holding a sword. This statue was created by Professor Bedow of Stuttgart, and erected in 1936. A fire fight at the kaserne, in 1945, blasted the nose off the statue. In 1969, Colonel Douglas K. Blue, U.S. Army, commissioned the repair of the missing nose. Today, close inspection is required to detect the replacement nose. Additional examples of art can be found at Patch, Grenadier, and Flak Kasernes.

At Patch Barracks, Stuttgart, on the exterior wall of one of the former mess halls, the Army restored a World War II German mural. The mural expresses the triad of the farmer, worker, and soldier, joined together in the war effort, each making a contribution; the farmer contributes new materials such as wool and leather, while the workers convert the raw materials into great coats and other equipment. Restoration has been completed for decorative iron screens on the porch windows of the Patch Officers Club which identified the kaserne occupants; one screen has the letters PzR and the number 7, representing the Panzer 7 Regiment, while the other window has KDR for the Kurmackishes Dragoner Regiment.

At Patch Barracks, detective work has been necessary in the preservation effort. There has been a search for a number years to locate a large World War II buffalo statue - a unit insignia. The large statue was standing soon after the kaserne was

captured, but sometime during the clean-up it disappeared. It was reported to have been bulldozed into a bomb crater, but digging in the suspect area has been unsuccessful.

When the former German officer's clubs in West Germany were first taken over, little effort was expended to preserve artworks. However, there are some notable exceptions; the dining room of the Augsburg American Officer's Club had a restored 1939 painting depicting the 955 Battle of Lechfeld (near Augsburg). The American Officer's Club in Mannheim had a few preserved artworks. In the basement of this club is a fireplace with tiles portraying the anti-aircraft defense of a city, signed artist Faerber. There is a wall mural near the fireplace signed by Knaub, and decorating this club's garden is a statue, also from its days as a German Officer's Club.

The most common artwork at World War II German kasernes is gate guardian eagle, many surviving. Those which had a swastika have since had it removed or altered. At a kaserne in Bad Reichenhall, the swastika has been converted into an Edelweiss flower.

Types of Preservation Uses

This worldwide review of reuse has identified five types of preserved use, they are:

1. **Original function:** Retaining the facility in its original military condition. The most common is to return the installation to a museum of its original activity. The Nike Museum in the Marin Headlands is one example.
2. **Related Museum:** A facility can be preserved by establishing a related museum in the structure(s). At Utah Beach, France, a German blockhouse houses the D-Day invasion museum.
3. **Reuse with Historical Integrity:** There are examples of sympathetic reuse where efforts are made to preserve the facility's historical integrity. The Gunsite Cafe, in a 150mm casemate, is a fine example.
4. **Reuse without regard to historical fabric:** These are cases where no consideration is given to preserving historical integrity. While this saves the structure, its historical fabric may be lost.
5. **Preservation of Elements:** When it is not feasible or possible to preserve an entire structure or object, important elements can be saved.

Alaska Recommendations

Two Alaska sites are recommended for return to their original function. These are: an antiaircraft gun site (#8) at Fairbanks, which is urged as a state park with AAA gun(s), and the Nike launch at Goose Bay, which could be restored as a missile museum or park.

The Site Summit Nike Hercules is under consideration as a natural and historic park. Recreation needs could be met by the use of the central barracks. The launch is also a possible choice for a Nike museum. Nike Hercules missiles are available and could be placed inside a launch structure on a firing platform. Winter sports activities could also be developed at the site. A volunteer group could be formed to clean up the well-preserved launch area and install a missile.

The very remote location of the DEW Line sites makes reuse unlikely. The I stations at Collinson Point and Nuvagapak are to remain as emergency shelters. This will be preservation, but with little attention to the historic fabric. The Granite Mountain White Alice is recommended for continued reuse as a lodge or camp. A study is urged to develop reuse plans for the Fort Yukon AC&W.

To improve the opportunity for reuse, a number of steps need to be accomplished. The Alaska Corps of Engineers, Real Estate Branch, and GSA need as much advance warning as possible to reduce time delays in transfer. Permits, such as used at Wildwood AFS and Bethel AC&W, are effective. A publicity campaign, with notices to potential reusers, could be employed to link facilities to users. As identified above, users will include: schools, vault storage, recreational users, construction firms, explosives firms, museums, and historical preservation groups.

An active role is needed on the part of the military to avoid wasteful abandonment, and encourage reuse with respect for historic elements. New uses sympathetic to the original design should be found before closure and permitted use until the land transfer is completed.

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