

LORAN-C Legacy: The End of an Era Social History and Operations of LORAN-C

United States Coast Guard

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ABSTRACT

Since WWII the U.S. Coast Guard has operated and maintained a ground-based long-range navigation system known as "LORAN," that broadcasts signals from fixed points allowing receivers to triangulate precise locations. By the 1950s, the system proliferated and became a primary tool for marine and air navigation with over 170 stations worldwide. System improvements made in the late 1950s, designated "LORAN-C," gradually replaced the WWII-era technology and were fully in use by 1980.

By the late twentieth century, global positioning systems (GPS) had rendered the LORAN-C system obsolete. The Department of Homeland Security Appropriations Act for Fiscal Year 2010 terminated funding for the LORAN-C program as of 4 January 2010 and ordered a decommissioning of U.S. bases. Recognizing the national and state significance of LORAN to the history of navigation, the Alaska State Historic Preservation Officer (Judith Bittner), the U.S. Coast Guard (Captain Mark S. Carmel) and the Advisory Council on Historic Preservation (John Fowler) entered into a Programmatic Agreement to document the Alaska-based LORAN-C stations at Attu, St. Paul, Narrow Cape (Kodiak), Tok, Shoal Cove and Port Clarence. Documentation stipulated in the Programmatic Agreement included the documentation of engineering systems and historic buildings at representative stations to meet Historic American Engineering Record or Historic American Building Survey standards, the curation of artifacts associated with U.S. Coast Guard LORAN-C operations, and preparation of a monograph and video documentary detailing the history and operations of LORAN-C stations. This document represents the "monograph" required by the Programmatic Agreement.

The historical documentation methods included ethnographic research, participant observation, interviews, and archival research to capture the essence of life at a LORAN station. Interviews were performed with current U.S. Coast Guard members on LORAN stations Attu and Shoal Cove and by telephone with LORAN station veterans from the 1950s through the early 2000s. Other research included reviewing archival documents at libraries, the National Archives, and the State Historic Preservation Officer's office in Anchorage.

Onsite research was conducted during the final week of operation at LORAN Station Attu, which was paired with Russian stations and was the most remote U.S. LORAN station, and at LORAN Station Shoal Cove, which was located within weekly commuting distance from Ketchikan, Alaska. LORAN Station Shoal Cove had ceased transmission, and personnel were packing for their next duty stations. Although LORAN Station Attu was still transmitting the LORAN signal, personnel were packing for their impending departures.

At the stations, the researchers observed a committed and dedicated staff that recognized the importance of maintaining their signal and focused on keeping their transmission on-line and in tolerance. In order to keep that signal transmitting, a support network extended from the base galley, to the generator room, to the airfield or boat dock, to the Base Support Unit in Kodiak. Morale on isolated and even semi-isolated LORAN stations was dependent upon leadership, living conditions, and keeping occupied. The latter resulted in individual efforts

toward personal improvement or career advancement and a significant effort of planning, and then executing plans. Although the earliest LORAN personnel endured primitive conditions with less than reliable support, the personal computer and the internet, as well as the U.S. Coast Guard's support of the "morale" program, significantly softened the hardships of isolated duty. Still, hiking, exploring, hunting, and fishing are as important in the twenty-first century as they were to the personnel stationed on LORAN stations in the mid-twentieth century.

Finally, researchers witnessed an emotional closure ceremony of LORAN Station Attu, the last LORAN transmittal from the last LORAN Station, at the far end of the earth—a bookend for a program that saved billions of dollars in property and countless lives by assisting aviators and mariners in reaching their final destinations for more than six decades.

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Appendix A Interview Questionnaire

ACRONYMS AND ABBREVIATIONS

| | |
|-----------|---|
| AACS | Army Airways Communication System |
| ACHP | Advisory Council on Historic Preservation |
| APE | Area of Potential Effect |
| BAH | base allowance for housing |
| C.I.S. | Commonwealth of Independent States |
| CCZ | Coastal Confluence Zone |
| CEQ | Council on Environmental Quality |
| CEU | Civil Engineering Unit |
| CFR | Code of Federal Regulations |
| CO | Commanding Officer |
| COMDTINST | USCG Commandant Instruction |
| CYTAC | Cycle Matching Tactical Bombing and Navigation System |
| DHS | Department of Homeland Security |
| DoD | Department of Defense |
| DRMO | Defense Reutilization and Marketing Office |
| EMS | Emergency Medical Service |
| ET | Electronic Technician |
| °F | degrees Fahrenheit |
| FAA | Federal Aviation Administration |
| GEE | generalized estimating equation |
| GNSS | Global Navigation Satellite Systems |
| GPS | Global Positioning System |
| GRI | group repetition interval |
| HABS | Historic American Buildings Survey |
| HAER | Historic American Engineering Record |
| ICAF | Industrial College of the Armed Forces |
| IEEE | Institute of Electrical and Electronic Engineers |
| ITU | International Telecommunication Union |
| KHz | kilohertz |
| LORAN | Long-Range Aid to Navigation |
| MHz | megahertz |

ACRONYMS AND ABBREVIATIONS (Continued)

| | |
|---------|---|
| MIT | Massachusetts Institute of Technology |
| MWR | Morale, Well-being, and Recreation Program (USCG) |
| NARA | National Archives Records Administration |
| NAS | Navy Aerological Station |
| NASA | National Aeronautics and Space Administration |
| NATO | North Atlantic Treaty Organization |
| NDRC | National Defense Research Committee |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NPS | National Park Service |
| NRHP | National Register of Historic Places |
| PA | Programmatic Agreement |
| SCATANA | Security Control of Air Traffic and Navigation Aids |
| SHPO | State Historic Preservation Office |
| SPARS | <i>Semper Paratus</i> (Women's Coast Guard during WWII) |
| SSO | Second Senior Officer |
| TNT | trinitrotoluene |
| USAF | U.S. Air Force |
| USCG | U.S. Coast Guard |
| USFWS | U.S. Fish and Wildlife Service |
| VFR | visual flight rule |
| WWII | World War Two |
| XPO | Executive Petty Officer |

COAST GUARD ACRONYMS

| | | | |
|-----|------------------------------|----|----------------------------|
| CWO | Chief Warrant Officer | FS | Food Service Specialist |
| ELC | Electronics Specialty | HS | Health Services Technician |
| EM | Electrician's Mate | MK | Machinery Technician |
| ET | Electronics Technician | SK | Storekeeper |
| ETC | Chief Electronics Technician | SN | Seaman |
| FN | Fireman | | |

1.0 INTRODUCTION

1.1 SECTION 106 MITIGATION

The Department of Homeland Security terminated funding for the United States Coast Guard's (USCG) Long Range Aid to Navigation (LORAN) program on 4 January 2010, which required the decommissioning of North American LORAN-C stations. In preparation for terminating the LORAN-C program, USCG prepared a "Final Programmatic Environmental Impact Statement on the Future of the United States Coast Guard Long Range Aids to Navigation (LORAN-C) Program" in 2009. The Statement complies with the National Environmental Policy Act (NEPA) of 1969; the Council on Environmental Quality (CEQ) regulations in Title 40 of the Code of Federal Regulations (CFR) Parts 1500–1508; Department of Homeland Security (DHS) Management Directive 023-01 (formerly 5100.1) (Environmental Planning Program); and USCG Commandant Instruction (COMDTINST) M16475.1D (NEPA Procedures and Policy for Considering Environmental Impacts).

On 4 January 2010, USCG published a notice of intent on the Federal Register to begin planning for the termination of the broadcast of the North American LORAN-C radio navigation signal on or about 8 February 2010. The decommissioning of the LORAN-C stations in the State of Alaska, which included the demolition, layaway, lease, sale, and/or transfer of radio transmission towers and communication facilities at Attu, St. Paul, Narrow Cape (Kodiak), Tok, Shoal Cove, and Port Clarence, was an undertaking that was subject to review under Section 106 of the National Historic Preservation Act (NHPA) U.S. Code Title 16 §470f and its implementing regulations, and 36 CFR Part 800 because the stations were determined to potentially be historic properties.

The NHPA defines an "historic property" as any prehistoric or historic district, site, building, or structure included or eligible for inclusion in the National Register of Historic Places (NRHP). Historic property includes related artifacts, records, and material remains. Traditional, religious, and cultural properties holding significance for American Indian tribes, Alaska Native groups, and Native Hawaiian organizations can also be considered NRHP-eligible. The NRHP eligibility criteria, as presented in 36 CFR 60.4, explain that the quality of significance is present in districts, sites, buildings, structures and objects of local, state or national importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and:

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

To be eligible for the NRHP, sites generally have to be at least fifty years old; however, because of their association with exceptional events or periods in American history, certain properties may be eligible even though they are of a more recent age. Some examples of such sites are the Alfred P. Murrah Building in Oklahoma City (the site of the 1995 federal building bombing) and the World Trade Center site in New York City, as well as many sites associated with the Cold War. Assessing the significance of properties from the recent past is addressed in “Criteria Consideration G” of National Register Bulletin 22, “Guidelines for Evaluating and Nominating Properties that have Achieved Significance within the Last Fifty Years” (National Park Service [NPS] 1998). These guidelines emphasize the importance of establishing a historical framework/cultural context for the properties and making an evaluation based on careful comparison with other properties within the same context. A justification or rationale of exceptional importance should be an explicit part of a statement of significance, and such properties frequently qualify under more than one of the Criteria for Evaluation in 36 CFR 60.4.

The Alaska State Historic Preservation Officer (SHPO) designated the six Alaska LORAN-C stations as eligible for listing in the NRHP as individual historic districts under Criterion A at the national level of significance for their roles as historic aids to navigation. Moreover, Criterion Consideration G was also applied because many contributing elements of the districts were less than fifty years of age, yet the LORAN system is considered of exceptional significance at the regional, national, and world-wide levels.

As part of their Section 106 identification effort for the decommissioning, USCG defined the undertaking's Area of Potential Effect (APE) as each station building, the transmission towers, the land immediately adjacent to the buildings and towers, and any access routes needed, including barge landings. USCG determined that the decommissioning of the LORAN-C program would adversely affect LORAN-C Stations Attu, St. Paul, Kodiak, Tok, Shoal Cove, and Port Clarence. (In general, undertakings that have the potential to affect historic properties are those that involve modifications to the land or buildings/structures, including everything from construction, grading, excavation, maintenance, rehabilitation, and renovation, to the sale or lease of a historic property.) In accordance with 36 CFR § 800.6(a)(1), USCG notified the Advisory Council on Historic Preservation (ACHP) on 16 April 2010 of its adverse effect determination, thus initiating the NHPA Section 106 process for the emergency demolition of the Port Clarence LORAN transmission tower under 36 CFR § 800.12.

The ACHP and the SHPO did not concur with USCG's determination of an emergency removal action; however, the transmission tower was demolished on 29 April 2010. The USCG, SHPO, and ACHP agreed that the remainder of the undertaking would be implemented under specific conditions presented in a Programmatic Agreement (PA) between USCG, the Alaska State Historic Preservation Office, and the Advisory Council on Historic Preservation Regarding the Decommissioning of LORAN-C Stations in Alaska on 6 August 2010.

The PA stipulated eight mitigation measures:

- 1). Document the Alaska LORAN-C System at the LORAN Station Attu with Historic American Engineering Record (HAER) Level 1 drawings, photographs, and a historical report.
- 2). Document each LORAN Station building with drawings, photographs, and a historical report meeting Historic American Building Surveys (HABS) Level II standards.
- 3). Provide engineering documentation of the transmission tower at LORAN Station Narrow Cape to HAER Level II standards.
- 4). Curate objects and artifacts collected during the course of the work conducted under the PA, primarily with the USCG Museum, and consult with the appropriate Native American tribes if Native American artifacts were recovered (although no such artifacts were recovered). The World War Two (WWII) collection of artifacts that graced the halls and lobby of the Main Station Building on Attu were given to the U.S. Fish and Wildlife Service (USFWS) for curation.
- 5). Prepare a monograph on the history and operations of LORAN-C stations detailing the history of the Alaskan stations individually, as well as the significance of the Alaskan stations within a nationwide context.
- 6). Produce a video documentary on the history and operations of the Alaska LORAN-C stations that documents the unique social context of work life at a LORAN-C station.
- 7). Update the Alaska Heritage Resource Survey database upon the completion of the previous six mitigation measures.
- 8). Ensure that USCG records management protocols are followed throughout the decommissioning program and presents this information to the Alaska SHPO in the form of a letter.

1.2 PREVIOUS RESEARCH AND IDENTIFIED GAPS

In 1997, the USCG evaluated the Alaskan LORAN-C stations for NRHP eligibility under Criterion A for its association with significant events in history (DNR 1997). After it was determined that LORAN-C was not eligible as a “type” of navigational aid (such as a lighthouse or buoy), USCG evaluated each station individually within the historical context of the Cold War era. The evaluation concluded that LORAN-C was used primarily as an aid to navigation and secondarily for national defense, and therefore was not significant within the Cold War context. Consequentially, the individual stations were found ineligible under Criterion A due to a lack of significant Cold War military association. Moreover, at the time, they were not considered eligible as historic aids to navigation. The SHPO concurred with these findings.

There is sufficient evidence to the contrary. According to USCG Historian Gary Thomas, the LORAN-C system was primarily used for defense purposes until global positioning system (GPS) came into operation in 1993. In fact, coverage was expanded precisely because of the Cold War. For example, coverage was extended to Pusan, Korea during the Korean War and

USCG ships involved in the Vietnam War used LORAN-C, as did U.S. Air Force (USAF) planes and USAF and Navy aircraft carriers. One of the LORAN-C stations in the Commander Lion Chain, which stretched from Korea to Vietnam, may have been overrun by the North Vietnamese (USCG 2009b). The U.S. Navy used LORAN-C to communicate with and track submarines throughout the Cold War era. Furthermore, declassified USCG correspondence from 1957 revealed that the Department of Defense (DoD) had been taking steps to accelerate the ballistic missile programs in response to Russian advances in missile science. As part of that, the *1957 LORAN Installation Plan* listed the construction of four LORAN-C chains as being a priority in order to meet the requirements of additional coverage including the North Pacific Chain. Internationally, the LORAN-C network in the Mediterranean was built explicitly for U.S. military use. In 1975, the National Aeronautic and Space Administration (NASA) used the timing capabilities of LORAN-C to dock the Apollo and Soyuz spacecraft during the Apollo-Soyuz Test Project, and NASA switched from use of LORAN-A to LORAN-C for the timing of ground missions as soon as each successive LORAN-C network went online.

According to National Register Bulletin 34, “Guidelines for Evaluating and Documenting Historic Aids to Navigation,” published by NPS in 1992, aids to navigation include lighthouses—manned and unmanned; sound signals such as fog signals; range lights; daymarks such as beacons; lightships; and buoys. The Bulletin explains that to qualify for the NRHP, a historic aid to navigation should be an example of one of these types, retain integrity, and meet one or more of the National Register Criteria for Evaluation. The challenge that has resulted from attempting to evaluate the historic significance of the LORAN system of navigation is that it does not neatly fit into any of these “types” defined in Bulletin 34 (NPS 1992); there is no category for any technologically advanced system such as LORAN (or GPS), even though the system was developed as early as WWII. However, LORAN technology had a significant impact on civilian and military navigation on a worldwide scale.

The design and engineering of the LORAN-C towers are also significant achievements. The 1,350’ towers, like the one at LORAN-C Station Port Clarence, represented some of the tallest free-standing antennae in the United States. The design parameter that would allow the tower to essentially screw itself into the ground if the guy wires were to break loose also may be unique (Engineering-Environmental Management, Inc. 2009). Additionally, the four-tower arrays used for the LORAN-C stations constructed between 1972 and 1976, including those at Shoal Cove and Tok, were the only antenna arrays of their type in existence. The technological design and engineering of the LORAN-C system exhibited greater accuracy and range for timing, which led to early Federal Aviation Administration (FAA) use of the LORAN-C signal over LORAN-A. Completion of the mid-continent LORAN-C chain allowed for the first coast-to-coast flights by smaller commercial aircraft and enabled the use of LORAN-C by commercial shipping within the Great Lakes. LORAN-C also represents the first iteration of LORAN to be used by small commercial and private recreational users.

In 2011, the LORAN-A system was nominated for worldwide recognition by the Institute of Electrical and Electronic Engineers (IEEE); approval is pending. The nomination commemorates LORAN-A for its rapid development during wartime conditions at the

Massachusetts Institute of Technology's (MIT) Radiation Lab, and also as a representation of the transformational change in how navigational capabilities evolved to providing near-real-time positioning information (IEEE 2011).

Based on the research discussed herein, the authors recommend the LORAN-C system as not only eligible under Criterion A, at the national level of significance, for its role as a historic aid to navigation, but also for its association with events during the Cold War. Because of its groundbreaking technologies, the system is also recommended as eligible for listing under Criterion C for its design and engineering.

1.3 USCG CHARACTER (SEMPER PARATUS)

In his Letter of Promulgation in USCG "Publication 1" (USCG 2009), Admiral Thad Allen stated:

"For over two centuries, the U. S. Coast Guard has safeguarded our Nation's maritime interests in the heartland, in the ports, at sea, and around the globe. We protect the maritime economy and the environment, we defend our maritime borders, and we save those in peril. This history has forged our character and purpose as America's Maritime Guardian—always ready for all hazards and all threats."

Always Ready—*Semper Paratus*! To the average Coast Guardsmen, those words define his or her character, principles, and very ethos. Serving at once as police officers, sailors, humanitarians, regulators, environmental stewards, and diplomats, USCG protects national borders and the maritime economy. Its unique mission is a combination of civil and military responsibilities that touches almost every facet of the United States maritime environment for commerce, food, and defense (USCG 2009:1).

The USCG is a branch of the U.S. military, and in that capacity, it is the Nation's steward of 95,000 miles of shoreline and almost 3.4 million square miles of exclusive economic zones. It protects the personal safety and security of Americans and their critical infrastructure, and natural and economic resources. The USCG's primary roles are maritime safety, security, and stewardship. Among these roles are eleven stated missions: marine safety; search and rescue; ports, waterways and coastal security; drug interdiction; migrant interdiction; defense readiness; law enforcement; marine environmental protection; protection of other resources; ice operations; and aids to navigation. As a multi-mission service, USCG has to be highly flexible.

The USCG has taken many forms in its evolution into America's Maritime Guardian. In 1790, the First Congress of the United States established the Revenue Marines, later called the Revenue Cutter Service, to collect customs duties and tonnage taxes at the new nation's ports. According to Alexander Hamilton's proposal for "a few armed vessels, judiciously stationed at the entrances to our ports, might at a small expense be made useful sentinels of the laws," the Tariff Act of 1790 authorized ten cutters and a corps of eighty men and twenty boys to collect the duties on imports.

As a result of the increasing loss of life and property from steamboat boiler explosions, in 1838 Congress enacted a law that gave U.S. district judges the authority to appoint steamboat inspectors, and within the next few decades the Steamboat Inspection Service evolved under the Treasury Department (USCG 2002:29). During the late eighteenth and early nineteenth centuries, the Revenue Marines began maintaining aids to navigation, assisting lighthouse personnel and charting coastal waters. In 1847, Congress provided federal appropriations for rendering assistance from shore to victims of shipwreck, and in the following years, a number of laws were enacted appropriating money for stations equipped with surf boats, rockets, cannonades, ropes, and other necessary apparatus for the better preservation of life and property. At a time when most coastal navigation was done through dead reckoning, and shifting shoals along rocky coastlines made coastal sailing downright dangerous, lifesaving stations were a disorganized and haphazard network of federal, private, and locally run facilities along the coast operated by volunteers. As a result of the Revenue Marine Board's inspection of this network of lifesaving facilities, the U.S. Life-Saving Service was formed in 1871 (Means 1987:1). In 1915, the Revenue Cutter Service merged with the Life-Saving Service to become the U.S. Coast Guard. The modern Coast Guard honors its legacy by saving lives and rescuing property in danger.

So, what makes someone want to go to the far ends of the earth, away from friends and family, into possibly terrible weather, with few of the modern conveniences that Americans are used to having, limited social interaction, and sometimes mind-numbing boredom? Why does someone join the Coast Guard? Their ethos is inherent in their positions as guardians—they are always ready to protect the people of the United States, to do whatever job is demanded according to their core values of honor, respect, and devotion to duty. The old Life-Saving Service motto “You have to go out, but you do not have to come back” seems to have melded into the daily life of the modern Coast Guard. As explained by one of the youngest Coast Guardsmen interviewed during this study, “we are here to preserve life” (Ledbetter 2010). Whether they are needed to respond to a national emergency, save someone's life, or spend a year on some lonely island making sure a signal is on time and in tolerance, they remain always ready—*semper paratus*.

In one of the interviews described below, Ron Caswell (2011), who had served in the Coast Guard during the 1970s, explained:

“I tell young people that one of the most proud things I’ve done in my life was that I joined the United States Coast Guard and I served my country. I did four years time, and I got an honorable discharge and a good conduct award. I can look back and when they say “all the veterans stand up.” I can stand up proudly and say I was part unique experience. Thank you, Coast Guard.”

1.4 METHODOLOGY

The purpose of this social history of LORAN is to document the patterns of everyday life unique to a LORAN station, and place them into their proper historical context. It involves illustrating the institutional structure provided by the Coast Guard, portraying people who

lived on the stations, and identifying their strategies for coping with everyday life. No standard definition of “social history” exists, although it is commonly accepted as an amalgamation of history and the related fields of anthropology, literary studies, psychology, sociology and political science (Tilly 2006). The study of social history expands the analytical focus of history from a laundry list of political events to the study of societies at a local level. It integrates an intimate personal perspective with a society’s global structure, with the ultimate goal of incorporating a sense of community and family into the historical record. This study employs ethnography, a standard method used by anthropologists, to study culture in accomplishing this goal.

Ethnography can be viewed as “an interpretation of closely examined social discourse” (Donath 1998). It is a research method that uses interviews, observations, and documentary research to describe a culture. Culture has many definitions. E.B. Taylor defined culture in 1871 (Taylor 2010) as “that complex whole which includes knowledge, belief, art, morals, laws, customs, and any other capabilities and habits acquired by man as a member of society.” Usually the idea of culture consists of origins, values, roles, and material items associated with a particular group of people. Ethnographic research, therefore, attempts to fully describe a variety of aspects and norms of a cultural group to enhance understanding of the people being studied (Byrne 2001).

Ethnographic research should really involve a long period of intimate study involving “residence in a well-defined community employing a wide range of observational techniques including prolonged face-to-face contact with members of local groups, direct participation in some of the group's activities, and a greater emphasis on intensive work with informants than on the use of documentary or survey data” (Conklin 1968:172). Unfortunately, the authors of this document did not have that luxury because the crews at the last two remaining LORAN stations – Attu and Shoal Cove – were scheduled to vacate their stations in August and September 2010, and the final PA under which this work was conducted was not signed until 6 August 2010. Fieldwork was conducted on Attu from 24 July 2010 through 1 August 2010 and at Shoal Cove from 7 September 2010 through 11 September 2010. The goal was to spend as much time as possible on a functioning LORAN-C station and LORAN Station Attu was the last functional station. Shoal Cove had terminated signal transmission; however, the station was still staffed and in the process of closing down.

The methodology for ethnographic research of the USCG LORAN Stations in Alaska consisted of three standard ethnographic tools: participant observation, interviews, and documentary research, which are described as follows:

Interviews: Oral histories are perhaps the most valuable tool available to an ethnographic researcher because they place the people who lived through historical events into the framework of the historical context. Interviews for this project were conducted at two LORAN-C Stations: Attu and Shoal Cove. Attu interviews were recorded the last week of station operations, enabling two types of interviews to take place: personal interviews, which were generally conducted one-on-one by the ethnographer or the videographer, and group interviews, which normally took place at the interviewee’s workplace. These workplace

interviews were especially important in capturing how different types of equipment were used and by whom the equipment was used. Prior to initiating the fieldwork, a questionnaire was developed (Appendix A). This included a variety of questions relating to biographical, duty, and job function; quality of life; and management organization. The questions were intentionally open-ended, and follow-up questions were added to solicit depth and detail. The questionnaire was not read, but was used as a mnemonic device to ensure that a broad range of issues were covered in the interview. The overarching point was to obtain background information and draw the interviewee out to reveal incidents and stories that could contribute to the understanding of the LORAN-C system's unique social history and capture them in this document. According to Ethnographer John Van Maanen (1979: 548):

“Various bits of recorded information generated by the ethnographer as to the features of the studied organization must be typed as presentational or operational, a distinction resting in large part upon the ethnographer's ability to both see and understand what is occurring within the informants' framework.”

So the interviews were intended to be flexible, and the interviewee was encouraged to freely discuss any experience from his time on the station.

Some personal interviews were also conducted over the telephone. The LORAN-C system spanned several decades over which there have been many improvements in technology at the stations from communications to entertainment. Those stationed at Attu from its inception until the 1970s would have been far more isolated from family and world events than those in 2010. For example, a 1946 inspection report of the LORAN-A station on Theodore Point said “it is possible” to obtain two features (films) and a variety of training films every two weeks; the report said that due to weather and surf conditions, mail was being delivered at intervals of as much as three weeks (USCG 1946b). In addition, technologies like video-conferencing, cable television, digital movies, e-mail, and the internet have given a completely new meaning to the concept of isolated duty. Finally, changes over time in command structure, agency protocol, staffing, and even social mores would likely be captured by interviewing current, as well as past, station staff. Therefore, since this study is a social history and not intended to be a snapshot in time, former LORAN system personnel were interviewed. Former station personnel were identified through blogs at various websites, such as “The Attu Guestbook” (http://www.hlswilliwaw.com/aleutians/Attu/Attu_Guestbook/default.asp?PagePosition=6) and “Fred’s Place” (<http://www.fredsplace.org/reunion/rh.shtml>). Personnel were targeted based on their associations with specific events or periods where data were lacking and their projected potential to fill those data gaps.

A total of forty-five personal interviews were conducted, either in person or over the telephone. This includes thirty-eight active duty personnel stationed on LORAN bases who were interviewed in person. Several former Coast Guardsmen who had served at Alaskan bases and one who also served on a Florida base were interviewed by telephone. Other personnel interviewed included contractors who worked with USCG personnel at LORAN

stations, USCG civilian employees, and a few LORAN users including aviators, boat captains, and sailors. Most of the latter were telephone interviews.

In order for the research to add any real value to the historical record, it must be accurate, and there is no sure way to test the accuracy of any specific interview. Van Maanen (1979:548) noted that the ethnographer must continually assess the believability of the talk-based information harvested over the course of a study, an evaluation dependent upon the fieldworker's interest, skill, and good fortune in uncovering lies, areas of ignorance, and the various taken-for-granted features of the studied organization. According to Douglas (1976), "a central postulate of the ethnographic method is that people lie about the things that matter most to them." So, penetrating fronts becomes one of the more important goals of the competent fieldworker. If the ethnographer can uncover the lie, much is revealed about what is deemed crucial by the individual, group, or organization (Van Maanen 1979:540). Put simply, first-order concepts are the facts of an ethnographic investigation, and the second-order concepts are the theories an analyst uses to organize and explain these facts (Van Maanen 1979:542). In organizational settings, according to Van Maanen, second-order concepts are dependent upon the faith the fieldworker can put into the first-order concepts uncovered in the setting. One goal of the ethnographer then is to account for the likelihood that memories fade with time or the accounting of events that might be biased by personal perspectives.

Group interviews normally occurred during work hours. The group interviews permitted the researchers to observe interactions among workers assigned to a particular workstation and obtain input from personnel with different ranks. LORAN Station Attu was operational at the time of the interviews, so the ethnographer was able to tour workstations and ask questions about various equipment attributes and how it was operated, as well as how it functioned and by whom it was operated. The interviews in the generator room were made difficult by the noise level produced by the massive diesel motors and generators. Other workplace interviews were conducted in the galley, barber shop, medical dispensary, timer room, machine shop or garage, and fuel farm, and during management meetings. These interviews differed from the participant observation in that during the latter, the researcher strictly observed social interaction, while the former were generally question and answer sessions (with the ethnographer asking the questions, as much as possible). According to Boellstorff (2008: 64), "enduring cultural logic may be shared among program participants, although, their stances toward this logic may differ." The observance of group interaction was intended to identify both similarities and differences in shared logic.

All interviews were recorded either on video and/or on audio then transcribed. Excerpts from those transcriptions were used to portray the social history described in this document. Additionally, release forms were prepared giving the interviewer the right to use information from the interview. These forms were signed by all people who consented to an interview; one person at LORAN Station Shoal Cove refused consent. Telephone interviewees gave verbal, recorded approval for the interviewer to publish or use the information provided.

Participant Observation: Participant observation “allows a fieldworker to use the culture of the setting (the socially acquired and shared knowledge available to the participants or members of the setting) to account for the observed patterns of human activity. In organizational studies, the patterns of interest are typically the various forms in which people manage to do things together in observable and repeated ways” (Van Maanen 1979:539).

The participant observations and interviews were intended to establish some semblance of social behavior from group dynamics to activities and social cliques. The segmentation of interests is important to understanding a culture, as it is the very existence of such social divisions in organizations that makes fieldwork worthwhile. Also, according to Van Maanen (1979:545), it is practically universal that the secrets of one group are most likely to be revealed by members of another group.

Participant observation refers to a technique where the researcher plays a role in the scene that is being studied; however, one flaw with this technique is that as a participant, the researcher becomes integral to the behavior that is being observed. A variant of this technique was employed on several occasions where the observer simply watched the activity and did not take part. Whether the researcher takes part or not, his or her mere presence would likely have some effect on behavior. Non-participant observation was employed for staff meetings and teleconferences, situations in which researcher participation would not have been appropriate. The researcher joined in most other activities.

Documentary Research: Documentary research is the foundation on which all of the other research is built. It is intended to establish the historical context for the LORAN-C system. A historical context is an organizational framework that defines the relationship between aspects of history, architecture, archaeology, engineering, culture, and geography, and develops them as theoretical constructs that are linked to historic properties through the concept of property type.

According to the “Secretary of the Interior’s Standards for Preservation Planning, as Amended and Annotated” by the NPS, June 2001, http://www.nps.gov/history/local-law/arch_stnds_1.htm (accessed 10 November 2010), historic contexts include:

- The concept, time period, and geographical limits;
- A compilation of existing information obtained through literature and background searches on history, architecture, social history, and development;
- A data synthesis which provides a written narrative of trends settlement and development, aesthetic or artistic values, technology or craftsmanship, as well as research interests;
- Definition of property or site types by characteristics of each type; and
- The identification of gaps in the body of information concerning historical contexts (NPS 2001).

Historical contexts contain temporal and spatial information as well as social characteristics, architecture, and technology. They are ideal for organizing contributing elements of a historic district because they are non-judgmental; they include elements of significance without implicating sites or localities as “significant” or “insignificant.”

Generally, the goals of documentary research would be specific to the historic context and often phrased in terms of property types, i.e. aids to navigation. Property types that have been subjected to less research, or where few examples exist, would be higher priority for future research. For example, that LORAN-A stations, such as the original Attu Island station on Theodore Point and the second station on Casco Cove, should be recorded and researched while some of their inhabitants are still alive; they would be considered high priorities.

Documentary research for this project was primarily conducted at the National Archives Records Administration (NARA) branches in Washington, D.C., Columbia, Maryland, and Fort Worth, Texas. The records referenced at NARA Washington, D.C. included declassified correspondence, reports on LORAN-C generally, and on LORAN-C stations specifically (station files and study reports) and USCG District newsletters. Most of the information originated from Record Group 26: Records of the U.S. Coast Guard, 1785-2005. The NARA Fort Worth branch had one report on psychological studies conducted at LORAN stations in Alaska in 1947 (Pinks 1949). Microfiche copies of previous studies related to Attu Island were recovered from the Office of History and Archaeology, Alaska Department of Natural Resources. Additionally, electronic records including historical newspaper articles and periodicals were retrieved from the University of Texas at Austin.

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2.0 HISTORY

2.1 EARLY DEVELOPMENT AND LORAN-A

Historically, maritime and aviation positioning was done using dead reckoning, celestial navigation, and later, radio beacon. Radio beacon was developed during WWI and operated by the U.S. Lighthouse Service until that agency amalgamated with USCG in 1939. With the approach of WWII, the development of a more accurate system was needed for defense operations, and in 1940, the Army Signal Corps issued a requirement for a “Precision Navigational Equipment for Guiding Airplanes” (Pierce, McKenzie, and Woodward 1948). The National Defense Research Committee (NDRC) was given the assignment to develop a long-range precision aircraft navigation system accurate to 1,000’ at a distance of 200 miles (USCG 1962). The pulsed, hyperbolic, long-range radio navigation system that eventually became known as LORAN was proposed by physicist Alfred L. Loomis working under the direction of the NDRC. In 1941, his proposal was accepted and trial stations were established at inactive USCG lifeboat stations at Montauk Point in Long Island, New York and at Fenwick Island, Delaware. Corporations such as RCA, Sperry, Bell Laboratories, Westinghouse, and General Electric filled equipment orders for the model stations (Pierce, McKenzie, and Woodward 1948).

LORAN was further developed by scientists at the Radiation Laboratory at MIT. Initially funded by Loomis, the “Rad Lab” later received federal funding by the Office of Scientific Research and Development. The first iteration of LORAN was derived from the British GEE (generalized estimating equation) system originated by Robert J. Dippy and designed for aviation and the short-range bombing exercises of the Allies’ air forces during WWII. The new system, later called LORAN-A, operated at the 1,850- and 1,950-kilohertz (kHz) frequencies. After successful field trials, the Royal Canadian Navy, NDRC, and USCG established the first LORAN chain in the Northwest Atlantic; it was composed of two of the trial stations—Montauk and Fenwick—and the permanent Canadian stations at Baccaro Point and Deming Island, Nova Scotia (Pierce, McKenzie, and Woodward 1948). (The Montauk and Fenwick stations were later moved to Bodie Island, North Carolina and Siasconset, Nantucket Island, Massachusetts.) The system became fully operational in the spring of 1943 when charts were made available to navigators for the four-station North Atlantic Chain.

The USCG and the MIT Rad Lab promptly began a training program for ground-station equipment operations at a naval LORAN school in Boston. The trained men helped build, operate, and maintain stations. The training consisted of basic electronics, fundamental circuit arrangements in LORAN, and information on timers, transmitters, antennae, and monitors. Technical and operational manuals were developed. During the summer of 1942, Dippy visited the Rad Lab to assist with the design and development of airborne LORAN equipment and ground-station timing equipment that would be interchangeable with its British counterpart, the GEE (Pierce, McKenzie, and Woodward 1948).

Its use by naval and air convoys in defense missions quickly increased due to requirements by the Allied forces for a highly accurate tactical bombing system (Joint Aids to Navigation

Panel 1957). In January 1943, after the Japanese invasion of the Aleutian Islands, an order was issued for LORAN coverage to be expanded as part of the Naval campaign to cover as much of the advance to Japan as possible. It was realized that an all-weather navigation system was needed on the Aleutian Islands quickly due to the inclement weather; celestial observations were not viable there (Pierce, McKenzie, and Woodward 1948). Under the Lend-Lease program established in 1941, the United States used LORAN-A to guide planes and bombers to the former Allied Soviet Union during WWII operations (Thomas 2011).

LORAN stations were originally in pairs, and later grouped into regional chains consisting of one “master” transmitting station, and two or more “secondary” transmitting stations, each separated by several hundred miles. Station location and orientation were determined by coverage requirements. By 1944, approximately 75,000 receivers were distributed to military and civilian users with seventy-five U.S. and fifteen British and Canadian LORAN transmitters providing coverage over 30 percent of the earth’s surface (Pierce, McKenzie, and Woodward 1948) including highly-trafficked water and air routes. By 1945, there were stations built all over the world providing some 60 million square miles of coverage (Pierce, McKenzie, and Woodward 1948).

Originally a U.S. Army-driven effort, the LORAN-A program was later transferred to the U.S. Navy because of its mission to precisely and safely route convoys, and guide and deliver defense material – tasks that could be achieved using LORAN. In November 1941, USCG was transferred from the U.S. Treasury Department to the U.S. Navy to support war efforts. Given its official role as operator and administrator of U.S. aids to navigation, USCG assumed management of the LORAN program for the Navy. After WWII, in 1946, USCG was transferred back to the Treasury Department, but retained management of the LORAN program (Thomas 2011). Incidentally, USCG was transferred to the Department of Transportation in 1967, and then again to the Department of Homeland Security in 2002.

The Alaskan LORAN-A chains included the Bering Sea Chain (St. Matthew Island, St. Paul Island, Umnak Island, and St. George Island); the Western Aleutians Chain (Attu, Amchitka, Adak, and Cape Sarichef); and the Gulf of Alaska Chain (Spruce Cape, Ocean Cape, and Biorka Island). Although Cape Sarichef was a LORAN-A facility, it purportedly installed and tested Loran-C equipment in the 1970s (Gray 2011).

2.2 LORAN-C

After WWII, many countries felt an urgent need to establish new regulations for radio communications, especially with the boom in aviation and the recent international consequences of the war. The International Telecommunication Union (ITU) was created to “...affect allocation of the radio frequency spectrum and registration of radio frequency assignments in order to avoid harmful interference between radio stations of different countries” (Bureau of the ITU 1947). In 1947, the ITU Conference allocated the frequency band 90–110 kHz for the development of a farther reaching, long-distance radio navigation system on a worldwide basis (Dickinson 1959). This was partly in response to a need for less

signal interference: the higher ranges were allocated solely for military use during wartime, but when they were returned to civilian use after the war, signal interference increased.

Over the next decade, various military branches attempted to improve the LORAN system including USAF. Sperry Gyroscope Company developed the Cycle Matching Tactical Bombing and Navigation System called CYTAC for the USAF. CYTAC was an experimental electronic strategic bombing system that used the same hyperbolic principles as LORAN-A, but at the lower frequencies allocated by the ITU Conference. Since the tactical bombing application of CYTAC was classified, its use for civilian navigation was limited; therefore, the USAF declassified the civilian application of CYTAC and named it “LORAN-C” while the tactical bombing aspect remained confidential (Joint Aids to Navigation Panel 1957). LORAN-C operated in the lower frequency as a hyperbolic radio navigation system using the time difference in pulses from two pairs of transmitting stations to obtain a navigational fix. It was highly accurate (better than 0.25 nautical mile absolute accuracy in the defined coverage area), all-weather, long-range, and available twenty-four hours-a-day. LORAN-C baselines could not be reduced much below 600 miles without losing considerable geometric accuracy. On the other hand, LORAN-A coverage was limited in the daytime to about 750 miles, whereas LORAN-C could provide precision coverage to about 1,200 miles using the ground wave and to about 2,100 miles day and night using the first hop sky wave. The first LORAN-C navigation system was installed on the East Coast of the United States in 1957 at stations in Carolina Beach, North Carolina, Martha’s Vineyard, Massachusetts, and Jupiter Inlet, Florida.

For the user, LORAN-C was just a simpler technology. Ron Caswell (2011), who worked on LORAN Station Attu during the transition period, explained:

“LORAN-C was just a big step up, you could just dial in your numbers and you didn’t have to look at a scope and line anything up. It was a stronger signal. It was a more accurate signal. With the LORAN-A, you almost had to go to operator school, learn how to read your receiver, where with LORAN-C you could read the book and figure out where you were at with it.”

2.3 LORAN-A TO C CONVERSION

In a letter dated 14 March 1958, the Secretary of the Treasury wrote the Secretary of Defense to ask for funding for the construction of seven LORAN-C stations:

“Construction funds for this priority requirement are being provided by reallocation from the 1958 LORAN-A construction program for which funds have been made available to the Coast Guard by transfer from a defense appropriation.”

The funds were needed for the training and assembling of crews and the operation of seven new facilities. The DoD allocated funds toward the implementation of LORAN-C stations.

In 1962, the USCG wrote the FAA discussing a USCG LORAN Planning Study conducted in 1957 (Treasury Department 1962), which investigated the compatibility of LORAN-A and C

equipment and the eventual combination of the two systems. In the letter, the USCG informed the FAA that LORAN-A and C stations would be combined until LORAN-A was phased out. The planning study indicated that the LORAN-A and C systems could be integrated without compromising existing LORAN coverage. The plan recommended collocating LORAN-A and C stations by re-locating “existing LORAN-A stations and building new LORAN stations as combined LORAN-A/C stations where appropriate.” It was important to phase out LORAN-A gradually since existing users might not have access to or be able to afford new receivers, which initially cost \$3,000 to \$5,000, according to declassified USCG correspondence from 1975 (Secretary of State 1975).

The LORAN-A phase-out and LORAN-C installation process was officially announced by the Secretary of Transportation on 16 May 1974. That year, LORAN-C was authorized by the Secretary of Transportation to be the federally provided radio navigation system for the U.S. Coastal Confluence Zone (CCZ), which is defined as the area seaward of a harbor entrance to 50 nautical miles offshore, or the edge of the Continental Shelf, whichever is greater. This mandate drove the expansion of LORAN-C service to all coasts of the United States—including Alaskan waters and the Gulf of Mexico—and to the Great Lakes, by 1980. By 1991, there were estimated to be more than 572,000 users of the LORAN-C system: 82 percent domestic and international marine users, 14 percent civil aviators, and 3.8 percent land users (USCG 1992).

As illustrated by Scott Price, in “History—The Legacy of LORAN,” from *Coast Guard Compass: Official Blog of the U.S. Coast Guard*, February 2010, <http://coastguard.dodlive.mil/>, LORAN-C also aided early environmental initiatives. In the 1970s the system was used to guide oil tankers along the Pacific Coast from Alaska to Canada and the contiguous United States, assuring highly precise navigation and minimizing potential damage from growing tanker traffic. With the advent of LORAN-C, station operations were more advanced and became more automated. Crews turned from primarily standing watch to making sure the equipment was maintained and operating properly. LORAN-A officially ceased transmission on 31 December 1980.

3.0 LORAN WORLD WIDE

3.1 COLD WAR DEVELOPMENT

According to declassified USCG correspondence from 30 December 1957, DoD was taking steps to accelerate the ballistic missile programs in preparation for continuing Cold War activity and in response to Russian advances in missile science (USCG 1957). To help achieve this goal, a corresponding acceleration of the LORAN-C program was necessary. According to the communication, the 1957 LORAN Installation Plan listed the construction of four LORAN-C chains as being a priority in order to meet the requirements of additional coverage; one of these four chains was the North Pacific Chain. The plan further indicated a requirement of six stations for sufficient coverage.

Additional correspondence from the USCG Commandant to top officials in Copenhagen – and consequentially Europe (USCG n.d.) – quoted an article from *Telecommunications Reports*, vol. 27, no. 14, dated 13 February 1961 that discussed the use of LORAN-C in classified defense operations as radio receivers on submarines. The receivers helped pinpoint geographical positions for the accurate launching of missiles. The Commandant stated:

“The existence of LORAN-C stations and the fact that military units have LORAN-C receivers installed is not classified. The direct tie-in of the LORAN-C program to the Fleet Ballistic Missile (FBM) Program is a security breach, which could have an adverse effect, particularly on our position in foreign countries.”

However, he directed USCG members to “minimize the effect and ... present a solid front,” by presenting LORAN-C as a “general purpose, all-weather, long-range radio aid to navigation.” According to the article, LORAN-C stations were installed around the world where coverage by LORAN-A was not available and in other areas where increased coverage was necessary to “improve air and surface navigation.” These stations included locations in the Aleutian Islands, Hawaiian Islands, Mediterranean Sea, North Atlantic, and East Coast of the United States.

A 1963 article, “A Blast in Air Held Detectable: LORAN-C Navigation System Adaptable, Study Finds” by Robert Plumb in the *New York Times* made public the use of the LORAN-C system as a “high-altitude nuclear explosion detection system.” The article further described studies by the Advanced Research Projects Agency (DoD) as having tested the system in 1962 and concluded that the system could detect nuclear explosions at “an altitude of more than 50 miles and explosive energy of a million tons of trinitrotoluene (TNT) or more.” At the time, there were reported to be twenty-one LORAN stations around the world.

3.2 FOREIGN OPERATION AND FOREIGN DUTY STATIONS

As part of the Cold War acceleration program, LORAN stations were built around the world to fulfill coverage requirements specified by DoD in the Joint Chiefs of Staff Planning Report

(referenced in the USCG 1957 communication). Foreign LORAN stations included those that were funded by USCG and those that were cost-shared with the North Atlantic Treaty Organization (NATO) or with operating countries. The *Annual Review of the LORAN Installation Plan* [of 1955], published on 9 April 1957 by the Joint Aids to Navigation Panel, stated that the primary objective of the Plan was "... to have LORAN service available at the outbreak of war." The report discussed the delays experienced during the implementation of foreign duty stations in non-NATO-member countries (including Japan) due to lengthy negotiations with foreign governments. Once acquisition agreements were in place, the operation of foreign stations became an issue: "Although it is very desirable that the Coast Guard construct, operate, and maintain all LORAN stations, it is necessary in certain areas to permit the foreign government to accomplish these functions, or to contract with civil companies for these services. The Coast Guard should monitor the operation wherever possible [in non-NATO countries] (Joint Aids to Navigation Panel 1957)."

Despite these obstacles, by 1963, USCG-funded stations were built in Italy, Turkey, Libya, Spain, Sardinia, Greece, Norway, Iceland, Greenland, Bermuda, Canada, United Kingdom, Japan, and the Philippines (USCG 1963). Some stations were dual-rated, meaning they produced two sets of signals for two unique chains, and some were dual-rated with foreign stations. In Alaska, LORAN Station Shoal Cove was dual-rated with a Canadian LORAN station because of their proximity (Atwell 1991). Attu was unique in that it was dual-rated with the Commonwealth of Independent States (C.I.S.).

The USCG and Soviet Union had discussed shared radio navigation since 1980, according to Don Atwell in "LORAN Station Attu links with Soviets," *Alaska Bear*, July-September 1991. In 1988, a proposal was negotiated with C.I.S. for the implementation of a mixed LORAN-C/CHAYKA Chain to serve the North Central Pacific Ocean (CHAYKA was the name given to the Russian LORAN system). An initial study conducted in 1989 (Atwell 1991) determined that the two countries' equipment were compatible. On 28 April 1988, both countries met in Leningrad to present their chain configuration options. The chain would provide marine and air coverage over the 500-mile-wide coverage gap that existed in the North Pacific between the North Pacific Chain, the Northwest Pacific Chain, and the Eastern Union of Soviet Socialist Republics (USSR) Chain (Westing 1989). The chosen configuration made use of the CHAYKA station at Petropavlovsk (Kamchatka Peninsula) as master, and stations at Kuril'sk (Kuril Islands) and Attu as secondaries. On 1 July 1991, the three stations were joined for an evaluation phase that lasted through 1992. The link was deemed successful and the chain became official (Atwell 1991).

In 1993, as a response to the advent of Global Navigation Satellite Systems (GNSS), DoD advised there was no longer a requirement for LORAN-C. As a result, USCG attempted to close U.S. LORAN stations and returned operation of all international stations to the host countries. However, Congress would not allow for closure of the U.S. stations based on the protests of civilian users, and the program continued in operation for another fourteen years (Thomas 2011). Moreover, the Russian-American Chain that included Attu remained in operation as a gesture made by both countries to promote peace after the Cold War; however, other international stations were returned to their host countries at that time.

4.0 DOMESTIC BASES AT LORAN-C CHAINS, ALASKA

Alaskan LORAN-C chains included the Gulf of Alaska Chain consisting of Tok, Kodiak (Narrow Cape), and Shoal Cove; the North Pacific Chain consisting of St. Paul, Attu, Port Clarence, and Sitkinak (relocated to Narrow Cape); and the Russian-American Chain by international agreement, featuring Petropavlovsk, Kamchatka, Alexandrovsk Sakhalin Island, and Attu. Two sites were visited for purposes of the ethnographic study documented in this report—Attu and Shoal Cove. Other stations from the Gulf of Alaska and North Pacific Chains were visited and documented for HABS recordation. Information on these sites is included in the descriptions below for the sake of comparing demographics and attitudes among stations.

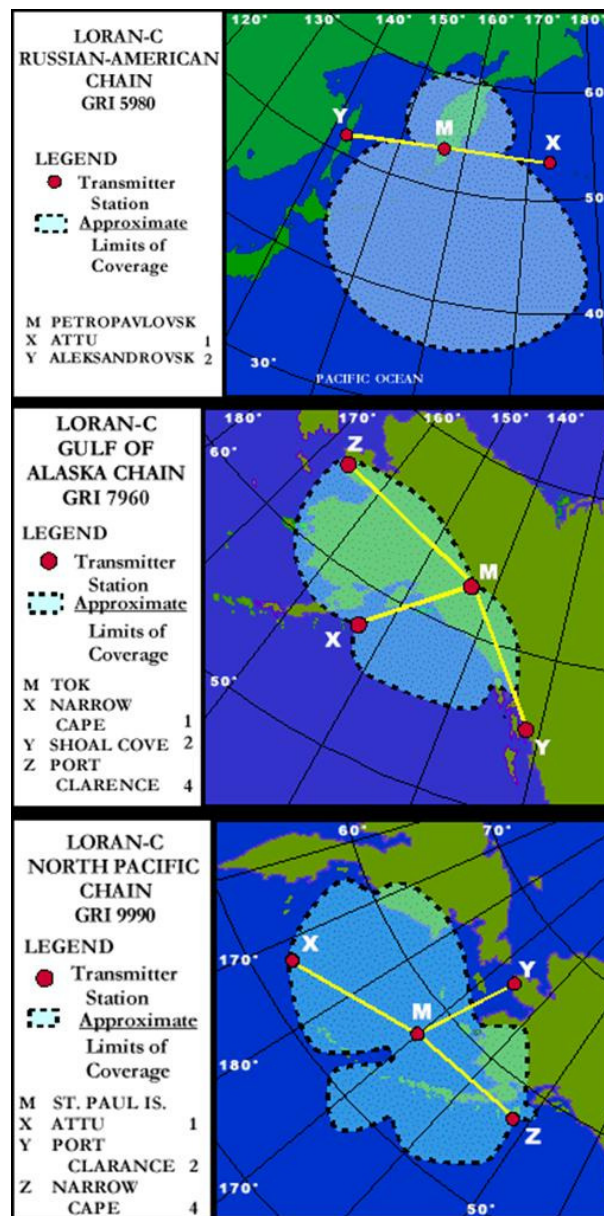


Figure 1: LORAN-C Russian-American, Gulf of Alaska, and North Pacific Chains

4.1 TOK

Known as the ‘Gateway to Alaska,’ the small community of Tok (population 1,393 [U.S. Census 2000]) is located in the eastern region of the state approximately 93 miles from the Canadian border. It is the first major community that drivers encounter upon entering Alaska from Canada via the Alaskan Highway (ALCAN). Due to its location at the intersection of the Alaskan and Glenn highways, the town is easily accessible by road from Anchorage (328 miles southwest) and Fairbanks (205 miles northwest). The climate ranges from 20 to -40 degrees Fahrenheit (°F) in the winter, but can rise to 100°F in the summer.

Tok was established as an Alaska Road Commission Camp during the construction of the ALCAN and Glenn highways during the 1940s. In 1954, the U.S. Army began construction of the Haines-Fairbanks fuel pipeline with a pump station located in Tok. The pump station closed in 1979 (www.tokalaskainfo.com).

The town’s economy is largely based on tourism; it is a popular spot for winter sports and for summer vacationers traveling the ALCAN. Tok also serves as a center for subsistence hunting of moose, bear, rabbit, grouse, and ptarmigan; dog breeding, training, and mushing; and the Tok Race of Champions Sled Dog Race each March, one of the oldest races in Alaska.

The Tok LORAN-C station was constructed approximately 5.5 miles east of the town and highway junction by USCG in 1976. The station exhibited four 695’ guyed towers and operated as the master station for the Gulf of Alaska Chain, grouped with Kodiak, Shoal Cove, and Port Clarence. The crewmembers at Tok lived in family housing either in the Willow Way Fourplex or in the Jackie Circle Duplex, both located near downtown Tok, and would commute to the station daily. One person would watchstand – stay overnight to monitor the tower (Springer 2011). Freight and supplies were mostly delivered by truck; however, the station had access to a 3,000’ paved runway at the airfield for air deliveries. The nearby Tok Junction airport was also used.

Life at the LORAN-C Tok station was not as isolated as other Gulf of Alaska and North Pacific Chain stations such as Attu and Port Clarence; crewmembers at Tok could live with their families and had access to a community complete with governmental and social services, recreational facilities, commercial businesses, and infrastructure. The town of Tok has an elementary school, six hotels, five restaurants, a grocery store, an auto parts store, two building supply stores, a post office, banks, and a medical clinic with a doctor, dentist, chiropractor, and mental health services, according to the Tok Chamber of Commerce (2011).

4.2 KODIAK (NARROW CAPE)

Kodiak Island is in the Gulf of Alaska, approximately 250 miles southwest of Anchorage. The Island comprises approximately 3,588 square miles. Travel to Kodiak from mainland Alaska is available by a one-hour flight from Anchorage, a nine-and-a-half to thirteen-and-a-half hour ferry ride (depending on the route) that departs frequently from Homer, or a less-frequent twenty-two-and-a-half hour ferry ride from Whittier, according to the Alaska Department of

Transportation Alaska Marine Highway System website <http://www.dot.state.ak.us/amhs> on 13 October 2011. Kodiak is the sixth largest city in Alaska, with 6,400 people, so it is not isolated like some of the other LORAN stations.

In 1972, the Coast Guard Base Kodiak was established after the U.S. Navy turned over the Naval Station Kodiak to USCG. At the time, USCG Air Station Kodiak was already operating with three HC-130H airplanes and two HH-52A helicopters. LORAN Station Kodiak was constructed in 1976 to replace the LORAN-A signal from Sitkinak, which transmitted from 1960 to 1976. Kodiak transmitted a one-megawatt signal and served as a double secondary station to both the North Pacific and Gulf of Alaska Chains with a coverage area of 2,400 square nautical miles. In 1990, Narrow Cape was renamed Kodiak.

Despite its remote location, the base is the largest USCG base in the country, serving approximately 1,000 active duty members, 1,700 family members, and several hundred civilians (Kodiak Island Convention and Visitors Bureau [KICVB] n.d.). The population of the island, including USCG Air Station Kodiak and surrounding villages, is approximately 13,900. Unlike most other Alaska LORAN stations, the crew at LORAN Station Kodiak lived at USCG Air Station Kodiak, not at the LORAN station. USCG Air Station Kodiak contains an exchange, commissary, post office, pizza restaurant, convenience store, cinema, bowling alley, auto hobby shop, and morale boats and campers. A gym with a large indoor pool, large modern weight and cardio rooms, and other facilities are also provided.

All of the crewmembers working at the LORAN-C station would commute one-and-a-half hours from USCG Air Station Kodiak to Narrow Cape and back each day. One crewmember would be required to stand watch overnight at Narrow Cape. A bunk room was provided at the station. The USCG Air Station Kodiak was also responsible for delivering supplies every two weeks to LORAN stations Attu, Port Clarence, and St. Paul.

4.3 SHOAL COVE

LORAN Station Shoal Cove is located in the Tongass National Forest approximately 20 miles northeast of Ketchikan at Carroll Inlet, on Revillagigedo Island. Ketchikan is linked to the rest of Alaska by the Alaska Marine Highway ferry line and by air. The climate at Shoal Cove is characteristic of a maritime climate. Yearly temperatures range from 20 to 60°F. This area receives moderate snowfall during the winter months.

Prior to the construction of the LORAN-C station, the area was used for logging. During the mid-1970s, USCG leased 240 acres from the U.S. Forest Service for construction of the LORAN station. The station was constructed in 1975 by the international architecture and engineering firm Leo A. Daly, which has been headquartered in Omaha, Nebraska since 1915. LORAN Station Shoal Cove was a dual-rated, double secondary station that produced secondary signals for both the Gulf of Alaska and Canadian West Coast Chains. The Canadian Chain included stations at George, Port Hardy, and Williams Lake. The station included four 650' sectional LORAN transmission towers and an Operations Building that

contained the electrical and mechanical equipment necessary to operate the LORAN-C transmitter.

Crewmembers lived in Ketchikan while off-duty and at the station while on-duty. Many lived with their families when in Ketchikan. A contracted civilian boat made one-hour trips between Ketchikan and Shoal Cove three days a week. USCG Station Ketchikan served as the Base Support Unit for Shoal Cove by routinely providing the station with logistics and supplies. Ketchikan provided a nearby community with governmental and social services, recreational facilities, and commercial businesses for the USCG crewmembers and their families.

According to Electronic Technician (ET) Steven Worthington who served at LORAN-C Shoal Cove in 2010, leisure time for many of the crew consisted of watching movies and television; playing ping-pong, pool, or video games; and sometimes bicycling, hunting, or fishing. Occasionally, Hooverball, hacky-sack, and basketball tournaments would be organized. In Ketchikan, volleyball tournaments were frequent during the summer months. According to Worthington, the town of Ketchikan was somewhat isolated during the winter months when only a few restaurants, a grocery store, and a Wal-Mart remained open. The town depends upon summer tourism; many businesses close from October to March.

4.4 PORT CLARENCE

LORAN Station Port Clarence was established in 1961–62 by USCG after it was determined by the DoD that the North Pacific Chain needed another station to provide additional coverage of the North Pacific Ocean and Bering Sea (Coulter and Fontaine 1962). It was during this time (Cold War era) that the DoD accelerated the fleet ballistic missile weapon system in response to Russian advances in missile technology. This required the concurrent expansion of LORAN-C for use by submarines in positioning themselves to carry out their mission.

The location chosen was Point Spencer, a 12-mile gravel spit extending into the Bering Sea at the west end of Alaska's Seward Peninsula. A U.S. Army Air Corps camp and airfield was constructed on the point in 1945, and while the camp was never used, the runway functioned. The station consists of an Administration Building, Barracks Building, Fitness Building, generator, Transmitter Building, Signal Power Building, Utilities Building, and garage. All of the major buildings are connected by aboveground heated passageways to allow for travel back and forth in extreme weather conditions. These connector halls also contained the electrical lines, telephone cables, and the water, sewage, and fuel pipes, to prevent them from freezing. The longest passageway at 1,850' connected the Signal Power Building and the Transmitter Buildings. It was referred to as "the Tunnel," and was the only unheated passageway.

Representatives from the Raymond International Corporation, an engineering and construction company, and a local expert in Teller, Alaska were flown in to Port Clarence to determine what type of foundation would best support a 1,350' antenna in an Arctic region on

permafrost. For the station buildings, which were built on top of the permafrost, reinforced concrete was used for the foundation over coarse, non-cohesive soils that would not contract or expand with cycles of freezing and thawing (Coulter and Fontaine 1962). The construction contract went to Raber-Kief Inc. and B-E-C-K Constructors for more than \$2 million, which included construction of the entire station except for the antenna.

The Sperry Gyroscope Company was hired to build the antenna. Construction of the tower in permafrost was extremely challenging. First, the permafrost layer, 8' below the surface, had to be thawed with the aid of steam lances. Then, thousands of gallons of water had to be pumped into cofferdams to create a dry environment for pouring the concrete foundation. After the base of tower was erected and the first 30' section of the antenna placed on top with a crane, the next forty-five sections (30' each) were erected using a gin pole with a boom that hoisted the sections one on top of the other. The last weeks of construction were done in freezing winds (Coulter and Fontaine 1962).

Life on Port Clarence was difficult because of isolation and extreme weather conditions. The crew included twenty-four residents working and living at the station. For recreation, the crew turned a water tank into a swimming pool. Each year, new crewmembers would complete an Arctic survival course where they learned how to dig snow shelters in case they became trapped outside, and how to find food and water in severe cold and often zero visibility. Logistic supplies were received every three weeks via C-130 aircraft from USCG Air Station Kodiak. Mail was received three days a week by commuter plane from Nome, Alaska (USCG 2005). Duty at Port Clarence was restricted to one year; from there, most crewmembers got their choice of next duty station.

4.5 ST. PAUL

St. Paul is 650 miles west of Kodiak. The island is only 14 miles long with a population of 763. However few humans, it has 210 species of birds, blue foxes, reindeer and fur seals. LORAN-A was established at St. Paul in 1943 by the Navy on the westernmost point of the island called "Southwest Point" (USCG 1946a). It was one of the first LORAN transmitters to be built in Alaska. The A signal was transmitted until 1950. Ten years later, LORAN-C operations were implemented on the island. The LORAN-C signal served first as part of the Bering Sea Chain from 1960-1969, and then as the designated master of the North Pacific Chain from 1961-1976 with Port Clarence, Attu, and Sitkinak (relocated to Narrow Cape/Kodiak in 1977) as secondary stations.

Along with Attu and Port Clarence, St. Paul was one of only three isolated-duty LORAN stations in USCG, which meant that all crewmembers lived on the station in barracks for one-year tours of duty. Logistics services were provided every three weeks by C-130 from USCG Air Station Kodiak, and once every summer, fuel and bulk supplies were brought in by barge.

According to an interview with ET Mike Hudson who spent 1974 on St. Paul, sixteen to twenty men were assigned duty on the island during a given year. During Hudson's time, crewmembers were required to stay the entire year on the island and could only take leave

after their tour was completed; they received sixty days of leave before their next assignment. In fact, duty was so isolated and restricted that members were often asked to have their wisdom teeth removed before their assignment as a precautionary measure.

As an ET, Hudson was one of the few men who were trained specifically to operate LORAN-C equipment and technology. ETs were required to continuously monitor every station, and therefore tended to work eight- to sixteen-hour shifts. The only form of communication on the island with the outside world during the 1970s was high-frequency radio. For entertainment, movies were flown in and shown on a projector, and crewmembers socialized in the bar. Additional idle time was spent exploring the island, fishing, and caribou hunting. The crew also attended the local gym and played in adult-league sports including basketball, volleyball, and softball organized by the City of St. Paul. Later, the St. Paul LORAN station was outfitted with satellite dishes and internet capability, and members were allowed to take leave during their tour. St. Paul did not allow dogs at the station because they posed a threat to the seals during breeding season.

The island is listed on the NRHP as part of the Seal Island Historic District (USCG 2009b), which encompasses portions of both St. Paul and neighboring St. George Islands Discovered in the 1780s as the home of the world's largest concentration of northern fur seals, the islands of St. Paul and St. George have long attracted fur hunters. An international conservation agreement made between the United States, the United Kingdom, Russia, and Japan in 1911 insured the preservation of the herds on the islands in an important example of the principle of international arbitration. The LORAN-C station is on the southeast coast of St. Paul Island, outside of the boundaries of the historic district (NRHP 1986).

4.6 ATTU

The Aleutian arc is a chain of volcanic islands more than 1,500 miles long that was formed through subduction: the plunging of the Pacific Plate deep under the North American Plate, which occurred as the earth's crust melted allowing molten material to rise to the surface, according to "National Atlas, Aleutian Islands" website, which is available at: <http://www.nationalatlas.gov/articles/geology/features/aleutians.html> (accessed 31 July 2011).

LORAN Station Attu is located on Attu Island, Alaska, the westernmost island of the Aleutian archipelago. Attu is approximately 1,100 miles from the Alaska mainland and less than 200 miles from the Russian Komandorski Islands. The closest town is 40 miles away at Shemya Island, Alaska. Attu is on the other side of the 180th parallel, making it the easternmost USCG station.

In an official report on the battle of Attu prepared shortly after the WWII battle, Attu was described as being:

"...about 17 miles × 40 miles in extent and is indented by many bays and long inlets. It has 3,000'-high Rocky Mountains, on whose cold summits lie patches of snow and ice the year round. There are many rocks and reefs off its shores. Beaches exist at the heads of bays and inlets, but about 95 percent of its shore-

line consists of rocky, precipitous cliffs. The off-shore approaches are habitually foul ground, filled with reefs and pinnacles requiring extreme caution of navigators. The valleys are very wet, with water usually only a foot or so below the surface of the tundra, which is frequently so swampy as to be in many places a true muskeg. The spongy water-soaked tundra extends up the hillside to considerable elevations, giving way at last to rock precipitous slopes and craggy crests (Boyce 1945:4)."

Flora and fauna include species from both North America and Asia. Vegetation is classified as terrestrial-maritime tundra, with three distinct plant communities: beach, lowland tundra, and upland tundra, according to United Nations Educational, Scientific, and Cultural Organization, "Aleutian Islands, Biosphere Reserve Information," last modified 15 March 2005, <http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&Code=USA+01>. Trees are entirely absent on Attu, except for a few spruce trees dwarfed by high winds that had been planted around the WWII-era barracks on Engineer Hill by soldiers stationed there. The elevation ranges from sea level to 2,946' above mean sea level, which is Attu Mountain.

Being in a maritime climate zone, it also suffers extreme weather conditions. According to the Alaska Climate Research Center website, Attu has an average annual temperature of 38°F, average annual rainfall of 48", and an annual snowfall accumulation of 74". Dave Meredith, who was on Attu in 1966 and 1967, said, "When I was the radioman, we had a wind gauge. It was a knot [meter] on the wall. I saw it get stuck at 120 knots for twenty to forty seconds."

He added, "When I got up there, I heard this stuff hitting the windows at night. They said it was the wind picking up rocks and boards and throwing them at the building. They put screens on them to protect the glass (Meredith 2011)."

One pervasive theme in the stories of life on Attu Island is that the weather is unpredictable. Dave Meredith described recording a weather report that was so unusual that he had to have it validated by the Commanding Officer (CO):

"One time, I remember, I went out and took the weather report in the morning. It was 72 degrees. I sent that in to Adak, then somewhere in Washington. They sent a message back saying that I had to have the temperature verified by the CO up there because they couldn't figure out why it was so warm. They were thinking that Russia had set off a nuclear device against the treaty and we were getting the warm air blast from it. They were all concerned about it (Meredith 2011)."

During the approximately one week the investigative team spent on Attu, the weather was consistent. The days started with fog, then progressed to low clouds by mid-morning and were mostly sunny during the long afternoons. Daytime temperatures were in the mid-60s. Nearly every encounter with a Coastguardsman included some discourse about how unusual it was to have good weather on that island, although we jested that we were sure that all the stories of bad weather were lies with the single purpose of discouraging anyone else from invading their personal paradise.

Attu Island is a National Historic Landmark commemorating the Battle of Attu. Recorded and unrecorded archaeological artifacts from this period and earlier are scattered about the island, including some from the Aleut settlement at Chichagof Harbor, which the Japanese destroyed during WWII (NRHP 1985).



Figure 2: Signal and Barracks Building, LORAN Station Attu

The first known inhabitants on Attu were the Aleuts, an Alaskan Native group. Their population was drastically decreased by the Russian Empire who discovered the islands in the 1740s and exploited the seal population for fur-trading. Attu became an American territory in 1867. In 1913, President William Taft established the Aleutian Islands Refuge, which included Attu. The island saw few visitors until June 1942 when it was captured by the Japanese in WWII.

On 8 June 1942, the Japanese 303rd Infantry Battalion landed on Attu Island. They seized the native Aleutian Village, church, and missionary at the head of Chichagof Bay and immediately began to prepare for a U.S. attack. During the invasion by the Japanese, the Aleuts were either killed or imprisoned at internment camps in Japan never to return to Attu. With a total force of approximately 2,400 men under Colonel Yasuyo Yamasaki, the Japanese spent approximately the next eleven months digging-in for the defense of Chichagof Harbor and Holtz Bay. These defenses included gun emplacements for heavy artillery and trenches, tunnels, and foxholes on hills overlooking the beaches, valleys, and passes, including strategic positions above Jarmin and Clevesy passes leading to Massacre Bay (Boyes 1945).



Figure 3: Eastern Attu Island

In 1943, Americans retook the island in the Battle of Attu—the only WWII battle to take place on American soil. On the night of 10 May 1943, elements of the U.S. Army's 7th Division arrived off Attu's coast and divided forces to simultaneously attack both the northern and southern coasts. The southern force, the main U.S. task force, landed at Massacre Bay while the northern force flanked the primary Japanese defenses from Austin Cove and Red Beach to the northeast of Chichagof Bay. At noon on May 11th, the order was given to proceed with landing operations (Boyes 1945:5) and the battle raged for the next eighteen days. Then, on May 29th Colonel Yamasaki and the remainder of his force, estimated to have been approximately 1,000 men, committed what would be one of the war's largest bonsai charges (Urwin 2000:xviii). The Japanese poured up from Chichagof and overran two U.S. command posts and medical installations until they were finally repulsed on a small hill at the head of Massacre Valley by impromptu defenses organized by U.S. Army engineers (Boyes 1945:10).

Out of the 15,000 American soldiers who took part in the battle, 549 died and 1,148 were wounded. Another 2,100 Americans succumbed to frostbite and other non-combat injuries. U.S. troops buried 2,351 Japanese, and an untold number may have been buried by their

fellow soldiers before they were killed or captured, or committed suicide. Only twenty-nine Japanese survived the battle (Mitchell et al. 2000:23).

During the remainder of the war, the U.S. Navy used the island as a base and staging area for the planned invasion of Japan. “Navy Town” consisted of over 200 Quonset huts and two paved runways on the eastern end of the island at Point Barbara (Department of the Navy 1947). In 1943, a USCG construction detachment built the LORAN-A station on Theodore Point. Construction was hampered by extremely cold weather, blizzards, deeply frozen ground, and the need for haste (USCG 1946a:51). The construction crew arrived on site on 11 January 1943. Cargo was hauled by a tracked vehicle called CAT[®] over the mountains in winds blowing forty knots, with blowing snow so thick the operator could barely see the controls. As fast as the quarters were constructed, the men moved in (USCG 1946:51). The main building consisted of five Quonset huts arranged in an “H” layout with connecting passageways. LORAN Station Attu was on the air and testing by 11 February 1944 (USCG 1946b:51). The 54th Fighter Squadron was moved to Alexai Point when the airstrip was finished in late October 1943. At the war’s peak, there were over 7,000 USCG and U.S. Navy servicemen housed at Navy Town in addition to the rotating battalions of U.S. Army and USAF personnel (Department of the Navy 1947).

In 1948, with the beginning of the Cold War, the LORAN-A station was moved to Casco Cove near Murder Point, which was better located for receiving supplies (DNR 1997). The following year, the Navy constructed a large Aerological Station Building at Navy Town. The station served to monitor weather for bomber routes to the USSR and gather seismic information to detect nuclear submarines (USCG 1959). The building was decommissioned in 1957.

In 1961, the LORAN-C system was deployed on Attu. For thirty years, Attu served as a secondary station within the North Pacific Chain where St. Paul was the designated master, and Port Clarence and Kodiak were additional secondary stations. In 1991, Attu became a dual-rated station, producing two different sets of timed pulses from the same transmitter to provide coverage in a larger area. Attu was unique because it was the only dual-rated station connected to a Russian LORAN chain, or CHAYKA. Stations in Petropavlovsk, Kamchatka, and Alexandrovsk, Sakhalin Island were connected to Attu to form the Russian-American Chain.

The existing LORAN-A complex on Casco Cove consisted of a Main Station Building, a Transmitter Building, and a warehouse for storage. According to the original site investigation conducted in 1959 (USCG 1959), while the Casco Cove site was considered electronically well-suited for the installation of the LORAN-C system, the facilities would have required a large addition to house the extra equipment and crew, as well as 2 miles of new roadway to connect to the airstrip and pier. Alternatively, USCG could easily re-use the large U.S. Navy Aerological Station Building (NAS) at Massacre Bay for operations, housing, and everything except actual transmission. Additionally, the building was perfectly situated next to the extant U.S. Navy airstrip for logistic support. Therefore, in order to efficiently operate the transmittal of both signals from the same building, LORAN-A equipment was transferred to the NAS

when the LORAN-C system was installed. The LORAN-A signal was phased out over the next two decades and officially terminated in 1979 on Attu Island.



**Figure 4: The Main Station Building at the LORAN-A Station
at Casco Cove in 2010.**

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5.0 DEMOGRAPHICS

“The Coast Guard will be recognized as the “Employer of Choice” in the federal government for recruiting, retaining and sustaining a ready, diverse and highly-skilled Total Workforce. We will foster an environment in which every individual has the opportunity to prosper and contribute to Coast Guard missions (USCG 2009a).”

One might infer from the above statement that the Coast Guard is challenged with recognizing personnel differences in the modern workforce to the end that each individual can contribute to the organization’s overall success. A functional team would leverage each member’s individual attributes while respecting their ethnic, racial, and social backgrounds and gender to enhance the working environment for all on board. So who makes up these teams? To develop a snapshot of the people who serve in the USCG, we looked at reasons for joining, education, ethnicity, gender, relationships, and a few other personal attributes.

5.1 REASONS FOR JOINING THE USCG

From our small pool of interviewees, we learned that the most common reason people join the Coast Guard was unemployment, or a search for a meaningful career. MK3 Turcott from Detroit, Michigan said, “I’ve been in the Coast Guard sixteen months, since April of 2009 ... [Prior to joining the Coast Guard] I spent a year off kind of doing odd jobs, hanging out with my friends. At least now I am not getting shot at every day. (Turcott 2010).”

When asked why he joined the Coast Guard, MK3 Ledbetter said, “I was born in Placerville, California. My dad was a correctional officer for Pelican Bay state prison. He retired after fifteen years, and we moved to Missouri, Arkansas. They wanted to buy a farm and settle down on some land and I hated it (Ledbetter 2010).”

Others, like SN Kyle Hamlin, feel they were destined to join the Coast Guard. He said “My mom’s dad, my grandfather, he was a master chief in the Coast Guard and that really appealed to me ... I came into the Coast Guard knowing my goal was to move on through the Coast Guard as a career (Hamlin 2010).”

ET2 Kinzel was drawn to the Coast Guard by the excitement and adventures portrayed in advertising. He explained:

“It’s something I always wanted to do when I was a kid. I thought it would be a really cool job. They had ice breakers and they had the big sailboat with the eagle, and it just seemed like it was a neat job because I wasn’t someone who wanted to join the military, it’s not really my thing, but I did want to do something to serve the country so I thought the Coast Guard was the best option for me and so far it’s been great. I’ve been doing this for ten years (Kinzel 2010).”

ET2 Walter Thomas at LORAN Station Shoal Cove also joined for the excitement. He said he got the idea of joining after he noticed the picture on his sister's schoolbook cover of a dramatic Coast Guard rescue scene of a man repelling from a helicopter.

MK3 Timothy Moreau viewed joining USCG as a stepping stone for his planned career path. He said, "... first of all, it's a pride thing, you know? I love my country and I'm not afraid to admit it. Also it seemed like I was going to be a police officer, and this seemed like it was a good foreground for that (Moreau 2010).

While we interviewed some Coast Guardsmen who enlisted because they were having difficulty finding employment as civilians, our review of statistical studies indicated that people join the Coast Guard for more than monetary reasons. We looked at a study done for The Heritage Foundation, a conservative think tank. In this 2008 study, Watkins and Sherk presented the demographic characteristics of newly commissioned officers and enlisted personnel who enlisted in USCG in 2006 and 2007 using average U.S. Census data from the Census Tracts of the addresses they gave at the time of enlistment. They found that the U.S. military service disproportionately attracts enlisted personnel and officers who do not come from disadvantaged backgrounds. In fact, only 11 percent came from the poorest one-fifth of neighborhoods, while 25 percent came from the wealthiest neighborhoods. They found the average household income at enlistment to be above the national average for both officers and enlisted men (Watkins and Sherk 2008).

5.2 EDUCATION

USCG enlistees are the most educated among all military branches. The USCG has a high level of education with 99.5 percent having completed high school or its equivalent, compared to 92.5 percent for all service men and women, in all military branches. However, continuing education amongst Coast Guardsmen lags, with only 53.4 percent of the officers and warrant officers holding a baccalaureate or higher compared to 89.3 percent among the other military branches (Watkins and Sherk 2008). According to one of the Coast Guardsman interviewed, his college degree does not count toward his career advancement in the USCG (Ornelas 2010).

The Heritage Foundation's study also found that USCG personnel are somewhat older than those in the other armed services. The average age of a Coast Guardsman is 30, while the average age of active duty personnel in the U.S. Navy is 29, and the average for all of the armed services is 28 (Watkins and Sherk 2008).

5.3 ETHNICITY

Racial and ethnic statistics were obtained from the Defense Manpower Data Center, which serves the Office of the Secretary of Defense by collecting and maintaining an archive of automated manpower, personnel, training, and other databases to support the personnel and management needs of the Secretary of Defense for Personnel and Readiness. **Table 1** presents racial, ethnic, and gender statistics for officers, warrant officers, and enlisted personnel for

USCG, U.S. Navy, and combined DoD, which would reflect the combined statistics for the U.S. Army, U.S. Navy, U.S. Marine Corps, and USAF. DoD statistics do not include USCG since it is under the Department of Homeland Security, not DoD.

**Table 1: Demographics U.S. Military (Active Duty)
U.S. Coast Guard, U.S. Navy, and Total Department of Defense Personnel**

| | USCG | | | | U.S. Navy | | | | Total DoD | |
|--------------------|-----------------|----------|------------------|-----------------------|---------------|----------|------------------|-----------------------|---------------------------|--------------------------------------|
| | Officers and WO | Enlisted | Percent Enlisted | Percent Officers & WO | Officers & WO | Enlisted | Percent Enlisted | Percent Officers & WO | DoD Active Duty Personnel | Percent by Race, Ethnicity or Gender |
| AMI/ALN | 126 | 928 | 3% | 2% | 351 | 14,555 | 5% | 1% | 23,984 | 2% |
| Asian | 61 | 294 | 1% | 1% | 2,089 | 16,112 | 6% | 4% | 51,735 | 4% |
| Black | 399 | 1,976 | 6% | 5% | 4,303 | 55,058 | 20% | 8% | 241,133 | 17% |
| MULTI | 382 | 1,819 | 5% | 5% | 925 | 15,928 | 6% | 2% | 26,054 | 2% |
| PI | 7 | 239 | 1% | 0% | 176 | 3,243 | 1% | 0% | 8,703 | 1% |
| White | 6,645 | 26,271 | 77% | 81% | 41,964 | 161,224 | 59% | 81% | 991,715 | 70% |
| UNK | 605 | 2,795 | 8% | 7% | 1,916 | 6,448 | 2% | 4% | 71,269 | 5% |
| Hispanic | 528 | 4,167 | 12% | 6% | 3,164 | 42,281 | 16% | 6% | 149,113 | 11% |
| Total non-hispanic | 7,697 | 30,155 | 88% | 94% | 48,560 | 230,287 | 84% | 94% | 1,265,480 | 89% |
| Female | 1,285 | 4,338 | 13% | 16% | 7,914 | 42,559 | 16% | 15% | 202,718 | 14% |
| Total | 8,225 | 34,322 | 100% | 100% | 51,724 | 272,568 | 100% | 100% | 1,414,593 | 100% |

Notes:

AM/ALN = American Indian / Alaskan Native

MULTI = Multi Racial

PI = Native Hawaiian / Pacific Islander

UNK = Unknown

WO = Warrant Officer

Source: Active Duty Master File (Strength Accountable)

Produced in April 2012 by Defense Manpower Data Center

According to the Defense Manpower Data Center's statistics for March 2010 (published April 2010 at <https://www.dmdc.osd.mil/appj/dwp/index.jsp>), all racial categories are represented in the USCG in some capacity. Approximately 77 percent of Coast Guardsmen presented themselves as "white," which is comparable to the 70 percent "white" enlisted population in all of the services combined. The percentage of "black" USCG enlistees is low compared to the U.S. Navy and total DoD personnel, but the proportion of other races between the two military branches, and among the DoD total personnel, is comparable. Women make up 16 percent of the USCG officer corps, which is slightly higher than the Navy's 15 percent and higher than the DoD's overall 14 percent (Table 1).

Of the thirty-six Coast Guardsmen assigned to LORAN stations Attu and Shoal Cove at the times of closures, there was one black person at Shoal Cove, two Hispanics on Attu, and one Filipino. The Hispanics were the Executive Officer, ETC Alex Limonte, and the Operations Department Manager, Vince Ornelas. MK3 Jeffery Bagtas is from the Philippines. None of these individuals described racial issues in their interviews.

ET2 Walter P. Thomas (LORAN Station Shoal Cove 2009 through 2010) was the only “black” person at either of the two LORAN Stations visited. When asked about discrimination, he stated, “I have felt this at lower levels. I have never felt I have been discriminated against because of my skin color. I have only experienced it with junior guys. I don’t want to say that it doesn’t affect me, but it has not hindered my career.” He added, “The only problem that I will say, is that there are really not a lot of black people in the Coast Guard. I think the Coast Guard is 75 to 80 percent white. Honestly, I think it is a recruiting thing.”

Thomas continued, “If you go to an Army base, you’ll find people of all kinds of backgrounds from everywhere. [Here] it is uncomfortable sometimes. It is a lonely place to be. Even in Alaska there are not any [blacks].” Randy McDonald (2011), who served on LORAN Station Attu during the early 1970s said, “We had young officers and good chiefs; mixed, black, and white sailors, nothing, no problem whatsoever.”

Thomas told a story of prejudice, and how it may have taught a man a lesson about discrimination:

“I have seen white guys discriminated against when I was stationed in Honolulu. I’ve never seen that happen before to a white guy. He was shocked. He’s got like a huge southern accent. He was looking for an apartment. They didn’t give it to him. They made that clear. He didn’t get it because he was from the South.

“I felt kind of bad for him. I hated to say this to you, but I said, ‘was that a good experience for you.’ He said, ‘how could you say that to me?’ I said, ‘Now you know how it feels. Now you won’t ever do that to anyone’ (Thomas 2010).”

5.4 GENDER

Legislation allowing women to serve in the USCG and on active duty was passed in 1973. Prior to that time, they were only allowed in the Women’s Reserve. In 1980 the first woman served restricted/isolated duty, which happened to be at a LORAN station at Kure, Japan (<http://coastguard.dodlive.mil/index.php/2011/01/history-women-at-the-coast-guard-academy/>). According to the LORAN History Information website (<http://www.Loran-history.info>) at least two women served as COs on St. Paul at the LORAN-C station in 1983 through 1984 and 2000 through 2001.

Although numerous women appear to have served on LORAN Stations in Alaska, the investigators were unable to make contact with any of them. However, one story of a woman stationed on an Alaskan LORAN station, Lieutenant Junior Grade (LTJG) Tammy Rose, was preserved and conveyed by K.D. Rager and W.F. Boatman in “Tammy Rose: An Individual,” for the *Alaska Bear*, the USCG District 17 newsletter, April-June 1982. Her story is one that epitomizes the structural and attitudinal changes USCG has endured over the past three decades. LTJG Tammy Rose was the CO of LORAN Station Port Clarence in the early 1980s. LTJG Rose followed in her father’s footsteps, as he had been a career Coastguardsman. When

asked about dealing with her male counterparts, LTJG Rose said, “It started at the Academy and it was like breaking ice ... and then I got on a ship and it started all over again ... there were these little wisecracks” (Rager and Boatman 1982). added:

“I had just given my first command to the helmsman, and he refused to listen to it. He just said, “Command, Ma’am,” even though he heard the command ... He just asked me to repeat it ... It was just that kind of attitude, like “I showed her.” She continued, “By the time I left, I felt I really had the respect of the crew. It was a nice feeling. I felt like I had gotten that far, now I’m ready to tackle something else (Rager and Boatman 1982).”

When asked why she went to LORAN Station Port Clarence, LTJG Rose replied, “I wanted to go because I wanted command (Rager and Boatman 1982).” However, once she arrived and reality set in, she admitted to asking herself, “What am I doing here? I am stuck in Alaska (Rager and Boatman 1982).” But she persevered and, as her story tells, grew professionally and gained the respect of her crew.

Although she was not actually stationed on a LORAN Station, Lt. J.G. Sarah Petrella made periodic inspections of Alaska’s LORAN towers, including Attu’s tower. When queried about women working on LORAN stations, she said:

“I’m not sure if they had a whole lot of women at the LORAN stations. Whenever I visited there weren’t any women at any of them ... I would imagine it would be kind of tough being out there and being the only woman ... You just have to kind of assert yourself and let them know – I’m easy to work with but, you can’t take advantage of me. Just have to start there and get your respect (Petrella 2011).”

During his interview, Senior Chief Machinery Technician (MKCS) Steven Strecker at LORAN Station Attu, who was affectionately called “Senior” by his men, was reading online news in the “Coast Guard Compass.” He relayed, “The First Lady Makes History: Mrs. Obama is christening the Dorothy Stratton. She’s christening that ship.” He explained, “Dorothy Stratten was the commander of the SPARs. It’s what women’s coastguard during WWII was called.” He went on to explain that the acronym SPAR means *Semper Paratus*, Always Ready—that is our motto. Our song even says that (humming).” MCKS Strecker appeared to take considerable pride in the Coast Guard’s progress in women’s rights over the past few decades.

5.5 RELATIONSHIPS

Serving isolated duty is challenging for anyone since humans are social beings by nature. However, according to a USAF study, the unmarried young men and women that typically serve at isolated duty stations are better suited for isolated duty than their married counterparts (Pierce, McKenzie, and Woodward 1948). At the time of the investigative team’s visit, both stations were staffed by male-only crews; however, at LORAN Station Attu there have been several female crewmembers and one female CO. In this setting, the lack of

interaction with women and legends of women who once served on the LORAN Station was a common topic of discussion.

Interviewed by Steven C. Levi for an article, “*Life on the Edge of the Western World*,” printed in the January-March 1990 edition of *Alaska Bear*, Kevin Shaw, another one of the Coast Guardsmen stationed at LORAN Station Attu, said:

“Isolation is hard—particularly with no women. I miss a lot of things but you can’t spend a year here and sit at the station. I get out a lot. During the winter, I cross-country ski, and when the weather is nice, I take photographs.”

When Gary Hartzel, another Coast Guardsman interviewed for the same article, was asked what he missed most about civilization he responded, “Women ... after I leave here, there a lot of things I’m never going to take for granted again, like the mail coming every day, or television.”

When asked if women served on LORAN Station Cape Sarichef in the 1970s, Bruce Gray responded:

“I don’t think they allowed it when I was there at that point, but I do believe they did allow it in some situations later on. Back then they absolutely did not allow women on isolated duty. Of course they are going to get pregnant, with 18 guys [potentially] hitting on them (Gray 2011).”

Bill Swansburg told a story of a woman who visited LORAN Station Attu, regularly:

“Well one day this tug came in and a bunch of us were out on the carryall and we went down to board the boat and we heard this voice call ‘come aboard’ and we went down aboard. He was bending over working on something and all you could see was this big, broad butt. One of the guys went out and slapped it and says ‘hey, we’re here.’ And tug boat Annie stood up, it was a lady captain ... she was a lady captain of the tug boat. It was a typical tug boat Annie though, she did everything ... well she hooked up with the corpsman; she and the corpsman became an item. She stayed for a couple of times, go over to Shemya, come back over then go back and get a load. One day a bunch of us were over on the other side hiking and fishing on the lake. We come back and here is the carryall over on the side of the road. We started thinking what the hell is going on, something wrong ... we walked over and here was the captain and the chief in the carryall and we just knocked on the door and walked by. After that he didn’t want to talk to any of us, in fact I don’t think she came back after that, but she might have (Swansburg 2011).”

An old sheet-steel-encased Quonset hut on the west side of Casco Cove was a mnemonic to several of the men serving on the island and is mentioned more than once on the website, “Fred’s Place”. The building was known alternately as the Love Shack, Stabbin’ Cabin, and Love Shed, as well as several other monikers. Several of the men told the investigators that

women once served on Attu, but “they all left pregnant.” There is no evidence to support this unlikely claim, and indeed repeating the myth only perpetuates the stereotype of women serving in isolated duty and reinforces the men’s prejudices about women serving on isolated duty. Regardless of the evidence to the contrary, the legend will live on in the minds of the men that served on Attu Island.

The idea that women occupied the minds of the men stationed on Attu Island is obviated by the LORAN station’s mascot... the “Horny Bird.” As a matter of fact, the Coast Guardsmen on Attu even designed their own unit patch displaying the Horny Bird. Unfortunately, no women were interviewed on this subject.



Figure 5: LORAN Station Attu’s “Horny Bird” unit patch



Figure 6: Attu's legendary "Stabbin' Cabin"

According to Chief Warrant Officer (CWO4) Jesus Mesa, CO on LORAN Station Attu from 1999 through 2000, in an e-mail message to Leonard Voellinger, October 2011, "We had a female corpsman on station. Absolutely no problems during her stay. I allowed her to keep a dog onboard for her safety and protection."

When facing the prospect of being stationed on LORAN Station Port Clarence, LTJG Tammy Rose said,

"I was really beginning to worry about what was going to happen to me. Am I going to get mugged, or raped, or what? But, when I started thinking about it recently, then it was really an unreasonable thing to think. I don't think that would ever happen. Nothing physical. I don't believe I will have any problems because I'm the CO. That will set off just a little bit more. So, if they don't want to obey the order of a woman, they will obey me because I'm the CO and I have the Code of Military Justice Behind me, backing me up, and of course the District Commander backs us all up. So, I'm not really worried about it anymore (Rager and Boatman 1982)."

The very idea that such thoughts could be openly expressed by the company commander of a U.S. military unit would likely be inconceivable to any male serviceman. It is emblematic of how far U.S. society has progressed in the last two decades. According to USCG, managing diversity deals with recognizing and leveraging the differences each [employee] brings to the workplace. It also is about creating an environment that builds on those differences and manages them in a way that positively contributes to the success of the organization (USCG 2009a:30).

In 1993, the U.S. Government initiated a policy commonly referred to as "Don't Ask, Don't Tell." This policy prohibited discrimination against closeted gay or bisexual personnel in the

military, but barred openly gay or bisexual personnel from service, with the intention of ending any harassment of closeted gays. The policy was repealed in 2011 to allow for more open expression of gay and bisexual lifestyles among servicemen.

According to Nigel Barber, “Homosexuality in the Military: An anthropological perspective,” (*Huffington Post*, 11 November 2010 (5:03 p.m., http://www.huffingtonpost.com/nigel-barber/do-gays-undermine-military_b_782350.html) “The enemy of military discipline is not homosexuality, but homophobia. In societies where homosexual relationships are accepted among the military, these boost morale and fighting readiness rather than degrading it. Some of the world's finest fighting units have been enthusiastically gay.” Barber’s perspective, offers interesting support for military policy change and coincidental and convenient timing with the closure of LORAN.

With the repeal of Don’t Ask, Don’t Tell, it seems that open expression of sexual preferences is not necessarily a problematic issue. However, if a study of police and fire departments is considered as an analogy, it was found that few lesbians and gay men announced their homosexuality despite having policies that codified their right to serve (Koegel 1996:137). Koegel found a general awareness that far more homosexuals were serving than were officially known in each of the departments, but in no department did the percentage of openly gay and lesbian officers exceed 0.05 percent.

As one LORAN serviceman explained:

“I certainly got hit on a couple of times. I was 18 years old so I was like, ‘what the hell did I get myself into here!’ This is not a good situation but I stood up for myself and kicked someone in the face ... I mean like some guy coming into your bedroom at night and jumping on your bed ... making an advance at you. Well, it’s like the reality is it’s kind of like the prison attitude, as long as you’re on the guy end of the thing, it’s not gay. And that’s what you hear about the guys on submarines and ships. On isolated duty, especially way out in the middle of nowhere like we were, there was definitely some of that going on (Gray 2011).”

(intentionally blank)

6.0 CHARACTER OF PLACE

The political geographer John Agnew (1987) assigned three fundamental aspects of place as a meaningful location: its location or physical coordinates; its material setting; and the locale of social relations in which people conduct their lives. So a “sense of place” refers to subjective and emotional attachments people can have to a place. According to Creswell (2004), place and landscape are “different concepts in that a landscape is viewed from the outside, while the viewer is integral to the concept of place.” He envisions places as ‘things to be inside of ... a place is not just a thing in the world, but a way of understanding the world’ (Creswell 2004).

Experience is embedded into a space transforming it into a place that holds memories that implicate people and events (Sethma and Lawrence-Zuniga 2003). Places, in contrast with localities, have various facets depending on the perspective. Rodman (1992) used the term “multilocality” in reference to a place affected by the influences of contemporary contexts. Massey (1994) argued that places have multiple identities and are constantly evolving. According to Creswell the most straightforward and common definition of place is a meaningful location (Creswell 2004).

Therefore, place can be defined a variety of ways: it can be based on one’s personal experience, the physiography, economic or commercial resources, political or geo-political history, aesthetic values, viewpoints and view sheds, and even changes over time, but mostly it is the meaning imbued by human experience at a particular location. Rodman insisted that place is a social construct that people impute to their surroundings (Rodman 1992).

According to Wallace Stegner (1994), a renowned chronicler of the American West, “no place is a place until things that have happened in it are remembered in history, ballads, yarns, legends, or monuments.” To those we need to add historic features that embody the landscape’s story of use. Sethma and Lawrence-Zuniga (2003) referred to places where humans document their presence on their surroundings in an enduring way as an “inscribed space.”

Attu Island is inscribed with the scars of human history. The history of Attu Island is one of contested space, as defined as a geographic location that derives its definition as a place from conflicts over social position, control of resources, or access to power (McDonogh 2003). Its earliest known human settlement was by Aleuts for the exploitation of natural resources. Russian settlement at the Aleut Village was followed by Japanese capture of the island and its ensuing re-location of the native inhabitants to a Japanese prison camp. The Battle of Attu left the island imprinted first by the Japanese defenses, and then by the U.S. invasion and occupation. On the island’s eastern end, the hills are pockmarked with battle trenches, foxholes, cemeteries, and bomb craters. The subsequent occupation by U.S. forces left the remains of airfields on Alexai Point, Holtz Bay, and Navy Town. During this occupation, which lasted from 1943 until the late 1950s, the Americans built hangars, piers, storage facilities, fuel farms, bunkers, munitions storage facilities, roads, mess halls, stores, churches, water treatment plants, outhouses, electric and water transmission and distribution lines. Most,

but not all of the buildings were sheet metal Quonset huts, ranging in size and function from small kitchens and barracks to airplane hangars.



Figure 7: Photographs of Massacre Bay from LORAN Station Attu.

The photo on the left is from 2010 and the photo on the right is from 1973 (compliments of Bill Swansburg). Notice the absence of WWII structures in the foreground of the 2010 photo.

ET1 Vince Ornelas was a U.S. history enthusiast:

“I like learning more - I’d never heard of Attu prior to going to Electronic Supports Detachment (ESD) Boston, but my warrant officer and my ET1 had both been stationed out here at one point, but not at the same time ... Once I found out there was a major battle, the Japanese invaded, and I heard a little bit of the history, it intrigued me. Growing up the primary focus on WWII was on the European duty as opposed to the Pacific duty. Everything is focused away from our real history so I wanted to learn a lot more about this (Ornelas 2010).”

He continued:

“It’s impressive to see what they all went through when they came over. I mean, when I do my hiking, the majority has been in the summer months when yeah, you’re dealing with tundra but it’s not really that bad. I’ve got all my warm clothes on, I’m wearing a lot warmer clothes than what they were fighting in, and I’m not getting shot at. That’s probably the most important part about it, and trying to hike up these mountains. They’re pretty steep, so try to do that in the snow having to worry about sliding down and at the same time having to worry about somebody else shooting at you—it’s insane ... And they did it, and they were successful. We actually, granted it was the second toss of battle overall, we lost a lot more people to not being properly supplied with clothing and stuff, so it’s impressive what they were able to do (Ornelas 2010).”

Attu Island offers a barren landscape broken by remnant features of the considerable military activity that has occurred there since the mid-twentieth century. The open landscape of Attu Island serves as a mnemonic device for telling stories of WWII as well as the Alaska Native settlement. Attu's military cartographers used the landscape for recounting historical events. Attu has been inscribed by its history to tell the stories of the successive occupants. The landscape encapsulates the ideals of soldiers stationed there. Trees, hardly taller than a man, were planted by soldiers who were bored with the treeless Arctic landscape more than 50 years ago. Names such as Engineer Hill and Massacre Bay tell stories of the battles that took place.

ET1 Ornelas talked about exploring the island and identified several place names:

"I've been to Murder Point, Temnac Valley, Holtz Bay, and the East Arm. I didn't make it over to the West Arm cause most of my hiking has been centered around fishing and hunting. I've been out to Chichagof over towards ... Lake Nichols. Haven't been up on Point Abel yet or out to Alexai Point, but I've been hiking all over and the C-130 crash site (Ornelas 2010)."

The contrast between Attu and Shoal Cove was noticeable. Shoal Cove, with its limited vistas hemmed in by its dense forests of fur trees, was claustrophobic, while Attu offered views for miles. Attu activities tended to be centrifugal, focusing on the external place, while Shoal Cove's were centripetal. Shoal Cove was a "job," a place to earn a living. While Attu physically challenged its inhabitants and drew them outward to explore its landscape and history, Shoal Cove encouraged a more internal experience of work and hibernation. More importantly, while Coasties at Attu were there 24 hours a day, the Coasties stationed at Shoal Cove were generally only there for the week and in Ketchikan for the weekend.

One of the traditions at LORAN Station Attu was to leave your name plate in a particular location that had some specific personal meaning. A lot of thought appears to have gone into where the nameplates were left. SN William Sniffen explained, "I've already counted over 100 either on station or off station; there's some just around on top of the mountains and everything too." He added, "The nameplate is kind of a tradition; you don't typically put up your nameplate until you finish your tour, your time here" (Sniffen 2010).

SN Charles Conant explained,

"The day that you wake up to leave on the flight is the day that you can put up your nameplate anywhere on this station. If you wanted to, you could put it on like the back of a door somewhere, put it up on the ceiling, absolutely anywhere you wanted to put it because that's your right, you stayed out here. It's just one of the privileges you get (Conant 2010)."

Contrasting opinions of each base exist. According to McDonald (2011), "[Attu] was a beautiful place. Nobody was ever sick; I think it was the most healthy place I had ever been in my life. It was just gorgeous." He relayed fond memories: "A ship came in once and we took our baseball gloves and bats and said 'Hey, you want to play some softball?' And they said,

‘It’s rainy and foggy.’ And we said, ‘It’s always rainy and foggy. Wanna play?’ (McDonald 2011).”

Alternatively, according to MK3 Ledbetter (2010), “Just a job, it is just a job. Don’t get me wrong, it is beautiful; I just miss the fact that I can’t get in my truck and go to the golf course.”

MK3 Turcott said:

“I would like to come back here if I could. Actually, if this station were staying open, I’d stay a couple more times. I absolutely love it out here. Not everyone can look out their window and see an ocean. It is not every day that everyone can walk outside and step into 180 mile an hour winds. Not everywhere can you walk out your door and see mountains covered with snow ... Just being able to go out (Turcott 2010).”

Health Services Technician (HS2) Brian Maksin (2010) liked the solitude offered by isolated duty on Attu Island: “It’s beautiful out here; I love coming out here in the wintertime. It is one of the only places where I can do some real backcountry snowboarding without having to worry about other people being around and getting in your way.” He later added, “It’s the feeling of freedom, independence, you’re out here by yourself doing your own thing not having to worry about anything else going on.”

7.0 ISOLATED / RESTRICTED DUTY

Generally, serving on a LORAN station was isolating, but LORAN stations were operated by USCG units that functioned under different degrees of isolation. Some stations were isolated by geography, while others were isolated by technology or culture. The degree of isolation ranged from those located within or near cities, towns, or villages that functioned like the common western society workplace with a factory or business office where workers commute daily. Semi-remote stations had weekly transport, and remote stations had transportation only bi-weekly or monthly, same goes for supply delivery. As one of the last three operational, isolated, restricted-duty LORAN stations, Attu was the most remote. According to a soldier stationed on Attu Island shortly after WWII:

“Ninety percent of the soldiers who have “done time” on Attu ... would probably vote for it as the most desolate spot in the world. I must admit my first view of the island was not inspiring. A heavy fog obscured the mountaintops and a stiff wind blew cold rain into my face ... As I stepped into the pier I heard two men already cursing the luck that had sent them to this Godforsaken place (White 1947:14).”

Each LORAN station was run by a crew of USCG enlisted men and officers or warrant officers. There were twenty servicemen on Attu including officers, electronics technicians, engineers, mechanics, firemen, a medic, a storekeeper, and two cooks. Crewmembers typically held an eight-hour workday. In the evenings, or when off-duty, most of the crew would participate in extracurricular activities that varied according to the season. Hiking the island and fishing were popular sports in the summer; snowboarding was popular in the winter. Throughout the year, the crew could relax in the station lounge, or “rec-deck,” which included a movie screen and movie theater seating, a beer bar, and a convertible pool/ping-pong table. Internet service was made available to the crew for personal use beginning in 2004, which helped lessen the impacts of seclusion.

The crew stationed at LORAN Station Attu depended on USCG Air Station Kodiak to bring in supplies every two weeks. These flights were the crews’ primary contact with other people for mail, food, supplies, and travel to and from the island. Occasionally, researchers and bird enthusiasts visited the island or sailors used the island as a rest stop. The Japanese have visited to recover remains from the Battle of Attu.

Ron Caswell recalled “mail call” in the 1970s:

“Mail was a big deal. Reeves Aleutian Airlines came in twice a week (weather permitting), which meant about once a week. We got an airplane in and they’d bring the mail bag into the quarter deck, that front room right in front of the galley. They’d bring in the mail and one of the petty officers would open up the mail bag and say “Smith” and hand it. And we would all be in line all the way around that room, and that was the coolest thing. They wouldn’t pass out the mail until we unloaded the airplane and got everything up [to the station]. Then we got our mail, and that was our connection to the outside. We didn’t

have internet. Mail was our connection to the outside world and I think that's what I miss the most about back then Caswell 2011)."

Along with Attu, Port Clarence and St. Paul were the only other two isolated duty LORAN stations in USCG, meaning that all crewmembers lived on the station in barracks for one-year tours of duty. All three stations depended on C-130 aircraft from Kodiak for logistic supplies.

Conversely, LORAN Stations Tok and Kodiak were near towns with community services and public infrastructure. Meanwhile, LORAN Station Shoal Cove was a hybrid of the two station types, where most crewmembers lived in town (Ketchikan) while off duty and at the station on Shoal Cove, which was isolated, while on duty.

The CO of LORAN Station Shoal Cove, ELC4 (an electronics specialty designation) Greg Enters (2010) described the workday schedule in Shoal Cove. He said:

"The schedule is from eight o'clock in the morning to about eleven thirty ... we break for lunch ... then we go 'til four thirty and then dinner is at about five o'clock or so. It's an early dinner, but that is for the cook since he is up from six, so he works twelve-hour days. We do reveille in the mornings and taps at ten o'clock at night.

"Even though we get to go in on the weekends, we are all here during the week ... so I live out here but get to visit my wife on the weekends. We're spending more time together out here than with our families (Enters 2010)."

James Carter (2011), stationed on Shoal Cove from 1982 to 1983, told about the schedule at Shoal Cove during those years. He said:

"The regular crew spent half- time out there, the E-6 and below. E-7 and above, which was only three of us, we went out Monday and if the weather was nice and our work was finished we'd come home Thursday afternoon, and if it wasn't we'd stay 'til Friday, and if it still wasn't we stayed there the weekend. In the winter months it was touch-and-go there a lot of times."

Isolation can be from the extreme remoteness of the station, race or gender, or even cultural or religious background. Stations rated as "Priority 1" for re-assignment granted those serving the ability to choose their next assignment. However, some stations that were not rated Priority 1 such as LORAN Stations St. Paul and Port Clarence may have had small villages nearby but no real opportunities for interaction with family and friends outside one's USCG unit.

"It was obviously very isolated. We didn't get any radio, television, or telephone so we were about as isolated as you could get. We could do a phone call, but it was through a radio so technically it would be a radio patch. There was very little communication except for letter writing. It was a very interesting time (Gray 2011)."

Coasties serving LORAN duty coined the term “LORANimal” to describe themselves: a LORANimal is someone who lives in a small group of 20 or so people in close conditions in isolation or with limited contact with the outside world, in sometimes extreme and unfamiliar weather conditions. It is a state that evolves from loneliness, isolation, redundancy, monotony, tediousness and job repetitiveness with nothing to do between watches, resulting in insipid boredom and lifelessness exacerbated by excessive beer drinking. Ultimately it progresses to self-reliance and extreme camaraderie with other LORANimals, and contempt for anyone who’s not a LORANimal. According to at least one of the Coasties, “LORANimal” status can only be obtained by completing two one-year tours of duty on a LORAN station (CWO Wills 2012).

Mark Ridgway, the LORAN Base Closure Project Manager, described them as “a very unique bunch and very dedicated to maintaining that signal and at whatever cost—and it had cost. They were out on these remote stations for a year at a time ... it took a certain kind of person to support LORAN.”

Gary Thomas, USCG Historian, added, “to understand what a LORANimal is, you have to realize where they were. In addition to Attu, there were places like French Frigate Shoals in the middle of the Pacific, Japan, Spain, Italy, Germany, Iceland ... These people were serving for a year at a time out in the middle of nowhere. But once it got into your soul ... LORANimals were a tight group of people” (Thomas 2011).

7.1 EFFECTS OF ISOLATED DUTY

Although the current study specifically focuses on LORAN-C, all of the early bases transmitted LORAN-A. Nevertheless, whether the signal was A or C, the duties and issues facing life on an isolated base were the same. Moreover, there was a period of as much as 20 years where stations transmitted both A and C signals to facilitate the transition of receivers. Additionally, although the USCG had assumed responsibility for the U.S. Navy’s LORAN stations, the U.S. Army and USAF also operated LORAN stations. The U.S. Army Airways Communication System (AACS) was established in 1938 to facilitate air traffic among U.S. Army flying fields in the continental United States; but by the end of WWII it operated control towers, radio ranges, homing beacons, LORAN installations, instrument-approach and ground-control-approach facilities, and elaborate message centers in many USAF installations including those in Alaska and Canada (Craven and Cate 1948-1958:343).

In 1947, the Human Resources Research Laboratory, Strategic Air Command, USAF conducted a psychological survey of Arctic Air Force LORAN stations along the Alaskan Beetle and Canadian Muskalf Chains which were being run by the USAF in the late 1940s (Pinks 1949). The Human Resources Research Laboratory study included surveys of five LORAN Stations, including two in Alaska and three Canadian stations (Pinks 1949:5).

The study involved a USAF psychologist spending a week or more at each base to observe conditions and behavior. During that time, he administered a questionnaire, recorded motion pictures of base conditions, and reviewed personnel records obtained from the medical

officer. Much of the study addressed facility conditions, personnel character, attitudes and preferences, the base's proficiency, and efficiency, morale, leadership, and discipline. The recommendations ranged from a period of acclimation to adjust to the effects of continuous daylight in Arctic summers on newly arrived personnel (Pinks 1949:5) to more scrutiny in screening personnel selected for isolated duty.

The study's number one recommendation concerned leadership. It found that "good officers were apparently just as important as living conditions ... as morale was just as high at one of the poorest constructed Canadian stations and not so good at one of the better constructed Alaskan stations" (Pinks 1949:3). The study found that "the leadership ability and common sense of the detachment commanders appears to have a greater than usual bearing on morale and efficiency of isolated personnel in the Arctic (Pinks 1949:6)."

Another important finding was that older men with families were less well-suited for long-term isolated duty. One issue was an indefinite policy of tour of duty and leave in effect at that time that had an adverse affect on both the subject and their families. Family conditions or problems at home were important influences on morale and efficiency. It was recommended that extreme care be taken to see that each man completed his personal affairs, etc., prior to departing for the Arctic, and not be involved in legal proceedings or outer troubles requiring correspondence or personal attention which could not possibly be rendered in extremely isolated locations (Pinks 1949:5). The study further recommended that "care should be taken to avoid the selection of personnel with records of drunkenness or serious misconduct of any sort when screening men for Arctic duty" and "those with excessive family or personal problems should be rejected" (Pinks 1949:6). They also determined that younger men who had not established "definite sex patterns" are much more content with isolated duty, than married or older single men (Pinks 1949:4).

Not all family problems could be settled before they got to the station. According to one Coastie, isolated duty played a heavy toll on the morale of married men. He said,

"The morale started to go down because the married guys wanted to talk to their families. And they hadn't a way of doing it, and half the station was married. So about half the guys were married and they'd get letters whenever a ship or plane would come in ... One thing I'd say about the wives, there was none of them that I think would realize what their husbands are going through. It was always, 'Oh Johnny broke a tooth and I don't know what to do' or 'the U.S. Navy is taking me to this tour ... what do I do'...they dumped so many problems on the guys; I never, never saw anything like it (Swansburg 2011)."

"On a ship you get to see people" explained Attu's cook (Clingerman 2010). He went on to elaborate on the situation:

"But there are days when you are underway, and it feels like you are going in a big circle with nothing to see. You got the same thing, reveille, clean-up, lunch, clean-up. So you got no variation, you're stuck in the same rut and it happens. Here you got better communication, but you can't see people. You

can call people, e-mail people. Here you can go for a walk, or go to your room. You can go hide out if you want to. On a ship, there's no peace time. You have a birthing area, 8 to 21 people. No peace time. You got a little bunk that's like 8' by 3'. You can close the curtain, but that's not really peace time. On a ship you can't hide nowhere."

"I feel more attached to the island than repelled," said Vince Ornelas (2010). "The only thing repelling me from the island is the fact that I'm away from my family. I tell my guys a lot if I can have my wife and my son out here, you can put me on here for a four-year tour and I'd be happy."

ET2 Kinzel used his year on LORAN Station Attu to catch up on his reading. "I do a lot of reading," he said. "Yeah, I have a big stack of books. My dad's a bookaholic, so he sends me lots and lots of stuff to read." He added, "I just got divorced before I came out here. I do have an ex-wife and 3 kids. I took care of all that before I came out here, which is actually one of the reasons I chose to come out here. I needed to get away, you know, do a little self-discovery for myself (Kinzel 2010)."

Others enjoy the solitude offered by an isolated base. SK2 Sippy (2010) described, "times when I do like to go hike by myself, and so I've climbed some of the taller hills around here that are just shy of 3,000' and just kind of sat and talked to the little birdies flying all over the place and, you know, just thoughts."

Before cable TV and the internet arrived at the remote LORAN stations, communication was significantly different. In a report of the conditions at the old LORAN-A Station at Theodore Point on Attu, transport between the Naval Air Station (the LORAN-C Station) and Theodore Point was "by means of a ship coming within one mile off shore from the station site, this necessitating a dory, manned with oarsmen to make contact with the ship and row all supplies ashore." This trip was so treacherous that mail had not been received or left the island over as long a period as three weeks (USCG 1946a). The quickest way one could contact the outside world from Attu Island was short-wave radio, but the stations did not always have an operator, or at least a "licensed" operator (Swansburg 2011).

Bill Swansburg told of such a time:

"I said, we got the damn radio, can't we go on the air? [The CO said] no, 'the FCC you know...we need to be licensed.' And I says, what do you mean be licensed? So he sent a message off to Anchorage at the time, which was the FCC people, and he said, 'I'm going on the air whether I'm an licensed operator, KL7CGB, if you don't like it tell the captain of the Coast Guard, my boss, and I'll shut down.' Well, I ran it for about two weeks and I could get all the stations that I would get. At first I would introduce myself to tell 'em that I was not a licensed operator and I would do whatever they told me to do. They would swing me on different frequencies. The hams were tremendous ... Oh, they were great. Even Anchorage said there was a two-week grace period ... and we got all our married guys talkin' and then we went to the single guys. I

talked to my mother and father in Westwood, Massachusetts. The guy came on pretty good and I remember he was in Pennsylvania or West Virginia. I don't remember which one it was ... and he was on every night and he was looking for us...you could hear him calling for us. It might be on somebody else and then the operator receiving could hear him call on the frequency I might have used before, always looking for a phone patch. What we would do, they had a rig on their phones or on their stations and they could go on their telephone company or on to the phone and they paid wherever they were to my house or somebody else's ... they paid it ... we never paid a penny ... they paid all long, it was just absolutely great. Nobody ever asked us to pay for it and we'd offer and they'd say 'taken care of' ... 'don't you worry about it.'

A few years later that radio came in handy. As Dave Meredith (2011) told it, “We had this guy named Boats (nickname) and he was from Eugene, Oregon. While he was up there, he found out his girlfriend was pregnant. So the radioman got up there on the HAM operator and they got married over the HAM waves.

The interviewer asked, “So then he didn't see his child until he got back?” To which Meredith replied:

“Yeah, I mean he got pictures and that. And his parents must have been wealthy because he really liked Tootsie Rolls. And they didn't send him just a pack, they sent him a gross. That's 44 boxes of them. He had them stored all over the station. He had one stored on the seismographic station down on the dock, they were like all over the place because there were so many Tootsie Rolls. I think we ate them all, too.”

Moreover, by the mid 1960s the HAM operators were licensed. “They went through different stations—they could talk to different people, and they relayed everything. And we'd be up there too and the radiomen that we had there were licensed to operate it. We were listening to a lot of Russian conversations; we got a lot of them (Meredith 2011).”

Even though LORAN Shoal Cove is not considered to be an isolated base by USCG, it can be socially isolating. ET2 Walter Thomas was the only black Coastie serving at Shoal Cove; he served there from 2009-2010. He explained, “I like meeting women. It is not happening up here. Since I've been up here I have no desire to go out and do anything. I am just looking at the calendar. Everything is at a bar. Up here, I just quit drinking. I do like my beer and once I get to San Diego I'm sure I will go back to enjoying one every now and then. Since I've been up here, I have no incentive” (Thomas 2010).

7.2 COPING

Several of the men were asked about how they coped with being isolated or away from their families for long periods of time. Coping mechanisms ranged from reading to taking up a hobby, but the most common seemed to be just keeping busy.

ETC Ray Fillion (2010), the Executive Officer at LORAN Station Shoal Cove, said:

“One of the techniques is we concentrate on work. If you have idle people they’re probably gonna be homesick. So we try to avoid that and work on professional development and try to develop some leaders...There are a lot of opportunities to do things and people just need to sit and think about it, what they want to do. They can do it out here if they want. They can do projects or they can just do routine, or do training and some of these things [they do here] they wouldn’t get until they were first class, but you have the opportunity to do a lot more here (Fillion 2010).”

Ornelas (2010) cautioned:

“Not so much you have to guard yourself, but you just got to be mindful cause again, it’s not like a normal unit where you can go home at the end of the day and you don’t have to see anybody that you’re working with. The guys that you might be upset with are the same guys that are in the same building with you until they leave on mid-tour or get PCS (portable computer system) hours, or you leave on mid tour or get PCS’d (permanent change of station) out, so you can’t really just blow steam at them immediately because there is no time to recoup from it. So it’s not so much you have to be guarded, you just got to be a little bit more mindful of the fact that yeah, you may be upset, but they’re probably upset, too, and things can escalate pretty quickly if you don’t just take a step back and focus on what’s important, which is your line and your wall (Ornelas 2010).”

Meredith explained:

“It was bad. I mean, when you’re 18, 19, you do not want to be on Isolated Restricted Duty. You’d rather be in Hawaii or something like that. I thought it was terrible. I only saw one ‘crack.’ He’d done a couple of years in the service and they kind of took him off on a medical leave. He broke ... he’d just sit in his bunk and cry.

“There was one guy who rotated out when I’d been there maybe two months. They said he did three things: he worked, ate, and slept. When he didn’t have anything to do, he slept. He just slept all his idle time away. I don’t think I ever saw him.”

When asked if he had any regrets from his time on Attu, Alex Limonte (2010), the LORAN station’s executive officer, responded, “Well, I don’t know if I call them regrets. I mean there are unpleasantries that come with the job, but you got those anywhere, so I wouldn’t say regrets. No, I mean compared to my options, [this] couldn’t be better; [I] couldn’t be happier.”

When queried about the unpleasanties, he responded, “Well just isolation ... I mean ... things you normally would expect; you’ve got the isolation. As much as I love these guys, I don’t love seeing them every day, you know. Every time, any little thing you do, you’re with the same guys all the time. That gets old. On board a ship ... you get to go home after a couple of months (Limonte 2010).”

According to USCG, “the inability to achieve work/life balance drives employees to seek opportunities outside the company. In fact, work/life balance is often more important to retention than compensation and benefits. Nevertheless, work/life balance is one of the hardest things to achieve (USCG 2009a:20).”

Some individuals just don’t fit in. Bruce Gray (Cape Sarichef 1976-1977) said, “It was a very interesting time. There were some guys there that seemed like they had a few screws loose and when you’re on an island in the middle of nowhere with some guys that are a little off, it kinda scares you a little bit. I thought it was a very interesting year (Gray 2011).”

He added, “We had one guy there, I don’t remember where exactly he was from ... down south somewhere ... but he was just a nasty person. He used to go killing pets around people’s neighborhood and he was just a scary dude. When you’re out in the middle of nowhere, and you’re not allowed to go outside without a gun because of bears and wolves ... everybody had guns (Gray 2011).”

There are people who cannot cope with isolated duty. According to Jeff Rosenberg (2010), LORAN Station Attu CO, when asked why one of the men on the roster was no longer present; he responded, “Some people just can’t do [isolated duty].”

The Executive Officer at LORAN Station Shoal Cove explained:

“I think it’s a natural tendency for people to be comfortable with what they know and in this job, you kind of have to go outside of what you know and keep learning to be effective. Here, where you have the time if everything is running smoothly, it’s a great place to be because you’re on detention out here in the woods ... and a lot of people do step up to it, a lot of them do, I would say, 90 percent. A very small percentage feel that it’s not for them; they want to stay in that comfort zone (Fillion 2010).”

FN Ryan Mills (2010) who served on Attu from 2009-2010 was ambivalent on his stay at LORAN Station Attu. He first referred to his time there as, “Unluck of the draw” and then added, “Actually, I feel lucky that I am here. Attu was my 12th pick ... [now I see that] it is incredible. I’ll never get to be in any other place like this.”

When asked how he liked isolated duty, Food Service Specialist (FS3) Banks (2010) responded, “It’s grown on me here. I didn’t like it at first just being away from everybody ... being away from society, but it’s, it’s not too bad. It’s nice and quiet, so it’s a good change of pace from normal everyday life back in the states.”

By the summer of 2010, when the investigators visited the LORAN stations on Attu and Shoal Cove, both stations had movie theaters well-stocked with digital movies. The theater at Shoal Cove had been packed for transport by barge to Kodiak, but Attu's theater was still in nightly use. Although the movie list contained hundreds of titles, "war movies" was the most popular genre among the Coasties. Before digital movies, and the advent of the internet, movie availability depended on physical delivery through the station's regular supply system. Ron Caswell relayed his experience in the early 1970s:

"The airplane brought us 35 mm movies and there's usually three reels to a movie, so we'd go up in the rec-deck and we'd watch the movies. Well the plane would come in and we'd seen the movie twice already. I remember one time we watched a whole reel backwards. [Another] time, we watched the second reel then the last reel, and then the first reel just because we'd seen it ... we knew it ... we thought we would put it in a different order. So we were pretty bored."

He added, "We slept a lot—looked out the window" (Caswell 2011). Another Attu veteran exaggerated, "there was one guy who spent six months sitting on one side of his bunk staring at one wall, then turned around, sat on the other side, and stared at the other wall for the next six months" (Gray 2011).

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8.0 DUTY AND RESPONSIBILITY

8.1 MISSION AND DIVISION OF LABOR

The real mission of a LORAN Station was to provide a signal—on time and in tolerance. In order to provide that signal, a support network was instituted that made a LORAN station function like an autonomous village, completely self-sufficient with one exception: subsistence was based on a dependable supply chain from USCG, so they did not need to farm for sustenance. Moreover, a LORAN station was significantly more complex than a primitive village; it faced all of the rules and regulations of a complex society, and its personnel expected living conditions close to what a modern society offers, i.e., modern infrastructure like plumbing, water and wastewater, electricity, roads, open and functional air and/or water ports, and three square meals per day.

According to an article in the *Coast Guard Compass*:

“Crew size at LORAN Stations varied but usually never more than around eight to twenty-five. The stations were typically commanded by a junior officer fresh off cutter duty and thrust for the first time into the vagaries of running a shore station far away from any higher command. There, they had to deal with all manners of problems—with the equipment or with their personnel—and also act as an ambassador of sorts to the native population as he/she was typically the highest ranking U.S. official in the area (Price 2010).”

The responsibilities for command and control of LORAN stations were organized within four major units including command, operational control, technical control, and administrative control. Within the command unit, there was the CO and the Second Senior Officer (SSO). The CO was assigned by the Commandant to administer the unit by using his/her experience, education, and military authority to accomplish the mission. (His/her lack of technical training in electronics, and/or the presence of technically trained personnel, did not alter this responsibility.) The SSO was charged with assuming command in the absence of the CO (USCG 1965).

Since LORAN Station Attu was the most isolated LORAN station, it provides a distinct model for the administration framework. LORAN Station Attu had twenty personnel within four departments: command, administration, engineering and operations. The person in charge of the Command Department, as well as the entire station, during the authors’ visit was Chief Warrant Officer 2 (CWO2) Jeffery Rosenberg. Under CWO2 Rosenberg was ETC Alex Limonte and MKCS Stephen Strecker. These three persons provided the station’s senior leadership.

The four people in the administration department included the two food specialists (cooks), the storekeeper, and the medic, or “health services corpsman.” Seven personnel comprised the engineering department under Damage Controlman (DC1) Joshua Pinkley, who was responsible for the operation and maintenance of all of the mechanical equipment from motor vehicles to runway lights, snowplows to the generators that provided the station’s electricity,

and the huge diesel engines that ran them. The seven people in the operations department were responsible for the timer and transmitter. The operations department was run by ETs. ET1 Vince Ornelas was the department manager.

According to Chief Limonte, “Here, the Executive Petty Officer (XPO) will usually be the electronics technician and he will normally have had the school for LORAN and pretty much be the department head for the Ops Department. He may not run your day-to-day operations—your ET1 will usually take care of that.”

Within the operating and technical control units, there are the senior technical and electronics technicians, maintenance positions, watch-standers, day workers, and engineman. The senior technical officer administers the operation, maintenance, and engineering of the LORAN installation and training of LORAN operating personnel. The senior electronics technician directs the watch-standing and maintenance functions of the LORAN operations division. The senior maintenance man directs and performs the preventive and corrective maintenance of the electronic equipment (USCG 1965). Additional maintenance men are responsible for the performance of preventive and corrective maintenance under the direction of the senior maintenance man. The maintenance watch is required at all LORAN stations to ensure compliance with safety regulations and requires the presence of two persons during maintenance of electronic equipment. The senior LORAN watch-stander directs the lower grade watch-stander in performance of his or her duties and trains personnel as LORAN watch-standers. Day workers are assigned work and attempt to increase their knowledge of equipment, operation, and maintenance. The senior engineman directs, supervises, and performs generator tests and maintenance to ensure proper and reliable operation of all power generating equipment (USCG 1965).

On social stratification by rank, MK3 Ty Ledbetter (2010) said, “On a bigger unit, I would say yes [there is]. There is a good bit of social distancing. You have to be relaxed out here. There is a balance. You have to keep a professional military bearing at all times and know when to turn it off and on” (MK3 Ledbetter 2010). He went on to explain that being stationed on isolated duty does not affect a person’s ability to achieve higher rank.

ET1 Ornelas (2010) disagreed:

“Well, it might be a little bit slower because I don’t get any extra points for being out here, whereas if I went to a ship, I’d be getting an extra two points a year towards my advancement ... it used to be a Lieutenant Junior Grade (JG) that ran the LORAN stations, but when they were doing that, the unusual time counted against their promotions as well, so it was a lot more nerve-racking. It kind of sucked!”

ETC Limonte (2010) planned his professional advancement after leaving Attu:

“I wanted to basically stay my full tour at Petaluma, and then leave when it was time for me to advance to chief. And so, last year there, I took my test at the right time so that if I made it, I could transfer out as chief and it worked

out ... it worked out all right, so I'll probably go to Key West and stay there for four years. I'll enjoy that tour as a chief the whole time and maybe my last year try to advance again. Then that way when I transfer, [it will be] as a warrant or a senior, either one, we'll see, but that's down the road another four years or so."

ET3 Worthington (2010) described how it is different in a small unit:

"It's a whole different side from the boats to the airplanes. You have your technicians and then the fly guys who are lieutenants, commanders, and then they work their way into managing the station. Then the guys that work on everything, the air crew, would be in charge of the [maintenance] side of how things work. It's completely separated. All the officers are in this building, and the technicians are in that building."

In a 2008 study of police governance through observation, Waters (2008:118) found that "lower echelons have a greater amount of discretion, while higher ranking police officials act within restrictive constraints." In other words, officers and senior enlisted men are expected to adhere to certain behavioral conventions, while junior personnel have more freedom to act as they choose, within society's normal range of acceptance.

8.2 BASE LAYOUT AND DUTIES (INFORMATION FROM ATTU AND SHOAL COVE STATIONS)

From the very beginning of the LORAN program, it was apparent that a typical station would need to consist of several basic components. First, the antenna and ground system for LORAN transmission and receiving would be needed. Second, there was need for a building to house the technical apparatus and communications system; a place to house the diesel-electric generators and other parts of the power plant; a building or buildings to serve as an office and quarters for the officers and crew; and facilities for the mess hall, galley, and sick bay. Sewage disposal arrangements, a water system, and other necessities would also need to be provided.

The Signal and Barracks Building was the largest building at LORAN Station Attu at approximately 29,024 gross square feet. The building was originally constructed by the U.S. Navy in 1949 as an aerological station. In 1957, it was decommissioned as such and in 1961, USCG began using the building for combined LORAN-A and -C operations. The building consisted of three stories and a basement. The basement included the barracks, showers, fitness rooms, a laundry room, a wood shop, mechanical and electrical equipment, timer room, storage space, and offices. On the first floor were the mess hall, galley, storage space, commander's quarters, offices, exchange, more barracks, the sick bay and toilet, vehicle storage bays, a boiler room, and parts storage. The second floor contained even more barracks and a recreation deck; and the third level was the ham deck, which served as an outdoor recreation area.

Randy McDonald (2010) explained the maintenance schedule.

“Every Friday we had a routine, I don’t know what they do now, but whether they needed it or not, we’d cut the decks and wax them. That was the big thing. Get those decks done and everything ship shape and then ‘hey, we got a movie tonight boys.’ You have routines, you get into stuff that you expect, and it was good.

“I changed a couple of lights a few times. We’d have to go down to the transmitter room regardless of the weather. In the winter we had hand lines. We had a neat little enclosed snowmobile with a VW [Volkswagen] engine in it and a gear shift that was backwards. We had old air force tie crawls ... track-driven units to get where we needed to go. We would get white-outs for a couple of weeks at a time. The anemometer would be pegged at above 100 knots. You couldn’t go out if you were right there.

8.2.1 Signal and Barracks Building

At both LORAN stations Attu and Shoal Cove, officers and senior enlisted men had private rooms, although that changed with room availability. On LORAN Station Attu, the lower ranking enlisted men slept two to a room in a facility more like a college dormitory where each double shared a bathroom with an adjoining double. Single beds were on either side of the room, and the desks were in the middle. The single rooms would have had one bed, one desk, a chest of drawers and a locker. Some of the earlier stations had single barracks with bunk-beds. At the earliest LORAN stations where billeting was in Quonset huts, enlisted men and officers and/or senior enlisted men’s billets were segregated by rank.

According to James Carter (2011) at Shoal Cove they had the system work to where it would at least give the men a feeling of privacy: “If you had to have two people in that room you had the other person on the opposite shift, so you were actually there by yourself in a room,” he explained.

8.2.2 Timing/Signal Room

At Attu, the control station, or timer room, was located in the basement of the Signal and Barracks Building. This room housed the timing equipment that maintained accuracy among the various signals. Along with the associated Primary Chain Monitor Site, the timing equipment continually measured the characteristics of the LORAN signal as received, detected anomalies or out-of-tolerance conditions, and relayed this information so that any necessary corrective action could be taken, such as maintaining time differences within specified tolerances. Each chain was assigned a unique group repetition interval (GRI) which, when multiplied by ten, identified the number of microseconds between pulses from a given station in the chain. Because Attu was dual-rated, it was designated “GRI 9990” for the domestic signal and “GRI 5980” for the international signal.

A cesium clock was used because of its extreme accuracy: it generated a 5 megahertz (MHz) sine wave that kept time to fifteen places behind the decimal point. Although extremely accurate, these signals were still synchronized with standard time references supplied by the U.S. Naval Observatory for the various LORAN chains. The timer used that signal to create a 100 kilohertz (kHz) signal that was sent to the pulse generators. The pulse generators modified the 100 kHz signal to compensate for the changes that took place during the amplification processes in the transmitter. The final output of the timer room was the transmitter drive waveform and timing signals (early triggers and early multi-pulse triggers). The two timing signals were used to prepare the transmitters for the transmitter drive waveform so it was amplified.

Interviews conducted with ETs who worked in the timing room portrayed a sincere dedication to keeping the signal transmitting and in tolerance and maintaining their equipment. “All day—there’s always gonna be somebody in here watching this, making sure that we’re in tolerance. It’s kind of a burden on us, but its part of our normal routine job (Ornelas 2010).”

According to ET3 Worthington (2010) at LORAN Station Shoal Cove:

“The LORAN system has to be very accurate to give direct locations within the guaranteed tolerance. When you guarantee within a third of a nautical mile or a quarter of a nautical mile, to keep that within that tolerance we have to be within 100 nanoseconds, which is really hard to do. The equipment in here helped us to do thatwe had three that oscillated with cesium. What those do is generate a 5 megahertz signal and then it went from there to phased micro-steppers. They would keep the cesiums in line. It would then go to the LORAN timers where it would generate the specific wave forms that our transmitter needed to put out the signal correctly.

“If something broke, the alarm would go off and we would go over and check what’s wrong and fix it as fast as we could. We have like two of everything so if something is bad we just switch to the good one, and then fix the bad one and switch them back. Its pretty fail-safe system as far as reliability.”



Figure 8: ET3 Conant records signal and timing data while SN Hamlin, FN Mills and ET1 Ornelas supervise

Randy McDonald (2011), stationed on LORAN Station Attu from 1971 to 1973, stressed the importance and difficulty in maintaining the signal:

“We know that people’s lives depended on what we did with that machine. Like I said if your signal got out of tolerance and we blinked our signal, we knew lives were in danger ... we had to get that thing working. You know, a little error over thousands of miles could mean running out of fuel and the like. We were well aware of the importance and that kept us going. There were times when we didn’t want to be here, but we knew people were depending on us and we couldn’t stop. That’s all there was to it. The scariest moment out there, I think, Nixon was the president, and they mined Hanoi harbor and they raised the Def-Con level and I don’t know why, but all of us sort of got down. We’re way out there and nobody was going to bother us, but it just sort of bothered us. “

McDonald continued:

“You had ships in the sea and planes in the air, and that signal could not vary. We had an oscilloscope and it had a peak with a certain tolerance, and if it got off the tolerance, we had to hit a blink switch, and that would tell anyone intercepting it that the signal was not accurate. Then we would have to get that baby back in there. The atmospheric, oh my lord, up in that part of the world would just rip our signal apart and it would be an hour sometimes ... it wasn’t the machine, we’d just be manually tuning the transmitter.”

He described what it took to put the signal back in tolerance:

“You literally took it off auto and manually adjusted the signal strength, the various adjustments you could do to get it back where it was supposed to be. Basically you band-aided it until the atmospheric passed where they needed to be, then you threw it back on auto mode and it could take care of itself. There were signal blocks up in the movie room and if you heard three horns and those lights went off, you got down there fast to see what was going on. We had LORAN-A and LORAN-C. I don’t know if LORAN was still there in later years, but just below the station towards the water was a LORAN A tower, the shorter one (McDonald 2011).”

Meredith recalled:

“I remember when the signal would go down and all the alarms would go off. There'd be hell to pay if you weren't broadcasting a signal. It would always need investigations when it went offline, even if it was for thirty seconds (Meredith 2011).”

When discussing the possibility of a system failure, ET1 Ornelas (2010) explained that one option was to switch timers, but another was to go into a different control mode called Delta. ET2 Kinzel (2010) explained that the control modes included Alpha, Bravo, Charlie, and Delta, of which Alpha and Delta were the two most common. In Alpha, NASA was remotely monitoring the signal to make sure it was in tolerance. In Delta, the signal monitoring was up to the station.

Security Control of Air Traffic and Navigation Aids (SCATANA) was yet another control mode where LORAN stations were secured to prevent anybody else from using the signals against the U.S. In this mode, the LORAN station would contact the duty technician, and as soon as the call was made, an alarm would sound, and both transmitters would be stopped remotely. The electricians would wait for orders to turn them back on. According to ET1 Ornelas (2010), the last time anyone on base had heard of going into this mode was on 11 September 2001.

8.2.3 Transmitter Building and Antenna

Many of the original LORAN-C transmitter buildings were constructed in the 1950s and rebuilt later. The transmitter building at Attu is a 3,851-square-foot concrete structure without windows. It was built in 1995 to replace an older transmitter building.

Along with a small number of other stations, LORAN Station Attu operated the AN/FPN-44 tube-type transmitter, as opposed to the later solid-state transmitters, until decommissioning. The function of the transmitters was to amplify the LORAN-C signal pulses at precise instances in time, monitor the developed signal, and transmit the signal pulses through an antenna. The transmitters received shaped drive pulses from the transmitter control and provided high level amplification via vacuum tube power amplifiers to increase the signal

level to sufficient amplitude to drive the transmitting antenna. Tuned circuits in the antenna coupler matched the output of the operating transmitting group to the antenna. The signal was then coupled to the antenna or standby load. The output of the standby transmitting group was switched to the “dummy” load by means of vacuum relays.

The Antenna or Tower, now razed, was a 625' tower comprised of galvanized steel structural members anchored by guy wires. The tower featured a ladder, safety rail, and lighting system and was painted entirely in orange and white aviation warning paint. The base of the tower consisted of an approximately 10' × 10' reinforced concrete foundation which supported a fiberglass rod insulator, from which the tower rose. It was connected to the Transmitter Building by the signal feed line. The tower was demolished on 27 August 2010.

When Ornelas (2010) was informed that 2010 would be the last year for LORAN-C operations, he requested another year of duty on Attu so he could be there when the watts were shut off and the tower fell. As the ET in charge on the island, he'd grown to revere the tower. He described the tower at LORAN Station Attu during the author's 2010 tour of the facility:

“It's a 625'-tall tower, the actual antennae tower. It's got the guy wires in all directions that actually keep it up in our 180[-mile-per-hour] plus winds. We've actually seen that thing sway before whenever it does get high winds – rather interesting. If you look close, you might not be able to see it, but you never know, but there're the actual aviation lights. There are five sets of them all the way to the top, and we actually have an order that they go in to actually tell the plane that this is a tower lookout so try to stay clear of it. The very top one and the second from the bottom of the set of five are both blinking. The other three sets will constantly stay on. If any of them go out we would have to climb the tower and replace the light bulbs.”

When asked if he had ever climbed the tower, Ornelas responded, “I don't get to because I'm not qualified to climb it, but whoever we have on station who is qualified to climb the tower would go up there.” Ornelas further explained tower safety: “The tower actually transmits out around 650 amps [amperes]. If you're not insulated from ground, probably you will die, you would actually light on fire.” He continued:

“For tower safety, as far as climbing it, we have to use a power glass slider leaning up against the tower. We have a harness on that that has a deceleration. You climb up, you go to grab the tower with authority, there's no hesitation. You will feel a static shock as your body gets brought from 0 to 425, which is what our tower is at. Then you climb the tower like you're climbing any other structure all the way up to the top. Do your work on the way up, check all the lights make sure that the solid lights are actually two lights side-by-side and that's on all three legs so if one burns out it has a relay that will switch it over to the other one to keep it lit. So when we do our preventative maintenance up there, we're just checking to make sure that A) the relay still works and that B) none of the lights are burned out. The blinking lights only have one light bulb so if that goes bad, you'll see it, and if they go bad and we

cannot fix it within half an hour, we have to notify the FAA, specifically the FSS—Flight Safety Services ... Coming off it's the same idea as when you get on the tower let go with authority otherwise you will feel static shock and these two can attest. Last year you guys had it pretty good. Nothing lethal – it's just like a static shock, like rubbing your feet across the carpet and touching somebody, but 20 feet up I heard them – it was pretty funny."

Ornelas (2010) described the process for changing light bulbs on the tower:

"For the solid ones you have to release a latch, the glass and everything is tied off so you can't drop it or it's not supposed to be able to drop, and then just like a regular light bulb, just unscrew it, put a new one in and put the cover back on. The only people that would ever go out on the cables are Civil Engineering Unit (CEU) or civilian contractors. We would never go out on the guyed wires ... Very dangerous."

Lt. J.G. Sarah Petrella, the current Planning Branch Chief, Coast Guard CEU Juneau, was a tower engineer and has climbed most of Alaska's LORAN towers (including Attu's). She explained, "If you don't hook yourself to the tower and you don't think about it, you could potentially fall a really long distance. It's seven feet across a LORAN tower, so you could be banging off of the inside of the tower as you fall. She added, "It's also electrified, so if you get on the tower wrong you can shock yourself pretty bad. I'm pretty sure it would kill you" (Petrella 2011). She explained further, "It is safe, if you do it right. You get a full body harness, with lanyards and carabineers." She continued:

"They have a fiberglass ladder, so you're never grounded. You climb from the ladder to the tower, never touching the tower and the ground at the same time. You have to put your hands on it really fast so it won't shock you... You have to just be slow and decisive. Like okay, I'm going to unclip this hook, but first I'm going to clip myself in over here and then I will unclip this one, so I'm always attached ... the lanyard is a real short one that goes from one side of your hip to the other so you can attach yourself and use your hands, so you kind of find somewhere to hook yourself up. Then you can work or change a light bulb. You have to tie all the tools to you with like little pieces of cord and make sure you don't drop any of it (Petrella 2011)."

Petrella described her job as:

"To climb the tower and look for corrosion, rust, bolts coming out, the lights being cracked or whatever, just general broken stuff. Around the base of the towers are concrete anchors holding the guy wires. Make sure those are not falling apart, splitting or coming out of the ground. Then the guy wires are actually tensioned to certain poundage, so you make sure they're not pulling the tower over one way or the other (Petrella 2011)."

When asked about the duty hours, Gray (2011) said:

“Well you know I worked my tail off and we worked long hours every day. I was an ET, you know, so I was operating the LORAN equipment, fixing it, maintaining it, and also doing radio watches. We had an ET Chief there then, like three of us ET3s, and when you’ve got a twenty-four-hour watch, that rotates in to at least eight hours a day just for your watch not to mention other duties ... anything, you know somebody else got sick you’d have to work even longer hours. I worked a lot. I think I had maybe a day or two off the entire year.”

8.2.4 Generator Building

The Generator Building at Attu is connected to the Signal and Barracks Building. Inside, three generators sit on isolated, elevated slab-on-grade foundations. According to MK1 Joseph Richie (2010), “Big, sixteen-cylinder diesel engines ... [are used] ... to power the station ... One is on immediate standby, and the one constantly running 24 hours a day. If one goes down, it would kick it to the second. We would almost certainly be there by then, but it would automatically kick it to the third. We put out 60 hertz (Hz) and generate 400 to 500 amps.



Figure 9: MK3 Bagtas performs maintenance in the Generator Room at LORAN Station Shoal Cove.

According to CWO Rosenberg (2010), “It takes about 230 kilowatts to run the station [Attu], and the remainder is standby ... auxiliary wait and reserve.” He says they burn through anywhere from 300 to 400 gallons of fuel per day, and explained that the newer stations have facility battery backups for the transmitter, but Attu did not have that installed.

MK3 Turcott (2010) explained the generators:

“Generators take 70 to 80 gallons of oil, and we change them every three weeks. Every one generator we run 24/7 for three weeks. Every 500 hours, we change the oil filters and oil; every 1,000 hours we do the fuel filters. We haven’t done a major overhaul. When they overhaul the engine, Caterpillar comes out to rebuild engines. The furthest in depth I’ve gone is to replace a fuel injector. A fuel injector broke so I had to take off the valve cover, valves, rocker arms, and take out the fuel injector. If it was something like a crank shaft or cam shaft, then Caterpillar would come out to fix it.”

8.2.5 Galley

The Modern LORAN station galley looked and functioned much like any small commercial kitchen in the U.S. It has stainless steel stoves, ovens and dishwashers; large sinks for prep-work and for pre-washing dishes; walk-in refrigerators and freezers; one or two domestic refrigerator-freezers; and pantries for storage. Food was served on a buffet table with hot chafing dishes in the dining room next to the galley.

SK1 Sippy (2010) described the rules for meal time at the study team’s orientation:

“Meal times on Sundays and days when we’re getting a logistics flight C-130 that’s coming in, we’re going to have a brunch at 10:00 to 10:45 and how that will work is they’ll pipe for the crew to come eat and then 10-15 minutes later when some slots have cleared, then we’ll pipe everybody and we only do that because we don’t have enough space. We’ve limited seating down there: there’s only room for 20 and there’s 20 permanent party members here, so we just have to wait for a few guys to move out and then we’ll go ahead and pipe for you guys. But it’s the same food -- they don’t give you a lesser meal or anything like that. And then so brunch on Sundays or plane days is 10:00 to 10:45, dinner is 16:30 to 17:00, and if you’re still eating after that you can keep eating – that’s fine. It’s just that’s when they’ll start breaking down the line and as you saw today, we do our own dishes; we’re taking them out, so just remember to do that. On all other days, the breakfast starts at 07:00; it goes to 07:45, and you’ll hear a reveille pipe that will happen right in the morning to wake everybody up. Lunch is from 11:30 to 12:30, and dinner is from 17:00 to 17:30.”

The Food Service Specialists were responsible for everything from setting up menus to ordering and preparing food. There were two Food Service Specialists, or cooks, on each

station. Additionally, the “non-rates,” or seamen, would rotate shifts in support of food service. According to FN Ryan Mills (2010):

“Non-rates—E-3 and below—rotate jobs to gain experience in different areas before choosing an occupation. FN Mills explained kitchen duty as, “ ... two days on two days off with sliding weekends. It is one week, there are 4 of us ... It is not hard—you have to get up early: One week on, then two or three weeks off.”



Figure 10: FN Mills works his shift in the galley at LORAN Station Attu.

Remote stations, like Attu, depended on their bi-weekly deliveries for food and supplies, while the Food Service Specialists at the less remote stations were able to shop at local grocery stores. When asked who makes the menus, FS1 Ryan Bailey (2010), the cook at LORAN Station Shoal Cove, responded:

“I make them. It’s not like the bigger services where the guys in Italy are eating the same thing as the guys in Northern Virginia. I make my menus every week and research recipes. I keep a catalog of my findings. Sometimes it’s burgers and others it’s the portabellas beef stroganoff. Got that and whole wheat egg noodles, a healthy kick.”

On Shoal Cove, Bailey was given a USCG credit card to shop for the station's meals. Shoal Cove had the luxury of having access to a grocery store, and did not have to depend on bi-weekly flights. FS1 Bailey explained, "We take the boat on Monday morning. The boat is at eight or nine o'clock ... I shop from like seven to eight fifteen. Show up to the boat with my groceries, and here we are. I also have Food Services of America. I use them for bulk meats, milk, produce; all the little nick knacks like fresh fruits (Bailey 2010)."

On nutrition, Bailey (2010) commented:

"We have to stay health conscious. We have no deep fat fryer, so this is probably one of the more healthy galleys you'll see in the Coast Guard, I'm proud to say. Frying food is nice, like fried shrimp and fries, so it is a double edged sword. Needless to say, it was a little frustrating when they took my deep fat fryer away ... There is the armed forces recipe system on the web, but I actually have a little box where I keep the dry stores. There is a card for pancakes and beef stroganoff and apple pie. But with the internet these days, there is just so much good food. The last chief gave me a Paul Prudhomme cook book. There was a jambalaya recipe that I got."



Figure 11: A typical breakfast on LORAN Station Attu.
From front to back, HS2 Maksin, EM 1 Evans and DC1 Pinkley hit the buffet.

He explained the effects of the budget on nutrition:

“The budget constraints are definitely there, but that’s really the only thing that holds me back ... If I could, I would buy fresh vegetables, but it is a little bit of frozen. The asparagus is expensive ... Asparagus is great to have, but just for a portion of the meal here, you’re talking like twenty bucks (Bailey 2010).”

When asked about a typical day, Bailey (2010) responded:

“Yeah, I typically wake up about five o’clock get my uniform ready, get in here about six, start cooking, get the morning meal ready by 7am, start service, then usually wrap that up about 7:45am. Then, depending on the meal I’m cooking for lunch, I’ll tend to take a little break for a little bit. That or I’ll just jump right into the meal for lunch, cooking that. ...That’s served at 11:30, and then after that I’ll just take a break until 12:30, come in, clean up, and then take a break...and then come in and start getting dinner ready. And that meal starts at 5, and then I’m done for the day.”

Because Shoal Cove only had one cook, cooking responsibilities were shared by all when Bailey went to Ketchikan. He explained, “On the weekends the guys fend for themselves. They follow the menu. I set the food out, and then they just select this guy or that guy to cook. Sometimes I’ll make stuff ahead like potato salad. Like tomorrow, I’ll just get the potato salad together, but beans are easy, burgers are easy (Bailey 2010).”

James Carter (2011) explained the system they’d used in the 1980s at LORAN Station Shoal Cove:

“The cook would cook a meal as fast as he could Friday and leave at noon...there was only five or six people there over the weekend. Monday, Wednesday, Friday, the crew kinda swapped. Everybody was there all day Wednesday for training. You’d take out what you wanted [from the freezer]. When I stayed out there, I always got a big rack of steaks that you cut your own...it might have been prime rib, I don’t know...We did our own cooking. One person usually became our cook, and another to wash dishes. When the cook came back in Monday, he’d take over.”

Hunting and fishing were some of the most prevalent social activities or sports for the men on LORAN stations. In the early years, the men would cook whatever they wanted; but the Coast Guard has gotten more stringent in recent years. According to Bailey (2010), the food is supposed to come from approved sources. Still, he said, “If a guy goes out and gets a deer and wants to put out some venison, that’s fine. As long as it’s fully cooked, that’s fine by me.”

On Attu, smoked salmon was frequently served, but it was not put on the buffet line with the other food; it was served on a table on the other side of the dining room. According to FS1 Clingerman (2010), everything served had to be Food and Drug Administration (FDA)-approved. Banks (2010) explained that anytime fish was caught, they would try and cook it

that same week. A lot of salmon was being smoked, and the crew had been eating halibut for a couple months.

Sometimes the supply plane would be delayed. In these cases, Clingerman (2010) would have to be prepared with alternative meals:

“Last time I was here there was one delay in the entire year. Now they have as many delays as possible, it seems like. I have had more delays this past summer than I’ve ever had. I can see them being cautious. What do you do when you run out of food—these guys expect three meals a day ... I’ve been to Alaska three times, and we’ve had the same problem. A ship comes out of Kodiak. A flight is like every other Wednesday. After a flight comes in on Friday, I put in an order. I make the request list. I do the basic bulk meats. I order fresh basil, garlic bulbs, cilantro. Cilantro is the one herb that I can get all the time. I cook a two-pound bag of frozen vegetables and have half of it left over. These guys don’t eat their vegetables ... We get a flight every two weeks. Come this week, we’re going to run out of produce. Produce lasts 7-10 days, that’s a gimme. August 4th is the next flight.”

The typical meals that were served when the investigators were on the LORAN stations were well planned and nutritious. The cooks took great pride in planning meals to satisfy both the tastes and nutritional requirements of the personnel. The meals included meat, such as pork loin stuffed with breadcrumbs and mushrooms, or fish, vegetables, and starches. FS1 Banks (2010) commented on the process, “[I] take recipes that I look at, and I try to change them up to, you know, to suit what I think is good, what the crew might like. But as far as coming up with something new, that’s a little bit more difficult, and I’m still in the learning phases right now.”

Some former Coasties spoke of times when everything wasn’t so fresh. “I remember in the freezers, we had frozen steaks from the 40s encased in wax, cardboard containers with banding around them. When they opened them up, they were kind of on the green side, you know, being frozen for twenty years or longer (Meredith 2011).”

“I remember eating steaks that were the consistency of shoe leather that I think were packed in the 60s. Then there was some grape juice, and I remember pouring out this can of grape juice, and the lining of the can kept coming out in clumps, and it was kinda unusable. We did a little more caribou hunting around that time I guess (Gray 2011).”

A typical one-week menu is presented below in Figure 12.




| LORAN STATION SHOAL COVE DINING FACILITY MENU | | | 6 12 Sept 2010 MENU 04 |
|--|---|--|--|
| | BREAKFAST | LUNCH | DINNER |
| MON | OPEN GALLEY: Cereal, Hot or Cold | Grilled Chicken Caesar Salad French fries Baked beans Salad bar Assorted beverages | Hard/soft shell tacos SW Corn and Black bean salad Pico de gallo Salad Bar Assorted beverages |
| TUES | Pancakes Bacon Eggs To Order Home Fries Fruit Juices Fresh Fruit | Snack: Cumin Chicken w/ chunky tom. Sauce Rice Pilaf Roasted Broccoli Normandy Salad Bar Assorted Beverages | Beef and Mushroom Stroganoff Wh. Wheat egg noodles Mixed Vegetables Dinner rolls Salad Bar Assorted Beverages |
| WED | French Toast Eggs To Order Oatmeal Fruit Juices Fresh Fruit | Snack: Surf and Turf Twice Baked Potatoes Coleslaw Salad Bar Asst. beverages | Shredded Pork loin Wild rice Pear and Mushrooms Salad bar Assorted Beverages |
| THUR | Oatmeal Eggs To Order Fruit Juices Fresh Fruit | Snack: Grilled Asian Chicken (bone-in) Risotto Spicy Sweet Broccoli Salad Bar Assorted Beverages | Beef Tips Over egg noodles Lemon dill green Beans Salad Bar Assorted Beverages |
| FRI | Waffles Home steaks Hash Browns Fruit Juices Fresh Fruit | Grilled Burgers Potato salad Baked beans Salad Bar Assorted Beverages | Monterey Chicken Roasted Potatoes Black-eye pea & Artichoke salad Salad Bar Assorted Beverages |
| SAT | OPEN Galley | BLT Sandwiches Tater Tots Seasoned green beans Salad Bar Assorted Beverages | Grilled Fish Mataroni and Cheese Broccoli Salad Salad Bar Assorted Beverages |
| SUN | Open Galley | Baked Chicken Rice Pilaf Mixed Vegetables Salad Bar Assorted Beverages | Grilled Steak Baked Potatoes Corn on the Cob Salad Bar Assorted Beverages |
| PREPARED BY:  R. BAILEY, FSI-USCG | | REVIEWED BY:  R.R. FILLION, ETC, USCG | APPROVED BY:  G.F. ENTERS, CW04, USCG |

Figure 12: A typical weekly menu from LORAN Station Shoal Cove

For the most part, the cooks were dedicated to pleasing the men on their base. FS1 Banks (2010) explained,

“Every now and then I go around asking them what they would like to see on the menu and get some ideas from them just because it gets a little bit difficult to make menus. So when you go around asking the crew what they like, it kind of boosts morale a little bit ... I guess you could say I’m probably part of morale as far as the cooking goes.”

The overall conclusion was that USCG meals were not too bad. “That was the one thing—we did eat good on the station” (Swansburg 2011).

8.2.6 Medical Emergencies

Medical emergencies are a real consideration at remote bases. Trained first responders were required, as well as communication with a secondary response facility, emergency transportation, and perhaps most importantly, safety plans to prevent medical emergencies.

Dave Meredith (2011) told a story of his experience on Attu in the 1960s:

“They made me a radioman while I was up there 'cause they had three radiomen, and one guy hurt himself and they had to medevac him out. He was mountain climbing. He fell and broke some bones and ribs, so they had to medevac him out to Adak.”

He went on to explain that the guy he was hiking with had to run back to the station to get help.

In another episode, Randy McDonald (2010) told a story of what can happen when blowing things up became a typical recreation activity on Attu. “When that kid blew up that shell, we had a medic who was a drunk, and that wasn’t too good sometimes when he would go off his rocker. But he wasn’t there long.”

One of the stories that lives on in legendary status is the rescue run of Don Volmer around 1986 or 1987. As Don told the story:

“I was with Robert Farmer (Alf) and Stacy when they fell off of that cliff on Mt. Terrible. Geez, there for a few minutes I thought they both were dead - I'm glad you guys weren't! I still remember Stacy sliding on his belly grabbin' at rocks, and for that brief second when our eyes connected, and went off of the cliff. In my haste to get to that spot, I too slid out on that ice and was heading over the cliff. Only thing that saved me (was) kicking my feet and arms into the snow/ice to slow me - then I hear Stacy and Alf yelling, “Don, don't go that way!” Haha, little did they know that they almost had company on that ledge. That was a hell of a long run back to the runway and then back with the other

crew members - I could hardly walk up the stairs at the station for a few days after that. Haha.”

(<http://www.fredsplace.org/reunion/d17/0120.shtml?mysubmit=View+the+old+table+page>. Accessed 5/2/06).

Michael Stephenson, who was the health services technician at that time, recounted:

“I remember Don Volner's rescue run. Someone should start a tundra foot race based on Don's Run, and it was a long run on spongy tundra that just absorbed most the energy from each step leaving little forward movement for the effort, until he hit the rocky ruts loosely described as road. I think the Iditarod was based on a rescue effort. It was an effort for me to get up Mt. Terrible, and I rode, until I ran out of road. Have to give the CO credit; he started giving tasks needed and not to anyone looking freaked, avoiding any risk of panic. I reminded Farmer he said something about wanting to get off the Island that morning, and we teased him about finding several hundred less dramatic and painful ways off island; as it was a nasty fall. Everyone worked hard at getting him down from Mt. Terrible, great crew of good people. Farmer was glad to be in reach of the station, coming down the mountain was as rough on him as the guys hauling him, and he was gritting his teeth to avoid screaming on the bumps. He did not want to upset his crewmates who were doing their best to be fast and gentle on some difficult terrain. Sounds like I was very remiss and should have checked Don out, too.”

(<http://www.fredsplace.org/reunion/d17/0120.shtml?mysubmit=View+the+old+table+page>; 9/4/06)

The bases had different methods of keeping track of personnel. On LORAN Station Attu, MK1 Richie (2010) said:

“On the board out front, each person has their own little nameplate—a sign-out. They slide their name over and show where they're going ... if something were to happen here, say if we have a fire, we have to account for everybody. They would look at the board and say this person is hiking, this one is on a boat. We would know that they're not in the space that's on fire.”

MK1 Richie (2010) went on to explain:

“There are certain places on the island where you don't have radio contact. So, like the other day, two chiefs were out in the Tucker, the snow cat, the little track vehicle. And they were beyond radio contact, and no one had heard from them pretty much all day; 10:00 at night they start wondering. But at 10:00, it is still day time—we have an 11:00 curfew ... We have four different channels—16 is the emergency channel. Station channel is where all the watch standards use that channel. One is a plane channel so when we're on the runway, all the flight crews use that channel ... Most of the time, we are on the station channel. The crash group--all the fire fighters use the plane channel.”

In the 1950s communication was a bit more difficult. Bill Swansburg (2010) explained that they had a radio, but no operator:

“I didn’t get any help from anybody in the Coast Guard though ... the only thing they said was that you’ve got an amateur radio station, which we did, and our call sign was KL7DGB, but we didn’t have an operator, and the FCC said you couldn’t go on the air without an operator. There was a piece of equipment that they got from the Army surplus ... it wasn’t even HAM gear, and it just sat there until finally I worked on it a little while and got it goin’, and a couple of the other electronics guys, there were three of us, and no chief ... I was the senior man second class ... we got the thing going.”

Greg Enters (2010), the CO on LORAN Station Shoal Cove, explained how the men watched each other’s back:

“So last night a peculiar thing happened. One of the guys disappeared for about an hour. All the sudden, “have you seen Bagtass?”” “No.” And about fifteen minutes later “hey, have you seen Bagtass?” Well another few minutes, and we would have started a search, so right away ... well turns out he was right here, but he did appreciate us guys being concerned ... We are in the middle of the Tongass National Forest, and I try to explain to these guys that, yeah, you’re at the station, but if you hurt yourself, there is no way to get you out. You have an hour minimum away from an emergency room from when we can call for help.”

The less remote stations, like Shoal Cove, used the public emergency medical services (EMS) for emergency transport; however, remote stations had to have their own emergency response capabilities. The medical facility on Attu was equipped for handling a wide array of emergencies; it included an X-ray machine capable of linking over the internet to the USCG hospital in Kodiak. HS2 Brian Maksin (2010) was the medical corpsman stationed on LORAN Station Attu during summer 2010. He explained that he was there on temporary duty from Kodiak where he served as X-ray technician and at the reception desk. Like so many of those who served on Attu, he held multiple jobs. He explained:

“Holding this type of job out here is pretty demanding; you have a whole lot of special job skills ... to be able to handle the job out here. On a day-to-day basis, I go around and do the galley inspections, make sure its safe for everybody to eat the food, I do all the water testing ... This island has arsenic in the water, so I have to go around test the arsenic uh, the chlorine level, Bremen levels, even our spa, our Jacuzzi, make that all safe for everybody to use. “

His other responsibilities included, “taking care of people’s pay issues, making sure everybody has their household goods shipped to the right places ... working side-by-side with the admin office in Kodiak, and making sure everything is taken care of” (Maksin 2010).

8.2.7 Base Exchange

The “Store Keepers” on LORAN Stations were the supply specialists. SK1 Wade Huston (2010) described his responsibilities, “We do anything to do with logistics really, from transportation to accounting to contracts to property—all of that is under storekeepers. If you have something to call us, call us financial specialists.” He described his average work day on LORAN Station Shoal Cove as:

“A normal day here would be, I’d be dealing with purchase requests and dealing with the accounting, the money and reconciling anything we had bought, and that’s really the meat and potatoes of my existence here ... to deal with that money. If, say, the ETs say they need some part for the transmitter or they need a part for radio or something like that, then they would put a request into me, and I would take my credit card and buy it, and then as soon as it came, I handle the shipping and receiving [paperwork]. I’d check it in for them, give them their equipment and manage the books ... my job there is a very low margin for error because I’m working with the budgets, the unit’s money, so I’m held accountable if anything’s wrong (Huston 2010).”

ET2 Kinzel (2010) ran the base exchange at LORAN Station Attu—approximately a 10’ × 12’ room with shelves on two walls, and a small desk against the window. The store had a computer where Kinzel did the store’s bookkeeping, and shelves stocked with a variety of goods including cough syrup, shampoo, Epsom salts, tooth brushes, razor blades, at least twenty kinds of candy, nuts, fishing supplies, and Attu memorabilia such as hats, long and short sleeve T-shirts, water bottles, cups and commemorative metal disks. In 2010, there was an Attu Zippo cigarette lighter for sale on E-bay which had to have come from Attu’s base exchange.

8.2.8 Improvisation

Because of the remoteness of the stations, the Coast Guardsmen had to be prepared to fix just about anything. MKCS Strecker (2010) relayed the story of the time the well went out.

“In April, our deep-well pump for the station’s water supply stopped pumping. With 75,000 gallons of water cisterns in storage, we have a certain period of time before that water supply runs out. I’m not really sure how long it will last, but you start getting critical in a week. So, we had a pretty short period of time to get the thing fixed before it started becoming a problem. At the same time, we had a fire system that had failed as well. From a year of being in service, (it) had holes cave into it, so we had to take that system down. We were having to use our cisterns as fire fighting water in case we had a fire, as well as drinking water. So we couldn’t let it get very low. If we had a fire on the station, that was our only source of firefighting water. In normal circumstances with the firefighting system up, you have 25,000 gallons in two storage tanks. In this case, the firefighting system was useless because a piece

was missing. We had those two things going at the same time, so that was the critical part of getting that pump fixed.

“None of us had ever pulled a pump before. It’s down the shaft of the well, 300’. I had to call somebody, a well driller, and ask, “How do we disconnect that?” It’s down the well. The pipe is six inches wide. You can’t reach it. He told us how to do it, so we were able to get the elbow loose. (We) had to pull up 300 feet of pipe and the pump, and then determine what kind of pump we had. We didn’t have any records except for 1995, and we didn’t know if it was the same pump. We had to pull it up and take out ... 10’ sections of threaded PVC (polyvinyl chloride) pipe with brass couplings between those sections. Typically, it’s one continuous piece of black A-B-S, and so you just shove it down. This, you had to pull up 10’, take it loose, pull up 10 more feet, take it loose ... We used our forklift with a chain-fall on it. There was some good ingenuity that went on amongst the guys too and uh, so that was definitely a fun problem-solving scenario. We got the pump in within four days. As soon as the plane came in, we began working on it, and worked until about nine each night to get it in, to get our system back up and running. It took it about a week for it to recover, and catch up with all the water that we had used. At the same time, we also got that piece for the firefighting system, and we were able to get that back in working order again too.”

The engineering staff emphasized the importance of maintenance in a remote location, and when things failed, improvising.

“One of the biggest challenges is that when a piece of vital machinery goes kaput, then we aren’t in a place where we can just go to the hardware store .I have a routine—fix it before it breaks. Before the station was going to close, we’d have scheduled maintenance (Ledbetter 2010).”

Richie (2010) concurs: “We do maintenance so we don’t have to do repair. Even something like a simple valve ... a piece of our pipe had a hole from corrosion that you could put your finger through.”

“We’d carry old water pipes and stuff to repair old bridges ... whatever it took” (McDonald 2011).

But still, the stations were dependent on a supply chain that reached back to modern civilization for parts and technical expertise. Randy McDonald (2011) told another story of what happened when parts broke.

“Broke a guy wire while we were out there. Yeah, we had to get a guy out there from Anchorage, and that was a big process to get that re-attached and everything. He flew out and we fixed it with what we had there ... We strung in a new wire, and it was good as new when it was done. He was an old guy with a belly. We did all the climbing; the engineers did all the climbing. He supervised, but he knew what he was about.”

Bill Swansburg (2011) told of how they scavenged from left-over facilities on Attu. He relayed how they had taken one of the U.S. Navy's old aboveground fuel tanks:

“Our boss at that time was a naval engineer. He built skids and we pulled one of these 5,000 gallon fuel tanks over to the station because the Coast Guard was having problems getting out there to supply us. The old man knew how to do it. He put it on a skid ... he had us build a skid. The damage control man built it, and we pulled it over with a tractor.”

They drilled a new water well for the Shoal Cove LORAN Station in the early 1980s. James Carter (2011) told the story as follows:

“Before I got there, the pond you saw sitting out beside the station...that was their water supply. I don't know if you ever took a sniff of it, but it had a taste problem. That little small building you saw sitting by the pond was the sewage. It was a miniature plant like you would see anywhere in the world...We had a drain pipe that was inside the ground that went, maybe, 100 yards behind the station and dumped into a ditch. Supposedly that water was good enough to drink, but none of us was drinking it. We did have to take samples on it and send it away monthly.

“They brought a driller in about the late 70's, and he spent a tremendous amount of time, from what I can tell, reading the logbooks, drilling, trying to get water out of that rock ... He got it. It was real slow though. Inside the building, it had two tanks. One was a five-thousand-gallon tank for firefighting and the other was a two-thousand-gallon tank for drinking water. As that level would begin to fall, using that two thousand gallons of water, it would start kicking off gang pumps. It's a pump-pipe-pump-pipe system. Since it was so far down, it would slowly start filling that two-thousand-gallon tank. But we never ran out of water, it was always somewhere near the top ... Somebody had it figured out pretty good.”

8.2.9 Training and Drills

While improvisation was important, drills were regularly conducted to keep everyone current on standard procedures. A fire drill was conducted at LORAN Station Attu while the authors were present. The fire drill was for a simulated fire in the battery room. “Senior” (MCKS Strecker) oversaw the operation and corresponded with a fire investigator over the radio. One other Guardsman assisted each fireman with their fire suits that included helmets, yellow air tanks, and respirators. The fire team was made up of DC1 Pinkley, MK3 Fortner, MK3 Ledbetter and FM Mills. Senior checked each fire suit for exposed skin and proper fit.

A voice came over the radio with some unintelligible statement, “... ventilation ...” After asking the radio operator three times to repeat the comment, Senior said, “he is saying something about checking the ventilation.” Senior spoke into the radio handset, “Fire Team 1 is on the scene.” He added, “fire in the battery room is out.”

After the fire drill, the management team including CWO Rosenberg, ETC Limonte, EM1 Evans, MK1 Richie, and DC1 Pinkley held a debriefing. Then, they presented their overall findings to the entire station crew. Everything is a learning experience; mistakes made during the drill will not likely be made during a real emergency.



Figure 13: Fire drill at 1130 hours, 30 July 2010
The crew at LORAN Station Attu assists the firemen with suiting-up.

8.2.10 Runway Operations

The bi-weekly flights were LORAN Station Attu's lifeline to the rest of the world. According to MK1 Joseph Richie (2010), the biggest job on Attu was keeping the runways open. During the winter, keeping the runway open was often a 15-hour a day job. According to MKCS Strecker (2010), they had three vehicles with snowplows and three snow-blowers. He told a story of being down to one functional snow plow, the flatbed Ford F750 with a plow blade on the front: "We had a period in March, 19 days of snow—continuous, consecutive days, and so it was every day the engineers were out plowing snow." He continued that they had to clear the runway of snow to get parts for broken vehicles, but, "if everything is broken, and you can't clear the runway, the plane can't come drop your parts." He mentioned an "airdrop" where they pushed the supplies out the door without landing. He laughed at the thought of hand shoveling 6,000' of runway: "That would take quite awhile (Strecker 2010)."

Others backed up Strecker's story:

"The most stressful time is during the winter because of the snow removal ... I would not say hard, it is just when something breaks down. Like in the winter, the motor on the oshkosh broke down, the 750 went down, and we were down to one vehicle for removing snow. We've always seemed to get it done in the nick of time (Ledbetter 2010)."

Dave Meredith (2011), described their snow clearing equipment on LORAN station Attu from 1966 to 1967: "We had a big rotary snow plow that cleaned off the airstrip, and we had two

or three of those Weasels ... It's got a trucks' body, but with Caterpillar wheels on it for the winter.”

8.3 FINAL ADMINISTRATIVE TASKS AND CEREMONIES

8.3.1 Morning Staff Meeting

28 July 2010, 0835 hrs (Wednesday)

Wednesday morning 20 July 2010 at 0830, a staff meeting began on Attu Island which was not unlike 10,000 other corporate staff meetings that take place around the world. The meeting was run by the CO and attended by the senior staff. The meeting also included the other command staff: chiefs Strecker, and Limonte; department heads Pinkley, Ornelas and Clingerman, and other senior staff: corpsman Makin, MK1 Richie and SK2 Sippy. This meeting was used to plan the events of the next several days, ranging from packing personal belongings and equipment for shipment to Kodiak or a next duty station, to incoming flights and billeting contractors, to planning memorials for a C-130 crash site and the monuments on Engineer Hill, to the station's signal termination on 1 August 2010. This would be the last senior staff meeting for an operating LORAN station in U.S. and Canadian history.



Figure 14: Senior staff meeting on LORAN Station Attu.

From the left foreground: MK1 Richie, HS2 Maksin, FS1 Clingerman, ET1 Ornelas, SK1 Sippy, CW02 Rosenberg, ETC Limante (out of the picture) and MKCS Strecker

8.3.2 Engineer Hill Commemorative

28 July 2010, 1713 hrs (Wednesday)

Several monuments have been erected on Engineer Hill. The Japanese erected a small glass encased memorial to Colonel Tasuya Yamasaki, the garrison commander who ordered what was to be the first bonsai charge of WWII, on Engineer Hill. A small boulder commemorates the event, and a titanium star about 15 feet tall is dedicated “to the memory of all those who

sacrificed their lives in the lands and seas during World War II in dedication to world peace.” The wooden sign commemorating the American’s last ditch effort to repel the final Japanese attack during the Battle of Attu was erected on 28 July 2010 by a Coast Guard detachment from the LORAN station. Near the end of the battle under cover of darkness, the last approximately 650 Japanese troops attacked. They ran through the American defenses and the hospital, and finally were stopped by the engineers and technicians of the 50th Engineer Regiment in hand-to-hand combat on what would come to be known as Engineer Hill (Mitchell et al. 2000:22). The U.S. Forest Service provided the commemorative wooden sign to be placed atop the hill.

On 28 July 2010, the six-man detail assigned to erect the sign traveled by flatbed truck to the top of Engineer Hill bringing everything they’d need, from the sign to shovels, posthole diggers, a wheel barrow for mixing concrete, water, hammers, a level, a measuring tape, two trash cans filled with water, two-by-fours for braces, and cardboard tubes for concrete forms. A site was selected near the hill’s apex, adjacent to the gravel road that connects Chichagof Harbor with Massacre Bay, where it could be clearly visible to anyone who happens along this most desolated road in America. Senior (MKCS Strecker) directed the operation. The two holes were dug with everyone taking turns at the shovel, including Senior. The sign posts were placed in the cardboard forms in the holes; concrete was mixed and poured. Final adjustments were made to level the sign, and the two-by-four braces were attached. After the sign was securely in place, Senior announced a moment of silence for the soldiers who’d given their lives defending this hill. Then, the equipment was cleaned, and everyone piled into and onto the truck for the trip back to the station. The whole operation had been planned and accoutered to its last element (*Semper Paratus*). As the detail passed the Japanese monuments, one could not help but think of how they have endured. How many blizzards, and days and nights of 180-mile-per-hour winds had they withstood? How many will the painted wooden Forest Service-provided sign withstand?



Figure 15: Senior (MKCS Strecker, below the sign) stabilizes the Engineer Hill Memorial sign while the crew mixes cement.

8.3.3 Packing and Shipping

Most personal equipment was packed up into boxes and drums, put on a pallet, and moved to the runway. Larger items were transferred by barge. It appeared that everyone packed their own belongings, and each department was responsible for packing its equipment. Engineering, under the direct supervision of MK1 Richie, had the task of staging everything in “5-Bay,” drayage to the warehouse in Massacre Bay for temporary storage; separating pallets by shipping mode: C-130 or barge; and then, transferring it to its transport mode, either the tarmac or the beach, just prior to the scheduled arrival of the plane or barge. MK3s Turcott and Ledbetter drove the forklifts. The C-130, bringing supplies and personnel for mothballing the base, was scheduled to arrive on or about 1400 on 28 July 2010, so the pallets destined for aerial transport were moved to the tarmac for loading on that day. When Attu’s famous fog failed to lift, the decision was made to delay the flight until there were better weather conditions. Everything was moved back to the warehouse. DC1 Pinkley (2010) proclaimed, “Let’s wait until the plane takes off from Adak before we move it next time.” The plane finally arrived two days later.



Figure 16: LORAN Station Attu's personnel crated their gear for shipment to Kodiak.

8.3.4 Flight CG 1600 Ceremony – 30 July 2010 1445 hrs (Friday)

We took the Tucker Sno-Cat[®] from LORAN Station Attu to the foot of the hill at site of a nearly three-decades-old C-130 crash. The Lockheed HC-130 Hercules aircraft had been assigned to USCG Air Station Kodiak and made regular flights to Attu to deliver logistics and supplies. The whole time, I kept thinking of the dedication and effort it must have taken to have built and operated the original LORAN station on Theodore Point a couple of miles west of the crash site. All of the construction materials and supplies to keep the station operational were lugged several hundred feet up the mountain for several years until the station was moved to Casco Cove. This current trek was to commemorate the crew of the C-130 that

crashed on this site. As we approached the hill, the debris field became visible, strewn over the mountainside like it had been intentionally broadcast there. As we got close, we could make out wheel assemblages, wings, a tail section, and even shoes and other personal belongings bringing a harsh reality to the scene along with a feeling of reverence.



Figure 17: Attu's crew places a commemorative plaque in the fuselage of Flight CG 1600.

On 30 July 1982, Flight CG 1600 crashed above Murder Point while transporting personnel and cargo to the island of Attu from Shemya. According to USCG, visual flight rule (VFR) weather conditions had deteriorated, forward visibility was lost, and the aircraft impacted the terrain. Two persons lost their lives, and the remainder of the crew escaped the wreckage and survived. The names of the personnel killed in the incident are AT3 Brad S. Canfield and SN Steven D. Berryhill. The Lockheed HC-130 Hercules aircraft was assigned to USCG Air Station Kodiak.

In 2010, the men from LORAN Station Attu fashioned a small wooden plaque about 8" × 8". MK3 Lance Fortner drilled two holes in the plaque and mounted it on the right, inside the tail section of the fuselage. The wooden plaque bears four small brass 1"-x-3" plates engraved with the flight number, the date of the crash, and the two people's names who lost their lives.

Senior (MCKS Strecker) presided over the ceremony. He said:

"I think at the beginning of their day, the crew began their day with no intention dying or even crashing. A sobering thought that we begin each day like that, not knowing what is going to happen. We want to take a moment on this day of the 20th anniversary of the crash of CG 1600 to honor those that died, and those that survived. We were able to mount a plaque.

"And I have a little poem. It is the best I could find on-line, in short notice:

The Hero's Path

You risk your life for others each and every day.
Understanding and accepting the potential cost that someday you might pay
Such is the path of the hero, a terrain where only the brave would choose to go.
For 'tis like a mountain pass, narrow and rugged
Far removed from the peaceful valley down low
Yet you walk that difficult path daily seeing harsh things while doing such good.
And we loved and respected your courage more than you understood
You were a blessing to countless people through your selfless and courageous deeds
Your efforts will impact generations through lives saved and all the good you did
Truly you were our hero, and
We all thank god that you lived.

"I think that says it pretty good, and I think the families of the guys would too.

"One of the guys was a member of the crew on Attu, and the other was a member of the flight crew.

"Maybe it would be good to have a moment of silence and a reflection on what price they paid.

"I appreciate you coming out and helping."

The detail trekked back down the mountain to the Sno-Cat, and then to the station.

8.3.5 Incoming Flight – 31 July 2010, 1705 hrs (Saturday)

The station's umbilical cord to the rest of the world is the runway. Just about everything arrives on their bi-weekly flights from Anchorage or Kodiak. The Coast Guardsmen on Attu perform multiple functions to keep that lifeline flowing. They are fire crew, runway agents, air traffic controllers, snowplow operators, lighting technicians, and ramp workers. The crew arrives at the Terminal Building about a half hour before the scheduled plane, and waits.

MK3 Turcott sat in the back corner with his fire suit down around his waste. The five others sat on the building's two three-seat, hard-frame couches facing each other in the middle of the room. Along the walls are fire suits, white canisters for the self contained breathing apparatus, first aid equipment, oxygen bottles, and a litter. EM1 Evans (2010) explained, "We are the first response for plane crashes." These first responders sat quietly and waited. In the 1960s, they did not have the luxury of a Terminal Building to get out of the weather. "We just went down there in a truck and sat in it. They had a double cab" (Meredith 2011).



Figure 18: The LORAN Station Attu crew unloading the C-130.

The radio hissed and a muffled voice announced the flight's arrival. Suddenly the crew moved into action, in an exercise repeated every time a plane came in. They assumed formation outside the Terminal Building. The plane appeared from behind a small hill and maneuvered into position on the apron. Once it stopped, the crew transformed from firemen to ramp workers. As the tail end of the C-130 opened, it revealed several pallets of shrink-wrapped and strapped packages. With a proficiency that can only be gained by repetition, they unloaded the plane with two forklifts taking its contents to the edge of the apron for ultimate drayage to the warehouse, then re-loaded it with the outbound pallets staged on the apron's edge. In a matter of minutes, the C-130 was gone. Left standing on the tarmac were three construction workers and a U.S. Fish and Wildlife Service ordnance expert sent to curate the artifacts that were on display in the Station Building's lobby. The artifacts had been collected by the station's occupants since WWII; the expert was assigned to segregate explosive from non-volatile artifacts. He brought wooden boxes and packaging to transport the non-volatile artifacts. The explosives were to be left on Attu for later disposal. The Coast Guardsmen helped their guests with their baggage, and once again became hosts and tour guides.

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9.0 LEADERSHIP—COHESION AND CONFLICT

“The Commander-in-Chief is a father who loves all his soldiers equally; and for that reason they are comrades among themselves. The Army differs structurally from the Church in being built up of a series of such groups. Every captain is, as it were, the Commander-in-Chief and the father of his company, and so is every non-commissioned officer of his section (Freud 1959).”

In the 1980s, a National Defense University study group envisioned cohesion in the military as "the bonding together of members of an organization or unit in such a way as to sustain their will and commitment to each other, their unit, and the mission (ICAF [Industrial College of the Armed Forces] 1984:2)." The individual member of a military unit interprets this cohesive bond in terms of safety. It is the simple concept: *you've got my back, and I've got yours*. It is the force that allows each member of the unit to commit acts of bravery above and beyond what would be committed without that cohesive bond. The tacit message contained in the ICAF definition is "a willingness of individuals to subordinate their personal welfare—including life if necessary—to that of their comrades, unit, and mission (ICAF 1984:3)."

In her book, *Mates & Muchachos: Unit Cohesion in the Falklands/Malvinas War*, Nora Kinzer Stewart (1991) further defined military cohesion as, "a special bonding that implies that men are willing to die for the preservation of the group, or the code of honor of the group, or the valor and honor of the country."

Personnel stability is essential in building unit cohesion. In his essay "The Potential for Military Disintegration," Stephen Westbrook (1980) wrote, "Under conditions of personnel instability, the members of a unit cannot undergo a set of common experiences that help build similar attitudes and goals as well as feelings of mutual dependence." In a report on military unit cohesion written in 1999 Major Stanley J. Jozwiak said that cohesion is "a full time, group-level phenomenon that exists across individuals, as opposed to morale or motivation that tends to ebb and flow within individuals."

U.S. Marines in combat, for example, were found to form an intense bond which, when strengthened over time, resulted in "absolute trust, subordination of self, and an intuitive relationship in the collective actions of the unit and the importance of teamwork (Jozwiak 1999:4)." The USCG used an individual replacement system at isolated LORAN stations where personnel served one-year terms at the station. The U.S. Army used a similar system in WWII and the Vietnam War with disastrous results; they found that this system did not provide the personnel stability required to develop cohesive bonds like the U.S. Marines.

There was evidence to the contrary at LORAN Station Attu, evidence that cohesion was actually quite strong, even though individuals rotated in and out when their terms expired. According to McDonald (2011), "That's the thing about the military, never since then have I been at a place where I really felt like somebody had my back. There was that feeling that if somebody couldn't hold that rope that they were coming with me."

But where LORAN Station Attu was home to the men stationed there, Shoal Cove was more like a workplace—just a job. At Shoal Cove, only one Coastie actually lived on base. The rest were “on the economy,” as they say—living in Ketchikan when off-duty. Although Attu looked like a typical business where employees coalesce around special interests, or by rank or for recreation, the men spent so much time together they actually seemed to work on getting along, and mutual respect permeated throughout the base. They treated each other almost like family, and like any family, there was some minor bickering over which movie to see, or teasing because someone was short, or young, or “green.” But the teasing and arguing appeared to be taken in stride and with good humor. As one Coastie said, “they tease me a lot because I’m short, but it’s okay ... we’re all family” (Turcott 2010). Turcott said:

“I am the shortest guy in the station, at 5’4”. They gave me a whole bunch of crap. It does not bother me, because I got a lot of that in high school. I blow it off because I’m not going to make enemies. This is family out here. I mean, I enjoy getting picked on a little bit because it lightens the mood.”

FS1 Banks (2010) commented on leaving Attu:

“[I’m] definitely going to miss most of the guys here, ...you know, everybody’s here, it’s interacting all the time, you know, kinda becoming a tight little family here. There’s quite a few of the guys I will miss. I will definitely keep in touch with a lot of them.”

According to ET1 Ornelas (2010):

“The biggest thing with being out here isolated is just you got to try and do whatever you can to get along with the people you work with, at least some of the people. And you’re always gonna have certain people that you just don’t feel that, you know, you don’t feel that close to. There’s not that much of a friendship – bond ain’t strong – but as long as you have at least a couple of people that you do develop a good enough personal relationship with, you’ll be fine, because you gotta have people that you can trust to talk to and blow off steam cause everybody is gonna need to blow off steam eventually.”

According to one researcher, “It is not necessary to like someone to work with him or her, so long as members share a commitment to the group’s objectives (MacCoun 1996:172).” Ornelas continued:

“You can’t take stuff too personally. You can’t take stuff too serious when it comes to playing sports or most anything because if you do, you’re just gonna drive yourself crazy. You gotta be able to get over the little things”

According to Randy McDonald (2011), 1970 to 1971:

“We knew that we had to depend on each other. There was some good nature jiving; I would walk over to where the engineers were with their generators and stuff and they’d say ‘God, don’t touch anything, you’re an ET.’”

After two days of interviewing most of the Shoal Cove Coastguardsmen, a picture was beginning to develop of an ideal setting. Everyone knew their duties, attended to them, and turned their job over to the next shift. It seemed like Shoal Cove ran like a well-oiled machine—systematically without missing a stroke. The film crew working on the project even talked among themselves and commented on how smoothly everything seemed to function. But something did not seem right, and there was also a sub-current of tension recognized by the film crew. At the end of an interview this feeling of uneasiness was expressed to an interviewee. The interviewer said, “Something here is not right. Everything is too perfect.” He replied, “You are very perceptive (Anonymous 1 2010).”

From there, the task at hand transformed from gathering empirical information to figuring out what was really going on, and what the interviewees were hiding, or who they were protecting. In the “Methodology” section above, the tendency for interviewees to lie about things that matter to them is discussed and described by Van Maanen (1979) and Douglas (1976); but why would this false front be projected at Shoal Cove, and what could be revealed if the lies could be uncovered about the “individual, group, or organization” as Van Maanen argued (1979:544)?

The interviewee joked that the men had talked about making “orange striped Shoal Cove prison shirts” as their official uniform. “This place is like a prison (Anonymous 2 2010).”

One Coastie, who declined to have his interview recorded, said, “I refuse to lie, but I won’t be recorded. The place is plagued by constant infighting among the administration. The ___ and ___ are constantly badgering each other (Anonymous 3 010).” Another Coastie reported, “huge amounts of stress and tension in the air. This year I have had more stress than I’ve had in my entire life. One person is causing it. I don’t know if anyone else has said anything, but one person is causing it (Anonymous 4 2010).”

He continued, “One person is causing it ... _____. I guarantee, if you went around and asked everyone to write on a piece of paper one thing you’d change about this unit, I would guarantee there would be one name (Anonymous 4 2010).”

He continued:

“He’s not very personable. Uh ... it is difficult to describe in one word. Not respectful. He has a tendency to be not very respectful at all. It’s not always, but he is so hard to read, and that’s where the stress comes from. At my first unit, this guy was ... I’ll try not to use profane language ... a meanie. But you knew what to expect. He was up front about everything. You knew that if you screwed up what was going to happen, and everyone knew what to expect ... Here you don’t know. Something big happens and he says nothing; but if you have a shoelace untied, you’ll get screamed at. It is ridiculous. It is a horrible environment. It is stressful on everybody—dreadfully stressful.

“Honestly, that is probably the biggest reason I am ready to go, that’s the main reason. I mean, Alaska is not really my place; it is not just me, it is

everyone. That is the main reason I'm ready to go. I am sure nobody else said anything on camera, but trust me (Anonymous 4: 2010)."

At least two other Coasties corroborated this story but refused to be recorded when describing the problem. The basis for the unruliness could have been a lack of respect for the superior or just arrogance. Whatever the cause, it was clear that the effect of the conflict on the personnel was profound, as several of the men said they could not wait to get out of Shoal Cove, and some said they couldn't wait to get out of USCG.

Was it poor leadership on the part of the accused superior or just conflicting personalities? Or was it the nature of a duty station where the Coasties' allegiance to the base is analogous to a regular 9-to-5 job rather than as a station where the camaraderie has evolved through a 24-hour-a-day association? According to MacCoun (1996:172), "Factors that encourage cooperation and teamwork among military personnel include effective leadership, military norms, roles, regulations and disciplinary options; and external threats and challenges."

Although the discord among the Shoal Cove station personnel was allegedly initiated by the leadership, its effect on the staff was pervasive. Sigmund Freud argued that it was this loss of cohesion that incited panic, so that "none of the orders given by superiors are any longer listened to, and that each individual is only solicitous on his own account, and without any consideration for the rest. The mutual ties have ceased to exist, and a gigantic and senseless fear is set free (Freud 1959:6)."

In his 1996 study of police and fire departments, Koegel found that leadership at all levels is critical to the successful implementation of controversial and potentially unpopular policies. He found, that "the evidence was clear that a strong leader could push a department in one direction or another (Koegel 1996: 147)." Van Maanen (1979:540-541) described "indigenous character type" as "those aggressively ambitious supervisors who struggle to make rank by zealously enforcing departmental rules and regulations." On an isolated base, an indigenous character might destroy the morale of the whole unit. Alternatively, it may not have been the fault of any individual at the Shoal Cove station, but rather, caused by incongruent personalities and the lack of a structural mechanism within USCG to identify and resolve such conflict.

9.1 TRAINING

Coast Guard personnel learn to be flexible, as their typically small units have to be versatile enough to do just about anything. As such, on-the-job-training is an important educational technique, and it is frequently employed. Ty Ledbetter (2010) explained USCG's system: "That is what's unique about USCG, because they allow you to find your niche, then sign up for A-School. A-School is where you learn your job. How would you know you'd be happy with that job until you actually go out and work with those people?"

He continued:

“We rotate by section. Within sections everyone rotates. It is just standard military knowledge that everyone does. It rotates among sections, and then everyone in each section does each job. The engineers, we are one and seven right now. That means that every seven days we stand watch. That includes the colors.”

SN Sean Fadely (2010), who had been on Attu about a year, explained:

“My job as a non-rated personnel ... I don’t have an actual job; but what I do is I support the Ops Department. I help them. I’m on LORAN watch standard, so if there’s any issues, like immediate issues with any of our equipment, I don’t exactly fix it, I just make sure that the signal is still going out and in tolerance so it’s still a good signal.”

The Executive Officer at LORAN Station Shoal Cove emphasized the need to gradually indoctrinate new personnel into the system:

“The new ones are very young. I mean, we try to take the opportunity to do everything from teaching them how to cook, because a lot people don’t know how to do much but open a package and read the directions, and we like them to cook and learn how to. We had one guy have to look up how to cook a burger, and after we told him we still need a little extra. We told him ‘well, go look it up on the internet.’ And that’s a good thing to get used to is to look it up, because if they’re alone, that’s what they will have to do, and we try to instill responsibility to them (Fillion 2010).”

According to ETC Limonte (2010), on Attu, once everyone knows their job, the station runs itself:

“I mean you pretty much lose any one person out here and, for the most part, somebody would be able to take up the slack. Maybe not for every little detail job. I mean, there’s a reason we’re specialists at what we do, but for the most part, the crew is pretty good at absorbing. Just like any military unit, you gotta be adaptable and whatnot.”

Bill Swansburg (2011) confirmed that on-the-job training has been in use for several decades:

“When they could get an aircraft in ... it was time for a rotation. ...the guy I relieved by the name of Rosen ... as I was getting off the plane, he was getting on the plane. Never said boo, never said hi ... got on, got into his seat, strapped himself in, and that was it. He didn’t say nothing, nothing! I got into the carryall with the Coast Guard guys to go back to the station ... and I said, ‘where is my relief?’ And they said, ‘he just left on that airplane.’ I said, ‘what are you telling me?! I don’t know where the instructions are ... or what we do...the call signs...nothing.’ ‘You’re going to have to learn it because he took

it with him.’ And so I was very lucky in that one of my first contacts I made that night was the chief over at Adak, which was also a NOAA station.”

McDonald (2011) reflected on his career decision:

“Two weeks out of high school we were in Cape Main, New Jersey. Eight weeks after that I had ten-day leave. I wanted to be a medic or radar operator, but my physics scores in high school landed me right in electronics school. I wanted aviation electronics, but somebody’s dad had flunked out in a week from that so I went to electronics training school - Trason Class A school in Governors Island School, New York.”

When asked if that school was specifically for LORAN, McDonald (2011) replied:

“They had tons of school. That was a huge Coast Guard training facility. They had gunnery, they had radar, and a bunch of their schools were right there at that facility. So I was an electronics technician, and in the Coast Guard you were trained on everything from a fish finder to a pilgrim clarinet ... some type of submarine communication device. You were trained on everything. Then I specialized in LORAN since that is where I was going to go. I was told to do really well or if you flunk out you’ll go to Tuley, Greenland or Attu, Alaska as an electronics watch-stander. Well I did ok, I got the last non-Vietnam bill, but where did I end up—Attu, Alaska with a guy name Jeffers who was voted most likely to electrocute himself. I saved his butt on three separate occasions. We almost lost him in the transmitter room one day. He about had his hand on some juice without any gloves and I said, ‘stop, put a meter on it.’ And wow, he wouldn’t have had arms.

“We just had to learn, kind of, on the spot there, how to work the Loran-C stuff, which I never totally mastered. I could certainly run the stuff fine, but some of the repairs were a little bit difficult (Gray 2010).”

Most of the lower ranks who worked at the LORAN stations did not receive formal training. SN Kyle Hamlin (2010) explained:

“I’m straight out of boot camp, and I didn’t have any previous training for this kind of stuff.” He added, “Out of boot camp, they just send you to your first unit. They give you a dream sheet, they call it, and it’s a list of 12 blank spaces that you get to put down anywhere in the Coast Guard you’d really like to go with number one being your biggest priority that you’d like to get. Sometimes they can’t get that for you, and they just put down where they need you, and this happened to be the place for me. So this is where I came, and I came here without any previous experience with LORAN ... no knowledge of it whatsoever. But they give you time here in the beginning to get your grounds with the equipment.”

Thomas (2010) recounted:

“I didn’t know what LORAN was when I got this job. When I first joined, I met a guy from North Carolina stationed at a LORAN station. He was in Turkey. When he told me they were shutting down the foreign bases, I didn’t even ask him what it was since they were shutting down.”

9.2 RE-ASSIGNMENT

The crewmembers at LORAN Station Attu were subsequently stationed at the USCG base of their choice in exchange for having spent one year on the remote island. After serving on Attu, or any isolated/restricted duty station, these Coasties are considered Priority 1, which meant they were assigned to their number one choice if it was available. Many of the Coasties assigned to Attu Island took those assignments as part of a plan to get to a particular base. According to ETC Alex Limonte (2010):

“I was trying to go to Florida. Complete opposite ends. So the detailer tells me, “well, I see that the two that are available aren’t anywhere you want to go, but what we have available, though, is Attu. You can do Attu isolated tour, get a Priority 1 out of there, pretty much get where you want, and if not exactly where you want, very close to it. I said alright I’ll do it, so here I am.”

Bruce Gray (2010) explained his situation:

“When you finish isolated duty you get an extra thirty days off, which they want you to take before showing up anywhere else. They want to normalize you again. I hadn’t even seen a tree in a year, you know ... just to be able to go to a store and buy a coke or to see women walk by ... you never, ever forget it. You never appreciate things like you do when you get back from a year of isolated duty. [In] Florida, I kinda cut loose quite a bit down there ... I bought a couple of motor cycles and was really having a good time. I had a girlfriend, I was definitely burning off some steam that had built up in Alaska.”

FN Ryan Mills (2010) of Smithville, Texas said, “I am going to MK school. I work with the MKs here ... I want to go MK and do engines and boats. I’m going to Yorktown, Virginia for A-School.”

SN Hamlin (2010) said:

“Right now I just got orders to the MK A-School which is a machinery technician [school], and I’ll be leaving there October 17th. I’ll be going to go report there and continue with A-School, and I’ll be an MK for a while, hopefully, in my Coast Guard career.”

Others, like FS1 Clingerman (2010) saw LORAN Station Attu as the terminus of their USCG career. He explained:

“I am going to go to college. Study bookkeeping and accounting. Probably go to UConn [University of Connecticut]. August 27th I’ll make my twenty-year mark. I am going to retire in Connecticut. In my career I’ve seen a lot of people get out of the Coast Guard. They never had to really pay bills. I am paying for my house right now. I’ve seen too many people get out. They’ve lived in government buildings. I’ve lived in a house since ‘97. The new GI bill that came out, I’m going to use that for my college. The biggest difference is that now I get BAH [basic allowance for housing].. Whenever I go to college, I’ll get VAH—housing allowance for an E5 with dependants. In Key West, I will get \$2,300 for housing. A full time student is thirty hours. I’m gonna take summer school. I only gotta do ten hours a semester including summers.”

Of course, since the normal tour of duty on Attu is one year, people have been leaving LORAN stations for over 60 years. Randy McDonald (2011) told about preparing to leave Attu in the 1970s, and then being re-assigned there many years ago:

“When we were there, we were committed. You had no choice, although they watched me for a day or two after I got told, because I was getting short. We had a short stick that’d you cut and put notches on. It usually started as a walking stick and it’d get shorter and shorter ... by the time I was out it was a pencil stub. They were going to put me on a ship and I was like no, so they said if I stayed a couple more months ... so I had to start a new stick. I was alright, I just wasn’t happy about it initially.”

10.0 MORALE, WELL-BEING, AND RECREATION

It is the stated mission of the USCG's Morale, Well-being, and Recreation (officially called "MWR", but the program, and any of its amenities were usually referred to simply as "morale") Program to "uplift the spirits of the Coast Guard family and be an essential element of Coast Guard mission readiness and retention, not only its military members, but also the entire Coast Guard family" (USCG 2000:1-1). Despite the policy, programs and services were not equitable or even similar among LORAN stations because of facility differences and variations in weather, accessibility, and logistical operations. Rather, COs developed their own MWR programs based on the assessed needs to support military readiness, camaraderie and unit cohesion, esprit de corps, promotion of individual development, and quality of life, as they are perceived as a valued benefit.

MWR programs were the responsibility of the CO and his or her chain of command. In addition, each facility had an active morale committee. The committee acted as an intermediary between the users and the command. They were intended to be advisory, but in cases like LORAN Station Attu, they were actually responsible for thinking of what to do next.

The USCG placed very few limitations on the types of activities, as long as they accommodated the majority of the assigned personnel and remained flexible enough to meet individual needs (USCG 2000:1-3). Activities or projects might include gymnasium athletic equipment, physical fitness activities, libraries, picnic areas, recreation rooms including movie theaters and beer bars (at Command's discretion), and arts and crafts materials. Revenue-generating activities, such as community events and pay-movies, were allowed and were sometimes implemented where practicable. LORAN Station Attu included a metal shop, a wood shop, several mountain bikes, snowboards, fishing equipment, and a recreation deck, (rec-deck). The rec-dec consisted of movie theater seating with three rows of five plush, reclining chairs each, a projector, and a screen; a computer with hundreds of downloaded videos; a pool table/ping-pong table; and a bar stocked with sodas, water, and beer. Crew members also had access to firearms, ammunition, boats, and all-terrain vehicles. The MWR program was funded by both appropriated and non-appropriated sources, such as profits derived from the Coast Guard Exchange System.

SK1 Sippy (2010) introduced the study team to the rec-dec. He said, "this is the rec-dec, so we have games up here: foosball, pool, ping-pong, and we have a beer locker back there. And if you look at the sheets that Petty Officer Fortner has..."

MK2 Lance Fortner (2010) interjected: "Do you mind if I explain? What we're gonna have in there, you'll see the first few pages in the binder." Holding up a three-ring notebook they used to calculate each person's bar bill at the end of the month, he continued:

"The first 20 pages have crew members up on the top left corner and they're printed out. With the pages towards the back you'll see empty, on pages like this one, we just ask that you put your name on there. Some of the rules for the beer locker: I don't open until 18:00 (6:00 pm). There's a four-beer-a-night

limit. You can't be intoxicated at any point in case we do have an emergency. It closes, in between Sunday through Thursday, it closes at 22:00, and Friday and Saturday it closes at 24:00. Basically, you're just gonna write a tally mark next to the beer that you purchase. It has the price right there so you know what you paid for. Like I said a four-beer limit on 12-ounce beers. We do have a 20-ounce Alaska smoked porter, and the limit on them is 2 a night."

The binder contained loose-leaf sheets with each person's name down the right margin and a list of beverages across the top. They used the honor system to log beverage purchases. Later, one of the Coasties pointed out the column on the far right, which read, "Purchased for Others," and said, "this is how we get around the four-beer limit."

Continuing with the tour SK1 Sippy (2010), Fortner added:

"You have to keep all alcoholic beverages on the rec-dec here. You can walk right outside with them. Sometimes we'll have like a barbeque, things like that, so if that happens while you're here, then we'll have it in an area where you can have it. But just don't leave with any alcohol beverages; we can't have it down the rooms. It needs to be contained here."

The presence of alcohol at LORAN bases was at the discretion of the CO. Shoal Cove was a dry station in 2010. ELC4 Enters (2010) explained:

"We're probably less lively than the other stations because we don't have a bar. We are 'dry country' here. And that's different. My last tour, we did have a beer bar in Shoal Cove. You can go into town and drink, but I think it has worked out well here at the station. The thing that changed the dynamics is the drinking age went from 18 to 21. If you have a beer bar at a place like this, then you have those that can and can't use it, so there is kind of a division. I'm a big kid, you're a little kid ... that kind of thing. When we removed the bar, it took all that away and made everybody on the same level again."

Others stations had beer or wine with or without limitations. Dave Meredith (2011) said, in 1966 to 1967, "Reeves [Aleutian Airways] only brought the mail in twice every two weeks, but I think we only got big supplies once a quarter. I know they brought an awful lot of beer up there ... they flew it in." He went on to describe that they would fly in "30 pallets at a timethen it only cost like 4 cents a can. We got a lot of Olympia beer."

Randy McDonald (2011) said:

"In the early 1970s, I tried to brew some wine one day; I got some raisins and stuff. As you go down the stairs from the living area there's a storage area beneath those stairs. We tried to make it, but it was horrible. But one of the engineering mates got busted a rank because he was making vodka with potato peels, and they blew up. That's how they caught him."

Randy McDonald (2011) also said on Attu Island in the late 1970s, “we had a little bar, we were allowed like two beers a day.” MK2 Fortner (2010) continued describing the rec-dec, “In the back, there’s buckets for glass, cans. We recycle everything here, so just put it in the appropriate place.”

The USCG did not always provide morale equipment. According to Bill Swansburg, Attu 1958-59 (2011):

“One thing the Coast Guard did not encourage out there was morale. I saying this right from experience. We had not one fishing rod, no snowmobiles, no skis, nothing. All we had was a snow-capable CAT[®] that was the commanding officers’ and was locked up 90 percent of the time. I see from what I’ve looked at on the LORAN-C station ... they have guns, they have sleds, they have skis. We had none of that. Your social life was what your roommate made it. I had a roommate who would sit and look at a wall for one week, then he’d turn and look at another wall for another week. So my social life was outside of my room.”

He added,

“Navy pilots were the ones who supplied us. God love ‘em. They’d come out every other week because they used [to] like to go fishing’ or go to see the station. We would call them and get a morale order. Say you wanted a fishing pole, they would bring it out.”

A 1946 inspection of the Attu LORAN A Station on Theodore Point reported that the:

“Morale is very poor, in fact at about its lowest possible point, yet not putting the personnel out of control [implying that crew’s morale is just above mutiny]. A number of the men have been stationed in the Aleutian Islands for periods exceeding two years and no attempt has been made to give them a change of duty or leave of absence. Due to the extremely poor transportation facilities ... the Morale Officer and Chaplain will not even hazard a trip to the station (USCG 1946a).”

This situation, where they kept the men on station for several years under deplorable conditions, seems bizarre by early 21st century standards; however, the American LORAN stations appear to have been significantly better off than some foreign stations.

USAF’s psychological study of isolated LORAN-based personnel looked at Canadian stations staffed by both American and Canadian personnel in the late 1940s. They reported a striking difference between Alaskan stations and Canadian stations (Pinks 1949). The Canadian stations “presented, generally, a picture of haphazard planning, inadequate space, and flimsy, temporary construction.” Floors were plywood laid directly on snow. Oil stoves smoked excessively and were faulty in operation; the floors beneath them were oil-soaked. The mess halls were dirty with an insufficient supply of water; no showers were available for bathing,

so washbasins were used. Latrines were poorly situated, and one station even used “honey pots” (Pinks 1949:1).

The Alaskan stations, in contrast, were “well planned and systematically laid out. Adequate foundations, sound, double floors, and double walls at either end gave these buildings a much sturdier construction” (Pinks 1949). The buildings were well insulated. Heating was satisfactory with the oil being piped in. The latrines were well built, and adequate facilities were provided for recreation, including ping-pong, movies, a library and post exchange (Pinks 1949:2).

The study also found that considerably more attention should be given to special service and recreation equipment (Pinks 1949:6). Major factors influencing morale included a lack of recreation facilities, poor mail service and meal quality, and the absence of alcohol. The study recognized that qualified mess personnel may be another important factor affecting morale, as stations with the highest morale were observed to have the best mess (Pinks 1949:6). The study also recommended that isolated LORAN bases have a supply of beer and soft drinks available to keep morale high (Pinks 1949:5).

10.1 RECREATION

10.1.1 Fishing

“My father was very sure about certain matters pertaining to the universe. To him, all good things - trout as well as eternal salvation - came by grace; and grace comes by art; and art does not come easy” (Norman McLean 1976).

As previously noted, participant observation was one of the techniques used to gather information on the social history. And perhaps one of the most heralded social activities on LORAN Station Attu was fishing, although not everyone derived the same amount of pleasure from it. After asking a few of the men who were the fishermen on the island, it seemed to be unanimous—most people liked to fish, but DC1 Josh Pinkley was passionate about it. Someone pointed out “DC1,” and I asked him if I could accompany him on his next trip; he said they were going halibut fishing after work that day.



Figure 19: MK1 Pinkley (right) pilots the boat toward his favorite fishing spot

DC1 Pinkley and MK3 Ledbetter met me at the beach at the prearranged time with a 13-foot bay cruiser pulled by a Sno-Cat[®]. They had brought enough gear for the three of us. It was cold, probably in the low to mid 50s Fahrenheit. They had bright orange foul weather suits. We suited up, launched the boat, and headed directly south out of Massacre Bay.

DC1 Pinkley is a tall man, about 6'5". He was described to me twice as "the tallest man on base." He has an air of self-confidence, and his men are demonstrably respectful of him. I asked him about his background. He is from Bend, Oregon. His father was a fisherman. He grew up fishing and was the authority of all things related to boating and fishing. It was in his blood. When he was at sea, he was at home.

Pinkley piloted the boat to a position about 45 degrees off both Alexai Point and Murder Point where the depth shallowed to about 60 feet. Pinkley (2010) explained, "there is a small ridge underwater here." It was his spot, which had been shown to him by someone who had left in the previous year, and was probably shown to him by someone else, and on and on since sailors first staffed Navy Town in the mid-1940s. He continued explaining, "the idea is that we'll drift along this ridge with our bait about three feet off the bottom." He cut the engine and unfolded white butcher paper revealing several frozen salmon cut into thirds. We baited the hooks, and we began to drift.

There was no wind. The boat drifted, barely moving with the sea, making soft lapping sounds as it licked the sides of the boat. Off in the distance, about 150 yards away, a whale surfaced and exhaled with a 'pushshshsh' sound, blowing water spray about 20 feet into the air. The silence was intense, broken only by the whale surfacing and an occasional puffin or seagull proclaiming their presence as they passed by. MK3 Ledbetter lay on the deck in the bow, not making a sound. In fact, he was so quiet, I wondered if he was asleep.

After what seemed like hours, DC1 Pinkley (2010) took out his knife and cut several pieces of the salmon we were using for bait and began throwing them overboard. Like all good fishermen, he had a plan: “my idea is to push that fish down, and the halibut would come up out of the deep, and we’ll start feeding them salmon guts and salmon heads.”

The whale continued to circle our boat, slowly moving closer and closer. “He’s probably going to fart on us,” Pinkley exclaimed. I laughed and said, “How ridiculous—it’s probably his breath when he exhales.” DC1 assured me, “No, it’s not.”

We continued drifting, waiting, like all fisherman do, for some unseen behemoth to rise up out of the deep and take our lines, in an age-old confrontation of man against nature...a confrontation that allows us to confirm our superiority as a species and at the same time validate our own maleness.

Pinkley had made a harpoon from a broom handle tipped with a Phillips-head screwdriver and a metal cap with a pin through it to allow it to toggle. The harpoon tip was attached to a metal cable, then to a braided rope, and then to a Styrofoam buoy. I looked at the implement, thinking he’d spent hours gathering the materials and fabricating, welding, and sharpening the tool not unlike the Aleuts who had fished these waters for centuries before the Japanese relocated them. The harpoon lay on the port deck.

Suddenly MK3 Ledbetter jumped, “Got something,” he yelled and began to reel and reel. There was no dramatic fight with reeling broken by long runs and acrobatic leaps. He just continued to reel like he had a tire or an old boat motor on the end of his line. As the fish approached the boat, DC1 grabbed the harpoon. Slowly the dark massive form closed in on the port side of the boat. The line snapped. There at the ready with his arm cocked, and harpoon in hand, was DC1. It happened so fast I cannot say whether the line snapped first, or fish was speared; but the fish disappeared, and so did the Styrofoam float attached to the harpoon. DC1 proclaimed, “we got him. He’s not going anywhere with that harpoon attached.” A few minutes later the float bobbed about 20 feet off the starboard bow.

They hoisted the halibut onto the bow and went back to drifting. The whale continued to circle, and did not seem to notice or care about the excitement of three men hauling a fish into a boat, although he undoubtedly watched it happen. After fishing for another half hour or so, the whale had closed to within about 50 feet of starboard. As he broke the placid water with his dorsal fin, an incredible stench engulfed the boat and the three of us. There was no blowing sound of the exhale, just a horrible smell of rotten eggs and fish. DC1 congratulated me, “You’ve now been farted on by a whale,” as though I’d been through a rite of passage that somehow allowed me to be part of a brotherhood of halibut fishermen.

They beached the boat, loaded it on the trailer, and proceeded to the “Five-Bay” to clean the boat and stow the gear. MK3 Ledbetter (2010) attached a small spring scale to the fork on a forklift, “74 pounds—small by Attu standards.” He proceeded to cut the fish into several packages to be frozen and shipped back home.

Fishing stories on Attu go back decades, Bill Swansburg (2011) who was there in 1957-58 reported:

“When you’d go fishing, all you need was a pole with a line with a hook on it, and you snagged them, the salmon. We pulled three, four hundred salmon in a day. Then we had an engineman by the name of King, he was a first class engineman, and he would take all the dynamite that he found someplace, and when they started to go up the river to spawn, he’d throw a piece of dynamite in and stun 50 or 60 of them. We’d wade in the river and pull ‘em all out and the cook would get them all ready and we’d smoke them. We had salmon all year round.”



Figure 20: MK3 Ledbetter with a "small" halibut, at least by Attu standards

According to Randy McDonald (2011), during his 14-month tour on Attu from 1971 until 1973, “We got silver salmon over by the station where we were. On the other side we got sockeye salmon. Two times a year, you’d get swans in; they migrate there.”

“We’d go over on the lake on the other side by Chichagof Bay, and we’d go to the lake over there and go for dolly vardens, they were trout. But there you needed a bait until the salmon came in. The other thing we would do, without telling the commanding office, we would take the Dodge power wagon – it was

more of a truck with a king cab on it – and we would take that and drive up the river until the water got close to almost swamping the engine, and we’d stop. And we had a galvanized bucket that we’d put in the back end, and we’d build a fire there and we’d sit there and fish. We never caught much. It was more drinking beer than anything else ... get away from the station (Swansburg 2011).”

The record fish size for Attu, or at least the recent record, was a 186-pounder caught by MK1 Joseph Richie in 2009. A photograph of the fishermen involved in the catch along with the prize fish, graces the wall of the rec-dec bar. “When I was home on leave, this guy told me that he had caught a 90-pounder. I told him that was a small fish out here (Richie 2010).”

MK1 Richie tried to pass his love for fishing on to the new guys. As he told, “there’s a lot of us that fished before, and others that have never done it. We try to get everyone out of there. We help the guys with their tackle and bait (Richie 2010).”

At LORAN Station Shoal Cove, James Carter (2011) found the crabs and shrimp to be plentiful. He explained:

“I’d run down to the boat dock and put out a couple of crab or shrimp pots or pull some in that I already had out. We had plenty of crab out there, plenty. Shrimp were a little harder. They were down a lot deeper, some of them down 600’. By the time you pull up a shrimp pot from 600’ with your arms, you don’t want to eat shrimp anymore, even though they were big. You put the crab pots just off the pier. Honestly, half of the pot would be out of the water at the right tide. Just grab the string, pull yourself up to it, and empty it out. Your hands hurt ya for two days because you had about 100 crab. I think the quota back then was like twenty per day per person, so if there were two of ya out there, then that was forty a day.”

Some fishermen did not have the foresight to bring their own equipment, and gear was not always provided by the Coast Guard morale program. Bruce Gray (2011), said in the early 1970s, “We didn’t have any fishing poles, but we shot a lot of salmon with .22’s that were coming down the stream and ate those.”

10.1.2 Skiing

Skiing was a popular sport to help pass the long winter on Attu Island, but without a ski-lift, they had to find alternative means of getting up the hills. “We have the Bombardier, or the Tucker, either one. The Tucker digs in too much. The Tucker makes it about $\frac{3}{4}$ of the way up (Turcott 2010).

“It is about [a] 2 to 3 minutes run, about 750’. Mount Terrible is 2,000’, so artillery must be about 1,000’. We can take it all the way up (Mills 2010).”

“Some of us faceplant down the hill Senior (MCKS Strecker) did cross-country skiing (Ledbetter 2010).”

“I usually go head over heels,” added MK3 Turcott (2010).”

“We had skis and snowshoes if we wanted to go outside in the winter (Meredith 2011).”

“A couple of us wanted to go up Terrible, but the CO put the kabosh from the command on it. It was so soft, I just sunk. I’ve been going down Artillery and fell upside down up to my knees. It was so soft one time I sunk upside down. I’ve never gone out by myself. You have at least one other person (Mills 2010).”

“We did go up Mount Terrible a lot, the one right behind the station. That was an old volcano; you could see where the cone was and everything. We would always haul our stuff up there and some of the sleds we made ... oh my lord. That was all a part of the fun. Someone was always making something for us to do as long as it wasn’t too dangerous. We’d hobble together some plywood or something. We cut an old water heater in half and made a bobsled- type thing. We had the tools, so we could build anything we set our minds to; that was the fun part. Oh, and stereos. Everyone was into stereos out there, especially Fisher brand stereos. Since we could order through the fleet post office, it was pretty cheap, so everybody would walk in and be amazed by these beautiful stereo systems. I still have mine in a box upstairs (McDonald 2010).”

10.1.3 Continuing Education/Self Improvement

“It kept me very busy, and also I was so bored I spent many, many hours just reading the second class petty officers manual to get to ET2. And I passes that up there, which I doubt that I would have done if I would have been stationed at another nicer station. The electronics manual was like several phone books thick ... books of all this technical theory stuff, which, to be honest, I don’t even think I understood half of it. I just looked at it so many times I just memorized it. I didn’t understand it, but I could repeat it (Gray 2011).”

“Because it’s such a slow-paced atmosphere out here, I had time to sit down and take college classes and stuff like that. So that’s one thing that I wouldn’t have been able to do at any other unit really, is take the time during, you know, a lot of free time to do that (Huston 2010).”

10.1.4 Dogs

Through the decades of isolated duty on LORAN Station Attu there were many dogs, and these dogs seemed to be important companions to the Coasties while they were away from their families. MKCS Strecker (2010) said:

“One of our dogs, Tennessee, would lay near my office all day long and. lay on the couch. [We would] talk with them, and you know, he was really, you’re my best friend”. He added, “Kiska and Tennessee we adopted from the animal shelter in Kodiak back in 01/02 as puppies or fairly young.”

Dave Meredith (2011) told of different dogs:

“We had three Malamutes. One was Brownie, Clowndog, and I forget the other one. They wouldn't come inside in the dead of winter; they buried themselves in the snow. When you were outside shoveling, you didn't know where they were. One guy hit one of the dogs in the butt with a shovel, and it scared the living crap out of him.”

Randy McDonald (2011) said:

“The thing that ticked me off was that after I left, some idiot brought a female dog out there, and that messed up the three huskies we had. Sparkey, the true husky with the [different] colored eyes, he had the curled tail and everything. The others were sort of half breeds and stuff like that. They were good, they were fun.”

Senior (MCKS Strecker) relayed a couple of stories about the dogs. One story was about chasing rats at LORAN Station Attu.

“The beauty of the fall here is that the rats start trying to move into the building and we have traps that are baited with dog food in different places ... actually all over the station. Particularly over in the five-bay and generator room; there is where they try to get in along an underground cable and those kinds of access points. Every morning the dogs would run down there and check the traps and you hear a rat squealing. They’d keep on barking until someone came down and took the trap out of wherever it was. Take the trap outside and the dogs would be sitting there waiting. They would open the door, and the rat would jump out right into their mouths and they would just have a blast with it. That was fun. But one morning, right here in this office, we were meeting with our senior engineering people and the store keeper next door let out a squeal. Actually, the dogs smelled it first. The dogs would often just go around sniffing around the different piece[s] of furniture, and Tennessee just went nuts. He knew there was a rat in his office. Both the other dogs came running. We all went in the office, and we were trying to move furniture so the dog could get at it. Now, this [was a] fairly small rat in relation to what the rats normally are here and had some white on it, so it may have been a young one, I’m not sure, but it went “pfeeeeewww” behind the file cabinet. We moved

the file cabinet and it went flying another way. It must have been pretty fast because they didn't get it initially. They got it cornered again, and then it made a bolt for my office and went under the couch. We lifted the couch up, the dogs went after it, it went flying back underneath my desk and the dogs went after it. You know, it went on and on and finally we got it out into the hallway. There were about six of us out there trying to corner this thing and ... the guy out here screamed like a little girl when he saw it ... (Laughing). He went running down the hallway—the rat went that way and a guy down at the end of the hall. [He] had a broom, and he stopped it. The dogs were able to get it. So that took probably ten minutes before we got that rat, but that was a good time (Strecker 2010)."

He also relayed that Tennessee and Kiska would accompany them on fishing trips. He said, they would attack the fish as they reeled them in. Tennessee would "actually go in and grab the fish with his teeth when they were reeling it in. But definitely, a lot of times, there would be someone brushing his hair and the other one would be petting it. Every meal, they'd be hanging [around] two inches into the mess deck waiting for someone to throw them a scrap (Strecker 2010)."

At LORAN Station Shoal Cove, back in the early 1980s, they kept a pack of wolves for pets, according to James Carter (2011). He said, "If you walked out the rear of the galley and just looked out there about thirty or forty yards, I had a concrete pad poured out there with eight-foot-high chain-link fence ... out there that all pointed in. It was 15' × 40', and that's where I kept my wolves."

"I caught an entire pack out there. We had three out there, two to start with. There was an all white one. That was the commanding officer's. The store keeper, Dustin Dewitt out of Indiana, got his; I don't know from where. We had all three there. There was about four people that could go in the pen with them ... never bothered us ... They're a pack animal. They know mom and dad. Sometimes they tolerate you and other times they won't. I never got bit, but I did lose some clothes. When I'd turn around to go, it'd run behind me and grab me by my shirt. Never got the skin; it was just his way of playing."

Ron Caswell (2011) spoke intimately about the relationship of the crew and its dogs during his year on Attu in the early 1970s. He relayed:

"... part of the crew I haven't mentioned so far today, but if you look at my photo album there's more pictures of the dogs than there are of the crew and our dogs were incredible. They were the coolest dogs I've ever known in my entire life. Just living out there on the island with us. They were well fed. They had thirty-two fathers that took care of them. I remember our dogs were gone. We had an earthquake and they left, and about two days later they came back. They, they knew, they went up to the mountains. We don't know where they went to but two days after the earthquake our dogs came back. We had one dog that could figure out how to get a door open and he would come in and go

down to the radio room. He would open the door he could let himself in, and he'd lay on the floor in the radio room, and we all loved that. In the morning about the time that the officers were getting up, he would go push the door open and away he would go. And we, we were always happy to have his company and he never made a mess or anything so we never got in trouble about him, but our dogs were a big part of our life."

He added, "I've never been as close to a dog than to the ones that were stationed out there. They were our buddies. You went for a walk they went with you."

10.1.5 Exercise

At the orientation to LORAN Station Attu, SK1 Sippy (2010) explained:

"Okay they brought one of the bars down, so if you want to lift some weights, you still have that. And we have an elliptical still down there and a treadmill, and there's a stretch cage which shows you stretches. It's nice; I use it after I run. We also have a Jacuzzi downstairs. If you didn't bring a swimsuit that's fine, just make sure that you're wearing a pair of shorts and a clean pair of underwear underneath, and make sure if you're getting in the Jacuzzi, that you've already showered. You don't want to come in from the outside – and then come in and get the water all nasty because it takes a long time for it to filter back out. Usually we have to drain it if that happens and put new water in there. But you're free to use that at any time."

According to several sources, there was once a gym on Attu Island. According to Randy McDonald (2011), in the early 1970s, "there was a gym; we played basketball. We kept lights going. We had a generator. We used to goof around. Attached to it was a one-lane bowling alley, and we had fun with it. You'd go over to the mess hall and movie theater; then you start to wonder about the people who served there and the ghosts that were running around. There was quite a city there at one point. If you face south of the station, that point way off to the left, there were a lot things over there." He continued:

"We had basketball; that was our big thing. It didn't matter what the weather was, we'd play with gloves with the fingers cut off. We'd play basketball. You know, up at the station, there was a place to watch planes come in, a tower. We had a ping-pong table up there. Yup, ping-pong and basketball and arts and crafts. Then the movies ... beer was cheap, soda was cheap. We used to make snow forts. There was one picture that I sent you that sort of showed a snow bank behind the station. We would go and make magnificent snow forts up in there just for something to do (McDonald 2011)."

Other LORAN stations, like Cape Sarichef, too had a gym. "We did have a basketball/handball court, which was indoors, and a sauna. We had a pool table too" (Gray 2011).

During one of the interviews in the timer room, the lunch call was piped over the intercom system, and the interviewee made an immediate and uncontrolled lunge toward the door. He caught himself, paused momentarily. Others in the room rushed out. When asked, “why is everyone so hungry,” the interviewee responded:

“Everyone goes fast to eat so they can leave and take a nap. It is a break in the day. They try to get there fast so they can eat and go take a nap. That is basically what we do. Some of us, actually 95 percent of us, will take a nap. Some of us, if I am not feeling too good, if I go to bed at midnight, or if I am just dead tired because of the work day, I’ll take a nap (Turcott 2010).”

“We got into a little boxing too, but that didn’t end well. We got a couple of busted noses and contusions, so that didn’t end very well. We stopped doing that (McDonald 2011).”

10.1.6 Exploring WWII History

On the investigative team’s first day on Attu Island, ET1 Ornelas (2010) described some of the hazards associated with the island’s military history:

“Certain spots around the island, most of its left behind from WWII, and when the Army was out here, Army/Navy, before they left they, tried to destroy all of it. But it didn’t get too old, and some of it didn’t take, and so it’s still really dangerous because it can blow up on you. So out here, we have areas that are sectioned off, or at least we have signs telling you that you’re going to walk into an unexploded ordnance area. But we do get really high winds out here, upwards of 180 mph. So just because you’re not in that area, doesn’t mean you’re not looking at something that could be unexploded ordnance. So the biggest thing is, recognize, retreat before if you see something that you think is unexploded ordnance. Get away from there, don’t chance it.”

He warned:

“It’s a pretty long flight for us to get anybody out here, and it’s gonna take just as long; that’s if the weather is nice. If the weather is real shitty and all foggy, it’s up to the pilot. So, you can be stuck out here for a long time, and be really messed up just because you decided to take a stupid little chance. So if you’re not sure, don’t test it (Ornelas 2010).”

ET1 Ornelas (2010) showed slides of a map and several photographs of ordnance found on the island. He described:

“Most of this training is gonna be just pictures showing you some of the items that were left behind and some of the stuff that you can run into or can encounter. That way you’re a little bit familiar, but it doesn’t cover everything. I’ve only got the pictures that the guys came out here and took when they did their look. The biggest areas, or the primary areas, are just past the runway.”

He pointed to specific areas on the map:

“If you look out here on the left hand side of the runway just up Peaceful Valley, there’s a ridgeline to the left of it. You’ll see there’s a burned house. This area is right next to this field right over here. There’s mostly diesel tanks that you’ve got to worry about there, no mines. Some people used to say that, but it’s just the diesel tanks at the end. Over here is the Siddens Valley. Mount Terrible is right over here. If you go on the right hand side of where we’re standing right now, all the way back, that is the Black Mountain. On the left hand side of the valley is Siddens Valley, and then out here is the C-130 crash site, and at the base is the Alexai Point Runway. This strip of land coming out over here is Alexai Point. At the very base of it, there near the runway – I believe it’s on this side of the runway – there’s an ammo pile they tried to burn off. If you guys do get a chance to make it out there, there’s mostly 30.06 and other small rounds, but there’s also hand grenades and mortar up in this area near Fishhook Ridge ... There was a lot of fighting, and since there was fighting all around here, they drew all sorts of stuff. So you can still find other stuff, even though it’s not within a sectioned-off unexploded ordnance area. So just be careful. So, out of the Westside point majority, like I said, is going to be small rounds. So these are 20 millimeters and 50 cal rounds. Some of the detonators – that’s the burned pile where most of it is gonna be found – and the other stuff is just mostly blown away from winds. At Haskell Field, you have 4-pound bombs, parachute flares, some 10 pounds, more smaller ammo, and 75-millimeter high explosives.”

The WWII context is a salient feature on the island, and one of the primary attractions to the men stationed there. According to FN Banks (2010):

“It’s actually pretty neat being a part of all the history here and being able to see it first-hand. Having never known anything about it, and then saying ‘hey your going to Attu, and looking up a few things about it ... finding out ‘hey, this is where the U.S. was invaded’, the only time its ever happened. And then coming out here and seeing it first-hand. Being out here, being a part of it, it’s pretty cool. Especially since we’re the last people that are going to be here.”

McDonald said:

“The only thing they got on us about was a big store of dynamite on one end of it. They were afraid of running into it. So one day we got a thirty ought six out and hit that, blew it; nitroglycerin was leaking out. We used to utilize a lot of old facilities from WWII. There’s a lot of hardened bunker-type things there too. They had dirt over them, cement and metal. Always had some interesting things happen with munitions, somebody doing something dumb. One day I was off island, I was an electronics tech, but I got tapped to take a guy to Shemya and then to Adak for evac for an appendicitis. While I was gone, somebody had taken a big shell; he thought it was lead on the head of it. He had it in a vice in the shop, then he hammered it, used a saw on it...he couldn’t get anything off of it. Then he took a propane torch and hit it ... it was a sixty

millimeter ... The head is loaded, so it exploded. It banana peeled, so it didn't kill him. He had superficial shrapnel, but a piece went through the wall and would have taken the chief's foot off if he had been sitting there. But it also went straight up and caught somebody in the butt in the movie theater upstairs. When I came back, he was going out in the flight I came in on (McDonald 2011)."

According to Banks:

"You can fish anywhere. This is one of the places I decided that once I'm going to be here, I'm going to try to see the history part of it. I can always go fishing somewhere else (Banks 2010)."

Kinzel concurs:

"You can feel like you're right there. You'll go up on Fishhook. You'll find these foxholes and these rocks, and they'll be hundreds of empty shell casings. You know somebody was sitting back there getting shot at, you know, machine guns and all kinds of stuff. You go up on the very top of Fishhook ... obviously where the battle ended. The Americans went up the side of the mountain and finished off the last of the Japanese. And you'll see, if it goes from casings from rifles to casings from pistols, you can tell where things got intense. So it's really nifty to see that. It's amazing to be on that mountain, to think that people went up that while being shot at, because it's almost impossible to climb it under normal circumstances when there isn't any snow. But with snow and people shooting at you, I don't know how they did it. Just unbelievable (Kinzel 2010)."

SK2 Sippy (2010) said"

"I've been across where the old airstrip was out in Alexai Point, just looking and seeing. Especially, it's cool to read about some of this stuff first and then go look at it. Hearing about what the runway conditions were like, that it was just metal plates just thrown out. The planes were landing on them, laying on them like, what are those floats that the kids jump in like a castle? Like trying to land on that. So actually being able to see that, and see the remnants of what they were talking about, you look and you can still see all those metal sheets out there. They're rusted and falling apart, and most of them are not recognizable unless you know what you're looking at."

"I think it's a great honor to come out here and get to see the things I get to see," said SN Kyle Hamlin (2010), one of the youngest men serving on Attu. He continued,:

"There's plenty of places in the United States, the lower 48, that you can go look at that do have some things that are, you know, WWII memorials and stuff like that. But you don't ever get to experience, I guess, the feel that you get when you actually see it ... You know that people have shed their blood for your country, and you're out here giving up things for your country. I think it's

a real good feeling to come out here and see the things that you get to see and look at all the old equipment that's out here and be like, wow, someone 60 years ago was using this, and it was in use, and now it's just kind of been left behind to take a look at. They're all American like we are. It's defending our country. It's doing something for us, and I feel that I'll never be able to match up to what they've done out here. But all I can do is really take it in and just respect what they have done."

Hiking is one of the activities most often mentioned by the men stationed on Attu Island. ETC Alex Limonte (2010), the Executive Officer at LORAN Station Attu in 2010, said, "I climbed one of these over here all on the Gilbert Ridge, the point there towards the battlefields. That was pretty neat; it gives you a pretty good view from up there. Artillery Hill I've climbed that one."

When he was warned that he only had a few weeks left on the station, he replied:

"I'm gonna do Terrible at some point, but that's right there, no rush on that one ... I'll get it in, though it only takes 5, 6 hours max. Then the one I want to do even more than that one is what's is called, I think it's called Lookout Mountain or West Mountain, 'cause if you're on that one and you get to the top of that one, you can see all of the coast headed towards Temnac Bay, and you can see all of this area around here ... Every one you do is a different view, so I definitely, would like to do both."

"I've climbed every peak you can see from the station," said Strecker (2010).

The people stationed on Attu have been climbing the mountains for exercise and something to do as long as there have been people stationed on the island. "On the weekends, we used to go boon docking," said Randy McDonald (2011) of the early 1970s.

"We'd get everybody together, take the trucks up, and go to the other side of the island. If we had to build a bridge to get there, we'd do it.... over where the Japanese came in. Those structures were still over there. Yeah, there was a graveyard over there where, I guess, the Russians killed off the indigenous population at one time. We got out and about as much as we could. We saw lights in other places and wondered if there were secret submarine bases on the other side of the island. If you face the station, as you go left, we got up around that coast quite a bit and saw some really neat things. There was a zip line from up above on a cliff where they could load stuff up on the beach and take it up to the structures above. The shoes we wore were called boon dockers, those metal tip things.

"They had seal flies there. It's kinda like a big round bumble bee that's a fly, and they were big enough to carry lice, and when they landed on you, they'd run off. Weird little things. My favorite things were the Alaskan lupines that lived out there.

“Yeah, that was fun. The wildlife with all the seals, whales, all sorts of stuff ... Over on that other side of the island where the village was, where the Russians killed everybody, there were gun emplacements over there with big round guns. I think there was a lot more to see that we didn’t get to see ... That was nice that I was able to go in all those buildings. I remember the lights were like an old wagon wheel ... they were like a rough hewn pine boards. We didn’t do all that much climbing (McDonald 2011).”

Several people mentioned collecting glass fishing net floats that would wash ashore. Randy McDonald (2011) explained:

“We went out to Attu one time and some of the guys, like the officers, knew about the Japanese glass balls used for fishing. They were kind of valuable; they were golf ball to beach ball size. If the net broke, then they’d wash up on shore. When we were on Attu, they took one of the lifeboats out to Attu to look for them on the shore.”

Dave Meredith (2011) added:

“Yeah, we used to look for them on hikes. I have about thirty of them in my cellar still. They were green, amber, clear, a lot different colors. The larger ones were hard to find. Most common size to find was about a softball.”

McDonald (2011) added:

“Also what we did was walk the coast and look for glass floats for fishing nets. The Japanese ones were clear and had a nipple; they were hand-blown. The Russians [balls] weren’t worth as much, but we were always looking for those and always for the big 12” ones.”

As part of the current study, one of the participant observation events was a hike to Sarana Bay. The event was planned Friday evening, July 30, when SK2 Sippy proposed a hike the next morning to Sarana Bay—about a mile stretch of beach where we could find sand dollars, and in a roundabout way, asked me to join. He said it was not too difficult, and sold it as, “goin’ to the beach for the day.” I looked forward to seeing a sand beach on Attu on the Bering Sea coast where few people have been. In the rec-dec bar, Ornelas overheard the discussion about the hike and warned us that it wasn’t all that easy. In fact, having never been, he was reluctant to go himself. He pointed to it on the map on the wall next to the bar, but then, mountains don’t look so tough on a map.

It was the study team’s last full day on Attu. I awoke as usual, or as usual as it had become for me to wake up on an island in the middle of the Bering Sea with twenty Coastguardsmen. That morning at breakfast, Sippy warned me to pack a snack—“we’ll be eating lunch at the beach,” he said. Thinking we’d only be gone a few hours, I grabbed a granola bar and snatched a water bottle from the pantry, grabbed my camera, and met the others out front. With us were ET1 Ornelas, ET3 Kyle Hamlin, SN William Sniffen, and FS3 Jason Banks. We

hopped in the six-wheel drive Bombardier and four-wheel drive Polaris and drove as far as we could, over a makeshift bridge and past some old Quonset huts that looked like former housing. We stopped just before the weeds got really high—up to our shoulders. We were already dirty from the drive. We trekked on about a mile or so when the guys began looking for a place to ascend the bluff to Jackass Pass—the pass that would take us to the beach. The pass was named during Navy Town days, presumably because only a jackass would try to hike it. During the Battle of Attu, the Japanese encampments were at Holtz Bay, Chichagof Harbor, but part of the battle was fought on these ridgelines above Sarana and Massacre bays.



Figure 21: On the way to Sarana Bay.



Figure 22: Jackass Pass in the distance (snow line).

It was a slightly foggy morning. We saw gulls and walked over the tundra through tall lupus. Here and there a spring or waterfall would emerge from the hillside. The guys were not finding the spot they had used before (of the four, only Sippy and Banks had hiked Jackass Pass). In the next minute, Banks thought he'd identified the right path, but Sippy insisted we trek on—there was a better spot ahead. Before long, it became clear that that was not the case, and Banks became aggravated with Sippy. (The rest of us were frustrated too). It seemed to me it was not the first time someone had become aggravated with Sippy, but everyone was basically civil and respectful. As a whole, on the island, there was no exclusion of anyone in activities or events—everyone was invited—all twenty men. Still, on this hike it was apparent that there were cliques within the group, Sippy and Ornelas were loners, while Banks, Hamlin, and Sniffen were pals. Maybe it was because Sippy and Ornelas were slightly older, but you could see that they were not forming their own band as much as they were keeping to themselves. Still, it was apparent they were all looking out for each other, and at times, the conversation was among all six of us. We talked about movies, hobbies, girlfriends back home, or lack thereof. Banks had a girlfriend who was an avid reader. He called her “my girl.” He had worked as a pedicurist before joining USCG. Hamlin had a cousin who was a U.S. Marshal that was injured on duty—he saw a report on TV while he was on Attu. He had a passion for law enforcement in his voice.

As we walked along the bottom of the bluff, no one area was looking any less steep than another, and I became anxious—there was nowhere that I could climb the mossy, 75-degree wall. I stuck by ET1 Ornelas since he was willing to hang back. He stood about 6'1" and was trying to quit smoking. He lit up a cigarette on the trail.

Banks took a left and headed into the bluff. He was tired of waiting on Sippy to find the special trail that never surfaced. I pictured a spot where someone had carved stairs out of the tundra, but that would not happen. As we followed, nearing the wall, Banks laid himself flat against the slippery 50-foot hill and began clawing his way to the top. Single file, we trailed after him, as if it were no big deal. Fear of falling backward almost equaled fear of someone falling on my head. We went fast, and tried not to think too much. The nearer the top, with adrenaline pumping, we climbed over the sheer bluff face, over the ridge, and sat to gather our bearings and our breath.

We sat for several minutes, watching the C-130 land back at the station airfield, then marched on toward the pass, thinking the hardest part was over. The hike became consistently difficult now, less from any terrifying steepness, and more from a steady incline taken at a speed only a 20-year-old male could maintain. But the rest of us kept up, panting the whole way. Meanwhile, Sippy, Hamlin, Sniffen, and Banks would occasionally forge ahead with a burst of energy, clueless of any group mentality. Hamlin talked the whole way, even winded. He had a quick wit and a profound sense of humor. He had the whole group laughing so hard it was difficult to hike; I jokingly begged him to stop talking at one point.



Figure 23: Banks taking a breather; Sippy in the distance

ET1 Ornelas had warned us of the cold, which was evident from the snow patches encountered at upwards of 800-foot elevation, but we didn't need a jacket under the mid-day sun. It was quite warm, and the snow was a welcome sight. There were ducks nesting on the pass, and Hamlin caught a fuzzy duckling. He looked very happy to have caught it and held it in his hands for a while. As far away from civilization as we were, it was thrilling to know that something else lived up here.



Figure 24: SN Hamlin holding a duck with SN Sniffen

About three hours into the hike, we reached the crest overlooking Sarana Bay. As we stood and peered out over our destination, Banks asked the group, "Are we really going down there?" I did not understand...had we not come all this way to go to the beach? Why would

we hike this far and then not actually set foot on the beach? We were almost there! Everyone agreed that we would hike down to the beach. In the next ten minutes, it became obvious why he had asked. The view from the crest was deceiving and what looked like a fairly gradual slope to the water was actually a 100-foot-tall, 85-degree drop. On Attu Island, with no trees and several miles of visibility in mountainous terrain, one's perspective is off—we were unsure of the elevation and farther from the beach than it appeared. We hiked downward toward the bluff finally coming to a point where we had to make a decision. Send the youngest, we all said; and of course, the youngest was willing to go. Sniffen went ahead, running fearlessly the entire way. Down the hill so fast—it appeared that he might fly. It is still unclear how he made it on his feet. We knew we had to follow.



Figure 25: Sarana Bay from Jackass Pass

What Sniffen had made appear easy was anything but. Sippy, Hamlin, and Banks all moved toward the edge to begin their journey downward. They looked unsure, but who could turn back now? Ornelas and I considered not going. We'd stay on the hill and eat our lunch there, we thought, viewing the beach from the hilltop as if to say, "It's okay to be older, to smoke, to cop out." But it was not. Even though I was twice Sniffen's age, the peer pressure hit me—I had to do it. And if I had to do it, Ornelas had to do it. It was implied and understood—everyone had your back, but you had to try. A sense of dread came over us as we followed Sippy toward the drop-off. We were advised to slide down on our backsides—there was no walking down this hill. Little by little, from an elevation of 100 feet, we began the descent on our backs. Things one normally avoided were slid over without pause. Slick spots sent rushes of adrenaline. Inching downward over the tundra and wet mud, grabbing grass and root to steady ourselves, using our heels as brakes, we slowly made our way to the bottom.

On the beach we ate lunch and talked. A sense of relief, accomplishment, and total catharsis set in as we relaxed. Hamlin found a stick twice his height and balanced it on his head. He and Banks joked, holding hands and skipping, acting out their exuberance for the camera. A lot of debris had washed ashore. There were large colorful nets, bird skulls, and bits of plastic, as if

there had recently been a party on the beach. It was strange seeing all of these things that had escaped their rightful owners for a terminal place of isolation. There were lots of sand dollars as Sippy had promised. It started getting dark, and I put on my jacket – it had finally gotten cool. I took a detail of a dead bird.



Figure 26: Lunch on the beach at Sarana Bay

The mountain lay ahead of us again, no easier to climb now than before. There was maybe a little less humor now and some division among the group as everyone battled with their own levels of weariness, boredom, tolerance, and perseverance. There was perhaps a little less concern for others even, and I could see how something could go wrong. Ornelas stopped a couple times on the way up from exhaustion. Sniffen hung back with him—an unlikely pair. The others checked in before moving on.

We made it back to the barracks around 7 pm, but missed the evening meal. Banks made pizzas and quietly announced to everyone who had gone on the hike that they were ready. “Was it worth it?” everyone asked. Even while strangely aware of the level of difficulty involved on the hike to Sarana Bay, everyone agreed it was a great day.



Figure 27: The return hike

10.1.7 Shooting

It was a complete surprise to the investigators when they were told that LORAN Stations were unarmed. Although many personnel had personal weapons, it does not seem reasonable that the most remote U.S. military base in the world was unarmed.

“Now I know earlier I said there were no weapons on the station. I forgot that the old man had a couple of shot guns and a rifle or something ... he had a .45 and the corpsman had a .45, and those were the only weapons we had (Swansburg 2011).”

Alex Limonte (2010), the executive officer on LORAN Station Attu added:

“I kind of just like getting out there, to tell you the truth. My thing is just kind of getting out there and getting out of the station, you know what I mean? You don’t always get two nights of weather. So when we do get nice weather, I usually head out, and I do something whether I go shooting down at the warehouse or shooting out somewhere, and going fishing one of the rivers or fishing out on the boat. Whatever, I usually get out. I brought my 357.

Dave Meredith (2011) said of LORAN Station Attu in 1966-67:

“Yeah, we went up to where they had the large battle up there one time. Did anyone tell you about the Japanese houses that were built inside the caves? Yeah, they were all up in there. Once in a while, we'd find a boot. We went up there where they had the battle. And the boatswains mate would give us so many rounds. When we went up there, we actually found ammunition dumps. And we'd go up there and fire off a couple hundred rounds. And we'd go back and give him the five or so clips he'd given us, and he'd look down the barrel

and release a few expletive words and say 'you guys found the ammunition dumps again, didn't you?' because the barrel would be black."

Meredith (2011) continued his story, "Yeah, and we found a bunch of old K rations. The only thing that was bad were the cigarettes. Since we only got supply every two weeks, we smoked them."

Bruce Gray (2011) said of hunting at Cape Sarichef in 1976-77:

"Yes, if you had a license. Which I did ... I did shoot one caribou. I did everything: I gutted it, cleaned it, skinned it, butchered it, ate it, the whole thing. It was something I wanted to do at least one time in my life, to actually go through that process. I had just been told how to field-cut a caribou. I've cleaned a fish before, but that was about it, and the caribou is a lot more intense. The other guy couldn't even do his after watching me. He was getting all green, so I had to do his for him. That kind of meat was a little gamey tasting. It was definitely best in stew type things; not so much as like a steak, better with lots of spices and stuff. We actually traded some caribou meat to another station that gave us some crab claws."

At Cape Sarichef, Coasties regularly carried guns. Bruce Gray (2011) said:

"Well the station had quite a few guns and we were told it was wise to bring some, partially for recreation. Also, like I said, we weren't allowed to go outside without at least one gun of .30 caliber or larger. They sold them there through the PX there, which was essentially like a closet – you could order guns and ammo there. That was one of the biggest hobbies actually. I used to go out and bring my .22 just for plinking and go through a couple thousand rounds.

"The dump was a fun place to go shoot up old bottles, and there were armored personal carriers left over from WWII. So there was a lot of interesting things to shoot at. Hell, I'd just sit at the top of a cliff and try to shoot bees off a plant from the top of a cliff ... just work on my accuracy and stuff, kind of fun (Gray 2011)."

10.1.8 Religion

Religion was not obtrusive on either LORAN Station Attu or LORAN Station Shoal Cove. When asked if there were religious services, FS1 Bailey (2010) responded:

"Not on base, but we have many services in town. On the weekends the CO and XO aren't here. I go to the same church as the CO. There are only five to eight guys here on the weekend, so no. The boat I was on, when we were underway at sea for five or six weeks, there was a service at ten am in the morning; they gave that option." He further explained that services on the boat were presided over by a layman and not an ordained priest or pastor."

Several of the Coasties on Attu were queried about religion. The response of one man summed up the religious practices on the island. Hamlin (2010) said, “there are people of different religions and each man is responsible for how he deals with his own beliefs.”

10.1.9 Miscellaneous Activities

Other than work, the type of activities that took place on LORAN stations were nearly as varied as the human imagination could devise. Some activities, such as music and art, relied on the availability of talent and interest, but others were based more on the availability of materials and human ingenuity. Moreover, since the LORAN stations needed both electronics shops and mechanical shops to survive, there were tools and equipment to build just about anything. Add to the mix about 20 stranded people looking for something to do and a variety of projects began, from pottery, to painting, to HAM radios, to building renovation and construction.



Figure 28: MK3 Ledbetter entertains while relaxing around a campfire behind LORAN Station Attu with Terri Asendorf and Casey Martin of Jacobs

Making music was a common activity at both LORAN Station Shoal Cove and LORAN Station Attu. Several people at Shoal Cove were purportedly members of a band at the time of the interviews, although we did not have an opportunity to explore their talents. At LORAN Station Attu, MK3 Ledbetter was a frequent source of entertainment. During interviews, “you know he went to Nashville” was a common refrain. Sure enough, when MK3 Ledbetter (2010) was interviewed, he confirmed,:

“I went to Nashville but I didn’t get anywhere because I was not in the top-40 crowd.” He added, “Went to Nashville a few times. Tried to make the country

music thing work for me. Decided that it wasn't for me. So, I just got the heck out of Dodge ... My love for country music is more a family tradition."

On one of the nights the investigative team was on the island, there was a campfire built of scavenged WWII-era telephone poles. The crew sat in a circle around the campfire and listened to Ty Ledbetter sing and play guitar. It should be noted that the campfire retreat was one of the special occasions where beer was permitted outside of the rec-dec. One of the "traditions" of the current Attu crew was to give "spontaneous applause." As additional crew members approached and joined the circle, they were met with a round of spontaneous applause from the crew. Perhaps it is gestures like that, that promote the general feeling of goodwill that was pervasive on LORAN Station Attu.

Another kind of art on Attu was the murals and paintings on the station's walls. When asked by the team if they knew who painted them, the response was, "they were here when I got here." Warner Barz, stationed on Attu in 1988 and 1989, posted on the website Fred's Place, "I painted most of the pictures out side the timer room and in the Old Transmitter Building. Anyone know if they are still there or have been painted over?"

(<http://www.fredsplace.org/reunion/d17/0120.shtml?mysubmit=View+the+old+table+page.10/19/00>).



Figure 29: One of the many murals decorating the walls of LORAN Station Attu

Randy McDonald (2011) said, “We had arts and crafts to a certain degree. The big thing was ceramics. We had a kiln out there. We were always making stuff.” Bruce Gray (2011) added, “I did do some scrimshaw. A guy up there taught me how to do that:

“Well, [it’s] like taking bones or teeth and etching designs into them then wiping black ink over it [so] that [it] fills in the lines. It was really popular in the whaling days. So that was something I did. I made some things out of leather. I made some gun belts.”

Other projects included the building of a Jacuzzi by FS1 Clingerman on Attu, and all kinds of general tinkering by the crew. The number and scope of projects may have changed with the advent of the internet. In the 21st century, the internet has provided a platform for each individual’s mental stimulation that was not imaginable a few decades ago. “Look at the Coast Guard in the 80s and 90s, [you] did not have internet—the only time you looked at computers in the 80s and 90s was to order parts (Stecker 2010).” Ron Caswell said, “We didn’t have video games. We had a pinball machine. That pinball machine ran twenty-four hours-a-day. One of the technicians spent most of his year maintaining that pinball machine. There was somebody playing on that pinball machine all the time. We didn’t have other entertainment. God bless our ET that maintained it and kept it running”.

Other types of activities to keep busy in a remote or isolated station included card games, board games, pool and ping-pong. LORAN Station Attu even had a half-dozen or so mountain bikes as part of the Morale Program. Senior (MCKS Strecker) had his own bicycle and used it regularly, weather permitting. The morale program bicycles were not well-maintained, but with minor cannibalization, four of the six were used one evening by the investigative team for a ride around the island.

10.2 DISCIPLINE; UNIFORM CODE OF MILITARY JUSTICE (UCMJ)

Discipline on LORAN stations was usually accomplished through the chain of command. As explained by the CO at LORAN Station Attu, “I have full UCMJ authority out here (Rosenberg 2010).” This means that he would have authority to handle problems with everything from a verbal reprimand or admonishment, plus extra duty or restriction, or a grade reduction, and loss of pay for more serious infractions. Also, it would include sending a perpetrator of a crime to the mainland for a summary, special, or general court martial, depending on the severity of the crime. Most problems at LORAN stations were dealt with locally, although there were some people who just did not fit in who were relocated (Rosenberg 2010).

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11.0 LORAN DECLARED OBSOLETE - NAVIGATIONAL TECHNOLOGY ADVANCES AGAIN

In October 2009, in an overall effort to eliminate unnecessary federal programs, the U.S. Department of Homeland Security signed into law an act terminating the LORAN-C system. The 2010 Homeland Security Appropriations Act directed USCG to discontinue LORAN-C operations no earlier than 4 January 2010. The Act further required the Commandant to certify that LORAN-C is not needed as a back up to GPS.

The USCG began a phased decommissioning of LORAN-C stations throughout the United States in February 2010 including demolishing transmission towers, which were an obstruction to air traffic, and placing all associated buildings in layaway. LORAN-C remains in use in several countries including the United Kingdom, France, Germany, Norway, Saudi Arabia, India, Korea, Japan, China, and Russia.

The domestic LORAN-C signal on Attu Island was terminated on 8 February 2010 and the Russian CHAYKA signal was terminated on 1 August 2010. Several members of the current crew attended the termination ceremonies including CWO2 Rosenberg, MKCS Strecker (“Senior”), ET3 Conant, ET1 Ornelas, MK3 Turkott, FN Mills, SN Sniffen and MK3 Ledbetter. The USCG Navigation Center in Alexandria, Virginia coordinated the last signal shutdown, calling Attu to express their gratitude for the crews’ dedication in operating the LORAN-A and LORAN-C signals continuously for sixty-six years in an extremely isolated location. On the count of three, two servicemen threw the switches for Transmitters A and B (named Karen and Ashley by the crew) and the sound of 1.6 megawatts of radiated power died. The two servicemen selected to throw the switches were SN William Sniffen and SN Ryan Mills, the two youngest men on the station.



Figure 30: SN Sniffen and FN Mills ready to terminate the signal at LORAN Station Attu

11.1 LORAN STATION ATTU DECOMMISSIONING CEREMONY

Below is a transcription of the audio recording of the 27 August 2010 ceremony:

“This is Commander Sanders, Naval Officer at the Naval Navigation Center”, he begins his speech:

“Today’s termination of the Russian-American LORAN-C signal transmission by LORAN Station Attu marks the end of a long-standing service that has guided countless mariners and pilots throughout the North Pacific.

“In order to provide continuous LORAN Service over these 66 years, Coastguardsmen stationed at Attu have endured life at the Coast Guard’s most remote station in the harshest and most desolate environment.

“Since its commissioning in 1944 LORAN A or LORAN C stations on Attu have broadcast on eight LORAN chains and were credited by Admiral Chester Nimitz with playing a major role in United State’s victory over Japan in WWII.

“Attu was built in the winter of 1943. Due to the urgency of war and the dire need for LORAN in the western Aleutians for the war effort, it was built in the harshest conditions ever. Construction occurred around the clock with winds that regularly reached 125 miles per hour and snow accumulations of 12’. Several ships, boats, and barges were lost at sea or crushed on rocks during frequent and sudden onset of storms. Scores of workers’ lives were lost, including a Coast Guardsman. But just three weeks after the first load of cargo arrived at the station site, construction concluded. On air testing commenced on 11 February 1944, barely two months after supplies first landed.

“In 1961 the construction was completed on the current LORAN Station which broadcast both LORAN-A and LORAN-C.

“Despite all its challenges LORAN Station Attu has provided exemplary service to the Coast Guard, the United States and to Russia.

“LORSTA Attu’s legacy will continue on in history and in the hearts of countless Coasties who worked so diligently to keep the signal alive for 66 years at the end of the world. On behalf of the commanding officer here and everyone else at NAVCEN, thank you for your continued service and a job well done.

Bravo Zulu and Semper Peratus.

I’ll be out there to thank you personally in a few weeks. In the meantime, carry out the remaining tasks for unit decommissioning at this establishment.”

Rosenberg: Sir, Thank you very much.

“Commanding officer at NAVSAT Semper Peratus, Out!”

Rosenberg: “The time right now is 1958, we will shut down at 2000 Z”.

Rosenberg: The time now is 1959, one minute and counting....”

“Lotta stress,. Man lotta stress, I don’t know if I can do this”, one of the men says nervously.

Rosenberg: “I’ll give you guys the command, 1,2,3—push.”

Voice over the radio: “This is Chief WO Dave Rubio, LORAN Station Attu you are ordered to immediately secure the Russian-American LORAN C 5980 X-Ray signal.”

Rosenberg: “One two three push”

[Buttons pushed by FN Mills and SN Conant]

Rubio:

“You are ordered to carry out the tasks to decommission your unit. On behalf of the operational command, please pass on that we are extremely proud of the service you’ve performed while stationed at such an isolated and arduous environment. We also recognize the sacrifice the families have made. Please pass on to your entire crew. I would like to personally thank you, Jeff. And to the entire crew, you have secured the bragging rights of being the last crew to serve at LORAN Station, Attu. I wish you all well in your future endeavors. Bravo Zulu to you all.”

Rosenberg:

“Thank you Mr. Rubio, we appreciate your comments. Just to reiterate good job to everyone here at hand. This is the end of an over 66 year signal coming out of Attu, both LORAN-A and LORAN-C. You guys have done excellent. I really pay tribute to the crew members both current as well as past. There were a lot of guys before us that set up the station for success. As well as you guys keeping it going, working with the Russians; working with [unclear] and NORPAC.” So, Bravo Zulu to you to all of those who served here before us securing the island so we can be here safely today.”

“So thank you all at NAV Center. Appreciate it...nothing more from Attu.”

Rubio: Thank you very much.

“Attu XO, Mr. Rubio, Control station this is Lieutenant. Boyd. Thank all very much for making this ceremony as meaningful as it should be. Everyone have a great Coast Guard Day. This is NAVCEN.”

Rubio: Goodnight LORAN C, Goodnight Attu; XO out.

Rosenberg:

“Operation has ceased.” He continued, “After more than 66 years LORAN operations on Attu have ceased and been permanently secured. Our op order had been officially changed being on air and in tolerance to completing the operational facility change order for decommissioning and disestablishment of LORAN Station Attu. Bravo Zulu to all personnel serving on Attu, both past and present”.

Rosenberg turns to Ornelas and says, “If you want, you can ground the tower”.

Ornelas, “Yes Sir”

[Everyone moves outside to the tower, where the ground wire is removed.]

[Then they went the CO. Fortner and Ornelas went outside and finally disconnected the transmitter from the tower.]

The tower was demolished on 14 August 2010 and the official decommissioning ceremony took place on 27 August. Interestingly, the Coast Guard’s official script for the termination ceremony included a back-up plan that involved using a teletype (TTY), as well as back-up telephone numbers in the event that radio communications could not be established or failed. That official script follows.

11.2 LORAN STATION ATTU DECOMMISSIONING CEREMONY GUIDELINES

LORSTA ATTU LORAN-C
TERMINATION CEREMONY SCRIPT
01 August 2010

SETUP

1900Z - ATTU: LORSTA Attu will be prepped for signal termination NLT

1900 ZULU on August 1st 2010.

1945Z - ATTU: Fifteen minutes prior to 2000Z LORAN Station Attu will call into the phone bridge @ 1-866-673-3658, pass code "7705706" ATTU: If you encounter a problem with the phone bridge during the course of the ceremony, immediately call NAVCEN via the watchstander cell phone number (703)785-0238 for the duration of the ceremony. Tertiary phone number is the CSDO cell phone @ (703)785-0239. If you are unable to establish any phone communications, ensure the RAC signal is secured at 2000Z and report via TTY Script outlined below, otherwise report termination status as soon as communications are re-established.

1955Z -NAVCEN: NAVCEN will announce "LORSTA Attu, please standby to secure the Russian-American LORAN-C rate 5980-XRAY."

NAVCEN COMMENTS: Short thank you speech and appreciation.

2000Z - NAVCEN announces: "LORAN Station Attu, you are ordered to immediately secure the Russian-American LORAN-C 5980-X signal.

Attu Responds: "Aye, Aye sir." (Attu secures RAC Transmissions)

Attu Responds: "This is LORAN Station Attu, 5980 X-ray has been secured."

2001Z – NAVCEN: "Very well. Carry out your OPORDER to permanently secure the transmitting equipment and OFCO tasks to decommission your unit."

SCRIPT FOR TTY REPORTING

1958Z – NAVCEN Watch: Enter the below notification TTY command for termination;

TA DE CM STBY TO SECURE LORANC 5980X.

NAVCEN WS's: *Coincident with the NAVCEN order to secure the signal, NAVCEN watchstanders will issue the "command to secure" for Attu over the TTY (script below).*

2000Z – NAVCEN Watch: Enter the below TTY Termination command; TA DE CM
SECURE LORAN C AS PER OP COM ORDER

(time stamp)

2000Z - 5980 RAC: Enter the below TTY Termination command; CM DE TA LORAN C
SIGNAL 5980X OA ATT (time stamp) *NAVCEN watch will immediately report after receipt of RAC TTY message to CDO/AOPS*

"Sir, LORSTA Attu reports via TTY that the 5980 X-Ray signal has been terminated as per the OPORDER."

11.3 LAST WORDS

The men permanently assigned to LORAN Station Attu were awarded a ribbon for restricted duty. These official Coast Guard citations are awarded to those who serve a full year on the LORAN stations at Attu, St. Paul and Port Clarence; however, if they were assigned “permanent duty” on Attu they were awarded a ribbon even if they served less than a year, according to Rosenberg (2011). Everyone got a certificate mounted on a redwood plaque that included the certificate, the duty ribbon, a small metal commemorative disk, and an outline of Attu Island. The redwood for the plaque was salvaged from lumber piles from the post WWII military occupation, and the plaques were made in the Attu shop by DC Pinkley. Some of the men, like ETC Limonte, embellished their awards by adding memorabilia. Limonte added a small piece of fishing net and a sand dollar from Sarana Beach on the other side of Jackass Pass.



Figure 31: ETC Limonte with his Attu service plaque

The text on the plaque is as follows:

U.S. COAST GUARD LORAN STATION ATTU
To all who shall use these present greetings
Know ye that
ETC Alex Limonte know
Has zealously, diligently, and faithfully served aboard
USCG LORAN Station Attu Island Alaska from
January 6th, 2010 to August 26th, 2010
And is hereby authorized to wear the Coast Guard Restricted Duty Ribbon
CWO2 Jeff L. Rosenberg
Commanding Officer USCG LORAN Station Attu.

The feelings of LORAN personnel differed. Some, like SN Banks, on LORAN Station Attu felt blessed that he was able to have been a part of the LORAN program. He said, “just being a part of a closure as my first unit its just kind of interesting because there aren’t too many people involved with closing down a station in their whole twenty year careers and me being my first unit within a year closing down a station. It’s pretty cool (Banks 2010).”

Others, like ET 3 Worthington at Shoal Cove, were more pragmatic. Worthington said, “I think it’s a good idea they took it down; I really think it’s an outdated system. No one’s using it anymore and it’s really expensive to keep it going. So it was definitely a good idea to break it down. I heard like a lot of the argument for keeping it up for a backup to GPS, but even if, like somehow in a doomsday scenario, GPS went down, who would be using LORAN? No one has a LORAN receiver anymore. So it’s pretty obsolete. I’m pretty glad they are getting rid of it (MK3 Worthington 2010).”

ET2 Kinzel was more concerned with the adequacy of GPS to provide reliable service. He explained:

“You know the great thing about LORAN is it is very reliable it’s been around so long, you know, they say it’s an obsolete technology but really it’s not because they’re still using it and it’s still very much relevant and it’s been updated. We have, this is LORAN-C, they have an e-LORAN now which uses GPS to help, well they did, I should say, they don’t have it now. They’re obviously getting rid of LORAN so e-LORAN is going away as well. But yeah, that’s a really great technology because it’s been around so long. It’s really had a chance to be perfected I think as much as it can be (Kinzel 2010).”

One retired Coastie put it this way, “I think that was sort of the sad thing—somehow I feel like I let the station down now that it is gone. I guess that it’s the satellites that have taken over now (McDonald 2011).”

Closing the stations meant that the materials and supplies were being distributed to other facilities and charities. According to CWO2 Rosenberg, the beds desks and lockers in Attu’s billets were being given to charity (Rosenberg 2010). According to Clingerman, “We’re closing. Everything is going to the Defense, Reutilization, and Marketing Office (DRMO) (Doctor Mo), a big government warehouse. Say, if someone wants this desk, they can get it from the warehouse (Clingerman 2010).”

MCKS Strecker summed up the feeling of many of the men who served in the LORAN system when he said:

“I definitely have a lot of fond memories, you know, the camaraderie, experiences you have as a crew in a situation like this are always a life changing and um, I’ve heard a lot of the young guys in fact saying that ‘I’m going to miss this place;’ and you know, it’s true, this hasn’t been easy. This hasn’t been always fun, but, it will definitely be missed. No doubt about that (MKCS Strecker 2010).”

The termination of LORAN-C in the United States and Canada has incited speculation on the need for a backup navigation system, should disruptions occur with GNSS. Enhanced LORAN, or e-LORAN, is the latest iteration of LORAN technology, providing navigation services completely independent of GNSS. The e-LORAN system has enhanced the LORAN-C signal by providing: (1) better control and tolerance of timing and pulse shape; (2) time-of-transmission synchronization to coordinated universal time (UTC) at each transmitter site independent of any changes in signal propagation; and (3) the addition of a digital data broadcast capability called the LORAN data channel, which can be used to send time-synchronization and text messages.

Several European countries, including the United Kingdom, Saudi Arabia, and South Korea are converting former LORAN stations to e-LORAN technology, while other countries including Ireland and Sweden are building new stations (Schue 2011). In North America, debate over which system should serve as backup for GNSS has prevented a transition from LORAN-C to e-LORAN.

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APPENDIX A
Interview Questionnaire

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LORAN MONOGRAPH INTERVIEW GUIDE SHEET

(Including some questions specific to the interviews conducted at LORAN stations
Attu and Shoal Cove.)

BIOGRAPHICAL

What is your name?

What is your rank?

Where are you from?

How long have you been in the USCG?

Where did you do your training?

How long have you been stationed here?

Where did you enlist?

Where is your family?

Are you married?

Do you have children? What are their genders and ages?

Are there any rules about contacting home?

How often can you call?

Is there unlimited use of e-mail?

Do you have specific hours or other rules regarding using the internet?

Do you anticipate a USCG career?

What do you want to do when you get out?

How long have you been in USCG?

Where else have you served and what were your duties?

What kind of training is available on the island?

Do some of you take advantages of remote training or college courses on the internet?

Are you expected to take such courses or training?

DUTY

What training school did you attend?

What is your MOS?

What is your job description?

Which building/area do you work in?

How do you plan for logistical problems with supplies and equipment?

Could you walk me through a typical work day?

Could you show me around your workplace?

What is your work week like?

What do you like best about your job?

What is the worst thing about it?

Can you describe any crisis events that happen at your job?

Do you have adequate supplies and equipment to do your job? What is lacking?

Where do you get supplies, and what do you have to do to requisition something?

What if you need a critical part, how do you get it?

Do you get time off?

How do you rotate shifts to cover people who are off duty?

After work, do you worry about a work crisis? Please explain.

Are there unusual or infrequent catastrophic events that happen in your job?

How do you handle medical emergencies?

How do you work responsibilities affect your time off?

How do you feel about your time in the Coast Guard?

How do you feel about your time on Attu/Shoal Cove?

How do you take care of other routine group maintenance, like mowing the lawn, galley support, or haircuts?

For the cook: How do you get your supplies, who makes your menu, and what are your limitations?

LANGUAGE

What acronyms used in your job performance?

What is some of the other jargon that you had to learn?

Do you have special terms for:

- Facilities
- Duties
- Tasks
- People who do certain jobs

Are there any amusing events you might want to tell me about?

QUALITY OF LIFE

Do you know any stories or legends about duty here or this place?

Are there problems with water such as taste, quantity, quality?

What is the food like?

What is a typical meal?

What is good about the food?

What do you like about being here?

What are your major complaints?

What were some of your first impressions of this base?

What does closing the LORAN program mean to you?

How did that make you feel when you learned they were ending the program?

SOCIAL INTERACTION

How do people get along with one another?

What recreation activities are available?

How do you spend your day?

With whom do you spend most of your time?

What do you most often do in your time off?

Do you have mandatory workouts?

What social groups exist?

What is the difference between them?

What are the characteristics of each?

How are the social groups based with regard to:

- Education
- Cultural background
- Age
- Gender
- Rank

What are the background characteristics of the various groups?

Are there any issues with race or gender such as prejudice that you've experienced?

MANAGEMENT AND ADMINISTRATION

Who is in your direct chain of command?

How is your team organized?

What were your major accomplishments while you were assigned here?

What was your greatest challenge?

What was your management style?

How has that changed since you've been at Attu/Shoal Cove?

How did you handle personnel problems?

Where there any major health issues that required immediate attention?

Were there any major initiatives? How did you handle them?

What responsibilities consumed most of your time?

Was there anything special in your training that prepared you for assignment in the LORAN program?

How do you view discipline and are there particular challenges?

Are there specific incidents you can tell me about?

PLACE

Are there any outdoor activities that you've especially enjoyed on Attu/Shoal Cove?

What kinds of activities do you engage in outside of work to pass time?

What do you think of the unique characteristics of the base?

How has Attu/Shoal Cove affected you?

Have you done bird-watching?

Do you go fishing? If so, where do you fish and how?

What have you learned about the history of this place?

Are there any specific places on the island you like to go?

Does USCG provide you with the equipment you need for recreation? How do you get supplemental equipment?

Have you seen the WWII ruins/earthworks?

Are you aware of the battles that were fought here?

Have you explored some of the ruins associated the battle or later occupation?

Are there any prohibitions from exploring them?

Have you seen the old Aleut village (Attu)?

Has your stay here affected your appreciation for nature?

Was there anything here that you developed a special appreciation for? Anything landscape related or related to animals?

How far have you hiked?

Has your feeling for Attu/Shoal Cove changed during your time here?

How do you cope with the long winters?

When there is extended bad weather what do you do inside during extended periods?

How often does mail come?

What is the library facility like? What kinds of books? How many, on what subjects?