



# SIGNALS FROM THE SHORE

Association of Old Crows | Garden State Chapter Newsletter

January 2016

## Operation Downfall and the Atomic Bomb(part 2)

by, John T. Cervini | AOC Garden State Chapter

The dropping of two atomic bombs on Hiroshima and Nagasaki forestalled Operation Downfall forever. What many people don't know is the role that U.S. Army engineers at Camp Evans played in the successful bombing missions of Hiroshima and Nagasaki.

The arming and fuzing of the two atomic bombs presented two distinct problems: on one hand, due to their tremendously powerful combination of explosive, incendiary, and biologically destructive effects, nuclear warheads must never be detonated accidentally. On the other hand, the arming and fuzing mechanisms must be designed and engineered so that once a weapon is released and armed it will fire. Therefore, arming and fuzing systems must be absolutely reliable.

The scientists at Los Alamos had determined that both the uranium bomb (Little Boy) and the plutonium bomb (Fat Man) were to be triggered at an altitude of about 2000 feet. This would minimize the ground contaminated fall out, allowing U.S. forces to occupy the area, and ultimately allow the target cities to be rebuilt and occupied. The designated altitude ruled out proximity fuzes, and barometric triggers weren't reliable enough. So the use of radars was investigated.

After some research, the AN/APS-13 "Archie" tail warning radar was selected. The APS-13 was designed and manufactured by RCA; it operated at frequencies of 410 to 420 megahertz (MHz).



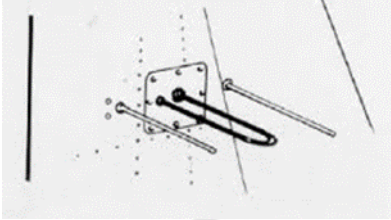
*“ The mystery of life is certainly the most persistent problem ever placed before the thought of man. . . . . The inability of science to solve it is absolute. This would be truly frightening were it not for faith. ”*

*- Guglielmo Marconi*

### In This Issue

- Operation Downfall and the Atomic Bomb
- AOC Lifetime Awards
- Lyons VA Hospital
- Infoage information

## AN/APS-13 Tail Warning Radar



Continued from page 1

Four modified "Archies" were used on each bomb, with a network of relays so that when any two of the units signaled, stored current was sent into the detonators. Size, Weight, and Power (SWaP) became an issue, so Army engineers

from Camp Evans worked with RCA and successfully reduced the number of components (mainly tubes), without sacrificing performance or reliability.



A barometric pressure-sensing switch closed when the bomb passed 7,000 feet; the bombs were dropped from altitudes between 31,000 and 32,000 feet from the B-29 aircraft. A bank of clock-operated timer switches, started by arming wires pulled out when the bomb was dropped, closed 15 seconds after release to prevent the "Archies" from being triggered by radar signals reflected from the delivery aircraft. At an altitude of about 1,800 feet, radar signals emanating from the "Archies" and reflecting from the ground completed the last part of the firing circuit and triggered the detonation signal. The Archie antennas were mounted on the outer cases of both weapons, as seen below.



This is another of the untold stories of critical technical work done by engineers at Camp Evans and their colleagues in Industry.





## Garden State Chapter Board Members Receive Lifetime Service Awards from AOC National

AOC Garden State Chapter Board of Director members Mari Kovach and Guy Albanese were awarded the Col. Anton D. Brees Lifetime Service Award at the Annual Banquet during the 52nd AOC Annual International Symposium & Convention held at the Marriott Marquis DC and Convention Center, Washington D.C. 1-3 December 2015.

The Col. Anton D. Brees award is presented yearly to AOC members in recognition of supreme dedication and outstanding contribution in achieving the aims and purposes of The Association of Old Crows and the goals and aspirations of its members. The award is named after Col. Anton (Tony) Brees USAF (Ret) who truly exemplified the attributes of the AOC Lifetime Service Award.



***Do you have an article you'd like to share?***

Contact Guy Albanese:

[guy.albanese@comcast.net](mailto:guy.albanese@comcast.net)



## **AOC Garden State Chapter visit to Lyons VA Hospital for Holiday Party**

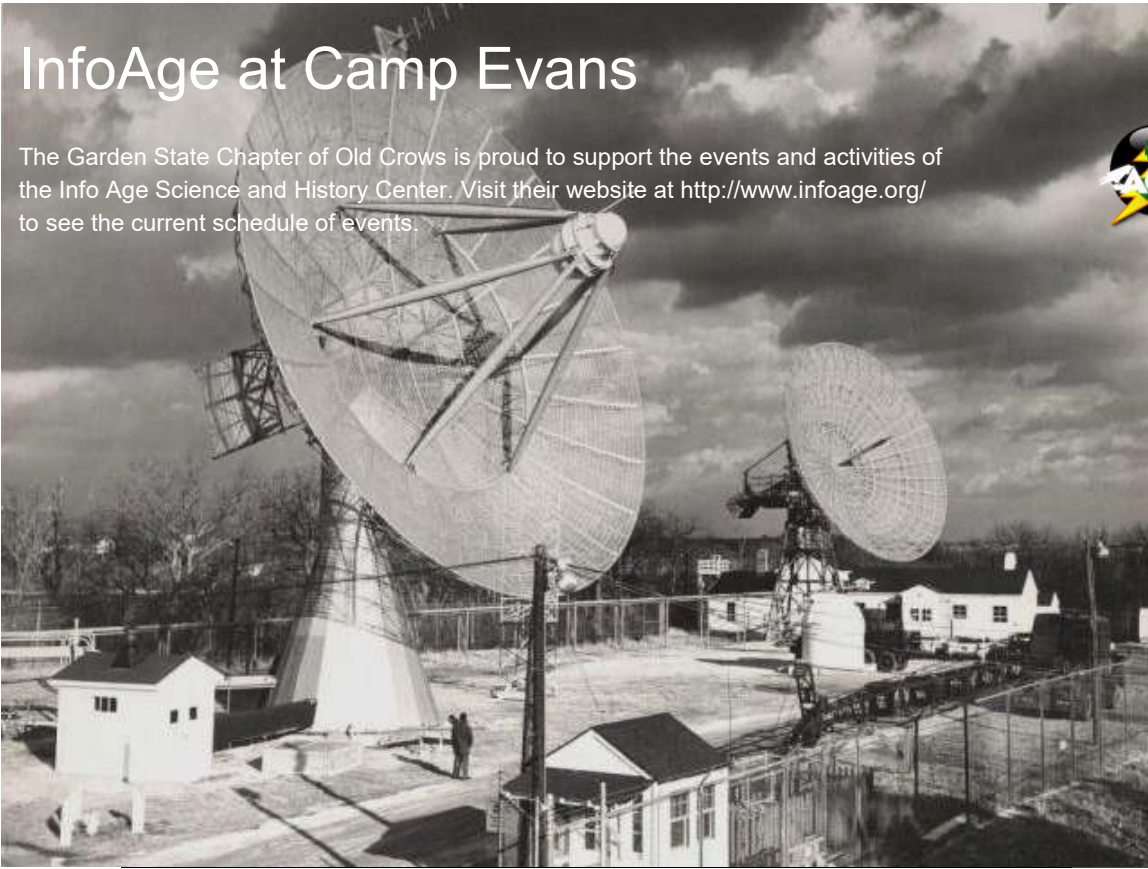
Members of the AOC Garden State chapter attended a Holiday Party at the Lyons Veterans' Hospital in Lyons, NJ on December 9, 2015. Ruth Sposito, Recreation Therapist, greeted the Garden State Chapter members and introduced them to the 26 veterans in her section from various branches of the military. After introductions, the GSC members entertained the veterans with several rounds of bingo. Winners were awarded canteen booklets to use in the local VA Hospital store for sundry purchases. After bingo, cake and coffee was served and great conversation was enjoyed by all. The GSC also presented each veteran with a \$20 Walmart holiday gift card as a token of our appreciation for their service to our nation. Walmart in Manville, NJ was generous in donating \$160 towards the total cost of gift cards. Shown in the attached picture from left to right is Weyman Watson (GSC Member), Ruth Sposito, Jan Moren (GSC BoD), Steve Wallner (GSC Vice President), Michelle Wallner, and Myles Murphy (GSC President). Mari Kovach (GSC BoD) helped organize the event but is not shown in the picture.





# InfoAge at Camp Evans

The Garden State Chapter of Old Crows is proud to support the events and activities of the Info Age Science and History Center. Visit their website at <http://www.infoage.org/> to see the current schedule of events.



## About Us



The Association of Old Crows Garden State

Chapter is a non profit international professional association engaged in the science and practice of Electronic Warfare (EW), information Operations (IO) and related disciplines.

## Contact Us

Association of Old Crows Garden State Chapter

### **Association of Old Crows Garden State Chapter**

P.O. Box 1167  
Eatontown, New Jersey 07724

PLACE  
STAMP  
HERE