# National Register of Historic Places Registration Form

OMB No. 10024-0018 MAT

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.
1. Name of Property
historic name <u>Cape Hinchinbrook Light Station</u> .
other names/site number <u>Cape Hinchinbrook Lighthouse (AHRS Site No. COR-095)</u>
2. Location
street & number: On the southwest corner of Hinchinbrook Island on the east side of Hinchinbrook Entrance to Prince William
Sound. In not for publication
city or town: Cordova  vicinity vicinity vicinity
state <u>Alaska</u> code: <u>AK</u> county <u>Valdez-Cordova Census Area</u> code <u>261</u> zipcode <u>N/A</u> .
3. State/Federal Agency Certification
As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this in momination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. I recommend that this property be considered significant locally. (See continuation sheet for additional comments.)
4. National Park Service Certification
I hereby certify that the property is:       Signature of the Keeper       Date of Action         I entered in the National Register       See continuation sheet.       See continuation sheet.       See continuation sheet.       2/29/05         I determined eligible for the National Register       See continuation sheet.       2/29/05         I determined not eligible for the National Register       I determined not eligible for the National Register       I determined not eligible for the National Register
removed from the National Register
other, (explain)

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(Chec	<b>tership of Property</b> k as many boxes as apply) private	Category of Property (Check only one box) building(s)	Number of Resource (Do not include previously Contributing	y listed resources in the	
	public-local public-State public-Federal	<ul> <li>district</li> <li>site</li> <li>structure</li> <li>object</li> </ul>	$\begin{array}{c} 2\\ 1\\ 3\\ 1\\ 7 \end{array}$	$\frac{1}{13}$	buildings sites structures objects Total
Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing) Light Stations of the United States			Number of contributing r National Register N/A	esources previous	y listed in the

### 6. Function or Use

Historic Functions (Enter categories from instructions) Transportation: water related: lighthouse

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**Current Functions** (Enter categories from instructions) Transportation: water related: lighthouse

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### 7. Description

Architectural Classification (Enter categories from instructions) Materials (Enter categories from instructions)

Modern Movement: Art Deco (lighthouse)	foundation	Concrete (lighthouse)
	roof	Concrete with sealed membrane (lighthouse)
	walls	Concrete (lighthouse)
	other	Metal lantern house
Other:Vernacular (boat house)	foundation	Concrete (piers)
(d <sub>a</sub> ),	roof	Metal
	walls	Wood weatherboard
Other: Vernacular (east pump house)	foundation	Concrete
	roof	Cedar shingle
	walls	Wood weatherboard

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

(see continuation sheet)

# 8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the		Areas of Significance (Enter categories from instructions)					
	of for National Register listing.)	Maritime history;					
✓ A	Property is associated with events that have made a	Transportation;					
	significant contribution to the broad patterns of our	Architecture;					
	history	Historical Non-aboriginal archaeology					
B	Property is associated with the lives of persons significant in our past.						
₽ C	Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.	<b>Period of Significance</b> 1910-1955					
₽ D	Property has yielded, or is likely to yield, information important in prehistory or history.	Significant Dates					
Criter	ia Considerations	1934					
(Mark "	x" in all the boxes that apply)	1910					
Propert	ty is:						
	owned by a religious institution or used for religious purposes.	Significant Person (Complete if Criterion B is marked above)					
	removed from its original location. a birthplace or grave a cemetery. a reconstructed building, object, or structure.	Cultural Affiliation Euro-American federal government lighthouse service					
∏ ∙F ∏ ∙G	a commemorative property less than 50 years of age or achieved significance within the past 50 years.	Architect/Builder U.S. Lighthouse Service/D.A. Chase/Edwin Laird					
(Explai	Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets). See continuation sheet						
9. Ma	ajor Bibliographical References						
Biblic	Bibliography (Cite books, articles, and other sources used in preparing this form on one or more continuation sheets)						

### **Previous documentation on file (NPS):**

Previous documentation on file (NPS):	Primary location of additional data:
preliminary determination of individual listing (36 CFR 67) has	State Historic Preservation Office
been requested	
previously listed in the National Register	Other State agency
, previously determined eligible by the National Register	Federal agency
designated a National Historic Landmark	Local government
recorded by Historic American Buildings Survey #	University
recorded by Historic American Engineering Record #	C other
Other	Name of Repository:
	U.S.C.G. CEU Juneau; National Archives

### 10. Geographical Data

### Acreage of Property 6.9 . **UTM References** (Place additional UTM references on a continuation sheet). Ouadrangle: USGS Cordova A-7/A-8 (1951/R1988) 1:63,360 See Continuation Sheet for additional UTM Reference Points 9 7 3 5 6 6 7 7 6 6 9 3 0 6 5 9 7 6 2 6 6 7 7 7 0 7 4 0 6 5 9 8 9 9 6 6 7 7 6 9 9 0 2 6 6 7 7 7 9 1 Zone Northing Zone Easting Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.) **Boundary Justification** (Explain why the boundaries were selected on a continuation sheet.) **11. Form Prepared by** name/title: Robert M. Weaver \_\_\_\_\_ organization: \_\_\_\_\_ Hart Crowser, Inc. \_\_\_\_\_ date: \_\_\_\_\_\_date: \_\_\_\_\_date: \_\_\_\_\_\_date: \_\_\_\_\_\_date: \_\_\_\_\_\_date: \_\_\_\_\_date: \_\_\_\_date: \_\_\_\_\_date: \_\_\_\_\_date street & number: 1910 Fairview Avenue E. telephone: (206) 324-9530 city or town: \_\_\_\_\_ Seattle state Washington zip code 98102.

Note: Archaeological Survey performed by Robert Weaver, RPA and Bruce Ream, RPA, Hart Crowser, Inc.

### **Additional Documentation**

Submit the following items with the completed form:

#### **Continuation Sheets**

#### Maps

A USGS map (7.5 or 15 minutes series) indicating the property's location.

A Sketch map for historic districts and properties having large acreage or numerous resources

#### Photographs

Representative black and white photographs of the property.

#### Additional items

(Check with the SHPO or FPO for any additional items)

#### **Property Owner**

(Complete this item at the request of SHPO or FPO)

name U.S. Coast Guard

street & number 2100 Second Street SW telephone (202) 267-1587 .

city or town Washington state DC zip code 20593.

**Paperwork Reduction Act Statement:** This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public Reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service. P.O. Box 37127, Washington, DC 2001307127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 10503

Form 10-900-a (8-86)

United States Department of the Interior National Park Service

## National Register of Historic Places Continuation Sheet

Section number	7	Page 1 of 13	Name of Property:	CAPE HINCHINBROOK LIGHT STATION
				Valdez-Cordova Census Area, Alaska

### Narrative Description:

The Cape Hinchinbrook Light Station forms the northern end of a string of stations that, for almost 100 years, have led ships through the Inside Passage of Southeast Alaska, across the Gulf of Alaska, and into the major ports of Cordova and Valdez beginning in the early part of the 20th century. At the time, the Alaskan marine highway served as the only primary access to Alaska, and it still plays a major role in the state economy. The Hinchinbrook light, one of only two in South Central Alaskan waters, marked the entrance to Prince William Sound and the turn toward Valdez (now better known as the port for the Trans-Alaska oil pipeline).

### **BACKGROUND AND SETTING**

Authorized in 1906 but built in 1909 and 1910, Cape Hinchinbrook was the last station developed during the massive expansion of aids to navigation that had been spurred by the various gold rushes. When the lighthouse system was proposed in 1901, concerns for maritime safety focused on two areas: the passage up the West Coast to Juneau and Skagway, and the crossing through the Aleutian Chain to Nome and the Yukon River. At the time, the Valdez and Cordova areas near Prince William Sound did not represent a main corridor to the interior of Alaska and the gold fields. However, with the strike at Fairbanks in 1902 and development of resources in the Copper River drainage, the area gained significant importance. A trigger for authorizing the Hinchinbrook light occurred in 1906 when the passenger steamer *Oregon* ran aground 3 miles from Cape Hinchinbrook.

Along with initial appropriations in 1906, President Theodore Roosevelt also established the reservation under Executive Order 525. Design and construction of the station by the 13th Lighthouse District in Portland, Oregon, however, was slowed due to only partial annual funding by Congress. Construction by the Standard Building Company of Seattle began in April of 1909. Rough weather and the terrain slowed construction in September 1909.<sup>1</sup> Only the tramway and the first story of the fog-signal building were constructed.<sup>2</sup> A temporary fixed white post light was established at 192 feet above the water.<sup>3</sup> Work continued in June 1910 and first lighting occurred on November 15, 1910.

Although the original octagonal Light and Fog-signal building, with integrated keeper's quarters, took some design inspiration from other wood lighthouse structures located along the Inside Passage, Hinchinbrook represents a divergence from the typical station. The fog-signal and keeper's residential section was two stories rather than one. The exposed location and greater proximity to major earthquake zones dictated concrete construction, and the structure was half again as large as its wood frame brethren. The light tower projected as a concrete stub from the top of the roof. Other elements of the station included an oil house, a carpentry/machine shop, and a tram hoist house, perched about 180 feet above the water near a sheer rocky cliff. A tramway and walkway led from the upper site to a shoreline creek northwest of the main point. The beach compound included

<sup>&</sup>lt;sup>1</sup> Annual Report 1909

<sup>&</sup>lt;sup>2</sup> Cordova Daily Alaskan, June 14, 1910.

<sup>&</sup>lt;sup>3</sup> Alaska Department of Natural Resources 1979. Aids to Navigation in Alaska History. Report authored by Charles M. Brown under the Alaska Office of Statewide Cultural Programs, Alaska Division of Parks.

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a boathouse, docking bulkhead, and stiffleg derrick. Earthquakes in 1927 and 1928 calved off portions of the cliff in front of the Light and Fog-signal building. Consequently, a new concrete structure was authorized in 1931 and completed in 1934 farther back from the cliff. The original Light and Fog-signal building was demolished, and portions dumped over the cliff; the foundation remains, but has been partially eaten by the eroding bluff.

The new Light and Fog-signal building, the first of a series of six built in Alaska during the 1930s, was designed in the Art Deco style. Additional amenities appear in the 1930s including improvements in the water supply system, a Radio Beacon station, and a newer derrick and hoist house for the boathouse area. The station was automated in 1974.

### CONTRIBUTING BUILDINGS AND STRUCTURES

Although cluttered by on-site modern radio equipment huts, the Cape Hinchinbrook Light Station remains one of the more substantial and impressive units in the Alaskan system. It includes the 1934 Light and Fog-signal building, the tramway system and boathouse/wharf area, and a water cistern and pump house served by a boardwalk. These features form an aggregate resource complex that reflects the overall operations of a light station. For convenience, the historical term "Light and Fog-signal building" will be used in following discussion. The main structure, however, includes the light tower, which also housed the fog trumpets; and the lower structure, which included the fog-signal machinery, equipment rooms, storage areas, and the residence for the keepers.

### Light, Fog-Signal, and Residence Building

The Light and Fog-signal building, perches about 150 feet from the edge of the Cape Hinchinbrook bluff. The design, rather than soaring, rises like an asymmetrical ziggurat from its solid rock base. The structure was designed in the Lighthouse Service 16th District office in Ketchikan by Dwight A. Chase and Edward W. Laird. Writing in 1991, Laird stakes claim to the design:

"I was the only true engineer in the office, as Chase was more of an administrator without much engineering background. I had no architectural training but had had considerable reinforced concrete design experience, having designed the lighthouse depot building on Yerba Buena Island in San Francisco bay and other projects. I designed Cape Hinchinbrook station and drew the plans...In the Coast Guard office, now in Juneau, you will find scores of plans of many stations marked E.W.L. in the drawn and traced note in the title. I studied pictures of other buildings being erected in that era and tried to get a good appearing building."<sup>4</sup> A review of the available drawings, however, show Chase as originator of most of the architectural elevations, with Laird as author of structural and mechanical sheets. Regardless, the two men erected a series of magnificent designs, with Cape Hinchinbrook as the most ornate and complex.

As conceived, the structure consists of a 26- by 23-foot engine room block flanked to the west by a 16- by 16-foot tower. A 36- by 21-foot living quarters unit adjoins the rear, offset to the west in line with the west tower wall. Overall outside

<sup>&</sup>lt;sup>4</sup> Laird, E.W. 1991. Letter from Laird to Clarke and Gilmartin, Alaska DNR, OHA dated July 25, 1991.

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dimensions are 42 by 44 feet. The basement is anchored into bedrock on pier footings. The site slopes to the north and east, and exposes the full basement height on those sides. The foundation forms a massive plinth-like base that serves as a spring point for the decorative and structural elements of the walls.

The architectural statement of the structure is formed through a series of pilasters with decorated caps. The caps are the most decorative and complex geometric elements on any of the 1930s concrete Alaska lighthouses. Although they appear solid, they are formed mostly as two- and three-sided vertical panels. A 22-inch core, beveled at the top, protrudes 6 inches above a stepped series of vertical rectangular cubes. The outer layer consists of a staggered "fork" that lies flush with the face of each 3-foot-wide pilaster; a 7-inch notch separates each tine. A second layer of cubic forms lies behind the outer tines at the corners of the core element. These are set back 3.5 inches from the outer face and rise to the break point of the cap bevels.

Although related to internal structure, these pilasters form more of a decorative than a structural element. They rise from the basement course and project above parapets; the parapets, in turn, are stepped. On the south and west elevations, the parapets step upward toward the tower, with the pilasters also rising higher in a proportional relationship to the parapet. This changes on the north and east sides to a conceptually symmetrical relationship. The north elevation consists of three 8-foot bays between four pilasters across the rear of the living quarters. The outer bays rise 13'6" to the top of the parapet, while the central bay rises 15'4". Interior pilasters run 2'6" above the central parapet, while the outer pilasters are only 2 feet above their adjacent parapets. Single 1-over-1 double-hung sash windows center in each of the bays with 4-inch-square interior air exchange vents (that look like scuppers) above each window.

The east elevation, in drawing, repeats this concept and the general proportions of the north, but has a four-bay unit at 7'6" between pilasters. The "center" panel parapets are higher than the flanking ones. The living quarters area at the rear of the structure, however, recesses 6 feet at the midpoint and, when seen in three dimensions, the setback breaks the symmetrical arrangement presented on the drawings. The original window pattern retains the single sash in each bay, although those in the engine room area have been replaced with concrete block infill.

The pilasters also dominate the tower, which rises 47'4" to the lantern gallery and 52'0" to the focal plane of the light. The 22'6"-tall lantern house raises overall height of the tower to close to 70 feet above grade. The 16- by 16-foot tower has pilaster columns at each corner and a central pilaster on each face. The 3'0" pilasters are separated by 3'6" bays, which being narrower than those on the fog-signal building, emphasize the verticality of the tower. The corner pilasters project above the gallery level by 2'6" and serve as an anchor point for a 3-foot-high iron pipe railing that surrounds the gallery. The central pilasters peak over the gallery no more than 12 inches.

Windows, which consistently are or were 32- by 40-inch openings with 1-over-1 double-hung sash, are asymmetrically placed on the tower at each internal landing and in association with the internal concrete perimeter stairway. The south façade included one window in the right bay about halfway up the tower and another in the left bay near the top. Both of these now are infilled with concrete block. The east elevation has two pairs of staggered windows in each bay, with one pair just above

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the fog-signal/keeper's quarters wing parapet and the other about three-quarters up the tower. The north face consists of three windows in the right-hand bay corresponding to the upper three landings or rooms, while the west elevation has one window at the parapet line in the left bay and one in the right bay about three-quarters up the tower. Due to its location in an active earthquake zone, additional diagonal steel reinforcing was built into the tower to provide increased structural capacity.

The lantern house comes from the original 1910 structure and was the most substantial in the Alaska system. The 12'4"diameter 16-panel plate glass exterior followed the plan for a first-order vertical-astragal lantern house, although illumination was reported as third-order. The vertical astragals, each 28 inches apart, are reinforced by two rings of horizontal muntins, with the glass running 10'8" from the gallery deck to the cornice line of the roof. Iron ribs at an 8-in-12 pitch support steel triangular roof plates, one for each window. The lantern retains its original internal vent hood. Although the vent ball and lightning rod that complete the top appear original, the original was removed and replaced with a copy when an emergency beacon was mounted in 1971. In 1994, the Coast Guard fabricated a new ball using historical design details when the beacon was moved inside the lantern house.

The south side of the Light and Fog-signal building forms the façade. As noted above, the tower stands at the west end of this elevation with a system of stepped pilasters and parapets above the east one-story engine room. The engine room façade consists of three unequal bays with the main entry consisting of double paneled doors accessed by four steps within the central bay. The doors are 32-inch by 7-foot units. A raised panel with a bas-relief plaque representing the lighthouse service (an eagle, surmounting a sailing ship, above a lighthouse) fills the area above the door. The original flagpole projects above the window to the left of the entry.

The west side of the 1934 structure is partially obscured by a 16- by 44-foot frame unit added in 1963. The addition provides a recreation/office space and a bedroom. It consists of a one-story shallow (0.25-in-12) shed-roof building with painted exterior cement asbestos board sheathing. On the west side, the roof overhangs by about 3 feet and provides shelter to the single hollow-core door on the west face. Windows are a combination of wood 1-over-1 double-hung sash (north and west sides) and aluminum casement units (south). The addition lends little character to the original and resulted in saw-cutting and removing portions of the original exterior walls to provide circulation. An original porch that led to a single door on the north side of the tower was also demolished. The addition is considered a non-contributing element of the main structure.

The interior retains its basic configuration, but the engine room and lower room of the tower have been cluttered by stud wall internal box structures that contain various electronic and mechanical equipment. Originally, the engine room was an open space measuring 24'10" wide by 20'9" deep. A drop ceiling gave a room height of 9 feet. It housed two Model K-782 Atlas Imperial diesel engines hooked to compressors manufactured by the Gardner-Denver Corporation, a small emergency compressor driven by a Wisconsin gas engine, and two U.S. Motor Corporation 10 kilowatt diesel generating plants. The 1964 alternating current conversion installed three Caterpillar Model D 311H 30 kilowatt diesel electrical generating units across the room just inside the front door. Two of these were replaced with three 20-kilowatt generator units during the 1971 automation program. The new units form a line against the east wall of the engine room.

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The first floor of the tower was originally designed as a living room for the four station residents (unlike most of the other Alaska lighthouses, the Cape Hinchinbrook station did not provide for families). The tower stairs ascends along the wall adjacent to the engine room. An archway on the north wall provided access to the kitchen area and the living quarters. The archway was infilled with a sheetrock and stud wall in 1963, and the south 8'6" space has been enclosed with stud walls as an electronics cabinet. The paneled newel post and turned stiles of the stairway now peek out from behind this enclosure.

The kitchen, originally a 14'2" by 14-foot space, also was reorganized and remodeled during the 1963 improvements associated with conversion to alternating current. Metal cabinets were hung along the south wall (formerly the opening to the tower space), and along the east and west walls, and formica counters were added. The modular systems remain in place and in reasonable shape. Three bedrooms, two at 9'10" by 12'7" and one at 10'6" by 12'7" run across the north side of the living area. A hall that serves these bedrooms also provides access to a small bathroom and to stairs leading to the basement.

The tower consists of six rooms. An engine cooling water cistern lies on the basement level. The rooms above in ascending order were: a living room on the first floor; a radio room; a fourth bed room; the diaphone fog-signal room; and a lens pedestal and machinery room. Most rooms now have been emptied of furnishings. The riveted steel receiver tank for the diaphone installation remains, but the fog signals themselves have been removed. Original equipment was an "F" type two-tone diaphone that ran a 5-second blast followed by 45 seconds of silence. This system may have been replaced in 1963; but in 1971, an externally mounted quad ELG 300/2 unit on a 3-second blast and 30-second silence schedule superseded the internal fog signal equipment.

The lens machinery room includes the original pedestal mercury trough and turntable and the semi-circular cast iron stairway to the lantern house. The stair appears to be original to the 1910 tower, as does the iron grill or grate above the pedestal that forms a main portion of the lantern house floor.

The lighthouse originally was equipped with a third-order fresnel lens manufactured by Barber Bernard & Turenne in Paris, France. The unit reportedly was modified to provide first-order capabilities with a rating of 20,000 candlepower. When installed in the current tower, the light was electrified with a 200,000 candlepower rating. Capacity was upped with a 1,000-watt bulb in 1960, which increased the rating to 3,500,000 candlepower. The original fresnel lens remained in use until 1971 when it was replaced with a DCB-224 beacon. Between 1994 and 1998, the lamp was a 250 mm CG-181 unit that had originally served as an emergency light on top of the roof. The lantern house currently protects a VEGA VRB 25 solar-powered light. The focal plane height for the tower is 235 feet above the water, and 52 feet above adjacent grade.

The basement remains much as constructed, complete with the U.S. Radiator Co. "RED TOP" 8-B furnace, which has been converted from coal to oil. Four water cisterns with a total capacity of 21,000 gallons are formed into the concrete foundations. A pair lies beneath the tower, and another under the east wing of the residential unit. Cistern and outer foundation walls are 14 inches thick, with the remainder of the load bearing internal walls at 12 inches. An 11'6" by 22'6" laundry and storage area lies beneath the bedrooms and adjacent to the 22'8" by 7-foot boiler room. A small 6'6" by 13'6" battery room fronts the tower cisterns. Two 11'8" by 20'6" storage and equipment rooms lie beneath the engine room. The east storage room held air tanks and auxiliary compressors associated with the fog-signal apparatus.

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Valdez-Cordova Census Area, Alaska

### East Pump House

An 11- by 11-foot pump house and 30- by 30-foot subgrade cistern lie downhill and across a stream valley about 300 feet east of the Light and Fog-signal building. The structure dates to water supply system improvements between 1944 and 1946.

The pump house sits on a 3-foot concrete foundation that, in turn, lies on top of a large concrete cistern. The wood frame walls with cedar shingling rise 46 inches above the concrete and the roof is end-gabled. Concrete is painted red, the wood shingles are white, and the cedar shingle roof is also red. A five-panel wood door is on the east elevation and is accessed by concrete stairs that descend to the cistern top level. Light to the interior comes through 2-over-2, 30- by 45-inch double-hung sash windows, one each on the east, south, and west sides. Exterior plywood panels currently protect these openings. The interior contains the foundations for pump machinery. Interior stud walls are covered with horizontal 3-inch beaded board.

A concrete intake dam lies 200 feet up a nearby stream, but is obscured by brush.

#### **Boathouse**

The current boathouse was designed as part of the World War II station rebuild, and was built in 1946. It is a wood frame building with front-gabled roof and measures 16 by 30 feet. A 7- by 7-foot opening, offset to the north on the west façade, provides boat and tramway access. The original sliding door has been replaced with a sheet-plywood unit. The original roof with a 7-in-12 pitch was replaced in 1950 with a new structure at a 12-in-12 pitch. The new roof also used, and retains, ribbed aluminum sheet roofing. The new roof projects less at the eaves and the ends than the original roof, and visually presents a flatter, more 1950s look.

The original design included two windows on the north side. Each window included two 6-pane horizontal-slide sash units and decorative wood trim. A fixed, 6-pane unit lay in the middle of the east (upstream) wall. Most windows have been blocked or covered from the outside, but the sash remains. The exterior is shingled in standard cedar cut shingles.

The interior consists of a single open area with a 9-foot height to the bottom of roof trusses. The house contains tram tracks and a still extant tram cart.

### Main Wharf and Seawall

The main wharf consists of a monolithic concrete seawall that straddles a stream at a small embayment northwest of the lighthouse. The original 1910 structure was a wood pile-supported timber structure that lay south of the creek at an elevation of approximately 50 feet above high water. In 1924, C.T. Elliot at the Lighthouse District headquarters in Ketchikan designed the concrete replacement that stands today. The structure, which lowered the landing to about 20 feet above high water, consists of two reinforced concrete wing-wall cribs on each side of the creek. Three 14- by 30-inch reinforced concrete beams span between the cribs to form the structure for a timber-decked platform above the creek. Decking includes 2- by 12-inch joists and decking. An additional crib, extending the structure roughly 15 feet further northwest, forms the base for a stiffleg derrick. The original hand-operated timber derrick was replaced in the 1940s with a larger unit operated by an engine. The cribs are earth filled with deck surfacing; the area north of the creek has a concrete slab (that originally supported the

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boathouse and derrick), while the surface over the creek and south unit is timbered. The main structure is in relatively good condition.

During World War II, the wharf area was expanded northeast up the creek valley to provide increased storage and space for a new boathouse. Concrete piers at roughly 8-foot centers support 12- by 12-inch girders and a 2- by 12-inch joist and decking system. The deck extension runs about 50 feet northeast of the main wharf structure. Part of the north end supporting the boathouse is experiencing some structural deterioration.

Two concrete pylons associated with the steel stillfleg derrick form the final features of this 1944 improvement to the wharf. The main pylon lies within the shoreline tidal zone 20 feet north of the derrick pad, with another tucked against the hillside on the north edge of the stream. The 80-foot-long derrick, with a 14-foot bullwheel to rotate it, no longer stands. It appears similar to the existing derrick at the Tree Point station, which dates from roughly the same period.

### Tramway System

The tramway system dates back to the original station construction. It consists of a standard 47-inch gauge steel track that descends 800 feet at an average 20 percent slope from the upper station complex to the station wharf. For most of the distance, the track lies on ties embedded in the ground. Near the wharf, a gully is bridged with a series of bents. Five 2- by 10-inch planks with cross tread boards form a walkway along the center, and two vertical 2- by 12-inch solid rails guard the outer edge. While pedestrian traffic used the center of the tram for most of the way, the steepness of the last 150 feet to the wharf required construction of a plank stairway and walkway to the north of the main line. In this section, the tram incline drops at a 40 percent slope and includes steel rollers for the tram car cable.

### Wharf Derrick Machinery

A shed contains the machinery that once operated the stiffleg derrick discussed above. The equipment dates from the 1940s and includes an engine and winch, mounted on a steel frame. The assembly is anchored to the concrete wharf. The equipment is rusted and currently inoperative. The shed that covers the machinery was built in 1966 to replace a 1940s unit. It is a simple stud wall structure with large openings (without sash or glass) on the nominal west and north sides. Overall dimensions are 10 by 14 feet. The roof is a shallow bow arch composed of sawn horizontal 2- by 10-inch rafters covered with plywood sheeting and composition sheet roofing. The exterior of the walls are also sheathed in plywood. A sign designating this as the Coast Guard Cape Hinchinbrook Station is nailed to the exterior. The shed is considered a non-contributing structure.

### THE DEMOLISHED OR DETERIORATED LIGHT STATION COMPLEX

The following section describes the no-longer existing components of the original light station complex. Unlike other stations in Alaska, no demolition contracts were let when the station was automated.

### The Original Light Station

As originally built in 1910, the Cape Hinchinbrook Light Station consisted of a Light and Fog-signal building and residence, a

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carpenter shop and storehouse, an oil house, the tramway system to a wharf (at the current location), and a boathouse. With the exception of the tramway, none of these features still exist. Original plans and drawings were not available for analysis, but recorded details provide a glimpse of the original station.

The Light and Fog-signal building was the most substantial in Alaska at the time it was built. It consisted of a two-story octagonal structure measuring 52 feet in diameter. Unlike other stations, reinforced concrete was used to form the foundation and walls, in part due to the location in a seismically active area. The main octagon included the engines and equipment for the fog signal on the ground floor. A 15,000-gallon water cistern lay beneath the incised concrete floor, and the first floor also included modern bathing facilities. The floor and cistern remain as features in front of the existing lighthouse. The second story provided quarters for the keeper staff. These included four bedrooms, a kitchen and pantry, and a sitting and dining room area.<sup>5</sup>

Each story rose approximately 12 feet. Major sides of the nominal octagon measured 30 feet, with corner sides at 15 feet wide. Each minor side had one window opening, while three (either windows or a combination of windows and door) occupied the main faces. A 10- by 30-foot one-story box flanked the south side of the main structure and the two fog-signal horns projected from the upper face of this extension.

Roof panels reflecting the octagonal shape rose from the walls at a pitch of 6-in-12 to a total height of 35 feet above grade. The roof was covered with asbestos cement shingles. An octagonal light tower rose through the core of the fog-signal building to a height of 7 feet above the top of the roof to the cast-iron lantern house gallery. Overall height to the focal plane was 47'3" above grade or about the same height as the current light. The original structure stood at an elevation slightly higher than the existing station. The existing lantern house, described above, stood on the top of the tower.

Based on historical photographs, the storage-and-carpentry house appears to have been a simple side-gabled one-story frame structure with a continuous porch along the south side. The structure stood near the location of the current Light and Fog-signal building. A simple frame tram house was located at the head of the tramway. The structure was sided in shiplap and had a pitched front-gabled roof. Two doors opened to the north to provide access to machinery and the tram cart storage. An oil house, that appears to correspond to the standard 9- by 12-foot design seen elsewhere in Alaska stands between the tram house and the fog-signal building. The oil house, which remained on site until demolished in 1965, would have been covered with corrugated metal siding and roofing materials. A 12- by 14-foot blacksmith shop lay to the rear of the carpentry building. The building was a simple single story utilitarian frame structure with shiplap siding. Concrete walkways connected the main features of the station. No details are available on the original wharf and boathouse other than mentioned under the current wharf described above.

### Other Collapsed or Demolished Buildings and Structures

The Cape Hinchinbrook Light Station Reservation also served for radio communications related to national defense and maritime shipping.

<sup>&</sup>lt;sup>5</sup> Cordova Daily Alaskan, September 9, 1909

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During World War I, the U.S. Navy took the lead in developing many aspects of the fledgling radio industry, obviously with an interest toward strategic military applications. Attempts had been made early in the 1910s to develop practical radio-compass systems (also known as direction finders) to aid navigation. In addition, the Navy also was developing and improving on ship-to-shore radio communication technologies. The direction finding (DF) equipment originally was installed on ships and played a role in locating enemy ships and submarines. Shore compass stations soon followed, with sites near Boston, New York, and Charleston in 1918. The Navy moved to establish stations elsewhere, including Alaska. Stations listed between 1921 and 1925 include nine with low to medium power communications capabilities. Three additional stations with radio as well as radio-compass direction finding systems were also established, one at Soapstone Point on the eastern edge of the Gulf of Alaska, one in the Pribiloff Islands off the west coast of Alaska, and one at the lighthouse reservation on Cape Hinchinbrook<sup>6</sup>.

The Hinchinbrook DF facility was established in September 1923. The Navy became a subtenant of the light station and independently built a two-story 45- by 26-foot barracks and operations building 200 feet west of the lighthouse and east of the tramway. A one-story battery storage and power control building protruded from the southeast corner of the building. Based on photographs, the building consisted of a simple utilitarian design with a shed-roofed front porch. No drawings illustrating the building have been found. The facility operated into the early 1930s when it was abandoned.

The Lighthouse Service, in building the new 1934 Light and Fog-signal building, also installed a Radio Beacon station. Given the layout of features, it is possible that the 125-foot steel mast used for the Radio Beacon antenna system originated with the Navy's DF station. No other features that could have been associated with the DF system were found during recent field survey in the vicinity of the Navy operations and barracks building. A distinction should be made between the DF and the Radio Beacon systems. One did not supplant the other. A military DF unit was not only used as a compass by ships at sea, but also more specifically for locating signals sent by ships. Through receiving equipment and other stations, the location of a radio broadcast could be pinpointed. The Radio Beacon installed by the Lighthouse Service broadcast pulses that were used by ships to pinpoint their own location. Only the foundation of the Navy building remains.

The Radio Beacon station also has little remaining. Aside from the radio room in the light tower, the system consisted of an 80-foot four-legged steel tower approximately 50 feet north of the Light and Fog-signal building, and the previously mentioned 125-foot pipe mast to the west. Collapsed segments of the pipe mast and guy wire anchors were found during recent survey; the 80-foot tower was demolished in 1994 when a new tower was built for the Automated Dependent Surveillance System (ADSS). The latter provides modern vessel traffic control for the Vessel Traffic Control Center in Valdez, Alaska. It serves particularly for oil tankers plying waters into and out of Prince William Sound. The new tower also serves a new Differential Global Positioning System at Cape Hinchinbrook.

Another lost building consists of the West Pump House, which was built in the mid-1940s near the expanded wharf. The building provided drinking water to the upper station complex. The 11- by 9-foot frame structure sat on a concrete foundation

<sup>&</sup>lt;sup>6</sup> Howeth, Capt. Linwood S., 1963. History of Communications – Electronics in the United States Navy.

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perched at the edge of the creek upstream from the boathouse. Remnants of the associated intake dam and the foundation for the pump house remain, but the building is gone.

### NON-CONTRIBUTING BUILDINGS AND STRUCTURES

Fourteen non-contributing buildings and structures surround the existing Light and Fog-signal building. These include the tramway hoist house, the shed for the derrick machinery, a collapsing pier extension mentioned above, a walkway to the east pump house, and a range of operational structures associated with the post-1960s period of automation. While the hoist houses and walkway represent earlier station features, the remainder do not contribute to the historical character of the station.

### Tram Hoist House

The current **tram hoist house** was built in 1955. Although not original to either the 1910 or 1934 station construction, it retains the same dimensions and location of the original hoist house. The replacement uses 2- by 4-inch framing to form a 17'11" by 9'11" box with front-gabled roof. The exterior is sheathed in plywood covered with machine cut 16-inch cedar shakes typical of 1950s construction. Two 43-inch by 7-foot utilitarian doors service the opening to the hoist engine foundation and tramcar storage area. Interior height to ceiling joists is 8 feet with an overall building height to ridgeline of 11'4". The 8-in-12 roof also used cedar shakes. One 2'8" by 3'10" window centered in the wall on the north elevation provided light to the interior.

### **Derrick Machinery Shed**

The derrick machinery shed was built in 1966 and was described under the previous section for the motor and winch.

### East Pump House Walkway

A board **walkway** made of 2- by 6-inch planks supported by stringers runs from the light station to the pump house. Crossbraced dimensional lumber posts support the walkway where it crosses undulating parts of the terrain. The walkway condition is poor, and appears to have been rebuilt or repaired numerous times.

### Transmitter Facilities and Associated Components

**Two fiberglass modular** units that contain electronic equipment associated with current operations lie in front of the Light and Fog-signal building. The west unit fronts the 1964 recreational room addition, while the second lies in front of and partially obscures the view of the engine room. The roughly 8- by 12-foot units are 10 feet high and are mounted on skids. Four above-ground fuel tanks also lie on skids between the two windowless cabinets.

The station's **communications antenna** stands on a small hillock that lies west of the Light and Fog-signal building with its base at an elevation about 40 feet above the lighthouse grade. The lattice-frame antenna supports a range of communications dishes and equipment.

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### **Helicopter Deck**

The existing **helicopter deck** also is considered non-contributing. The structure was built in 1972 and consists of a 70-footsquare timber platform that lies on the rocky point 30 feet in front of the Light and Fog-signal building and immediately adjacent to the old fog-signal foundation. Vertical 8- by 8-inch posts support a glulam beam system. Decking is 4- by 12-inch decking on vertical 4- by 14-inch joists. The elevation of the deck is about 10 feet above the grade of the Light and Fog-signal building.

### Finger Pier

The wharf area was expanded in 1964 with a **pier structure on pilings** that juts 270 feet seaward from the seawall opening for the stream. The pier is collapsing; the outer end, which held the last station derrick, has completely collapsed, and derrick pieces are strewn along the north beach.

### Former Fuel Oil Tanks

Two vertical fuel storage tanks are located in the vicinity of the tramway hoist house and the former Navy DF operations building and barracks. These were installed with the 1964 upgrade to alternating current.

### **ARCHAEOLOGICAL RESOURCES**

Features and artifacts at the Cape Hinchinbrook light station form an archaeological complex relating to historical occupation of the facility. Definition of the archaeological complex is based on review of historical maps, drawings, and field observations. As part of the general field investigation for National Register consideration, professional archaeologists conducted a pedestrian transect survey of the primary use areas of the station, although given the topography and dispersed use area, non-linear survey methods also were employed. The pedestrian survey consisted of generally systematic transects, which covered the different land use areas. The survey was conducted on October 17, 2002. Methods consisted primarily of visual observation of features and observable artifact scatters. Information on cultural materials was recorded in field notebooks. The objective of the survey was to provide an initial understanding of resource potential and integrity. No artifacts were collected. Both historical and Native American resources were considered as potential finds, although no prehistoric or ethnohistoric resources were discovered.

### The Original Light and Fog-Signal Building

The remnant of the original light station structure provides the most evident archaeological resource. It consists of the rear two-thirds of the concrete floor and foundation, which still retains the octagonal outline of the structure. The remains include the subgrade cistern associated with operations beginning in 1910. The cistern was not opened but likely contains remnants of the station. In addition, when demolished, much of the structure as well as unwanted equipment were pushed over the adjacent

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cliff. The cliff base area is not readily accessible, but materials and artifacts can be seen on the boulder field below the face. In addition, inaccessible areas under the current helicopter pad also are likely to contain artifacts. This area, to the south of the lighthouse complex, drops off in a series of natural gullies to the east that would typically have been collectors of historical materials from station operations. Pieces of what appear to be original structural fabric were observed along the slope beneath the landing pad. Glass and metal debris also occurs in a gully feature off the northeast corner of the helicopter pad and just north of the wood walkway to the East Pump House.

A second large concentration of historical artifacts occurs in a large gully that runs down the north side of the tramway alignment. Glass battery cells, ceramics, and general metal debris are partially exposed beneath a heavy cover of duff and moss. The area provides a logical site for disposal activities associated with the lighthouse operation as well as from the nearby Navy DF station.

Also located were anchor piers and the collapsed remains of the Radio Beacon (and probably DF) 125-foot steel mast. The mast is broken in rusting pieces, but retains its basic shape. The pole was built using decreasing diameter steel tubing ranging from 16-inch to 8-inch tubes. It lies on a ridge due north of the Navy building and northwest of the Light and Fog-signal building. The hillside slopes down to the north, and a structural scatter from a frame building was found on the slope. This structure does not show on historical light station plans or drawings. It was a single story frame dwelling with 1- by 8-inch tongue-and-groove siding and beaded board interior paneling. The remnant shake roof was painted green. The structure likely was associated with the antenna pole.

A second building scatter was located 300 feet north of the existing Light and Fog-signal building. Again, only collapsed remnants of a frame building were observed. This building, however, relates to the 1940s improvements to the light station. It shows as crew quarters on historical maps, and was located about 50 feet from an equipment parachute drop zone used at that time. It lies at the head of a small valley that parallels the Radio Beacon tower knoll and which contains the creek that discharges at the station wharf. The remnants of this building lie mostly buried beneath brush and moss.

Higher use activity areas associated with early station operations represent a probable zone of historical archaeological materials. Buried concentrations likely exist in the zone between the original lighthouse and the head of the tramway, as well as in the area surrounding the former blacksmith shop.

Other elements considered as archaeological features or artifacts have been mentioned in the discussion of demolished or collapsed buildings and structures above. These include the foundations and artifact scatter from the Navy Radio Beacon building; footings for demolished radio towers; the foundation for the west pump house and dam; and the pylons and remnants of machinery associated with the stiffleg derrick complex.

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Table of Contributing and Non-Contributing Properties

Contributing	Non-Contributing
Buildings	Buildings
Light and Fog Signal Building with Residential Unit Boathouse	Tram Hoist House
Structures	Structures
East Pump House	Derrick Machinery Shed
Main Wharf and Seawall	East Pump House Walkway
Tramway System	Fiberglass Transmitter Sheds (2)
Object	Fuel Storage Tanks
Wharf Derrick Machinery	for transmitters (4)
	Communications Antenna
Sites	Helicopter Landing Pad Finger Pier
Historical Archaeological Resources (artifacts and	Vertical fuel oil tanks (2)
features in association with former activity areas)	vortiour ruor on tunks (2)
Original Light and Fog Signal building foundation and cistern Artifact scatter from original light and fog signal building at base of cliff Artifact scatter northeast of helicopter pad and	
east of lighthouse Artifact scatter/dump in gully adjacent to	
tramway	
Radio Beacon tower remains Building scatter near Radio Beacon Tower 1940s Construction quarters ruins and drop zone Navy Radio Beacon Direction Finder housing	
foundation complex	
Blacksmith shop foundation	
Communication tower footings	
West pump house foundation and dam	
Derrick pylons	
Stiffleg derrick structural artifacts	

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### Narrative Statement of Significance:

Alaskans have relied on and continue to rely on their marine highway as one of the important commercial links to the Lower 48 and the Pacific Rim. Since 1910, the Cape Hinchinbrook Light Station has served an important role as part of a string of aids to navigation guiding ships to the commercial and economic centers of Alaska. Both treacherous reefs and treacherous seas confront mariners as they wend their way up the coast through the Inside Passage, across the stormy Gulf of Alaska, and on to ports at Valdez, Cordova, and Anchorage. The lighthouses of Alaska in aggregate represent not only the danger associated with crucial maritime travel, but also stand as beacons to the economic development and exploitation of the farsighted purchase of the territory by the United States in 1867. Prior to the fledgling beginnings of air travel in the 1920s and construction of the Alcan Highway during World War II, shipping provided the only connection between the states and the wild but opportunistic ventures of the Alaska territory.

The Cape Hinchinbrook Light Station is significant under three of the four main National Register criteria as outlined below. It is historically important for promoting the safe use of coastal waters for shipping and transportation, and it demonstrates the significant Federal role in providing for navigation safety in Alaska. Although the current station was built in 1934, it clearly maintains an integrity that conveys its relationship to the critical need for navigational aids as first established in response to the rush for gold at the turn of 20th century. As such, its feel and association with the events that fostered commercial development of Alaska, and the awareness of that territory in the national consciousness in the early 1900s remain.

Also, the 1934 light and fog-signal building was the first in a series of Art Deco lighthouses that were erected during the Depression years. This rebuilding phase at six stations in Alaska during the 1930s forms a chain of Art Deco and Art Moderne buildings, each slightly different, that is unique within the national system. Although engineered simply but elegantly by designers in the 16th Lighthouse District office in Ketchikan, the buildings, including the Cape Hinchinbrook light, have a quality of proportion and design that represents an outstanding application of the Art Deco style. As first designed, Cape Hinchinbrook presents the most elaborate application of the style. Those that follow become simpler and more streamline, but Hinchinbrook, with its offset tower, stepped parapets, and elaborate pilaster caps epitomizes the qualities taken by the Deco style from Egyptian and Mesopotamian geometric precedents.

While some of the fabric has suffered with remodeling over the years, including some infilling of windows, the damage is eminently reversible. The strength of the massive concrete building form still clearly depicts both the architecture and purpose of the building. Unlike other stations, the Cape Hinchinbrook station still serves an acutely active role in modern navigation. Features associated with the modern mission detract somewhat from setting in terms of immediate visual quality. These features, however, easily can be removed. From a distance the light tower still dominates the landscape, especially when viewed from sea level.

Finally, preliminary survey of the main station compound and perimeter identified areas that contain potentially significant archaeological remnants of station operations in the first half of the 20th century. These have the potential for yielding information about the conditions faced by light keepers and as well as the engineering ingenuity necessary to maintain remote outposts.

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Based on the above, the period of significance has been established as beginning in 1910 to a point 50 years before present. The end date of 1955 addresses those features 50 years and older, which relate to the principal years of operation for the station. More recent structures do not meet the exceptional criteria for properties less than 50 years old.

### DEVELOPMENT OF NAVIGATION AIDS IN ALASKA

The Russian explorer, Vitus Bering, first sighted Alaska in 1728, and his expanded expedition in 1740-1741 provided the impetus for the first permanent Russian settlement at Kodiak in 1784. A land of rich natural resources, Alaska has depended on the sea for communication, transportation, growth, and development since the initial Russian occupation. Given its northern climate and rugged coastline, however, the critical maritime connections have been challenging. Historian James A. Gibbs<sup>1</sup> described the territory as having "a wicked coastline, broken and battered with bold outlying ridges, and inside passages bristling with sharp turns, narrow defiles, and jagged headlands of the kind that give pilots grey hairs long before their time..." The coast, according to Gibbs is "…one of the best-filled marine graveyards anywhere."

American exploration by the U.S. Coast Survey shortly after the purchase of Alaska by the United States in 1867 resulted in recommendations for establishing light stations in Alaska as part of a study that covered Oregon, Washington Territory, and Alaska.<sup>2</sup> The report by George Davidson of the U.S. Coast Survey recommended a series of lighthouse locations near Sitka, Kodiak Island, and near Dutch Harbor in the Aleutians. Implementation of the recommendations, however, waited until the need became critical. Only a series of buoys and unlighted daymarks were placed, but no lights or lighthouses.

Marine commercial traffic increased significantly throughout the 1870s and 1880s due to initial mineral discoveries and commercial fisheries, but in 1890, Alaska had only 27 buoys and 15 daymarks, with no lights or fog signals<sup>3</sup>. Although more protected than the open sea, the Inside Passage route through Southeast Alaska contained numerous marine hazards. In particular, the areas of the Tongass Narrows and Wrangell Narrows presented serious obstacles to safe navigation. At the time, Alaska fell under the command of the 13th Light House District headquarters at Portland, Oregon. The district also commanded the coastlines of Washington and Oregon, and these states received first priority. Only one buoy tender, the *Columbine*, covered all coastlines and could attend to Alaska only in the summer months. Initial visits to place and tend markers began in 1886.

Increasing traffic on the Inside Passage translated into greater losses. The decade of the 1880s saw wrecks with a total loss of over \$40 million. Beginning in 1890, the federal Lighthouse Board pushed Congress for funds to construct a light and fog-

<sup>&</sup>lt;sup>1</sup> Gibbs, James A., Jr. 1955. Sentinels of the North Pacific. Binford & Mort, Portland, Oregon

<sup>&</sup>lt;sup>2</sup> U.S. Senate, Executive Document 53, 40th Congress 3rd Session. Message of the President of the United States in relation to Points upon the coasts of Oregon, Washington Territory, and Alaska , for light-houses.

<sup>&</sup>lt;sup>3</sup> Alaska Department of Natural Resources 1979. Aids to Navigation in Alaska History. Report authored by Charles M. Brown under the Alaska Office of Statewide Cultural Programs, Alaska Division of Parks.

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signal station on Mary Island, which lies in the Revillagigedo Channel at the south end of the Tongass Narrows near Ketchikan. The Board was ignored. It took the excitement, activity, and hardships of the Klondike Gold Rush to bring attention to Alaska. As miners, geologists, and entrepreneurs flocked north, the number of wrecks climbed substantially. The number of shipwrecks in Alaska in the 1880s and early 1890s averaged less than 10 annually. Between 1898 and 1899 alone, at least 46 vessels perished.<sup>4</sup> With the increased vessel traffic, the Lighthouse Board pushed again for funding. The Board proposed a series of light stations, mainly servicing the Inside Passage route to Skagway. Congress acted and appropriated \$100,000. Immediately the Engineer and Chief Inspector of the 13th District conducted a detailed examination of southeast and western Alaska.<sup>5</sup> They recommended 15 sites, the majority in Southeast Alaska, to be funded by supplemental appropriations of \$300,000. After initiating design for two key locations, Sentinel and Five Fingers Point, the Board provided a prioritized list indicating the top four subsequent sites as Lincoln Rock, Mary Island, Tree Point, and Guard Island. These four locations covered the southern entry into Alaskan waters through the Tongass Narrows and north through the Clarence Strait along the main route to Skagway and the gold rush trails.

Planning, designs, and bids under the 13th District were developed between 1901 and 1903 under a total appropriation of over \$500,000. By the end of 1903, when the Board was transferred to the Department of Commerce, five light stations were in operation. Six more lit their lamps in the next year. With the addition of the Eldred Rock station in 1906, the first major lighthouse complement had been completed. Only four more stations ever were added to the system.

Mining booms in the Yukon drainage and other parts of Interior Alaska, discovery of copper at Kennicott in the Copper River drainage, construction of railroads from Seward and Cordova in the Gulf of Alaska, construction of the Richardson Road (later highway) and the increased traffic to the interior drove the subsequent limited additions to the chain of light stations that marked the marine highway. Supplemental stations included Cape Hinchinbrook (1909-1910) and Cape St. Elias (1915-1916). Both extended navigation from the Inside Passage into the Gulf of Alaska for ships headed for Cordova, Valdez, and Seward in response to Copper River mining and the construction of the Alaska Railroad. The commitment by the federal government to the railroad drove additional measures related to sea traffic. In conjunction with a reorganization that abolished the Lighthouse<sup>\*</sup>Board and created the Bureau of Lighthouses, more commonly known as the Lighthouse Service in 1910, the government established the 16th District in Ketchikan to serve exclusively Alaskan waters. The Secretary of Commerce, William C. Redfield, speaking in 1914, noted that the value of the railroad would never be realized until Alaskan waters were as safe for shipping as in British Columbia.<sup>6</sup>

With the addition of the St. Elias light in 1916, however, conditions had improved to the point that no shipwrecks were reported for the year. The job of the lighthouse service did not end there. Alaska was one of the first places to use newer technologies such as acetylene lamps at both light stations and at unattended lights. During the 1930s, radio beacon facilities

<sup>&</sup>lt;sup>4</sup> U.S. Mineral Management Service 1992. Shipwrecks of the Alaska Shelf and Shore. OCS Report MMS 92-0002. U.S. Department of Interior, Anchorage, Alaska.

<sup>&</sup>lt;sup>5</sup> U.S. Senate 1901. Light-house and Fog-signal Stations in Alaskan Waters. Report No. 1909, U.S. Senate, 56th Congress, 2nd Session. U.S. Government Printing Office, Washington, D.C.

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were installed at many of the stations and at points along the coast. In addition, the Lighthouse Service began a modernization program, beginning in 1923, that replaced the original deteriorating structures with solid concrete towers. The replacements were designed out of the Ketchikan office and, on the whole, are unique to the national lighthouse system.

In 1939, authority for operation of the lighthouses transferred to the U.S. Coast Guard. The Coast Guard inherited and, due to the driving force of world war, improved upon an efficient system that formed the heart line of Alaskan commerce. Over the years, improved technologies have affected the operations; it is a tribute to the initial planning and design, however, that most of the installations still shine their beacons to the sea. In the late 1960s most stations were automated using diesel generators, and keeper facilities were demolished; recent improvements have replaced the generators with solar battery systems. The lights still shine, but the quiet structures are only shells of the originals. No longer do the voices of keepers, wives, and children echo about the remote promontories; all that is left is the efficient whirr of electronic equipment and the winds.

### THE CAPE HINCHINBROOK LIGHT STATION

The Cape Hinchinbrook Light Station was established under the early 20th century impetus to significantly improve the system of aids to navigation in Alaska. The station was the last major light built during the period, an adjustment that reflects the dynamic changes in shipping during the opening of the interior of Alaska (with gold strikes in Fairbanks and other mineral discoveries in the Copper River drainage). It still serves its intended role. Along with new technologies, in part fostered by the *Exxon Valdez* oil spill in Prince William Sound, the Cape Hinchinbrook station still serves an important modern safety role for Alaskan shipping.

The cry for improvements to the critical maritime system began in the late 1800s. At the time, however, Alaska was low in the national consciousness and national priorities. Due to the pressures and awareness brought on by the gold rushes, Congress was finally ready to act in 1900. It authorized construction of two stations and funded a study to identify additional facilities to improve safe navigation in Alaskan waters. The study, delivered to Congress in 1901, emphasized needs associated with two routes: the Inside Passage to Skagway and Juneau; and the passage through the Alaskan Peninsula to the Yukon drainage.<sup>7</sup> Cape Hinchinbrook was not on that initial list, but the dynamic conditions of Alaskan resource exploitation soon created a need.

The Prince William Sound and Cordova areas lie adjacent to the Copper River valley. Although an over-glacier "All American" route was forged north from Valdez during the rush days of 1898, it never was tremendously popular. With discoveries of mineral wealth in the Copper River valley and the strike further north at Fairbanks in 1902, however, Valdez became a major transportation and supply center for points north. Coal and oil, discovered at Katalla near Cordova in 1902, development of the Bonanza-Kennecott copper mine, and expansion of canneries associated with the Copper River fish runs created major commercial ports at both Valdez and Cordova. Cordova was established in 1905 and served as the 1906 starting

<sup>&</sup>lt;sup>7</sup> U.S. Senate 1901. Light-house and Fog-signal Stations in Alaskan Waters. Report No. 1909, U.S. Senate, 56th Congress, 2nd Session. U.S. Government Printing Office, Washington, D.C.

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point for construction of the Copper River and Northwest Railway to the mines. The first load of ore was shipped to Tacoma in 1911.

With the rise of maritime activity, the need for navigational aids became critical. In particular, the Cape Hinchinbrook area had historically been the scene of some of Alaska's most devastating wrecks. In 1799, the destruction of a fleet of Russian bidarkas resulted in the loss of 200 lives. In 1901, the steamer Aloha crashed on the southeast side of Hinchinbrook Island; and in 1906, the passenger steamer Oregon met the same fate. The passengers and crew of the Oregon were fortunately rescued by the Lighthouse Service tender *Columbine*, which happened to be in the area. The wreck sealed the demand for a station at Cape Hinchinbrook, and it was added to the list of critical needs. On November 27, 1906, President Theodore Roosevelt signed Executive Order 525, which established the lighthouse reserve.

Although construction estimates called for \$125,000, Congress initially appropriated only \$25,000. It wasn't until the 1908 Session that full funding became available. Construction began in April 1909 under the direction of A.B. Lewis of the Standard Building Company of Seattle.<sup>8</sup> A construction crew of 40 men began clearing the limits of the site and building the tramway and supply landing. The rough seas and weather delayed progress. One of the supply scows broke free and drifted west to Montague Island, where it ultimately was recovered.<sup>9</sup> By the end of September, work had halted. Shipments across the Gulf of Alaska could not continue because of the bad weather. Only the tram and part of the shell for the fog-signal building had been completed. The location was viewed as critical enough to establish a temporary fixed light as shown on the 1910 edition of the U.S. Coast and Geodetic Survey map; a keeper remained behind under strained conditions to tend the light through the winter. The following June, the work crew returned and proceeded to complete the concrete pours and raise the structure. They also completed the oil house and carpenter/machine shop, and tram house, which completed the station complement. Total expenditures, at \$100,323, came in well below the original 1906 estimate.

Primary equipment included a rotating third-order fresnel lens from the Paris company of Barber Bernard & Turenne with an oil burning lamp. The four-panel prism had an inside diameter of 39 inches and was marked as USLHE 320. Rotation was provided by a counterweighted clock mechanism. The lens, along with a later DCB-224 beacon, now reside in the City of Valdez museum. The original flashing interval was 5 seconds. The fog-signal came from two compressed air sirens powered by coal oil engines and air compressors.

Although in full operation, the station was unable to prevent the next major grounding. In 1912, the recently assigned lighthouse tender Ameria struck an uncharted rock while delivering coal to the station. This was the first tender permanently assigned to newly-created 16th Lighthouse District. Originally built at Camden, New Jersey in 1890 for the Third Lighthouse District, the vessel subsequently was requisitioned by the Navy for the Spanish-American War and participated in the blockade of Cuba. The 1,052-ton tender was a total loss. The ship was close enough to the light station, however, that the keepers were able to launch their dinghies and rescue the stranded crew.<sup>10</sup>

<sup>&</sup>lt;sup>8</sup> Annual Report 1909; Cordova Daily Alaskan September 3, 1909.

<sup>&</sup>lt;sup>9</sup> Cordova Daily Alaskan, September 11, 1909.

<sup>&</sup>lt;sup>10</sup> Annual Report 1913

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The original Cape Hinchinbrook design concept differed from most other stations built of the time, which provided separate housing for keepers and their families. The Hinchinbrook design incorporated living quarters for four men into the fog-signal building. This pattern continued during the regional rebuilding phase of the 1930s. Of the lighthouses built in the 1930s replacement program, the Cape Hinchinbrook light and fog-signal building is the only one to include living quarters within the primary station building.

As with other stations in the Southeast Alaska chain, the Cape Hinchinbrook station received technological upgrades as warranted. The significant rise in marine commerce through Prince William Sound coupled with the prevalence of dense fog in the Hinchinbrook passage dictated installation of a more powerful fog signal. A diaphone system was installed in 1923. The power of lighting was increased over time with installation, first of electrical power in the 1930s, and then new beacons and alternating current in 1964.

Cape Hinchinbrook was the earliest station with electronic radio equipment, which was built and operated by the Navy. The Navy DF (direction finder) outpost began operation in 1923. This was replaced with a radio beacon system in approximately 1934 operated by the Lighthouse Service, apparently using some of the resources of the then-abandoned Navy station. Poles were mounted on the hill west of the light tower, and to the rear of the engine/keeper's quarters structure.

The erection of the replacement light and fog-signal building and crew quarters in 1934 marks an important change in the character of the site. Again, the design is unique among the facilities designed for Alaska during the era. Most all of the other stations used existing separate residences; Hinchinbrook incorporated quarters into the design of the main building. The earthquakes of 1927 and 1928 had made the Hinchinbrook station vulnerable. Elsewhere, the original wood light and fog-signal buildings were deteriorating from the Alaska climate. Six stations were replaced, with Hinchinbrook as the first. The designs came from the District office of the Lighthouse Service located in Ketchikan. An engineer in the office, E.W. Laird, claims the main design role at the stations, although as noted in Section 7, his superior D.A. Chase appears to have played a major role in the architectural design.<sup>11</sup> Each design took inspiration from the Art Deco or Art Moderne style, and each was slightly different. The designs show a progression from the more elaborate at Cape Hinchinbrook to the spare and streamline forms at Mary Island and Scotch Cap. With the exception of Scotch Cap in the Aleutian Islands, these lighthouses form a progression and pathway from the Canadian boarder, through the Inside Passage, and out over the Gulf of Alaska.

The Cape Hinchinbrook design serves as the most intricate variant in the chain. Its pilasters, with ornately detailed caps that rise above the parapets, emphasize the vertical. Pilaster separation differs between the tower and fog-signal building; the proportioning emphasizes the different purpose and qualities of each unit. Unlike the rest of the buildings from this period, the Hinchinbrook design, through its treatment of the parapets, harkens back to the pyramidal structures that provided inspiration for the Art Deco style. As counterpoint, yet eminently compatible with the design, the lantern house from the original 1910 station sits atop the tower, its black metal features and glass contrasting the white with the main structure.

<sup>&</sup>lt;sup>11</sup> Laird, E.W. 1991. Letter from Laird to Clarke and Gilmartinn, Alaska DNR, OHA dated July 25, 1991.

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Although some of the original fabric has been removed or damaged, the damaged pieces are minor compared to the strength of the monolithic concrete structure perched on a 180-foot bluff. All are readily restorable, and as a building, the station still retains its overall qualities and integrity.

In addition, the remaining contributing structures generally retain their individual integrity and contribute to form a significant light station complex. More than most sites, light stations must be reviewed in terms of their function within the overall landscape. Not only does this include the visual character taken from the sea, but also the functional character of a complete operation. The Cape Hinchinbrook Light Station retains most of the buildings and structures that interpret the daily operations of a station compound.

### SUMMARY

The Cape Hinchinbrook Light Station is significant because of its association with the crucial development of a system to protect commerce and transportation in Alaska (Criterion A) beginning in the early 1900s. The heightened national awareness of Alaska, created by the rush for gold beginning with the Klondike strike, represents a turning point for both the territory and the nation. As aspiring millionaires flocked north, in part as a response to the national depression of the 1890s, the territory's population exploded. The marine highway provided the only access to and from the territory.

Cape Hinchinbrook stands as the last light built during this first phase of navigational improvements. It also stands alone in representing the dynamics occurring with the rush for riches throughout Alaska. When the original set of stations was proposed to Congress, the Copper River area played only a minor role in the commercial exploitation of the territory. That soon changed with the development of transportation corridors from Valdez to Fairbanks, and a railroad from Cordova to the Kennecott mines. With these changes in traffic patterns, the Light-House Board made adjustments to the system. Some of the originally proposed sites were downgraded to minor unattended lights, while the Cape Hinchinbrook Light Station became the most substantial in the chain. It is the overall operational landscape, inclusive of more recent buildings and structures (several that replaced earlier buildings at or near original locations) that portray the quality of the station in relationship to its role in history.

In addition, Hinchinbrook is significant for its association with the early deployment of electronic aids to navigation. The Navy installed just three radio DF stations in Alaska between 1920 and 1925. A functionally acceptable design for DF had been in existence for less than 5 years prior to the first installation. The Lighthouse Service took over this function, using the radio beacon system. The first radio beacon units were installed in 1926; probably because of the Navy DF, Hinchinbrook did not receive its radio beacon until it was designed into the new light and fog-signal building in 1934.

The 1934 light and fog-signal building stands out on its own as architecturally significant (Criterion C). While concrete served for lighthouses elsewhere in the country, particularly along the earthquake-prone West Coast, the series of Art Deco designs that form the Southeast Alaska group stand out as unique within the national system. The balance and proportion achieved in the design belies the engineering background of the designers in the Alaska District headquarters in Ketchikan. The Cape Hinchinbrook structure was the only building of the 1930s design in Alaska to pay special attention to earthquake engineering. Additional diagonal rebar was included in the design to reinforce the standard concrete construction methods.

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The Cape Hinchinbrook structure forms the first and most elaborate of the six lighthouses built during the 1930s which illustrate the progression in design (towards streamline simplification) over time. As noted above, the Cape Hinchinbrook design represents the most dynamically ornate of the system. The designs that follow retain the use of pilasters to emphasize the geometric verticality of the style, but none provide quite the layering and multi-level progressions of the Hinchinbrook design. Although intrusive modern structures such as the adjacent radio tower and helicopter pad impinge on the visual qualities of the main building, the weighty mass of the concrete light and fog-signal building still dominates the landscape. The intrusive "improvements" are far more transitory and do not seriously detract from the overall quality.

The discussions above dwell mainly on the historical contexts that established the Cape Hinchinbrook Light Station and the chain of lighthouses built between 1903 and 1910 in Alaska and the architectural qualities of their 1930s replacements. Another facet relates to the people that ran the stations and station operations under relatively remote living conditions. The historical question relates to the similarities and differences between the stations and other semi-"frontier" settlement organizations, whether in Alaska or elsewhere. Anecdotal accounts and limited historical records provide glimpses of conditions faced by keepers in Alaska. The historical archaeological site aspect of the Cape Hinchinbrook Light Station provides an opportunity to address research questions that cannot be exclusively answered through the historical documentation, and consequently qualifies under Criterion D. In particular, Hinchinbrook from the start differed from most of the other stations. Where others included families, the Cape Hinchinbrook station, with the residence compound within the light and fog-signal building, related to single men. While no subsurface investigation has occurred, the surface manifestations including foundations, features, and visible turn-of-the-century artifact scatters clearly indicate the potential for significant intact resources. Assemblages in terms of artifacts would be typical of period historical materials: food and beverage containers; construction materials; personal items, and discarded equipment from early operations.

The remoteness of the island and the limited disturbance from subsequent demolition activities indicate that primary archaeological deposits exist. Consequently, site features and components should have good integrity. The remoteness and difficulty in supplying the remote station also predisposes the site to contain a wide array of cultural materials that would have been lost or discarded in-situ rather than systematically removed from the island.

Few, if any, residential light stations have been studied archaeologically; nor have studies examined the difference between family residential stations and those assigned exclusively to men. A wide range of local, regional, and even national research questions apply to the occupancy of Cape Hinchinbrook. Many should focus on the earlier years of the station, but not exclusively. Opportunity exists for both inter- and intra-site analysis. The station was occupied by keepers and assistants, often of varying ethnic background, and supported and directed by a quasi-military organization. If analogies to other similar conditions (like the more modern DEW-Line stations in Alaska) are correct, each station at any point in time would reflect cultural behavior unique to location and time. Archaeological investigation should be able to compare the localized patterns of social structure, adaptation to environmental conditions, and response by diverse "ethnic" populations to other similar remote stations. The standardization of supply (by the Lighthouse Service) and similar activity functions should provide a unique control to better highlight variables of individual preference shown within the archaeological record. In addition, Alaska provides a unique opportunity for comparisons farther afield. The lighthouses were established during a major mining boom that spawned isolated communities, also with male-dominated populations, in the vicinity of the prospects and mines; other supply sources responded to a more traditional pattern, but also have their unique qualities relative to other settlements. The

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isolated clusters provide a counterpoint comparison to activities and cultural patterns at the more traditional domestic lighthouse stations, with variable control provided by the responses to a remote setting. An already extant research question for Alaska relates to differences and similarities in behavior, adaptation, social mix, and population patterns between the more remote mining establishments and their necessary supply points such as Skagway and Fairbanks.

In terms of intra-site conditions, a social hierarchy existed at the local level between keeper and assistant. Anecdotal stories mention the strains related to this hierarchy, but certainly the distinctions among the various workers in terms of relative "wealth" or possibly foodways well could be represented in the archaeological record. Status relationship questions can be extended to the regional level if archaeological data that allows comparison to other coastal townsite areas become available in the future.

Alaska as a whole represents a unique opportunity to observe later stages of commodity-flow patterns as defined by William Adams<sup>12</sup>. The research question relates to trade networks and origins of goods associated with diverse locales and communities throughout the United States and varying time periods. The subject has had initial consideration as part of a mitigation project in Fairbanks, Alaska<sup>13</sup>. The analysis of early 1900s commodity demand spans the same period as the formative years of the lighthouse developments in Southeast Alaska. The archaeological component of the Cape Hinchinbrook Light Station has the potential to add a different perspective on such analysis due to the controlled aspect of the federal supply system rather than the open market selection demonstrated in other Alaskan sites.

<sup>&</sup>lt;sup>12</sup> Adams, William Hampton, 1976. Trade Networks and Interaction Spheres: A View from Silcott. Historical Archaeology 10:99-112. Riordan, Timothy B., and William H. Adams 1985. Commodity Flows and National Market Access. Historical Archaeology 19(2):5-18.

<sup>&</sup>lt;sup>13</sup> Bowers, P.M., B. L. Gannon, Robert M. Weaver, and W.H. Adams. 1998. Historical Development of the Chena River Waterfront, Fairbanks, Alaska: An Archaeological Perspective. Alaska Department of Transportation, Fairbanks..

OMB Approval No. 1024-0018

Form 10-900-a (8-86)

United States Department of the Interior National Park Service

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### **Geographic Data (cont.)**

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	Zone Easting						No	Northing					Zone				Easting					Northing									

### **Verbal Boundary Description:**

The boundary for the Cape Hinchinbrook Light Station property encompasses the main light and fog-signal building, representative standing outbuildings and structures, and areas of identified or potentially significant archaeological resources as follows: Beginning at a point approximately 235 feet south and 40 feet east of the southwest corner of the existing light and fog-signal building, which is located near mean tide level at the base of the Cape Hinchinbrook bluff; then N 35° 22' E a distance of 153 feet to a point near the East Pump House walkway; then S 84° 31' E a distance of 451 feet to the location of the pump house dam; thence N 12° 41' E for 40 feet; then N 70° 53' W past the pump house to the artifact scatter near the light and fog-signal building a distance of 492 feet; then at N 37° 18' W for 177 feet past the remnants of the 1930s RB tower area; then 230 feet N 14° 12' E to the site of the construction camp quarters; then N 82° 38' W a distance of 92 feet; thence 284 feet in a direction of S 52° 29' W past the RB/DF tower remnants to a major archaeological deposit; then N 41° 3' W for 482 feet to an area just above the West Pump House Dam in the vicinity of the station Wharf; then S 51° 58' W for 128 feet to a point just offshore from the concrete wharf seawall; then generally parallel to the station tramway line for 757 feet at a direction of S 36° 40' E a distance of 300 feet to the point of beginning

### **Boundary Justification:**

The boundaries have been set for two primary reasons: historical archaeological potential and visual impacts to the property. The area is remote and the federal government owns adjacent land. The boundary of the Cape Hinchinbrook Light Station encompasses the main light and fog-signal building, the East pump house complex and walkway, the existing tramway system, wharf, and boathouse area. The boundaries also include archaeological areas including the original lighthouse foundation, cliff scatter, tramway gully scatter, the RB/DF pole and associated building structure, and the worker-housing scatter. The boundaries are established to incorporate observed and potential archaeological materials and features associated with the light station. The boundaries are also established to address the visual landscape of the facility and its related components. As defined, the boundary does not incorporate all of the original lighthouse reserve, which consisted of 57.4 acres. The 6.9 acres included in the nomination encompasses the major area of light station activity including structures and use areas, while the remainder of the historical reserve remained as generally unused forested land that do not add to the visual or historical qualities of the station.



Figure 1 - Cape Hinchinbrook Light Station (Source USC&GS 1913 Chart 8520)



Figure 2 - Site Boundaries and Areas of Observed Archaeological Artifact Concentrations



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Light Tower and West Addition of Light and Fog Signal Building



Bas-Relief Medallion over Front Door of Light and Fog Signal Building







Grate between Lamp and Rotating Machinery



## Coastline at Wharf



Lower Tramway Trestle



Original Light and Fog Signal Building in 1914 Looking SE



Light and Fog Signal Building ca 1936



Cape Hinchinbrook Light Station (1950) from West



Cape Hinchinbrook Light Station ca. 1960 Looking South