

Counter Terrorism Technology Center

by Rodger Sloan



US marine ChemBio Incident Response Force troops await personal decontamination after completing live chemical agent training at CTTC Suffield. Photo: Ted Ostrowski, DND/DRDC

While the risk of a Chemical, Biological, Radiological, Nuclear (CBRN) attack is small, the consequences of such an attack are enormous: the public's perception of personal security, and the enormous costs associated with detection, identification, treatment of affected persons and cleanup ensures that this risk must be mitigated by preparation. Timely and reliable identification of suspect areas and materials is also essential to minimize risks of exposure, costs of cleanup and threat to public security.

The Counter Terrorism Technology Centre (CTTC) is the latest iteration of a continuing tradition at Suffield to provide Science and Technology support to the Canadian Forces (CF) and the wider Public Safety community. Taking the knowledge accrued in research activities since 1941, the lab began its outreach activities at the 1976 olympics preparing the Canadian Forces for a potential CBRN attack in Montreal. From that time on, live chemical agent training has been a key part of preparing the CF and other international military partners for the threat of CBRN weapons.

Just prior to the events of 9/11, senior management at Defence Research and Development Canada – Suffield recognized the need for a stand alone section to answer all of the short term operational requirements related to CBRN events. The CTTC concept was approved and funded in the December 2001 federal budget with a mandate to provide:

1. Training to prepare the First responder community to deal with CBRN threats;
2. Test and Evaluation of technologies to detect, protect and deal with these threats;
3. Forensics and scientific expert support; and

4. Field support capabilities to eliminate old chemical agent dump sites.

The initial focus of the CTTC has been on training first responders for a biological or chemical incident, and developing guidelines on how to deal with those events. The training builds upon existing skills and provides guidance in the detection, identification, handling and decontamination of threat agents in a controlled field setting. The training is designed to test individual units tactics, techniques and procedures in an environment that is as close as possible to a real incident. To that end a wide variety of field scenarios are available ranging from clandestine labs to caves and a subway platform.

All trainees progress through a series of lab based exercises using Live nerve and mustard agents, Biological simulants and radiological isotopes. They also have opportunities for seminars with scientists currently involved in the research programme. Students will then participate in trade specific scenarios to hone their individual skills prior to participating in a number of exercises as a member of the incident response team.

This unique and flexible approach to training at the advanced level has attracted the top teams in this discipline from across the world including the US Marines, US Army, Australian Army, as well as Australian, UK and American civilian specialist teams. The success of this programme is now moving to a whole new level as the expertise gained in training these groups is being pushed out to South East Asia and other countries as part of a Foreign Affairs Canada counter terrorism initiative. In addition to this civilian training programme, the Canadian government made a commitment to its NATO partners to provide Live agent training to the NATO CBRN battalion. This annual commitment has resulted in almost 1000 troops being trained from over 8 nations.

Test and Evaluation (T&E)

Suffield is a unique facility in its size (2700 sq km), unrestricted airspace, and long history of safe handling of highly toxic and hazardous materials. DRDC Suffield is the only location in Canada permitted to handle chemical warfare agents and has historically accommodated T&E requests if they fall near the scope of their R&D mandate. This work often requires researchers to evaluate products developed in-house against commercial competitors, potentially exposing DRDC to charges of impropriety and bias. The solution to this capability/credibility gap was to create an impartial, independent, fully accredited T&E organization, the CTTC. This arrangement would permit sharing unique facilities and personnel skills while still maintaining the integrity of the R&D program.

Equipment designed for detection, protection, operation and neutralization within zones suspected of CBR contamination is extremely specialized and has a limited market. As such, there are few established or recognized industry standards for CBR testing and evaluation. The CTTC draws on the proven capabilities of DRDC Suffield to test commercially available equipment, products in development and existing or proposed protocols, provides consistent, reliable evaluation and make recommendations for improvements and procurements.

Forensics

The CTTC facilitates access by security agencies to the highly specialized expertise and technologies for unambiguous threat identification available at DRDC Suffield. The Forensics lab is composed of a unique Biosafety level 3 facility for handling samples from an incident that require traditional law enforcement forensics but must first be cleared of any CBR evidence and contamination. This unique lab is part of the CDC Atlanta's Lab Response Network and in conjunction with the resources found in the main lab, can offer the widest spectrum of sample analysis techniques.

Demilitarization

CBR hazards require highly specialized handling for safe cleanup. Government regulations mandate that sites previously used for the storage and destruction of Chemical weapons stocks be brought up to current environmental standards. The CTTC marshals the proven capabilities over dozens of clean up operations in the last 30 years to ensure site remediation and decontamination of these complicated high risk sites are completed safely. The same skills that allow scientists and technicians to operate safely in the "Hot Zone" also provides them a unique edge in this environment. In the coming years the CTTC will be leading the final remediation of several sites remaining at Suffield as well as provide subject matter expertise for other potential sites across Canada as part of the Warfare agent destruction programme.

The Future

While the CTTC is new and rapidly growing section at DRDC Suffield there remains room for additional growth. The Suffield Centre for Operations in Urban Terrain (SCOUT) is the next horizon for the CTTC. This concept will see the section take advantage of the explosives and robotic vehicles expertise residing in the Lab to provide a test bed for Urban operations concepts in a fully instrumented, multi-hazard facility. This facility will provide high level concept development opportunities for Canada and its NATO partners as well as the domestic First Responder community.

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