This issue of The CIP Report provides an overview of homeland security exercises and how they are being conducted in the private and public sectors. Exercises are an important tool utilized to ensure the preparedness of our nation against terrorism, natural disasters, and other emergency situations. Exercises are conducted at all levels of government from federal to state to local. They help measure the efficiency of response plans already in place and identify where improvements or changes are necessary. There are different types of exercises, different models and tools used, but cooperation between the private and public sectors has led to an established framework for such exercises.

The Federal government has put in place a program to help guide exercises so that a standard exists and can be implemented when developing and carrying out these valuable efforts. An overview of this program, the Homeland Security Exercise Evaluation Program (HSEEP), is provided, as well as an article from Cubic Applications, Inc., that offers a look at how the private sector is aiding stakeholders in executing exercises and keeping them HSEEP compliant. We are also pleased to feature information on a tool helping to create realistic cyber exercise scenarios developed by Utah State University, Norwich University Applied Research Institutes, the Institute for Security Technology Studies at Dartmouth College, and Delta Risk, a private consulting firm.

In addition to these pieces we have also included a summary of Top Officials (TOPOFF) exercises, Congressionally-mandated exercises conducted in an effort to better prepare for terrorist attacks using weapons of mass destruction. The private-public partnership is highlighted in another article that illustrates the importance of how the partnership is essential when it comes to different sectors conducting collaborative exercises. Lastly, an overview of a legal conference the CIP Program participated in is provided.

We hope you enjoy this issue of The CIP Report and thank you for your continued support of the CIP Program.
An important effort of the Department of Homeland Security (DHS) is to conduct exercises with federal, state, and local agencies and private sector organizations. These exercises serve to improve preparedness and response should an emergency incident occur. The exercises help in establishing roles and responsibilities as well as identifying problems with response plans. DHS established the Homeland Security Exercise and Evaluation Program (HSEEP) to organize and provide guidelines for such exercises.

By utilizing HSEEP and its specified guidelines, consistency and a national standard for all exercises in ensured. There are four performance requirements to be considered in order to be HSEEP compliant. They are as follows:

1. Conducting an annual Training and Exercise Plan Workshop and developing and maintaining a Multi-year Training and Exercise Plan.

2. Planning and conducting exercises in accordance with the guidelines set forth in HSEEP Volumes I-III.

3. Developing and submitting a properly formatted After-Action Report/Improvement Plan (AAR/IP). The format for the AAR/IP is found in HSEEP Volume III.

4. Tracking and implementing corrective actions identified in the AAR/IP.

A checklist is provided on the HSEEP website to help guide an exercise program in being compliant.

There are several different types of exercises that can be conducted. The HSEEP has separated these exercises into two different categories, Discussion-based Exercises and Operations-based Exercises. The website defines Discussion-based Exercises as exercises lending to the development of new plans, policies, agreements, and procedures or helping participants become familiar with those that have already been established. Operations-based Exercises focus more on clarifying roles and responsibilities, identifying resource gaps, and validating plans, policies, agreements, and procedures.

Exercise Types

Discussion-based Exercises:

- Seminar - an informal discussion, designed to orient participants to new or updated plans, policies, or procedures.

- Workshop - resembles a seminar, but is employed to build specific products, such as a draft plan or policy.

- Tabletop Exercise - involves key personnel discussing simulated scenarios in an informal setting. They can be used to assess plans, policies, and procedures.

- Games - a simulation of operations that often involves two or more teams, usually in a competitive environment, using rules, data,
In the late 1990s, Congress mandated the development of enhanced multi-agency, multi-jurisdiction counterterrorism exercises to facilitate improved training and better enable officials to prepare for, respond to, and recover from terrorist attacks involving weapons of mass destruction (WMDs). This mandate was realized through the Top Officials (TOPOFF) exercise series, first led by the U.S. Departments of Justice (Office for Domestic Preparedness) and State (Office of Counterterrorism) and the Federal Emergency Management Agency and now by DHS in coordination with other federal agencies.

The exercises consist of simulated, “real-time” incidents stemming from the use of WMDs, including chemical, biological, radiological, and nuclear weapons. Numerous scenarios are presented during the exercises that provide specific information to participants, such as the type and level of threat, extent of damage, and related factors. Each scenario challenges participants to make timely decisions in the face of arising issues concerning incident impact, policy, and strategy.

Four TOPOFF exercises have been held since 2000, covering a range of WMD threats in locations across the United States and its territories. Participation in the exercises centers on senior federal, state, territorial, and local government officials, law enforcement, first responders, and representatives of the private sector and other non-governmental entities (e.g., American Red Cross); international stakeholders also play an important role in the exercises. During the TOPOFF exercises, participants address issues such as: homeland security; infrastructure protection; incident command; law enforcement and public safety; information gathering, intelligence analysis, and information sharing, both for the general public and among those with a valid need-to-know; public health; crisis and consequence management; and resource management.

Notably, exercise organizers seek to deliberately place stress on response systems to more effectively gauge capabilities and levels of success, or failure, in meeting exercise goals and objectives. While the specific goals of the TOPOFF exercises have evolved slightly through the years, the overarching goal of unifying response efforts has been maintained. The table on page 4 details the key goals of each TOPOFF exercise.

In an effort to learn from the exercises, and allow for better preparedness and improved future response, after-action conferences are held and after-action reports are developed following each TOPOFF full-scale exercise. In addition, each exercise attempts to build on the previous one and address changes to the organization of responsible entities or response frameworks. For example, a designated Principal Federal Official first participated in TOPOFF 2, and subsequent exercises considered revisions to the National Response Plan. Best (Continued on Page 10)

<table>
<thead>
<tr>
<th>TOPOFF Full-Scale Exercises</th>
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</thead>
<tbody>
<tr>
<td><strong>TOPOFF 1</strong></td>
</tr>
<tr>
<td>Dates: May 20-24, 2000¹</td>
</tr>
<tr>
<td>Locations: metropolitan Denver, CO and Portsmouth, NH²</td>
</tr>
<tr>
<td>Attack Details: terrorist-motivated release of biological agent (Denver) release of chemical agent through vehicle bombing (Portsmouth)</td>
</tr>
<tr>
<td><strong>TOPOFF 2</strong></td>
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<tr>
<td>Dates: May 12-16, 2003</td>
</tr>
<tr>
<td>Locations: metropolitan areas of Chicago, IL and Seattle, WA³</td>
</tr>
<tr>
<td>Attack Details: covert release of a biological agent (Chicago) explosion containing radioactive material (Seattle)</td>
</tr>
<tr>
<td><strong>TOPOFF 3</strong></td>
</tr>
<tr>
<td>Dates: April 4-8, 2005</td>
</tr>
<tr>
<td>Locations: New London, CT and Union and Middlesex Counties, NJ⁴</td>
</tr>
<tr>
<td>Attack Details: chemical attack in conjunction with a vehicle bombing (New London) biological attack involving vehicle-based dispersal device (Union and Middlesex Counties)</td>
</tr>
<tr>
<td><strong>TOPOFF 4</strong></td>
</tr>
<tr>
<td>Dates: October 15-19, 2007</td>
</tr>
<tr>
<td>Locations: Guam, Phoenix, AZ, and Portland, OR</td>
</tr>
<tr>
<td>Attack Details: detonation of a radiological dispersal device (i.e., dirty bomb)</td>
</tr>
</tbody>
</table>

Note: In addition to the full-scale exercises, seminars, planning events, related exercises, and after-action conferences were conducted over a span of time reaching as much as two years.

¹ The “attack” agent in Denver, CO had a three-day incubation period, but active response began on May 20
² Complemented by an exercise in the National Capital Region (NCR), known as NCR 2000
³ The NCR also participated on Day 1
⁴ Related exercises were also held in the United Kingdom (Atlantic Blue) and Canada (Triple Play)
## TOPOFF Exercise Goals

<table>
<thead>
<tr>
<th>TOPOFF 1</th>
<th>TOPOFF 2</th>
<th>TOPOFF 3</th>
<th>TOPOFF 4</th>
</tr>
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<tbody>
<tr>
<td>• Assess and strengthen the role of all organizations, including non-traditional partners, in crisis and consequence management;</td>
<td>• Improve the Nation’s capacity to manage extreme events;</td>
<td>• Incident management: To test the full range of existing procedures for domestic incident management of a terrorist event and improve, through practice, top officials’ capabilities in affected countries to respond in partnership;</td>
<td>• Prevention: To test the handling and flow of operational and time-critical intelligence between agencies to prevent a terrorist incident;</td>
</tr>
<tr>
<td>• Create broader operating frameworks of expert federal, state, and local crisis and consequence management systems;</td>
<td>• Create broader frameworks for the operation of expert crisis and consequence management systems;</td>
<td>• Validate authorities, strategies, plans, policies, procedures, and protocols; and</td>
<td>• Intelligence/ investigation: To test the handling and flow of operational and time-critical intelligence between agencies prior to, and in response to, a linked terrorist incident;</td>
</tr>
<tr>
<td>• Validate authorities, strategies, plans, policies, procedures, protocols, and synchronized capabilities; and</td>
<td>• Build a sustainable, systematic national exercise program to support the national strategy for homeland security.</td>
<td>• Build a sustainable, systematic national exercise program to support the national strategy for homeland security.</td>
<td>• Incident management: To test the full range of existing procedures for domestic incident management of a terrorist weapon of mass destruction (WMD) event and to improve top officials’ capabilities to respond in partnership in accordance with the National Response Plan and National Incident Management System;</td>
</tr>
<tr>
<td>• Build a sustainable, systematic, national exercise program in support of national domestic preparedness strategy and international response strategies.</td>
<td></td>
<td>• Public information: To practice strategic coordination of media relations and public information issues in response to linked terrorist incidents; and</td>
<td>• Public information: To practice the strategic coordination of media relations and public information issues in the context of a terrorist WMD incident or incident of national significance; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Evaluation: To identify lessons learned and promote best practices.</td>
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Exercises: How to Prepare a Nation

By Amber Burke, Cubic Applications, Inc.

In our nation’s recent past the local, state, and federal response to Hurricane Katrina is the most visible reason why our nation’s response entities at all levels, the public and private sector, the media, volunteers, military, international organizations, and numerous others are continuously encouraged to exercise their plans, policies, and procedures together to identify gaps in our domestic emergency response system. Just as athletes train to perform their best in athletic competition, first responders and government officials need to practice to be better prepared to deal with crises and save lives.

Established in 2003, the Department of Homeland Security was given four mission areas – prevent, protect, respond, and recover – to increase our nation’s overall preparedness. To better prepare the nation for natural disasters, man-made accidents, and terrorist attacks, the Homeland Security Exercise and Evaluation Program (HSEEP) was developed as a capabilities and performance-based program to perpetuate the preparedness cycle. By focusing on capabilities outlined in the Target Capabilities List (TCL) and its complement, the Universal Task List (UTL), our nation’s civilian response system can become standardized and interchangeable no matter where a disaster takes place. Similarly, the military utilizes the Joint Mission-Essential Tasks (JMETs) or Universal Joint Task List (UJTL) to standardize the capabilities across their specialized units.

Depending on the objectives, the scope of the exercise could be a discussion-based seminar or tabletop with key policy-makers, or an operations-based exercise that simulates first responders on the ground reacting to a variety of scenario elements. Over the years, Cubic Applications, Inc. has supported the government in executing exercises from tabletop to full-scale. To best discuss policy issues and prepare senior officials, a facilitator presents a scenario and asks questions to drive policymakers to make critical decisions and understand the ramifications – both positive and negative – and the limitations they have – both legally and logistically – during a table-top exercise. In a functional exercise, we work with the government to expand the scope of the scenario and the level of participation.

Generally, the functional exercise primarily tests the notification and communication aspects of incident response procedures and evaluates the ability of multiple operations centers to communicate effectively in a timely manner. The largest exercise, a full-scale, includes volunteer organizations, private sector companies, non-governmental organizations, international organizations, and other entities that respond outside of the government sector.

At the beginning of the exercise development cycle, exercise planners utilize the appropriate capabilities list to determine exercise objectives the training audience would like to improve or develop. Working with the client, Cubic Applications, Inc. researches and reviews previous After Action Reports, Lessons Learned, and other historical documentation to support the development of obtainable objectives. For instance, after a local jurisdiction updates its plan on mobilizing and tracking resources, it may request a functional exercise to test the communications between the local operations center and the identified distribution points to validate the plan. Testing the ability of first responders to execute proper decontamination procedures would require a full-scale exercise as first responders would physically set-up a decontamination area. A common objective in most exercises focuses on public affairs and the ability of the government to inform.

(Continued on Page 9)
Exercises and the Public - Private Partnership

By James Creel

The partnership between the public and private sectors is vital in encouraging participation in cross-sector initiatives. Initiatives such as tabletop exercises and workshops help ensure resiliency across all sectors by measuring preparedness and response capabilities. These exercises and workshops also help sector partners identify key interdependencies and improve communication. This article will touch upon some of the collaborative exercises being conducted throughout the sectors.

Banking and Finance: In September, the Financial Services Sector Coordinating Council (FSSCC) and the Financial Banking Information Infrastructure Committee (FBIIC) conducted an exercise on pandemic flu. Sponsored by the U.S. Department of Treasury and the Securities Industry and Financial Markets Association, participation in this exercise was encouraged to all members of the financial sector. This exercise provided an open forum to discuss different scenarios, test pandemic plans, and assess how a pandemic flu would affect the sector.

Food and Agriculture: Given the extensive scope of the Food and Agriculture (FA) Sector, it is critical that communications between FA sub-sectors flows well. In 2006, the Food and Agriculture Sector Coordinating Council (FASCC) and its government counterparts in the Government Coordinating Council (GCC) decided to replace two of the quarterly joint meetings with two tabletop exercises per year. These tabletop exercises help augment decision-making, improve communication and collaboration, and identify the vulnerabilities sector owners and operators must mitigate.

Information Technology: DHS’s National Cyber Security Division (NCSD) sponsors Cyber Storm, the National Cyber Exercise series. Cyber Storm helps enhance preparedness, coordination, and response between the private sector and Federal, State, and local authorities in the event of a cyber attack. Given the fact that up to 85% of sector assets are owned by the private sector, maintaining effective collaboration and cooperation with both public and private security partners is critical. The first Cyber Storm was held in February 2006, and Cyber Storm II has been scheduled for March of 2008.

Water: As discussed in the October edition of The CIP Report, the Southern States Energy Board and the Public Technology Institute in collaboration with multiple public and private entities including the U.S. Department of Energy hosted Black Water, the Southeast Energy-Water Interdependence Tabletop Exercise. This tabletop offered participants an opportunity to discuss interdependencies between the Water and Energy Sectors. It also identified ways to enhance communication and collaboration as well as test state approaches under the State Energy Assurance Guidelines.

Tabletop exercises have proven to be quite beneficial to participants and the sectors they represent. They allow private and public entities an open forum to contemplate and prepare for certain scenarios that would otherwise negatively affect business continuity. As SCCs continue to evolve, these exercises and workshops will continue to provide sectors with a valuable resource.

For additional information, please see the following:

FASCC: http://www.pcis.org/FASCC
Cyber Storm: http://www.dhs.gov/xnews/releases/pr_1158340980371.shtm
Cyber Storm II: http://www.us-cert.gov/reading_room/infosheet_CyberStormII.pdf
Black Water: http://www.seenergywater.gov/tools.us/

All Sector-Specific Plans available to the public can be viewed at: http://www.dhs.gov/xprevprot/programs/gc_1179866197607.shtm#2
We usually conduct emergency preparedness exercises as training activities in which we rehearse an established incident response plan. But today’s critical infrastructure is increasingly complex, interdependent, and controlled by information technology that is almost always connected to the web. As government agencies and private sector enterprises join forces to develop strategies for critical infrastructure protection, we find that cyber response exercises serve another purpose – discovery of the complex interdependencies, decision processes, constituencies, and considerations that must come into play for an effective response to a threatening incident.

This is particularly true in a cyber exercise, where the “playing field” is a series of complex networks of information systems that control our critical infrastructures. Within those networks, a diverse collection of computers, routers, and control systems enable electronic transactions that are essential to business and government continuity. These networks, largely owned by the private sector, are difficult to characterize even by the people who keep them running on a daily basis. Furthermore, when an attack on those networks is suspected, information passes through a complex human network that involves both public and private sector personnel. As cyber exercises have evolved, they have grown in participation and complexity. The national-level Cyber Storm exercise, conducted in 2006, included over 100 organizations located in 6 different countries. With over 3,000 simulated cyber-events connecting the web of participants, this type of cyber exercise has the potential to overwhelm and confound. The Livewire exercise, conducted in 2003, simulated attacks across multiple critical infrastructure sectors. Consequently, creating a realistic cyber exercise scenario is a daunting task for an exercise design team, but the challenge can be a discovery opportunity if we have the proper tools at our disposal.

To this end, DHS’s Science and Technology Directorate has contracted with leading experts to develop a cyber Scenario Modeling And Reporting Tool (CyberSMART). The development team is led by Utah State University and includes Norwich University Applied Research Institutes, the Institute for Security Technology Studies at Dartmouth College, and Delta Risk, a private consulting firm. This team delivers world-class experience in cyber exercise design, including Livewire and TOPOFF exercises for DHS, Bulwark Defender for the U.S. Air Force, a variety of exercises at the regional and state levels, as well as consulting on cyber exercises for other countries.

Exercise planners can use CyberSMART to develop credible, engaging scenarios for functional cyber exercises up to the national level. Over the next several months, CyberSMART will be beta tested in state-level exercises by teams in Vermont and Massachusetts. A principal benefit of the tool is that it will help DHS’s National Cyber Security Division strengthen the response capabilities of state and local agencies in cyber awareness and preparedness. Another benefit is that the tool will help these agencies ensure their cyber exercises are compliant with Homeland Security Exercise and Evaluation Program (HSEEP) guidelines – making them eligible for Homeland Security grants. HSEEP is a capabilities and performance-based exercise program that provides a standardized methodology and terminology for exercise design, development, conduct, evaluation, and improvement planning. It is maintained by FEMA, and constitutes a national standard for the planning and execution of exercises. After the beta tests, CyberSMART will be hosted on the FEMA HSEEP website as part of the HSEEP Toolkit, where it can be accessed for DHS-sponsored exercises.

CyberSMART is a collaborative, web-based tool that allows a team of specialists to effectively create a (Continued on Page 8)
CyberSMART (Cont. from 7)

complex cyber scenario. As a web-based tool, the number of specialists is not limited and exercise designers can work from their home offices or remote sites — anywhere they can reach the Internet. Based on a variety of best practices developed by the team’s experts, the tool guides users through a disciplined, methodical approach for collecting, connecting, and communicating cyber-event detail. For complex scenarios, CyberSMART is well suited to manage several thousand cyber events, dozens of exercise participants, and provide a convincing, engaging, well-paced scenario of events.

Most exercise development doctrine begins with exercise objectives and ends with a Master Scenario Events List (MSEL). But what happens in between? The process often bogs down as exercise designers try to develop hundreds or thousands of scenario events that contain credible information and do not contradict each other. Because exercise designers often focus on a laundry list of attack methods, but don’t incorporate credible detail about the networks in which the attacks will play out, the exercise itself bogs down because the participants don’t have enough information about the network to craft a response.

The key to the CyberSMART approach is a “gamespace” model in which exercise designers define transactions, IT assets, and security measures for each participating organization. By focusing on the transactions necessary to maintain business continuity first, then identifying assets that support those transactions, the scenario development team can develop an attack scenario that emphasizes infrastructure protection issues rather than specific cyber attack methods. The scenario events themselves are more credible, since they incorporate accurate information about the context of the attack.

CyberSMART provides a disciplined process for cyber exercise planning, which is the foundation for exercise execution and provides a framework for after action analysis.

While exercises may last only a few hours or days, the exercise development process often takes months. The payoff for this time investment isn’t always obvious at first, but the discovery opportunity within the exercise scenario development process almost always turns out to be as valuable as lessons learned during the exercise itself. CyberSMART is designed to maximize the value of exercise planning by emphasizing that understanding of complex systems is just as important as training with realistic scenarios.

Figure 1 – The CyberSMART tool, sponsored by DHS, provides a disciplined process for cyber exercise planning.
HSEEP (Cont. from 2)

and procedure designed to depict an actual or assumed real-life situation.

Operations-based Exercises:

- Drill - a coordinated, supervised activity usually employed to test a single, specific operation or function within a single entity.

- Functional Exercise - examines and/or validates the coordination, command, and control between various multi-agency coordination centers. It does not involve any “boots on the ground” (i.e., first responders or emergency officials responding to an incident in real time).

- Full-Scale Exercise - a multi-agency, multi-jurisdictional, multi-discipline exercise involving functional and “boots on the ground” response (e.g., firefighters decontaminating mock victims).

For more information, please visit HSEEP’s website at: https://hseep.dhs.gov.

Preparation (Cont. from 5)

the population – both affected and unaffected – of the current situation and prevent the spread of fear and confusion in the population. By incorporating a public affairs component, numerous officials have been tested through mock press conferences that can be broadcast live on a secure network run by the exercise developers.

Exercises are designed to test the implementation of plans, policies and procedures. As such, there must be an evaluation portion of the exercise. Having studied our clients’ plans, policies, and procedures and learned best practices from evaluating other exercises, Cubic is able to observe exercise participants and provide constructive feedback based on the objectives that were identified at the beginning of the planning cycle. At the end of the exercise, Cubic conducts a Facilitated After Action Report (FAAR) with the primary training audience to discuss what went well and what needs improvement while the exercise is still fresh in the participants’ minds. Within 30 days of the end of the exercise, Cubic provides a written analysis of the exercise providing specific observations and recommendations for each objective the training audience identified. This written report becomes a historical document officials can use to improve operations and understand why certain decisions may or may not have worked when a real event occurs.

Cubic is proud to continue to support our nation’s first responders at all levels as it has over the past 25 years. Our cadre of expertise spans not only all facets of exercise design and implementation but also subject matter experts in homeland security, military affairs, and chemical, biological, radiological, and nuclear (CBRN) agents.
The CIP Program works in conjunction with James Madison University and seeks to fully integrate the disciplines of law, policy, and technology for enhancing the security of cyber-networks, physical systems, and economic processes supporting the Nation's critical infrastructure. The CIP Program is funded by a grant from The National Institute of Standards and Technology (NIST).

The CIP Report is published by Zeichner Risk Analytics, LLC (ZRA) on behalf of the CIP Program. ZRA is the leading provider of risk and security governance knowledge for senior business and government professionals. ZRA's vision is to be a consistent and reliable source of strategic and operational intelligence to support core business processes, functions, and assurance goals.

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