On Demand Communications Solutions

By Michael Williams, Board Member, American Association of Information Radio Operators

If we have learned anything observing the growth of emergency management in the past forty-plus years, it is that more often than not, less is more and simple is best. While technology has evolved and does amazing things when it comes to emergency information, in a crisis, the universally-available AM radio receiver is often the best source for the public.

Combined with simulcast Internet streaming, text notifications and advisory signage, radio can inform an entire community quickly and efficiently and without great cost or staff commitment.

While good management practices are essential, information processing, vetting and staff commitments can be overwhelming and profoundly slow in a world where information travels at the speed of light. As emergency managers, we have learned that storms, wildfires, earthquakes and urban emergencies can create an overwhelming challenge when it comes to public notifications and evacuations. Time becomes the enemy against the public's demand for instantaneous on-demand information.

Travelers' Information Stations

To meet this continuing challenge, many communities, including Montecito and San Marcos Pass in Santa Barbara County, California, are utilizing time-tested Travelers' Information Stations (TIS) as a solution. TIS is reliable and inexpensive by comparison to other options. It is also easy for the public to access. Simply stated: it works.

In 2013, the Federal Communications Commission (FCC) affirmed that emergency officials have the authority to broadcast local emergency information directly to citizens on TIS radio stations.[1] These automated low-power stations transmit within the commercial AM band[2] with an average three- to five-mile radius range.[3]

TIS stations can be interconnected into networks to cover various communities individually or simulcast together for area-wide coverage. TIS stations also can receive and rebroadcast targeted county all-hazards alerts issued by the National Weather Service (NWS) and can be interconnected to messages posted on IPAWS. Moreover, emergency managers can control such systems simply and remotely using a computer/cellular data network, phone line or agency two-way radio. Even with power loss, TIS stations can remain operational for days via batteries and indefinitely with a generator back-up.

Two communities on opposite ends of the country, recently ravaged by nationally reported wildfires, serve as examples. The first benefited greatly from the use of emergency TIS during a recent evacuation. The second is getting prepared for just such a scenario.

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Photo provided by the Montecito Fire Protection District.

Captain John Pepper of the Fresno Fire Department prepares to search a Montecito home after mudflow devastation. Photo by Mike Eliason.

[1] Travelers' Information Stations" in FCC Ruling 13-98
[2] 530-1710 kHz
[3] 25-75 square miles

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US101 underwater in January at Montecito, California.

Montecito, California

Montecito is a community nestled in a narrow strip between the Pacific Ocean and the Santa Ynez Mountains that includes many celebrity homes and historic buildings. It also hosts the primary highway and railroad that traverses Southern California through Santa Barbara County.

On Dec. 4, 2017, what became known as the Thomas Fire erupted in the City of Santa Paula, just south of Santa Barbara County. In time, the Thomas Fire became the largest wildland fire in California history, burning 281,893 acres; destroying 1,063 structures; damaging 280 additional structures. It is attributed to the death of one CalFire fire-fighter and one civilian.

By Dec. 16, the fire had burned into Santa Barbara County and directly threatened the entire communities of Montecito and Carpinteria. The Thomas Fire became a contributing factor leading to the tragic debris flow of Jan. 9, 2018, which resulted in the largest loss of life and property in the county since the great 1925 Santa Barbara Earthquake.

Montecito officials already had an established an innovative multi-modal communication system and policy to meet emergency information needs based on lessons learned from previous wildland fires. By utilizing these pre-established notification methods – including the Montecito Fire Protection District's emergency AM-1610 TIS station and MERRAG, the volunteer arm of the Montecito Fire Protection District – officials were able to reach citizens directly over the air, while streaming the same programming via the Internet to their computers and smart phones. The long form information allowed by radio/streaming technology gave safety officials the ability to send text notifications, which included a link to the streamed programming for more detailed information. Because the information was simulcast by radio, evacuees could get updates by radio as they lined up to leave.

Great Smoky Mountain National Park sign. The Smoky Mountains were aptly described in November 2016, when a wind-driven wildfire seared an area best known as a traditional family get-away. And the message from Gatlinburg public safety officials at that time was "Get away now!"

Montecito Fire Department Communications Coordinator Jackie Jenkins recounts, "When all other critical infrastructure was lost intermittently due to strong power surges, we were able to rely on the AM Radio [station] to keep the community informed." Installed following the 2013 Rim Fire, Montecito's AM-1610 continues today to keep the community informed.

The Montecito TIS station was supported by neighboring sister station, San Marcos Pass Emergency Radio System – SMPERS 1040-AM, in conjunction with the Santa Barbara County Operational Area readysbc.org and the public-private initiative Aware & Prepare. SMPERS 1040-AM was installed following the June 7, 2004, Gaviota Fire and has served the San Marcos Pass community's emergency information needs during every local wildfire and weather event since it inception.

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Gatlinburg, Tennessee

Thousands of miles to the east, the popular tourist destination of Gatlinburg, was struck by an "Inland hurricane of fire" that drove flames across drought-parched mountains into the city on Thanksgiving weekend 2016. As the firestorm approached, officials had attempted to evacuate more than 14,000 residents and visitors.

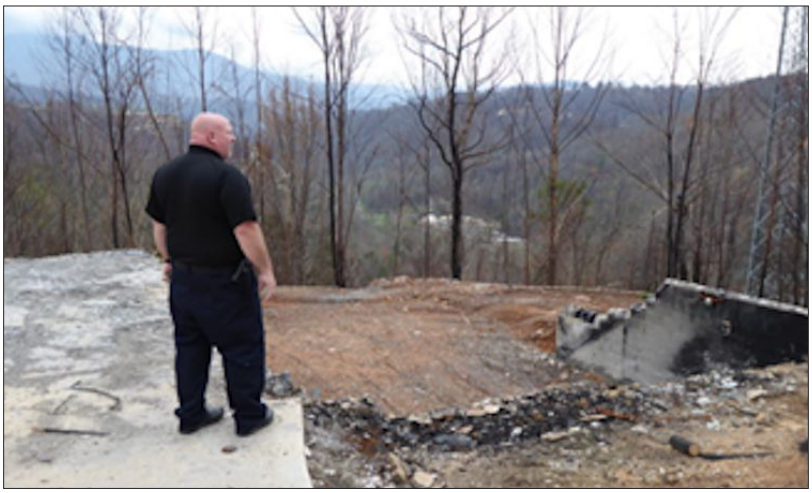
However, the fire's ferocity quickly overwhelmed the community. Power and communication services relied on by not only the public but also by public safety were lost when needed most.

Within one evening, more than 2,500 buildings were destroyed, eliminating entire neighborhoods and killing 14 residents and visitors.

Based on the experience, Gatlinburg-area officials have installed three synchronized TIS stations and a streaming link similar to Montecito's, to better guide citizens and provide updated emergency advisories and weather information in real time.

Included is the capability to automatically interrupt programming to repetitively broadcast text-based alerts in verbal form which are posted on IPAWS. The multimodal warning system includes 14 sirens to provide outdoor warnings in Gatlinburg and surrounding Sevier County. TV Channel 10 News, WBIR, is running a video about Gatlinburg's new safety upgrades.

Originally thought to be contained by geography, on the night of Nov. 28, 2016, a roaring inferno, fanned by hurricane-force winds, tore into Gatlinburg and parts of Sevier County, Tennessee. Photo by Joe Galentine.



Fire Captain Joe Galentine explains that when winds roar at 80+ mph across tinder-dry ground, a wildfire can move so fast it may sever all escape routes and communications. Gone in one evening were more than 2,500 buildings.

Conclusion

Everyone within the public safety community knows how dynamic emergency events may quickly result in unanticipated consequences. In any disaster, timely information that is simply disseminated becomes essential for response, rescue, and recovery.

We have found in Santa Barbara County that TIS stations are a key component that integrates the well-established reliability of radio with modern digital technology to feed the public's constant quest for instant on-demand information, no matter where they may be.

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This banner hangs at Gatlinburg's fire headquarters.

EM Calendar

Visit www.iaem.com/calendar for details on these and other events.

Sept. 18-19 The Natural Disaster Resilience, Response & Recovery Conference, Brisbane Australia. ***Endorsed by IAEM-Oceania.***

Sept. 24-27 California Emergency Services Association, Indian Wells, CA.

Sept. 25 2;00-3:30 p.m. EDT, IAEM Think Tank: "Smart Cities – How New Technology, Including Nanotechnology, Can Enhance All Phases of Emergency Management.'

Oct. 3-4 Ontario Disaster & Emergency Management Conference, Toronto, ON, Canada. ***IAEM-Canada is a participating community member.***

Oct. 19-24 IAEM 66th Annual Conference & EMEX: "Opportunities and Innovations in Emergency Management," Grand Rapids, MI. Complete details about the IAEM Annual Conference are on the conference site at iaemconference.info. Register before Sept. 21 to receive the early bird discounted registrated rate.

Oct. 30-Nov. 1 Canadian Risk & Hazards Network (CRHNET) Conference, "Dealing with Uncertainty: Innovation & Practice," Vancouver, BC, Canada.

Oct. 31-Nov. 1 2018 Common Alerting Protocol (CAP) Implementation Workshop, Hong Kong. ***Co-sponsored by IAEM.***

Nov. 5-7 ISCRAM ASIA PACIFIC 2018: "Innovating for Resilience, Wellington, New Zealand.

Nov. 13-16 TIEMS 25th Annual Conference, Manila, Philippines.

Nov. 15 1:00-2:00 p.m. EDT, IAEM Thursday Learning Series: "Increased Preparedness Working with Non-Traditional Partners."

Nov. 16-17 2018 IAEM-USA Region 1 Conference, Massachusetts Maritime Academy, Buzzards Bay, MA.

Dec. 4-5 Alberta Emergency Management Agency (AEMA) Stakeholder Summit, Edmonton, Alberta, Canada.

Dec. 5-7 RES/Con New Orleans: Global Resilience Summit, New Orleans, LA.

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■ **Jackie Jenkins**, Communications Coordinator, Montecito Fire Protection District, California, jjenkins@montecitofire.com.

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