



Weapons of Mass Destruction Device Training for Bomb Technicians

The Edgewood Chemical Biological Center (ECBC) is the U.S. Army's principal research and development center for chemical and biological defense technology, engineering, and services. ECBC has achieved major technological advances for national defense, civilian needs, and industrial competitiveness, with a long and distinguished history of providing the Armed Forces with quality systems and outstanding customer service. For decades, the Center has tested, developed, and evaluated equipment and procedures for the military defense of the United States against chemical, biological, and radiological materials. Today, the focus of ECBC's work is on both military technology and the transfer of that technology to the civilian sector. The Center also provides instruction on the proper application of its products, including assistance with planning and training.

The Military Improved Response Program/Installation Preparedness/Special Projects Team (MIRP/IP/SP), part of ECBC's Homeland Defense Business Unit (HLDBU), offers a number of resources for first responders and others who recognize the need for domestic terrorism preparedness, especially when related to chemical, biological, radiological, nuclear, and explosive (CBRNE) weapons of mass destruction (WMD). Among those resources are a series of awareness courses that cover topics from basic recognition of common WMD dispersal devices to advanced electronic theory for hazardous device technicians.

While a portion of the coursework available from the MIRP/IP/SP takes a general approach to device identification and proper procedures, special focus is given to the electronic theory involved in WMD detonation devices, which is useful for bomb squad technicians and other responder professionals.

These courses can be conducted in concert with other WMD preparedness resources available from the HLDBU, including the Installation Preparedness program. The WMD Installation Preparedness program is a field-tested and proven process for preparing military installation



emergency response personnel to respond to asymmetric attacks involving CBRNE weapons. Through baseline assessment, planning assistance, training and exercises, and technical assistance, the WMD Installation Preparedness program provides a systematic approach toward installation preparedness. The program can be delivered in its entirety or in a modular fashion, depending on each installation's unique requirements.

When it comes to device awareness training, there is not a "one size fits all" approach. Consequently, the training is tailored to meet the specific needs and existing skill level of a particular group and can be taught on-site or at the customer site. However, the following three basic programs serve as the starting points for any custom-designed training package:

- **Chem/Bio (CB) Device Awareness.** This 2–4 hour course discusses and demonstrates some of the devices and methods a would-be terrorist might use to disseminate a CB agent and how to identify these devices in the field. Upon completion of the course, participants will have a better awareness of what to look for, what to do, and what not to do when faced with a suspect package or device.
- **CB Device Identification.** This 16-hour course builds on the Awareness training by providing more in-depth coverage of the electrical control

portion of an improvised explosive device (IED) or improvised dispersal device (IDD). Basic electronic theory, device recognition, device components, and device circuits are discussed. Participants gain a more thorough understanding of commonly found improvised explosive and dispersal devices, how they differ, and how they are constructed.

- Electronics Theory and Applications for the Hazardous Device Technician. This intensive 40 or 80-hour course is meant for professional hazardous devices technicians, such as explosive ordinance disposal (EOD) or bomb squad professionals. Students are taught the basics of direct current theory and applications specifically related to techniques used in improvised trigger devices for WMD. There is also an emphasis on the unique aspects of WMD CB dissemination devices, which employ electrical and electro-mechanical components such as solenoid valves, solenoid actuators, and relays. Latching circuits, collapsing circuits, and timing circuits—including the 555 timer—are also covered. Students learn practical circuit design and breadboarding of circuits to demonstrate digital logic, truth tables, and clock circuits. Additionally, each participant completes a project that includes design layout, schematic drawing, breadboarding, and hand soldering of a fully functional timer circuit, which may be used in future training exercises.

Safe and Hand Entry exercises can be conducted, which provide technicians the opportunity to practice render safe procedures or attempt an actual hand entry of a sophisticated CB device.

Other products that are available for training purposes are as follows:

- Customized simulated IED/IDDs can be fabricated, to varying levels of complexity, and then used to lend realism to any exercise and to test the EOD personnel skill levels.
- A Special Training facility, which can be configured to allow realistic training scenarios for first responder/EOD personnel.

Please note, due to the nature of these courses, they are only available to approved federal, state, and local agencies.

For more information, contact the Homeland Defense Business Unit, U.S. Army ECBC at (410) 436-3674 or visit the web site at <http://bombtech.sbccom.army.mil>.