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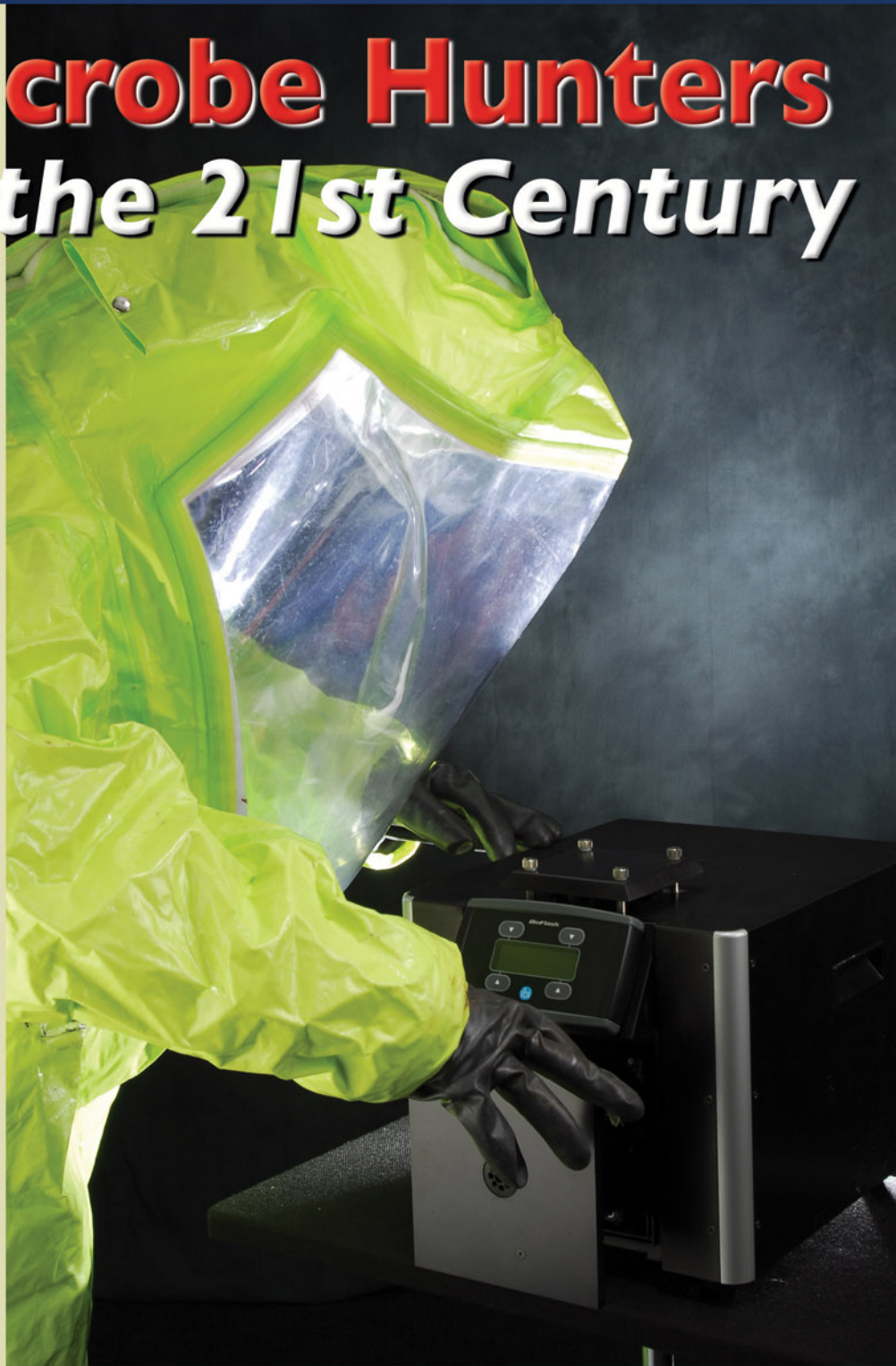
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Publisher's Message

By Martin (Marty) Masiuk, Publisher



Necessity, the well known but not always popular "mother of invention," has been rather busy in recent years – more specifically, ever since the 2001 terrorist attacks that finally convinced the American people, and their elected leaders, that the proliferation of advanced technology, including weapons technology, was now a clear and present danger that could no longer be ignored.

Moreover, the ability of not only less developed nations but also terrorist organizations to build or acquire weapons of mass destruction – WMDs, an umbrella term that includes a broad spectrum of chemical, biological, radiological, and nuclear (CBRN) weapons and devices – meant that literally thousands of American citizens could be annihilated at one and the same time. Suddenly, every major U.S. population center had become, and remains, a likely target.

In the almost seven years that have passed since the 9/11 attacks the U.S. government and the American people have been involved in a major and multi-faceted national effort to prevent additional attacks, to respond – both immediately and comprehensively – if such attacks do occur, and to recover as rapidly and completely as possible from the effects of those attacks.

Particular attention is being paid, for obvious reasons, to the threat posed by CBRN weapons and devices, with special focus on the development, test, validation, and deployment of detection and identification systems of all types ranging from hand-held assay devices to portable screening systems to full-scale field labs. Most but not quite all of these sophisticated systems are being built by the private sector (always working in close partnership with the nation's armed services, the Department of Homeland Security, and other government agencies and organizations).

This month's printable issue of DPJ includes a Special Report (by Editor in Chief James D. Hessman) that examines a random handful of *some* of the CBRN detection/identification systems being developed and fielded by several of the leading companies in this important field: ADVNT Biotechnologies; CANBERRA Industries; Innovative Biosensors Inc.; ICx Technologies; MSA; PROENGIN Inc.; and Thermo Fisher Scientific. The important work being done by each and all of those companies, and by many other U.S. and allied companies in the same field, is both amazing and encouraging.

Complementing the Special Report are a baker's dozen of related articles by, among other highly respected domestic-preparedness professionals: Glen Rudner, who discusses the new and higher limits of technology now being reached (and rapidly breached); Dr. James J. Augustine, who envisions and encourages the design and future construction of a large number of all-purpose/all-hazards hospitals and medical centers; Kay Goss, who points out the compelling need for emergency backups to satellite communications systems in future times of crisis; and Joseph Cahill, who spells out a parallel need for the decontamination of ambulances and other emergency vehicles during and following mass-casualty incidents.

Cahill also contributes a first-person report on the wealth of information provided to those attending the ESI WebEOC conference earlier this year in Boston; Diana Hopkins discusses the pros and cons of a controversial law being considered by the New York City Council to regulate detection systems in various ways; Sue Booth provides a Case Study on the improved Quad-City communications system linking Iowa and Illinois; Gina Piazza reports on a new Hospital Emergency Coordinator certification course in Georgia; and Adam McLaughlin rounds out the issue with reports on new preparedness initiatives underway in California, Florida, and South Carolina.

About the Cover: The IBI (Innovative Biosensors Inc.) BioFlash(TM) biological aerosol dispenser and identification system, which offers an integrated biological sampler and detector in one compact device, can simultaneously detect up to 21 biological threat agents. (Photo by Tim Hickey).

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Detection Equipment – An Ever Higher Technology Ceiling

By Glen Rudner, Fire/HazMat



Emergency-response teams across the nation have a continuing need for portable, reliable instruments that can be used to quickly and accurately characterize the hazardous materials known or likely to be encountered on the scene of a broad spectrum of incidents ranging from traffic accidents to chemical explosions to major fires. However, any investigation of a potentially contaminated site entails a parallel need for: (1) The detailed information required to know *how* to purchase the instruments and devices being used – and from what vendors; and (2) a comprehensive training program that prepares first responders not only how to cope with the risks they face at the accident scene but also how to make the rapid, but safe, decisions necessary to ensure personnel safety and mitigate the worst effects of the hazardous materials that might be encountered.

Today, fortunately, there are numerous manufacturers throughout the United States of detection equipment; those companies have pursued a broad range of options in their efforts to design, develop, and build products that are smaller, lighter, and easier to use than their predecessor systems – and that offer greater functionality as well. These manufacturers have almost literally reached far into the future to bring new technology into the present for use by today's responders. One result is that there is now a very large number of vendors seeking to draw in emergency responders who want to purchase more sophisticated products for less money.

All of which brings up a relevant question – namely, has the technology ceiling, in the design and development of ever-improving detection systems, already been reached? There is also a relevant problem: by reaching so far into

the future for new technology, today's responders have not always gained, and/or retained, the ability needed to interpret the data being received in such unprecedented abundance.

To combat this problem, the nation's emergency-response communities should perhaps adopt a longer-range "macro" approach in purchasing new detection instruments, tools, and systems. That approach should include the continued use of the multiple technologies available today – each of which gives the user complementary information that enhances the ability to understand the new systems coming into the market at any given time. In any case, no matter what materials are detected and monitored at the scene of an incident – particularly a potential mass-casualty incident (MCI) – certain basic criteria are necessary. To begin with, on-the-scene responders should know in advance, and as specifically as possible, what data they are looking for. That information will be used to determine the detection tools needed – different instruments, built to different standards, are used to detect and identify various chemical, biological, radiological, and/or explosive materials.

Today's portable chemical detectors, to cite but one example, obviously should be of a robust design. This means that any new detection system should be able to stand up to the very rough use likely in future field-test and/or on-the-scene operations. To meet this requirement the manufacturer should provide test data for the end user that describes the type of ruggedness testing the system has gone through – drop tests, for example, as well as exposure to both heat and cold, and to water. The bottom line: *All* future detectors should be waterproof, lightweight, have a long battery life, and be able to quickly and accurately detect

a potentially hazardous material (and immediately sound an alarm). They also must be able to differentiate – detect the materials they are intended to detect while remaining immune/indifferent to other materials that might contaminate or adversely affect the accuracy of the readings of the “intended” materials.

More for Less – Plus a Large Bonus

A long and continuing price competition between the manufacturers of detection systems has brought the cost of those systems down considerably, and serves as a bonus factor that has benefited the response agencies and the communities they represent. Many of the monitors now being used, in fact, have dropped in cost by 60 percent or more – from an initial cost of perhaps \$2,000 per unit several years ago to \$600 or \$700 today.

Moreover, the reduction in cost has not been achieved by a reduction in capability but – partly because of increases in production – simply has made the same technology more affordable. Many of today’s meters, for example, are both lighter and smaller than their predecessors, and allow

responders to use their instruments not only in more locations but also under more difficult working conditions. Giving additional impetus to this trend is that many of the latest units are using newer and more sophisticated circuit boards as well as smaller but more powerful batteries.

The nation’s emergency-responders are no longer using only the standard four-gas meters previously (and still) essential, but some new types of detectors as well – photo-ionization detectors (PIDs), for example. Which brings up another potential problem: Partly because of the onrush of technology, some highly capable systems perform well in detecting a large number of hazardous materials but do not always specify the essential differences between two or more materials detected at more or less the same time. The frequent result is a puzzling plethora of quantitative information lacking the qualitative characteristics also needed for full and final identification.

Training Updates And the Canary Syndrome

Unfortunately, the problem does not end there – instead, it flows forward to

the need for quickly and accurately interpreting the data provided by the meter and then making informed tactical decisions – in real time – on what to do next. The solution to most of these inter-related problems is in the training available on the more sophisticated equipment now being used. That training, in many if not all cases, is or can be provided by the manufacturer. Today, most manufacturers of detection systems and other operational tools used on the scene by first responders do offer a relatively broad training program. However, many of those training programs are carried out by the manufacturer’s sales force rather than by professional trainers who possess hands-on experience in the use and interpretation of the detection/identification devices used by responders in the field.

A related problem in this area is that many (but by no means all) manufacturers also fail to *update* the training on the high-tech systems they are selling – particularly the “advanced” models of the systems – and this omission gives the user a false sense of reach-back capability. The rule here is obvious: The user of any detection system not only needs to be able to understand and interpret the data provided any time that system detector is used but also needs refresher training when and if the system is upgraded and/or improved.

To summarize: Chemical detection has come a very long way from the “olden days” when coal miners used canaries as their principal (and only) detection system. The new detection tools being manufactured today are based on the best technology currently available. But many members of the response community may have reached the extent of the current training syllabus and lack the ability to use the improved new systems now in the research-and-production pipeline. The key, of course, is in the training itself.

Glen D. Rudner is the Hazardous Materials Response Officer for the Virginia Department of Emergency Management; he has been assigned to the Northern Virginia Region for the last nine years.

Technology	Type of Material							Conditions
	Organic			Inorganic			Other	
	Solid	Liquid	Gas	Solid	Liquid	Gas	Energy	
CHEMICAL DETECTION								
Photo-Ionization Detector (PID)			✓				✓	Dependent on bulb output
Combustible Gas Indicator			✓					
Metal Oxide Sensor (MOS)			✓				✓	Any products that have a hydrogen atom attached better on inorganics than a PID
Electrochemical Cells			✓				✓	Chemical dependent
Flame Ionization Detector (FID)			✓				✓	Anything that will burn Relative IP = 15.4 eV
Surface Acoustical Wave (SAW)			✓				✓	More and more of this technology is being used today
Gas Chromatograph/Mass Spectrometer		✓	✓		✓	✓		Column dependent
Raman Spectroscopy	✓	✓	✓	✓	✓	✓	✓	Sampling not impacted by water
FT Infrared Spectrometer	✓	✓	✓	✓	✓	✓	✓	Though not very good for inorganics
Ion Mobility Spectrometry (Ni63)			✓				✓	
Ion Mobility Spectrometry (Corona Discharge)							✓	
Colorimetric Tubes			✓				✓	Dependent on tube selection
Indicating Papers		✓					✓	Dependent on paper
Wet Chemistry (HAZCAT)	✓	✓	✓	✓	✓	✓	✓	
RADIATION DETECTION								
Gamma Spectroscopy				✓			✓	
Geiger-Mueller Tubes				✓			✓	Dependent on radiation type & isotope
Scintillation				✓			✓	Dependent on radiation type & isotope
Mass Channel Analyzer							✓	
BIOLOGICAL DETECTION								
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Fleet Decontamination During a Pandemic

By Joseph Cahill, EMS



Influenza – “the flu,” in common parlance – is a respiratory disease caused by a virus that mutates from one year to the next into a slightly new strain that requires a new annual vaccine. A flu pandemic occurs when influenza becomes easily transmissible from person to person and the global population has little or no immunity to the new strain – a lethal combination that results in millions of people – sometimes tens of millions – throughout the world dying or becoming seriously ill. The only saving grace is that, despite the horrendous loss of life, most of those infected eventually will recover from the illness.

The goal of most communities within the United States, and overseas as well, preparing to cope with an influenza pandemic is to at least lower the percentage of the population that is sick at any given time, a successful strategy that may perhaps mean the difference between 20 percent and 30 percent of the local population being ill simultaneously. Whatever the percentage, even a relatively small difference – when applied to critical staff such as emergency services technicians, transportation personnel, and many others playing key roles in the overall healthcare community – is significant enough to save hundreds or perhaps thousands of lives.

It is important to remember that the emergency-response community does not use the terms “disinfection” and “decontamination” interchangeably. Disinfection refers to removing or killing the microorganisms that cause the flu; decontamination refers to removing or neutralizing a substance or microorganisms from a person or object and moving that person or object to a contamination-free environment.

Not only healthcare officials but also planners and decision makers at all levels of government already have spent a great deal of time working out the processes and procedures needed to provide for the decontamination of patients not only at the scene of an incident involving hazardous materials and/or terrorism but also at the doors of the hospitals and other healthcare facilities within their communities.

This vital work is essential, of course, to combat the specific threats mentioned; however, the same plans cannot always be used to cope with a pandemic flu – for two reasons. The first reason relates to the nature of the hazard, which in this case is a microorganism. A person infected with influenza does not exhibit a surface contamination; instead, the contamination is embedded deep in his or her lungs. The second reason is that, if and when a pandemic flu strikes any given community, there would seldom if ever be a “clean zone” available through which a decontaminated ambulance could pass.

Processes, Procedures, And the Prevention Strategy

The standard operating procedures used to disinfect an ambulance during an influenza pandemic would be the same as the disinfection procedures used after an outbreak of any other respiratory-based illness. In fact, they should be exactly the same as those used in taking a patient with flu-like symptoms to the hospital during flu season or at any other time.

The difference is not in the disinfection process or in the illness; it is in the context of the pandemic itself. During a pandemic, disinfectants and other supplies may quickly become very scarce, not only because of the suddenly increased demand but also because there probably would be a decrease in

the supply of disinfectants available – the latter problem would be caused by the debilitating effects of the pandemic both on the production staff (of the companies that produce the disinfectants) and on the transportation workers who deliver the disinfectants not only to warehouses and other storage sites but also to hospitals, clinics, and other healthcare facilities.

One strategy that can be used to combat these expected shortages is to stockpile materials in advance. However, many agencies and/or communities do not have the financial resources or the storage space needed to implement this strategy. A better strategy for most organizations and agencies facing this problem is a multi-faceted prevention plan. Requiring any coughing or sneezing patient, for example, to wear a mask to contain the virus-carrying droplets being emitted will minimize both the amount and the spread of the virus adhering to surfaces within an ambulance and/or hospital room. Obviously, EMS, transportation, and healthcare staff should be wearing masks for the same reason.

A full-scale prevention strategy also would entail keeping ill employees from their normal working places, and vaccinating those who have not yet become ill (but it should be remembered that a vaccine is likely to be available too late to help most of those likely to be infected). The most important step in the prevention strategy, however, is frequent and consistent hand washing as well as the use of liquid hand disinfectants when soap and water are not available.

Joseph Cahill, a medicolegal investigator for the Massachusetts Office of the Chief Medical Examiner, previously served as exercise and training coordinator for the Massachusetts Department of Public Health, and prior to that was an emergency planner in the Westchester County (N.Y.) Office of Emergency Management.

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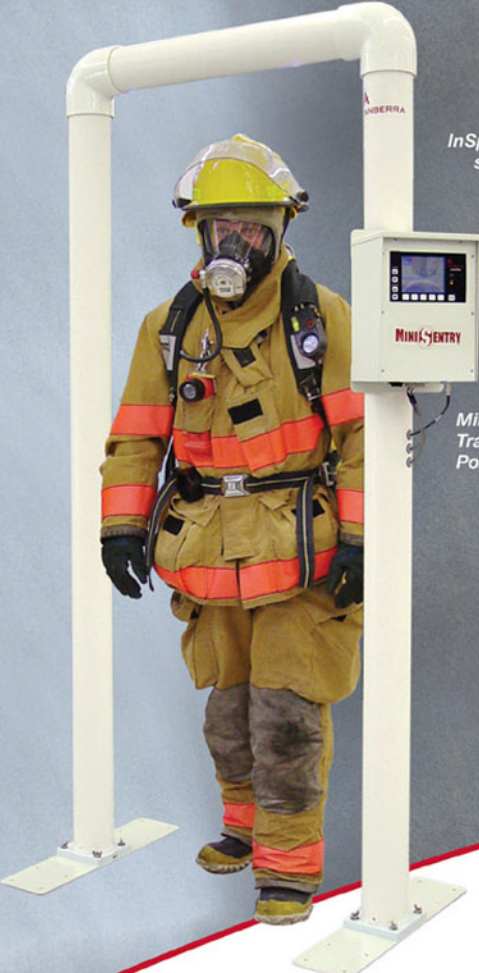
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The Design of the Future U.S. Hospital System

By James J. Augustine, Health Systems



When emergency planners and healthcare officials – including financial planners and political decision makers at all levels of government – want to envision the U.S. hospital system of the future, they ask themselves a host of complex questions, including the following: What sites would be ideal for a community's investment in preparedness to meet a broad spectrum of disasters? What healthcare facilities would be the heart of healthcare provision for the treatment of disaster victims, regardless of cause? What have Americans learned from recent experiences with blackouts, hurricanes, ice storms, and earthquakes?

The community hospital almost always emerges as the facility favored for investment by all stakeholders in the collective effort to improve the nation's domestic-preparedness capabilities. Now and for years to come, it seems likely, such hospitals not only will fill a community's everyday basic need for health care, but also will serve as the key component of a durable infrastructure that will survive all but the worst and most destructive disasters possible.

That conclusion is inevitable when one considers just the physical attributes required for a facility built to serve the community in times of major disaster. More specifically, community hospitals and other major medical facilities:

- (a) Are built to standards that require durable construction;
- (b) Typically are built in locations that are both "high and dry";
- (c) Possess large quantities of their own power and water, as well as telephone and Internet lines;
- (d) Are backed up by innovative power reserves and communication resources;
- (e) Are able to manage unexpected surges of needy persons, many if not all of them suffering from major medical problems;
- (f) Are experienced in and capable of managing persons with "special needs,"

- either physical or behavioral;
- (g) Can usually if not always provide and maintain tight security;
- (h) Possess a large and varied supply of medications (usually stored in heavy-security areas);
- (i) Also are stocked with a relatively large supply of food;
- (j) Are capable of carrying out patient evacuations by either ambulance or helicopter; and
- (k) Have usually been well maintained and, to meet ever-higher preparedness standards, are frequently upgraded.

There are potential alternative sites, of course, worth considering for the same type of financial investment: airport facilities, for example, as well as hotels, large nursing homes, convention centers, and sports arenas. But each of these, whatever their other qualities, has significant limitations in terms of serving and caring for large numbers of medically needy citizens.

The Hospital Solution

It is apparent that, in most American communities, the hospital is already the focal point of most community health preparedness programs. Public health is a very important factor, of course, in the wellbeing of every community, but in essentially all crises (or future crises when considered from an "all hazards" point of view), the hospital is the centerpiece around which all else revolves. Fortifying that obvious fact is the certainty that almost all programs related to the prevention and/or management of future natural or man-made epidemics will be hospital-centered.

Today, most U.S. hospitals are privately-owned and -operated entities, and their emergency departments (EDs) are staffed by independent emergency physicians. But the federal government, through various laws, particularly those enacted since the 11 September 2001 terrorist attacks, has made today's ED essentially a mandated community resource – which, fortunately, can be leveraged with

a relatively small capital investment. For that reason, a federal program to "wrap a preparedness program around the ED" would synergistically combine an abundance of physical assets already available with new as well as ongoing surveillance programs and the plans and standards coming into place for responding to sudden emergencies – all of which would (or at least should) be quickly linked to other community assets. The end result would be the most cost-effective preparedness program possible for the size of the investment, and one that could be used on a day-to-day basis rather than being reserved "for emergency use only."

Combining public and private resources would be critical in developing such a preparedness program, but the concept described above would provide a sturdy framework for such a sizable investment. There also would be ample opportunities not only for joint investments by the federal, state, and local governments but also for similar investments by the many businesses, charitable organizations, and individual citizens who want and are willing to pay for a new and higher level of emergency preparedness in their communities. Essentially, every ED in the country might well benefit from a retrofit to fill a new role in community surveillance and the provision of medical care in the aftermath of mass-casualty incidents.

There are several historical indicators that investments in hospitals and other healthcare facilities can be used to build the most critical elements of a bigger and better community health system for the future. The nation's healthcare system faced a similar need for capital investment after World War II, for example, when most U.S. communities were growing rapidly, advances in the health sciences had dramatically improved medical treatment, and U.S. leaders (perhaps with the 1941 Japanese

attack on Pearl Harbor still in mind) feared the possibility of other military or natural disasters occurring on American soil. Those fears escalated, of course, with the beginning of the Cold War.

The executive and legislative branches of government considered the needs as well as several possible solutions, and crafted an infrastructure healthcare building program funded under and governed by the guidelines postulated in the Hill-Burton Act – which became law on 13 August 1946 as Public Law 725. Today, the much increased potential for more, and more destructive, mass-casualty incidents – which can be dealt with only by providing a similar increase in hospital preparedness capabilities – has led to recognition in some quarters of the need for another round of Hill-Burton funding programs to build more and better community hospitals and other facilities.

Another factor to consider is that, in recent years, the federal government has downgraded much of the previously very large naval/military healthcare system. The “major incident centers” in the emergency departments of today’s civilian hospitals must now be capable, therefore, of caring for many military as well as civilian patients, and also must serve as the training grounds for those medical providers who will provide care in the military emergency system. The federal government also is charged with the responsibility of preparing for “worst case” events involving American citizens that occur either in this country or overseas. Here, the broad definition of worst case includes such varied scenarios as a California earthquake, a dangerous military operation overseas, or even the explosion of a nuclear device.

With the commitment to building new hospitals that already exists in many U.S. communities, disaster planners can explore a relatively broad range of concepts related to the improvement of hospital infrastructures to the degree

needed to support major disaster and evacuation functions. It seems safe to assume that the most important components of a disaster-ready hospital construction plan would include, but not necessarily be limited to: (a) a design “friendly” to patients, the hospital staff, and the local community; (b) modern high-speed information systems linked with a regional healthcare coordination center; (c) spaces and/or departments geared specifically to the handling

of mass-casualty incidents; (d) other spaces specifically designed for the safe management of patients contaminated by (or exposed to) hazardous substances; and (e) links to the community’s out-of-hospital emergency system.

Coordinated Contributions: Role Of Non-Government Organizations

The hospital preparedness program envisioned above should be paid for by a joint and mutual investment, funded

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and facilitated by the federal, state, and local governments – then carried out in cooperation with the numerous businesses, charitable organizations, and individuals who want and are willing to support the new and higher level of emergency preparedness previously mentioned. Here it is worth emphasizing, again, that the new and better community disaster systems being funded would also be available to provide routine emergency medical care for the same community. Common sense and sound fiscal management both require that an effective disaster response system be built on a solid foundation of effective day-to-day emergency care.

The new, improved, and more versatile facilities built would include Level One trauma centers, which provide many of the critical-care services needed by regional groups of patients. But trauma centers cannot accommodate *all* of a community's medical needs, either on a day-to-day basis or in the aftermath of a major disaster, natural or manmade. All U.S. hospitals, in fact, are now responsible for developing plans to prepare to handle victims of any type of crisis, from trauma, to contagious disease, to radiation exposure or burn.

Federal funding for the new emergency system would have to be allocated under guidelines developed to support, among other things, the central role played by emergency care systems in community preparedness and syndromic surveillance and healthcare forecasting. Those goals can be met only through federal direction, but individual states can contribute the regional-application models of these systems.

Local governments can and should provide support for necessary roadway changes, zoning approvals, the movement and upgrading of public utilities that surround and serve the hospital, and by cooperating with local public safety agencies in developing and implementing community emergency medical preparedness plans.

Hospitals themselves should provide the space and customized designs needed to incorporate new Major Incident Preparedness Centers (MIPCs – the individual hospital would then be capable of expanding the center around the existing ED to provide more patient care area and additional spaces to buffer tight inpatient resources). There should be a consistent approach in designing an MIPC in which the space “wraps around” the hospital's existing emergency department and provides, among other things, a reassuring and reliable approach to greet incoming emergency patients, both on an everyday basis and in the aftermath of a major incident.

The system for greeting patients should be designed both to safely manage incoming EMS (emergency medical services) or ambulatory patients, and to facilitate use of the high-tech systems that must survey for syndromes related to natural outbreaks of disease and/or indicative of terrorist or criminal activity. The MIPC also would house the supplies needed to cope with mass-casualty incidents throughout the community, including the new wave of detection systems required to identify hazardous chemical, biological, and/or radioactive agents.


National businesses, foundations, and service organizations should contribute to, and be recognized for, the development of a uniform approach to community emergency medical preparedness programs. The elements needed to organize a system such as that described already exist in other industries, and those industries should be given incentives to contribute specialized expertise that could be disseminated nationwide. There also should be a way developed to recognize those community organizations and corporations that contribute to these new models of community preparedness.

The new hospital systems envisioned would provide a unique opportunity

for businesses to contribute to the development of innovative applications of information technology. Like many other industries, the nation's healthcare industry would benefit greatly from a robust, user-friendly, and effective technology base. An effort to integrate information solutions to fill a major community preparedness need should be encouraged. This would spur the development of regionalized, coordinated, and fiscally accountable emergency care systems and the promotion of the emergency medical workforce.

The hospital-based ED Major Incident Preparedness Center would serve as the new heart of a much more comprehensive community preparedness plan. Able to simultaneously serve as a community-based health management center, it would be fully integrated with the overall state/local healthcare system and the community's emergency-response program. The simple beauty of a major capital infusion in EDs today would provide the opportunity to benefit from that investment tomorrow and every day thereafter for the foreseeable future. The best way to meet the time-sensitive need for a major structural upgrade of healthcare facilities is to modernize present EDs to the degree needed to help them not only receive and process everyday patients, but also to develop the physical and process changes required to meet the community's “all hazards” preparedness needs of the future. In short, the term “hospital preparedness” would very soon mean that all U.S. citizens would have access to critical medical services in their times of greatest need.

Dr. James Augustine is an emergency physician and medical director of the Atlanta Fire Rescue Department and Atlanta Hartsfield Jackson International Airport. He also is a clinical associate professor in the Department of Emergency Medicine at Wright State University in Dayton, Ohio. Augustine served as chair of the ASTM Task Group that developed ASTM Standard E2413 on Hospital Preparedness, and is now chair of the Atlanta Metropolitan Medical Response System.



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Excellence in Education: Georgia's New CHEC Course

By Gina Piazza, Public Health



The emergency management of hospitals is a unique area of specialization within the broader field of emergency management. However, there have been no uniform guidelines established that spell out the specific skills and/or level of education that hospital emergency managers should possess. This deficiency has led not only to the growth of a broad spectrum of disparate capabilities possessed by the nation's hospital emergency managers but also to considerable confusion and misunderstanding in an era during which uniformity of both knowledge and practice is essential.

In early 2005, the Division of Public Health (DPH) of the Georgia Department of Human Resources set out to create a standardized curriculum for hospital emergency managers. An advisory committee, which included representatives from public health and academia as well as both seasoned and newly assigned hospital emergency managers, was established. The group outlined what its members considered to be the most critical and highest-priority tasks that should be included in the curriculum, and also established the criteria needed for certification as a Hospital Emergency Coordinator – a distinction previously unavailable.

Nine critical areas of study also were identified. They included such interrelated topics as: emergency operations plans (EOPs); overviews of the National Incident Management System (NIMS), the Incident Command System (ICS) and the Hospital Incident Command System (HICS); emergency preparedness

training, drills, and exercises; the coordination and integration of disaster plans, hazard vulnerability analyses, regulations, and standards; disaster life support training; and surge capacity. In addition, twenty-seven other high-priority tasks were

The course was unveiled in Macon and discussed with an audience that included an estimated 25 percent or so of all of Georgia's hospital emergency coordinators

identified as areas recommended for study. These included such important but ancillary subjects as: budgets and grants; staff and facility safety; administrative support; alert procedures; and the development of external relationships.

Fast Action To Meet an Urgent Need

A development and training grant later was awarded to the Medical College of Georgia (MCG), and the coursework and manuals were completed in late 2007. In January of this year, the course was unveiled in Macon, Georgia, and discussed with an audience that included an estimated 25 percent or so of all of Georgia's hospital emergency

coordinators. (Additional courses are being taught at various venues throughout the state to facilitate attendance by all of Georgia's hospital emergency coordinators.)

The coursework for certification is divided between classroom and on-line studies, and includes a mix of previously existing and newly developed courses. It is distinct from, but may serve as a valuable adjunct to, widely available CEM (Certified Emergency Manager) programs of study – but can be pursued independently of the CEM programs. Participants have the opportunity to attain three levels of certification. The only prerequisites needed to begin the certification process are: (a) approval by the Georgia DPH; and (b) completion of the IS 100.HC course or its equivalent – available online through the Federal Emergency Management Agency (FEMA).

When these prerequisites have been met, the student is eligible to enroll in the Certified Hospital Emergency Coordinator (CHEC) Basic Course, which is managed by MCG (with assistance provided by the DPH). Following successful completion of the CHEC Basic Course and the requisite ICS, NIMS, and HICS courses, the student is eligible for CHEC Level I Certification.

Taking It to a Higher Level

If the CHEC student wants to pursue a higher level of certification, he or she may subsequently complete the CHEC Level II course, which is heavily focused on the Emergency Operations

Plan and drills and exercises. This classroom-based interactive course also is managed and taught by MCG, with assistance from the DPH. The prerequisite for enrolling in this course is IS 235 Emergency Planning, also available from FEMA. CHEC Level II certification is available after the student has successfully completed the Level II course.

The final certification is Level III. To be eligible for this advanced certification, the applicant must have at least 12 months of cumulative "on-the-job" hospital emergency manager/coordinator experience. He or she also must have met the requirements specified for the Level I and II certifications, and to have completed the following additional coursework (sponsored by the National Disaster Life Support Foundation): Basic Disaster Life Support (BDLS);

Advanced Disaster Life Support (ADLS); and National Disaster Life Support – Decontamination.

The Georgia CHEC training program is the first of its kind, and may serve as a model for similar programs in other states as the nation's overall preparedness efforts move forward. The coursework mentioned above continues to be updated and could be easily adopted by other states (and/or cities in major metropolitan areas). The key point to remember is that the overarching goal of the program is to develop and ensure the uniformity of the knowledge base and skills required in the training of hospital emergency management professionals. Thanks to the initial and, it is confidently assumed, probable continued success in Georgia, it seems very likely that similar programs will soon be

developed and required by Georgia's sister states throughout the country.

For additional information

On the MCG course: please visit www.mcgcom.com and click on the Office of Public Health and Hospital Emergency Management link;

On the FEMA coursework available: click on www.training.fema.gov.

Gina Piazza, DO, FACEP, is an assistant professor of emergency medicine at the Medical College of Georgia in Augusta. She also serves as the medical director of operational medicine within the college's Center of Operational Medicine. Previously, she served as the medical director of public health, safety, and wellness for the Erie County Department of Health in Buffalo, N.Y. She is board-certified in emergency medicine and fellowship-trained in emergency medicine services and disaster medicine.



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Detecting Hazardous Chemicals, Radiological Materials, and Infectious Agents

By James D. Hessman, Editor in Chief



The longest-lasting and probably most important battle in the multi-front war against terrorism is against three invisible enemies: radiological, biological and chemical weapons. To help combat these lethal threats the U.S. and allied private sectors have developed and are producing a broad range of detection systems and sensor devices designed to find and identify a broad spectrum of deadly assassins that – if not contained, quarantined, and destroyed – could kill thousands and perhaps millions of innocent victims. The following Special Report focuses on a few of those systems and devices – built by such leading-edge companies as ADVNT Biotechnologies, CANBERRA Industries Inc., Innovative Biosensors Inc., ICx Technologies, MSA, PROENGIN Inc., and Thermo Fisher Scientific.

ProStrips 5 – The Key to Success In Real-Life White Powder Incidents

Speed, reliability, and accuracy are the qualities most needed by first responders “to quickly detect a credible white powder” and are the principal stock in trade of ADVNT Biotechnologies, a specialized but internationally respected biotech company headquartered in Phoenix, Arizona. ADVNT’s line of “quality rapid-detection products,” which company spokesman Dan Faubion notes have been successfully evaluated by the U.S. Department of Defense and the Ministry of Defense in the UK, are currently used by the FBI, the U.S. Secret Service, the U.S. Border Patrol, all branches of the United States military and several of its allies, and “even NASA.”

Significantly, ADVNT’s products also are being used to train military,

medical, hazmat, and other security personnel not only at major military facilities in the United States but overseas as well.

According to Faubion: ADVNT develops, manufactures, and markets “sophisticated yet simple-to-use” HHA (hand-held assay) devices that can detect and identify a variety of threat agents “in as little as three minutes.” “Our detection tests require a “very



An actual evaluation of a suspicious white powder from a mailing envelope using ADVNT Biotechnologies' ProStrips 5 biothreat hand-held assay.

small sample,” and are very specific, he said. These devices “are not a simple protein test that merely detect an organic material.”

The newest addition to the ADVNT line is ProStrips 5, “the only device in the world,” Faubion points out, “capable of detecting five BW agents simultaneously: anthrax, ricin toxin, botulinum toxin, Y. pestis/plague, and SEB.” ProStrips uses “one sample, one device,” to “rapidly detect” all of these potential threats and to provide “highly accurate information to the user. ... Nothing is easier, more accurate, or less expensive than ProStrips 5.”

From a marketing point of view, one of ADVNT’s biggest selling points is that its products already have been used in a number of real-world “White Powder Incidents,” including the well publicized recent discovery of ricin toxin in a Las Vegas hotel room. The Las Vegas police department “used our tests to successfully identify the ricin,” said Faubion.

Forty Years, a Global Presence And Falcons for the Future

CANBERRA has been the world’s leading supplier of radiation detection, identification, and protection systems, instruments, and services for over 40 years, and, in the words of Marketing Manager Regis Lacher, offers solutions that “cover the entirety of radiation-detection needs” ranging from the protection of first responders to the use of “scanning technologies” to protect the ports and borders of the United States and its allies throughout the world.

CANBERRA’s long list of satisfied customers includes not only the U.S. Department of Defense and U.S. Department of Energy but also a number of state, local, and federal law-enforcement agencies and several international organizations and many allied military forces. It is no secret that the company’s inventory includes numerous fixed, mobile, and portable detection devices that are used to identify the presence of radioactive materials concealed in packages, containers, and vehicles of all types – and on people. The principal goals of all of the company’s customers, Lacher says, are much the same: to prevent the diversion of radioactive materials; to interdict the smuggling of nuclear weapons or devices; and



The Falcon is a radionuclide identifier (based on a high-purity germanium (HPGe) detector). It quickly answers: "Is there a radiation source present?"; "Where is it?"; and, importantly, "What isotopes are emitting the radiation?"

to mitigate "the consequences of radiological events."

Looking to the future, Lacher says that "one way" that the U.S. (and global) radiation-measurement industry is likely to change in the next several years is through "an increased acceptance of and reliance on novel technologies such as High-Purity Germanium-based radiation detection." He cites CANBERRA's own Falcon 5000™ portable radionuclide identifier [www.canberra.com/products/438118.asp] as a leading example. The Falcon, he said, provides: (a) High Resolution – achieved by combining "the best-resolution HPGe technology with ultra-low microphonic cooling"; (b) Proven Software – The Falcon system "comes complete with a full version of ... [the company's] industry-leading gamma analysis software, Genie 2000"; and (c) Ease of Use – "The user can easily review the contents of any ... nuclide library and even edit the current library or load a different one as the application requires."

A Desert Storm Veteran Emphasizes AP4C Capabilities

One of the world's best known and most highly respected builders of biological/chemical detection systems and devices is PROENGIN Inc., a French company (its U.S. offices are headquartered in Plantation, Florida) that specializes in the development, design, and delivery of easy-to-use and highly reliable flame-spectrometry systems that were used by the French Army during Operation Desert Storm – and since then have been sold to more than 40 other countries.

The company's distinguished roster of satisfied customers includes, in addition to the armed services of most of those same countries, the U.S. Department of Homeland Security and a long list of fire departments, HLS, law-enforcement, EMS (emergency medical services), and public-health offices and agencies in nations throughout the world.

Fast response times, exceptional reliability, very high sensitivity, and easy maintainability are among the principal virtues of the PROENGIN detection systems, according to General Manager Mark Reuther, who points out that, of 8,000 units of one of its principal systems now in service, fewer than 10 per year malfunction in any way and have to be returned.

The current "star" of the company's product line is the AP4C chemical-warfare and TIMs/TICs (toxic industrial materials/toxic industrial compounds) detector that offers homeland-preparedness professionals a fast and reliable way to carry out quick and accurate assessments of most "potential terrorist threat" situations. The "simple-to-use" AP4C, Reuther notes, is effective against "all vomiting agents," "all nerve agents" (Sarin, soman, and Vx, for example), "all blood agents," and "all blister agents" (e.g., mustard gas and lewisite).

Asked if a first responder would be better off using "a broad-spectrum detector with a very high potential to indicate the danger and its source [the AP4C, in other words]," or a detector "that has limited detection capabilities and offers identification – but will not detect any threat not included in its identification programming," Reuther's answer was short, succinct, and very much to the point: "Determining if a threat exists should [always] be the first step." Specific identification of the threat, he continued, "can follow after the area has been secured."

A CEDAP Win, On-Site IDs, And an Edgewood Pedigree

A false-positive rate of one in one million, a false-negative rate of one in ten thousand, and the exceptionally accurate identification of such deadly biopathogens as anthrax, ricin, the plague, and smallpox. Those are among the many working qualities that make MSA detection/identification systems and devices so popular with the U.S. and allied armed forces and with state, federal, and local CBRNE (chemical, biological, radiological, nuclear, explosives) military and hazmat teams.



The UC AP4C chemical warfare and TIMs/TICs detector is a simple-to-use broad-spectrum instrument unit that simultaneously detects potential terrorist threats offering homeland preparedness professionals a fast, reliable way to initially assess most chemical threat situations.

The assays provided by MSA devices are not only extremely sensitive but also, according to CBRNE Marketing and Sales Director Norman Davis Jr., designed to provide, “to an extremely high certainty,” the on-the-scene identification of a large number of biological agents and toxins. That value-added capability, he notes, gives hazmat teams the ability to “quickly determine whether to clear and/or quarantine an office building, sporting event, or other venue, and – of even greater importance – to know what prophylactics should be provided to those who have been exposed to whatever dangerous agent has been identified.”

The handheld BIOSENSOR 2200R, developed in cooperation with the Edgewood (Md.) Chemical/Biological Center and intended specifically to serve as a portable field unit, is the latest weapon in the company’s anti-pathogen toolkit. Well designed with an onboard menu-driven instruction set and lid-mounted pictorial “quick-start” guide, it is not only lightweight and easy to use but also able to preserve test samples for additional testing later in a permanent lab.



The BIOSENSOR 2200R Biological Agent Detector is a handheld, portable, on-site instrument for rapid detection, analysis, and identification of biological agents. Its five-minute time-to-answer capability allows first responders to make informed critical decisions more rapidly than ever before.

Adding further luster to MSA’s already glowing reputation was the company’s selection earlier this year, by the Department of Homeland Security, for a major CEDAP (Commercial Equipment Direct Assistance Program) bio-detection contract. The CEDAP selection process, Davis noted, is a “highly competitive” one in which DHS subject-matter experts evaluate a number of excellent systems and devices. “Being selected for CEDAP,” he said, “is a significant endorsement [of BIOSENSOR] as a world-class instrument that meets the needs of first responders in both law enforcement and the fire services.”

Diversity, Versatility, Strength And an Unobtrusive Stanchion

ICx Technologies, one of the most innovative and successful companies in the domestic-preparedness field, has already built numerous detection systems and devices that are used today by the nation’s armed forces, and by law-enforcement agencies throughout the country – as well as many private-sector organizations – to protect the U.S. homeland, and American citizens, not only from new terrorist attacks but also from a broad spectrum of other threats.

ICx detection systems of various types are now being used for the protection of not only airports (in Houston, for example, and in Seattle-Tacoma, Washington), and seaports (Long Beach, San Diego, and Orlando), but also such “critical facilities” as the Statue of Liberty, the Pentagon, and a number of U.S. Army depots. The company’s customer list also includes not only all branches of the U.S. armed forces and the Israeli Defence Force, but also: (a) In the law-enforcement field, the California Department of Corrections and more than 50 police and sheriff offices throughout the United States; (b) In the transportation field, the Panama Canal, the California and Hawaii Departments of Transportation, and the Washington (D.C.) Metro Area Transit Authority; and (c) In the field of



The stanchionSPEC™ is a high-performance spectral system designed to detect, monitor, and analyze possible radiation sources. It provides safe, reliable, covert radiation monitoring. It can be used as a stand-alone detection device or in combination with other surveillance systems such as video monitoring.

border security, both the U.S. Customs and Border Patrol and Israeli border-surveillance units on station along the Gaza Strip.

The company’s principal strength, perhaps, according to Patrick Dempsey, ICx’s vice president for Detection Sales, “is its diversity across the homeland-security spectrum.” Its adaptability, he added, is another major selling point. “Our solutions to the market’s problems can be scaled to the right size for the job.” The ICx Detection Division, he pointed out, builds products “for every segment of the CBRNE [chemical, biological, radiological, nuclear, explosives] field. We have devices that quickly detect CBRNE agents within minutes.”

ICx is not resting on its laurels, though. One of its newest and most versatile offerings, in Dempsey’s words, is “a radiation detection/identification product called the stanchionSPEC that was specifically designed to detect, monitor, and analyze possible radiation sources. Built into a standard crowd-control stanchion to give security professionals a way to unobtrusively create an array of monitoring stations, it can be used to detect and identify radioactive

sources that may be used in weapons of mass destruction." The stanchionSPEC "can be set up quickly in almost any location," Dempsey continued, "and can be used as a stand-alone detection device or in combination with other surveillance systems – video monitoring, for example."

Disposable Discs and Aptly Named CANARY Capabilities

Innovative Biosensors Inc. (IBI) – the key word in that name is "Innovative" – combines imagination, energy, and a clear sense of purpose in its quest to develop and build a versatile line of bio-detection systems and devices that provide high value at relatively low cost. Focusing on end-to-end solutions that encompass not only biological aerosol sampling but also the collection, detection, and identification of pathogens, the company emphasizes both affordability and efficiency in its easy-to-use products.

Probably the best known of those products is IBI's BioFlash™ biological aerosol sampler and identification system, which offers an integrated biological aerosol sampler and detector that can be used for the rapid and sensitive identification of a potential biological threat. "The BioFlash biological detector," says Richard R. Thomas, president of the company's Environmental Group, "is a highly portable, high-performance, easy-

to-use integrated aerosol sampler and identifier that was created specifically for biodefense applications."

The BioFlash detector, which incorporates the aptly named CANARY (Cellular Analysis and Notification of Antigen Risks and Yields)* diagnostic technology developed by MIT Lincoln Laboratory scientists, provides sensitive and specific identification of up to 21 biological threat agents, including but not limited to *Bacillus anthracis* spores, *Yersinia pestis*, *Francisella tularensis*, VEE, and vaccinia as well as botulinum toxin and ricin. Recent government aerosol testing, Thomas said, "has validated the BioFlash breakthrough sample collection efficiency and speed of detection." [*Canaries used to be carried into coal mines to provide an early warning of potentially fatal gases.]

The use of simple disposable plastic disks permits the BioFlash to simultaneously collect and identify up to 21 biological threat agents. According to Thomas, the system detects and identifies bacteria, viruses, and toxins in the air in less than three minutes with sensitivities approaching those of polymerase-chain-reaction (PCR) detectors at a fraction of the cost. The BioFlash technology is now being deployed in a number of buildings, Thomas said, to provide accurate and rapid biological agent threat detection and identification.

RadEye, Hand-Held Devices And Entirely Integrated Solutions

"A complete line of high-sensitivity instruments and devices" specifically designed for use by U.S. and allied defense and law-enforcement agencies and organizations "to detect illicit radioactive materials and to monitor ... [suspect] areas for radioactivity." That is the noble goal, briefly summarized, and mission set for itself by Thermo Fisher Scientific, which designs, develops, and builds a full range of products, ranging from hand-held devices to "entirely integrated solutions," that serve "the entire radiation-measurement needs" of U.S. homeland-security professionals.



The RadEye PRD is 5,000 – 100,000 times more sensitive than a typical electronic dosimeter. This capability is achieved through a special technique based on the company's patented Natural Background Reflection (NBR) technology.

At the top of the company's product list, according to Adam Grose – general manager of Thermo Fisher Scientific Radiation Measurement and Security Instruments – is the RadEye product family. RadEye can be used not only "as a prevention and detection device before, during, and after a radiation event," he told DPJ, but also as a preventive device to help the first-responder community carry out its surveillance duties.

"During a radiation-related event," he continued, first responders "can use the RadEye to detect airborne radiation while being secure in the knowledge that the RadEye will not provide false alarms" (triggered by naturally occurring background radiation). RadEye "delivers radiation detection, gamma dose-rate measurement, and area monitoring in a convenient, pocket-sized instrument," Grose said.

In addition to its RadEye products, he added, the company "markets a broad range of environmental instruments that can comprise a whole homeland-protection system, including air-, water-, and radiation-monitoring instruments and integrated systems." Its radiation measurement and protection products, he continued, "provide unequalled radiologic performance and protection." ▼



The BioFlash™ is a highly portable, high-performance, easy-to-use integrated aerosol sampler and identifier that is used specifically for biodefense applications.

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A female doctor with dark hair, wearing a white lab coat over a dark shirt and dark pants, stands on the right side of the poster. She is holding a white rectangular sign with orange text. A stethoscope is visible around her neck.

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This program is supported by Area Health Education Center of Southern Nevada through Grant #T01HP06397 from the Assistant Secretary of Preparedness and Response (ASPR).

Backups for Emergency Satellite Communications

By Kay Goss, Emergency Management



Although once extremely difficult and expensive to operate, satellite technology is now practical for many public, private, and nonprofit organizations. By using VSAT technology, dishes as small as only one meter can provide two-way data connectivity. Satellite-based networks are excellent for remote offices and are cost-competitive with traditional leased lines. In fact, satellite links can form the basis for a secure, encrypted Virtual Private Network, or VPN.

By designing satellite-based communications links as backups to an organization's wide area network, a disaster recovery plan is in place for vital communications to function, even when conventional land-based systems fail. Satellite-based communications can act as backup links to branch locations, for example.

Some entities have deployed smaller versions of their main data center generators – usually equipped with a mobile emergency data center and a variety of other emergency communications equipment – that become the hub for communications during a crisis. This option can create a secure, encrypted, wireless, command-and-control communications zone up to several miles in diameter.

A generic “sat in a box” can be designed for emergency communications, as a self-contained unit, automatically locking on to the satellite by using self-aligning, auto-tracking servomotors controlled by a GPS-fed computer. Vendors can deliver it on-site overnight via airfreight, and it can be operational in an hour or so, ready to support 5-10 wireless laptops complete with Internet access, emails, and VPN connectivity to the system's main site.

Legitimate Concerns And Possible Closures

Emergency managers and other decision makers are rightly concerned about what would happen to their work, and/or those they have responsibility for, if they lost all of their data because of a system crash, a hacker intrusion, a fire – or, possibly, a theft. In the private sector, when all of a

***When all of a
company's data is lost
that company
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at least a few hours;
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the company might
be out of business***

company's data is lost that company will almost always be offline for at least a few hours; in worst-case situations, of course, the company might be out of business. In fact, the Federal Emergency Management Agency (FEMA) found that more than 40 percent of businesses hit by disaster never re-open.

With a data backup system available, important information can be stored offsite – usually at redundant but secure data centers. The most important data would be both compressed and encrypted, ensuring fast backups and greater security. Very user-friendly software is available off the shelf to allow the automatic backup

of files and provide the immediate restoration of data.

Interoperability also provides redundancy and sustainability, reduces dependence on a single source, and reflects the vision enunciated for “Project 25” (also called P25 or APCO-25 – which refers to a suite of standards established for communications use by federal, state/province, and local public-safety agencies to enable them to communicate with other agencies, and with mutual-aid response teams, during emergency situations). P25 fills more or less the same role as the protocol, but is not interoperable with it.

Inter-RF SubSystems Interface (ISSI) is a non-proprietary interface that enables RF subsystems (RFSSs) built by different manufacturers to be connected together into wide area networks. The wide area network connections using the ISSI provide an extended coverage area for subscriber units (SUs) that are roaming. The extended-coverage area is important for use by public-safety first responders involved in providing assistance to other jurisdictions during an emergency.

The ISSI supports both the messaging and the procedures needed to enable RFSSs to track and locate SUs, to set up and tear down calls, and to transfer voice information to the SUs. The ISSI uses various standardized protocols to provide the messaging between RFSSs.

ISSI is key for a number of reasons, including the fact that it interconnects with multiple systems, permits a mix of RF subsystems, connects systems operating in different bands, helps

interoperability by permitting system-independent dispatch, and allows control to be quickly and easily transferred to another site.

Bandwidth, Backup Systems, And Strict Time Limits

As P25 systems proliferate, roaming, encryption, and even management will require intersystem connectivity, and that requirement will in turn translate into a need for credentialing and specific configurations. Failure will isolate systems and break interoperability – creating situations requiring even more backup and raising the question as to what bandwidth may be required in different scenarios. In fact, VSAT terminals or high-altitude platforms might be required.

In disaster situations, emergency managers and responders usually revert to known minimum-performance capabilities in existing systems, because there is not enough time to test or experiment. In these cases, excessive customization hinders interoperability. The disaster site needs more than two-way communications to manage successfully. More specifically, it also needs:

- Recognition of broadcast, cellular, and paging services;
- One-way information dissemination, which is easier both to set up and to meet urgent needs; and
- The standards and procedures required to tie into an emergency-response system.

In the last several years considerable effort has been expended, and significant progress has been and is being made by the nation's fire-service, law-enforcement, EMS (emergency medical services), and emergency-

management communities, at all levels of government, and by private-sector vendors. The continuation of this outstanding leadership and hard work will be needed for the foreseeable future to build a sustainable emergency communications capability at all times – particularly, though, in times of potentially catastrophic incidents and events of all types.

A Related Note On a Major Step Forward

In a recent development in this area, the National Communications System (NCS) of the U.S. Department of Homeland Security (DHS) announced that it is launching a three-year pilot program that will give key government and industry facilities access to advanced satellite communications during emergencies.

The new NCS Satellite Priority Service is being provided by Mobile Satellite Ventures (MSV) of Reston, Va. – through a contract with the Sprint Corporation's Emergency Response Team to provide interoperable, nationwide push-to-talk radio and satellite phone services that will not be affected by local terrestrial conditions.

MSV is a joint venture between Mobile Satellite Ventures LP (owned by SkyTerra Communications Inc.) and Mobile Satellite Ventures Incorporated of Canada.

The Satellite Priority Service is being run from the same NCS office that provides the Government Emergency Telecommunications Service (GETS) for wire-line phones and its cellular equivalent, the Wireless Priority Service (WPS). GETS and WPS provide authorized government and industry users with priority service on commercial networks during emergencies when other resources may be inadequate to meet all of the

probable needs that are anticipated. Unlike those programs, which put authorized users at the front of the line for access to commercial service, the Satellite Priority Service will be a “dedicated” program – i.e., it will be available only to authorized users.

The satellite will act much like a repeater for a traditional radio in push-to-talk mode. The signal is sent from a ground set to one of two MSV satellites in geosynchronous orbit over North America, relaying it to the ground station, where the network: (a) identifies the radio and the talk group being used; (b) looks for other talk group members who are on the air; (c) summons their radios to a common frequency; and (d) sends the signal back up to a satellite and down to the radios of the talk group.

Satellite phone calls to other MSV users do not go over the Public Switched Telephone Networks (PSTN). Any phone calls made to non-MSV phones are transferred to the traditional phone networks for delivery.

The ground set is mobile, but not portable. It consists of a 9-inch automatic tracking L-band antenna and a handset, both of which are connected to a transceiver slightly larger than a laptop computer. For those frustrated by previous systems and connectivity problems it seems evident that a new era in emergency communications is becoming a reality.

Kay C. Goss, CEM, possesses more than 30 years of experience – as a federal and state administrator and in the private sector – in the fields of emergency management, homeland security, and both public finance and intergovernmental operations. A former associate FEMA director in charge of national preparedness training and exercises, she is a noted lecturer as well as the author of several books and numerous articles and reports in the fields of homeland defense and emergency management.



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The Intro 650 Debate

NYC's Controversial Threat-Detector Legislation

By Diana Hopkins, Standards



Legislation, in the form of an introductory bill called Intro 650, is pending in the New York City Council that sets forth limitations on the ownership, purchase, and placement of threat detectors in New York City. The legislation was initiated by Mayor Michael Bloomberg and introduced to the Council by Peter Vallone, chairman of the Council's Public Safety Committee. When and if it passes review by the Council and Mayor, Intro 650 will be promulgated as a local law.

The stated purpose of Intro 650 is to better protect the citizens of New York City by, among other things, distribution – controlled by the New York Police Department (NYPD) – of detectors that meet technical and operations standards set by the NYC departments of health and environmental protection (and by the NYPD). By some accounts, the impetus for the bill came from the U.S. Department of Homeland Security (DHS), allegedly because DHS may want to see it used as a model for similar bills in other U.S. cities.

Intro 650 has encountered strong opposition, though, from a large number of labor unions and a broad spectrum of community-based civil liberties, environmental, academic, health-care, and public-interest organizations, including (but not limited to) the New York Committee for Occupational Safety and Health, the Public Health Association of New York City, the American Industrial Hygiene Association, the United Federation of Teachers, and the New York State Public Employees Federation.

One of the principal concerns of these groups is that the bill might give the NYPD broad new powers that would threaten the public's safety by hindering access to critical public health information – such as that independently collected for environmental monitoring. A number of modifications to the bill, supported by at least some of the organizations opposing Intro 650, also are being reviewed by the Council.

Status Uncertain – But Some Relevant Questions

The final status of the bill is unclear at this time, but what is very clear is that Intro 650 is viewed by many if not all of the groups opposing it as an ill-advised attempt to respond to (or perhaps avoid) some weighty threat response questions – questions that are faced everyday in the homeland security community, and that directly involve the Department of Homeland Security's efforts to protect both the American people and the property of private citizens.

Among those questions are the following: (1) How should the government (national, state, or local) prevent the use of sub-standard detectors and/or detectors that do not meet national consensus standards of performance? (2) How does the government prevent the use of detectors that have not only not been validated by an independent third party but also validated to the extent that there is a high level of confidence in the detector's performance? (3) How does the government ensure that those who operate the detectors are trained to the point that they do not incorporate human error into the test results? (4) What should be the role of emergency responders, health

officials, and law-enforcement officials when a legitimate threat is detected? (5) What should be done to ensure that the manufacturers, purchasers, and users of threat detectors are all working together toward the same high standards needed to ensure that public safety is the highest priority of all parties involved?

Without passing specific judgment on the various substantive claims of those who oppose Intro 650, it seems fair to say that the proposed bill has at least provided much-needed visibility to a helpful checklist of standards, ethical considerations, and responsibilities – within and involving the threat-detector community – that should be fully addressed not only in New York City but on a nationwide level.

If the system proposed under the current legislation is not acceptable, then it is important that *all* Intro 650 stakeholders – the City Council and NYPD, the opposition groups, health and environment officials, and everyday private citizens – reach consensus agreement on a substitute bill and/or on some other way to ensure that all components of the threat-detection and -response algorithm are up to standard and that the public is fully protected in a reliable and effective manner.

Diana Hopkins, creator of the consulting firm "Solutions for Standards," is a 12-year veteran of AOAC International and, until recently, senior director of AOAC Standards Development. Most of her work since the 11 September 2001 terrorist attacks has focused on the development of standards for U.S. homeland security and national defense. In addition to being an advocate of ethics and quality in standards development, Hopkins is also an expert in technical administration, governance, and process development, and is a certified first responder.



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Quad City Interoperability Pilot Bolsters Regional Response Capabilities

By Sue Booth, Case Study



For 12 months, first-responder communities, public-safety professionals, and government agencies in the Midwest's Quad City region worked together in an unprecedented way to dramatically improve their ability to collectively, and individually, respond to emergencies, major incidents, and even street crime.

This unique pilot project, launched in 2007 in partnership with the Raytheon Company and a team of communications-technology leaders, enabled the interoperability of several communication systems used across the Iowa-Illinois state line – connecting two counties and six major cities – to allow a higher level of multi-jurisdictional collaboration, communication, and response efficiency.

"The ability of all of the public and private/public safety agencies involved to seamlessly communicate via voice, video, and data without needing to make a major re-investment in new technology or to change individual operating procedures was a major success of this venture," said Rob Henry, CIO of the City of Davenport, Iowa. "This had never been done before."

The newly established network not only connected emergency responders throughout the Quad City region, it also allowed municipalities to leverage their existing infrastructures by easily integrating new capabilities, including fixed and mobile broadband wireless connectivity, to provide situational awareness and camera surveillance in high crime areas.

The network has had a positive impact in many areas of the Iowa/Illinois Quad-City region. "Everyone could see the benefit of keeping the costs down and

simplifying the process," Henry said. "We were able to spend more time on the human side of things that mattered and not the elements of the technology."

Pilot participants included public safety agencies, first responders, and the municipalities of Davenport, Iowa, and Moline, East Moline, Milan, and Rock Island, Illinois. Another key participant, the Genesis Medical Center, operates a 502-bed facility which functions across three strategically located sites on both sides of the Mississippi River and supports, among other things, a Level II trauma center in Silvis, Illinois.

Raytheon's Network Centric Systems (NCS) served as the project lead for the pilot system, drawing on the company's military communications solutions and systems-integration expertise. The company recently established a Civil Communications Solutions division within its Integrated Communications Systems business to focus on the communications and interoperability challenges faced by the nation's first responders and public safety officers. Partners in the pilot included Nortel Government Solutions, New Era Wireless, and the NexPort Solutions Group.

Strategic Planning Supports Regional Relationships

Prior to performing any network analysis or system upgrades, consortium representatives determined the scope of collaboration desired, obtaining mutual agreements on governance, standard operating procedures, and equipment use. Once these parameters were established, work began on the foundation for what would be an integrated, interoperable network of networks to provide the infrastructure necessary for optimum communications and information sharing. A Raytheon team network operations center was

established in Davenport to control and monitor the network 24/7. This important initiative allowed the integration of several new capabilities to the system, including:

- Voice, video, and data operability among and between users;
- Commander and first-responder connectivity through fixed and mobile broadband access;
- Mobile enhanced situational awareness that works in fixed, nomadic, and mobile sites – first responders can now access streaming video (i.e., news coverage) – while en route to an emergency site; and
- An Electronic Patient Tracking System (EPTS) designed to track and document patients through triage, treatment, and transportation to medical facilities. The system also: (a) supports notifications to the family members of those who may have been killed or injured in a crisis; and (b) tracks medical supplies, vehicles, and even prisoners when needed.

"Raytheon's approach is to keep what you have and let us add to it more," said Eddy Boggs, IT director for the City of Moline, Illinois. That approach, he continued, "is very appealing to the municipalities involved because most of them have a lot of money invested in most of their applications and don't want to start fresh."

Sue Booth is a freelance writer and communication strategist based in Boston, Massachusetts, who has covered various technologies and trends at the Raytheon Company since 2003. During that time she has contributed to both internal and external news vehicles, including the Raytheon Technology Today magazine, for the company, and has covered a wide range of subjects, including Raytheon Six Sigma™, and Engineering, Technology & Mission Assurance.

Three to Get Ready

By James D. Hessman, Editor in Chief



The earthquakes in China earlier this month, and the cyclone that crippled Myanmar; Hurricane Katrina; the terrorist attacks on the World Trade Center Towers, the Pentagon, the London Underground, and the train station in Madrid; the earlier and even more violent San Francisco earthquake of 1906 and the global influenza pandemic of 1918-1919. Not to mention the Nazi invasion of Poland in 1939, the Japanese attack on Pearl Harbor in 1941, North Korea's invasion of South Korea in 1950, and Iraq's invasion of Kuwait in 1990.

All of these and many other random acts of nature – and deliberate acts of hostile nations – had several things in common: They were not only sudden and, usually, unexpected, but the nations, cities, and states totally or partially devastated were in almost every instance completely unprepared.

No nation, and no individual human being, can undo the past. But national governments and the people they govern – and should do their utmost to protect – can and should use the lessons learned from the past to prepare for the future. Today, those preparations require but should not necessarily be limited to:

1. Planning – Included in this umbrella category should be unflinching assessments of a broad spectrum of potential dangers, natural or manmade, as well as a full and honest calculation of the costs involved in coping with (to the extent possible) each of those dangers. The principal cost involved in this aspect of the preparations spectrum would be for investments in intelligence, information, and communications systems (and people).

2. Implementation – This phase usually would take longer and entail greater costs – for the design, development, purchase, and deployment of surveillance and detection systems and devices of all types, for stockpiles of medicines and medical supplies, for the building of protective barriers, and for the recruitment and training of thousands and thousands of first responders – firemen and policemen, medical technicians,

It was known for many years that New Orleans could be flooded by a major hurricane, but the cost of building higher and more effective levees triumphed over common sense

doctors and nurses, systems and equipment operators, and a host of other highly skilled preparedness professionals. Also required are mutual-aid compacts – involving all potential stakeholders – between neighboring cities and states and sometimes between nations. The training and exercises required must include both team and individual training, carried out at regular intervals, and should not be done on the cheap.

3. Political Courage – This is the most difficult part of all. It requires – in a democracy, at least – that a nation's leaders be totally honest with the people they govern. It requires

their willingness to make the difficult choices between domestic preparedness programs and the more politically popular entitlement benefits of all types. Most importantly of all, it also requires, when terrorist attacks are involved, the honesty and leadership qualities needed to strike back – not only at the terrorist organizations themselves but also, perhaps, at the nations that harbor and protect terrorist groups and organizations.

The achievement of total preparedness, at all times and against all threats, is perhaps an impossible dream. But achieving a much higher level of preparedness than in the recent past is eminently doable – at an admittedly high cost. It was known for many years, for example, that New Orleans could and eventually would be flooded by a major hurricane, but the cost of building higher and more effective levees triumphed over common sense. San Francisco could have made its buildings at least somewhat more “earthquake proof” – but did not do so until *after* the 8.3 earthquake of 1906. There are numerous other could-have/should-have examples that could be cited in the long list of disasters that might not have been prevented but could certainly have been ameliorated.

To their credit, the legislative and executive branches of the U.S. government have accomplished much in the almost seven years since the 2001 attacks against the Pentagon and the World Trade Center. With a few notable exceptions, the new Department of Homeland Security is carrying out its numerous responsibilities reasonably well. New and comprehensive legislation has been enacted: to establish and implement preparedness standards; to protect bridges, banks,

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government buildings, and other critical infrastructure; to stockpile drugs, medications, and a full range of other essential supplies; to fund the development and distribution of a broad spectrum of advanced communications, detection, and surveillance systems of all types; to pay for numerous training programs and exercises; to tighten the security procedures at airports and on the waterfront; and to enforce laws against illegal immigration.

All of which has cost the nation's taxpayers a rather large sum of money and will require huge additional expenditures in the future. But it should be remembered that the total cost of the attacks on the WTC Towers alone has been officially estimated at "\$1 trillion, and counting." Moreover, the high cost of preparedness is and throughout history almost always has been offset by numerous other costs that do *not* have to be paid – for the long-term care and treatment of even more victims of terrorist violence; for the replacement or reconstruction of buildings, power plants, and other critical infrastructure that have *not* been destroyed; and to restore the continuity of business operations that have *not* been disrupted. There is no way, of course, to estimate the truly incalculable cost of the human lives that have *not* been lost.

In short, the cost of national preparedness is and always will be very high. But it will be a mere fraction of the much higher cost that would be paid for *not* being prepared.

James D. Hessman is former editor in chief of both the Navy League's Sea Power Magazine and the League's annual Almanac of Seapower. Prior to that dual assignment he was senior editor of Armed Forces Journal International. Hessman received a commission in the Navy following his graduation from Holy Cross College and served on active duty for more than ten years in a broad spectrum of surface warfare and public-affairs assignments.

WebEOC Fusion For Disasters and Everyday Use

By Joseph Cahill, EMS



Publisher's Note: The DomesticPreparedness.com family of publications sent two senior representatives to the Renaissance Hotel in Boston, Massachusetts, last month to attend the ESI Fourth Annual WebEOC User Conference. The following report is based on the information provided to them during that conference.

The principal reason for establishing an Emergency Operations Center, or EOC, is to bring to one place, very quickly, all of the information relevant to a specific incident or situation so that information can be reviewed, correlated, and then provided to decision makers, not only at the EOC but also at the scene of the incident. An additional benefit provided by establishment of an EOC is that it creates a central system through which resources and tasks can be both requested and acquired, making a more efficient and better coordinated response possible. The end result, of course, should and will be better, and better informed, decisions made earlier in the aftermath of the incident.

ESI's base product, the WebEOC, is a powerful Microsoft server and SQL-based product that helps those in charge of the EOC manage the flow of information during an emergency situation – SQL stands for Structured Query Language, and refers to a specialized type of database. Each user simply logs into the system from his or her computer and is able to communicate with all other users of the system, posting information that helps provide situational awareness in real time.

The WebEOC can run on the ESI's servers with users connecting either over the Internet or on the customer's servers, which are connected to users over LAN/WAN (local or wide-area) networks or across the Internet. To

enhance security, these log-in servers are password-protected, the data on them is encrypted, and – when running on the agency's server – their software runs behind the user's firewall.

The Internet connectivity option allows a decision maker to log in from any location on the Internet and to act as if that individual is physically present in the EOC. This capability gives elected officials and department executives the ability to keep up to date without making phone calls or physically entering the EOC.

The WebEOC is compliant and compatible not only with National Incident Management System (NIMS) guidelines – including those specified for ICS (Incident Command System) purposes – but also with: (a) the numerous Emergency Support Functions (ESFs) laid out by the Federal Emergency Management Agency (FEMA); and (b) the terminology and forms used in Emergency Management Assistance Compacts (EMACs), matching those spelled out in these important national standard guidelines.

As an ancillary benefit, EMAC compliance allows the individual WebEOC user to create and print forms that conform to the EMAC agreements between states that make it possible for those states to assist one another in times of emergency. An important point to remember here is that, although the WebEOC user can create new job titles, those already in the system are both NIMS- and ICS-compliant, a factor that allows officials from other jurisdictions to integrate quickly into the response structure even when the agencies involved have never previously worked together.

For the same reason, using the NIMS resource-typing definitions to make requests through the system's resource-

management module means that both the requester and the provider of resources will be using a common language.

WebFusion and a New Tale of Two Cities

One of the highlights of last month's user conference came when ESI rolled out its WebFusion collaborative communications platform – which integrates multiple WebEOCs, running on different servers, into a community working together and in tandem at the same time.

To understand how the system works one might consider the example of a hurricane making landfall between two cities, "A" and "B." City A, the state Emergency Operations Center, and the state police all are using the WebEOC to manage the emergency – but each of those three users also has its own data running separately on its own servers. However, the EOCs for the county and for City B are using a different EOC management product. Prior to the availability of the WebFusion platform, information had to be manually transferred from one system to the other – an unwieldy and time-consuming process frequently requiring the double entry of information.

Other solutions that were available required more technical support and had other significant limitations. These requirements often kept "outside the EOC" information as written information and thus limited its availability to those who might need it the most. WebFusion, however, allows the three separate WebEOCs to talk to one another, pushing information and requests back and forth, enhancing and facilitating overall cooperation, and improving situational awareness between and among the state, the state police, and City A. The automated communications are limited to outgoing information only.

Creating significant additional value to the upgraded system is that, with the simple installation of a software adapter, both City B and the county can be

added to the growing WebFusion family and thereby bring their information into the system as well.

There is a truism in the emergency-management field that, to be managed successfully, massive events need a massive tool. The new WebFusion system serves as that tool by allowing numerous WebEOCs to link together to form a coherent whole that can be used to manage events large enough in scale to extend across several political and operational jurisdictions.

The WebEOC Mapper And Resource Manager

Emergency managers agree that it is much easier to comprehend the full extent of a hazard by seeing its "footprint" on a map – for example, the area that would be affected by the projected path of a hurricane. Visual representation on a map allows decision makers to understand, among many other things, the specific locations of resources and hazards more readily than would be possible by using a dry "spread sheet" or compilation of various types of lists or other stand-alone information.

In a similar way, public speakers have long known that the more complicated the information is that they are discussing the more valuable graphic representation can be to an audience, both in the comprehension of the information provided and the speed at which it is understood. By making available on a map anything that can be placed spatially the system's software makes it immediately relatable to everything else on the map. A special WebEOC "Mapper" feature combines the power of the ESRI GIS (Geographic Information System) data and software with the emergency-management power of WebEOC 7.

The WebEOC "Resource Manager," another special feature, allows emergency managers to track not only the resources needed but also the requests for those resources, thereby facilitating both the prioritization of requests and the tracking of costs as well as the eventual use of those same resources.

Large-scale emergencies that stretch across a number of jurisdictions are extremely difficult to manage because of the complexity involved in the tracking of multiple resources and the many requests for assistance likely to be pouring in. However, by tracking the resources already in use (including those staged and ready to go) – as well as the requests both filled and pending – the system's Resource Tracker gives emergency managers a comprehensive and readily understandable overview of the logistics involved in the response. The resources created and managed by the Resource Manager feature can be assigned coordinates or locations on the WebEOC Mapper and displayed on the incident map.

Strong Partners Make for a Stronger Response

ESI has partnered not only with nationally known corporations such as Microsoft and ESRI but also with such specialized and industry-specific companies as Salamander Industries, 3-GIS, Strohl Systems, Visual Risk Technologies, MIR3, EMSystems, and others to provide bridges between the WebEOC and other needs. In some of these working relationships the goal was to provide capabilities not necessarily native to the WebEOC family of software; in others the goal was to "obsolete-proof" customers who were using other software systems but wanted to integrate with the WebEOC. Firefox and Safari web browsers, to cite but two examples, also are supported by the newest version of WebEOC.

Interestingly, one of ESI's advertising themes focuses on the term "Boundless Collaboration." The use of WebFusion brings that collaboration to a new and much higher level. Ideally, WebEOC should be integrated into everyday operations not only to keep an agency's staff conversant with the software being used but also to determine what does (or does not) work within the agency's own organizational structure. ▼



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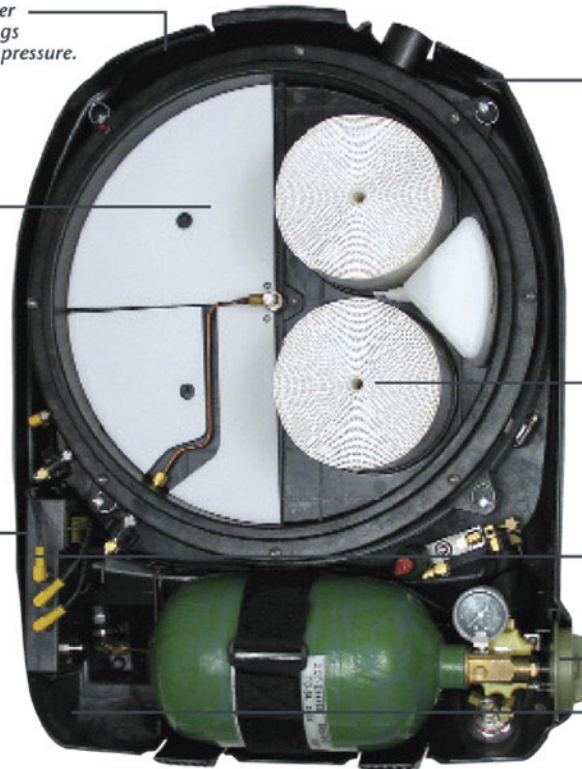
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South Carolina, California, and Florida

By Adam McLaughlin, State Homeland News



South Carolina National Guard Conducts Evacuation Exercise Using C-130 Airlifters

If there were doubts about whether a C-130 Hercules transport plane could land at the Hilton Head Airport, they were erased on Wednesday, 23 April. The large military aircraft could become the principal and perhaps only means of evacuation for Hilton Head residents stranded if the bridges leading to the island were made uninhabitable by a hurricane or other natural disaster, and local officials were anxious to see a successful landing and takeoff.

The first of two Hercules transports assigned to determine the possibility of using C-130s as evacuation vehicles landed in the morning as part of the National Guard's annual Vigilant Guard training exercise. The second C-130 landed in the afternoon.

"That was five months' worth of work," said Beaufort County emergency management director William Winn after the first landing. Winn had spent much of the past year preparing for the training exercises, which were designed to simulate what could be done if an earthquake closed Hilton Head off from the mainland. But the same exercise would be just as useful for a much more likely event – a hurricane devastating the island.

As part of the C-130 training scenario, Air Force experts tested the runway well ahead of time. They eventually pronounced it capable of handling the aircraft, which has a maximum takeoff weight of 155,000 pounds, but weighs less than 100,000 pounds without cargo. The current "approved" weight limit for the runway (for normal

rather than emergency operations) is 75,000 pounds.

Winn and other officials have said many times, though, that, although even an "empty" C-130 is above the current weight limit, the runway could withstand a relatively high number of landings during emergency situations. Prior to last month's exercise, however, military officials had not approved use

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of the runway for such landings, and that non-decision left a major question mark over the airport's possible usefulness during an actual evacuation.

If a real-life emergency occurs that necessitates an evacuation by C-130s (or other transport aircraft), it is now confirmed that a plane such as the C-130 can be used for an emergency evacuation, said Beaufort County Council Chairman Weston Newton, who attended the morning plane landing.

The C-130's commander, Captain Brian Zwicker, said that, despite moderately windy conditions, landing the plane "wasn't really that challenging," and that the Hilton Head runway is more than long enough to accommodate a Hercules airlifter. Zwicker led a tour

of the plane following the landing, noting that the C-130 is capable of carrying up to 92 civilians (or 64 military troops and their gear).

The question of whether a C-130 could land at the airport first emerged during a debate over the airport runway's possible expansion. Commenting on the success of the three-day exercise (which brought more than 3,000 troops to Beaufort County), Brigadier General Les Eisner of the South Carolina National Guard said "The big thing is, the aircraft got in and it got in safely."

California Barrier Installed to Stop Boat- Bomb Attacks in Port of Los Angeles

Several tugboats circled around the main channel of the Port of Los Angeles late last month as their crews linked sections of a floating boom across the busy port's cruise-ship terminal as part of a long-term plan to install a physical barrier to protect the terminal from a potential terrorist attack.

Even after the last section was in place, the orange-and-white barrier looked a bit flimsy bobbing up and down in the harbor's choppy waters. However, even though the foam and steel-cable barrier might not look like much of an obstacle to possible trespassers, port authorities said that they hope it will at least serve as a deterrent to small boats that could pose a threat to cruise ships and cargo vessels passing through the port. The barrier would stop a small boat, "then force it to bounce back," said George Cummings, director of homeland security for the Port of Los Angeles. "It [the barrier] is not intended to do damage to a boat," he continued. "We just want to stop it and keep it from going where we do not want it to go."

Port officials purchased 5,000 feet of building materials, using funds provided by a federal DHS (Department of Homeland Security) grant, to pay for

the barrier, according to port spokesman Gordon Smith.

Port officials said they hope the new security barrier will prevent a terrorist attack similar to the one in Yemen that killed 17 American sailors and injured 39 others when a small boat laden with explosives blew a large hole in the guided-missile destroyer USS Cole on 12 October 2000. "There is not an imminent threat here [in the port of Los Angeles], but the cruise terminal could be targeted for an attack, so it makes sense to test out the barrier here," Smith said. "It is also a good place to test the equipment without disrupting terminal operations at the rest of the port."

An estimated 50 or so port police officers used the occasion to conduct a drill and test several other systems designed to improve port security. Five dive-team officers clad in black wetsuits plunged into the harbor's cold water, for example, to look for suspicious devices, and a hazardous materials team used biosensors to search for contaminants. It was, in short, "an important day to get everybody together," said Captain Michael Graychik of the port's police force, "as a way to combine training and testing for all of our new high-tech security systems."

Elsewhere, port police officers tested a new long-range acoustical device that sounds a loud alarm to keep wayward recreational boaters from entering restricted areas. Scofflaws could be fined up to \$500 or sentenced to six months in jail under an ordinance that went into effect in January. "We were the first port in the United States to actually define areas where small vessels could go," Smith commented. "The new devices we are testing," he said, "are meant to enforce those rules while keeping everyone safe."

LIAI to Conduct Research on Smallpox Antibody Treatment

The La Jolla Institute for Allergy & Immunology (LIAI) has received a

\$7.1 million grant from the National Institutes of Health (NIH) to fund the safety and effectiveness testing of an antibody treatment that could be quickly put into play to fight the smallpox virus. The treatment developed could be the nation's first line of defense in protecting against a terrorist-originated smallpox outbreak, and the antibodies developed may eventually be stockpiled nationwide alongside the smallpox vaccine.

"This work is particularly important because those younger than 36 years old in the U.S. population have not been vaccinated against smallpox, which makes the need for a strong and fast-acting treatment all the more vital should we ever face a smallpox outbreak," said Mitchell Kronenberg, LIAI president & scientific director.

Shane Crotty, the LIAI scientist who developed the antibody treatment, said that the NIH grant would be used to fund pre-clinical testing of the work he and his research team started three years ago. In 2005, the institute's researchers, studying blood samples from people who had received the smallpox vaccine, were able to isolate the "anti-H3" antibody, which has been identified as an extremely potent fighter against smallpox. The LIAI research scientists then proved the antibody's effectiveness by testing it in mice.

Because of concerns that the smallpox virus might be used by bioterrorists, it has been the subject of intense research interest throughout the world during the last several years. The virus was almost completely eradicated in the United States early in the 20th century, and vaccinations for the general public were ended in 1972. But new concerns developed in the aftermath of the 11 September 2001 terrorist attacks, which led to fears that the smallpox virus could be used by bioterrorists to attack the U.S. population. Disease experts are particularly worried about the possibility that samples of the smallpox virus may

at some point already have fallen into the hands of terrorists (or of countries sponsoring or providing safe harbor for terrorist groups). That concern has led to the creation, in some countries, of new stockpiles of the smallpox vaccine over the last several years.

"While we do have a smallpox vaccine, there are concerns because people who are immuno-compromised – including infants and the aged – cannot use the current vaccine," Kronenberg said. Disease experts have estimated that as much as 10 percent of the U.S. population should *not* receive the vaccine. Another complicating factor is that, if there were a smallpox outbreak – spontaneous or caused by terrorists – there would be a certain time lapse before people could receive the vaccine. "In general, vaccines are preventive [in nature]," Crotty said. "You must receive the vaccine *before* you are infected or sick. Otherwise, it will not do you any good."

However, the anti-H3 antibody could be used to provide immediate treatment, even if the person receiving the antibody had already been exposed to the disease. The antibody would work the same way that an antibiotic does, Kronenberg said, and for a short time would protect potential victims from a bacterial infection. "This could be very important," he said, "should people become infected before they have a chance to be vaccinated."

Florida Osceola E-M Director Urges Business Owners To Develop Disaster Plans

The director of Osceola County's Emergency Management Department has warned the owners of local businesses that if they do not have emergency plans for their companies in place before the summer storm season approaches they may risk losing those businesses.

"If we are hit by a hurricane, 30 [percent] to 50 percent of small businesses

will go out of business,” David Casto said, citing numbers gathered during previous storms, including the three that devastated many areas of Central Florida in 2004. Then he became even more specific. “If you do not have a disaster plan,” he predicted, “you will go out of business.”

About 100 local business owners were at the Kissimmee Civic Center on 2 May to hear Casto speak at the Kissimmee/Osceola County Chamber of Commerce’s monthly Breakfast of Champions gathering. His prediction came after half of those in attendance admitted that they did *not* have emergency plans in place for their companies. “There is an important phrase to keep in mind here – continuity of operation,” Casto said.

When disaster strikes, he pointed out, customers are not able to come in to shop, suppliers are not able to bring in their products, and telephone, computer, and air-conditioning services are often not available. In addition, company records and files can be lost if backup copies have not been made.

Many business owners think they can rely on “the government” – whether that government is local, state, or federal – to make them whole again if they are the victims of a natural disaster. “That is not going to happen,” Casto said. “Only you,” he told his audience, “can make it happen.”

Governments, he pointed out, do not identify specific individuals or businesses in the disaster plans they develop (and are supposed to be ready to implement), but have such plans in place primarily to protect the community as a whole. This means that individual business owners must put their own emergency plans in place to protect themselves and their businesses from any disaster, whether it is a devastating storm, some other act of nature, or even a terrorist attack. “If you live in a flood plain, you are going to get flooded,”

Casto told his audience. “If you live in Florida, you’re going to get a hurricane, you are going to get a wildfire. If you live in the United States, you are going to get a terrorist attack.”

Casto said that all U.S. citizens should put together emergency plans for their families and their businesses to ensure that they not only have covered all of the steps they should take to protect their businesses and families during

and/or in the aftermath of a disastrous event, but also personally know what to do and how to recoup and recover from a disaster after it is over.

Adam McLaughlin is with the Port Authority of NY & NJ, and is the Preparedness Manager of Training and Exercises, Operations & Emergency Management, where he develops and implements agency-wide emergency response and recovery plans, business continuity plans, and training and exercise programs.



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