

CRIMINAL / TERRORIST USE OF CHEMICAL / BIOLOGICAL AGENTS

Cpl. John Bureaux, Explosives Disposal and Technology Section, Royal Canadian Mounted Police, Tel.: 613-830-3845
FAX : 613-993-9917

INTRODUCTION

During the 1991 Persian Gulf conflict, the threat posed by Iraq making use of biological and chemical weapons caused great concern within the US and allied forces. The Iraqi biological and chemical programs were advanced with state of the art machinery and technologies. The use of C/B (chemical and biological) agents for a military purpose can be attractive due to the extreme toxic nature of these compounds. They are relatively inexpensive to make from easily acquired materials. Such toxic agents have also piqued the interest of terrorist and fringe groups for the same reasons.

Just after 8:00 A.M. on Monday the 20th of March 1995, several passengers on different trains in the Tokyo subway system placed vinyl bags containing Sarin nerve agent onto the floor, pierced them and then exited. The resulting aerosols from the nerve agent killed 12 persons and injured 5,498 others. This act by the followers of the Aum Shinrikyo cult was directed by their leader/guru Shoko Sahara. The very indiscriminate act of murder was a wake up call for police and security agencies around the world. This marked a transition in the use of weapons of mass destruction typically used in war to a terrorist act against unprotected civilians. (Weapons of mass destruction include toxic radiological, chemical and biological agents.)

In October 1995, members of a Minnesota-based militia group, the Patriot's Council, were convicted of possession of Ricin for a criminal purpose. Later in 1995, a member of the White Separatist Aryan Nation was convicted for the possession of Bubonic Plague cultures - his intentions are unknown. This is an offence under US legislation which prohibits the holding of weapons of mass destruction. In December of the same year, an Arkansas man took his life while in jail awaiting court proceedings for the possession of Ricin. This toxin was seized from the individual as he attempted to enter into Canada at Beaver Creek, Yukon.

The location of raw materials and instructions to manufacture both Sarin and Ricin are readily available in underground publications and on the Internet. In fact, there are many sources in the public domain that provide similar information on a wide variety of toxic compounds. They often will detail a step by step synthesis, the amount required to kill and the most effective delivery method.

The probability of criminal or terrorist use of chemical and biological compounds is not high, but the consequences can be severe with high potential for large numbers of casualties. It is very important that police are aware of the potential problems that these incidents can pose and are aware of "indicators" that may be present at a crime scene or noted during an investigation.

DIFFERENCE BETWEEN CHEMICAL AND BIOLOGICAL AGENTS

Chemical agents are man made substances that may cause death or injury to exposed persons. The onset of symptoms is normally very fast (seconds to minutes from exposure), but there are few agents that cause injuries that are not apparent for a couple of hours. There are a number of chemicals that may be used by terrorists including those designed for warfare purposes or for industrial and commercial use.

Biological agents include both living microorganisms (bacteria, protozoa, rickettsia, viruses and fungi), and toxins produced by organisms, plants or animals. These agents may be lethal or cause illness in varying degrees when persons are exposed to very small quantities (e.g. the lethal dose of Type-A botulinal toxin for an adult male is a millionth of a gram); the onset of symptoms may be delayed for days or even weeks.

ACQUISITION OF AGENTS BY TERRORISTS AND CRIMINAL

Chemical Agents can be acquired by a terrorist group by

- Manufacturing agents on their own,
- Making direct use of commercially available poisons,
- Stealing chemical munitions,
- Receiving ready-made agents from a state sponsor.

Biological Agents can be acquired by:

- Stealing it from a legitimate existing facility,
- Buying it from a "black market" source or from legitimate sources,
- Or receiving it from a "friendly" foreign nation.

INDICATORS OF THE MANUFACTURING OF AGENTS

During an investigation, police officers may be presented with information that should be considered as an indication that a group has or is interested in establishing a C/B manufacturing capability. The following is a list of resources that a terrorist may have in place or attempt to acquire in support of a C/B synthesis capability:

- Subject related text books,
- University trained persons in the areas of biology and chemistry; in particular, organic chemistry, microbiology, aerobiology, pathology and genetics.
- Raw materials,
- Bacteria seed cultures.
- Typical lab equipment, i.e. beakers, reflux apparatus, centrifuge, petri dishes with culture medium, stirring apparatus, fume hoods, etc.,
- Improvised synthesis/culture equipment, i.e. home brewing equipment, egg incubators, yogurt makers, etc.,
- Test animals for determination of agent toxicity,
- Personal safety equipment, i.e. rubber gloves, gas masks, protective coveralls, self contained breathing apparatus, syringes w/antidotes etc.,
- Spray devices, improvised device components to disperse C/B agents.

INDICATORS OF POSSIBLE CHEMICAL OR BIOLOGICAL INCIDENT

Biological and chemical agents can be dispersed in the air we breathe, the water we drink, or on surfaces we physically contact. Other than the simple manual application of an agent to food and water, air dispersion methods may be as simple as opening a container or through more sophisticated dispersal devices. In the absence of historical data that can provide us with likely device designs, we have developed several likely models of Improvised Biological/Chemical Dispersal Devices. The design could make use of many initiating systems from timed to remote control that would function a variety of dispersal mechanisms like an ordinary garden sprayer, an explosive charge or other means.

In most cases there are observable signatures of a chemical agent release. First responders can be equipped with real time chemical detectors that can identify chemical agents. There are no characteristic signatures for the release of biological agents as they are usually colorless and odorless. Presently there is no equipment for real time biological agent detection and identification. Monitors are being developed to fill this gap. Responders will soon have the detectors to immediately indicate the presence of a biological agent, but samples must be collected, taken to a lab, then cultured to identify the pathogen. The whole process can take several hours.

- Chemical Incidents
- Dead Animals/Birds/Fish - Not just an occasional road kill, but numerous animals both wild and domestic, birds and fish in the same area.
- Lack of Insect Life - If normal insect activity (ground, air or water) is missing, check the ground or bodies of water nearby.

- Blisters/Rashes - Numerous individuals experiencing unexplained water-like blisters, weals (like bee stings) and/or rashes.
- Mass Casualties - Health problems including nausea, disorientation, difficulty in breathing, convulsions and death.
- Patterns of Casualties - Casualties will likely be distributed downwind, or if indoor, by the air ventilation system.
- Unusual Liquid Droplets - A number of surfaces exhibit oily droplets/film; water surfaces may have an oily film on the surface.
- Dead/Withered Vegetation - Not just a patch of dead weeds, but trees, shrubs, bushes, food crops and/or lawns that are dead, discolored or withered, without drought conditions.
- Unexplained Odors - Smells may range from fruity to flowery, sharp/pungent, garlic/ horseradish like bitter almonds, or new mown hay - all smells will be completely out of character for the surroundings.
- Low-lying Clouds - Low-lying cloud and fog-like condition.
- Unusual Debris - The presence of liquid on various recovered components of an improvised dispersal device that may include metal from a munition, batteries and/or wire.
- Biological Incident
- Unusual Number of Sick or Dying - Any number of symptoms may occur. First, strong consideration should be given to local hospitals to see if additional casualties with similar symptoms have been observed. Casualties may occur minutes to hours to days or weeks after an incident has occurred. The time required before symptoms are observed is dependent on the agent used.
- Unscheduled and Unusual Spray - Especially outdoors during periods of darkness.
- Abandoned Spray Devices - Devices will have no distinct odors.

CANADIAN RESPONSE TO CHEMICAL AND BIOLOGICAL TERRORISM

In Canada, it is the responsibility of the Joint National Chemical/Biological Response Team (JNBCRT) to respond to incidents involving the criminal/terrorist use of biological and chemical agents. The JNBCRT's mandate has been formalized within the National Counter Terrorism Plan as developed by the Department of the Solicitor General of Canada. The JNBCRT will be deployed in support of the police agency that has jurisdiction for the C/B incident.

The JNBCRT is composed of members of the RCMP Explosives Disposal and Technology Section and the RCMP "A" Division Ident. Section supported by members of the Canadian Forces NBC School and Defense Research Establishment Suffield. The RCMP component provides skills in the Rendering Safe of Improvised C/B Dispersal Devices and evidence recovery in a contaminated scene. The CF component provides expertise in toxic agent characteristics, detection and identification as well as personal protection, decontamination and medical support.

Specifically the JNBCRT will

- Reduce the effects of an Improvised C/B Dispersal Devices,
- Recover evidence at a C/B crime scene, maintaining its significance and admissibility for court proceedings,
- Render safe or otherwise mitigate Improvised C/B Dispersal Devices,
- Conduct high risk searches of clandestine C/B manufacturing or storage locations.