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The International Unexploded Ordnance Training Program (IUTP)

Ongoing military conflicts, past wars and military training have contaminated vast areas of the world with UXO. This course is designed to provide students with the skills they need to successfully function as a UXO Technician’s Assistant (Tech Level 1).

by Tom Gersbeck, Program Coordinator, IUTP

Introduction

The IUTP is a component of the National Emergency Response and Rescue Training Center (NERRTC), a division of the Texas Engineering Extension Service (TEEX) and part of the Texas A & M University System (TAMUS). Developed in 1998, TEEX is a world leader in technical hand-on training and includes the largest fire fighting training program in the world, robust law enforcement training and an extensive domestic preparedness training program. With the largest engineering school in the United States, it is only fitting that Bryan/College Station, part of the TAMUS, is the location for this course.

Initiated in 1997 and certified in 1999, the UXO Technician Level 1 Course of the IUTP is the only civilian UXO training certified full certification by the U.S. Department of Defense (DoD). The course is also approved by the Veterans Administration, allowing U.S. military personnel the opportunity to offset course costs with their GI bill benefits.

IUTP Mission Focus

The IUTP staff works closely with industry, government and academia to address the wide range of UXO-related issues. The IUTP’s primary focus is on military ordnance in relation to area remediation, public safety and site management issues associated with UXO.

These sites are typically located on closed military reservations or former military training areas. The IUTP is not a demolitions program; however, mines are categorized as ordnance and are included in the training. The course covers mines planted by individuals or delivered by surface weapons systems or aircraft, including shallow- and deep-water mines. Frequently in demolitions operations, numerous pieces of UXO are encountered before a mine is ever successfully located and neutralized, making it extremely important that personnel participating in demolitions operations be trained in all aspects of UXO. There are numerous programs in place to train humanitarian deminers; this course is designed to educate technicians on all groups, categories and types of ordnance, as well as other aspects of area remediation.

The curriculum of the UXO Technician Level 1 Course are certified to work as UXO technician assistants. With three years of experience, a technician can be promoted to Technician Level 2 and after another five years to Technician Level 3. This ability to advance within the industry from entry level (UXO Technician Level 1) through middle management (Technician Level 3) ensures a long-term career path for all graduates.

In the United States, there are many instances in which military ordnance items are encountered in civilian communities. Police and fire department personnel are called upon to address the hazards UXO pose to public safety. Evidence of this can be found with any civilian bomb squad, as most have training aid libraries full of military ordnance items recovered within their communities. Though many of these items were never employed on a battlefield or in a training environment, this does not mean they are not hazardous. Women, many of these items have gone through their arming cycles and failed to function or have been modified by a third party. All of these circumstances increase the threat to first responders as well as to the general public.

Unfortunately, few civilian bomb technicians have had the opportunity to receive formal training on military ordnance and are woefully unprepared to safely deal with these threats. The IUTP is designing two additional courses to counter this menace to public safety: one for first responders and another for civilian bomb technicians. These courses focus on the needs of civilian first responders and bomb squad personnel.

They are designed to prepare this first line of defense with the information they will need to protect the public while increasing their chances of survival when military ordnance, explosives or other related hazards are encountered.

The IUTP aims to address these issues by providing training to the civilian work force. The IUTP is an industry-driven program that prepares individuals for a long-term career in UXO remediation. The program focuses on the needs of the civilian community and provides a comprehensive understanding of UXO and ordnance safety.

The IUTP functions as a program within NERRTC and currently has one permanent staff member and a large cadre of adjunct instructors. We have attracted the most qualified personnel available to fill our instructor positions. Instructors are drawn from the UXO industry as well as the military explosive ordnance disposal (EOD) community. It is anticipated that the number of permanent staff positions will grow in the future as requests for this training increase.

Employing a large number of adjunct instructors provides the IUTP the opportunity to bring the most updated skills and experiences from the industry into the classrooms. It also allows us to apply new techniques, equipment and technology that will be returned to the industry through our students. For example, one permanent staff member, four adjunct instructors and one guest speaker supported the UXO Technician Level 1 class, which concluded on March 22, 2002. The IED technician, UXO supervisor and munitions management experience of these six individuals totaled 120 years.

Course Details

The UXO Technician Level 1 Course is a 200-hour course covering 25 training days. The subject areas covered during the course are:

• Course introduction and administrative requirements.
• UXO environmental remediation overview.
• Mathematics, electricity and physics.
• Explosives and explosive effects.
• Zone functioning and ordnance safety precautions.
• Surface, air, chemical and underwater ordnance identification (classroom and practical).
• Other various explosive hazards and pit technics.
• Storage, handling and transportation of explosives.
• Demolition materials, firing systems & disposal procedures.
• Electric, non-electric and shock-tube firing systems (classroom and practical).
• Four different pieces of geophysical equipment (classroom and practical).
• Professional development seminar (focusing on the UXO industry).
• Industry seminar (dependent upon personnel availability).

Study-halls are offered nightly on weekdays and on weekends upon student request. At least one instructor is present at all study-halls; however, it is common to find two or more in attendance.

Exams

Students are required to pass two practical and three written exams during the course, including an overall comprehensive exam. Minimum passing scores are 80 percent and 85 percent for written and practical exams respectively. The grading criteria are set high to ensure that IUTP graduates can operate with minimal supervision on a UXO site.

Training Facilities

The IUTP offices and primary training areas are located at Texas A & M University’s Riverside Campus. The Riverside Campus, on the site of the former Bryan Air Force Base, encompasses 19,000 acres and contains ample classroom space and numerous practical exercise areas. Located in the center of the former runway complex, the demolition range is spacious, well-prepared and professionally-designed to accommodate 25 students simultaneously. All of the practical demolition training is conducted on this range. On the east side of the former main runway is the UXO range training area. Spread out over a six-act area are four "grids" containing over 400 pieces of ordnance for students to locate, excavate and identify. Needless to say, these grids are various other metal objects to provide false readings on the equipment, presenting the students with a realistic situation and challenging their knowledge.

Throughout the grids, the locations of the UXO items vary from lying on the surface to a depth of 10 feet. Four grids are used, one for each of the four different pieces of geophysical equipment covered during the course. During the last week of training, students "hit the grids" to clear this simulated UXO site. Students are required to lay out their grids properly and employ the search equipment, locate, excavate and identify all ordnance encountered; and correctly plot the UXO locations on a grid map.

History of UXO Remediation

The UXO Technician Level 1 course was established in 1992 with the primary goal of providing a standardized means of training personnel who were responsible for the safe recovery of UXO in the United States. The course was developed in response to a growing need for qualified personnel to address the increasing number of UXO incidents occurring in the United States. The course was designed to provide a comprehensive understanding of UXO and ordnance safety.
is based on the U.S. Navy Explosive Ordnance Disposal School (NAVSCOLEOD) curriculum. However, unlike the EOD curriculum, ours is specifically oriented to the commercial clearance of UXO, not the military EOD mission, as the two are not the same. With instructors from the military EOD and the civilian UXO communities, students are taught the knowledge and skills required to safely perform in the UXO industry.

Historically, only graduates of the NAVSCOLEOD were allowed to work as UXO technicians within the borders of the United States. Internationally, personnel from many different nations perform this work. The majority of this workforce consists of people with training in bomb disposal or engineering. However, personnel with backgrounds in other military occupational fields from a variety of nations can be found working on UXO or demining sites. The training received by these personnel while in their respective country's service was most often outstanding. However, this training focused on the bomb disposal or engineering missions at hand. A civilian UXO clearance mission differs greatly from the military mission in tools, equipment, procedures, management and technical as well as logistical support. In essence, there are more dissimilarities than similarities when considering the civilian and military mission requirements of a UXO cleanup. Furthermore, the U.S. military does not provide any technical support, research, training, equipment or equipment development to the UXO industry. Without military support of this kind, it is impossible for a civilian UXO company to operate in the same manner as a military organization would, given the same task. This program is the first within a major university system to provide comprehensive practical and classroom training specifically designed for UXO technicians and managers.

Conclusion

The need for an in-depth UXO training program designed to address the shortage of entry-level UXO technicians is real. As long as there are pieces of UXO threatening human lives, the IUTP will continue to provide this training to qualified personnel. Currently, there is a shortage of Level 1 UXO Technicians industry wide. With another round of military base closures in the United States about to begin, this shortage is bound to increase.

Biography

Mr. Gersbeck is the program coordinator for the UXO Training Program. A 20-year Marine Corps veteran, he served in 1st Air Naval Gunfire Liaison Company (ANGLICO) before transferring to EOD. As an EOD officer and technician, he served in a variety of billets in both air and ground units.

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