

ASBPPE MAGAZINE OF THE YEAR  
2012-2013

# EMERGENCY

STRATEGY AND LEADERSHIP IN CRITICAL TIMES

# MANAGEMENT

SEPTEMBER/OCTOBER 2013

# What's Changed?

HOW THE RESPONSE TO THE LOMA PRIETA EARTHQUAKE WOULD LOOK 24 YEARS LATER



## BEYOND DEBRIEFING

HOW TO CARE FOR FIRST RESPONDERS



## AN INSIDE LOOK AT SAFETY

AT SAN FRANCISCO INTERNATIONAL AIRPORT



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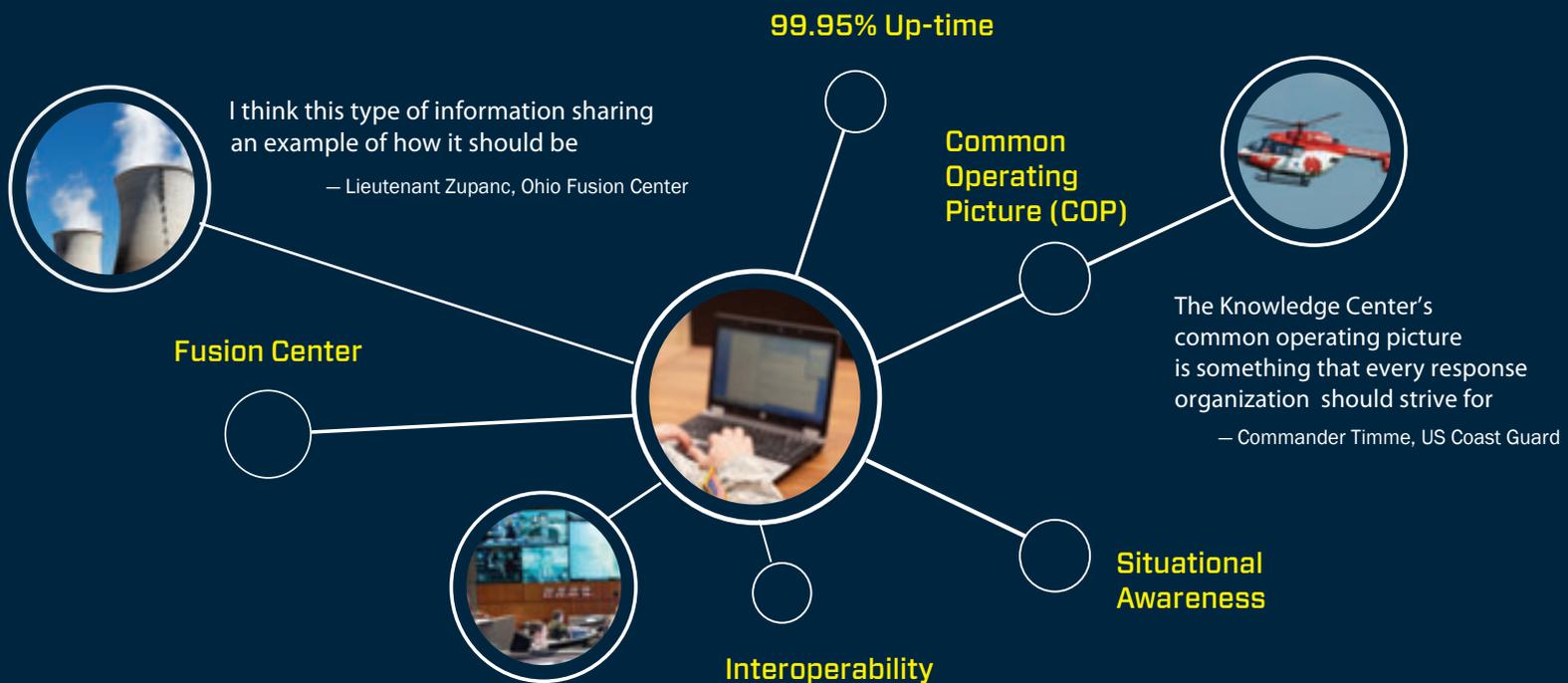


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COVER IMAGE : CHRISTOPHER FLANDERS

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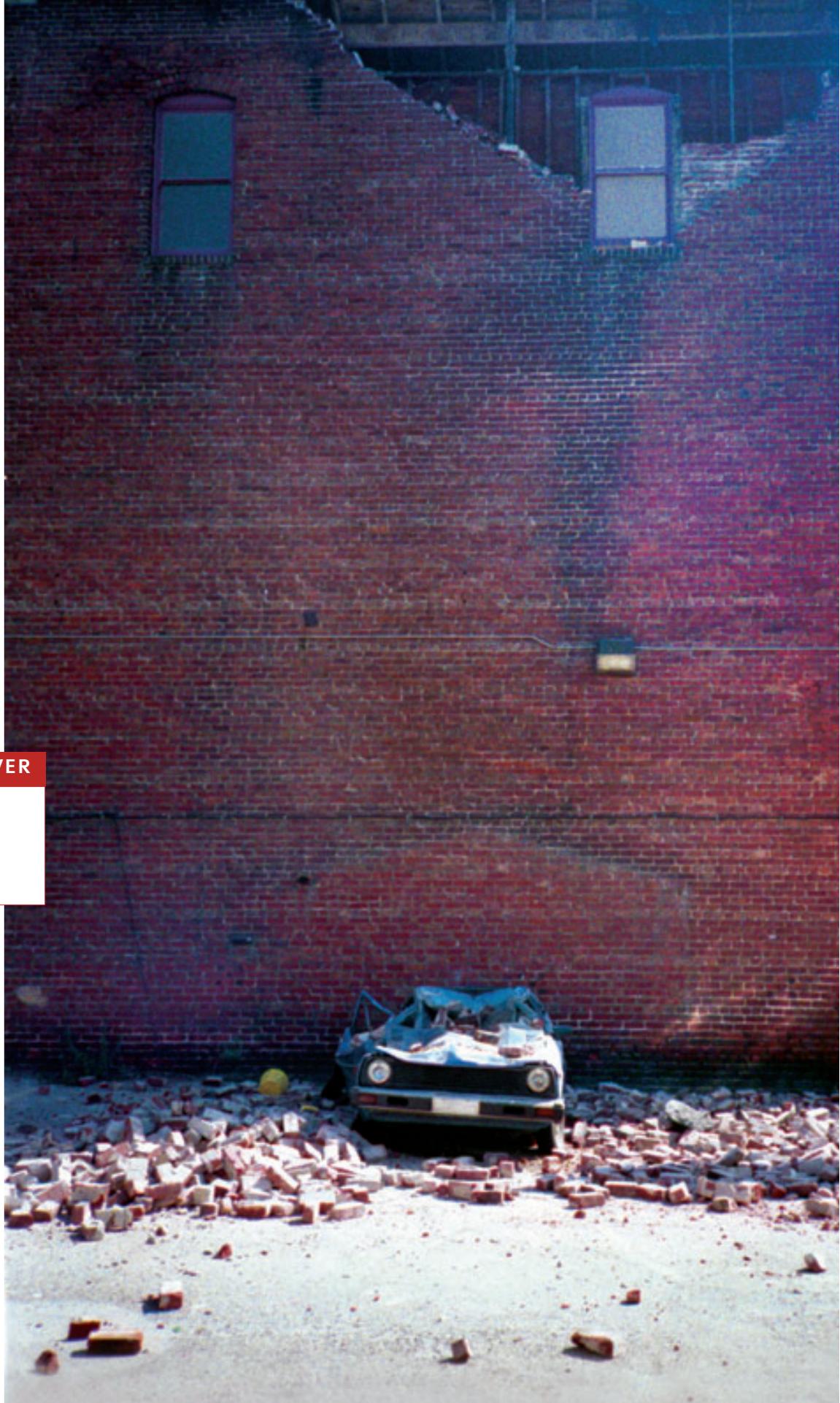
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CHRISTOPHER FLANDERS



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to describe in words.*

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**Appreciate the informative article.**

However, use of statistics for decision-making can lead to unintended consequences; majority of supplies could go to the area with the highest social media saturation; or, the area where the cell towers are out gets overlooked due to lack of “data.” Still, the potential benefits seem to outweigh these concerns. Now, how to pay for it?

— Steve Sanders in response to the *Harnessing Big Data* article in the July/August issue

**Thanks for a great introduction to this topic.**

As important as acquiring the video content may be, preserving it as evidence to be used in court is essential. In addition, gathering content from citizens, validating and storing it appropriately is a challenge that law enforcement agencies still face. Solving that business problem will increase the community’s confidence in law enforcement’s technology.

— Rob Sprecher in response to *The Efficacy of Video Cameras* article in the July/August issue

**Effective emergency management requires a significant amount of prior planning**

(deliberate planning) that is acquired through the study of plans, lessons learned and guiding directives. Without a sufficient background (education), a bogus emergency manager can only respond by using “crisis management” or winging it. Winging it doesn’t work and only generates more lessons learned of ways not to do it. When you look at the adequacy of a city’s emergency planning,

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many times you will find insufficient plans that when studied fail to work for obvious reasons that should have been corrected in the review process before attempted execution at the scene. Who will cull the real planners from the phony in the emergency management crowd? Real emergency managers should cull the crowd.

— David M. Williams in response to *Eric’s Corner* in the July/August issue

**Michael Greenberger’s last remark hits the nail on the proverbial head.**

Yes, the bombings should have been stopped, but “could” they have been stopped? Possibly, but then we start to raise the question of how far are we willing to go in invading civil liberties in order to prevent every attack? Should we expect to be frisked at every train station? Public concert? Fireworks display? And can we allow that kind of invasion of privacy in the name of preventing terrorism? We have to draw the line somewhere, and I question whether it’s been drawn in the right place.

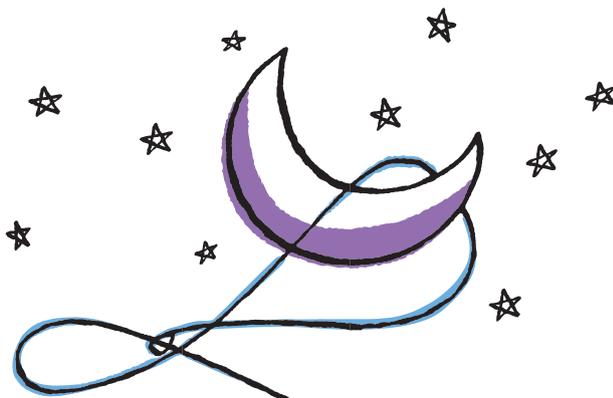
— Rob Berra in response to the *Should the Bombings Have Been Prevented* sidebar in the July/August issue

**Your well written article brought back**

some haunting memories of the tsunami that hit Hilo, Hawaii, in 1960. As a kid growing up in Hilo, we would always have a number of false tsunami alarms to the point of complacency. The evening before (May 22) the tsunami, my father evacuated us kids up to higher ground, the mountains, and he and my mother stayed in our house. Realizing the danger of the tsunami, they climbed a telephone pole, only to see our house devastated. I lost two classmates among the 61 people killed. It was this experience that launched me on a course to eventually become the corporate emergency operations manager for Science Applications International Corp. (SAIC) headquartered in McLean, Va. This imbedded experience has made my mission to monitor and respond to all man-made and natural disasters 24/7 impacting our employees and their families in the U.S. and overseas all the more important.

— Bowman Olds in response to the *Warning Siren Face Lift* article in the May/June issue





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# We Thank You.



**T**here are a couple of ways in which I measure the success of *Emergency Management* magazine. The first is how you, the reader, responds to our stories. On that count, we're doing well.

Overwhelmingly, through our surveys, you indicate that *Emergency Management* is the publication of choice when it comes to the planning, response, mitigation and recovery related to natural and man-made disasters.

Reader response, in the form of letters to the editor and comments on our website, indicate an engaged, passionate audience. It keeps us on our toes and striving to meet your needs and provide interesting, educational copy in a professional manner.

We are grateful for you, the reader, for your input and comments, and we invite more of the same. You understand that we won't shy away from a difficult topic, even in the face of criticism or advertiser backlash. And you've told us that you appreciate that.

Our peers at the American Society of Business Publication Editors too have recognized our staff's passion for doing things the right way, and did so in a big way this year by naming us Magazine of the Year. The result is gratifying and confirms that we are on the right track. But that in no way means we will rest on our laurels. We will continue to strive for excellence, and with your continued support and engagement will continue our quest to serve the emergency management community as best we can.

We thank you for your interest and support. 



**QUESTIONS OR COMMENTS?**

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## In the News

The adoption of revised flood maps from FEMA nearly a year after Hurricane Sandy is becoming evident in the form of stilt houses in Greenwich, Conn. The maps add up to five feet of high water to the predictions of what a 100-year storm will look like. That has prompted residents to use hydraulic jacks, pylons and stilts to rebuild houses, according to the *Insurance Journal*. With the new houses, some homeowners in the area are looking at substantial hikes in insurance, up to \$23,150 a year in some cases.





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### 3 TIPS FOR POSTING EMERGENCY INFORMATION ONLINE

Nigel Snoad, product manager for crisis response and civic innovation at Google, told *Emergency Management* how response and preparedness organizations can post information online in ways that make it easily searchable and shareable.

#### ➤ 1 / POST FREE TEXT.

Snoad said PDFs and images are the worst offenders. Don't put text in an image, which requires a person to read the information to make sense of it. Google's Web-crawling bot, or Googlebot, searches the Web for new and updated sites, automating the information-seeking process. Similarly, Bing has four crawlers that handle different search needs. These Web crawlers search and collate the information, allowing the search engine sites to make use of it.

#### ➤ 2 / DON'T LOCK UP DATA IN LICENSES.

Snoad said they see many websites that say the information is not for commercial use, cannot be distributed and/or is fully copyrighted — even with emergency data. Government agencies and

organizations should consider how they want their information to be used; choose a data license that allows the information to be reused in a way that helps the public and allows for wide distribution.

#### ➤ 3 / USE OPEN, COMMERCIAL TOOLS TO SHARE AND SAVE DATA.

Even if information is published in a way that allows for easy reuse and machine readability, the servers that store the data may crash during an emergency. "You don't want your evacuation zone maps to be on a server that gets overwhelmed by the public trying to look at it — that can cause a tragedy, unfortunately," Snoad said. He recommends using open, commercial tools to share important messages. This includes **posting on social media sites**, saving data in the cloud and publishing data on open mapping systems.



## BIO-THREAT EARLY WARNING BOOSTER

A statewide bio-surveillance system designed to provide early detection of potential health threats has received a \$3 million grant from the U.S. DHS to continue its research efforts. Called the North Carolina Bio-Preparedness Collaborative (NCB-Prepared), the group was formed in 2010 through an initial \$5 million grant from the DHS. The public-private partnership includes representatives from the University of North Carolina at Chapel Hill, North Carolina State University and SAS. The new funding will be used to expand the system and help determine how information from the collaborative can best be used by local, state and federal agencies.

SOURCE: REP. DAVID PRICE

## UTILITIES UNDER CYBERATTACK:

**160:** Surveyed utilities

**10,000:** Attacks during one month on one utility

**\$10 BILLION:** The cost of a successful cyberattack

**68 PERCENT:** The increase from 2011 to 2012 of attacks centered on federal agencies, critical infrastructure and industrial bodies. SOURCE: ZERO DAY

## ◀ More Security for Students

Back to school usually means new notebooks, new clothes and new teachers. But this year, it also means more security. More than 450 bills were introduced in statehouses this year on school security measures. After thousands of hours of debate, what emerged at the state level are relatively small-scale plans to pay for security upgrades like adding classroom-door locks that can be used from the inside and outside, fortifying school entrances, installing security cameras and allowing teachers or volunteers, in very limited circumstances, to carry guns on campus. SOURCE: STATELINE



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On that fateful day in 1989, emergency managers didn't have some modern-day benefits when they responded to the Loma Prieta earthquake.

FLICKR/JOE LEWIS

# WHAT'S CHANGED?

Seven ways emergency response to a devastating earthquake would be different today.

BY DAVID RATHS

**MAXIMUM  
SPEED  
50**

**CALL  
STOP**

**MOST SAN FRANCISCO BAY AREA** residents over 30 years old remember exactly where they were at 5:04 p.m. on Oct. 17, 1989, when the magnitude 6.9 Loma Prieta earthquake shook the region.

I certainly do. I was just getting ready to drive home to Palo Alto, a few miles from the editorial offices of *InfoWorld*, a technology publication in Menlo Park, where I worked. Our second-floor offices shook violently. The building seemed to twist and warp under the pressure. Bookshelves and desktops all emptied their contents into the aisles, but there were no injuries. Shaken up, I made my way home slowly through chaotic traffic and fallen debris. Others were not so lucky. The quake killed 63 people, injured 3,757 and left several thousand homeless. It proved to be both a major test of area emergency management and a wake-up call about the region's disaster preparedness efforts.

Today Bay Area residents live with the realization that another big quake is in their future. In 2007, earthquake scientists led by the U.S. Geological Survey estimated that there is a 63 percent probability of a magnitude 6.7 or greater earthquake in the Bay Area in the next 30 years.

So what has changed since 1989 in terms of response capabilities? If a major quake struck today, how would emergency management be different than it was 24 years ago? There have been many lessons learned cumulatively since Loma Prieta in terms of emergency response, said Rob Dudgeon, deputy director of the San Francisco Department of Emergency Management (DEM), where he leads the Division of Emergency Services. "Things didn't change all of a sudden in 1990," he said. "But if an earthquake happened today, everything about the response would be different."

Here are seven ways in which today's response promises to be different:

### 1. MODERN EMERGENCY OPERATIONS CENTER

One of the most obvious differences is that today, there is a seismically reinforced and modern emergency operations center. "The EOC during the Loma Prieta quake proved inadequate," Dudgeon said. Earlier this year, *Emergency Management* gave readers an inside look at the new EOC during the Golden Guardian exercise in May, during which agencies worked together on practicing for the response and recovery to a simulated magnitude 7.8 earthquake.

San Francisco now uses the WebEOC incident management tool for situational awareness and to help keep everyone on the same page. This year's functional exercise focused on carrying out policies, response and recovery for up to 48 hours after the earthquake hit. Representatives of the agencies participating in the exercise relied on both technology as well as face-to-face communication to help each other follow protocol.

### 2. STANDARDIZED EMERGENCY MANAGEMENT SYSTEM

Earthquake response in California has benefited not just from previous quakes, but also lessons learned during other types of emergencies. In response to problems experienced during the Oakland Hills fires in 1991, the California Legislature passed a law requiring a clear incident command system during emergencies. The standardized emergency management system provides for a five-level emergency response organization, and is intended to structure and facilitate the flow of emergency information and resources within and between the organizational levels.

"Now we have a unified command structure, so we have experts in charge of their areas and not the mayor making all the decisions," said Dudgeon, who was working on an ambulance in Oakland during Loma Prieta. "How we deal with multiple casualty incidents is different and communications with hospital emergency rooms is better," he added.

### 3. USE OF SOCIAL MEDIA AND MOBILE DEVICES

The San Francisco DEM has adopted several social media channels and continues to experiment with them during events. The city uses a text-based notification system, AlertSF, and Twitter. AlertSF sends alerts regarding emergencies disrupting vehicular and pedestrian traffic as well as citywide post-disaster information to registered wireless devices and email accounts. Registrants can also sign up to receive English-language automated information feeds and alerts targeted to specific areas of the city.

"We believe in the power of the crowd," said Alicia Johnson, resilience and recovery manager at the San Francisco DEM. She oversees the development of the Resilient SF program and long-term community affairs and education. "We don't know if systems such as Twitter will be up when

we need them, but we plan as if they will," she said. "We use them every day in planning events and in situations like the recent airplane crash. Although social media, just like traditional media, can be the source of incorrect information, the information passed on by social media tends to correct itself."

### 4. CLOSER TIES WITH COMMUNITY ORGANIZATIONS

A report published by National Academies Press and titled *Practical Lessons from the Loma Prieta Earthquake* was based on the 1993 proceedings of a symposium held in San Francisco.

It noted that pre-existing social problems such as homelessness, hunger and lack of health care are worsened immediately after a destructive earthquake. The report recommended that community agencies develop policies to address these issues and become more involved in emergency response.

In fact, the aftermath of Loma Prieta led directly to the creation of an umbrella group called SF CARD (Community Agencies Responding to Disaster), which connects nonprofit, faith-based and private organizations with the network and knowledge they need to continue providing critical services after a disaster. Vulnerable populations naturally turn to these organizations immediately following a disaster for housing, food and essential services.

"People who went through Loma Prieta saw the potential for a new way to help nonprofit organizations provide assistance, get involved in preparedness and make the city more resilient," said Brian Whitlow, SF CARD's executive director. "During Loma Prieta, there were people volunteering to help the Fire Department fight fires in the Marina District. Nonprofit organizations are working on ways to give those people tools to help. And SF CARD is the conduit between the DEM and those organizations."

Dudgeon noted that after Loma Prieta, government agencies began to realize that they couldn't do everything. Previously there had been less recognition of the role of community groups. "There was definitely a reluctance to engage in the past, even 10 years ago," he said. "But now there is recognition that emergency response is not a total government show."

"I give the DEM a lot of credit," Whitlow said. "They have done a great job of reaching



Social media is one tool emergency managers have at their disposal now that wasn't available in 1989.

FLICKR/JOE LEWIS

## A To-Do List After Loma Prieta

**A 1990 REPORT** by the State/Federal Hazard Mitigation Survey Team identified several emergency response-related needs highlighted by the Loma Prieta earthquake. It was included in the Practical Lessons report in 1993.

Most of the issues have been addressed or at least progress has been made. One area that is proving harder to tackle in both the Bay Area

and nationally is seamless communication between first responder agencies.

Needs listed in the report include:

- ✓ a model emergency management structure and procedures that are common to local, state and federal response agencies;
- ✓ enhanced communication systems at all levels;
- ✓ a systematic approach to collecting data on damage;
- ✓ a model resource-tracking system for state and local jurisdictions;
- ✓ the identification of staging areas for various resources;
- ✓ the establishment of regional planning groups to address response-related issues;
- ✓ emergency medical service mutual aid agreements for Office of Emergency Services regions;
- ✓ efforts to address regional emergency transportation planning;

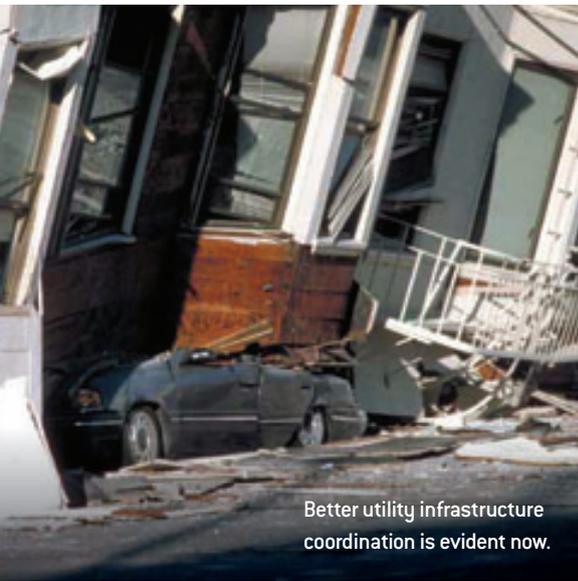
- ✓ increases in emergency resources: generators, fuel supplies, search-and-rescue equipment, etc.;
- ✓ lists of federal, state and local personnel who can perform post-earthquake building inspections;
- ✓ increased capacity to provide short-term shelter to earthquake victims; and
- ✓ increased capacity to provide timely public information.



Community organizations have popped up since Loma Prieta to help residents prepare for the worst.

IMAGES: FLICKR/CIRONLINE





Better utility infrastructure coordination is evident now.

FILE/REUTERS

out and helping agencies prepare. We are an advocate and liaison in their EOC.”

The city also has a Neighborhood Emergency Response Team program of volunteers trained and supervised by the Fire Department. Other cities and towns now have Community Emergency Response Teams as well.

### 5. DRILL, BABY, DRILL

Another lesson from the *Practical Lessons* report was that organizations that had developed and tested realistic earthquake planning scenarios prior to the Loma Prieta earthquake were better prepared than those that had not.

The region seems to have taken this lesson to heart. The Bay Area Urban Areas Security Initiative (UASI), a regional effort to build core capabilities to respond to terrorism and natural disasters, has increased the number of drills in the region. In fiscal 2011-2012, the Bay Area UASI spent approximately \$3.3 million on training and exercises. According to UASI's reports, the region trained about 1,200 responders (as compared to approximately 500 responders in prior years) across a range of disciplines including emergency management, emergency medical services, firefighting, law enforcement and hazardous materials response.

In 2013, the annual Golden Guardian exercise involved a catastrophic earthquake in the Bay Area, with the goal of exercising and assessing emergency operations plans, policies and procedures for large-scale incidents at the local, regional and state levels.

### 6. UTILITY INFRASTRUCTURE COORDINATION

More than 150,000 customers lost power during Loma Prieta. Today that figure would be closer to 500,000, because of the area's increasing population density. Although many of the types of utility infrastructure that would be impacted by an earthquake are similar today, the resiliency and level of communication between providers is different, said Don Boland, executive director of the California Utilities Emergency Association. He said the association brings together utilities to study interdependencies, expedite getting systems back up and running as quickly as possible, and prioritize what needs to be done — providing pumping stations with power before stoplights, for instance.

“Energy, telecom, water and gas are like four legs of a dining room table. Without all four, the table is going to collapse,” Boland said. “We act as the state EOC's utility arm. We hold mutual assistance compacts for all 41 power companies in the state, and are able to reach down to San Diego to help stand up resources if there is a 7.0 earthquake in San Francisco without waiting for any kind of damage assessment. The type of system we have for pulling resources from elsewhere did not exist during Loma Prieta. The utilities realize they are no longer silos and are working together.”

In San Francisco, a Lifelines Council is conducting an interdependencies study on infrastructure serving the city. The council seeks to:

- develop and improve collaboration in the city and across the region;
- understand intersystem dependencies to enhance planning, restoration and reconstruction;
- share information about recovery plans, projects and priorities; and
- establish coordination processes for lifeline restoration and recovery following a major disaster event.

### 7. ONGOING EFFORTS ON SEISMIC RETROFITTING AND LAND-USE PLANNING

Besides beefing up emergency response capabilities, the Bay Area is also doing a better job of understanding local earthquake hazards and addressing them before the next disaster. After Loma Prieta, San Francisco

launched a 10-year-long study, called the Community Action Plan for Seismic Safety (CAPSS), to evaluate the city's risk from earthquakes. In late 2011, CAPSS developed into the Earthquake Safety Implementation Program, a 30-year workplan and timeline implementing the Community Action Plan.

“A lot of the recommendations and the work of CAPSS are drawn from lessons from what happened during Loma Prieta, as well as during large earthquakes in other cities, such as in Christchurch, New Zealand,” said Patrick Otellini, San Francisco's director of earthquake safety.

By the 20th anniversary of the Loma Prieta quake, the city and county of San Francisco had completed more than 180 seismic retrofits or total replacements of public facilities, ranging from small but critical pump stations and transmission mains to essential facilities like police and fire stations and the EOC.

The city also passed legislation that requires the evaluation and retrofit for “multi-unit soft-story buildings,” which are wood-frame structures containing five or more residential units, having two or more stories over a “soft” or “weak” story, and permitted for construction prior to 1978, Otellini said.

“We are working toward a more resilient city in terms of buildings and lifelines shored up so it will be easier to rebuild after an earthquake,” said Sarah Karlinsky, deputy director of SPUR, a nonprofit organization that works on a host of issues including disaster planning and regional land-use planning. “We have a variety of building types that are vulnerable, including these soft-story apartment structures that tilted during Loma Prieta.”

A 2013 SPUR report, called *On Solid Ground*, argues that good land-use planning can prepare the Bay Area for a strong disaster recovery.

No one knows how well the region will respond the next time a quake occurs, but SF CARD's Whitlow believes the Bay Area is much more resilient today than it was in 1989. “The nonprofit organizations are embracing best practices in terms of working with emergency management, and groups like the Red Cross and United Way have really come together to work on drills. So we are not just talking about it, we are actually doing something.” ➤

**David Rath** is a contributing writer based in Philadelphia.



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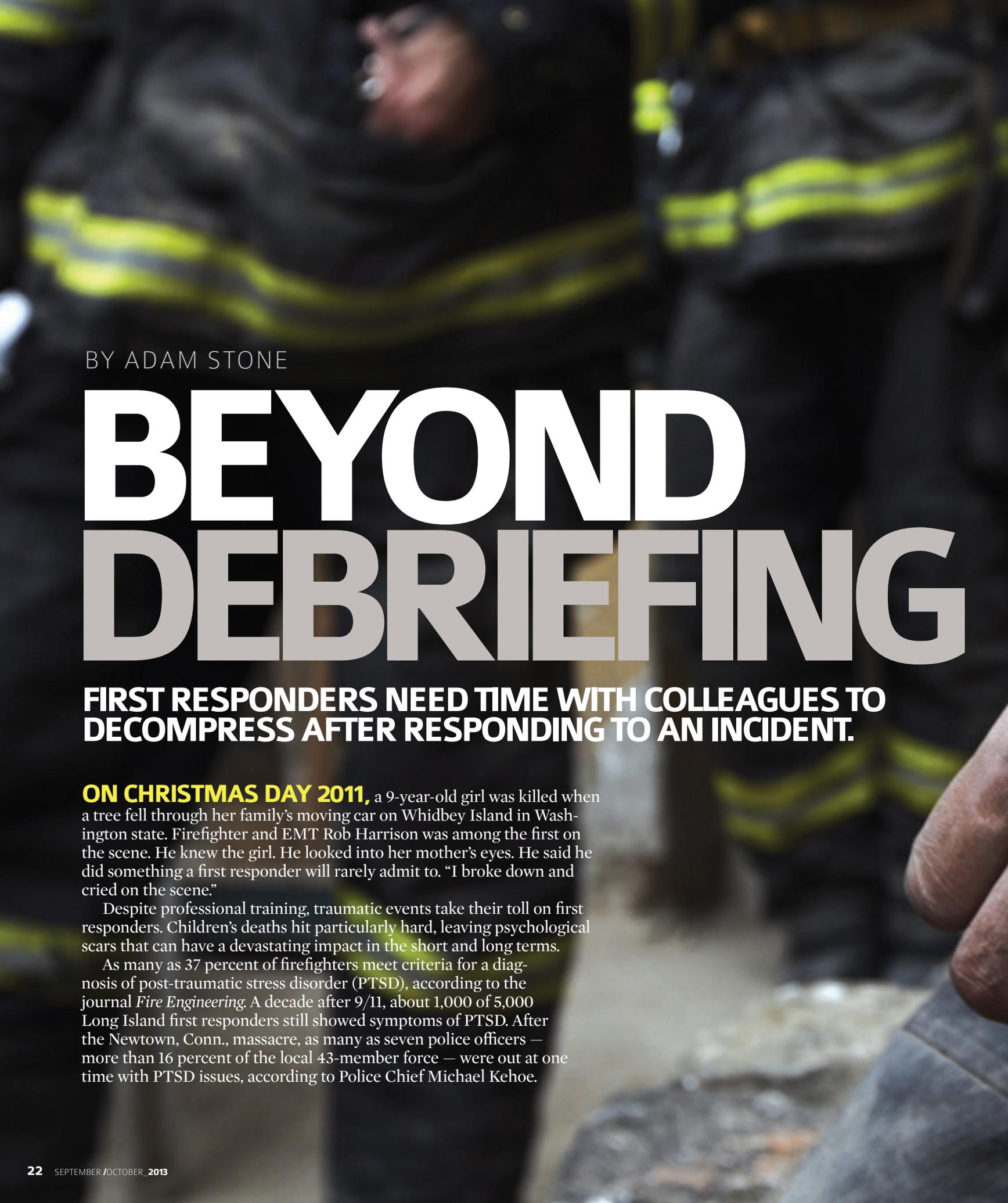
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BY ADAM STONE

# BEYOND DEBRIEFING

**FIRST RESPONDERS NEED TIME WITH COLLEAGUES TO DECOMPRESS AFTER RESPONDING TO AN INCIDENT.**

**ON CHRISTMAS DAY 2011**, a 9-year-old girl was killed when a tree fell through her family's moving car on Whidbey Island in Washington state. Firefighter and EMT Rob Harrison was among the first on the scene. He knew the girl. He looked into her mother's eyes. He said he did something a first responder will rarely admit to. "I broke down and cried on the scene."

Despite professional training, traumatic events take their toll on first responders. Children's deaths hit particularly hard, leaving psychological scars that can have a devastating impact in the short and long terms.

As many as 37 percent of firefighters meet criteria for a diagnosis of post-traumatic stress disorder (PTSD), according to the journal *Fire Engineering*. A decade after 9/11, about 1,000 of 5,000 Long Island first responders still showed symptoms of PTSD. After the Newtown, Conn., massacre, as many as seven police officers — more than 16 percent of the local 43-member force — were out at one time with PTSD issues, according to Police Chief Michael Kehoe.



The emergency management community has taken some steps to address the emotional needs of those who rush to a disaster scene. But experts say there's much more that could (and should) be done.

### ADDRESSING EMOTIONAL NEEDS

The question of emotional health among first responders has been getting more attention lately. After the Boston Marathon bombings, for instance, Police Commissioner Ed Davis took the unusual step of calling for large-scale counseling efforts. "Officers that I have talked to have been extremely traumatized and saw things that you would see on a battlefield. We are extremely concerned about that," Davis told *The Wall Street Journal*.

In recent years, the standard answer to first responders' emotional needs has been the critical incident stress debriefing, an often mandatory gathering of those hit hardest by the trauma of disaster. Authoritative voices, however, say these interventions are insufficient.

The World Health Organization, for instance, says a psychological debriefing "should not be used for people exposed recently to a traumatic event," and may do more harm than good.

While such debriefings have been common practice for first responders, the value hasn't been scientifically demonstrated, said Kathleen Tierney, sociology professor and director of the Natural Hazards Center at the University of Colorado, Boulder. "This is something that doesn't have much science behind it," she said. The largest drawback: Debriefings are simply too generic. "One-size-fits-all debriefings are not appropriate."

Yet the need for some intervention is indisputable.

"First responders in disaster situations and other kinds of major emergencies are confronted with things that can be psychologically very disturbing," Tierney said. "The sight of dead bodies, people who lost limbs, people who are trapped, seeing children who have been killed or injured."

The lasting effects of such exposure can include depression, anxiety and withdrawal. If generic debriefings aren't the answer, what else can emergency managers do to ensure that responders are properly cared for?



Following the bombings at the Boston Marathon in April, Police Commissioner Ed Davis recognized the emotional toll on

### LAY THE GROUNDWORK

As with so many aspects of emergency management, post-trauma care often comes down to planning, said Jeff Upperman, director of the Trauma Program and the Pediatric Disaster Resources and Training Center at Children's Hospital Los Angeles.

Knowing that medical personnel will be among the first to confront the human toll of a disaster, Upperman looks to ensure that proper support mechanisms are in place long before any event. "As a Level 1 trauma center, we have exercises on an annual and semiannual basis," he said. "We have an active committee to talk about plans and preparations."

Those plans include building networks with local schools and churches where personnel may turn for help. "You're part of that community; you're not isolated from that," he said. Pre-planning for community support therefore can be a major benefit.

Front-line managers must be trained to recognize signs of stress and shown how to act appropriately. "Leadership is going to have to be ready to make some just-in-time decisions," Upperman said. Likewise, personal communications networks should be designated in advance. "We ask explic-

itly, 'do you know how to text?' Because texting will not tie up the phone lines like a phone call, and will allow people to talk to family as soon as they need to."

### CONTAINING HOURS

Before considering further solutions, it may be useful to delve deeper into the problem. While a disaster can be traumatic, the impact often is worsened by the management of first responders, especially when it comes to time in the field.

The dictum that rescuers need to go home after 12 hours is too often ignored.

The impulse to stay in the field is built into the first responder psyche, Tierney said. "They don't know when to stop, and they don't want to stop. Twelve hours on is hard enough already, but often it is very difficult to get people to stop working. Unless management takes a strong stand, things can get out of hand. There has to be the enforcement of hours, so people don't exhaust themselves working overtime."

That enforcement starts with training, educating first responders about the physical impact of overwork and teaching them to recognize signs of mental and physical fatigue. "This kind of information needs



Flickr/BEACON RADIO

responders and implemented a large-scale counseling effort.

to be part of that training,” Tierney said. “That you have to take breaks, and you have to leave at the end of your shift.”

Sometimes the strongest way to make that case is to remind first responders that taking a break is critical to doing their job well. “After a couple of days, people just won’t be working as effectively, whether it’s decision-making or the physical component. You need rest; you need downtime,” said Dave Neal, professor of political science, a sociologist and a member of the fire and emergency management program at Oklahoma State University.

This issue of managing hours extends beyond the responders themselves, Neal said. Those who rush to help emergency workers cope also must be strictly observed and regulated by emergency managers overseeing events.

“There is a tendency for everyone and everything to show up in the first couple of days, which often comes from too much self-dispatching,” Neal said. That includes psychologists, clergy and well-meaning laymen. “They may be really good people, but maybe it makes more sense for them to wait two or three days until after that first wave, when the mental and emotional stress starts to take place. That means emergency coordinators need to have a system in place.”

## HOW TO HELP

What forms of assistance can help first responders? EMT Harrison said the critical incident stress debriefing wasn’t the answer. “It was the only tool we had at the time, but for me it didn’t work.”

Since the 2011 incident, Harrison’s community has developed another option — developing the voluntary response network Whidbey CareNet, founded by Petra Martin. Through this network, a broad range of local care providers step up during crises to help comfort those on the front lines.

Those services run the gamut, with counselors, massage therapists, even pedicurists and chefs volunteering to help ease the pain. Volunteers in the mostly rural area of Whidbey provide a cost-effective means of emotional support for those who need it.

The American Group Psychotherapy Association likewise offers a number of best practices for supporting first responders.

- **Self Care** — Make sure first responders are meeting their own basic needs as an incident unfolds: sleeping, eating, hydrating and taking downtime for activities such as music, exercise and prayer.
- **The Walk-Around** — Someone needs to be on the ground offering a supportive presence and monitoring responders’ emotional state. This may be a peer, chaplain or officially sanctioned service member. Eyes and ears on the ground can make a difference.
- **Buddy Care** — With their “Band of Brothers” mentality, first responders may likeliest respond to an informal inquiry about how their buddies are doing. They may be more open to sharing with one another and more attuned than an outsider to their peers’ emotional state. Chaplains and counselors also form a vital link in the chain of immediate support personnel. This is what they’re trained to do, and their early presence on the scene can help contain the long-term negative effects of an event.

## MAKE CONNECTIONS

As the issue of first responder care has gained momentum in recent years, experts say coordinated partnerships have emerged as one of the most effective tools.

Neal points to the example of the Murrah Federal Building, site of the Okla-

homa City bombing that killed 168 people in 1995. In that instance, the American Red Cross teamed with the American Psychological Association to rapidly identify qualified support personnel and get them on the scene. This helped contain a hodgepodge of self-selected, would-be caregivers, according to Neal. “They had a lot of mental health workers showing up, from highly trained psychiatrists to lay preachers with an eighth-grade education.”

By working in tandem, the national organizations were able to implement some order and put qualified professionals in place.

The partnership model can be seen in Philadelphia’s First Responders Addiction Treatment (FRAT) Program, which addresses alcoholism or other dependencies that may accompany the emotional trauma of first responder work. In that case, the organization works with the local area medical community to ensure that emergency personnel get proper support.

While formal arrangements are crucial, there’s much to be said for less formal support. On 9/11, for instance, volunteers from all walks set up tents to offer support to first responders. “They created a respite center, a place to rest,” Tierney said. “All the volunteers did was sit and talk to people, hold their hand if they wanted to, just provide some human contact.”

Finally, and crucially, in the first responder culture, rescuers are most likely to talk to those within their own ranks. A firefighter who avoids a counselor might share more openly with a peer in uniform. Emergency planners must create the time and space for front-liners to hang out and decompress, both just after and in the weeks following an event.

This speaks to what is perhaps the greatest challenge in caring for the caregivers: the macho culture that drives the first responder mindset. Emergency managers looking to ease the pain must always be mindful that “tough guys don’t cry.” Providing appropriate care means finding a way over, through or around this fundamental sticking point. Mental health professionals can help emergency managers craft plans that address emotional needs while still treading thoughtfully on this delicate ground. +

adam.stone@newsroom42.com

# INSIDE SFO

A TOUR OF  
SAN FRANCISCO  
INTERNATIONAL  
AIRPORT'S SAFETY  
AND SECURITY  
OPERATIONS.

BY JIM MCKAY



The crash-landing of Asiana Airlines Flight 214 in July tested the response capabilities at San Francisco International Airport.

On July 6, Asiana Flight 214 crash-landed at the San Francisco International Airport (SFO), resulting in three deaths and 181 injured passengers and crew members. The crash took place eight days after Emergency Management toured the airport for a story about its security operations. We've included follow-up comments, but the majority of the information was gleaned during the visit before the crash.

**A**siana Flight 214 from Seoul, South Korea, slammed down on San Francisco International Airport runway 28L at approximately 11:27 a.m. By 11:30, the airport EOC had been activated, and by 11:35, emergency personnel were en route to the scene. It was a scenario that safety and security staff had trained for countless times, yet

no one is ever sure how ready they'll be when it happens.

"It's still a bit surreal," said Toshia Marshall, emergency planning coordinator for SFO, three weeks after the crash. "We responded and restored the airport's operation as a team, just as we are working through the recovery process as a team."

Marshall said the EOC immediately filled with staff from the Airport Commission

and federal, state and local agencies, and within a few hours was occupied by San Francisco Mayor Edwin Lee and his staff, the San Francisco fire and police chiefs, as well as others.

From the EOC's standpoint, the response went down just as they had practiced it.

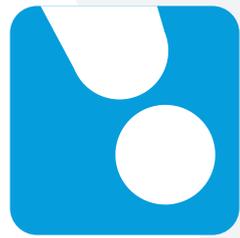
"We've concluded that the EOC functioned well and the right people were present to perform the necessary response

roles as intended," Marshall wrote in an email. "As we went along, we did develop other roles that were necessary for improving the communication with other airlines and tenants regarding the response and recovery efforts over the seven-day period that was impacted."

Marshall said there will be a review of EOC operations, and several debriefing sessions are still to come.

CONTINUED ON PAGE 30



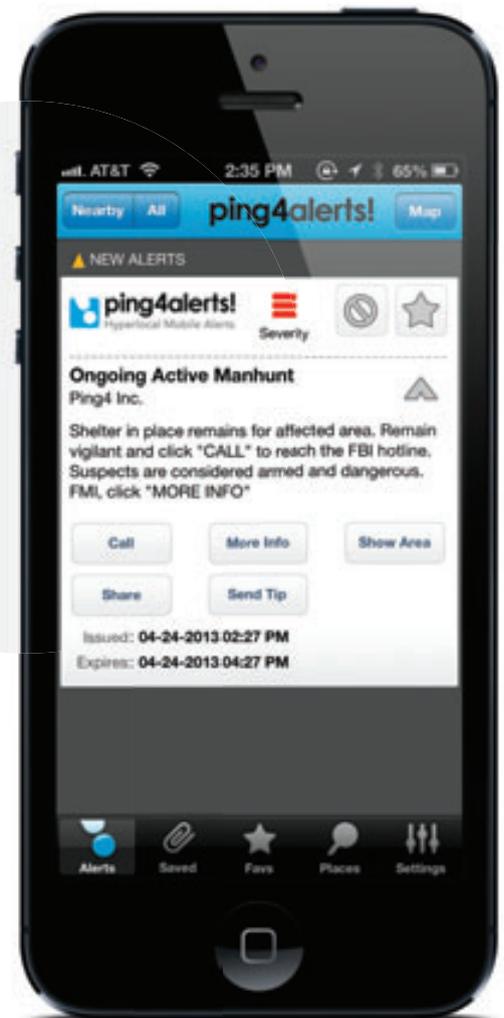


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## Q&A / Immediate and Intelligent Alerts

**In times of emergency, people need critical information fast. We talked with [Jim Bender](#), CEO of Ping 4, Inc., to learn more about ping4alerts! — the company's revolutionary new mobile alert application that's fulfilling this need for local communities.**

### Q / What is ping4alerts!, and how does it work?

**Jim Bender:** Ping4alerts! is a state-of-the-art emergency alert system for the public. It's simple for both users and alerting authorities, and it only takes 10 seconds to put together an alert. This is how it works: We develop a geo-fence (virtual perimeter) that can be any shape or size — either a polygon or circular area. It can be constructed very quickly, wherever it is in the world, and if you happen to be inside that area, you're going to get the alert.

### Q / What differentiates ping4alerts! from other mobile notification apps?

**Jim Bender:** What makes us different is that we can send alerts to very precise locations. For example, we can isolate a single room in a building. That's a level of granularity that almost nobody will actually need, but this ability to isolate a specific location is valuable because if people are getting alerts that don't pertain to them, they're going to get alert fatigue and say, "I've got to turn this off because I'm just getting annoyed too often."

The second thing that differentiates ping4alerts! is the ability to put any combination of rich media on a user's phone. This includes video, pictures, websites, audio, text and much more. For instance, when there is an Amber Alert, with ping4alerts! you can have a picture of the child pop up on your phone while a voice describes where the child was last seen, what the child was wearing, the license plate number and so on. John Walsh [of America's Most Wanted] told us a year ago that "this absolutely transforms Amber Alert."

The third thing is that ping4alerts! is anonymous. The alerting authorities don't need any information about who ping4alerts! users are and what their names, cell phone numbers or email address are. The public doesn't need to provide any personal information.

### Q / How is ping4alerts! positively impacting local communities?

**Jim Bender:** Massachusetts has been a customer of ours for about 10 months. During the Boston Marathon bombing, Gov. Deval Patrick ordered a lockdown of all the towns surrounding Boston. Ping4alerts! was used to notify people that these cities were in lockdown and that people had to stay in their homes. It was also used to announce when the lockdown ended.

Recently, we had a tropical storm coming up from Florida, and ping4alerts! was the only true conditions-based automated alerting system available to the public. We actively and automatically monitor the real-time National Oceanographic and Atmospheric Administration (NOAA) weather feed and then we analyze, sort and prioritize this information

into meaningful real-time warnings. For example, if you're in the path of a storm and it turns into a hurricane, ping4alerts! will send an alert that you may be in danger.

### Q / What plans do you have coming up for ping4alerts! in the future?

**Jim Bender:** We're planning on expanding to half the states in the country by the end of next year, and we're also talking to some federal agencies. We can go anywhere on the globe. For example, the U.S. has embassies located all over the world, and many of them are in dangerous and remote places. Ping4alerts! could give the U.S. State Department a "private channel" capability. Let's say you had 40 American employees associated with an embassy, and you knew that things were about to get dangerous and there was no way to help them. You could send out a private channel message to just those 40 employees that would self-destruct in 30 seconds, just like in "Mission: Impossible." That way, if a phone fell into the hands of the wrong person, he/she would never figure out what the message said. That's the kind of thing we can do.

**Ping4alerts! is the revolutionary mobile communications platform that enables public safety agencies to send highly targeted, multimedia alerts to mobile devices notifying citizens of dangers and emergencies happening at the exact moment wherever they happen to be.**



CONTINUED FROM PAGE 27

The EOC is the hub from which a major event, such as a plane crash, is monitored, intelligence gleaned and decisions made in what essentially becomes the command center.

The airport is equipped with more than 2,000 cameras, any of which can be called up for view within the EOC, Marshall said during our visit. “When we have an active event, we’ll call up a camera, whether it’s on the runways, the roadways or the terminals. We can see from this center what’s going on as it’s occurring.”

After an event, like a plane crash, notification — email, text messages, phone calls — of the appropriate responders and dispatching of police, fire and medical personnel begins. And in the case of a plane crash, FAA personnel will be on the “red phone.”

“If we’re in here and looking at the cameras, something bad has happened,” said Henry Thompson, who manages 155 staff members as associate deputy airport director of operations and security. In the case of something “bad,” staff would call up cameras in the vicinity of the incident and get every possible video angle. Two-way communication between emergency personnel in the field and staff in the EOC would take place regarding logistics and resources.

There are multiple tables, each equipped with video, satellite phone and other communication apparatus, in the EOC, which can be split into two rooms with a temporary sliding wall. There’s also a policy room where the airport director and other policymakers can be fed information and respond with action.

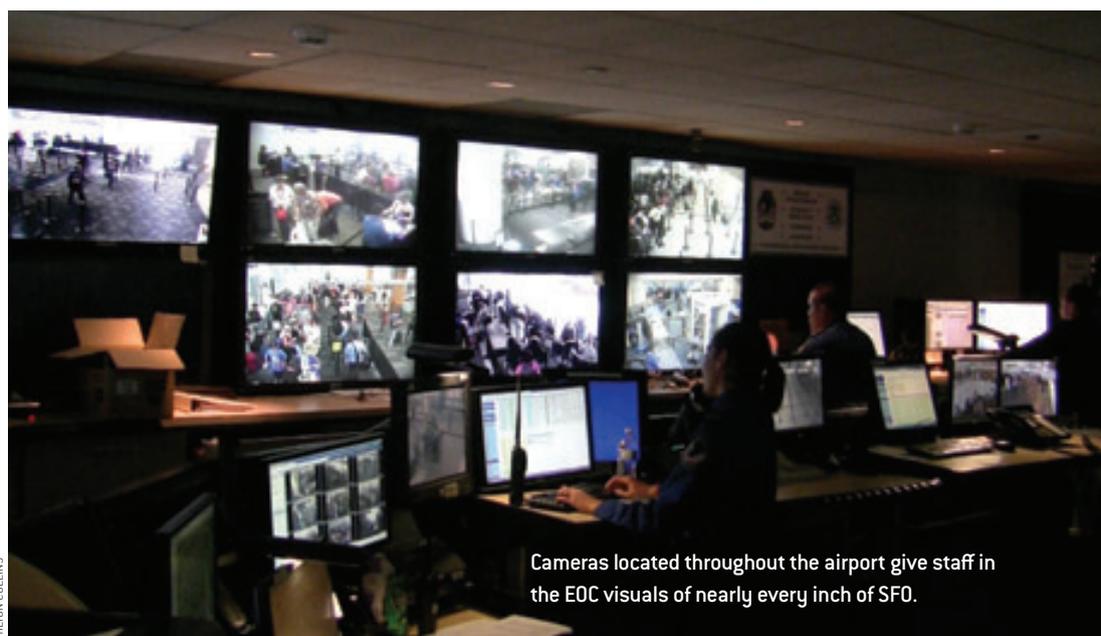
There are communication lines that can be opened, permitting personnel in the EOC to pick up channels from the airport tower, allowing them to hear communication with planes landing and taking off.

The EOC is 10 years old, but technology upgrades, like the physical security information management system, have kept up with the times. The system includes a GIS map, which shows a fly-over view of the entire airport, and allows staff to visualize nearly every inch of the airport via monitors. Analysts within the EOC can monitor just about any situation and feed information to first responders out in the field.

Marshall noted that since events happen so quickly, soon after the EOC is filled with officials, the response phase is actually a



The physical security information management system GIS mapping, which shows a fly-over view of the entire airport.



Cameras located throughout the airport give staff in the EOC visuals of nearly every inch of SFO.

recovery phase. Marshall, who worked in the airline industry prior to joining safety staff at San Francisco International, said that not all airports are as equipped as SFO. “I visited several airports, many of which you would think have space and people dedicated to doing this. They don’t.”

Thompson said safety and security has to be a constant focus and never becomes routine. “Other airports have people in that role because they have to. The FAA says if you’re going to operate as a commercial airport, you have to do this. Not all of them have gone above and beyond and focused on what really needs to be done for that airport.”

Thompson and Marshall convene an Emergency Operations Group meeting monthly in the EOC for everyone on staff who would be called in if the center were

activated. It’s a way to keep staff focused on safety issues and how everything works in the EOC, Thompson said. “We’re going to turn the lights on if something happens. Well, when something happens, you’re not going to know how to turn the lights on if you haven’t been proactive.”

Airport security staff is obviously well aware of the potential for a mass casualty event and prepared to respond as well as possible. “We have flights departing out of here with four or five hundred people on them,” Thompson said. “Something catastrophic that affects those flights will put us to the test.”

“We’re able to respond,” Thompson continued. “Not just put out the fire and rescue the people, but to triage, give



An out-of-service airplane is used for training.

mutual aid support — and we're going to make it happen, no doubt about it."

Airport personnel conduct a simulated plane crash three times each month where fire trucks and other first responders roll out to an old plane that's used for practice, Thompson said. Personnel practice freeing victims, train with foam and test response times.

The airport has its own dispatch center with certified dispatchers, from which it sends out police, fire, ambulance and other operational departments. The airport serves nearly 45 million passengers a year and dispatchers stay busy. Thompson said the airport sees four or five health emergencies per day from incoming flights.

The dispatch center runs 24 hours a day and everyone in the center is cross-trained, according to communications manager Reginald Saunders. He said dispatchers get notified or "pinged" for myriad reasons and must react by sending a first responder. For example, there are defibrillators placed throughout the airport, and when one is accessed, it sends a message to dispatch, which calls up a camera in the area and sends help.

Also, if a TSA representative experiences trouble with a passenger, he or she can trigger a response by stepping on one of the pedals located in all security checkpoints. "There can be a camera callup at any checkpoint so that police have information before they get there," Saunders said. "TSA steps on a pedal, and in a few minutes, you'll get a tap on the shoulder."

**T**errorism is an ongoing concern, and Thompson tries to keep staff vigilant to avoid complacency. He said every one of the 20,000 or so airport employees who are issued a badge must first undergo training and understand the responsibilities that go along with obtaining access. "We have really focused on the culture of awareness," Thompson said. "It's everyone who is issued a badge, and we rely quite a bit on the traveling public to see things and report them."

Thompson said his staff is in daily contact with federal, state and local authorities about potential threats. "Prior to 9/11, we weren't getting much information, but today we are partners with all of the federal, state and local law enforcement agencies so it is really a coordinated effort to ensure the safety of the airport."

Within the airport, multiple layers of security ease Thompson's fears of someone getting through security and causing a problem. For instance, every door has an alarm on it, and if an unauthorized person goes through it, the alarm will ping personnel in the Security Operations Center. Analysts will then call up a camera on the door, find the person and dispatch personnel to the area.

Up until 2006, analysts, such as Tom Colosi, had to rewind video when an alarm sounded. Now they can get a camera on the area and follow whoever triggered the alarm. Colosi said all video is saved for 14 days and checkpoint video is saved for 45 days.

Thompson said that in light of today's heightened awareness, something would have to go very wrong for someone to bypass security. "There are multiple layers in place to deter it before it happens. But the worst-case scenario is that multiple or all layers have failed and somebody gets through. I would like to say that's not possible, but I can't and that's why we always have to be on guard. We talk to our team about it on a regular basis."

Thompson said you can never really know when enough preparation, planning and training have been done to keep an airport safe. But he said SFO has gone "above and beyond" to assure the safety of visitors to the airport.

"I don't know that you can ever be truly ready, but I think we do a good job of trying to get prepared for whatever may come at us." +

[jmckay@emergencygmt.com](mailto:jmckay@emergencygmt.com)



Airport personnel are constantly training with all available first responder equipment.



# Henry Thompson

*Henry Thompson is the associate deputy airport director of Operations and Security for the San Francisco International Airport (SFO). We sat down with him for an interview and a tour of SFO eight days prior to the crash landing of Asiana Flight 214 that killed three and hurt 167 on July 6. Thompson heads eight departments at SFO and is responsible for a staff of 155, covering all aspects of safety and security at the airport. He showed Emergency Management magazine what would happen in the event of a plane crash and how the airport monitors security.*

By Jim McKay | Editor

## Can you talk about some of the different departments?

We have our 911 dispatch center and public safety center here. Those cover emergency planning and operations and airfield and safety and operations. The security access office covers regulatory compliance on the security side. Then we have a section called the security operations center, which is our

proactive way of conducting surveillance at the airport here.

## You mentioned the new safety management system office. What does that do?

The FAA is contemplating a new regulation that requires all commercial airports to have a safety management system in place. It is a program that is designed to start looking at

safety in more of a proactive manner to try to identify safety hazards and risks upfront and to address issues before they happen.

## Does that mean terrorism?

No, it's more safety in respect to where the aircraft are operating at the airport. So there is a proposed rule that the

FAA is working on right now with input from the industry that will basically result in a regulation requiring safety management system programs being implemented. We are not really sure what that regulation is going to say yet or where it is headed, but we are being proactive. I have hired a safety management system manager and we are starting to look at all of our safety programs to conduct an inventory and see where we need to go.

## You mentioned being proactive with surveillance. Can you talk about that?

There is a lot of activity happening here at the airport on a daily basis. So we have created what we call our security operations center, which is staffed by a security analyst 24/7 monitoring the security of the airport. Essentially they are really focused on monitoring to ensure that proper procedures are followed and appropriate response is given to it. When there isn't something actively going on, they are conducting surveillance of the airport with thousands of cameras located throughout to ensure the safety and security of the traveling public.

## How many people do you have monitoring cameras?

Generally there are two analysts who are on duty and performing these duties. It's not just monitoring cameras, it's responding to door alarms and investigating security issues, supporting the police and other security staff who are in the field. So it is a very proactive way of addressing security.

## How do they monitor all of those? Is there a way that the cameras would notify you if something is out of the ordinary?

We do have features built into our security system whereby we are alerted if there is something going on. For example, if someone goes through a door that they are not authorized to go through and they set off an alarm, we will automatically get a camera call up on that door. We can see exactly what is

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occurring at the door in the moment and we can rewind and fast-forward to see where that individual went.

⊕ **You said that you looked into facial recognition too?**

Facial recognition is something that we are very interested in and the technology isn't quite where it needs to be today, but we have our eye on it and we will certainly be moving in that direction as soon as it is appropriate.

⊕ **Talk about the changes in safety and security in the last 10 years.**

Just in the past 10 to 12 years, SFO is probably twice the size that it was. We've expanded our facilities and our traffic has recovered and continues to grow. As you know, security threats are a major concern for every commercial airport, and so security has to be on the forefront of everything we do.

We have been on the leading edge and it has been a priority, but now the way we approach that responsibility is different and we employ technology is different. We have layers of security and there is nothing that is not relevant when it comes to security; we have

Protection, FBI. The San Francisco Police Department has an airport bureau here and they are part of our security team, so they are actually hand in hand with us. We are located in San Mateo County so we have San Mateo County Sheriffs, who are a part of our security team as well.

⊕ **Do you have a lot of those threats that the public never hears about?**

I will say yes we do. Now the severity and validity of them all varies and the types of threats that come through, it all varies, but we take them all seriously and they all get vetted out and certainly the public doesn't hear about all of them.

⊕ **Are there other technologies in place here that you can talk about?**

I don't want to get into a lot of the specifics about it, but I will say that here in San Francisco, we are very focused on technology, and more and more technology is being used to help us manage security. We are looking at the application of technology in just about everything we do today. Anything that we once did manually that required solely staffing, we are looking at doing it faster, better, more

occurs. Whether that be an aircraft or a natural disaster or terrorist incident, regardless, we can respond to it.

⊕ **Sounds like an all-hazards approach.**

Absolutely. From just about any direction, we have the procedures and resources to do that. We have the support of both San Francisco and San Mateo counties with mutual aid capabilities coming from both directions. We are constantly exercising our procedures; it is a continuous process with us. We have three fire stations here on the airport to address aircraft incidents, structural fires, medical responses and we have had quite a few of those; you would be surprised how many people get sick traveling.

And as I mentioned earlier, we essentially have a precinct of the San Francisco Police Department here on the airport and that force is larger than some of the police forces on the peninsula cities. We have other resources to draw from the federal agencies that are here, some armed and some not. So we are in a good place to be able to execute and respond to just about anything that could come up.

⊕ **Including an earthquake?**

That is very much on the forefront of our minds and not just responding to the effects of the earthquake itself and making sure that we rescue people and making sure the environment is safe, but that we really plan ahead for being able to take care of the people who might find themselves here after an earthquake — find themselves stranded here at the airport.

⊕ **That is a lot of planning and training. How do you find time to do that?**

We have training that is continuous, but exercises are planned throughout the year and that's a necessary component of the training, of the procedures, of making sure that you exercise it and make sure people are familiar with what to do when they need to do it. We actually go above and beyond in exercising. The FAA requires a triennial air crash exercise. We do it once a year here at SFO just to make sure that all of the layers are in place and everyone understands what we need to do and how to do it. Because it is one thing to exercise it, and it is a whole other thing to implement it when it really happens. ⊕

## **As you know, security threats are our major concern for every commercial airport, and so security has to be on the forefront of everything we do.**

really focused on creating a culture of awareness about security and it's not just the folks who [perform] the primary function of security who are focused on security. It is everyone who works in this environment and at SFO.

We have about 20,000 employees that we issue badges to, and all of those folks have to undergo specialized training and security on what to look for. And they have responsibilities that come with having a badge. We rely today quite a bit on the traveling public to see things and report things that are unusual as well.

⊕ **Are there communications with other state and federal agencies that go on daily?**

There is both on the safety side as well as the security side. We work closely with our partners at the TSA, Customs and Border

efficiently. We are supplementing our team with layers of technology as well. We have a lot of good technology that is in place at the airport here today and we have a lot of technology that we are looking at for the future.

⊕ **Let's talk more about the safety side of things.**

FAA requires airports to have emergency procedures in place to be able to handle just about any type of an emergency from a major aircraft mishap to bomb threats and things of that nature. So we have emergency procedures in place that fully comply with that, but in a lot of instances we go above and beyond that. We are truly a city within a city, so we have significant resources here on the airport alone so that we are able to address any type of incident that

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# THE DIRTY BOMB

BY BRIAN HEATON

THE BOSTON  
ATTACKS SHOW  
THAT THE U.S. IS STILL  
VULNERABLE TO  
**CHEMICAL THREATS.**



# THE BOSTON MARATHON BOMBINGS WERE A CHILLING REMINDER THAT TERRORIST ATTACKS DON'T NEED TO BE BIG TO WREAK HAVOC ON A POPULATION. PRESSURE COOKER BOMBS CONTAINING SHRAPNEL KILLED THREE PEOPLE AND INJURED 264 OTHERS, CAUSING PHYSICAL AND EMOTIONAL SCARS THAT WILL LAST FOR YEARS.

What if a similar incident included the release of a biological or radiological agent? Are emergency responders prepared to handle such a contingency? The answer may vary depending on the agency and its training resources, but experts believe a terrorist's ability to carry out that type of attack may be increasing.

Matt Mayer, a former official with the U.S. DHS, said acquiring the equipment and technology needed to disperse biological or radiological agents is becoming easier. Mayer referenced the 2010 failed car bombing attempt in New York City's Times Square and the Christmas Day 2009 bombing attempt of Northwest Airlines Flight 253 as examples of terrorist plots that would have succeeded if the bombs had detonated.

In addition, communication breakdowns between various levels of law enforcement may have an impact on detecting potential terror schemes. A recent report co-authored by Mayer and Los Angeles Police Department Deputy Chief Michael P. Downing called out the FBI for failures that may have led to the Boston Marathon bombing.

Writing for the Heritage Foundation, a conservative public policy think tank, Downing and Mayer argue that the FBI's interview of Boston Marathon bomber Tamerlan Tsarnaev in January 2011 should have been revealed to the Boston Police. While the interview may have concluded that Tsarnaev posed no terrorist threat at the time, his actions in the following two years may have suggested otherwise.

Tsarnaev's subsequent activities went undetected by the Boston Police Department

because it was unaware of the FBI's initial contact with him, leading to lost opportunities to detect and potentially thwart the bombing at the marathon.

"In some cases, we've been lucky rather than good," Mayer said. "So the question is can we be doing better, and I think the answer to that clearly after Boston is 'yes.'"

"We can't afford for the Boston bombing to be a biological release or a radiological release," he added. "We can't afford to have those losses."

## MODERN TERROR

Biological attacks have occurred through the mail over the years, using agents such as anthrax or more recently, ricin, to intimidate and harm political figures. Though filters and other preventive measures have since been installed in post offices and mail rooms, other delivery methods concern experts.

Bombs like the ones used in the attack during the Boston Marathon are an obvious delivery device for radioactive materials. Vayl Oxford, national security executive policy adviser for the Pacific Northwest National Laboratory, and former director of the DHS' Domestic Nuclear Detection Office (DNDO), said there are high-risk radiation sources within the U.S. that could easily be the source of a dirty bomb. He added, however, that the U.S. launched a program in 2007 to enhance security of domestic radiation sources to make them difficult to obtain.

The nation has focused its strategy on preparing areas that could be on a terrorist's agenda due to the potential of high casualties, according to Duane Lindner,

director of Sandia National Laboratories' Chemical and Biological National Security program. Tourist attractions, sporting events and major urban areas are just some examples of prime targets.

"Where do people gather and where are there crowds of people? You quickly come to worry about the transportation hubs," he said. "[They would] release the material into the air in an airport terminal or other sorts of transportation nodes."

But while large public spaces are an obvious target for terrorists, Lindner was equally concerned about toxins being introduced into food and water supplies, which could have devastating economic consequences.

Experts shared some steps that emergency managers and the public can take to prepare. Oxford said state and local responders should stay actively engaged with federal anti-terrorism efforts through their own law enforcement agencies or by involvement with trade associations. Mayer agreed, but said some localities can't afford additional training, particularly with the pressure to handle more routine threats like floods and fires.

Mayer also said the public must be better prepared. Although the release of a biological or radiological agent may not be as frequent as a tornado touching down, knowing what to do could save lives. From the DHS' If You See Something, Say Something campaign to general awareness, having citizens on alert is vital.

"We need to make sure people are up to speed on what they should or shouldn't be doing," Mayer said. "That way, if an incident occurred, we don't become obstacles for first responders who have to waste valuable resources dealing with people who are perfectly fine."

## PREVENTION AND PREPARATION

The U.S. has been busy in recent years shoring up domestic and international efforts to mitigate the risk of biological and radiological terrorism. Many steps have been taken in the last decade to increase the intelligence that federal, state and local emergency officials have about potential biological or radiological materials in the U.S.

One major initiative is BioWatch, a program started as a result of the 2001 anthrax attacks in the U.S. The federal initiative is designed to find pathogens in the air

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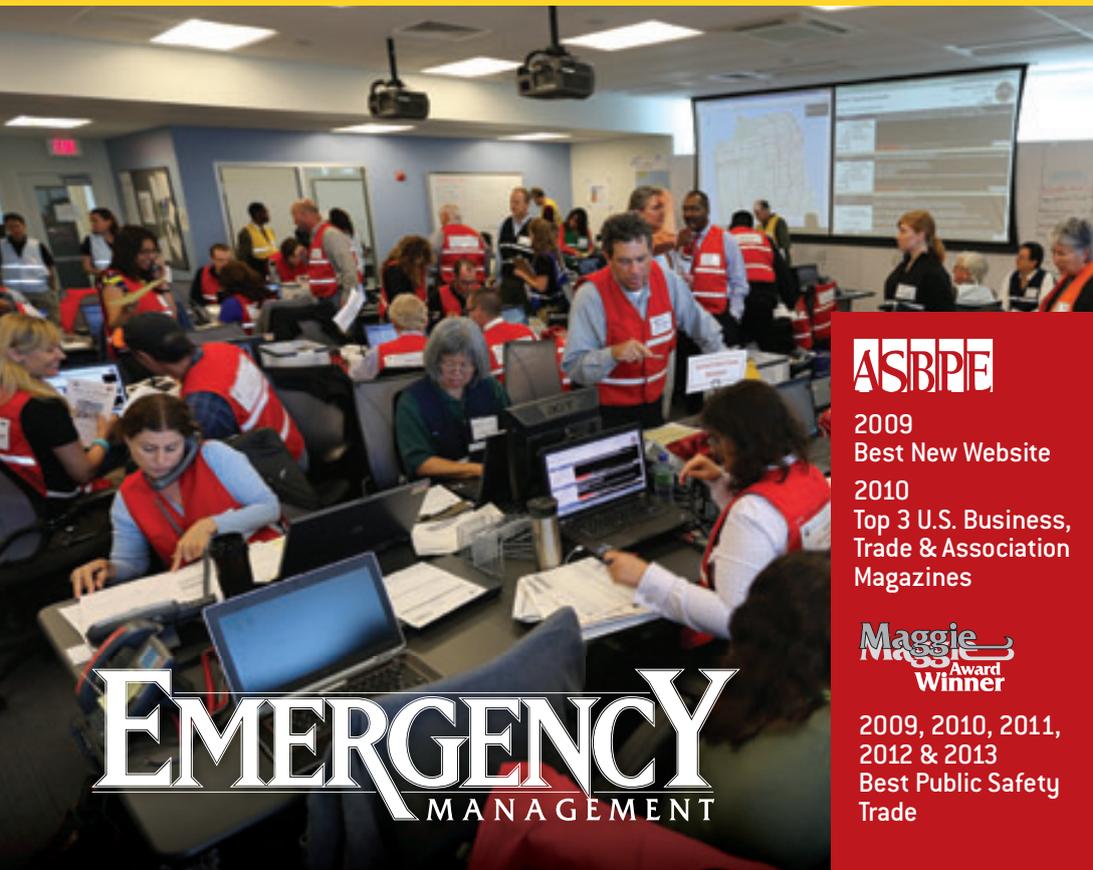
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The air filters are collected regularly and analyzed by the Centers for Disease Control and Prevention (CDC). When a filter contains a notable pathogen, the CDC alerts the FBI, which then investigates the issue and in turn, alerts local law enforcement of a possible biological threat.

Lindner said BioWatch is based on technology developed at Lawrence Livermore National Laboratory in Livermore, Calif., in the late 1990s, in conjunction with the Los Alamos National Lab in New Mexico. He said the fundamental architecture for the system was laid out by Sandia around the same time.

BioWatch's effectiveness depends on how frequently the filters are analyzed. Lindner was confident in the technology, but said the system isn't perfect. He believes, however, that there is a high probability

that any catastrophic release of biological contagions into the air would be detected.

The key once a biological release is confirmed is to have a response plan in place to identify and help treat those affected by the pathogen. Lindner said any terror attack using a biological agent is also a major public health event that needs situational awareness.

"There's a strategic stockpile of medical countermeasures, and there are warehouses full of things that would be used in response," Lindner said. "So there's been quite a bit of attention placed on trying to understand exactly who's impacted as quickly as we can and get medical treatment to those individuals. In each of these cases, work continues to improve the system."

While many homeland security and public health officials support the early warning system, BioWatch also has its critics. The system has come under fire in recent years for several false alarms. In a story published by the *Los Angeles Times* last year, reporter

David Willman detailed false positives, including a false alarm for bacteria that causes tularemia, an infectious disease, at the 2008 Democratic National Convention.

Willman cited other false alarms that happened in Los Angeles, Detroit, St. Louis, Phoenix and the San Francisco Bay Area, according to the newspaper's investigation.

Lindner called the *Times'* take on the false alarms a "fundamental misunderstanding" of how the system works, adding that false positives can be triggered by closely related biological organisms and seasonal changes in air composition. In a nutshell, it's like a very steamy shower setting off a smoke alarm.

While the nationwide debate on BioWatch continues, a next generation of the technology has been designed. Lindner said it's expensive, but the new system would include autonomous detectors that enable much faster response to biological releases. Work also is being done to tie in medical diagnosis technology so that anyone infected with a biological agent can be treated faster.



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“Whether it’s a terrorist attack or a new disease, the initial indicators of such an event would look very similar, and our response would be very similar,” Lindner said.

### COMPLICATE THE THREAT

There’s also concern that terrorists could access radioactive materials and spread them through conventional explosives. The U.S. government has begun in the last six years to make it harder for radiological material to get into the country or be transported — however, the threat remains.

Oxford said a layered strategy is in effect that combines numerous counterterrorism tools along with improvements in domestic and international intelligence gathering. He said the goal is to complicate terrorist planning to the point that the likelihood of a radiological attack being successful would be so low that it acts as a deterrent.

To increase security against radiological materials and weapons of mass destruction getting into the U.S., the federal govern-

ment launched the Proliferation Security Initiative in 2003. The nonbinding agreement aims to eliminate trafficking of various nuclear materials. According to the U.S. State Department, 102 nations have signed on to be a part of the initiative as of 2012.

As another proactive effort, the DHS has been scanning for radiological and nuclear material at U.S. ports and border crossings for years. The DNDO and U.S. Coast Guard established a pilot in 2009 to enhance maritime radiological and nuclear detection capabilities. Called the West Coast Maritime Pilot, it’s part of a national effort to develop regional plans for reducing the transportation of radiological and nuclear materials on small vessels.

Oxford explained that although most in-bound cargo at seaports and border crossings was being scanned, officials were concerned about ships that weighed less than 300 gross vehicle tons that weren’t being scanned. The pilot helped address that.

The program took place in the Puget Sound region of Seattle and in San Diego.

Working with state and local law enforcement, areas were surveyed for existing radiological and nuclear detection architecture, as well as potential risks and recommendations for addressing them. A port security grant helped to purchase radiation detection equipment for state and local program participants.

Although federal funding for the program has ended, the West Coast Maritime Pilot has soldiered on with local agencies conducting regular demonstrations and exercises.

Other current efforts include DNDO’s Securing the Cities program, an initiative under way in metropolitan areas including New York City and Los Angeles. The program is designed to enhance protection from radiological attacks in urban environments. Securing the Cities helps municipalities develop a regional structure of law enforcement and first responders to identify, prevent and respond to potential nuclear or radiological threats. +

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# Learn to Win

University of California, Davis police teach winning, not surviving, in an active shooter scenario.

By Jim McKay | Editor

**T**he Shriners Hospital in Sacramento, Calif., treats children with burns, spinal cord injuries and myriad other ailments. But the environment is designed to be bright, colorful and friendly to put kids at ease. Those factors make it difficult to picture the hospital amid an active shooter scenario.

But that situation is within the realm of possibilities and that's why it was addressed in the form of an active shooter survival workshop, conducted recently by the University of California, Davis Police Department.

"Five years ago, none of us would have thought of this as part of our hospital emergency preparedness," said Allan Johnson, who is in charge of emergency preparedness at Shriners. "But everyone's awareness has been raised; these things have happened."

More than 100 people, including Shriners staff, UC Davis staff and community members participated in the approximately 90-minute workshop in an auditorium setting. The workshop

**"Five years ago, none of us would have thought of this as part of our hospital emergency preparedness. But everyone's awareness has been raised; these things have happened."**

included video and demonstrations, which included weapons and simulation of an active shooter scenario.

"It was actually a very interesting presentation," Johnson said. "The power of the presentation was that there were

100 people sitting in that room who now have the same mentality if something like this were to happen."

There is no template for the active shooter response, but being aware of surroundings and having an idea of how to react are important keys to surviving. "The main takeaway was being prepared," Johnson said. "We can plan all we want, but it's not the plan on paper but raised awareness and hopefully having a step or two in our heads that we can remember quickly."

## Not Surviving, Winning

When UC Davis Police Chief Matt Carmichael talks about being prepared for an active shooter scenario, he talks of winning, not just surviving. "This is self-defense 101," said Carmichael, who's been delivering the workshop for six years. "Self-defense is confidence, commitment and belief that you are going to be successful."

Carmichael said success comes from taking action, and taking action means some training and thinking about what to do before an incident occurs. During a shooting, the action to take is escape if possible, hide if you can't escape or fight if neither of the first two options is available.

The workshop teaches students that when they map out their new classes each fall or spring, they should also find three escape routes in the area. That's one of the lessons Carmichael provides on his tours of schools, universities and hospitals throughout the country.

"Everyone is good at going to work or class the same way every day," Carmichael said. "Just for fun, walk three routes, build that memory, be aware of your surroundings and where you can escape to."

The workshop describes the "butt theory" when running away. That means making a target of your rear end and shielding vital organs, if possible, Carmichael said. "Banking, getting low, moving, dodging and not being an easy target."



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UC Davis Police Chief Matt Carmichael said success comes from training and thinking about what to do before an active shooter incident occurs.

Another strategy is to find a safe place to hide in case of such an emergency. If there is a safe place and running away is off the table, Carmichael suggests hiding quietly with lights out, making sure to put any phones on vibrate.

So how do you know when to run and when to hide? "If there's a safe way for you to get out, you get out," Carmichael said. "You run if it's safe and hide if it's not. It's that simple." But if someone is cornered or in close quarters with a gunman, going for the gun may be the only option.

The workshop teaches what to do before law enforcement gets to the scene and then how to respond when the cops show up. "Remember, law enforcement is not going to be there right away," Carmichael said, acknowledging that these incidents usually only last minutes and the gunman often kills himself before police arrive.

Carmichael said that law enforcement has become better prepared for these incidents and has changed its strategy from waiting the gunman out to going in immediately. But the public has been left out of the preparedness equation.

"We're just reinforcing and sharing our experiences so we can help the community," he said.

A lot has changed in the way law enforcement approaches an active shooter scene since the shootings at Columbine High School in 1999. Police no longer wait out the shooter, but go in immediately. "We used to wait; we didn't even tactically dispatch," Carmichael said. "We dispatched with the common 'keep you on the phone, keep talking, stay calm.' So Columbine was the event that across the country changed what law enforcement does."

Carmichael and his staff play audios from Columbine during their presentation to show the interaction between someone who's stuck in a critical situation and a dispatcher. "We provide video showing what to do, what a contact team and a rescue team look like," Carmichael said. "You can look at history, these events are not stopped by law enforcement."

Usually the gunman kills himself and the whole ordeal is over in minutes. The presentation shows what to do in the aftermath, such as how to provide first aid. It's a lesson that those in a situation with the shooter may need to act before first responders arrive.

**"This is self-defense 101. Self defense is confidence, commitment and belief that you are going to be successful."**

The workshops include demonstrations of weapons and what they sound like when being reloaded, which might provide an opportunity to run. And they include a DHS video on active shooters toward the end.

Carmichael advocates that every business, school, university and hospital connect with the local police department to develop a crime-fighting strategy for an active shooter scenario.

"When we are invited to an area, our message is you have to go back to your local law enforcement and work with them," Carmichael said. "Working with a private vendor is fine, but those aren't the people who will come to help you when you're in the middle of it." +

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## CASE STUDY / DELL SOFTWARE

# / WORKING TOGETHER TO IMPROVE PUBLIC SAFETY

Wake County, N.C.'s Sheriff's Office enables better data sharing and reduces IT workload with Active Directory identity solution and ActiveRoles Server.

Raleigh, N.C.

“We are all on the same team” is a phrase often used in law enforcement to remind public safety personnel that the distinctions and rivalries that come with differing uniforms should not distract from the common goal of protection and enforcement.

But in today's environment, successful law enforcement requires more than just a willingness to work together. It requires the ability to effectively share data, information and intelligence across multiple jurisdictional boundaries in a secure and efficient manner.

The public safety agencies in Wake County, N.C., promote data and intelligence sharing based on the belief that doing so enhances their ability to detect, prevent and respond to public safety issues across the county and beyond. Fortunately, Wake County is utilizing technology to help them do so effectively and efficiently.

### A CRITICAL HUB

The Wake County Sheriff's Office, located in the Wake County Public Safety Center in downtown Raleigh, is the primary law enforcement agency for the unincorporated areas of Wake County. The office employs nearly 1,000 personnel working in six divisions, including Patrol, Investigative, Special Operations, Judicial Services, Detention and Administrative.

The Sheriff's Office relies on a SunGard-based public safety and justice software suite to help manage the county's criminal

justice data. It also houses the county-wide criminal justice system. As such, the office acts as the central data hub for all public safety divisions within the county. This approach has proven an effective cost-sharing model. Rather than each agency buying and maintaining their own servers, the Sheriff's Office owns and maintains all public safety-dedicated servers, which other agencies access and utilize as needed.

“Some of the agencies have no IT staff at all, so this approach has proven very successful for them,” says Christopher J. Creech, manager of Information Technology for the Wake County Sheriff's Office.

The model has also helped further the county's data-sharing goals. “Using this approach, we are able to freely share all of our criminal justice and civil process data amongst each other as a true law enforcement community,” says Creech.

### THE DOWNSIDE OF DATA SHARING

Unfortunately, Wake County's technology-sharing strategy also had a drawback. Because the Sheriff's Office acted as the main cog in the public safety data-sharing wheel, the other agencies relied on the office anytime they needed to make a change or addition to their data.

“Other agencies could not access the system to create their own user accounts, to add new employees, change someone's access privileges or even to change a title if someone was promoted,” says Creech. “The

Sheriff's Office had to devote staff time to handle all of those needs.”

As a result, resources at the Sheriff's Office were strained. The process frustrated end users as well. “Many of the agencies wanted some autonomy to be able to manage their own records without having to rely on us every time they needed to change something,” says Creech. “We have a lot of novice IT people. They did not understand how the system worked — they just wanted to be able to go to one place and update their department information.”

Ultimately, the cumbersome processes affected the entire public safety community. When the Sheriff's Office became overwhelmed, critical data could not be added or changed in a timely manner. Yet the office saw few alternatives. Allowing the other agencies direct access to the SunGard database was not feasible given its complexity and the sensitivity of the data. The county needed a way to ease the burden on the Sheriff's Office while allowing the other public safety agencies to maintain their own data in a controlled, secure and effective manner.

### ENABLING END USERS: DELL SOFTWARE GRANTS AUTONOMY WITHOUT SACRIFICING SECURITY

In March 2012, leaders at the Wake County Sheriff's Office implemented Quest One Identity Manager — Active Directory Edition and ActiveRoles Server from Dell Software. Quest One Identity Manager — Active Directory Edition empowers end

users to complete the most labor-intensive Active Directory group-related tasks on their own, without administrator involvement, while leveraging pre-defined approval processes and workflows. By using an easily deployed, simple and customizable request portal that automatically flows to the appropriate group owner in accordance with established policy, approved requests can be automatically fulfilled, removing the burden from Active Directory administrators.

“With Active Directory self-service, users can now change, update and control their own data,” says Creech. “They can make changes as they happen instead of depending on and waiting on us to do it.”

With Quest One Identity Manager – Active Directory Edition, when a user adds or changes data or creates new records, backend scripts interface with the SunGard system and update the appropriate databases automatically.

“It has taken much of the burden off of the Sheriff’s Office,” says Creech. “We don’t have the staff to support all the other agencies and their users anymore. It works well and allows us to focus on other priorities.”

Additionally, the burden of user access requests are transferred from IT staff to business owners without sacrificing security, compliance and governance objectives.

The addition of ActiveRoles Server has made securing and protecting Active Directory simple and efficient. By delivering automated tools for user and group management and Active Directory delegation, ActiveRoles Server allows the Sheriff’s Office to protect critical Active Directory data and eliminate unregulated access to resources.

“The program allows agency personnel to use the system but prevents them from getting native access within the application,

“The ability to quickly update and share data is a huge factor in enabling us to do our jobs better. Ultimately, it allows us to more effectively serve and protect the public.”

Christopher J. Creech, Manager of Information Technology, Wake County Sheriff’s Office

which would grant them a broader set of privileges that we wouldn’t be comfortable with,” says Creech. “It allows them to manage their agency and their users without giving them access to change another agency’s data or to view certain types of protected information.”

Quest One Identity Manager – Active Directory Edition also allows the Sheriff’s Office to assign ownership of specific groups or distribution lists to key individuals in the organization based on their business needs and organizational roles. For example, the Sheriff’s Office divided users into view-only members and partner agencies. View-only members, such as the Clerk of Courts, District Attorney’s Office and State Bureau of Investigations, can sign in and view data but cannot enter or change it. Meanwhile, partner agencies (there are currently 10) can view data as well as change information or enter new data. In all, the system is currently used by just over 1,600 public safety personnel.

#### HELPING PUBLIC SAFETY AGENCIES DO THEIR JOBS BETTER

Creech says automatic user notifications were an additional benefit he did not expect with the implementation of Quest One Identity Manager – Active Directory Edition

and ActiveRoles Server. Any time a change is requested to an account, a password is reset or security privileges are altered, the affected user is automatically alerted.

“In the law enforcement community it is important to know what is going on, especially if something is changed that a public safety officer didn’t know about or didn’t ask for,” says Creech. “It’s a nice added benefit that helps alert us that something is wrong or if unauthorized changes are made to an account.”

By 2014, the Sheriff’s Office plans to enable Quest One Identity Manager – Active Directory Edition’s Group Attestation Engine as well. The Attestation Engine will allow business managers or group owners to schedule routine or on-demand attestation of Active Directory groups and distribution lists in order to ensure and maintain compliance.

Ultimately, Creech says the benefits of implementing Quest One Identity Manager – Active Directory Edition and ActiveRoles Server go beyond his agency and the other public safety agencies within Wake County.

“The ability to quickly update and share data is a huge factor in enabling us to do our jobs better,” he says. “Ultimately, it allows us to more effectively serve and protect the public.”

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# Overlooked Storm Threat

Storm surges are a dangerous part of a storm that most citizens don't take seriously enough.

By Hilton Collins | Staff Writer

**S**torm surges are a coastal threat that few taxpayers understand. A surge strikes when a storm causes seawater to rise above the normal predicted tide level. The surge itself consists of extra water that's been added on top of the tide, and the combination of the two bodies of liquid can spell doom for coastal residents.

Hurricane Katrina, for example, killed more than 1,800 people in 2005, and the National Hurricane Center attributes many of those deaths to the resultant storm surge. Surge flooding of about 25 to 28 feet above the normal tide level struck the Gulf Coast and caused an estimated \$75 billion in damage in the New Orleans area, the costliest hurricane on record.

But according to some of America's most prominent weather experts, storm surges are often overshadowed in the public consciousness by the disasters that create them.

"People by their very nature think wind first. You hear 'hurricane,' you think wind. They're not thinking water," said

Jamie Rhome, the National Hurricane Center's team lead on storm surges.

Bryan Koon, director of Florida's Division of Emergency Management, agreed.

"A 100-mile-an-hour wind, 150-mile-an-hour wind — people understand wind, but when you start talking about storm surge, we start using terms like 'above ground level' [and] 'base elevation,'" Koon said. "It quickly gets complicated and as a result, there's less conversation about it, simply because it doesn't register as much."

Government agencies are working diligently to increase storm surge awareness and education. The National Hurricane Center, a division of the federal government's National Oceanic and Atmospheric Administration (NOAA), is developing storm surge warnings, separate from hurricane warnings, to be ready by 2015, and Koon said Florida is one of several local governments that is developing strategies to publicize storm surge and evacuation zone information.

## Under the Radar

Multiple factors contribute to storm surges, which makes them more mercurial and difficult to predict than the forces that generate them. When wind moves in a cyclone around the eye of a storm, the force pushes water to shore and creates the surge, but the surge's power depends on the storm's characteristics, which can vary over the disaster's duration. These features include the storm's size, forward speed, angle of approach to the coast and central pressure.

Surges' destructiveness also depends on the land features they hit. If an area has a shallow continental slope, the storm surge will potentially be greater than if the slope were steep. A shallow slope allows water to more easily wash onto shore, but a steeper slope can create a groove that catches more water than it allows to flow. The Louisiana coastline's shallow continental shelf can produce a high storm surge, as it did in Katrina's case, but a storm surge that strikes Miami Beach, Fla., which has a steep continental slope, may be much lower.

Consequently, storm surges don't always match the severity of their accompanying storms, and sometimes storms don't bring surges at all. This means that storm surges are often overlooked while the severe weather behind them always receives attention.

"In Florida, you get a lot of hurricanes without storm surge, so it's not something that people always tie together, or if you do,



Government agencies are working to educate the public about the dangers of storm surges.

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**Dr. Rocco Casagrande** is the managing director of Gryphon Scientific, LLC where his focus is bringing rigorous scientific analysis to problems of homeland defense. He has led weapons of mass destruction (WMD) threat and risk assessments and biodefense system evaluations for the Department of Homeland Security; technology assessment for the FBI and Multistate Partnership for Security in Agriculture; modeling for the Department of Health and Human Services and technical guidance for the Defense Threat Reduction Agency, the White House Office of Science and Technology Policy, and non-profit research institutes (like Georgetown University, MIT and the Institute for Defense Analysis). Dr. Casagrande formerly served as the UNMOVIC biological weapons inspector in Iraq. He has published several articles on his novel research in molecular biology, cell biology, genetics and biochemistry and he holds three patents on inventions in the field of drug discovery.



**Thomas E. Drabek** is currently an Emeritus Professor of Sociology and Criminology at the University of Denver, where he was also a faculty member and department chair for several years.

Earlier this year, the second edition of his latest book *The Human Side of Disaster* (2013) was released. He has authored or co-authored over 100 book chapters and journal articles and 28 other books. He served as the co-editor of the *International Journal of Mass Emergencies and Disasters* (1986-1990) and was elected President of the International Sociological Association's Research Committee on Disasters (1990-1994). He additionally has prepared four Instructor Guides for the Emergency Management Institute, FEMA.

Drabek is the third recipient of The E.L. Quarantelli Award for Contributions to Social Science Disaster Theory by the International Research Committee on Disasters, he received the first Dr. B. Wayne Blanchard Award for Academic Excellence in Emergency Management Higher Education and he was awarded a John Evans Professorship.



**Brian Fagan** specializes in communicating archaeology and the past. A former Guggenheim Fellow, he is regarded as one of the world's leading archaeological and historical writers. He was Professor of Anthropology at the University of California, Santa Barbara, from 1967 to 2004, when he became Emeritus.

His many books include three volumes for the National Geographic Society, including the bestselling *Adventure of Archaeology*. Other leading sellers include many books on ancient climate change and human societies: *Floods, Famines, and Emperors* (on El Niños), *The Little Ice Age*, *The Long Summer*, *Elixir: A History of Water and Humankind* and a *New York Times* Bestseller—*The Great Warming: Climate Change and the Rise and Fall of Civilizations*. Coming out in June, 2013 is his latest book, *The Attacking Ocean: The Past, Present, and Future of Rising Sea Levels*.



**Eric Klinenberg** is one of America's leading voices—a social scientist whose work examines cities, culture, media, and politics. Klinenberg is a Professor of Sociology, Public Policy, and Media, Culture and Communications at New York University. He is the author of three acclaimed books: *Heat Wave: A Social Autopsy of Disaster in Chicago*; *Fighting for Air: The Battle to Control America's Media*; and *Going Solo*. He has also contributed to *The New York Times Magazine*, *Fortune*, *Time Magazine*, *Rolling Stone*, *The Wall Street Journal*, *The Guardian* and the radio program *This American Life*.



**Dennis S. Mileti, Ph.D.** is professor emeritus at the University of Colorado, Boulder where he served as Director of the Natural Hazards Center from 1994-2003. His book *Disasters by Design* summarized knowledge in all fields of science and engineering regarding natural hazards and disasters, and made recommendations for shifts in national policies and programs. Mileti provided oversight to the U.S. Army Corps' investigation of why the levees failed during Hurricane Katrina and ensured societal impacts for which he was awarded the U.S. Army's Civilian Medal of Honor. He also designed NIST's congressional study of evacuation of the World Trade Center towers on 9/11. He has chaired the Committee on Disasters in the National Research Council of the National Academies and the Board of Visitors to FEMA's Emergency Management Institute. Meleti is now working with colleagues at different universities on a DHS-sponsored project to comprehensively test public warning messages for communication over mobile devices.

it's often such a small storm surge that it doesn't go very far inland and most people are unaware of it," Koon said. "You get the occasional giant ones like you did with Katrina, so oftentimes when people think hurricanes, they're not thinking storm surge because it doesn't always correlate with that."

Koon also feels that the media focuses on wind damage more than water damage because wind is easier to observe. Reporters can stand near strong winds, but they can't stand near 20 feet of water rushing onto shore.

"You get reporters standing there with wind blowing them sideways, but, because

they would be dead, you don't get people standing up saying, 'Here, the water's 20 feet higher than it normally has been in this location,'" he explained.

Rhyme said that reporters don't understand water events as well as they do wind events. "Your on-camera TV people; they're meteorologists comfortable with wind. They're not oceanographers, so they're not as comfortable with water."

### Changes Ahead

Efforts are under way to improve storm surge warnings and demystify the nature of these events to the public.

The National Weather Service, another NOAA division, plans to create experimental storm surge watches and warnings by 2015, and the National Hurricane Center has updated its existing storm surge modeling program on faster computers to help emergency managers update evacuation plans more quickly.

The center's surge model is called SLOSH, which stands for Sea, Lake and

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The number of deaths caused by Hurricane Katrina, many of which were due to the accompanying storm surge.



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Overland Surges from Hurricanes. Center personnel use it to calculate surge levels in advance for nearly 40 areas around the world, including the Gulf and East coasts. They run hurricane simulations for all categories of storms, and faster computer modeling means that the center can run more surge scenarios than in the past. Emergency managers use these models to prepare evacuation zones before storms hit.

These efforts will lead to the government's creation of a separate warning system for storm surges specifically. Currently hurricane warning and advisories dominate the emergency preparation process, and no sophisticated system exists for storm surges specifically. The much-used Saffir-Simpson scale, which measures wind speed, is what's used to determine hurricane categories, but it overlooks the power of surge water.

The Hurricane Center is also coordinating with multiple governments across federal, state and local levels to improve public advisory language pertaining to

storm surges in order to better educate the world about the danger; an improvement over how it's been done in the past.

"We probably haven't done a great job of educating people exactly what a storm surge is," Koon said.

To change that, NOAA is working with social scientists to assess the language and dissemination methods for any future public service messaging. The idea is to consider the public first before messaging is developed, as opposed to an approach where climate specialists develop sophisticated language first without considering how confusing the jargon may be to others outside of the scientific community.

"Historically the weather service would do an excellent job of designing a product or service that fit its needs," Rhome said. "Well the average person doesn't have an advanced degree in physical science, so that product may or may not be clear to them."

These messaging changes will include using "high" to describe water levels more

often than "deep" is used, since the general public typically associates "deep" with ocean depth as opposed to how deep water will be from a storm surge when it hits the land.

"Communication experts work with our constituents directly to design what will ultimately be a new suite of forecast products and services for storm surge."

He claimed that some of the language and dissemination changes have already commenced, which comprises more visuals, like videos and graphs. He may or may not have been referring to the eye-catching material on NOAA websites, like video on the Ocean Today website, or the wealth of visuals and models that abound on the Hurricane Center's storm surge information page.

Recent disasters like Hurricane Katrina have prompted these changes in warnings and public messaging, but so has the increase in the numbers of residents moving to coastal communities. +

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# Leading without Authority

**I**t doesn't take a person entering the field of emergency management long to figure out that when it comes to responding to and recovering from disasters, we don't have much, if any, authority. This then is our lot in life. Lots of responsibility, no authority.

How then do you successfully lead without authority? Here's how you can lead, but not command.

First and foremost is understanding the limits of your authority. Most emergency managers would prefer to report directly to the chief executive, mayor, county commission or governor. This allows for more personal contact with the organization's senior leadership and also puts you in a peer-to-peer relationship with other senior members of a cabinet or department.

## HAVE YOUR ACTIONS MATCH YOUR WORDS.

In reality, few emergency managers have a position that gives them the influence that comes from being directly associated with senior leadership. At best, we can get a letter signed by the chief executive directing people and departments to participate in planning or exercises.

The key for emergency management professionals is gaining and maintaining relationships. What you want to accomplish via your relationships is an ongoing process of engagement in activities that they find beneficial to them. Note that I said "them" and not "you."

Get partners involved with disaster exercises. Events like exercises have a way of opening eyes as to the ramifications that come from disasters. Here is a list of other things to do to develop and promote your ability to lead:

- **Lead by example — have your actions match your words.** This is critical if you are going to be able to build partnerships and coalitions. It all boils down to having trust be a bedrock foundation that you can build on.
  - **Focus on individual and organizational relationships.** You don't build trust between organizations. You build trust between individuals, which then brings along the organizational trust.
  - **Be transparent about your intentions.** By sharing as much information as possible with others, they begin to understand what you are trying to accomplish. This builds trust.
  - **Communicate clearly both verbally and in writing.** An old quote I really like goes something like this, "It is not good enough to communicate so that you are understood. You must communicate in a manner that you are not misunderstood."
  - **Study up on marketing skills — you are, after all, selling ideas.** We are always selling something, be it disaster preparedness, the value of mitigation or the concept of disaster resilience.
  - **Build partnerships with individuals and organizations.** We cannot function alone and in a vacuum. Our real influence (authority) comes from working in concert with others.
  - **Learn to find common ground and negotiate win-win solutions.** If you want it "your way" and are unwilling to compromise, then you will have a lonely and frustrating existence. Doing things in concert with others will always make your program stronger. Give up some control in order to become more effective.
- There is no "chain of command" in our profession. Professional emergency managers who are successful at what they do learn to accomplish much more than they ever could have done by commanding others to do their will. 



**ERIC HOLDEMAN** IS THE FORMER DIRECTOR OF THE KING COUNTY, WASH., OFFICE OF EMERGENCY MANAGEMENT. HIS BLOG IS LOCATED AT [WWW.DISASTER-ZONE.COM](http://WWW.DISASTER-ZONE.COM).

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## INDOOR TRACKING

New technology from product development firm Cambridge Consultants can accurately detect someone's location indoors when GPS drops out. A number of sensors and a custom algorithm determine the location, with an accuracy of within approximately 1 percent of the

distance traveled. The technology uses low-power, low-cost sensors, and the device concept is small enough to clip onto a belt. It also doesn't need any existing internal infrastructure.

Indoor tracking systems that process data from one or more sources of location information

to estimate where a person or object is located are not new. But they often rely on RF signals from Wi-Fi access points or custom infrastructure, poor-quality GPS signals or expensive, high-quality sensors. The availability of low-cost smartphone components — including

accelerometers, gyroscopes, magnetometers and pressure sensors — has enabled a new generation of location devices and applications, when combined with a tailored Bayesian algorithm to fuse the information.

[www.cambridgeconsultants.com](http://www.cambridgeconsultants.com)

By Capt. William E. Simpson

# Don't Alienate Preppers

**T**here is a serious downside to the recent demonizing of preppers in the media, and that downside has a direct effect upon emergency management personnel. Preppers are essentially just like anyone else you know. Some of the people who live in your neighborhood are probably preppers. Few people realize that estimates have the numbers of preppers at approximately 3 million to 5 million Americans, and the number is growing fast.

Many preppers are current or former military, police and fire department personnel. There are scores of nurses as well as doctors, scoutmasters, mechanics, pilots, weather forecasters, teachers and generally Americans of all ages and from all walks of life, all of whom are preppers.

As a result of my exposure to and contacts with hundreds of preppers online and in person, I have formed the opinion that the vast majority of preppers are merely the people next door — people who after witnessing emergencies or disasters (Katrina or Sandy) have become better prepared by following FEMA's advice and have stored some basic supplies and equipment, as well as others who through their backgrounds in EMS, police or military may have better-than-average equipment, supplies and skills, but nonetheless are our fellow Americans and neighbors. I have found these people to be loyal and helpful, with a sincere interest in emergency management and disaster preparedness.

It's unfortunate that there are a few people who have broken the law or have shown some mental instability, who may call themselves preppers, or have been labeled as preppers by the media. And because of all the trendy TV shows and movies about preppers, zombies and doomsday, it's newsworthy when anyone who commits a crime is identified as a prepper. As with most stereotypes, these kinds of gross mischaracterizations couldn't be further from the truth.

Why is this important to emergency managers? There are many reasons, all of which are tactically important during an emergency, especially during a large-scale disaster.

Given the total numbers and national distribution of preppers, if even a small percentage become effective volunteers on an as-needed basis during local, regional or national emergencies, emergency managers could potentially field a significantly more robust response than under normal circumstances.

It's important for emergency managers to understand that preppers are a cut above the vast majority of citizens when it comes to emergency and disaster preparedness. Most average citizens are unprepared for any kind of emergency or disaster, have virtually no training and will constitute the bulk of post-disaster victims requiring some form of assistance.

We cannot expect the majority of preppers to obtain degrees or advanced training in emergency management or complete a full CERT training program. The full level of CERT training would be incumbent upon team leaders and emergency management professionals who would provide on-scene leadership and guidance to the proposed PCERT members.

Preppers are not in the position to initiate the foregoing, which places the burden for initiating such changes in the hands of emergency management professionals and agencies. And there is no time to lose in building such a relationship and training platform. The next Katrina, Sandy or possibly something even worse could happen at any time. +



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