

## CHAPTER 4: HOW NOAA WEATHER RADIO FITS INTO THE NATION'S ATTACK ALERT SYSTEM

### **4.1: NOAA Weather Radio and EAS Complementary Systems**

Most Americans have at least a passing familiarity with the Emergency Alert System, known before 1997 as the Emergency Broadcast System, by reason not only of its periodic test messages, but also the weather bulletins it relays. When a severe storm warning is issued, anyone tuned to the commercial broadcast media is likely to hear of the impending danger as a result of an EAS program interruption originated by the local National Weather Service office. However, the primary mission of the EAS was always to provide an emergency, “last-ditch” outlet for presidential addresses in the event of enemy attack or other extremity of circumstance. The EAS’s use as a mass-media weather-alert system is a mere consequence of the network’s capabilities to serve in that capacity.

The founding missions of NOAA Weather Radio and of the EAS are thus quite different. Still, the two media are complementary alert systems sharing common digital signaling protocols, and since in some respects the two networks are beginning to merge, it seems well that we should review the history of the EAS’s development, of its capabilities and limitations, and of the manner in which NOAA Weather Radio fits into the EAS architecture and mission.

## 4.2: CONELRAD

CONtrol of ELectronic RADiation was America's first national alert system, established by President Harry S. Truman in 1951 to give the federal government nationwide media control in the event of a Soviet bomber attack on the United States.<sup>212</sup> If activated, the system required radio transmitters, commercial and amateur, to cease normal operations so that Soviet air crews would be thwarted in any attempt to use radio signals as homing beacons. Designated CONELRAD stations would broadcast on either 640kHz or 1240kHz to keep the public informed.<sup>213</sup> Regulations made it obligatory that all radios sold after 1953 have the CONELRAD frequencies 640 and 1240 kHz marked with small triangles on their dials—so-called “CD marks,” for Civil Defense—to make finding the frequencies easy.<sup>214</sup> By the early 1960s the advent of a Soviet missile capability made the CONELRAD system obsolete, so this requirement was dropped when the CONELRAD system gave way to the Emergency Broadcast System.<sup>215</sup>

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<sup>212</sup> Federation of American Scientists. “Control of Electronic Radiation: CONELRAD.” 29 Apr. 1998. 17 Nov. 2002  
<<http://www.fas.org/nuke/guide/usa/c3i/conelrad.htm>>.

<sup>213</sup> Ibid.

<sup>214</sup> Ibid.

<sup>215</sup> Ibid.

### 4.3: EBS

The Emergency Broadcast System was established in 1963 by President John F. Kennedy to allow the president directly to address the entire nation in the event of a national emergency.<sup>216</sup> The EBS was an all-analog transmission system in which commercial broadcast stations were required to possess specified equipment, which relied upon operator control, to receive and re-transmit emergency messages originated from the president or his designated spokesperson. If activated for a national emergency, the EBS would link the federal government to 33 broadcast and cable networks and wire services.<sup>217</sup> Thirty-seven individual broadcast stations, located outside anticipated nuclear-blast zones,<sup>218</sup> were designated as Primary Entry Point (PEP) facilities which would relay the messages down a “daisy chain” of subordinate stations required continuously to monitor the PEP stations for possible messages.<sup>219</sup> Today, 34 PEP stations,<sup>220</sup> “typically all-news AM stations with powerful transmitters”<sup>221</sup> and outfitted with “emergency generator, fuel, and other equipment”<sup>222</sup> to ensure signal integrity,

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<sup>216</sup> Federation of American Scientists. “Emergency Broadcast System.” 12 July 1999. 17 Nov. 2002 <<http://www.fas.org/nuke/guide/usa/c3i/ebs.htm>>.

<sup>217</sup> Federal Communications Commission. “Report and Order and Further Notice of Proposed Rule Making: Amendment of Part 73, Subpart G of the Commission’s Rules Regarding the Emergency Broadcast System, FCC 94-288.” 9 Dec. 1994. 17 Nov. 2002 <<http://www.fcc.gov/Bureaus/Miscellaneous/Orders/ormc4004.txt>>.

<sup>218</sup> Ditt.

<sup>219</sup> Federal Communications Commission. Ibid.

<sup>220</sup> Stine, Randy J. “Terrorism Attacks Cue EAS Debate.” *RW Online*. 26 Sept. 2001. 17 Nov. 2002 <<http://www.rwonline.com/reference-room/special-report/rw-eas2.shtml>>.

<sup>221</sup> Poulsen, Kevin. “Insecurity Plagues Emergency Alert System.” *Security Focus Online*. 10 Sept. 2002. 17 Nov. 2002 <<http://online.securityfocus.com/news/613>>.

<sup>222</sup> National Science and Technology Council, Committee on Environment and Natural Resources. *Effective Disaster Warnings: Report by the Working Group on Natural Disaster Information Systems, Subcommittee on Natural Disaster Reduction*. November 2000. Appendix 2: pg. 45.

remain “the only primary presidential outlet” in the modernized Emergency Alert System architecture,<sup>223</sup> more about which below.

With implementation of the EBS, president Kennedy allowed, for the first time, the nation’s commercial-broadcast alert system to be used for transmitting official, preemptory bulletins about state and local emergencies,<sup>224</sup> including weather warnings. This authorization led to agreements between the Federal Communications Commission, the Federal Emergency Management Agency, and the National Weather Service, which specified procedures for ensuring system access to authorized state and local agencies. From 1975 to 1994, more than 20,000 activations of the EBS were reported to the FCC, with every state and territory originating activations,<sup>225</sup> 70 percent of which were in response to weather emergencies.<sup>226</sup>

#### 4.4: EAS

Implemented by the Federal Communications Commission in January 1997, the Emergency Alert System constitutes today’s digitally capable incarnation of the analog, cold-war era EBS.<sup>227</sup> The EAS offers a number of concrete operational improvements over the older EBS technology:<sup>228</sup>

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<sup>223</sup> Ditt.

<sup>224</sup> Federation of American Scientists. “Emergency Broadcast System.” 12 July 1999. 17 Nov. 2002 <<http://www.fas.org/nuke/guide/usa/c3i/ebs.htm>>.

<sup>225</sup> Federal Communications Commission. “Report and Order and Further Notice of Proposed Rule Making: Amendment of Part 73, Subpart G of the Commission’s Rules Regarding the Emergency Broadcast System, FCC 94-288.” 9 December 1994.

<sup>226</sup> National Weather Service Forecast Office, Marquette, MI. “NOAA Weather Radio Questions and Answers.” 17 Nov. 2002 <<http://www.crh.noaa.gov/mqt/nwr/qa/>>.

<sup>227</sup> Miller, Kiesha. National Communications System. “FCC’s New Emergency Alert System (EAS) Replaces the Old Emergency Broadcast System (EBS).” 21 July

- Automatic operation  
The EAS digital system architecture allows broadcast stations, cable systems, participating satellite companies and other services to send and receive emergency information quickly and automatically even if those facilities are unattended.
- Redundancy  
The EAS requires monitoring of at least two independent sources for emergency information.
- Reduced intrusiveness  
EAS tests are shorter and less obtrusive to viewers and listeners. Therefore, when people do hear or see actual emergency messages, they will take them more seriously.
- Second language  
EAS digital messages can be automatically converted into any language used by the broadcast station or cable system.

Anyone who has ever heard EAS activations on radio or television may recall the four-part format: 1) a digital burst, iterated three times (the three “duck-quack” sounds), which allow equipped receivers to decode a variety of information relating to the bulletin, including the identity of the originating agency, the type of emergency, the location(s) affected by the announcement, and the anticipated duration of the emergency condition; 2) a two-frequency audio “attention tone” (853 and 960 Hz.<sup>229</sup>) lasting from eight to 25 seconds; 3) the actual bulletin content, rendered in audio or text; and 4) another set of three digital bursts signaling “end of message.”

FCC regulations now make it incumbent upon all radio and television stations and cable systems to possess EAS decoders, and for those decoders to monitor at least two

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1998. 17 Nov. 2002

<[http://www.ncs.gov/n5\\_hp/Customer\\_Service/XAffairs/NewService/NCS9833.htm](http://www.ncs.gov/n5_hp/Customer_Service/XAffairs/NewService/NCS9833.htm)>.

<sup>228</sup> Federal Communications Commission. “Fact Sheet: The Emergency Alert System.” 25 Nov. 2002 <<http://www.fcc.gov/eb/easfact.html>>.

<sup>229</sup> Federal Communications Commission. *Part 11 – Emergency Alert System*. Subpart B, Sec. 11.31. “EAS Protocol.” 17 Apr. 2000. 25 Nov. 2002 <<http://www.fcc.gov/eb/eas/47part11.doc>>.

EAS signal sources.<sup>230</sup> Regulations stipulate that broadcasters wishing to remain on the air during national emergencies are required to relay national-level bulletins; any wishing to opt out of EAS operations are required to go off the air during such emergencies.<sup>231</sup>

The majority of EAS activations that do take place involve local or regional weather emergencies, and thus the National Weather Service is by far the most prolific and experienced originating agency for EAS bulletins. Other activations can involve disparate governmental agencies with responsibility for issuing other types of bulletins, for wildfires, hazardous-materials spills, radiological releases, civil unrest, and even child abductions (so-called “AMBER Alerts,” for which the Federal Communications Commission just this year allocated a distinct EAS event code—“CAE” for child abduction emergency<sup>232</sup>). See Appendix B, pp. 126 and 127, for the current list of valid EAS codes.

A problem with EAS as currently regulated is that for non-national emergencies, EAS participation is voluntary. Not all stations will interrupt programming for weather or other local or regional emergency announcements, and this is an impediment to the creation of a truly national alert system. Unfortunately, EAS equipment upgrades that allow the new codes to be properly interpreted are, like EAS participation itself, largely voluntary. The following excerpt from the FCC’s recent EAS codes revision document is illustrative of the current regulatory climate:

Recent events in this country have highlighted the importance of maintaining an alert system which affords national as well as state and

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<sup>230</sup> Ibid. Sec. 11.52(d).

<sup>231</sup> Ibid. Subpart C, Sec. 11.41. “Participation in EAS.”

<sup>232</sup> Federal Communications Commission. *Report and Order: Amendment of Part 11 of the Commission’s Rules Regarding the Emergency Alert System*. 26 February 2002. Sec. 19, 20: “Child Abduction Emergency Code.”

local authorities the capability to provide emergency communications and information to the American public immediately via broadcast stations and cable systems. Nevertheless, we recognize that participation in EAS at the state and local levels remains voluntary and we do not wish to impose additional costs or burdens on broadcast stations and cable systems that may have the unintended effect of discouraging voluntary participation in state and local EAS activities. Therefore, we will not require broadcast stations and cable systems to upgrade their existing EAS equipment to add the new state and local event codes and location codes that we are adopting in this proceeding. Rather, we will permit broadcast stations and cable systems to upgrade their existing EAS equipment to add the new event and location codes on a voluntary basis until the equipment is replaced. All existing and new models of EAS equipment manufactured after August 1, 2003 will be required to be capable of receiving and transmitting the new codes. We believe that this approach strikes an appropriate balance between promoting public safety by permitting enhancements to state and local EAS and ensuring that any such enhancements do not result in reduced voluntary participation in state and local EAS activities.<sup>233</sup>

It seems at least a reasonable proposition that in light of the new security concerns facing the nation, the FCC's preferred, "balanced" approach may no longer be appropriate. Furthermore, any EAS decoders that are not *immediately* upgraded to properly interpret new codes are likely to set off a generic alarm when any such unrecognized code is intercepted—precipitating an "unidentified alert," or some indication of that nature, depending on the make and model of decoder unit. This can lead to upset in commercial broadcast station operations, and even tempt broadcasters to deactivate their EAS decoders, which, ironically, discourages EAS voluntary

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<sup>233</sup> Ibid. Sec. I: 1.

participation—the opposite of the stated intent of the rule-makers. Krudwig said the Federal Communications Commission had made such a “mess” of the EAS rules that the Commission’s incompetence had figured prominently in his decision to retire from the federal government.<sup>234</sup>

For all of its regulatory problems, the EAS is still an excellent service in comparison with the old EBS, primarily owing to the EAS’s digital protocol, which was based on the digital-burst package originally developed by Krudwig for NOAA Weather Radio: WRSAME. By extending that digital capability from NOAA Weather Radio to the nation’s entire Emergency Alert System, the government has removed all technological impediments to the manufacture of radio receivers and other kinds of consumer-electronics devices that can monitor for and act upon government-issued warnings. For example, there no longer exists any technical reason why makers of car stereos cannot produce radios that will monitor both NOAA Weather Radio and commercial radio frequencies, and turn themselves on when an EAS activation is detected. Furthermore, consumers could be empowered to program their devices, screening event codes so that the devices will activate only for certain types of alerts. That such devices are not yet common in the marketplace is, according to Boezi, primarily a matter of economics. Including such EAS-monitoring capabilities in consumer devices would likely cost several dollars per unit, a prospect at which electronics manufacturers have balked for years.<sup>235</sup> But Krudwig says another reason is product liability: since EAS participation in all but national-level emergencies is voluntary (and no national-emergency bulletin has ever been sent), even if a consumer

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<sup>234</sup> Telephone interview. 10 November 2002.

<sup>235</sup> Telephone interview. 7 July 2002.

possessed an EAS-decoding AM/FM receiver, there is no assurance that local or regional bulletins would be relayed, and consumer-electronics makers would be faced with trying to sell an alert feature that may or may not perform, depending on the station to which it was tuned. If consumers want a radio with alert capability, they must for the foreseeable future rely on NOAA Weather Radio exclusively.

#### **4.5: The EAS and NOAA Weather Radio, Post-9/11**

NOAA Weather Radio dovetails easily with the EAS in its digital signaling protocols, its all-hazards warning utility, and its national-security potential. Weather Radio's WRSAME digital capability provides the National Weather Service with a direct gateway into the EAS network. However, the degree of EAS involvement by any particular National Weather Service office depends upon arrangements made by state and local authorities in that region. Since the technology for intermingling the networks is relatively new (at least, in terms of the speed of governmental change), states are still developing their own access arrangements with their respective local National Weather Service offices. Because these agreements vary in nature with locality, and because the agreements change over time, it is difficult to find straight answers to questions about just how NOAA Weather Radio fits into the nation's EAS network nationwide. Still, some procedures are in place governing the use of NOAA Weather Radio as a warning disseminator in the event of terrorist attack, and even nuclear attack. (See Appendix C starting on page 128 for an excerpt from the NWR operations manual

specifying attack procedures.<sup>236</sup>)

Neither the EAS nor its predecessors, the EBS and CONELRAD, have ever been activated for their primary national-security purpose of transmitting a preempting message from the upper echelons of our national government.<sup>237</sup> The fact that no EAS activation took place during the 11 September 2001 terrorist attacks gave rise to some controversy and Internet discussion. But *RW Online*, an Internet portal of *Radio World Newspaper*, reported on 26 September 2001 that such an activation might have caused more harm than good.<sup>238</sup> Almost as soon as it was clear that a terrorist attack had taken place, it was over and the damage had been done. Since the mass media were fully engaged on the story, President Bush reportedly chose not to issue an unprecedented Emergency Alert Notification—an EAN message, in the emergency-services parlance—when such an activation might only have needlessly increased panic in an already-stressed and fully attentive nation.<sup>239</sup> Dr. Peter Ward of the Partnership for Public Warning (more about which organization below) tells a different story: “We have recently learned that the FAA called Norad and Norad called FEMA 19 minutes before the second plane hit the second tower, and 13 minutes before the third plane hit the Pentagon. (www.norad.mil press releases 2001 gives the times planes were scrambled.) The FEMA Emergency Operations Center should have notified the states and the states should have issued an EAS alert. New York does not have an EAS plan. Washington, DC

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<sup>236</sup> National Weather Service. “Operations and Services Dissemination Policy NWSPD 10-17.” *National Weather Service Instruction 10-1710*. 1 October 2002. Pp. F-1, F-2.

<sup>237</sup> Federal Communications Commission. “Fact Sheet: The Emergency Alert System.” 25 Nov. 2002 <<http://www.fcc.gov/eb/easfact.html>>.

<sup>238</sup> Stine.

<sup>239</sup> Ibid.

does and the FEMA EOC only needed to pick up the WAWAS [Washington Area Warning System] phone...so it turns out the system failed primarily because of human failure and the lack of an EAS plan in New York.”<sup>240</sup>

Regardless of the causes for EAS’s non-utilization during the terrorist attacks, post-9/11 discussions within and outside the government have intensively explored possible future use of the system for such alerts. The nation’s new Homeland Security Advisory System provided an impetus for some of that discussion. On 18 March 2002 the Department of Justice announced the Homeland Security Advisory System (hereafter HSAS), which includes a graduated, color-coded scheme of threat levels—low (green); guarded (blue); elevated (yellow); high (orange); and severe (red). The announcement stated, “The HSAS would provide a comprehensive and effective means to disseminate information to Federal, State, and local authorities and to the American people regarding the risk of terrorist acts.”<sup>241</sup> In its announcement of the system, the DOJ solicited comments from the public, to which at least eight manufacturers of Weather Radio receivers responded as a group.<sup>242</sup> In addition, the Partnership for Public Warning, a public/private non-profit institute of government and industry warning-dissemination

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<sup>240</sup> Email to the author. 10 November 2002.

<sup>241</sup> United States Department of Justice, Office of the Attorney General. “Notice: Homeland Security Advisory System.” *Federal Register*. 67.52 (2002): 12047.

<sup>242</sup> NWR System Advocates. “Comments to the Department of Justice on Homeland Security Advisory System.” 26 April 2002. In a cover letter attending their comments, the members of NWR Advocates identify themselves as RadioShack Corporation, Midland Radio Corporation, Topaz3, LLC, ShareCom Inc., SIMA Power and Communication, The Whistler Group, Inc., and Cobra Electronics.

experts,<sup>243</sup> convened a workshop and issued comments.<sup>244</sup> Both documents are illuminating and worthy of extensive quotation.

The weather-radio receiver manufacturers, who in their submission refer to themselves as “NWR Advocates,” state that the NOAA Weather Radio transmitter network is now capable of being received by approximately 90 percent of the U.S. population, and they understandably claim that “the benefits of disseminating the warnings from HSAS through the existing NOAA Weather Radio system are substantial.” Their recommendations call specifically for the administration to endorse NOAA Weather Radio as a “primary means” of HSAS dissemination; for model state-federal agreements ensuring access to the Weather Radio network by all appropriate agencies; and for incorporation of the HSAS threat-condition terminology into the Weather Radio warning and events codes system. (For a fuller rendering of the NWR Advocates’ comments, see Appendix D: Excerpted Comments from NWR Advocates to the United States Department of Justice Concerning the Proposed Homeland Security Alert System, starting on page 130.)

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<sup>243</sup> The Partnership for Public Warning (PPW) included the following organizational information in its comments submission: “The Partnership for Public Warning was incorporated in January 2002 as a 501©3 public/private non-profit institute as recommended in 2000 by the National Science and Technology Council. Our mission is to promote and enhance efficient, effective, and integrated dissemination of public warnings and related information so as to save lives, reduce disaster losses and speed recovery. We anticipate being chartered soon by FEMA as a Utilized Federal Advisory Committee...” Participants in the workshop which developed the PPW comments document included university researchers, representatives of private companies, the American Red Cross, the National Science Foundation, and personnel from federal agencies including the FCC, FBI, FEMA, USGS, NRC, and the National Weather Service.

<sup>244</sup> Partnership for Public Warning. “Partnership for Public Warning Comments.” 5 July 2002. 17 Nov. 2002  
<[http://www.PartnershipForPublicWarning.org/ppw/docs/ppw\\_response.pdf](http://www.PartnershipForPublicWarning.org/ppw/docs/ppw_response.pdf)>.

Research leading to this paper would appear to bear out the case made by the NWR Advocates. Their recommendation for access agreements between the Weather Service and all government agencies potentially requiring transmission privileges into the Weather Radio network is especially worthy, as heretofore such arrangements have, as noted, been a matter of piecemeal, localized—or, at best, state-wide—initiatives. Now that technology has placed within the grasp of any warning agency a potent, national alert system, already installed, and featuring a self-activating alarm capability, there is little case to be made for continued failure to standardize such access arrangements on a nationwide basis. And yet progress toward making full use of NOAA Weather Radio's new digital dissemination architecture continues to be stalled owing to bureaucratic inertia.

For its part, the Partnership for Public Warning (hereafter PPW) called the HSAS a “commendable first step” toward addressing the nation's need for a terrorist warning system. However, the panel convened by the PPW was troubled by the proposed system's failure to distinguish between the “probability” implied with a threat and the “risk” implied (risk meaning, in disaster-preparedness terms, the potential damage that could result). This vagueness in terminology is apparent when one considers the graduated scale built into the HSAS: if, say, a bulletin announced that the threat level had been elevated, would the public take that to mean that there is then a greater *likelihood* of an attack, or that the likelihood might remain the same, but with an anticipated target of higher value? The PPW workshop observed in its comments that the HSAS proposal deliberately muddles the two concepts: “According to the HSAS, ‘The higher the Threat Condition, the greater the risk of a terrorist attack. Risk includes both the probability of

an attack occurring and its potential gravity.’ This mechanism for changing threat levels is flawed not only by being vague, but also by combining the gravity of the threat and the probability of its occurrence into one scale. Clearly, these two factors can vary independently.”<sup>245</sup>

This criticism may seem picayune to readers unfamiliar with the art and science of warning communication, but it goes to the heart of dissemination sociology, long-researched and understood by federal authorities who took no part in developing the HSAS. Mileti and Sorensen drew upon more than 200 studies of warning systems and warning responses to conclude from their survey that warnings, to be useful and credible, must be specific in describing the threat (its nature, location, time frame, etc.) and in giving practical response advice.<sup>246</sup> They also observed a necessity that warning officials formulate objective criteria for evaluating threats and deciding whether to warn.<sup>247</sup> It is not clear how closely in compliance with these principles the HSAS can eventually be brought. It is clear that the current HSAS abrogates numerous principles Mileti and Sorensen identified. Krudwig said, “The scheme was ill-planned. Now there’s a whole new level of terminology that the public needs to be educated about. No organization on earth is more experienced in warning dissemination than the National Weather Service, but the Weather Service was not even consulted” before HSAS made its public debut.<sup>248</sup>

In fact, the PPW pointed out that a great deal of already-completed government research should be called upon in developing an improved HSAS. The PPW stated that

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<sup>245</sup> Ibid.

<sup>246</sup> Mileti, Dennis S. and John H. Sorensen. “Communication of Emergency Public Warnings: A Social Science Perspective and State-of-the-art Assessment.” Oak Ridge National Laboratory. Aug. 1990: (3) 6-12.

<sup>247</sup> Ibid.

<sup>248</sup> Telephone interview. 9 March 2002.

the National Weather Service had “spent years developing a sequence of terms that imply different amounts and specificity of risk”—terms to which the public is already accustomed:<sup>249</sup>

1. **Warning:** The hazardous event is occurring or is imminent. The public should take immediate protective action.
2. **Advisory:** An event, which is occurring or imminent, is less severe than for a warning. It may cause inconvenience, but is not expected to be life threatening or property threatening, if normal precautions are taken.
3. **Watch:** Conditions are favorable for occurrence (development or movement) of the hazard. The public should stay alert.
4. **Outlook:** The potential for a hazard exists, though the exact timing and severity of the hazard is uncertain.
5. **Statement:** Detailed follow-up information to warnings, advisories, watches, and outlooks is provided.
6. **Forecast:** This is a prediction of what events are expected to occur.”

These seemingly esoteric distinctions made by the PPW are gravely important if the HSAS is to be brought into conformity with, and to take full advantage of, the already-existing warning infrastructure in place in the United States, especially as HSAS relates to EAS or NOAA Weather Radio dissemination. Among its recommendations, the PPW stated that “a specific code or codes for terrorism and specific language related to that code must be implemented through the Report and Order process at the FCC that would lead to reprogramming EAS encoder/decoders at every radio and television station and cable head end.”<sup>250</sup> Furthermore, the PPW recommended against any EAS activation for bulletins of lesser urgency than an elevation from condition “orange” to “red.”

We are left wondering whether, how, and when the HSAS will be modified to conform to the nation’s EAS, especially now in the earliest days of the Homeland Security office’s Congressional mandate. Scott Gudes, a NOAA Deputy Undersecretary

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<sup>249</sup> PPW Comments.

<sup>250</sup> Ibid.

for Oceans and Atmosphere, in post-9/11 Congressional testimony concerning NOAA's role during and after the terrorist attacks, spoke of the National Weather Service's preeminent experience in American warning dissemination, saying, "One of the NWS's greatest assets is its ability to deliver hazard emergency messages to the public, both directly through the NOAA Weather Radio and through our partners." He added some promotional comments regarding NOAA Weather Radio, saying that it "triggers the Emergency Alert System, which allows these emergency messages to be received and re-disseminated through the media almost immediately."<sup>251</sup> Yet Krudwig said that the National Weather Service has never connected the "electronic plumbing" to make NOAA Weather Radio truly seamless with the EAS.<sup>252</sup> Herbert White, Dissemination Services Manager with the National Weather Service, stated in an 11 November 2002 email that "a direct audio connection does not exist through NOAA Weather Radio for Presidential messages. NWR is the primary means for NWS alerts to activate the Emergency Alert System and non-weather emergency messages will be relayed over NWR at the request of Federal, state or local officials, but this does not include a direct broadcast of Presidential or national EAN messages at this time." Donald Wernly, Chief of the Weather Service's Performance and Awareness Division, allowed in an email that "as noted by the Partnership for Public Warning, this nation does not have a national warning system nor consistent warning terminology."

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<sup>251</sup> Federal Document Clearing House Congressional Testimony. "Statement of Scott B. Gudes, Acting Under Secretary for Oceans and Atmosphere, National Oceanic and Atmospheric Administration, Department of Commerce, before the Subcommittee on Oceans, Atmosphere and Fisheries, Committee on Commerce, Science, and Transportation, United States Senate." 11 October 2001.

<sup>252</sup> Telephone interview. 10 November 2002.

Clearly, a number of obstacles stand between the nation and a fully integrated Homeland Security warning system, with NOAA Weather Radio playing its full potential role. One source, highly placed in the Commerce Department—a person whose purview includes Weather Service administration—said a primary impediment to making NOAA Weather Radio a truly “all-hazards” warning system, fully integrated into the EAS’s larger national-security function, is the Weather Service’s ownership of the network, and its bureaucratic reluctance to share control of it. This person, who insisted on anonymity, said, “It’s a turf issue. There are concerns within the Weather Service over who will control what warnings go out. Everyone is waiting for high-level leadership. Most of the people who concern themselves with NOAA Weather Radio are below the pay grade where policy decisions get made. [President] Bush and [Homeland Security Secretary Tom] Ridge know about the network, but they have bigger issues on their minds right now.” Moreover, this person is not sanguine about the chances for constructive change in the near term, especially as various commercial interests begin to push for their own competing dissemination visions, which do not necessarily include NOAA Weather Radio. In referring to the DOJ’s call for dissemination of Homeland Security alerts, this person said, “Government moves at glacier speed. And a lot of people want a piece of this. There are many commercial entities trying to sell new dissemination concepts, and lots of money is at stake. Big bucks.”

Ken Putkovich, currently Chief of the Weather Service’s Dissemination Systems Branch and the NOAA Weather Radio National Program Manager, said, “In the future I hope we’ll be more pro-active about approaching local and state authorities, and telling them it’s easy to establish an access agreement.” He pointed out the Weather Service’s

clear obligation to screen access requests carefully — “there are always questions of security” — so for now, when a non-weather message is proposed for broadcast, the Weather Service personnel who control the Weather Radio consoles “need to hear from authorities with whom they have an established relationship.”<sup>253</sup> Putkovich said that last year he proposed the development of a new interface to the NOAA Weather Radio network that would allow local emergency-management officials to break into Weather Radio broadcasts in their area directly, without having to involve the intervention of Weather Service personnel. But, as previously noted, the wheels of government grind slowly. “We’re trying to get it worked into the fiscal year ‘04 or ‘05 budget,” Putkovich said. Moreover, this new access interface would only lay the technological groundwork. Local agencies desiring such access would still be required to make pre-arranged authentication agreements with the Weather Service.<sup>254</sup>

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<sup>253</sup> Telephone interview. 18 October 2002.

<sup>254</sup> Ibid.