

# THE INFO AGE MARCONIGRAPH

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## New Military Artifacts for InfoAge

**John Cervini**

AOC Garden State Chapter • Member InfoAge Board of Trustees • 732-528-7854 • [johntcervini@optonline.net](mailto:johntcervini@optonline.net)



Guardrail Common Sensor Aircraft

InfoAge recently acquired three HUMMWVs that were part of the Army's critical and most effective Airborne Intelligence System known as Guardrail Common Sensor. GUARDRAIL is an Airborne Signal Intercept and Emitter Location System designed to provide tactical commanders with critical battlefield information. Designed to support field commanders, the Army's GUARDRAIL/Common Sensor System, known as GR CS has provided a highly flexible architecture to allow rapid deployment to support contingency operations for more than 40 years.

GR CS integrates, aboard a single aircraft, Communications Intelligence, or COMINT; the Communications High Accuracy Airborne Location System, CHAALS/CHALS-C, for COMINT precision emitter locations; the Advanced QUICKLOOK, or

AQL, for Electronics Intelligence, ELINT, precision emitter location; and the Guardian Eagle technical insertion payload into a single Signal Intelligence System. It is a veritable "antenna farm", as can be seen above. The GR CS improves commanders' situational awareness and contributes to their understanding of the environment by providing COMINT and ELINT intercept, direction finding, precision geolocation, and special signals exploitation. It has been a critical asset supporting troops in Afghanistan and Iraq, and has resulted in many lives saved.

The System's key performance attributes include a real-time COMINT and ELINT collection and high accuracy target location capability in communications and radar frequencies. The Tactical Common Data Link, or TCDL, was updated to Surface Terminal Equipment (STE) and connects

airborne elements with the ground processing element. A satellite remote relay supports rapid deployment, minimum forward footprint, and remote signal processing capability. This allows the Aircraft to operate anywhere in the world and send the highly classified, encrypted data, back to the continental United States for additional processing.

The three vehicles were the improved ground portion of the Guard Rail Common Sensor and contained the STE and the satellite relay equipment. The electronics inside were removed due to its classified nature. Each Hummer was called a Ground Relay Facility, and its function was to maintain an interface with up to three GR CS aircraft platforms via three individual data links. Each GRF consisted of full duplex, digital microwave communications equipment that provided connectivity to three aircraft; and operated with a Class I designation, where Class I mode of operation is defined as Line of Sight missions.

Receiving signals intelligence (SIGINT) and targeting information in as close to real time as possible are essential factors in enabling information dominance and force superiority on the battlefield. Raw data is processed into actionable intelligence, which is then sent back via satellite through either the aircraft or the remote relay facility, ultimately reaching a tactical operations center for use in targeting and battle command decisions.

The vehicles in InfoAge's possession will have a number of uses. One of the Hummers will become part of the expanded EW display, and will explain the nature and technology associate with Signals Intelligence; and illustrate how the Army used the system.

GR CS Ground  
Relay Facility  
Vehicles



*To all of our friends,*

*This year at Camp Evans and InfoAge has been excellent. Tremendous progress has made on many fronts. This has been our best year of progress yet for our non-profit organization. This is due to your dedicated financial support and volunteering.*

*With a grant from the NJ Cultural Trust, 9010A has new heat and air conditioning. Our partner, the Military Technology Museum of NJ dedicated funds and resources to get a certificate of occupancy for their 15,000 square foot museum at InfoAge.*

*An example of unsurpassed volunteerism is the wildly successful Base of Terror. The Halloween event was hailed the best in NJ and second in the tri-state area. We received excellent media coverage. This event was 'fun' raising and the funds generated are being used to make important repairs to preserve Camp Evans.*

*Lastly, I am very proud to announce the arrival of the Camp Evans National Historic Landmark plaque, a gift of the National Park Service. We will dedicate it in the near future.*

*Consider making a donation to help a number of projects currently in the works. Help get the TIROS Dish working again after 45 years. This historic dish is not far from being a tool of space research again. The adjacent structure needs to be brought up to current building codes to use it as a NASA style interpretation center and education facility. Our Marconi 'hotel' is over 100 years old. A gift will enable this famous building to serve another century.*

*Your generosity has brought about excellent results. Consider a year-end gift to InfoAge now to accelerate more progress.*

*Have a safe and happy holiday season,*

*Fred Carl, Director*

*InfoAge Science History Learning Center and Museum*



**A year-end gift  
to InfoAge is a  
gift for the future!**

Remember the past and  
Inspire the future with a  
tax-deductible donation to the  
**InfoAge Science Center!**

**2201 Marconi Road, Wall, New Jersey 07791**



**InfoAge**

Science/History Center  
at Camp Evans, Wall, NJ

InfoAge Science History Learning Center and Museum  
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## The Newsletter of InfoAge Inside this issue...

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## Save The Dates

### Vintage Computer Festival East 10.0

“VCFeX”

Friday, April 17 - Sunday, April 19, Wall, New Jersey

Vintage Computer Festival East is a hands-on, family-friendly celebration of computer history. It offers a book sale, classes, consignment sale, exhibit hall, food, lectures, museum tours, prizes, vendors, workshops, and more.

The event is produced by Mid-Atlantic Retro Computing Hobbyists (MARCH), is hosted by the InfoAge Science Center, and was founded by VintageTech.

This edition's keynoters are Ted Nelson and Bob Frankston.

Dozens of exhibits, classes, workshops, and special attractions will be announced throughout the next few months! (Contact: [evank@midatlanticretro.org](mailto:evank@midatlanticretro.org))

Ticket information will be posted soon.

*For more information about these events, such as admission costs and times,  
call 732-280-3000 or visit us online at [www.infoage.org](http://www.infoage.org).*