

History of the Ha'ikū Stairs

Compiled by John M. Flanigan

The Ha'ikū* Stairs is a series of galvanized-steel ladders that provides access for hikers to the top of Pu'ukeahiakahoe. At an altitude of almost 2800 feet, the top of the Stairs is some 2200 feet above the main building of the now-decommissioned U. S. Coast Guard Omega Station and about 2200 feet above the bottom step.

The ladders are altogether about 4000 feet long. Despite its reputation of being “nearly straight up,” the average slope is near 30 degrees. Of course some stretches are quite steep, but others much less so. It comprises 595 sections each of 6 or 7 steps, or flat steel plate.

On the lower part of the Stairs, each section is 18 inches wide and contains seven steps; beyond the hoist house, the sections are wider, each has six steps, and some sections have only flat plate. The nearly 600 sections are numbered consecutively, bottom to top. There are other steps apart from the metal steps themselves, however, which complicates the counting. The most widely accepted count is 3,922, credited to Lee Motteler of Bishop Museum in an article “3,922 Steps to the Top” (The Sunday Star-Bulletin & Advertiser, September 13, 1981).

World War II – The Navy Era

In 1942, as the second world war raged in the Pacific, the U. S. Navy needed means to communicate with elements of the fleet active in far-flung theaters of operation. They began the construction of a top-secret high-powered radio facility in a natural amphitheater in the Ko'olau Mountains on the island of 'Oahu.



Hikers approach the upper hoist house on the Ha'ikū Stairs in Ha'ikū Valley, Kāne'ohe, Hawai'i. Photo by John M. Flanigan

One more item was needed to give the Pacific fleet full striking power: absolute certain means of radio communications with headquarters at Pearl. ... A giant sending station must be built that would reach not only to the waters of Australia and the Indian Ocean but also to every Allied submarine-submerged-especially if she were on the bottom of Tokyo harbor (Woodbury 1946:349).

In order to obtain the necessary height for the antennae, it was decided to stretch them across the Ha'ikū valley, a natural amphitheater surrounded by 2000-foot-high ridges. To accomplish this, they needed “easy” access to the top of the ridges.

Two “high scalers,” men who had worked on Hoover Dam, were found working on the Red Hill project, and were assigned the task.

As they climbed, workers below constructed sections of wooden ladder. When the climbers returned for more steel pins, they carried a length of ladder back up with them. By hanging the sections to the spikes they had driven into the ridge they eventually had a series of ladders all the way to the top. (Those who had made the climb before the installation of the ladder referred to it as a “sissy climb.”)

[E]ach man carr[ied] with him about 200 feet of 5/8” diameter manila rope, a half-dozen pointed steel pins 5/8” diameter and about 3 feet long, and a rock pick and hammer. ... When they are stopped by rock cliffs that are vertical or nearly so, they make use of the hammers to cut steps, or drive in the steel pins and attach ropes to them. ... Approximately three weeks were required to gain access to the mountain tops on each side of Haiku Valley. (Technical Report, undated, p. A-822)

Later, a more elaborate wooden stairway (“ladder” in Navy parlance) was constructed up the mountain.

* "Haiku" does not refer to the Japanese poetry genre: The area is named "Ha'ikū" after the Kahili flower. One doesn't have to stop at each anchorage and compose a 5-7-5-syllable poem about the natural world – although a Ha'ikū haiku contest might be interesting.

Some remnants of the wooden ladder and stairway may still be seen beside the metal steps.

Once the top of the ridge had been achieved, the men – Bill Adams and Louis Otto – rested, enshrouded by the orographic cloudiness typical of the Ko‘olau Mountains.

Clinging to the northernmost spur of the hogback, they looked around. They could not see more than twenty feet in the dripping mist ... Sitting exhausted on the wet ground, Bill Adams swung one leg over the further side and straddled the mountain. The fog broke a little.

“God Almighty!” he grunted. “Look Louis.”

The drop on the east side was almost perpendicular, all the way down eighteen hundred feet to the next valley beyond. They were perched on the thin edge of a giant razor.

Then, suddenly the clouds blew off and the whole enormous panorama of the region lay below them. There to windward was the shallow curve of Kāne‘ohe Bay, pale emerald in the sunlight, with the vague violet of the shoals showing through. A cluster of microscopic white dots huddling around the base of Ulupau Crater represented the huge Naval Air Base.

“Pretty, by God!” said Bill fervently. (Woodbury 1944:355)



Remnant of wooden ladder.
Photo by John M. Flanigan



Wooden stairway circa 1946
Photo by Len Hardy

After more than a year of frenetic construction and heroic effort, the radio station was commissioned in 1943, and served as the primary long-range communication system for the U.S. Navy's Pacific Command to the end of the war.

The Alexanderson Alternator

To transmit such a powerful signal, the Navy needed a transmitter of greater capability than was then possible with vacuum tube technology. They therefore decided upon an Alexanderson alternator, a huge device capable of generating powerful radio-frequency signals, and requiring an antenna system of heroic proportions. (See Notes) At the beginning of the war, the U. S. Navy took control of RCA's American Marconi Station at Marion, Massachusetts, which had two Alexanderson alternators. In 1942 one of them* was purchased from RCA and shipped to and installed in the

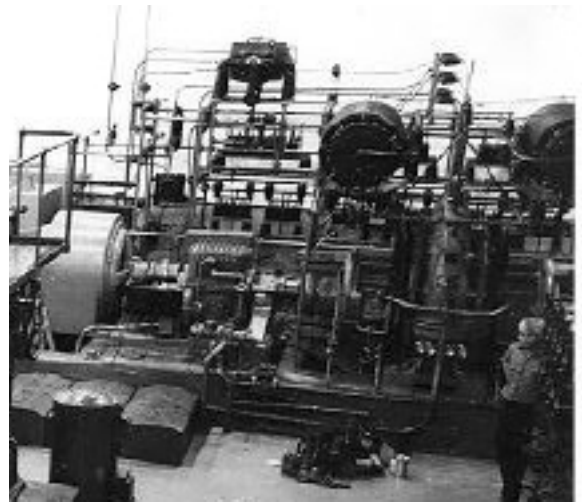
new VLF (very low frequency) Ha‘ikū Radio Station. (Brown, 2000)

Convenient access to the top of the surrounding ridge was needed to support installation of the huge antenna. A cable car system was installed between a “lower hoist house” in the main compound and an “upper hoist house” high on the south ridge. Workers, equipment, and materials were hauled from the valley floor to the various points on the ridge where the eight concrete anchorages were to be installed.

* Installed at Marion: 1922, Call letters: WSO, Wavelength: 11,628 meters (25.8 KHz) The Alexanderson alternator was capable of transmitting up to 100 words per minute in telegraph code from punched tape keyers.

The upper hoist house – the concrete block building low on the main ridge – housed a winch that drove a second cable system used to distribute equipment and materials further up the mountain. The burden from the cage from the valley was transferred to the ridge platform, and could then be hauled to wherever it was needed on the south ridge. A similar system provided access to the north ridge. Once the cable car was in operation, most workers preferred to ride the car to the upper hoist house rather than to endure the tedious climb up the stairs.

At the very top, a “bomb-proof” Communications Control Link building housed equipment which served to maintain VHF communications between Kāne‘ohe and Wahiawā if the regular communication cables failed. When a technician needed to perform maintenance on the equipment in the CCL hut he would try to get a buddy to ride with him on the tram. The buddy could then operate



Alexanderson alternator as installed in the Kāne‘ohe Naval Radio Station, ‘Oahu, Hawai‘i, 1945. From the collection of the Ha‘ikū Omega station.



Helicopter view of the Communication Control Link building, c. 1960. From the collection of the Ha‘ikū Omega station.

the secondary cable system from the upper hoist house, and the technician could ride all the way to the top. (For more recent hikers, the hoist house was a welcome refuge from the quickly-moving showers so common on the slopes, until the roof was removed, a victim of the litigation-averse response to the current concern over asbestos-related lawsuits. The only other shelter now available is the concrete block CCL building at the very top of the Stairs.)

In 1954 the Navy allowed the U.S. Air Force to use the CCL structure as an unattended microwave relay station until that too was abandoned in 1963. It was used to house the microwave equipment and is still topped by the old microwave antennae.

The Coast Guard Era

The Radio Station at Ha‘ikū Valley was inactivated in 1958 and began to function as an experimental Omega radio-navigation station, operated by civilian personnel. A new antenna was stretched across the valley in 1971, and Coast Guard personnel moved into the station in 1972. On February 17, 1975, the station was commissioned as an official Coast Guard unit. Local hikers who knew about the Stairs were allowed to climb after signing a waiver at the Omega station.



The tramway cage docked at the upper hoist house as seen from the stairway. Photo by David W. Jessup, 1946

Millions of people learned about the Stairs on April 9, 1981, when an episode of “Magnum P.I.” (“J. ‘Digger’ Doyle,” guest-starring Hawai‘i-born Erin Gray) was aired. It included several exciting scenes featuring action on the Stairs and in the transmitter building. (The Stairs continue to attract interest from film and television production companies.)



Magnum P. I. and J. "Digger" Doyle (Tom Selek and Erin Gray) hurry the rescued Higgins up the Stairs. (screen captured from an A&E re-run)

Five months later, on September 13, an article entitled "3,922 Steps to the Top" appeared in the "Today" section of the Star-Bulletin & Advertiser. The "Magnum P.I." episode was re-telecast on October 9, the same year. These events sparked enormous interest in the previously little-known hike, to the great chagrin of those hikers who had grown to regard it as their own special, "secret" hike.

On October 18, the Honolulu Star-Bulletin published an article "It's Getting Crowded at the Top." The article reported that the Coast Guard Station had been flooded with requests to climb—as many as 200 people a day on weekends. The Coast Guard quickly limited to 75 the number of climbers allowed on the Stairs at one time.

Gradually the use of the Stairs returned to a more manageable number, but the Coast Guard still counted as many as 20,000

climbers per year, with no reported serious accidents, and no recorded complaints from the newly-built nearby developments, according to their records.

Vandalism and littering were continuing problems. Plants were cut, off-limits properties were trespassed upon, and climbers who had no trouble carrying full food and drink containers up the Stairs often would not carry the empties back down. A large pile of litter accumulated at the top. Perhaps the most troublesome act was that of sliding weighted coat-hangers down an antenna. This necessitated a helicopter-borne removal of the transmission-disruptive material.)

In 1987, Rear Admiral William P. Kozlowski became the new Coast Guard Commander in Hawai'i. He soon expressed concern that civilians were allowed on the Stairs and because of occasional vandalism and routine trespassing on off-limits areas, the Stairs were "closed for repairs" in May, 1987. Then in June, after three sections in two steep locations were de-coupled and allowed to fall down the mountainside, the Stairs were closed permanently.

The Friends of Ha'ikū Stairs

When the closing was announced, there were letters to the editor in both the Honolulu Advertiser and the Honolulu Star-Bulletin from citizens who were outraged at the vandalism and closure. One letter, from Frank Stong, then a resident of Kāne'ohe, suggested that anyone who

wanted to do something about it should call him. His phone number was listed. John Flanigan called, and the two began planning to organize an effort to re-open the Stairs. Susan Hieb, who had never yet climbed the Stairs, independently began a similar effort on the other side of the mountain. Mike McCartney, who knew of both activities, facilitated a meeting at Hawaii Loa College. They rapidly recruited dozens of citizens who eagerly engaged in information-gathering, letter-writing, and collecting signatures on petitions.

On September 10, 1987, the meeting at Hawai‘i Loa College in Kane‘ohe was attended by dozens of enthusiastic hikers, other community members, and state and local politicians. The name “Friends of Ha‘ikū Stairs” was chosen, and a concerted effort to re-open the Stairs was begun.

A meeting of Adm. Kozlowski, DLNR director Bill Paty, and FHS principals was arranged by Representative Terrance Tom and held in his office. Adm. Kozlowski was adamant that the Stairs would not be re-opened. He indicated that the Omega station had a limited future and that the intention of the Coast Guard was to dismantle the structure before abandoning the station. This suggestion was met with vigorous opposition from the FHS members present. Various options were discussed whereby the City might gain access to the property. Adm. Kozlowski agreed that destruction of the Stairs would be delayed, and surprised the FHS members by wishing them “success in your efforts.”

During the next few months members of FHS held further petition-signings, requested and received support from Hawai‘i’s congressional delegates, local government officials, local scientists, and other local organizations. Information was obtained regarding the requirements for achieving status as a National Historical Site. Eileen Root, Hawai‘ian Reference Librarian, displayed an impressive collection of historical photographs of the radio station in the Kane‘ohe Library.

Then construction on the H-3 recommenced, the trailhead leading to the Stairs was engulfed by the construction operation, and all FHS activities went into indefinite recess.

The H-3 Era

Long-delayed work on the H-3 highway re-commenced in May, 1987, with completion projected for 1993. (It was actually completed in 1997.) Although the Director of Transportation had promised that “provisions can be made to permit hikers to cross the access road provided they receive permission to enter the area from the United States Coast Guard” (Hirata, 1988), no such permission was ever granted by the Coast Guard.

Construction completed, H-3 was opened in December, 1997. Soon drivers on the new highway began to see people climbing on the neglected stairway. A single guard stationed at the entrance to the former USCG facility was insufficient to patrol the entire fenced border of the property, and soon hiker-sized openings appeared



Section of Stairs resting against the mountainside.
Photo by John M. Flanigan



Vandalism of perimeter fence provides illegal access.
Photo by John M. Flanigan

In the fence. Ignoring the no-trespassing signs, hikers, pig-hunters, and other trespassers created their own means of access. With little security, the transmitter building suffered grievous vandalism.

Residents of the Hokulele subdivision and other nearby communities became increasingly annoyed when hikers parked automobiles in inconvenient places, when large groups created noise and traffic blockage while walking through the area, and when some hikers even knocked on doors to ask residents for directions to the Stairs.

Ropes were hung across the missing sections, making the climb across those treacherous areas possible. Despite the fact that they were still officially off-limits, the Stairs were again an active, if illicit, hiking site.

The Valley Changes Owners

The last transmission by the Ha'ikū Omega Station took place in September, 1997. The Omega station was decommissioned immediately thereafter.

The Environmental Assessment (EA) done for the station closure considered the alternatives of tearing out and removing Ha'ikū Stairs, or turning them over to the City and County of Honolulu in their existing condition

(Dept. of Transportation, U.S. Coast Guard, June 1997). This same EA validated the Stairs eligibility for Historic Register status, as part of an Historic Landmark in Ha'ikū Valley. The report read in part:

The stairway is the most distinctive remaining structural representation of the Haiku Valley Naval Radio Station. Due to the fact that it is relatively unaltered, it maintains a high level of integrity. It is substantially significant in itself as the vital link between the transmitter building on the floor of the valley and the anchors high along the ridge. It serves as a clear and immediate representation of the extremely difficult terrain and dangerous construction conditions that were a constant during the experimental construction. The stairway endures as a manifest symbol of the innovative and rare design that enabled the U.S. military to send messages around the world and assist in saving countless lives during World War II. (Ogden, 1997)

In 1997 the pending closure of the Omega Station again threatened destruction of the structure. The Friends of Ha'ikū Stairs was revitalized with participation from the Conservation Council of Hawaii, Hawai'i Trail and Mountain Club, the Sierra Club, the Ko'olau Foundation, and interested community members.

During spring and early summer of 1998 discussion continued between City and Coast Guard officials. A Coast Guard official indicated that the Coast Guard would repair the Stairs and turn them over to the City. Coast Guard attorneys quickly quashed the idea, and a series of negotiations ensued. It was determined that a major part of the funding for repair would be available from the federal ISTEA (Intermodal Surface Transportation Efficiency Act). Eventually the Coast Guard agreed to relinquish the Stairs, and the City agreed to accept them, in "as is" condition.

Members of a revitalized FHS renewed their campaign of public information and solicitation of cooperation. Numerous letters and inquiries were sent to government leaders, information was supplied to news media, members of FHS appeared on news programs and wrote op-ed items for publication. It quickly became clear that after fifteen years the community was still active and willing to step forward in preserving the Stairs for public use.

To be in a better position to assure that funds for educational and ancillary management and maintenance of the Stairs could be obtained, the Friends incorporated as a 501(c)(3) non-profit organization in November 1999.

The administration of Mayor Harris, with support and encouragement from City Councilman Steve Holmes, submitted a notice of intent to request the excess federal lands of Ha'ikū Valley for a park and preserve on the valley floor, and for preservation of Ha'ikū Stairs. Access to the Stairs was across the valley, over the previous federal land. The route up the valley wall was largely on Board of Water Supply land.

The Department of Hawai‘ian Homelands, which had higher priority in the excess federal lands hierarchy, also expressed interest in the valley. On July 9, 1999, the U.S. General Services Administration turned over 147 acres of the former U.S. Coast Guard Omega Station to the State Department of Hawai‘ian Home Lands. This transfer included areas used for access to the stairs through the former Animal Quarantine Station, and included two parcels along the ridge tops on which the Stairs are located. Several other parcels of land along the upper Stairs were owned by the State Department of Land and Natural Resources as a result of a federal quit-claim deed. In a cooperative spirit, the State passed ownership of these lands to the City in October 1999 (DLNR proceedings, 22 October, 1999)

The Stairs Are Repaired

The City was not deterred by DHHL's acquisition of Ha‘ikū Valley. The valley is unsuitable for development for homesteads. It is too steep, too high, too heavily gullied. Its value to DHHL was as a tract that could be traded to the City for land more suitable for development.

The City began efforts to accomplish such an exchange. Meanwhile, Councilmember Holmes submitted a project for city and federal funding to repair the stairs in the Year 2000 to 2002 Transportation Improvement Plan.

At the same time, a planning consultant was hired and began a series of meetings with various focus groups to plan for a cultural and natural preserve and park on the valley floor, as well as for access to Ha‘ikū Stairs. This planning process is (as of this writing) still waiting completion because of delays in agreements between the City, DHHL, OHA, and other interested parties.

With funding available, the city prepared specifications for repair of the Stairs and a winning bidder was selected in July 1999. In June 2001, the selected contractor, Nakoia Companies, commenced work, and completed the job by the summer of 2002.

Since the DHHL land was unavailable, a substitute access point was sought. Of those considered, the only practicable solution appeared to be to negotiate an arrangement for parking at Kaneohe Hope Chapel, and make use of the adjacent H-3 Service Road for an easy one mile walk to the stairs trailhead along the H-3 construction access road. A gate was constructed that provided access from the Chapel parking lot to the access road. This route was to be used until discussions with DHHL were concluded, and the former Quarantine Station in Ha‘ikū Valley made available for trail head access and parking.

As plans for the opening day were being completed, it developed that the contract with Hope Chapel had not been approved by their parent church, nor by the owners of the property. Further negotiations were unfruitful, and that option appeared closed. That left the hoped-for land swap as the only viable solution.

Meanwhile, people anxious to hike the Stairs were undeterred by the “No Trespassing” signs and began climbing in droves. On some week-end days more than a hundred rogue climbers walked through nearby neighborhoods to gain access over the perimeter fence or through holes cut at various convenient points.

Residents of nearby neighborhoods accused hikers of trespassing, illegal parking, and rudeness. Antagonism grew. The issue was discussed often in meetings of the Kāneʻohe Neighborhood Board. The City eventually placed a guard at the trailhead to turn hikers away. The number of illegal hikers dropped to a trickle – eight to ten on an average day, by the count taken by the guard.

These mitigative efforts did not pacify a number of residents. Still angry over the earlier invasion by rogue hikers, they began an organized effort to block the city's efforts to open the Stairs, and enlisted the offices of their representative, Ken Ito, who, in a televised interview, insisted that the Stairs were dangerous and should be removed entirely. At the same time, the City and the Friends of Ha'ikū Stairs continue to advocate for managed access to the Stairs and for the development of Ha'ikū Valley and the old Naval/Coast Guard station into a cultural preserve and soft-recreational and historical park. In November, 2003, the Kāneʻohe Neighborhood Board created a Ha'ikū Stairs Task Force which over the next three months developed a plan that would avoid the nearby neighborhoods by creating a pedestrian access through a corridor bordering Windward Community College and the Hawaii State Hospital.

Then in January, 2004, Representative Ito introduced a bill (HB1748) "to start a special proceeding for the acquisition by the State of the land underlying the metal stairway and removing the stairway, thereby removing a hazardous situation and potential liability to the State."

There was quick opposition and the bill was withdrawn. But on March 24, Rep. Ito introduced a resolution with much milder language (HCR199) "requesting the Department of Hawaiian Home Lands, the Department of Transportation, the Department of Land and Natural Resources, and the Office of Hawaiian Affairs to cease issuing any easements to the City and County of Honolulu for access to Haiku Valley and to "Haiku Stairs." Despite considerable testimony against the resolution, it was passed by the house on August 16, 2004. At the same time the City and DHHL remain in negotiations regarding a land swap that would give DHHL land upon which to build affordable housing, and allow the City to complete its plans for development of the Ha'ikū Valley Cultural/Historical Preserve.

The resolution does not have the force of law, and was largely ignored.

On August 27, 2004, the City administration announced that an agreement about the land swap had been reached with DHHL, and on September 29, the Budget Committee of the Honolulu City Council met to deliberate the issue. There was much public interest in the meeting, and testimony was presented for and against. Those who testified for the swap pointed out that the agreement would provide buildable land where DHHL could build homes for Hawaiians, it would relieve the nearby neighborhoods of the continuing problem of illegal hikers, it would allow the community to access to the popular hiking trail, and it would sustain the Hawaii tradition of providing public access to natural attractions. City Councilman Romy Cachola questioned the value of the property being traded by the City, and tesifiers against raised the improbable argument that opening the valley for parking would actually increase the number of trespassers through their neighborhood. Chairman Ann Kobayashi ruled to defer the decision until the City gave a clearer estimate of the further costs of the project.

[To be continued...]



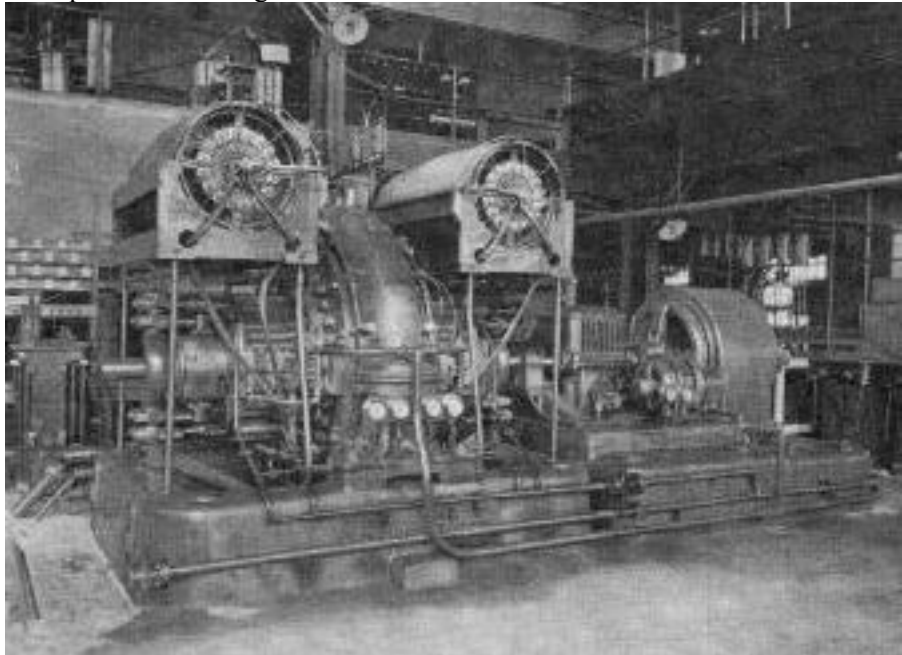
Nakoa Companies employees carry on repair Activities near the CCL building. Photo by Nakoa Companies

Notes:

THE ALEXANDERSON ALTERNATOR

In 1915 Mr. E. F. W. Alexanderson of the General Electric Co. was successful in developing an alternator which generated continuous waves at very low frequency. This development was based upon earlier ideas of Dr. Reginald Fessenden. It consisted of a two-phase alternating current induction

motor driving a high-speed generator through a gear system which increased the speed of the generator. The rotor of this generator was of steel and contained a number of slots on its periphery which were set up which induced alternating currents in the 64 armature coils wound in slots in the stator. These coils were coupled to a common secondary which in turn was directly connected to the antenna and ground systems. One of the stator coils was connected to an independent circuit through a mercury vapor rectifier and the current induced in it was used for



Alexanderson's high-frequency alternator capable of putting 700 amperes of high-frequency current into the antenna.

(From <http://chem.ch.huji.ac.il/.../history/alexanderson.html>)

operating the speed regulator. Accurate speed regulation was obtained through the use of choke coils which changed the voltage supply of the induction motor and thereby its speed. Since the radiated frequency is a function of alternator speed any desired frequency of 25 kc. or less could be obtained.

Keying was accomplished by opening a low, direct current powered magnetic amplifying circuit inductively coupled to the secondary which when closed threw the system out of resonance.

The antenna used with the alternator was also developed by Alexanderson and was multiple tuned by a number of spaced down leads each connected to its own loading coil and ground system, thereby greatly increasing the antenna efficiency. [*History of Communications-Electronics in the United States Navy*, Captain Linwood S. Howeth, USN (Retired) Appendix M]

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