THE INFOAGE
MARCONIGRAPH
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MEMORIES

by Andy D'Angelo
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In June 1973 Lt. Col. (P.) William Harrison reported to Fort Monmouth to head a new project office for Mortar and Artillery Locating Radars (MALOR). A recent ICAF (Industrial College of the Armed Forces) graduate with combat and staff artillery assignments and a masters in electronics engineering, he was the right guy at the right time to head this complex and important acquisition program. Not happy with the name MALOR he quickly changed the name to FIREFINDER. The rest is history.

In his five years as the project manager for FIREFINDER he took the program through development, testing and initial fielding, battling and overcoming budget, testing, technical and political obstacles. He provided incredible stability and leadership for his handpicked staff and delivered for our soldiers an outstanding weapon system that has distinguished itself in every conflict since the early 1980s.

During his time as PM FIREFINDER he occupied the quarters at 9002 Marconi Road, just a short walk from his headquarters in the Marconi Hotel building, the current headquarters for InfoAge. He and his wife Shirley and their children Denise and Dale became part of the Wall Township community and built lasting relationships in the area. He retired in 1977 and had not been back to Fort Monmouth and the Evans Area since. That changed when he accepted an invitation to attend the 2009 St Barbara's Artillery Ball on February 7 at Fort Monmouth. He was looking forward to renewing acquaintances and visiting the Evans Area. Mike Ruane arranged for a tour of InfoAge and even opened up his former quarters at 9002 Marconi Road. After an absence of 32 years Col. Harrison got to relived his experiences.

The walk through the building was nostalgic and exciting. He dug deep into his memories, pointing out the former occupants of each office and posing for a photo in front of his portrait in the gallery of past senior officers at the Evans Area. Touring the house was a different experience. He relived his former life in that home with emotion and happy memories.

It was a very special day for Bill, filled with nostalgic memories and excitement. He was surprised and gratified at how InfoAge is preserving the historic site, helping current and future generations learn about and understand the history and achievements that took place in these historic buildings.

William Harrison next to his portrait in the Evans Area where he served as project manager for Firefinder for five years.

The Expanded New Jersey Shipwreck Museum

Visitors to the shipwreck museum are greeted with an exhibit that orients them to our displays. Many residents of New Jersey have little idea of what lies beneath the waters of our State.

by Dan Lieb
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The Quest for a Venue

Since 1992, the New Jersey Historical Divers Association, Inc. (NJHDA) has sought a venue to establish its New Jersey Shipwreck Museum. Our efforts began in Monmouth Beach were we planned to renovate a vacated State Marine Police facility. The building was originally built as a U.S. Life-saving Service Station. What better place to open a shipwreck museum than in a building that went into action when a shipwreck occurred? Unfortunately, we became entangled in a political tug-of-war involving the station, the State, the borough officials and citizens that had other ideas for the station. Next, we tried to acquire a building on Sandy Hook. That, too, went by the boards as the site is still entangled in a political tug-of-war - still going on today -between those who would develop Sandy Hook in order to restore and reuse the buildings, and those that are against private development on public lands. Recently, members of NJHDA became involved with a citizens group wanting to acquire or otherwise run the former life-saving station in Manasquan. Here, the opposite is true; a private citizens group has all but offered to pay for the renovations, but the borough has neglected to ask the group to cover the costs. The borough will not pay for the remaining repairs owing to the current fiscal climate. By the same token, they will not ask for the help.

Finding a Home at InfoAge

Amid this time, Fred Carl, director of InfoAge, asked NJHDA if they would like to become involved in Wall and establish our shipwreck museum at Camp Evans. NJHDA considered the idea for a while, then agreed that the Wall site may just be the best site for our museum and headquarters. On April 1, 2006, the same day that the Army, the National Parks Service, and Wall handed the "keys" to InfoAge, NJHDA opened its NJ Shipwreck Museum in building 9001. The one-room exhibit served us for two and a half years while we planned the first expansion into building 9032 - the building adjacent to the 9001. For the past six months, we were shut down while we focused our manpower on painting, carpeting, and build displays for the expanded museum.

A timeline throughout the museum offers visitors a means of comprehending shipwreck history in our region and how it relates to the development of radio and radar.

Now, we have what we are looking for - a headquarters that allows us to get NJHDA out of our houses and garages and into a facility that allows for real office and display space. A place where we can work in an environment conducive to research and the study of shipwreck history. Here, we can clean and prepare

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

An Early WWII Radar Account

by Ray Chase
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A recent find of some WWII papers from Western Electric Field Engineer Paul Reveal yielded some interesting tales of his work on radar in the South Pacific early in the war. Apparently he was sent to help with Navy radars in May 1942. Much of his travels were in the company of a GE and a Raytheon field engineer sent on the same mission. As I decipher his notes, Mr. Reveal was to service Western Electric Fire Control Radars while the GE man, David Shirkey was to tend to air search radars and the Raytheon man, Robert Shirley was to support surface search radars. The bulk of Mr. Reveal's notes concern a presentation he made, probably given to the Navy Bureau of Ships (BUSHIPS) who originally requested his help in the South Pacific. I believe that the report was given upon his return a year or two later. The report and presentation outline is marked confidential. I edited and somewhat shortened his report. It gives a good tale of how the Navy had to learn how to use this new "fangled thing" called radar and some of the difficulties they experienced keeping it operational. Once adapted, it served them well and made the difference in many an engagement with the enemy. Mr. Reveal's narrative begins - -

Paul Reveal – Western Electric

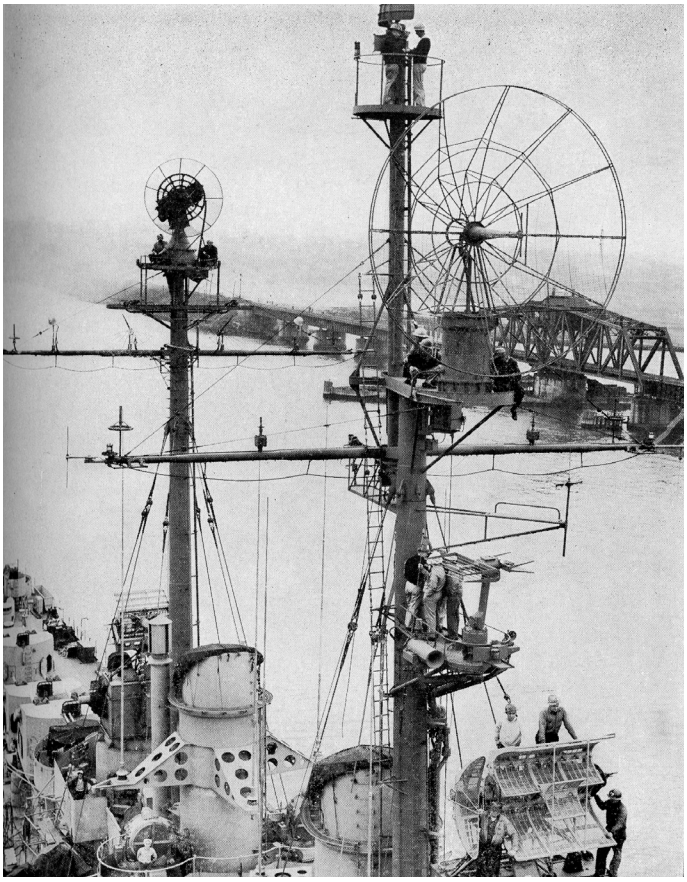
June 1, 42 sent to New Zealand but no radars there – along with a rep. from GE and Raytheon, did nothing for 2 months, bureaucratic snafu with lack of paperwork. Finally got sent to Noumea the capital of New Caledonia – Sept. 42, newspapers were saying that we were not sending anything to south Pacific but as we flew in I never saw so many ships in the harbor; there were 74, many combat vessels with radars on them. Week later it was 100, then a few days later they were gone, off to battle I suppose.

Met by representatives of Admiral Ghormley's staff who told us that radars in the fleet at that moment were not in good condition and there was a lot of work for us to do. Radar officers were not in possession of all the facts about this equipment and enlisted men were no better off. I would venture to say that not one radar in twenty was working anywhere near to the point that it could be 100% efficient.

So from that moment on, for about 5 months, myself and the GE and Raytheon men worked something like 13, 14, 15 hours a day 7 days a week. Noumea is a French colony and not a very clean one. Sewers run down the gutters and the city has the most heterogeneous population that you could imagine. There are people from almost every island in the Pacific Ocean.

Prior to the Naval battle of Oct. 10 or 11, Admiral Scott commander of the task force came down to talk to Admiral Ghormley and ended up taking us civilians back North with him. We worked for 3 days and nights on that task force before it went out to battle.

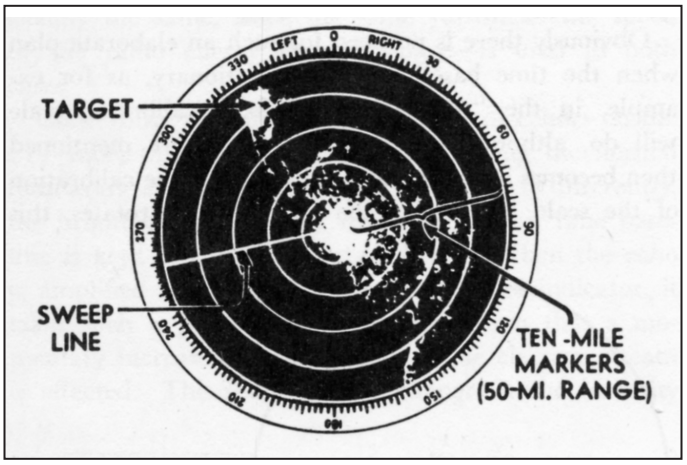
When ships go out for radar practice at night, one of our ships will go over the other side of the horizon and simulate an attack. During these 3 days there was no case where the radar failed to pick up the enemy. Every time the attacking destroyer came within 5 or 6 thousand yards they would open the searchlights on the radar bearing and immediately spot the simulated enemy. Convincing proof that this new gadget would work. So what happened when they went out to fight? Bare in mind that everybody including the Admiral was convinced that this radar would work. What actually happened is that they picked up the enemy ships at 24,000 yards and tracked them beautifully yet they sailed down to point blank range and slugged it out the good old-fashioned way.



This is the type of ship that Paul Reveal worked. On the masts are the several antennas for the air search and surface search radars. The fire control radar antenna is located on the top of the gun turret.

A great many enemy ships were destroyed but we took a beating as well. However every one concerned with that fight, especially the officers were convinced that radar would do the job. The ships that used radar and did not use lights, sank enemy ships, and came away in better shape. The same general pattern was followed in the remainder of the 1942 battles, they would sail in close and slug it out. However radar did increasingly play a role and people were more and more convinced of its value. That ended the battles during the end of 1942 and nothing startling occurred in the first half of 1943. A lot of small engagements would happen where a destroyer would pick up an indication on their screen and check it out often to find an enemy submarine on the surface at night. They would sail toward this object and when within a range of five or six hundred yards switch on their lights with every gun on ship trained on the sub. Few survived this torrent of steel! Quite a lot of that sort of thing happened throughout the first half of 1943 and radar commenced to be known as a mighty force out there.

Along about the end of June 43 one of our cruisers had some trouble and was returning to the States for repairs. Now the Admiral in command of the task force had been listening to all these things about radar and having his ear to the ground decided that the cruiser's SG radar (surface search) should belong to him and generally when an Admiral wants something he gets it. So the SG radar was taken from the cruiser and placed aboard his flagship. There were two PPI radar indicators then, (Plan Position Indicators)* one for normal navigation and perhaps fire control and the other exclusively for the Admiral. Therefore he had at all times the whole story of what was going on over the battle area. That's what happened at Kula Gulf, this particular Admiral was able to see the enemy coming in formation at 25,000 yards on his own radar PPI scope. He was able to maneuver his own force into the most advantageous position with all guns trained on their targets. In this engagement the enemy task force was wiped out with the loss of only one of our ships.



This is a typical PPI Radar display.

Back in 1939 an idea was advanced that the commander of the battle group should be in a well-protected bomber aircraft flying over the battle engagement. This way he would have an overall view of the battle scene could array his ships in the most favorable positions and send orders to individual ships as to how to best maneuver. Obviously this was not done but the use of radar and the PPI scope gave the commander nearly the same thing. (This of course was the prelude to the use of a Combat Information Center [CIC], soon to be in common use aboard ship).

He goes on – I may be working for Western Electric but I am primarily interested in helping the Navy win this war as rapidly as possible. People find the target first with the Raytheon radar that to my mind is the best search equipment made by anyone. Use its range and bearing to bring the Western Electric Fire Control equipment to bear then commence to shoot. If being attacked by air beyond the range of vision, find them first with the General Electric equipment then use the fire control radar. This FC, FD Mark 3 and Mark 4 have had a lot of bad words said about it, mostly unjustified. It is still necessary to aim a gun and that is what you have to do with a piece of radar equipment used for fire control. It has to be directed by their minds, it requires though and effort. It is hard to get people to change their ways but from what happened at the battle of Kula Gulf, the Navy is on the beam.

In response to a question from a Lt. Commander Riley regarding training; Mr. Reveal answered: The best way I can answer that is to tell you what we did in Noumea. We had a very progressive RMO down there, Lt. Commander Albert A. Wellings. He was a brilliant man with a lot of pep. I should know because he ran me ragged for months. These officers from the training schools are not leaving them well enough prepared for their jobs. There is too much slide rule and not enough screwdriver. They are coming out with plenty of theoretical knowledge but they don't know where to find a blown out resistor. The same is true of enlisted men. I think the theoretical training can very well be shortened and turned into a "work" school for the last month or two. Newly trained officers and enlisted men would come to us in New Caledonia fresh from school but scared stiff of the equipment. Each of us three civilians would be assigned 3 or 4 officers and a like number of enlisted men. We became known as the Radar Task Force of the South Pacific. We went to visit ships in our 35-foot launch and when these officers and men left us to go to their own ships they were competent. They had learned how to find trouble and fix it and they learned not to be afraid of it. Radar equipment is really very simple, it is radio, some of the circuits are very intricate and hard to get at but it's still radio.

So ends Mr. Reveal's narrative. Radar was a brand new technology when we entered WWII and our ability to create it and learn how to make the most use of it as keep it operational are a testimonial to the hard work and resourcefulness of the American spirit. Our ability to master it and employ new tactics to capitalize on its advantages, both offensive and defensive was significantly instrumental to our victories in WWII.

As for Mr. Paul A. Reveal, all we know of him is that he was 37 years old when he embarked on his South Pacific adventure. He was a ham, W2ADD in Glen Ridge, NJ. It appears that he worked for radio station WOR after his WWII service.

* The PPI scope was developed early in WWII. It is a CRT display in the form of a circle where the center of the circle is where the radar is located, i.e.; the ship. A radial beam originating at the center of the display sweeps around the CRT as the radar antenna rotates. A long persistence phosphor on the CRT screen holds the display from sweep to sweep. Targets (ships, land masses, aircraft) are displayed as if one were watching from overhead. This gives a two-dimensional picture of what is happening out to the range limitation of the particular radar.

ARRL FIELD DAY 2009

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Once again the Ocean Monmouth Amateur Radio Club will participate in amateur radio's yearly premier operating event called "Field Day". The event is sponsored by the American Radio Relay League, the national voice for radio amateurs in the United States. Advertised as an exercise in emergency preparedness, OMARC will operate its station from the Diana site on Marconi Road in Wall Township. The event will take place on Saturday and Sunday, June 27/28, and is open to the public free of charge.

Vintage Computer Festival

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This year's Vintage Computer Festival is September. 12-13 here at the InfoAge Science Center. The VCF is a celebration of computers from the 1940s to 1980s. It is similar to an antique car show, the difference being that at a car show you can't take test drives! At the VCF all exhibitors are required to have their systems up and running for public demonstrations.

Details for this year's show, the VCF East 6.0, are still being determined. However, as in previous editions of the show, there will be history and technical lectures each morning, followed by public exhibits each afternoon. Adult tickets are $10 for one day and $15 for both days. Admission is free for ages 17 and younger, and there is free parking.

So, if data storage to you means paper tape and punch cards; if you miss your PDP-11 and Apple IIe; if you programmed a mainframe and can identify the IMSAI from "WarGames" -- then you have to attend the Vintage Computer Festival. Heck, just bring your kids to play some Atari.

Special events at this year's VCF include a per-pound book sale, a vintage computer replica workshop sponsored by Briel Computers (www.brielcomputers.com), and -- we're still working on this -- a live homebrew chip fab on our show floor!

The event is produced by Mid-Atlantic Retro Computing Hobbyists (www.midatlanticretro.org). MARCH is a non-profit computer club with a museum at the InfoAge campus. InfoAge itself is a sponsor, as is Livermore, Calif.-based VintageTech (www.vintagetech.com).

More details are available by visiting our website at www.vintage.org or by contacting MARCH president Evan Koblentz at evank@midatlanticretro.com..

INTERNATIONAL MARCONI DAY 2009

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The Ocean Monmouth Amateur Radio Club, OMARC, a support organization of Infoage, has participated in many amateur radio special events from Camp Evans, now Infoage, since the early 90's. These events primarily extolled the accomplishments of Guglielmo Marconi and what went on at this location back in 1914. At that time it was known as the Belmar station and was one of Marconi's receiving stations in a network of stations that encircled the earth.

About 6 years ago, OMARC applied for and was granted status as an official International Marconi Day award station. International Marconi Day is a yearly event sponsored by the Cornish Amateur Radio Club from Cornwall, England. Poldhu in Cornwall was the transmitting site of the first transatlantic communication that was received by Marconi at St. Johns Newfoundland back in 1901. International Marconi Day was first held 22 years ago to commemorate the birthday of Marconi. Had Marconi still been alive today, he would be 135 years old on April 25.

As of January 2009, there were listed 56 official Marconi Day Award stations that were eligible to participate in this years event. Each station must indicate whether or not they will have their station on the air and a check list on the web site is continuously updated to provide this information. All of these award stations have a significant tie in with the history of Marconi and are located throughout the world. The event is not a contest but gives amateurs the opportunity to contact these official award stations for credit toward an award made available by the Cornish Amateur Radio Club. A total of at least 15 contacts with different award stations in voice, code or digital modes is necessary to obtain a certificate of achievement. Awards are also given to short wave listeners who send in verified log copies of the stations they heard.

To find out more about this event, go to www.gb4imd.org.uk/ . There you can read about the histories of the participating award stations as well as the rules governing the event. The event officially starts Friday, April 24 at 8 pm local time and continues on for a 24 hour period. OMARC will have its doors open to the public on Saturday morning the 25th starting at 10 am. So if you're going by the Diana site and the gate is open, please stop in to say hello. The operators there will be glad to show you around and answer any questions you may have.

Continued from page 2.
artifacts for display, organize our expeditions, hold meetings, conferences and fund raisers, and become a point of contact to the public interested in New Jersey shipwreck history. Furthermore, InfoAge allows us to become an extension of the classroom to schools throughout the area.

What We Feature

We feature 800 square feet of reconfigureable display space in three rooms. Visitors enter an orientation room that describes New Jersey shipwrecks, where they are located, why they wrecked, and a little about NJHDA, what we do and how we function. Next, they enter a large room containing artifacts from various shipwrecks off our coast. Our last room features artifacts that describe parts of vessels. With some notice, we can change this space to suit specific display needs, such as a display that features artifacts recovered from a single vessel, or those involved in a historic moment in maritime history.

Our museum features artifacts from area shipwrecks including this insulator recovered from the infamous Morro Castle disaster.

We also feature two rooms where we can prepare artifacts for display after we clean and record them. This is more of the "nuts and bolts" of NJHDA, but it allows us to show visitors what we do and how.

Furthermore, we feature a research archives containing books, articles, photographs, site plans and more. These archives - our library - is publicly accessible by appointment. Although small in size, our archives have already been used to identify shipwrecks and track down family histories.

Lastly, NJHDA associated itself with the New Jersey Museum of Transportation (NJMT) headquartered at Allaire State Park. NJMT runs the Pine Creek Railroad and owns the sunken locomotives found off Long Branch in 1984. The locomotives were recently featured on an episode of Deep Sea Detectives, a program on the History Channel. NJHDA is working with NJMT to raise, conserve and display the two locomotives. The project has come to InfoAge. Soon, parts of the locomotives will be on display here at the InfoAge Science Learning Center.


One room in the museum currently offers visitors an idea of how vessels are constructed, and what kind of items can be found specific to certain kinds of vessels.

We We're Going

When the director of InfoAge gave us the space we currently occupy, he informed us that we would only be there temporarily. Our space would soon become a World War II display showing the way work was done here during the war years on a day-to-day basis. This means that we will be moving from this space to larger space in the nearby H-buildings. These buildings are made up of sixteen 6,000 square-foot rooms that will allow InfoAge, and NJHDA, a chance to spread out and really offer something to our visitors - expanded learning facilities, displays that fascinate, and to provide future generations with an educational facilities that preserves and teaches the history of science and technology, how it was used, who used it, and when. It is not enough to say that radar was developed here. This is history, but it is only half of it. It is not enough to say that ships were equipped with radar. We must show what happens when it is used, and what happens despite its use. That is what makes history come alive.

The Second Expansion

When the time comes for NJHDA to relocate to the H-buildings, we have planned for a display and research facility that offers the visitor the sense that they have walked into our workshop. We will plan on artifacts being on display next to those being cleaned and prepared for future display. We will offer meeting and classroom spaces in both open and enclosed areas. Our books, maps and photographs will be readily available. Everything will be under one roof. The visitor will be able to see artifacts from the wreck of the Mohawk, see a photograph of the Mohawk, and view a site plan of the Mohawk - all within steps of each other. This will truly facilitate shipwreck history research. The amount of space we will get has not been determined, but our hopes are high and our expectations realistic.

InfoAge
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The Newsletter of InfoAge

Inside this issue...

THE WHITE HOUSE

January 12, 2009

Dear Volunteers of InfoAge Science-History Center,

Congratulations on the designation of InfoAge Science-History Center as a Preserve America Steward! The preservation of our historical and cultural resources honors our nation's rich heritage. President Bush and I applaud your achievement.

Your volunteer efforts inspire our fellow Americans and set a great example for communities around the country. Thank you for your enthusiastic participation in the Preserve America initiative.

Sincerely,

Laura Bush
Honorary Chair, Preserve America

Our work to save Camp Evans and give it a future in education has been recognized by the White House. We are in the first group of eleven Preserve America Stewards. We are making it happen. Congratulations to us!

From the Preserve America Stewards Webpage:

The InfoAge Science-History Center has played a pivotal role in ensuring the continued preservation of Camp Evans, site of a pre-World War I Marconi Station and other important advances in the development of modern communications. Since the facility's closure by the Army, the Center's volunteers have worked to ensure its protection during transfer from federal ownership, to rehabilitate its buildings and grounds, and to interpret its rich history to the public.

Fred Carl - InfoAge Director