

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form 562619

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any 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.



1. Name of Property

Historic name: Point Reyes Naval Radio Compass Station
Other names/site number: Point Reyes Naval Direction Finder Station
Name of related multiple property listing: N/A
(Enter "N/A" if property is not part of a multiple property listing.)

2. Location

Street & number: 23250 Sir Francis Drake Boulevard
City or town: Inverness State: CA County: Marin
Not For Publication: Vicinity:

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

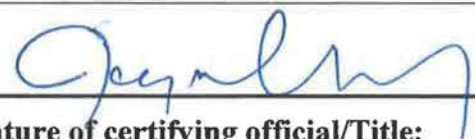
I hereby certify that this x nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

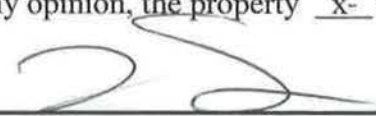
In my opinion, the property x meets does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

 national statewide x local

Applicable National Register Criteria:

 x A B x C D

 <hr/> Signature of certifying official/Title: <u>NPS FPO</u>	<u>5/10/2018</u> <hr/> Date
<hr/> State or Federal agency/bureau or Tribal Government	

In my opinion, the property <u>x</u> meets <u> </u> does not meet the National Register criteria.	
 <hr/> Signature of commenting official:	<u>12/12/17</u> <hr/> Date
<hr/> Deputy State Historic Preservation Officer, California Office of Historic Preservation	
Title :	State or Federal agency/bureau or Tribal Government

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

4. National Park Service Certification

I hereby certify that this property is:

- entered in the National Register
 determined eligible for the National Register
 determined not eligible for the National Register
 removed from the National Register
 other (explain:) _____


Signature of the Keeper

6/28/18
Date of Action

5. Classification

Ownership of Property

- Private:
Public – Local
Public – State
Public – Federal

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Category of Property

- Building(s)
- District
- Site
- Structure
- Object

Number of Resources within Property

Contributing	Noncontributing	
<u>1</u>	_____	buildings
_____	_____	sites
_____	_____	structures
_____	_____	objects
<u>1</u>	_____	Total

Number of contributing resources previously listed in the National Register _____

6. Function or Use

Historic Functions

DEFENSE/naval facility

Current Functions

VACANT/NOT IN USE

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

7. Description

Architectural Classification

NO STYLE

Materials:

Principal exterior materials of the property:

Foundation - concrete

Walls - wood single

Roof - wood shingle

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraphs

In 1920, the U.S. Navy built the Point Reyes Naval Radio Compass Station on the Point Reyes Peninsula, specifically on a bluff above Point Reyes Beach overlooking the Pacific Ocean. The building is situated at the northwest corner of B Ranch, a contributing ranch within the 22,237-acre Point Reyes Peninsula Dairy Ranches Historic District, and approximately three miles north of the Point Reyes Light Station.¹ It is accessed by an approximate 0.5-mile long unpaved, single-lane road leading west from Sir Francis Drake Boulevard. The site includes the radio compass station building and the narrow unpaved footpath leading north from the access road up the hill to the building.

The small, wood frame structure has a distinctive form comprised of a one-story control room and a two-story tower that housed the radio direction finder. Its small size and scale was meant to provide enough space to house a desk and radio equipment on the first story and the radio direction finder mounted on a rotating pole in the second story. The U.S. Navy's radio compass station buildings were built with a similar size and form, although the exterior cladding and fenestration differed. The Point Reyes Naval Radio Compass Station has gable roofs with wide eave overhangs, wood shingle cladding, and multi-light, wood sash windows that lend it a domestic rather than institutional appearance.

¹ The Point Reyes Naval Radio Compass Station is a non-contributing feature of both B Ranch and the Point Reyes Peninsula Dairy Ranches Historic District.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Despite some modifications, including the replacement of the exterior wood shingles and the construction of small additions on the south and east façades, the Point Reyes Naval Radio Compass Station retains its integrity. It retains its wood shingle cladding (replaced in kind), roofing configuration, and wood sashes and frames of the original windows despite the loss of the glazing. Most importantly, it retains its distinctive small-scale, two-part form characteristic of this building type. Although the radio compass station was moved back from its original location along the bluff (which has since eroded), it still maintains its orientation toward the Pacific Ocean and spatial relationship to the access road and ancillary buildings to the south. Of the four radio compass stations forming the San Francisco Bay entrance group in 1920, the Point Reyes Naval Radio Compass Station is the only station with its original radio compass building. The radio compass station facilities have been demolished at Southeast Farallon Island, Bird Island, and Point Montara, although the adjacent dormitory building at Point Montara now houses the main office of the Montara Water and Sanitary District.

Narrative Description

The Point Reyes Naval Radio Compass Station is a highly specialized building constructed in 1920 to house radio direction finder equipment and to serve as a lookout. Currently, the building is located at a distance of approximately 80 feet from the coastal bluff on a high east/west trending ridge. This location provides a prominent view of the Pacific Ocean as well as north and south along the coastline, a critical feature for sending and receiving radio signals seaward without obstruction and for functioning as a lookout. Originally, the building was constructed approximately 140 feet west along the same high ridgeline but coastal erosion required the structure to be relocated eastward to prevent its loss in the 1940s. The building's high position and close proximity to the coastline are important aspects of its location and setting and remain intact despite its relocation.

The small, narrow, wood frame building has a rectangular plan and a board-formed concrete foundation. The building has a one-story operation room at the west end facing the ocean and a two-story tower at east end. The radio direction finder was located in the second story of the tower and mounted to a rotating metal pole that extended through a circular cutout in the ceiling at the first story.

Both sections of the building have steeply pitched, gabled roofs with wide eave overhangs. The building and roofs are covered with wood cedar shingles. The entrance is located centrally on the south façade and enclosed by a shed addition with a brick foundation dating to the 1940s. Portions of a wood platform and an approximate 100-foot-long wood boardwalk leading south to the access road are also extant on the south façade. The east façade has another small addition with an asymmetrical gable roof and plywood board cladding. This addition was probably constructed in the 1970s to house a heater. The west façade facing the ocean is dominated by wood sash, eight-light casement windows (three on the west façade and two each on the north and south façades) providing views out to sea and along the coastline. The rear two-story tower has wood sash, double hung, six-over-six windows at the first story on the north and south façades and one square, wood sash, four light window centered on each façade of the upper story. The wood window frames and sashes are intact, although much of the glazing has been broken and removed and the windows are presently boarded up.

The buildings entrance at the south facing façade of the building opens up into the stations operating room. The main unit of the operating room measures 17'6" by 9'4" with a 7'11 ¼" ceiling height. To the left of the main unit is an 8'6" by 6'2" pop-out dominated by windows that extends the operating room toward the west and provides expansive views of the ocean. Within the pop-out the ceiling height is

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

8'2¼". To the right of the main unit, a wall with centered doorway creates a small room (2'6" by 9'4") that was likely divided from the main operating room to serve as a restroom at the time when the compass station was adapted into a residence. This wall is finished with vertical 1" by 6" tongue-and-groove V-groove with center V-groove wall covering. The interior wall and ceiling finishing throughout the rest of the operating room is 1" by 4" tongue-and-groove V-groove, also with 1" by 3" cove molding. The flooring throughout the building is 1" by 4" tongue-and-groove. A simple staircase allows access to the second story through a 6'3¾" by 2'2¼" opening at the northeast corner of the main unit of the operating room. The second story consists of a single, square room measuring 9'4" on all sides with a 7'4" ceiling height that was built to house the radio compass antennae. The walls and ceiling are consistent with the materials of the lower story. A finished 14" diameter piercing in the center of the floor allowed the radio compass apparatus to pass through the floor so that it could be rotated manually from the operating room below. A 2' by 2'6" storage cabinet is built into the northwest corner of the room, and appears to be an original fixture.

A grouping of small, ancillary structures are located within the immediate viewshed of the radio compass station building. A powerhouse, and tool shed remain from the build-up of the site by the Navy during World War II. Additionally, a workshop, barn, and water tank were constructed at or moved to the site by the Davis family, which owned the property from 1962 to 1977. Although the power house and tool shed were added to the site by the Navy within the period of significance, these resources were excluded from the nomination because they are ancillary structures that supported several large radio antennae that were added to the site in the 1940s and are no longer present at the site. Their absence significantly detracts from the integrity of design and association of these buildings.

Integrity

The Point Reyes Naval Radio Compass Station retains integrity despite falling into disrepair in recent decades. The majority of the alterations consist of minor additions and the removal or replacement-in-kind of select building material. The main entrance on the south façade was enclosed by a small vestibule by the early 1940s, and a small non-original room was constructed on the east façade after the 1960s when the property became a residence. The majority of the wood-plank pathway and platform and two small rooftop platforms and ladders have been removed from the exterior, and the radio direction finder has been removed from the interior. The exterior wood shingle cladding was replaced in kind in 2011. Although much of the glazing is missing, the wood window sashes and frames remain behind plywood board covering.

Despite these alterations, the naval radio compass station retains its wood shingle cladding (replaced in kind), roofing configuration, and fenestration. Most importantly, it retains its distinctive small-scale, two-part form characteristic of this building type. Although the building was moved back from its original location along the bluff (which has since eroded), it still maintains its orientation toward the Pacific Ocean and spatial relationship to the access road and ancillary buildings to the south.

Of the four stations that composed the San Francisco Bay entrance group, the Point Reyes Naval Radio Compass Station is the only station with its original radio compass building. No radio compass station buildings are extant at Southeast Farallon Island, Bird Island, Point Montara, although the dormitory building at Point Montara is now the main office of the Montara Water and Sanitary District. The Point Reyes Naval Radio Compass Station Building is strongly associated with San Francisco Bay entrance group and the role such stations played in the development of maritime navigation technology and coastal defense systems.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

8. Statement of Significance

Applicable National Register Criteria

- A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- 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.
- D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

- A. Owned by a religious institution or used for religious purposes
- B. Removed from its original location
- C. A birthplace or grave
- D. A cemetery
- E. A reconstructed building, object, or structure
- F. A commemorative property
- G. Less than 50 years old or achieving significance within the past 50 years

Areas of Significance

COMMUNICATIONS

ENGINEERING

MARITIME HISTORY

MILITARY

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Period of Significance

1920-1948

Significant Dates

1920

1948

Significant Person

Cultural Affiliation

Architect/Builder

U.S. Navy

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The Point Reyes Naval Radio Compass Station is eligible for listing in the National Register of Historic Places at the local level under Criterion A for its role in the U.S. Navy's experimentation and adoption of radio technology in the early twentieth century, which drastically reduced the number of shipwrecks along the northern California coastline. The building is also significant under Criterion C as an exceptionally rare example of the naval radio compass stations constructed in the late 1910s and 1920s along the United States coastlines. The distinctive form consists of a one-story operation room with a two-story tower that housed the radio direction finder. Its scale and form were designed to provide the minimum amount of space needed to house a crewman and associated radio equipment. The building's broad expanse of windows facing the Pacific Ocean allowed it to function as a lookout station and provided an ample amount of natural sunlight. The building also meets the threshold under Criterion Consideration B for moved properties. The building was moved in the mid-1940s due to coastal erosion. However, it was only moved approximately 80 feet away from the cliff edge and retained its orientation toward the ocean and spatial relationship with the dormitory and garage building to the south (now demolished). The Point Reyes Naval Compass Station's period of significance begins in 1920 when it

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

was constructed as part of the San Francisco Bay entrance group and ends in 1948 when the U.S. Navy relinquished the lease on the parcel and the property became a private residence.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

Significance under the Criteria

Criterion A

The Point Reyes Naval Radio Compass Station is eligible under Criterion A for its association with early twentieth century developments in maritime navigational technologies, in particular, the development of a network of radio compass stations by the U.S. Navy around the San Francisco Bay. Built in 1920, the Point Reyes Naval Radio Compass Station was one of four radio compass stations (collectively known as the San Francisco Bay entrance group) that worked together to fix the location of ships in the vicinity. Shipwrecks were common prior to the establishment of the stations, due to dense fog, rocky shores, and hidden reefs along the northern California coast. The station allowed mariners to determine their precise location even in darkness or fog, and shipwrecks nearly ceased. Radio compass technology proved itself highly effective during World War I, prompting the Navy to expand these facilities for both military and civilian use along the entire coastline and on the Great Lakes. The San Francisco Bay entrance group, installed in 1920, was the first to be constructed along the California coastline. The technology was quickly eclipsed by the construction of radio beacons on shores and radio direction finders on ships and advances in high power radio stations transmitted audio signals over long distances. The Navy ceased constructing new compass stations after the mid-1920s in favor of other infrastructure. Despite advances in radio technology, the Navy used radio compass stations, including the one at Point Reyes, through World War II and even expanded the Point Reyes facility to house additional staff. The Point Reyes Naval Radio Compass Station continued to provide accurate locations to ships and airplanes until the Navy vacated the property in 1948, after which it was converted to a private residence.

Criterion C

The Point Reyes Naval Radio Compass Station is eligible under Criterion C for embodying the distinctive characteristics of radio compass stations constructed by the U.S. Navy following the end of World War I into the 1920s. The relatively minimal physical requirements consisted mainly of constructing a building to house the radio compass antenna and operating equipment. These buildings featured a standardized form with a two-part structure comprised of a one-story room with a desk and communication equipment and a two-story tower that housed the radio direction finder. These buildings were typically clad in wood shingles or horizontal boards and had gable or hipped roofs. The fenestration varied, although it generally consisted of wood sash, double-hung or casement windows. The Point Reyes Naval Radio Compass Station exhibits hallmark features of this specific building type, including the two-part composition, wood shingle cladding, gable roofs, and wood sash casement and double-hung windows. Unlike other naval radio compass stations of this era, the Point Reyes Naval Radio Compass Station's one-story control room, rather than the two-story tower, is facing the ocean. Of the four stations established at San Francisco Bay, the Point Reyes Naval Radio Compass Station is the only extant building, making this an extremely rare building type along the northern California coastline.

Criteria Consideration B

The Point Reyes Naval Radio Compass Station is the last extant radio compass station building from the San Francisco Bay entrance group. As such, it meets the threshold for Criteria Consideration B as the surviving property most importantly associated with a particular historic event. In addition, the building's

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

orientation, setting, and general environment are similar to its original location and are compatible with the property's significance.

Historic Context

Overview

The following historic context discusses the building's significance under Criterion A, in particular the evolution of radio technology, its early adoption by the U.S. Navy, the invention of the radio direction finder, and the construction of the defense network of radio compass stations along the U.S. coastline. It then discusses the design and construction of naval radio compass station buildings in order to establish the building's significance under Criterion C.

Criterion A: Naval Radio Technology in the Nation's Coastal Defense and Navigational Systems

Since the mid-nineteenth century, the federal government prioritized navigational aids around the San Francisco Bay due to the poor conditions along the coast and heavy ship traffic headed to the city. Before lighthouses and fog signals were installed, mariners navigated by dead reckoning (i.e., estimating their position based on geographical observation and timing), but this proved treacherous along the California coast. Following the discovery of gold in 1848, San Francisco became the gateway to the gold fields in the Sierra Nevada foothills, transforming it into a booming port city. The city's waterfront became "a forest of masts," as the majority of people and imported goods arrived in San Francisco by sea.² Not only was the San Francisco Bay the busiest harbor on the West Coast, but the federal government recognized it as the coast's best natural harbor and navigational aids as essential for economic growth. In 1854, the first lighthouse along the Pacific Coast was established in the San Francisco Bay at Alcatraz Island. The federal government then constructed lighthouses on Southeast Farallon Island, 20 miles from the Golden Gate, in 1855; at the southern tip of the Point Reyes Peninsula in 1870; and at Point Montara, about 25 miles south of San Francisco, in 1875.³

However, these lighthouses could not prevent all shipwrecks along this treacherous section of coast. Thick fog made light signals impossible to see and often deflected audible fog signals, leaving mariners uncertain about their proximity to shore.⁴ In 1878, the U.S. Life Saving Service (the precursor to the U.S. Coast Guard) opened the Golden Gate Park Life-Saving Station south of the bay's entrance. The station rescued shipwrecked soldiers and served the most heavily trafficked route from the south to the bay. In 1890, the service opened a lifesaving station on Point Reyes Beach, three miles north of the lighthouse. Though fewer ships approached the bay from the north, this beach was known as the foggiest location on the West Coast, and the Point Reyes headlands jutted out nearly 10 miles into the ocean, providing a physical obstacle that was difficult to see in the fog. The Point Reyes Life-Saving Station staff rescued crewmen from ships that had capsized or wrecked and used signaling systems developed by mariners to communicate from ship-to-shore. Prior to the invention of wireless telegraphy, or radio, these signals included storm signals using flags or lanterns on the beach and wig-wag and semaphore codes similar to

² James P. Delgado, *Gold Rush Port: The Maritime Archeology of San Francisco's Waterfront* (Berkeley: University of California Press, 2009), 6-7.

³ James P. Delgado and Steven A. Haller, *Submerged Cultural Resource Assessment: Golden Gate National Recreation Area, Gulf of the Farallones National Marine Sanctuary, and Point Reyes National Seashore*, Southwest Cultural Resources Center Professional Papers 18, Santa Fe, New Mexico, 1989.

⁴ Peter Evans, "Shipwrecks and Strandings on the Coast of Point Reyes, 1840-1940" (M.A. thesis, San Jose State University, 1969).

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Morse code using hand-operated devices.⁵ Ninety-five ships had wrecked in the treacherous waters near the bay's entrance before the construction of the naval radio compass stations, with twice as many ships capsized or stranded due to fog.⁶

In 1895, the Italian inventor and electrical engineer Guglielmo Marconi (1874-1937) developed the first wireless telegraphy technology (also known as radio telegraphy), which used transmitters and receivers to convey messages using electrical signals. (The first radio transmitters could not emit audio signals or sounds.) Using this new technology, the transmitting operator tapped a switch that turned a transmitter on and off, and by controlling the length and pattern of radio waves, spelled different letters using Morse code. The operator listening to the signals on the receiving end translated the pattern into text. In 1899, the U.S. Navy began experimenting with wireless telegraphy under the direction of the Bureau of Equipment and by 1904, had constructed 30 wireless telegraphy stations along the U.S. coastline, with several others on ships. In the San Francisco Bay Area, the first wireless radio facility was constructed at Mare Island in 1904, with the first radio signals broadcasted to ships along the Pacific Coast.⁷ The U.S. Department of Agriculture's Weather Bureau installed a wireless radio station on Southeast Farallon Island around the same time. The U.S. Navy took over the facility and built a new station with compatible equipment in 1905. It became one of most important and powerful radio stations on the west coast through World War I.⁸

In 1910, the Navy's Bureau of Steam Engineering took over wireless telegraphy operations until the 1912 Radio Act granted it authority over the nation's radio stations, both government, commercial, and private. The Navy formed the Bureau of Navigation to license private and commercial radio operators and continued to expand the network of coastal radio stations. In 1914, the service was transferred to the Division of Operations.⁹ World War I brought about subsequent changes; the Naval Radio Service was renamed the Naval Communications Service, which encompassed all telegraph, telephone, cable, and dispatch work, and was overseen by the Director of Naval Communications. During the war, the Navy took control of all commercial radio stations and equipped naval and merchant marine ships with radio equipment and trained staff. Additional high-powered stations were installed in France, England, and Italy, creating a global naval radio communication system.¹⁰

In 1915, Dr. Frederick Kolster (1883-1950) of the U.S. Bureau of Standards invented the radio direction finder that could be used to determine the location of a radio signal. The radio direction finder is a rectangular coil of wire wrapped around a wood frame and enclosed in a non-conductive protective cover that prevents deterioration but does not block radio waves. It is mounted on an operable gear that allows it

⁵ Dewey Livingston and Steven Burke, "The History and Architecture of the Point Reyes Lifeboat Station, Drakes Bay, Point Reyes National Seashore, California, Historic Structures Report, Point Reyes National Seashore" (Point Reyes, California: National Park Service, 1991), 4-6, 22-24.

⁶ Christy Avery, Historic American Buildings Survey for Point Reyes Radio Compass Station, Barracks (Navy Radio Direction Finder Station, Barracks; Ben Davis House), Inverness Vicinity, Marin County, California, HABS No. CA-2898, September 2013, 2.

⁷ Henry P. Beers, "The Development of the Office of the Chief of Naval Operations, Part I" *Military Affairs* 10, no. 1 (Spring 1946): 68; Uribe & Associates, "Historic and Archaeological Resources Protection Plan for the Naval Communication Station, Stockton, California," prepared for Engineering Field Activity, West, Naval Facilities Engineering Command, San Bruno, California (November 1996), 16.

⁸ Peter White, *The Farallon Islands: Sentinels of the Golden Gate* (San Francisco: Scottwall Associates, 1995), 73-76.

⁹ Beers, "The Development of the Office of the Chief of Naval Operations," 68.

¹⁰ Beers, "The Development of the Office of the Chief of Naval Operations," 67; Henry P. Beers, "The Development of the Office of the Chief of Naval Operations, Part II" *Military Affairs* 10, no. 3 (Autumn 1946): 20, 24.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

to be turned by a large wheel with a pointer and compass graduated in degree from 0 to 360. The wire coil has two terminals attached to receiving instruments. The radio direction finder is rotated until the strongest signal is recorded on the receiving instrument and the bearing on the compass noted. Topography and other barriers, such as buildings, bend radio waves, causing them to arrive at a slightly different path to the receiving station. While the technology did not work great on land, it worked remarkably well during coastal piloting when vessels are located within moderate distances of the shoreline. Only two radio direction finders were required to obtain an accurate location, but a third or fourth was used to confirm the reading.¹¹

Radio direction finders were housed in small radio compass station buildings, sometimes known as radio direction finder stations, constructed along the coastline. Each station was situated such that no natural obstacles were located between the antenna and the shore, which would have bent the radio waves and rendered the bearings useless.¹² In order to obtain a location via a radio compass station, a ship with radio equipment called a radio compass station using Morse Code (“QTE?” meaning “What is my true bearing?”) and a particular wavelength (375kc or 800m). The first station to receive a ship’s signal notified adjacent stations to take a bearing on the ship. Staff inside the onshore radio compass station building maneuvered the radio direction finder to determine the bearing. The bearings were transmitted back to the ship, and the captain could determine the ship’s location even in fog or darkness.¹³ The readings were not perfectly accurate, as bearings taken near sunrise and sunset could sometimes be unreliable. Still, it worked better than relying solely on lighthouses and foghorns.¹⁴ The new radio compass technology proved significant in defending the coastline in Europe and America during World War I. Great Britain used the technology against the German submarines, which communicated to each other via radio at night. British naval compass stations along the coastline plotted submarine bearings using radio signals, and Allied ships were notified of areas to avoid. Radio compass stations were similarly used by the U.S. Navy along the Atlantic and Gulf coasts to assist in both locating enemy submarines and obtaining bearings for ships and aircraft.¹⁵

After the war, the Navy continued to construct these facilities along the coastline to serve military and merchant traffic as well as airplanes equipped with wireless radio technology. By 1920, the Navy had 19 radio compass stations under construction along the West Coast, bringing the total number of radio compass stations on the Atlantic, Pacific, and Gulf coasts to 48 stations assisting over 2,000 ships monthly.¹⁶ On the Pacific Coast, stations were located at the entrance to the Strait of Juan de Fuca in Washington, at the mouth of the Columbia River in Oregon, and at the San Francisco Bay (Point Reyes, Bird Island, Southeast Farallon Island, Point Montara), the Santa Barbara Channel (Point Conception, Santa Cruz Island, and Point Hueneme), at San Pedro (Point Fermin, Newport, and Catalina Island), and at San Diego (Point Loma and Imperial Beach) in California. In return for free navigational service, ships

¹¹ Ellery W. Stone, “Piloting by Radio,” *Pacific Marine Review* (April 1920): 67-70.

¹² *Ibid.*

¹³ U.S. Navy Hydrographic Office, *Radio Aids to Navigation* (Washington, D.C: Government Printing Office, 1935), 273-276.

¹⁴ *Ibid.*

¹⁵ “Shipping Saved by Radio Compass,” *Army and Navy Register* 71, no. 2180 (April 29, 1922): 387; Beers, “The Development of the Office of the Chief of Naval Operations, Part II,” 25.

¹⁶ John W. Kean, “Navy to Establish Radio Compass Stations on the Great Lakes,” *Pacific Marine Review*, (September 1920): 81; “Radio Stations Planned,” *Pacific Marine Review* (November 1920): 112.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

were asked to radio the compass stations in clear weather when they did not need the assistance and report the results to the U.S. Navy, in an effort to improve each radio compass station's accuracy.¹⁷

The San Francisco Bay entrance group was the first to be constructed along the California coastline, preceding the others by several months.¹⁸ Radio compass stations were often constructed as harbor entrance groups controlled by a master station; the other stations relayed their bearings to the master station, which triangulated the ship's location and relayed the bearing.¹⁹ At the San Francisco Bay entrance group, the radio compass station on Southeast Farallon Island (call letters NPI) served as the master station. The other stations at Point Reyes (call letters NLG), Point Montara (call letters NLH), and Bird Island (call letters NLD) worked in tandem with the Southeast Farallon Island station to guide ships approaching San Francisco Bay. The Point Reyes Naval Radio Compass Station was constructed adjacent to the U.S. Coast Guard lifesaving station along the peninsula coastline. The spot was treeless and exposed, with no physical barriers for radio waves. The Navy leased 3.5 acres of land within B Ranch from the Mendoza Family and built the radio compass station building. Two years later, it constructed a dormitory and garage for crew members downhill from the station.²⁰ In 1922, the radio compass station on Bird Island was decommissioned due to a lack of personnel to operate it; the other three continued operating for several more decades.²¹

The San Francisco Bay entrance group went into operation in September 1920, reducing the number of capsized ships and earning the nickname the "guardians of the Golden Gate." The *Current Radio News* reported that "skippers will chuckle tomorrow morning if fog envelopes the sea lanes into San Francisco bay, for Uncle Sam will be extending a guiding hand to steer all steamers safely past the dangers of shoals and rocks when navy radio compass stations will start their work of cutting terrors out of the sea."²² When the radio compass stations first came into service, many military and merchant ships distrusted the new technology and refused to accept the bearings provided. That changed in 1923 after the Honda Point disaster, when seven U.S. Navy destroyers ran aground along the central California coast after the squadron commander ignored the radio stations' bearings. Consequently, mariners came to trust the bearings calculated by radio compass stations, and the incidence of shipwrecks along the California coast nearly ended.²³

Shortly after construction of its network of naval radio compass stations from the late 1910s to the early 1920s, the Navy began to question if the radio direction finders should be placed on ships rather than on shore. During the advent of the technology during World War I, the installation of radio direction finders

¹⁷ U.S. Navy Hydrographic Office, *Radio Aids to Navigation*, 273-276; U.S. Navy, *Annual Reports of the Navy Department for the Fiscal Year 1920* (Washington, D.C.: Government Printing Office, 1921), 59-61.

¹⁸ "Radio Due to Rob Fog of its Danger," *Ellensburg Daily Record* (Ellensburg, Washington), April 1, 1920.

¹⁹ U.S. Navy, *1922 List of Lights with Fog Signals and Visible Time Signals of the West Indies and Pacific Islands and Coasts of North and South America Excepting the United States, Volume I, including Uniform Time System, Radio Time Signals, Radio Weather Bulletins, and Radio Compass Stations of the World* (Washington, D.C.: Government Printing Office, 1922), 446.

²⁰ Livingston and Burke, "The History and Architecture of the Point Reyes Lifeboat Station," 71-73.

²¹ "Notice to Mariners," *The Oregon Daily Journal* (Portland, Oregon), September 19, 1922; "Notice to Mariners," *Oakland Tribune*, October 20, 1922; S.R. Winters, "The Radio Network of the Navy," *Radio* 6, no. 4 (April 1924): 12; U.S. Department of Commerce Coast and Geodetic Survey, *United States Coast Pilot, Pacific Coast, California, Oregon, and Washington*, 5th ed. (Washington, D.C.: Government Printing Office, 1934), 13.

²² "Radio Compass Robs Fog of Terrors," *Current Radio News* (November 1920): 76.

²³ U.S. Navy, Naval History and Heritage Command, "Honda Point Disaster," accessed September 8, 2017, <https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/h/honda-pedernales-point-california-disaster-8-september-1923.html>; Jack Mason, "Life and Death on the Great Beach," *Point Reyes Historian* IV, no. 4 (Spring 1980): 451-453.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

on shore was more cost effective and expedient. However, technology rapidly advanced such that by 1922, it was possible to install radio direction finders on ships that could use radio beacons located on shore or on moored ships. Each beacon sent a distinctive signal at a specific interval. The radio compass operator on the ship rotated the direction finder to find the strongest signal and to determine its bearing. The U.S. Bureau of Standards collaborated with the Lighthouse Service to install test beacons on three moored vessels at Fire Island (Long Island, New York), Ambrose Channel (New York-New Jersey border), and San Francisco (*Sequoia* lighthouse tender stationed outside the Golden Gate), and on the Sea Girt Lighthouse (New Jersey), with plans to expand the facilities on both coasts as funds became available.²⁴ By the end of 1922, it had also established a radio compass beacon station on the Columbia River (*Lightship Columbia* stationed at the mouth of the Columbia River at the Washington-Oregon border).²⁵

Reversing the location of the radio direction finder addressed several disadvantages of radio compass stations. The onshore stations could only assist one ship at a time, and the ship had to transmit the test signal until each compass station received it. During wartime, a ship could give up its location to the enemy by broadcasting a signal. The information had to pass through several people to be routed back to the ship, leading to possible errors. Ships also had to be located within 100 to 200 miles of the shoreline to obtain their locations, in comparison to long-range radio beacons installed on ships. It was costlier to construct a series of radio compass stations and staff them with trained personnel. Additionally, ships installed with radio direction finders could assist other ships in finding their locations and could constantly receive a signal from an onshore beacon rather than wait for an onshore radio compass station to take a bearing. The advantages to onshore radio compass stations were that they required only one calibration (ships with metallic cargo must recalibrate each time unless it had a metallic hull), and they have a fixed location making it easier to convey accurate bearings during heavy storms.²⁶

The installation of radio direction finders on ships and radio beacons on lighthouses and moored vessels halted the construction of new compass stations after the early 1920s, although the facilities would continue to be used through World War II. Seven new beacons were proposed to be installed in late 1922, including one in California.²⁷ By 1934, radio beacons were installed on the California coastline at eight locations, including two in the San Francisco Bay Area (a San Francisco lightship and the Farallon Light); the number of radio compass stations had been reduced to 16 along the Pacific Coast.²⁸ The Navy concurrently expanded its radio infrastructure through the construction of 40 high-power radio stations with a range of 800 to 6,000 miles and 95 intermediate-power stations with a range of up to 800 miles as part of a \$25 million investment in radio communication. It linked San Francisco with strategic naval facilities in Honolulu, Guam, and the Philippines, with similar facilities linking the Atlantic Coast and Europe.²⁹

Despite advances in radio technology, the compass stations continued to be used by civilian vessels and airplanes to navigate safely in and out of the San Francisco Bay Area. A 1938 *Popular Mechanics* article featured the China Clippers, which flew across the Pacific Ocean between San Francisco and the Philippines (transferring to another aircraft for the flight to Asia) in under six days. The airline pilots

²⁴ F.W. Dunmore, "Radio Direction Finding," *Pacific Marine Review* (July 1922): 404-405; "The Conquest of the Fog," *Pacific Marine Review* (October 1922): 563.

²⁵ "Radio at the Mouth of the Columbia," *Pacific Marine Review* (October 1922): 556.

²⁶ F.W. Dunmore, "Radio Direction Finding," 404-405.

²⁷ "Radio Fog-Signal Stations," *Pacific Marine Review* (November 1922): 608.

²⁸ U.S. Department of Commerce, Coast and Geodetic Survey, *United States Coast Pilot*, 11-14.

²⁹ S.R. Winters, "The Radio Network of the Navy," 10-12.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

trained as mariners as they navigated the ocean the same as ship captains by using dead reckoning, celestial observations, and radio bearings. These pilots often used radio bearings in combination with a sun line to obtain a position. On the return leg, China Clipper planes would use the three radio compass stations at Southeast Farallon Island, Montara Point, and Point Reyes when flying within 100 miles of the Golden Gate.³⁰

During World War II, the radio compass station experienced a surge of activity and development. The Coast Guard assumed operation of the Point Reyes Naval Radio Compass Station in 1941 and patrolled the shores of Point Reyes during World War II from the spot.³¹ Although the U.S. Coast Guard Life-Saving Station was abandoned in 1927 and demolished, the Coast Guard did not remove it from the record of properties held by the Treasury Department, and the property was taken under the command of the Navy.³² Three large barracks buildings, a support building, and a four-stall garage were constructed at the site to support as many as 50 men. Additionally, a concrete power house and tool shed were constructed next to the dormitory to support upgraded infrastructure added to the station. In 1945 or 1946, the radio compass station building was relocated approximately 80 feet east along the high ridge due to bluff erosion. Lastly, a water tank and pump house were constructed at the south end of the site near the beach. Photos from the 1940s show the power house connected to several large radio antennae that are no longer extant.³³

In 1948, the Navy abandoned the Point Reyes Naval Radio Compass Station following the expiration of the property lease. The large barracks and four-stall garage were removed but the compass station building, dormitory, tool shed, and the power house were left to serve the new residents. The Navy retained the adjacent land where the Life-Saving Station had stood and constructed a complex of three to four buildings in 1963. In the 1980s when the site officially closed, the transmitter house from the original Coast Guard facility and the water tank and pump house at the south end of the site were demolished. In 1948, the Mendoza family sold the compound as a weekend home to Joseph E. Tuttle and J.E. Faltings. In 1962, local residents Ben and Patricia Davis purchased the site and converted the dormitory building into a single-family residence where they raised their family. The Davis family later constructed the extant workshop and barn and converted the radio compass station into a small dwelling. In 1977, they sold the property to the National Park Service, though the terms of sale included a 50-year lease, and Davis' residency continued through 2013. In 2015, the National Park Service demolished the dormitory and garage as coastline erosion was undermining the foundations.³⁴ The radio compass station buildings at Southeast Farallon Island, Bird Island, and Point Montara also have been demolished, leaving the Point Reyes facility as the only remaining radio compass station along the northern California coastline.

Criterion C: Naval Radio Compass Station Architecture

The Navy's radio compass stations constructed along the entire U.S. coastline during the late 1910s to early 1920s were remarkably similar, although each varied slightly in detailing. The building requirements were relatively minimal, mainly a small structure to house the radio compass antenna and operating equipment. These buildings featured a standardized form with a two-part structure comprised of

³⁰ "Flying the China Clippers," *Popular Mechanics Magazine* 69, no. 4 (April 1938): 500-503, 118A, 120A.

³¹ Malcom F. Willoughby, *The U.S. Coast Guard in World War II* (Annapolis, Maryland: United States Naval Institute, 1957), 138; Livingston and Burke, "The History and Architecture of the Point Reyes Lifeboat Station," 73.

³² U.S. Army Corps of Engineers, *Inventory Project Report Bombing Target California Point Reyes Gunnery Range, Marin County, California* (Sacramento: U.S. Army Corps of Engineers, 1999), 2.

³³ Mason, "Life and Death on the Great Beach;" see also historic photographs in Section 11 of this nomination form.

³⁴ Mason, "Life and Death on the Great Beach;" Livingston and Burke, "The History and Architecture of the Point Reyes Lifeboat Station," 73.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

a one-story room housing a desk and communication equipment and a two-story tower that housed the approximate four- to six-foot-wide radio direction finder. These buildings were typically clad in wood shingles or horizontal boards and had gable or hipped roofs. The fenestration varied, although it generally consisted of wood sash, double-hung or casement windows.

The Point Reyes Naval Radio Compass Station's two-part composition, gable roofs, wood sash casement and double-hung windows, and wood shingle cladding are in keeping with similar stations. The radio station has an approximate 250-square-foot footprint including a 10-foot square tower with ample room to rotate the radio direction finder.³⁵ The radio direction finder was operated from first story and mounted on a pole that extended through a circular hole in the ceiling, which has since been converted to house a light fixture. Unlike other naval radio compass stations of this era, the Point Reyes Naval Radio Compass Station's one-story control room, rather than the two-story tower, is facing the ocean.

The first U.S. Navy crew members assigned to the Point Reyes Naval Radio Compass Station lived in shacks without indoor plumbing or insulation and joined staff in the adjacent Point Reyes Life-Saving Station for meals in their facility until a two-story dormitory building and garage were built in 1923.³⁶ Typical of Navy dormitory buildings of the time, five staff members lived upstairs in the dormitory building, while the cook lived on the first floor adjacent to the kitchen and mess hall.³⁷ In 1933, the Point Reyes Naval Radio Compass Station, along with the Southeast Farallon Island and Point Montara stations, received unspecified repairs from \$250,000 allotted by the Navy for improvements to coastal radio compass stations.³⁸ In 1936, the facility received additional, unspecified improvements, completed by contractor F.J. Early.³⁹ Three years later, the compass station received electricity, when Pacific Gas and Electric Company (PG&E) installed a 10.5-mile-long power line to bring electricity from Bolinas to the Point Reyes light station, with circuits serving the Coast Guard Life-Saving Station, radio compass station, and several dairy ranches on the Point Reyes Peninsula.⁴⁰

By the early 1940s, the entrance on the south façade had been enclosed with a small gabled entry. Additionally, small wood platforms had been mounted to the roof and were accessed by wood ladders attached to the south façade. The platforms were a common feature of radio compass stations to allow crewmen to use a mounted theodolite (a precise instrument used to measure angles in vertical and horizontal planes and commonly used in surveying) to keep a lookout in the vicinity of the building and to note changes in the shoreline.⁴¹

During the build-up of the facility during World War II and its conversion to a residential property in the late 1940s, other ancillary structures were added to the property, including a workshop, pumphouse, concrete power house, chicken coop, and sentry shack. In 1945 or 1946, the radio compass station

³⁵ F.W. Dunmore, "Radio Direction Finding," 404.

³⁶ Avery, Historic American Buildings Survey for Point Reyes Radio Compass Station, 4.

³⁷ John S. Garner, *World War II Temporary Military Buildings: A Brief History of the Architecture of Military Cantonments and Training Locations in the United States* (Army Corps of Engineers, March 1993), 25.

³⁸ "Improvement Funds Given Mare Island," *The San Bernardino County Sun* (San Bernardino, California), September 10, 1933.

³⁹ "Wins Contract," *Oakland Tribune*, April 2, 1936.

⁴⁰ "Light at Pt. Reyes Now Electric," *The Petaluma Argus-Courier* (Petaluma, California), June, 26, 1936;

"Electricity for Many Uses at Point Reyes," *The Petaluma Argus-Courier* (Petaluma, California), July 26, 1939.

⁴¹ U.S. Coast and Geodetic Survey, *Annual Report of the Director, United States Coast and Geodetic Survey to the Secretary of Commerce for the Fiscal Year Ended June 30, 1920* (Washington, D.C.: Government Printing Office, 1920), 164.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

building was moved approximately 80 feet east away from the cliff edge, due to bluff erosion made worse by a storm in the winter of 1945.⁴² Since its conversion to a residential property after the Navy vacated the lease in 1948, the structure has been minimally altered. A small non-original room was constructed on the east façade after the 1960s when the property became a residence. The majority of the wood-plank pathway and two small rooftop platforms and ladders have been removed from the exterior, and the radio direction finder has been removed from the interior. The exterior wood shingle cladding was replaced in kind in 2011. Although much of the glazing is missing, the wood window sashes and frames remain behind plywood board covering. The Point Reyes Naval Radio Compass Station is the only extant building of the four stations established at San Francisco Bay, making this an extremely rare building type along the northern California coastline. It continues to stand along the steep, rocky coastline overlooking the Pacific Ocean, as the physical legacy of the U.S. Navy's experimentation with and adoption of radio technology in the early twentieth century.

⁴² National Park Service, Interview with Ben and Pat Davis by National Park Service staff on January 12, 1976, on file at Point Reyes National Seashore Archives.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 1. Photograph of Point Reyes Naval Radio Compass Station, ca. 1920 (Jack Mason Museum of West Marin History)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 2. Photograph of an unidentified man and child at the Point Reyes Naval Radio Compass Station, ca. 1920 (Point Reyes National Seashore Archives, HPRC 2730)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 3. Photograph of the Point Reyes Naval Radio Compass Station, ca. 1920-1923. The radio compass station building is in the background on the right. (Point Reyes National Seashore Archives, HPRC 43050)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 4. Photograph of the Point Reyes Naval Radio Compass Station, 1943 (Tom McLaughlin)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 5. Photograph of the Point Reyes Naval Radio Compass Station with an unidentified group of men, early 1940s (Tom McLaughlin)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 6. Photograph of the Point Reyes Naval Radio Compass Station, ca. 1943 (Point Reyes National Seashore Archives, HPRC 47690)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 7. Photograph of the Point Reyes Naval Radio Compass Station, ca. 1943. The radio compass station is on the left, and the dormitory and ancillary buildings are on the right. (Point Reyes National Seashore Archives, HPRC 47710)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 8. Aerial photograph of the Point Reyes Naval Radio Compass Station, ca. 1943. The compass station building is located at the top. (Point Reyes National Seashore Archives, HPRC 47650)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 9. Photograph of the Point Reyes Naval Radio Compass Station, 1958. The dormitory is located on the left, and the compass station building is located on the right. (Point Reyes National Seashore Archives, HPRC 47640b)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 10. Aerial photograph of the Point Reyes Naval Radio Compass Station, September 1995 (Point Reyes National Seashore Archives, Don Gunn Collection, HPRC 8057.485)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 11. Aerial photograph of the Point Reyes Naval Radio Compass Station, October 2009. The photograph depicts the eroding shoreline. (Kenneth and Gabrielle Adelman, California Coastal Records Project)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 12. Aerial photograph of the Point Reyes Naval Radio Compass Station, September 2013. The shoreline has eroded such that the dormitory on the right is located at the cliff edge. (Kenneth and Gabrielle Adelman, California Coastal Records Project)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 13. Map showing the blind angles of the four radio compass stations of the San Francisco Bay Entrance Group, 1920. The stations on the coastline from north to south include the Point Reyes, Bird Island, and Point Montara radio compass stations. The radio compass station on Southeast Farallon Island is located in the lower left corner. (*Pacific Marin Review*)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 14. Photograph of the Point Montara Naval Radio Compass Station, ca. 1920s. The radio compass building is located on the left. (J.P. Ruschmeyer)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 15. Photograph of the radar station on Southeast Farallon Island during World War II. The radio compass station building is located at the far left. (San Francisco History Center, San Francisco Public Library, Photograph No. AAC-9683)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

**Figure 16. Postcard of the Naval Radio Compass Station at Lewes, Delaware, ca. 1920s
(William H.J. Manthorpe Jr.)**



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 17. Photograph of the Cape Lookout Radio Compass Station in North Carolina during World War II (Cape Lookout National Seashore, CALO D-20)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

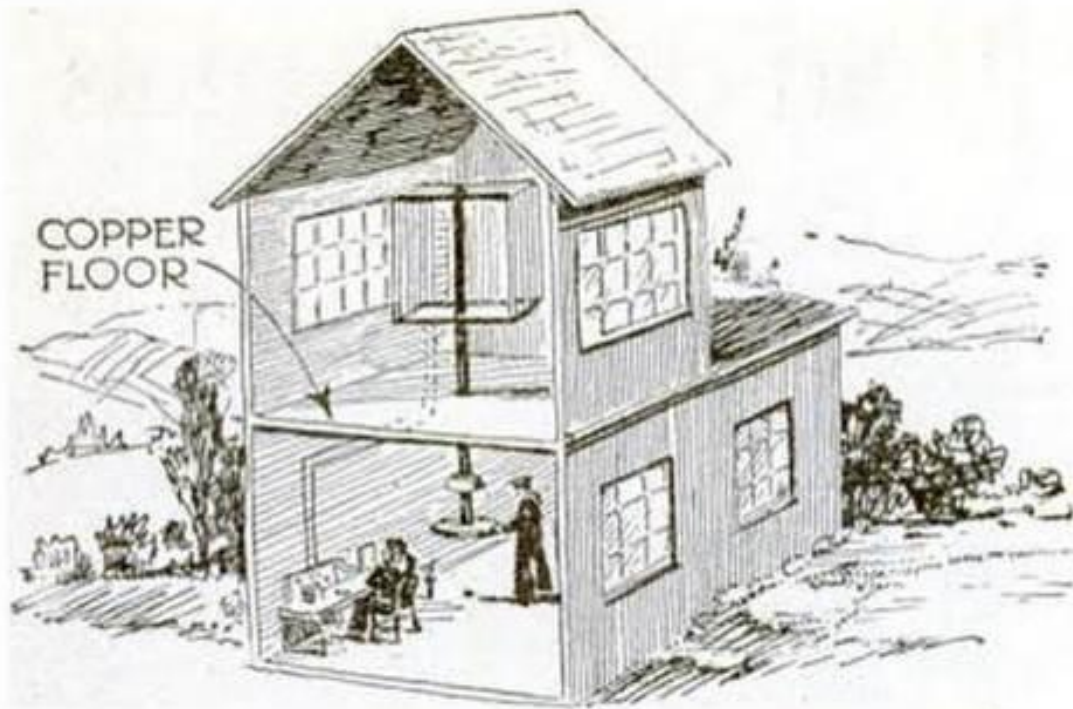
Figure 18. Interior photograph of the radio compass station at Cape May, New Jersey, 1921. The Point Reyes Naval Radio Compass Station would have had a similar setup. The radio compass is controlled by turning the metal ring on the left. (Naval History and Heritage Command, Photograph No. NH 122667)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

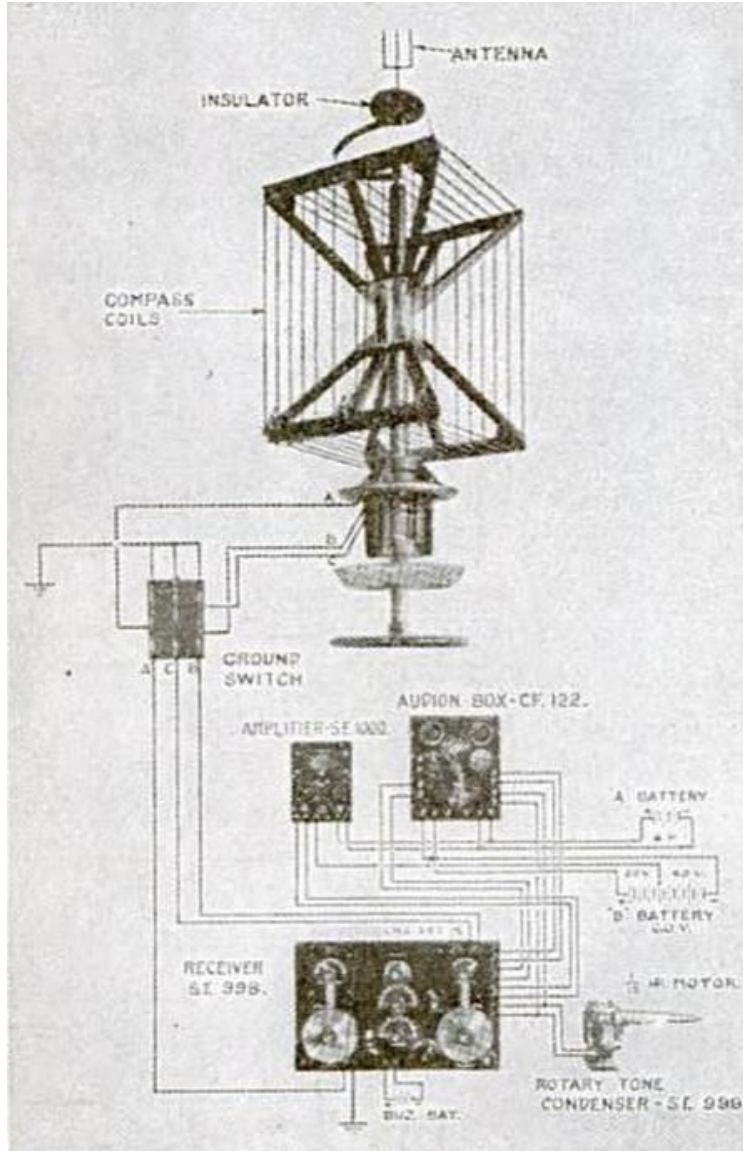
Figure 19. Diagram of a typical radio compass station building (*Popular Science Monthly* 9, no. 3, page 117)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

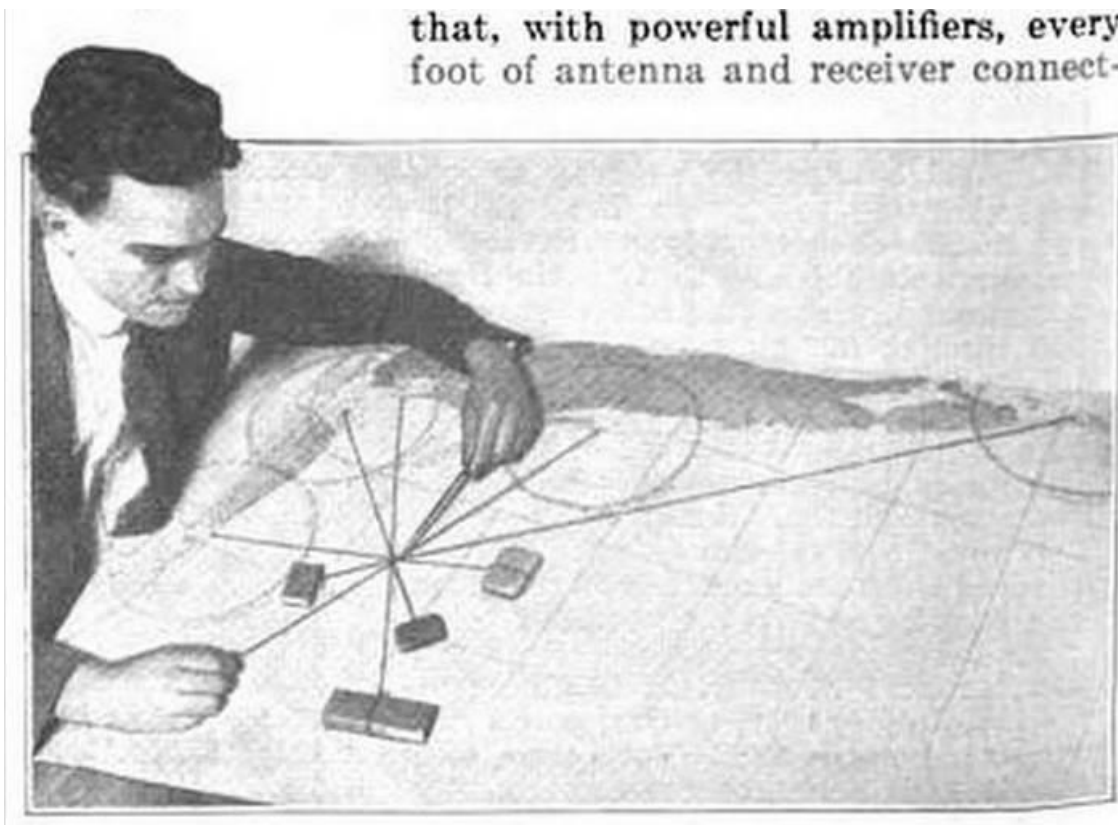
Figure 20. Diagram of a typical radio direction finder (*Popular Science Monthly* 9, no. 3, page 117)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Figure 21. A radio compass station operator pulling strings from holes in the map that correspond to the location of each radio compass station working in tandem. The strings indicate the bearings reported by each station, and the intersection of the strings marks the ship's location. (*Popular Science Monthly* 9, no. 3, page 116)



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

9. Major Bibliographical References

- Avery, Christy. Historic American Buildings Survey for Point Reyes Radio Compass Station, Barracks (Navy Radio Direction Finder Station, Barracks; Ben Davis House), Inverness Vicinity, Marin County, California, HABS No. CA-2898. September 2013.
- Beers, Henry P. "The Development of the Office of the Chief of Naval Operations, Part I." *Military Affairs* 10, no. 1 (Spring 1946): 40-68.
- _____. "The Development of the Office of the Chief of Naval Operations, Part II." *Military Affairs* 10, no. 3 (Autumn 1946): 10-38.
- Delgado, James P. *Gold Rush Port: The Maritime Archeology of San Francisco's Waterfront*. Berkeley: University of California Press, 2009.
- Delgado, James P., and Steven A. Haller. *Submerged Cultural Resource Assessment: Golden Gate National Recreation Area, Gulf of the Farallones National Marine Sanctuary, and Point Reyes National Seashore*. Southwest Cultural Resources Center Professional Papers 18. Santa Fe, New Mexico, 1989.
- Dunmore, F.W. "Radio Direction Finding." *Pacific Marine Review* (July 1922): 404-407.
- Dyall, A.K. "Workings of the Radio Compass." *Popular Science Monthly* 95, no. 3 (September 1919): 116-119.
- Evans, Peter. "Shipwrecks and Strandings on the Coast of Point Reyes, 1840-1940." M.A. thesis, San Jose State University, 1969.
- "Flying the China Clippers." *Popular Mechanics Magazine* 69, no. 4 (April 1938): 500-503, 118A, 120A.
- Garner, John S. *World War II Temporary Military Buildings: A Brief History of the Architecture of Military Cantonments and Training Locations in the United States*. Army Corps of Engineers. March 1993.
- Kean, John W. "Navy to Establish Radio Compass Stations on the Great Lakes." *Pacific Marine Review* (September 1920): 81.
- Livingston, Dewey, and Steven Burke. "The History and Architecture of the Point Reyes Lifeboat Station, Drakes Bay, Point Reyes National Seashore, California, Historic Structures Report, Point Reyes National Seashore." Point Reyes, California: National Park Service, 1991.
- Mason, Jack. "Life and Death on the Great Beach." *Point Reyes Historian* IV, no. 4 (Spring 1980): 451-453.
- National Park Service. Interview with Ben and Pat Davis by National Park Service staff on January 12, 1976. On file at Point Reyes National Seashore Archives.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

- “Radio at the Mouth of the Columbia.” *Pacific Marine Review* (October 1922): 556.
- “Radio Compass Robs Fog of Terrors.” *Current Radio News* (November 1920): 76.
- “Radio Fog-Signal Stations.” *Pacific Marine Review* (November 1922): 608.
- “Radio Stations Planned.” *Pacific Marine Review* (November 1920): 112.
- “Shipping Saved by Radio Compass.” *Army and Navy Register* 71, no. 2180 (April 29, 1922): 387.
- Stone, Ellery W. “Piloting by Radio.” *Pacific Marine Review* (April 1920): 67-70.
- “The Conquest of the Fog.” *Pacific Marine Review* (October 1922): 563.
- Uribe & Associates. “Historic and Archaeological Resources Protection Plan for the Naval Communication Station, Stockton, California.” Prepared for Engineering Field Activity, West, Naval Facilities Engineering Command, San Bruno, California. November 1996.
- U.S. Army Corps of Engineers. *Inventory Project Report Bombing Target California Point Reyes Gunnery Range, Marin County, California*. Sacramento: U.S. Army Corps of Engineers, 1999.
- U.S. Coast and Geodetic Survey. *Annual Report of the Director, United States Coast and Geodetic Survey to the Secretary of Commerce for the Fiscal Year Ended June 30, 1920*. Washington, D.C.: Government Printing Office, 1920.
- U.S. Department of Commerce. Coast and Geodetic Survey. *United States Coast Pilot, Pacific Coast, California, Oregon, and Washington*, 5th ed. Washington, D.C.: Government Printing Office, 1934.
- U.S. Navy. *1922 List of Lights with Fog Signals and Visible Time Signals of the West Indies and Pacific Islands and Coasts of North and South America Excepting the United States, Volume I, including Uniform Time System, Radio Time Signals, Radio Weather Bulletins, and Radio Compass Stations of the World*. Washington, D.C.: Government Printing Office, 1922.
- _____. *Annual Reports of the Navy Department for the Fiscal Year 1920*. Washington, D.C.: Government Printing Office, 1921.
- U.S. Navy Hydrographic Office. *Radio Aids to Navigation*. Washington, D.C.: Government Printing Office, 1935.
- U.S. Navy, Naval History and Heritage Command. “Honda Point Disaster.” Accessed September 8, 2017. <https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/h/honda-pedernales-point-california-disaster-8-september-1923.html>.
- White, Peter. *The Farallon Islands: Sentinels of the Golden Gate*. San Francisco: Scottwall Associates, 1995.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Willoughby, Malcom F. *The U.S. Coast Guard in World War II*. Annapolis, Maryland: United States Naval Institute, 1957.

Winters, S.R. "The Radio Network of the Navy." *Radio* 6, no. 4 (April 1924): 10-12.

Newspapers

Ellensburg Daily Record (Ellensburg, Washington).

Oakland Tribune.

The Oregon Daily Journal (Portland, Oregon).

The Petaluma Argus-Courier (Petaluma, California).

The San Bernardino County Sun (San Bernardino, California).

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____
- recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal agency: Point Reyes National Seashore
- Local government
- University
- Other

Name of repository: Point Reyes National Seashore Archives; Jack Mason Museum of West Marin History, Inverness, California; Anne T. Kent California Room, Marin County Free Library, San Rafael, California; History Room, San Francisco Public Library, San Francisco, California; San Mateo County Historical Association, Redwood City, California; National Archives at San Francisco, San Bruno, California; National Archives at College Park, Maryland; National Archives at Washington, D.C.; Internet Archive; Online Archive of California; California Digital Newspaper Collection; Library of Congress Chronicling America; Ancestry.com; Newspapers.com; David Rumsey Map Collection; HathiTrust Digital Library

Historic Resources Survey Number (if assigned): _____

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

10. Geographical Data

Acreage of Property 2.44 acres

Latitude/Longitude Coordinates (decimal degrees)

Datum if other than WGS84: _____
(enter coordinates to 6 decimal places)

Compass Station:

1. Latitude: 38.036177 Longitude: -122.993595

Boundary Points:

2. Latitude: 38.035474	Longitude: -122.993121
3. Latitude: 38.036068	Longitude: -122.993761
4. Latitude: 38.036465	Longitude: -122.994436
5. Latitude: 38.036840	Longitude: -122.994203
6. Latitude: 38.036550	Longitude: -122.993482
7. Latitude: 38.035960	Longitude: -122.992554

See "Sketch Map" below, which shows these boundary points.

Or

UTM References

Datum (indicated on USGS map):

NAD 1927 or NAD 1983

1. Zone:	Easting:	Northing:
2. Zone:	Easting:	Northing:
3. Zone:	Easting:	Northing:
4. Zone:	Easting :	Northing:

Verbal Boundary Description (Describe the boundaries of the property.)

The boundary begins at the northern point on the beach where the cliff edge used to extend when the naval radio compass station was constructed in 1920. It then travels southeast along the valley north of the radio compass station building to a point where the access road to the facility branches from the main access road leading west from Sir Francis Drake Boulevard. It then travels southwest to a point just north of the extant ancillary buildings and then travels northwest following the valley toward the beach where it proceeds northeast to the starting point.

Boundary Justification (Explain why the boundaries were selected.)

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

The boundary uses a combination of cartographic features (topography) and natural features (beach lining the cliff edge) to encompass the naval radio compass station building, the pathway leading north to the building, and a portion of the original setting at the cliff edge on the Point Reyes Peninsula.

11. Form Prepared By

name/title: Erica Schultz and Matthew Davis
organization: Architectural Resources Group
street & number: Pier 9, The Embarcadero
city or town: San Francisco state: CA zip code: 94111
e-mail: e.schultz@argsf.com, m.davis@argsf.com
telephone: (415) 421-1680
date: November 2017

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Location Map



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Sketch Map



Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Photo Key



Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Point Reyes Naval Radio Compass Station
Name of Property

Marin County, CA
County and State

Photo Log

Name of Property: Point Reyes Naval Radio Compass Station
City or Vicinity: Inverness
County: Marin
State: California
Location of Original Files: Architectural Resources Group; Pier 9, The Embarcadero,
Suite 107; San Francisco, CA 94111

Photographs 1-5, 7-11

Photographer: Matthew Davis, Architectural Resources Group
Date Photographed: August 31, 2016

Photograph 6

Photographer: Paul Engel, Point Reyes National Seashore, National Park
Service
Date Photographed: August 23, 2013

Photo #1. Access road leading to the site with the naval radio compass station building on the right, view northwest.

Photo #2. Naval radio compass station building, looking north.

Photo #3. Naval radio compass station building, looking east.

Photo #4. Naval radio compass station building, looking south.

Photo #5. Naval radio compass station building, looking west.

Photo #6. Interior of the naval radio compass station showing the hole in the ceiling where the pole attached to the radio compass antenna extended to the second story of the building.

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.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 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 Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.















United States Department of the Interior

NATIONAL PARK SERVICE

Point Reyes National Seashore
Point Reyes, California 94956

IN REPLY REFER TO:

H4217

Memorandum

To: Federal Preservation Officer and Acting Deputy Associate Director, Park Programs and National Heritage Areas

From: Superintendent, Point Reyes National Seashore

Subject: Point Reyes Naval Radio Compass Station Nomination for the National Register of Historic Places

Please find enclosed concurrence letters from the California State Historic Preservation Officer (SHPO), the first two pages of the National Register nominations with signatures from the SHPO as commenting official, and archival CD-Rs with nomination documents and photos for the above-named National Register of Historic Places nomination.

We request your review of the enclosed documentation and, if approved, request your signature on the nomination form and recommend the nominations be forwarded to the Keeper of the Nation Register of Historic Places.

We appreciate your review. Please contact Archeologist Paul Engel at 415-464-5287 or paul_engel@nps.gov if you have any questions or require further information.



**DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION**

Lisa Ann L. Mangat, Director

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

December 12, 2017

Ms. Joy Beasley
Federal Preservation Officer
Deputy Associate Director
Park Programs and National Heritage Areas
National Park Service
Washington Office
1201 Eye St., NW, Room 804
Washington DC 20005

RE: Point Reyes Naval Radio Compass Station Nomination for the National Register of Historic Places

Dear Ms. Beasley:

I am responding to your request to comment on the National Register of Historic Places (National Register) nomination for the Point Reyes Naval Radio Compass Station, located in Marin County, California. I concur that the property identified and evaluated in the nomination is eligible for listing in the National Register. The nomination documents the contributing and non-contributing features of the fourteen ranches in the 22,237 acre district. The statements of significance clearly associate the property with the historic context of dairy ranching in Marin County under Criterion A, focusing on the areas of significance of Communications, Maritime History and Military History. The property is also eligible under Criterion C as a rare example of Naval Radio Compass Station architecture, a property type designed around the physical requirements of the radio direction finder apparatus, with a period of significance of 1920-1948.

I have signed the application as commenting authority. If you have any questions, please contact William Burg of my staff at (916) 445-7004 or wburg@parks.ca.gov.

Sincerely,

Jenan Saunders
Deputy State Historic Preservation Officer



United States Department of the Interior

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

MAY 10 2018

H32(2280)

Memorandum

To: Keeper of the National Register of Historic Places

From: Acting Associate Director, Cultural Resources, Partnerships, and Science,
and NPS Federal Preservation Officer *Joy Kelly*

Subject: National Register Nomination for Naval Radio Compass Station, Point
Reyes National Seashore, California

I am forwarding the National Register Nomination for the Naval Radio Compass Station at Point Reyes National Seashore. The Park History Program has reviewed the nomination and found it eligible under Criteria A and C, and Criterion Consideration B, with Areas of Significance of Communications, Engineering, Maritime History, and Military.

The State Historic Preservation Office (SHPO) and chief local elected official(s) were sent the documentation on September 15, 2017. Within 45 days, the SHPO requested more information. Subsequently, on December 12, 2017, the SHPO x supported supported with comments did not respond. Any comments received are included with the documentation.

If you have any questions, please contact Kelly Spradley-Kurowski at 202-354-2266 or kelly_spradley-kurowski@nps.gov.