

RICHARD MUTH
Member, National Emergency Management Association
and
Executive Director,
Maryland Emergency Management Agency

TESTIMONY
Before the

**House Transportation & Infrastructure Subcommittee on Economic Development,
Public Buildings and Emergency Management**

on

**“This is NOT a test: Will the Nation’s Emergency Alert System Deliver the
President’s Message to the Public?”**

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National Emergency Management Association
PO Box 11910
Lexington, KY 40578
Ph. (859) 244-8233

Introduction

Good Afternoon, Chairwoman Norton, Ranking Member Diaz-Balart, and distinguished members of the Subcommittee. I am Richard Muth, Executive Director of the Maryland Emergency Management Agency, and member of the National Emergency Management Association. Thank you for asking me to testify on this important issue: “This is NOT a Test: Will the Nation’s Emergency Alert System (EAS) Deliver the President’s Message to the Public?”

Before being appointed to my current position last year I was with the Baltimore County Fire Department for more than 30 years with 15 years as the County’s emergency manager. I come here today with experience both as a state and local emergency manager. It is an honor to be invited to discuss Maryland’s current initiative regarding EAS – the emergency alert system and the associated critical issues that remain a challenge for the future.

Background

My Agency’s role, as mandated by Maryland State law, is to help protect Maryland residents by coordinating the State response to major emergencies and declared disasters, directing assistance to local jurisdictions when needed, and coordinating assistance with the Federal Emergency Management Agency (FEMA) and other federal partners. Emergency alerts to citizens represent a critical component of that protection.

My interest in the EAS began in September of 2003 while working for Baltimore County emergency management when the system failed residents of the County as Tropical Storm Isabel was pounding the mid-Atlantic region. At about 9pm on the night of September 18, 2003, as Tropical Storm Isabel was pushing huge volumes of water up the Chesapeake Bay, my office wrote an emergency alert message urging residents of coastal areas of eastern Baltimore County to evacuate to higher ground.

Unfortunately, the Baltimore television stations decided not to air the broadcast immediately; instead they treated the alert message as if it were a press release and ran the information as part of the 11pm news. For some in the affected area, that was just too late. By the time the stations announced the evacuation recommendation on the late news we were scrambling to get boats out to stranded residents.

We later learned that broadcasters did not think it appropriate to interrupt a broadcast to the entire Baltimore viewing area for an issue affecting only a few dozen homes. But for those residents it could have been a life and death situation. While there were no deaths or serious injuries, the emergency response did make for some anxious moments for residents and risked the lives of the first responders who rescued them.

Much of this anecdote was avoidable if we could have depended on the media to broadcast the alert in a timely fashion instead of substituting their independent judgment for that of the experts in the field. Throughout the remainder of this testimony, I will outline some of Maryland's accomplishments, our future plans, and areas still under development. I will describe for you the background and current status of EAS inadequacies, Maryland's efforts to address these gaps, and possible solutions.

Current Status of EAS

The EAS is a national public warning system that requires television and radio broadcasters, cable television systems, wireless cable systems, satellite digital audio radio service providers, direct broadcast satellite service providers, and wire line video service providers to offer the President of the United States the capability to address the American public during a national emergency. It replaces the Emergency Broadcast System (EBS) adopted during the Cold War as a means of conveying a Presidential message about a nuclear attack or similar emergency.

Today the Federal Communications Commission (FCC) in coordination with FEMA and the National Weather Service (NWS) implement the EAS at the national level. The President has delegated the administration of determining when to activate the national level EAS to FEMA.

- The FCC's role includes prescribing rules that establish technical standards for the EAS, procedures for EAS participants to follow in the event of activation, and EAS testing protocols.
- The NWS uses the EAS on a local and statewide basis to provide the public with alerts and warnings regarding dangerous weather and other emergency conditions.

The national EAS is designed to enable the President to speak to citizens in the event of a national emergency. Broadcasters are required to have the hardware to participate in the alert system. As leveraged by state and local authorities, EAS has been adapted to issue civil emergency and AMBER (missing child) alerts as well as to relay weather and other emergency alerts over broadcast radio, television, and cable systems. The vast majority of alerts issued over EAS are weather related; however, broadcasters' participation in state and local alerts is voluntary.

The EAS allows broadcasters to send and receive emergency information quickly and automatically even when their facilities are unattended. If one link in the system for sharing emergency alert system information is broken, members of the public have multiple alternative sources of warning. EAS equipment provides a method for automatic interruption of regular programming and in certain instances can provide emergency messages in languages other than English and to persons with disabilities.

Existing Issues

Since September 11, 2001, and the 2005 Gulf Coast Hurricanes, questions have been raised about the reliability and effectiveness of the system. In 2007, the FCC adopted new rules designed to modernize the EAS. The FCC ordered that all EAS participants have the ability to accept messages using a Common Alerting Protocol (CAP) within 180 days of the adoption of a protocol by FEMA. As described by the FCC, the CAP is a “standardized, non-proprietary, data interchange format that simultaneously disseminates consistent all-hazards emergency alerts or public warning messages over different kinds of communications networks and systems.” The goal is to ensure that a single alert can be received and processed by the widest variety of media for re-transmission to all audiences. In order for state broadcasters to receive a CAP message the state needs to have systems capable of sending and distributing CAP messages.

The FCC requires states to have the capability to transmit EAS messages and has an established system that is standard across the country using statewide relay networks among radio stations. The statewide relay is basically a description of the method of message transfer from the main radio stations to participating stations in the state based on their monitoring assignments.

Highlighted gaps in the current system:

- Improvement of coordination between emergency management and the broadcasters to stress the importance of the alerts.
- Funding to provide adequate equipment to participating broadcasters
- Broadcasters “voluntary” participation at the state and local levels.

Maryland Improvements to EAS

To address the current gaps, state and local representatives have worked closely with the broadcasting community on the Maryland State EAS Plan. In anticipation of FEMA adopting a rule currently under consideration, Maryland has revised the EAS plan to include language concerning changes to the Common Alerting Protocol (CAP) and the authority of the Governor or a designee to issue a mandatory EAS message to the entire state or geographically targeted area. All EAS participants will be required to maintain compliance with these rules within 180 days after FEMA adopts the CAP under FCC Rule §11.55. This adoption, or lack thereof, is of main concern.

MEMA, in cooperation with the Maryland-DC-Delaware (MDCD) Broadcasters Association, deployed the Emergency Managers Network (EMnet) in 2004. EMnet is a highly secure encrypted public warning network utilizing satellite and internet connectivity to provide emergency management with the ability to execute activation of EAS for any county, region, or the entire State of Maryland. EMnet also is capable of sending and receiving CAP messages.

Two-way communication is a unique feature of the Maryland EMnet system allowing emergency management agencies (EMAs) to communicate with radio, television, and cable systems before, during, and after a Public Warning without sending an EAS-Activation. EMnet provides the State, county, and local EMAs with a confirmation that each terminal has received the warning message or EAS Activation. The status of all EMnet terminals is also provided to the management terminal at MEMA.

Prior to the deployment of EMnet broadcast stations received EAS activations via a one-way 'daisy-chain' relay from station to station across the State that did have some operational issues. Unfortunately, *due to lack of funding*, approximately 75 broadcast stations, of the 95 Maryland broadcasters, have yet to purchase equipment with an EMnet terminal; this creates a situation whereby a large portion of Maryland must still rely upon a relay of the EAS activation from station to station in order to receive a warning.

MEMA and the MD CD broadcasters have taken the additional step to implement another avenue of EAS transmission to those stations not currently in the EMnet network. It is anticipated that additional stations will be outfitted with IP (Internet Protocol) radios. These radios will receive streaming audio over the internet of the EAS messages generated so that the station need not rely on the station-to-station transmissions.

As part of the State Emergency Communications Committee (SECC), MEMA is encouraging the formation of Local Emergency Communications Committees (LECCs) to draft or update local plans in conjunction with broadcasters to include changes to the state plan. During this plan update the State is encouraging local jurisdictions to reach out to broadcasters and revisit the agreed-upon alerting procedures for EAS in order to streamline the process so all parties involved in an EAS activation are informed and have rehearsed the procedures.

Delivering the President's Message

The President of the United States may choose from available EAS systems when there is an emergency message to deliver to the country. Limitations in the current system, however, may preclude the ability of the government to deliver the message.

In theory, an EAS "Emergency Activation Notification (EAN)" activation code overrides local programming and locks-down all stations into the Presidential Message Audio Circuit so that the President's message may be transmitted. When the message is completed the stations are released from the Presidential Message Audio Circuit and allowed to return to local programming.

On a weekly basis, major stations are required to log into the EAS system to test functionality. Those stations must then transmit the test message to subsequent broadcasters essentially utilizing a daisy-chain method.

A Presidential Emergency Message using EAS has never been issued; therefore there is some probability that difficulties could be encountered at broadcast stations due to the daisy-chain relay system. The daisy-chain relay system severely degrades the quality of the audio message being broadcast. It is likely that many stations may encounter lock-out problems attempting to restore local programming after the message is finished.

EAS Successes and Vulnerabilities

Successes

Broadcasters developed “Amber Alerts” in cooperation with law enforcement which uses the EAS break in radio, television and cable programming to notify the public when child abduction has occurred. The use of the EAS system for Amber Alerts remains a remarkable success.

The industry has acknowledged the former inappropriate use of the EAS for weather bulletins. The NWS utilized EAS to provide notice to the general public regarding forecasted severe weather in addition to actual verified severe weather warnings. The use of EAS to send forecasted severe weather is a miss-use of the System and all EAS ‘weather watch event codes’ have been removed from radio, television, and cable systems activation list.

Vulnerabilities

The most pressing concern by emergency management and broadcasters is that FCC-required “Specific Area Message Encoding” (EAS-SAME) is inaccurate and results in false and misleading warnings. SAME coding applies to certain designated areas but may be too broad geographically. For example, a warning may be sent with a SAME code that includes far too many areas without specificity. There are two fatal flaws with the 13 year old EAS-SAME system.

- The first flaw is that to enter a warning into the EAS System an FCC event code must be selected. Since it would be impossible to develop a stock list of all types of public warning events, the Watch Officer originating a specific public warning must choose an event code that most closely resembles the actual warning event.

For example, a train derailment with a plume of hazardous chemicals requires the evacuation of a six block area. In this example the Watch Officer originating the warning would have no choice by to use one of the following stock event codes; Civil Danger Warning, Civil Emergency Message, Hazardous Materials Warning, Immediate Evacuation Order, Law Enforcement Warning, or Local Area Emergency. None of these codes accurately describes the actual public warning event. Further, the text message that will crawl on television and cable channels will show only the event code title, the county, and the time.

- To enter a warning in the EAS an FCC mandated 'FIPS' county identification code must be selected. There is no way to accurately identify the desired warning area of the county as in the six-block area previously mentioned. Instead under the existing EAS-SAME, an entire county or counties would be warned because the required FIPS code is by county. This has led to the 'Cry-Wolf Syndrome' where many public warnings are ignored since for the most part they do not pertain to the area under an actual warning

If in this example the Watch Officer selects 'Evacuation Immediate,' all television and cable channels in the county will run a text crawl urging everyone to evacuate instead of just the local six block area being warned.

FEMA/DHS Interaction and Support to States Regarding EAS

MEMA has partnered with the MDCD to address gaps in the current system. A lack of financial support, however, remains one of the most significant challenges. In Maryland, there are at least 75 broadcast stations without Maryland EMnet terminals due to a lack of funding. Some funds, especially certain grant regulated funds available for communications systems, may allow for purchase, but are not allowed to be used to sustain the systems. To solve as many of the public warning dissemination problems as possible, Maryland continues to work to bring this situation to the forefront. My presence here today is one way in which we are working toward a solution. FEMA/DHS allows states and urban areas to purchase communications systems through Homeland Security Grant Program. Recipients cannot use those funds, however, for long-term sustainment and maintenance. Dedicated and sustainable funding is imperative in addressing these issues.

Other Federal Initiatives

EAS is just one of several means by which the public is notified and receives emergency warnings and alerts. Under Congressional mandate, FEMA/DHS presently is developing the Integrated Public Alert and Warning System (IPAWS) which will serve as the backbone for local, county, state, and Federal public warnings in the future. The Common Alerting Protocol is being reviewed by FEMA/DHS and will be used as the data file entry for all public warnings in the country once adopted. IPAWS then will distribute the CAP warning file to all disseminators and broadcasters within the desired warning area. The FCC has adopted rules that require broadcast stations to be capable of receiving CAP file warning messages within 180-days from the date that FEMA/DHS adopts CAP. FEMA has yet to adopt similar rules.

Even though CAP may resolve some issues in the present EAS-SAME encoding, the FCC has ruled that all broadcast and cable systems must translate a CAP warning and

revert to the earlier less descriptive SAME warning. Furthermore, the CAP file will provide accurate text information of the warning, an audio message, and video if necessary. The CAP file per current FCC rules must be translated at Broadcast and Cable System into one of the stock 'EAS-SAME Event' codes. This lack of specificity leads to widely inaccurate warnings and potentially misleading information.

FEMA/DHS should mandate that EAS-SAME must be retired and only NOAA Radio be required to continue sending EAS-SAME and the 1060 Hz tone in order to remain compatible with existing consumer NOAA radios and the small percentage that have built in EAS-SAME decoders.

While we continue working diligently to expand our alert and preparedness several issues have been identified that must be addressed at the Federal level either by Congress or the Administration:

Recommendations

As many challenges have been addressed during this testimony, recommendations for improvement are the hallmark of strong public policy.

- Unnecessary delay is created since both the FCC and FEMA remain in control of EAS issues. FEMA has not adopted needed regulations especially in regard to mandatory participation in broadcasting messages from a state governor. While FEMA is on the encouraging path of enhancing public alerting in general, the progress is much too slow. The FCC administers the legacy system that is in place now but seems reluctant to allow for new procedures and technological capabilities. FEMA should be directed to adopt needed regulations and that both the FCC and FEMA would work together in a more expeditious fashion.
- Improved leadership and coordination issues must be resolved at the Federal level between the FCC and FEMA. Coordination needs to be communicated down to the state and local levels.
- Current grant funds for sustainability of EAS and other complementary alert systems such as the National Capital Region (NCR) text alert, ROAM Secure, and Reverse 911 are small or non-existent. Provide more flexibility for this important component of emergency management capabilities. It also is vital that States are allowed to manage their own requirements.

Thank you for the opportunity to present testimony on this important topic, and thank you for your support of emergency management. I welcome any questions you may have, and as always NEMA remains a ready resource for the Committee as you tackle the tough issue of catastrophic disaster response and recovery.