

Bomb Squads: Local Preparedness for Global Problems

*F*aced with a terrorist movement that went global several years ago, bomb squad commanders around the world have come to realize that the days of localized threats are over. In response, several agencies joined to host an *Improvised Explosive Device Defeat Commanders Summit* in Denver, Colo. Twenty-five U.S. bomb squad commanders and 10 of their non-U.S. counterparts who participate in bilateral research and development (R&D) programs with U.S. agencies attended the event on Sept. 23-25, 2009.

The event was hosted by the National Institute of Justice, the U.S. Department of Homeland Security's Science and Technology Directorate, the Combating Terrorism Technology Support Office-Technical Support Working Group, the FBI, the Bureau of Alcohol, Tobacco, Firearms and Explosives, the National Bomb Squad Commanders Advisory Board (NBSCAB) and NIJ's Weapons and Protective Systems Technologies Center of Excellence.

Participants brought with them examples of the technical and tactical challenges they have faced and the solutions they have developed so that attendees could share the knowledge required to defeat this global issue. Their efforts will produce a compilation of the challenges and solutions shared plus strategy-related recommendations brought out during breakout sessions focusing on vehicle-borne improvised explosive devices (VBIEDs), person-borne improvised explosive devices (PBIEDs), homemade explosives, training and intelligence.

"This summit was truly the first step in bringing together a worldwide bomb technician community of practice," says Edwin Bundy of the Technical Support Working Group. "I sincerely hope that this is the first of many such summits, and there is little doubt that the bonds formed here will strengthen not only the U.S., but also the international effort to combat terrorist use of explosives."

NBSCAB declared in 2007 that VBIEDs pose the greatest technological challenge to bomb squads. The size, mobility, complexity and magnitude of VBIED explosions

take this threat out of the realm of normal bomb squad response tools, which have evolved over the years to deal with briefcases, backpacks, pipe bombs and illegal fireworks. During this summit, the group discussed the advances needed in robotic technologies to be effective against VBIEDs. In presentations and breakout sessions, the group shared experiences, challenges and potential solutions to deal with both diagnostic and defeat issues for VBIEDs.

"There was a shared recognition among the group that the VBIED challenges are real," says Jim Hansen, NBSCAB chairman. "Nobody has the complete answer yet on either the diagnostic front or the defeat front. Ideas for both of these areas were discussed this week, but nobody has developed the magic bullet for either of them.

"Even if you defeat the firing mechanism of the bomb, your problems are not over when dealing with homemade explosives in large quantities, which present their own set of handling and disposal hazards. There was an admission among the group that VBIED defeat technologies are not developed to the levels we need, and that our fallback is to train on the tools we have, with emphasis toward improving the hands-on skills in life-threatening situations," he says.

The PBIED threat brings with it the challenge of dealing with a human who is attached, in whatever way, to the IED. Whether alive or dead, whether victim or criminal, a PBIED complicates the operational response procedures for the bomb squad and poses daunting technological and tactical challenges.

Some of the non-U.S. participants at the conference who have extensive experience in dealing with suicide bombers shared their lessons learned. Discussion revealed the wide range of skills and technologies needed to deal with PBIEDs, including interaction with tactical teams in hostile takeover situations, hands-on device defeat in hostage scenarios and robotic manipulation of

incapacitated suicide bombers whose devices may have malfunctioned.

The manufacture and use of homemade explosives (HME) has been on the rise in the past decade, with the number of chemical variations growing in geometric proportions and the sensitivity levels of each pressing safe-handling limits for bomb technicians. Some presentations included case studies in which bomb squads had to deal with unknown sensitive explosive mixtures. Other presentations dealt with a recent sharp rise in information available on the Internet on how to manufacture HME. In breakout sessions, the group made several valuable recommendations for potential R&D efforts.

In the conference final wrap-up, the group concluded that bomb squads in the various countries face different threats and threat levels, leading to differences in experiences and solution sets, and deal with different governmental structures, leading to differences in policies, equipment and training program structures. However, there are similarities as well:

- A fundamental concern for public safety leads to similarities in priorities.

- The global scale of terrorism makes any threat everyone's threat.
- There is a universal understanding that technological challenges are shared by all and shared technology solutions pay the greatest dividends.
- The skills needed for the bomb technician's task are increasing on a geometric scale.

Participants in the event recognized that international standards at a professional level can be achieved. While basic training is program-centric and tends to become its own standard operating procedure, specialty training programs evolve from the fringe and can best be coordinated through professional standards validated by a core training program. Meaningful standards may be possible by starting with specialty areas and working back toward the center. Participants also recognized that the challenges bomb squad commanders face are increasing at a daunting pace and there is a clear need for training development at the commander level.

For more information on the conference and the availability of the report, contact the Weapons and Protective Systems Technologies Center of Excellence at (800) 248-2742.

The National Law Enforcement and
Corrections Technology Center System
Your Technology Partner

www.justnet.org
(800) 248-2742



This article was reprinted from the Winter 2010 edition of *TechBeat*, the award-winning quarterly newsmagazine of the National Law Enforcement and Corrections Technology Center System, a program of the National Institute of Justice under Cooperative Agreement #2005-MU-CX-K077, awarded by the U.S. Department of Justice.

Analyses of test results do not represent product approval or endorsement by the National Institute of Justice, U.S. Department of Justice; the National Institute of Standards and Technology, U.S. Department of Commerce; or Lockheed Martin. Points of view or opinions contained within this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice.

The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance; the Bureau of Justice Statistics; the Community Capacity Development Office; the Office for Victims of Crime; the Office of Juvenile Justice and Delinquency Prevention; and the Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking (SMART).