'Show and tell' demonstrations part of interactive two-day IED course

By Staci George
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WASHINGTON, D.C. — Mark Maginess, a senior counter-IED subject-matter expert and trainer, vividly recalls the day when he saw 23 IEDs detonated on the streets of Belfast, Northern Ireland.

It is one of his introductory stories he shares with some 30 JIEDDO employees there for his two- day improvised explosive devices orientation course.

"I was 15 at time, and remember being frightened," he said to February's class. "I helped a lady into an ambulance and thought to myself, 'people shouldn't be allowed to do this.'"

But they are, and the technology is nothing new or difficult. It is basic electronics using whatever wires, switches, sensors, batteries, detonators and other materials that one can get their hands on, he said. He was 16 when he made his first IED, just to prove he could. He later joined the British army as a way out of Belfast. After that, he joined an anti-terrorist organization in London.

Maginess became known as a security consultant around the world. For the last five years, he has been a consultant with Hazard Management Solutions, Inc., owned by parent company Allen-Vanguard. HMS offers counter-IED training ranging from basic introductory courses to advanced standards in IED operations conduct.

Maginess has been teaching this orientation course for the past four years. Six-to-10 sessions per year are held for JIEDDO personnel to familiarize them with the worldwide IED threat.

"IEDs do two things," he said. "They knock down buildings and they kill people."

This is a simple, but powerful message. It is one he repeats numerous times throughout the 14-module orientation course. The modules include ammunition design, switches and relays, infra red systems and vibration systems, suicide IEDs, command IEDs and vehicle-born IEDs.

"Once we learned how to kill people with explosives, we kept doing it," he said.

For instance, assassination with vehicle bombs began long before the wars in Iraq and Afghanistan. On Christmas Eve, 1801, in Paris, Napoleon Bonaparte's carriage was targeted by a

bomber as he traveled to a theater. He was not injured, but 50-to-60 people nearby were killed.

Maginess begins the session by handing out a pre-test to see what everyone already knows about IEDs. From there, the next 16 hours of instruction combine lessons from history, science, mathematics and geography. It is a combination of lecture, short videos, demonstrations and interaction with the group.

Early into the session, it is easy to see that Maginess has an extensive IED knowledge and ability to engage a classroom.

"The instructor is a master of his craft, and his teaching methodology is effective and quite informational. He kept the class engaged the whole time," said 1st Lt. Dino De La Hoya, an operations support officer at JIEDDO.

Quite simply, it is Maginess' forum for show and tell. A long table in front has various objects scattered about: wires, sensors, batteries, cell phones, walk-talkies, light bulbs and kitchen timers. Students quickly come to learn that although these items may appear harmless, they can be combined to form a destructive IED.

This message is illustrated by an easel containing a foldable blue circuit board made into a simulated IED. Here, a series of connected wires form a rectangular perimeter. At a few spots are places to plug in a power source, firing switch, arming switch, blasting cap and safe arm indicator light bulb. At some places are little wooden shelves where the battery packs and switches set. As he and the class progress through the modules, he returns to the simulated IED to plug in gadgets — a cell phone; home alarm system's sensor; battery packs; large, heavy mortars; etc. — and flips off the safe arm switch and activates the fake bomb. A red light bulb flashes, indicating to the class that it has "exploded." Maginess and others say "boom" in unison for more of an effect.

"The IED display was my favorite part, as the instructor walked us through each IED component and showed us different possible configurations," said De La Hoya.

Throughout the course, Maginess pauses from his lecture to pick items off the table to pass around the classroom so attendees can see and touch the items as a way to better understand his lesson. They can get a closer look at the fake IED he rigged up using a cell phone and some spare batteries or feel the jagged edges of shrapnel.

Although the IED on the easel in front of the classroom is simulated, explosions in videos Maginess found on the Internet are the real thing, emphasizing casualties and glorifying violence. Some have music in the background, while others include commentary. One video depicts two military Humvees traveling along a road scattered with debris. The first passes unscathed; the second is blown up. In a second video, a young woman wearing explosives passes through two levels of security on her way into meeting with a dignitary. During the third and final security interview, she gets nervous answering a question and detonates herself among a crowd of people.

Maginess reminded everyone that bomb makers in Iraq and Afghanistan do not have Radio Shacks and Wal-Marts to buy supplies.

"They use what they can find, including old D-cell batteries and rubber from bike tires," he said.

They also use simple things — melting ice, draining water and expanding beans — in place of electronic timers to detonate a bomb. He described how a garden watering can was filled with water and a less dense disc was placed on top. A hole poked on the side would drain the water, moving the disc slowly toward the bottom of the can. When it reached the bottom, it made contact with the firing switch and set off the IED, he said.

Maginess ends the course with a quick overview of counter-IED measures used by the military. These range from the simple — use of metal detectors to locate IEDs — to the very complicated — use of jammers to disarm them. The process can take a few minutes or it can take hours, he said.

"Defeating an IED is a big ego boost," he said.

De La Hoya said that the session was a comprehensive overview of the IED threat and that he would recommend the course to his colleagues.

"He showed us a myriad of ways that IEDs are prepared; from simple devices, to the more complex. The combination of videos and overview really made the class complete," he said.

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