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Weather Radio: "SAME" is no longer the same.

National Weather Service Upgrades Hardware; Causes Some NOAA Weather Receivers to Ignore Alerts

WASHINGTON, DC: The first clue came on May 3, 2016, from a loyal **Information Radio Station** (<http://www.theRADIOsource.com/products/information-station.htm>) operator in Pennsylvania. His NOAA weather receiver was not triggering on official tests and alerts. "When the county-specific SAME [**Specific Area Message Encoding** <http://www.nws.noaa.gov/nwr/info/nwrsame.html>] tones go off for an actual weather event, I don't believe the unit is activating," advised Chuck Freese of **Avon Grove Regional Emergency Management** (http://agrem.org/AGREM1670/AGREM_AM_1670.php). After determining that his receiver was working properly, engineers determined that the source of the problem must lay with the source itself: the NOAA Weather Radio broadcast.

Countless hours of testing later – with the assistance of National Weather Service and under the direction of Weather Radio expert Dan Gropper – Information Station Specialists Product and Research Manager Geoff Penna succeeded in proving in practice what had appeared an unlikely hypothesis: something had changed with the NOAA Weather Radio's alerting format, and the change had gone largely unnoticed.

The "SAME" technology incorporates data bursts that are broadcast across NOAA's Weather Radio stations to indicate which hazards are imminent and which counties are being alerted. Since the late 1990s, SAME bursts have been generated by the National Weather Service's venerable "Console Replacement System" referred to as "CRS." But in 2016, the Weather Service began the process of changing out CRS, one weather forecast office at a time, and replacing it with their new Broadcast Message Handler (BMH) system.

The analysis (see below) revealed that the "CRS-SAME" format is not precisely the same as the new "BMH-SAME" format. Missing from the BMH version were three bytes of "zero padding" data that had always followed CRS data bursts. Any NOAA Weather Radio Receiver that keys on the presence of the padding data to authenticate a warning message will not trigger when alerts and tests are issued.

Once the cause became known, it did not take the NWS long to agree with the diagnosis and to design the patch, which in September was installed at each of its 1,025 national Weather Radio stations across the US. According to NOAA's Ron DeWaters, the process should be completed by the beginning of November.

But the National Weather Service also says that it considers receivers which use the original CRS-SAME format and which expect to see those 3 bytes of data to be "defective." They stress that the software patch is not going to be instituted in the permanent SAME specifications going forward; and, therefore, someday there again might be issues with these receivers ignoring alerts. States NWS's Craig Hodan, "Making changes to the current SAME specification to accommodate any manufacturing defects would be inappropriate and difficult to sustain."

Consistency in the NOAA Weather Radio alerting format is not only important because it governs whether home table-top receivers trigger properly, but also because thousands of sophisticated emergency systems count on their reliability – opening FEMA tornado shelters; alerting the public in schools, hospitals and sports venues; turning on tornado sirens.

Information Station Specialists (<http://www.theRADIOsource.com/default.htm>) advises emergency managers with SAME receivers to monitor weekly NOAA Weather Radio tests (RWT) each Wednesday morning – typically between 10 AM and noon local time – to verify that their equipment is receiving and decoding alerts properly;... because now it has been proven that not all "SAME" is the same.

If you wish to comment to the National Weather Service about the issue, you can write your weather forecast office or AAIRO's **Bill Baker** (bill@aairo.org). The **Association of American Information Radio Operators** (<http://www.aairo.org/>) is considering consolidating received comments into a joint response to NWS in the near future.

"Not Controllable"

Health Officials Prepare for Zika Impact as Vaccine Enters Testing Phase

MIAMI, FL: On Tuesday, October 25th, CDC director Tom Frieden delivered a message no one wanted to hear, speaking at the CityLab 2016 Conference in Florida. Attendees learned that it's too late to contain the Zika virus in the United States. Frieden stated that the mosquito-borne virus, which has been detected in 49 of the 50 states, will become endemic in this hemisphere. In Puerto Rico alone, CDC expects up to 25% of the population to become infected. Zika can cause severe birth defects when children are born to mothers infected during pregnancy.

The best-case scenario is that a vaccine will be ready for distribution to the public in 2 to 3 years. Even so, local health officials are getting prepared for vaccine distribution, as it enters testing in the United States and at least two other countries. They expect again to utilize PODs (Points of Dispensing) to quickly distribute the vaccine to at-risk populations, as they have done recently for other outbreaks, such as the swine flu and bird flu.

This time they will be even more prepared. Health officials have asked provider **Information Station Specialists** (<http://www.theradiosource.com>) to develop a portable LED-based changeable message sign solution that can be utilized in association with PODS – as well as health clinics and hospitals – to inform and direct motorists, as they approach and line up for treatment. Design requirements: lightweight, rechargeable power with long cycle time, storable messages; quick setup by one person, folds into trunk of a car, affordable so multiple can be purchased by one agency.

The result is a new tool for public safety/public health – **LIGHTNING LED Message Sign** (theRADIOsource.com/products/sign-lightning.htm). Dubbed a "**LIGHTNING** Sign," the new solution was introduced in 2016 at the NACCHO Preparedness Summit in Dallas in April and the International Association of Emergency Managers Conference in Savannah, GA, this month.

Early adopters have been health departments and hospitals, but its application potential for public safety and emergency management is considered to be significant. The **LIGHTNING** Sign can be used in conjunction with Information Station Specialists' line of portable radio stations, such as, **RadioSTAT** (<http://www.theradiosource.com/products/radiostat.htm>) or **VoiceStar** (<http://www.theradiosource.com/products/voicestar.htm>) or independently as its own communication tool. It can be used to get quick messages in front of motorists as well as pedestrians, making it an ideal way to advise the public at the periphery of all manner of incidents.

According to the company, this product is the only hand-portable LED-based message sign with internal rechargeable batteries (optional). A separate battery pack or power source is not required. The internal battery pack can power the sign's operation for two days and is extremely light-weight due to the inclusion of the newest Lithium Iron Phosphate (LIFEPO) battery technology.
