THE INFOAGE
MARCONIGRAPH
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HISTORIC LANDMARK STATUS UPDATE

The Marconi Building at the Information Age Science and History Learning Center in Wall.

In October 2007 the National Park Service recommended the Camp Evans historic district in Wall be evaluated for nomination to the National Register of Historic Places as a key WWII home front site. The six year study of the WWII home front was mandated by congress in 2000.

This positions Camp Evans to receive the honor of elevation to the status of a National Historic Landmark. This is the highest historic designation in our nation. During WWII Camp Evans was a home of Army radar development. Radar was critically important during the entire war. A quote widely published the day WWII ended states: "In the technical field, where so much of this war has been fought, the failure of the Nazis and the Japs to keep pace with Allied radar has been probably the major single reason for defeat."

The purpose of the study is to identify historic places that best represent the wartime mobilization that occurred in the United States. Camp Evans was one of 30 sites recommended of the thousands of factories, government office buildings, research laboratories, housing projects, military bases, United Service Organization (USO) canteens, day care centers, and schools that were built or expanded during the war.

The Home Front Theme Study can be viewed online at: http://www.nps.gov/nhl/themes/Homefront/Homefront-FINAL.htm.

This recommendation is a credit to Wall Township and you, the members of InfoAge Science – History Center. Our work to save the heart of Camp Evans for future generations is showing more results. Your donations, gifts and volunteer work continue to bring improvement to this historic site. Congratulations.

Although the WWII Home Front study recommends Camp Evans as a National Landmark, a new nomination has to be written and submitted. Thank you for your research and your donations of historic documents and photos. This will make the nomination preparation easier.

If you have Camp Evans history to share please call or send an e-mail.

Thank you,
Fred Carl, InfoAge Director

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INVEST IN VICTORY
The InfoAge SIGNALEER
SIGNAL CORPS ENGINEERING LABORATORIES
INVEST IN INFOAGE

How About Those 400 Foot Marconi Towers!

by Ray Chase
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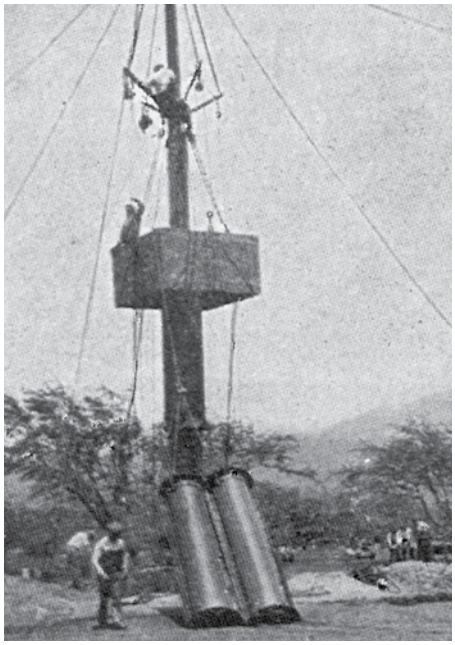
Steel semi-cylinders for the Marconi tubular mast

What this is about are those six 400-foot-tall masts that Marconi erected in 1914 as a major part of the establishment of his Belmar transatlantic communications receiver site in Wall. They were located on what is now InfoAge and Camp Evans. When Marconi created this site he called it the Belmar station even though it actually is in Wall Township. The rationale for this was that one arrived here by way of the Belmar train station.

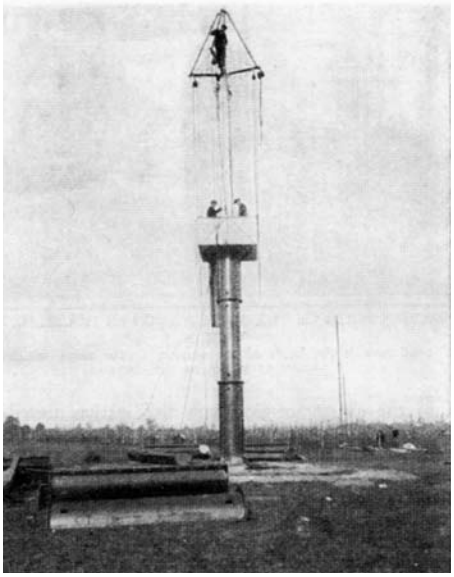
While the masts are long gone and the former open fields where they were located are now blocks of single family houses, it is interesting to reflect on how they were built nearly one hundred years ago. Construction of such towers without the availability of tall aerial equipment must be considered somewhat of a construction achievement. Sure the ancients build tall structures such as the pyramids centuries ago but Marconi did not have an army of slaves or the luxury of dozens of years to finish them. How then was he able to relatively easily accomplish the task probably in a matter of months? Interestingly; he had to erect dozens of such masts at the companion transmitter site that was located in New Brunswick. Here is how they did it, literally "bootstrapping" their way up to 400 feet.

The first step was to construct a base. There were six of these, in a line almost a mile long spaced a little more than 900 feet apart. Each was of poured concrete, 10 feet by 10 feet at ground level and probably going to a depth of more than 10 feet as well. Additionally, each mast needed four guy wire anchors of poured concrete about 200 feet out from the base.



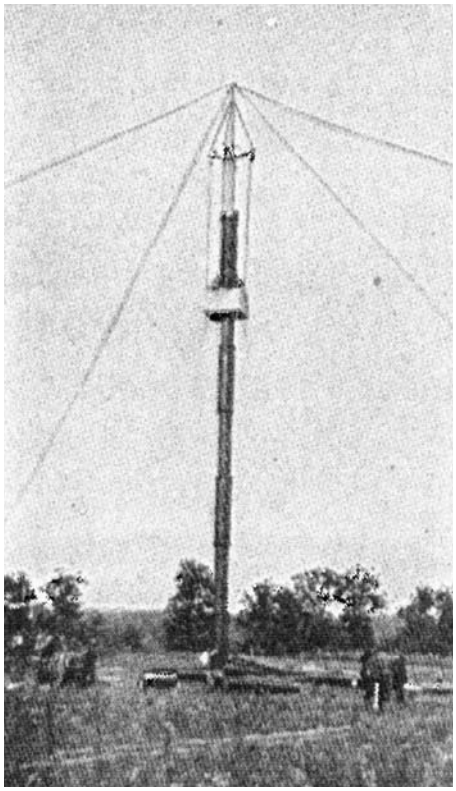
Workmen's cage which is carried to the top during the process of erection

Most of each mast was constructed of pairs of semi-circular steel shells 10 feet long. The shells had flanges along their vertical edges and horizontally at each end that allowed them to be bolted together to form steel cylinders that were 30 inches in diameter for the bottom half of the mast and 24 inches in diameter for the top half. A total of 37 cylinders on top of one another and bolted together at the horizontal flanges formed the bulk of the mast.



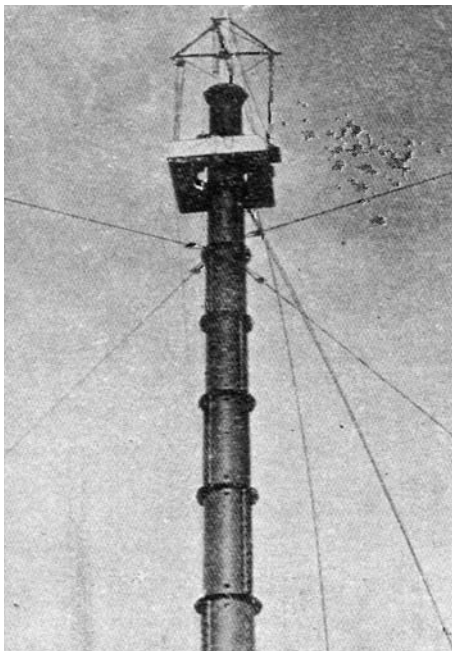
How the mast grows

Construction was started by placing a 40-foot wooden mast, temporarily guyed in place, upon the prepared base. This sturdy mast had its lower half formed in a square shape. Next, two pairs of steel shells were assembled around the mast to a height of 20 feet. Between each set of shells was inserted a metal diaphragm with a square hole that holds the mast losely in place. The upper end of the wooden mast has four arms from which was swung a kind of square balcony that can be raised or lowered by workmen on it. Another hoisting block at the top of the mast was now used to raise additional steel shells and the workmen in the suspended platform were able to assemble additional sections to the mast by bolting them around the wooden mast as well as securing them to the top of sections already in place along with the diaphragm between sections. The unique feature now came into play in that the bottom of the wood mast had a pulley in it and a wire cable from a steam hoisting winch on the ground threads up to a temporary pulley on one side of the steel shell, then down inside the steel tube around the pulley at the base of the wood mast and then back up to the top of the shell. In this way the wood mast was raised inside the tube to a higher working position. Once aligned in place, steel pins were inserted through holes in the shells to hold the mast in its new location. This was the manner in which more 10-foot tube sections were added and the mast supporting the work platform was continually raised until the tower reached its ultimate height.



A tubular mast in early stages of construction

As the tower was raised, guy wire supports had to be added to successively steady the array. Each mast had five sets of one-inch thick guys when the desired height was reached. Considering that the guys extended in four directions to massive concrete anchors, each antenna mast required over two miles of guy cable. It should be noted that once a set of guy wires is attached, the work platform could not be easily lowered below that point therefore at the beginning or end of a day the workmen had to gain access to their work station by use of Bo's'ns chairs probably hoisted up by the steam winch. Interesting commutes to say the least.



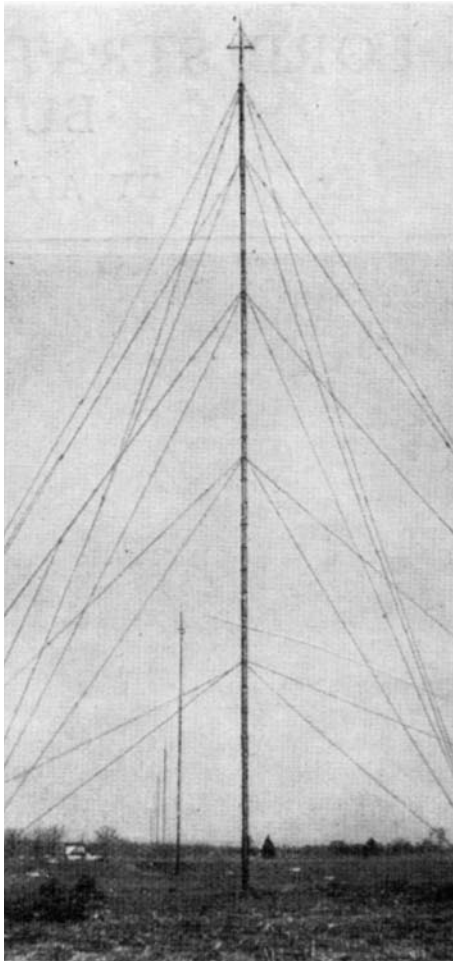
The cage and the top mast several hundred feet from Earth

Once the tower had reached a height of 370 feet, the wood mast that served as the support for the work platform was firmly secured in place and served as the final 30 feet or so to complete the finished height of 400 feet. An insulating device with a pair of grooved pulleys was then attached to the top of the mast to support the two antenna wires that ran over the top of the six masts. Since the antenna wires were nearly a mile long and were subject to wide temperature extremes, they had to be supported in such a way as to allow for expansion and contraction of their length.

In the several historical documents that were researched to provide information on this construction technique, none told of what procedure was followed once the topmost height was attained. Obviously, the work platform and the various hoisting mechanisms had to be taken down by disassembling them into smaller pieces while the workers clung to the top of the tower probably in nothing more than Bo's'ns chairs suspended by a single rope. Interesting work. A single maintenance hoisting pulley would be left in place in order to access the top of the mast for maintenance. An interesting anecdote was recounted when an engineer had to be hoisted to the top of the mast for a repair. He was hoisted up in a simple chair on a rope hoist but when he was raised somewhat past the half way point, the weight of the down rope exceeded his weight along with the up rope and he was suddenly being propelled up to the top of the mast at an alarming rate that could not be arrested by those on the ground. He hit the top of the mast with a thud but fortunately was not injured. Succeeding ascensions were made with a restraining rope as a counterbalance.

Upcoming Event

On Sunday, April 27 at 2pm author Richard Thompson Jr. will give a talk on his book, "Crystal Clear" at InfoAge. This is the story of how Fort Monmouth and the War Department took the manufacturing of quartz crystal from a few firms supplying hobbyist to a war time critical industry. This will be the forth talk cosponsored by InfoAge and the IEEE. Richard will be selling and signing copies of his book.



The line of six masts at Belmar, N.J.

Marconi built stations similar to Belmar at several locations in the United States as well as many other places around the globe in order to set up his "Globe Girdling" wireless communications system. The general design of these stations was produced at the Marconi headquarters in England but local construction and materials were used wherever possible. At the Belmar station, overall construction and management was under the direction of the J. G. White Engineering Company of New York. The steel cylinders for the masts were produced by the McMyler Interstate Co. of Bedford, Ohio; concrete for the bases and anchorages was obtained from Pennsylvania Portland Cement Co.; while wire rope for the mast guys was furnished by the John A. Roebling's Sons Co. of Trenton who also supplied the phosphor bronze antenna wire that ran over the tops of the six masts.

It should be pointed out that the commemorative steel tower currently located near the bottom of Marconi road near the intersection with Monmouth Blvd. was not part of the main antenna system described above. Several of these smaller lattice work towers were part of the "balance antenna" system that ran at right angles to the main antenna. Such an arrangement was used to balance out unwanted radio signals from the companion high power station then located in New Brunswick. One can also still see one of the complete concrete guy wire anchors along Monmouth Blvd. at the intersection with Watson Rd. Most of the original bases and guy anchors were destroyed over the years as the existing community built up around Camp Evans, however a member of InfoAge has located most of the original locations and found at least one that has not been jack hammered or blasted into pieces. A modern map showing the mast and guy locations along with the metal remnants of one guy anchor are on display in the Radio Technology Museum at InfoAge.

Ref:

Elmer E. Bucher, Practical Wireless Telegraphy, Revised Edition 1917

The "Wireless" Girdling Of The Earth, The American Review Of Reviews, March 1914

RFC 24 March 2008

Something New at InfoAge

by John Cervini
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Something new and exciting is about to start at the InfoAge Learning Center. If one were to write a book, it might be entitled, "Camp Evans-The Untold Story." With the help of the AOC, an international, professional organization dedicated to increasing public awareness of Electronic Warfare (EW), whose Garden State Chapter is headquartered on the post at Ft. Monmouth, InfoAge is embarking on a special project to determine the history of EW at Camp Evans.

For years now, many articles have been written about the role Camp Evans played in the history of wireless communication and radar development, but now the public will hear about the critical part that Evans and its dedicated employees played in advancing the state-of-the-art of intelligence monitoring equipment, electronic countermeasures, and sophisticated intercept and direction finding systems. Soon you will be hearing about esoteric programs and equipment such as; Cefly Lancer, Cefirm Leader, Guardrail, Quick Look, Hot Brick, etc. Many facts about these systems were highly classified, and only now can specific information be released to the general public!

The first step was taken by Steve Makrinos, a long time AOC Garden State Chapter member, who spent most of his distinguished Army civilian career at Camp Evans. Steve recently made a trip to the Tobyhanna Army Depot in Pennsylvania to inspect Army equipment that was considered excess and no longer in the inventory. Having been to the depot many times during his career, Steve renewed acquaintances with some key people, especially Frank Zardecki, one of Tobyhanna's executives and a good friend of Steve. While there, they had enough time to tour one of the buildings containing excess equipment where Steve spotted some things he recognized. He and Frank entered into an informal agreement which would allow specific items, identified as having an historical connection to Camp Evans, to be set aside and donated to the InfoAge Learning Center.

Four months ago with the help of a few Info Age volunteers and the cooperation of Wall Township officials, a truck was dispatched to Tobyhanna and returned with a number of items which are currently being stored in the historical district. This is the first step in accumulating equipment and facts relating to the "Untold Story". The AOC is putting together a list of people to contact who have or might have direct knowledge of EW and ECM artifacts and equipment developed by the Army at Camp Evans.

Stay tuned for periodic updates about the progress being made on this very exciting project.


EW equipment pods


UPD-7 ground station

Expanding the Shipwreck Museum at InfoAge

by Dan Lieb
New Jersey Historical Divers Association, Inc.
732-776-6261 • njhda@aol.com

A model of the RMS TITANIC on the bottom is now on display in the NJHDA Shipwreck Museum in Wall, NJ. This model, and our site plan of the Barge PLYMOUTH, offers visitors a better understanding of the condition of many of our shipwrecks.

In the first issue of the InfoAge newsletter, we reported on the current state of NJHDA's New Jersey Shipwreck Museum Project. We discussed why we decided to establish our museum at the InfoAge Science and History Center, and what we hoped to accomplish by selecting this venue. We have not been disappointed.

Our current display is 288 square feet - the size of an average living room. By this summer we expect to have an artifact cleaning station and research facility (for cleaning, examining, and recording artifacts) set up in an adjacent building referred to as Building 9032. Shortly after that we expect to have our museum display moved from its current location inside the "Marconi Hotel," to an 800-square-foot area across the hall from the facility - totalling 1,200 square feet. All of this will occur in Section B of 9032. Section C will hold an antique and vintage computer exhibit belonging to M.A.R.C.H. (Mid-Atlantic Retro Computing Hobbyists). Section D already holds the New Jersey Antique Radio Club's Radio Technology Museum and the National Broadcasters Hall of Fame. Section A will serve as a general-purpose room complete with a kitchen facility. This space will be used for conferences, symposiums, demonstration space, fund-raisers, etc. Being located next door to Section A means that we will have a virtually uninterrupted space in which to hold our future shipwreck symposiums. This arrangement will offer us presentation space to one side of our entrance, and a museum display on the other side.

For at least several years, this arrangement will offer us an expanded facility that will meet our growing needs. It will allow us to illustrate more of New Jersey's rich maritime and shipwreck history. Also, it allows us to show links between the development of radio and radar and its application to the maritime industry. Furthermore, through interpretive displays, we will be able to clearly describe those moments in time where the use of radio and radar lead to history-making events, and where the misuse lead to disaster and loss of life.

To help us cover the costs of building our displays, NJHDA is holding a set of fund-raisers on May 3, 2008. Information about these two events is detailed on the next page. In addition to our shipwreck symposiums, we hope to hold other events on site to help us raise the funds we need to continue our work. The money we raise not only helps NJHDA, but it will also help InfoAge. Some of the money we raise goes to support the larger organization that facilitates us. But it is this expanded interim facility that will enable us to meet all of our goals of presentation and display space, a research and cleaning station, and our archive facility. Our future at InfoAge is looking very bright.

The New Jersey Historical Divers Association, Inc. presents

SHIPWRECKS, SEA LIFE, and OLD SALTS

The NJ Shipwreck Symposium

Saturday Afternoon, May 3, 2008
2 PM to 6 PM
InfoAge Learning Center, Wall, NJ

Admission is $20 per person
($15 for NJHDA Members)

Reservations are required - seating is limited.
(payment in advance guarantees seating)

The symposium will be hosted by

Dean Fessler
Shark Research Institute

The speakers and scheduled events are as follows:

Identifying the No. 9 Wreck
Dan Lieb – NJHDA President

Expanding the NJHDA Shipwreck Museum
Neil Norrell – NJHDA Secretary

Right Whales
Dave Barbara – Marine Photographer

Intermission
(light refreshments and 50/50 raffle)

Legends of NJ Wreck Diving
Steve & Maureen Langevin

Andrea Doria: Where Dreamers Dare!
Keynote Speakers: Steve Gatto & Tom Packer

The NJHDA Party

Saturday Evening, May 3, 2008
7 PM to 10 PM
InfoAge Learning Center, Wall, NJ

Admission is $40 per person
($35 for NJHDA Members)

Reservations are required - seating is limited.
Casual attire.
(payment in advance guarantees admission)

This fund-raising event will help NJHDA
defray the costs of expanding its
New Jersey Shipwreck Museum.

Special guests include speakers and the host of the
NJ Shipwreck Symposium.

Also featured:
Tours of the expanded museum display
Shipwreck Artifacts
50-50 Raffle
Beverages
Hors d'oeuvres
Door Prizes

Come and celebrate our museum expansion!
Enjoy the company of our special guests as they relate their tails of adventure, danger, and exploration.*

*80% of it known to be true!

Directions from North: Take Garden State Parkway SOUTH to EXIT 100 onto Route 33 east. Continue to Route 18 South. Get off at EXIT 7A. The exit will merge you onto Brighton Avenue. Follow Brighton to the bottom of the hill and turn RIGHT onto Marconi Road. After a few hundred yards, you will see a parking lot entrance on your right. Enter and follow the directions of the parking attendants.

Directions from South: Take the Garden State Parkway NORTH to EXIT 98. Bear to the right and take the exit for Route 138 East. Follow 138 to the Route 18 North exit. Follow 18 North to Exit 7. The exit ramp will put you on Marconi Road where it intersects Brighton Avenue. Go straight. After a few hundred yards, you will see a parking lot entrance on your right. Enter and follow the directions of the parking attendants.

Directions from West: Take 195 EAST, to Route 18 NORTH. Follow 18 North to EXIT 7. The exit ramp will put you on Marconi Road where it intersects Brighton Avenue. Go straight. After a few hundred yards, you will see a parking lot entrance on your right. Enter and follow the directions of the parking attendants.

Directions from East: Take 33 WEST, to Route 18 SOUTH. Get off at EXIT 7A. The exit will merge you onto Brighton Avenue. Follow Brighton to the bottom of the hill and turn RIGHT onto Marconi Road. After a few hundred yards, you will see a parking lot entrance on your right. Enter and follow the directions of the parking attendants.

For reservations and more information, please call 732-776-6261 or e-mail NJHDA@aol.com. Send checks payable to:
NJHDA, Inc., 2201 Marconi Rd, Wall, NJ 07719

Alterations and substitutions to the schedule may occur without notice.
NJHDA, Inc. is a nonprofit charitable historical research organization. All donations are tax deductible.

InfoAge
Science/History Center
at Camp Evans, Wall, NJ

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The Newsletter of the InfoAge

Inside this issue...

2008 Calendar of Events

April 26th
International Marconi Day
- Free to the public
- 10 AM starting time

April 27th
Crystal Clear - a talk by author Richard Thompson
- 2pm • Free to public

May 3rd - 2pm to 6pm
NJ Shipwreck Symposium
- $20 per person • Refreshments • Raffle

May 3rd - 7pm to 10pm
Museum Fund-raiser Party
- $40 per person • Refreshments • Raffle

May 3rd & 4th
Weekend at Olde Monmouth
- Visit us! Free to public

June 21th - 10am to 4pm
Second Annual Antique and Classic Car Show
- $15 per car exhibited ($12 if you pre-register) • $5 admission

June 21th - 7pm to 11pm
Wall of Honor Annual Dinner
- $100 per person • Dinner • Open Bar
- Wall of Honor induction ceremony honoring Dr. Rudi Buser, Mr. Harold Jaffe, and Mr. William Fischbein

June 28/29th - 2pm to 2pm
ARRL Field Day - exercise in emergency preparedness
- Free to public
- This is a 24-hour event

July 26th - 8am to 2pm
NJ Antique Radio Swap Meet

Call 732-280-3000 for more information.