

Module 1: Terrorism in Perspective

Terminal Objective: At the completion of this module you will be able to place terrorism into perspective when compared to other emergency response activities.

Enabling Objectives

After completing this module, you will be able to:

- define terrorism, and recognize the chief characteristics of terrorist activities;
- recognize attack vulnerability factors; and
- identify chief characteristics of the five categories of potential terrorist threats.

THE THREAT IS REAL

Terrorists have the knowledge and the capability to strike anywhere in the world. We have seen that when properly motivated they will do whatever they have to do in order to achieve their goals. The tragic events of September 11, 2001, and the anthrax attacks thereafter were a wake up call that the United States--and the rest of the world --had to prepare for and respond to terrorism. There have been smaller bombing incidents, not necessarily classed as terrorist events, at the 1996 Olympics, at family planning clinics, and, at social clubs. Other earlier pre-September 11th examples of terrorist attacks:

- the World Trade Center bombing, February 1993;
- the Tokyo Subway nerve agent attack, March 1995;
- Oklahoma City bombing, April 1995;
- the bombings of the U.S. Embassies in Kenya and Tanzania, 1998; and
- the attack on the USS Cole, 2000.

More recently, even though there have been no large-scale terrorism incidents in the United States since 2001, there have been many, many smaller incidents.

Here are some examples:

- an armed attack at Los Angeles International Airport's El Al counter, 2002;
- John Allen Muhammad and Lee Boyd Malvo conduct the beltway sniper attacks, killing 10 people in various locations throughout the Baltimore-Washington metropolitan area, 2002;
- an attack of the Jewish Federation of Greater Seattle Building results in one killed and five wounded, 2006;
- a radical Muslim opens fire at a U.S. Army recruiting station in Little Rock, AR, killing one, 2009; and
- an 88-year-old white supremacist kills one guard at the U.S. Holocaust Memorial Museum, 2009.

These incidents are extremely pertinent as they illustrate the breadth of methods as well as the targets of terrorism.

The list most likely will continue to grow. In addition, there have been numerous terrorism incidents overseas. In fact, one school of thought about why there have not been further large-scale attacks in the United States, is that terrorists are content to attempt to kill Americans overseas in Europe, Asia, and particularly in Afghanistan and Iraq.

Greater cooperation and coordination at all levels of American government--local, State, and Federal--has also meant that many terrorism incidents have been successfully **prevented**.

All communities--especially those in free societies--are vulnerable to incidents involving terrorism. Nearly all of these communities contain some high-visibility target. These targets usually are situated along routes with high transportation and access potential. Many may have manufacturing and testing facilities. Other examples of locations that may become targets for criminal or terrorist activity include

- public assembly;
- public buildings;
- mass transit systems;
- places with high economic impact;
- telecommunications facilities; and
- places with historical or symbolic significance.

Despite our security consciousness, if terrorists intend to wreak havoc it will be difficult to stop them.

An act of terrorism can occur anywhere, at any minute, when you would least expect it. No jurisdiction, urban, suburban, or rural, is totally immune.

What Is Terrorism?

The Federal Bureau of Investigation (FBI) defines terrorism as "the unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives." This definition includes three elements:

1. Terrorist activities are illegal and involve the use of force.

2. The actions intend to intimidate or coerce.
3. The actions are committed in support of political or social objectives.

In one sense, it makes no difference to a first responder whether the incident is a terrorist act or not. You still will respond and be among the first on the scene. Naturally, the size and the kind of terrorist action are key factors. But the important point to note is that an act of terrorism is essentially different from normal emergencies. You will have to deal with a new set of circumstances far different from the structural fire, the auto wreck, even the hazardous materials incident.

What Is a Threat?

One way to look at it is to see a threat as consisting of two elements: motive and ability. In one sense, determining the threat is a law enforcement function. But, on a more practical level, emergency responders need to realize that any individual or group that has both the motive and the ability can perpetrate an act of terrorism. There are many groups that possess both the motive and the ability; the law enforcement community monitors these groups constantly to assess the level of threat.

The criminal component is the most important element separating a terrorist organization and its actions from a legitimate organization. However, any organization, legitimate or not, can resort to terrorist means to achieve its political or social agenda. Also, keep in mind that several domestic terrorist organizations, such as the Animal

Liberation Front (ALF), are on the violent, extremist fringes of legitimate, Constitutionally-protected organizations.

We also need to remember that a terrorist can act alone. A clear advantage to a terrorist to act alone is that he/she cannot be infiltrated by our law enforcement personnel.

What makes the terrorist event so dangerous is that it is intended to cause damage, to inflict harm, and in some cases to kill. The fire that starts in someone's home as a result of careless smoking was probably not set with the intention to damage, hurt, or kill. There are exceptions, of course, as in the case of arson, but normally most of the incidents you will respond to are not criminal in nature. Terrorists will go to great lengths to make sure the event has the intended impact, even it means destroying a whole building and killing all of its occupants.

Recent bombing incidents have shown that there can be a sequence of events carefully timed to inflict further harm on those whose job it is to respond to assist others. This shows the depth to which terrorists can descend to achieve their ends. Some additional hazards will include

- armed resistance;
- use of weapons;
- booby traps; and
- secondary events.

Experts generally agree that there are five categories of terrorist incidents. We need to take a brief look at the five:

Biological, **N**uclear, **I**ncendiary, **C**hemical, and **E**xplosive. The acronym

B-NICE is one simple way to remember the five.

There are several other acronyms currently used to describe the types of agents terrorists use. One that has recently gained a large following in the U.S. military and in law enforcement is **CBRNE**. The acronym stands for **C**hemical, **B**iological, **R**adiological, **N**uclear, and **E**xplosive.

You'll notice that CBRNE leaves out "incendiary;" while B-NICE leaves out "radiological." In actuality, CBRNE includes "incendiary" in "Explosive;" while B-NICE includes "radiological" in "Nuclear." Keep in mind that whichever acronym you use is only a memory aid: your keen situational awareness still is



needed to keep you safe. Our course is organized using the B-NICE acronym.

Don't be limited in your planning by these acronyms: neither one includes **armed attack** in their categories of incidents, yet this is a prime terrorism tool, both domestically and overseas.

In addition, realize that terrorists must constantly adapt their techniques, if they are to succeed. In turn, we must prepare ourselves for terrorism techniques that have not been used in the past, such as the potential for a large-scale cyber systems attack.

As we discuss these incidents, it is important to remember the four routes of entry: inhalation, absorption, ingestion, and injection. As with other incidents, responders should exercise good judgment in using personal protective

equipment (PPE) and training provided to them. The use of protective clothing, including positive-pressure, self-contained breathing apparatus (PP-SCBA), will enhance your chances of safe and successful response especially in situations where you may face secondary contamination.

An Overview

1. **Biological incidents.** Several biological agents can be adapted and used as terrorist weapons. These include anthrax (sometimes found in sheep, cows, and other hoofed animals), tularemia (or rabbit fever), cholera, encephalitis, the plague (sometimes found in prairie dog colonies), and botulism (found in improperly canned food). As noted, these can be naturally occurring or they can be specifically grown or manufactured with lab supplies.

Thinking About My Situation...

As one involved in emergency services, you already may have responded to a terrorism incident. If you have, what were your key concerns or worries as you responded to the uncertainties of the situation?

In retrospect, do you think your anxiety level was higher than in the more customary responses such as to a house fire, a vehicle accident, or even a hazardous materials incident? Why or why not?

If you have never been associated with a terrorism incident, what would be some of your anxieties or concerns as an emergency services provider in dealing with a situation like this?

What steps can you take to both reduce your risk and increase your preparedness for a terrorism incident?

Biological agents pose very serious threats given their fairly accessible nature, and the potential for their rapid spread. The potential for devastating casualties is high in a biological incident. These agents are disseminated in the following ways: by the use of aerosols (spray devices), oral (contaminating food or water supplies), dermal (direct skin contact with the substance) exposure, or injection.

Biological agents are inherently more toxic than chemical agents on a pound-for-pound basis. Plus, they are potentially more effective for terrorists to use because most biological agents are naturally occurring organisms--such as bacteria and viruses. These can be enhanced further with lab techniques to make them more lethal.

Biological agents are self-replicating and have specific physiologically-targeted effects. Also, terrorists can use them against plants, animals, people, or materials (such as foodstuffs). Through food contamination (or to a lesser extent contamination of water supplies), terrorists can cause massive disruptions and illnesses.

The Centers for Disease Control and Prevention (CDC) categorizes what it considers to be the most dangerous biological agents because:

1. They can be easily disseminated or transmitted from person to person.
2. They result in high mortality rates and have the potential for major public health impact.
3. They might cause public panic and social disruption.

4. They require special action--such as a specific vaccine--or public health preparedness.

These agents, known as **Category A Agents**, are

- **Anthrax** (*Bacillus anthracis*);
- **Botulism** (*Clostridium botulinum* toxin);
- **Plague** (*Yersinia pestis*);
- **Smallpox** (*variola major*);
- **Tularemia** (*Francisella tularensis*); and
- **Viral hemorrhagic fevers** (filoviruses (e.g., Ebola, Marburg) and arenaviruses (e.g., Lassa, Machupo)).



Ebola as viewed through an electron microscope.

Looked at another way, there are four common types of biological agents: bacteria, viruses, rickettsia, and toxins.

Bacteria and Rickettsia

Bacteria are single-celled organisms that multiply by cell division and can cause disease in humans, plants, or animals. Although true cells, rickettsia are smaller than bacteria and live inside individual host cells. Examples of bacteria include anthrax (*Bacillus anthracis*), cholera (*Vibrio cholerae*), plague (*Yersinia pestis*), tularemia (*Francisella tularensis*); an example of rickettsia is Q fever (*Coxiella burnetii*).

You may be familiar with the disease anthrax, associated with cattle, sheep, and horses serving as hosts. Handling of contaminated hair, wool, hides, flesh, or other animal substances can lead to contracting cutaneous (dermal) anthrax. However, the purposeful dissemination of spores in aerosol, such as for terroristic purposes, is another way people could contract it and cause a more dangerous form of the disease, inhalational anthrax.

Clearly, the anthrax incidents of 2001 illustrated just how effective this agent could be. Further, it spawned thousands of "suspicious white powder" calls that turned out to be harmless substances. However, precious first response resources--especially of police, hazmat, and public health--had to be devoted to these responses.

Virus

Viruses are the simplest type of microorganisms. They lack a system for their own metabolism and therefore depend upon living cells to multiply. This means that a virus will not live long outside of a host.

Types of viruses that could serve as biological agents include smallpox, Venezuelan equine encephalitis, and the viral hemorrhagic fevers such as the Ebola and Marburg viruses, and Lassa fever.

Smallpox is an excellent example of why viruses would be effective terrorism tools and why we must prepare for them. According to the CDC, "smallpox is a serious, contagious, and sometimes fatal

infectious disease. There is no specific treatment for smallpox disease, and the only prevention is vaccination." The fatality rate is estimated to be between 10 and 30 percent. Historically, it was the cause of millions of fatalities. Due to a massive international public health effort smallpox was eradicated in 1978.

Why then our continuing concern, especially given that the last recorded case in the United States was in 1949? Several reasons:

- Since we haven't had recent experience with smallpox there may be difficulties with our medical practitioners making a correct diagnosis.
- Although the major stockpiles of smallpox that were developed for biological weapons have been destroyed, there are still two countries with **legal** smallpox research supplies: the United States and the Russian Federation. However, it is also believed that several countries are maintaining **illegal** smallpox inventories, including Iran and North Korea.
- Vaccination is still the **only** effective protection, although some research has shown antiviral medications to have some value.
- Finally, it is believed that the Soviet Union may have successfully developed a "chimera," a hybrid virus, with smallpox and another virus.

Toxins

Toxins are toxic substances of natural origin produced by an animal, plant, or microbe. They differ from chemical agents in that they are not manmade and typically they are much more complex materials. Toxins, in several cases, are easily extracted for use as a terrorist weapon, and, by weight, usually are more toxic than many chemical agents. The four common toxins thought of as potential biological agents are botulism (botulinum), SEB (staphylococcal enterotoxin B), ricin, and mycotoxins.

According to the CDC, botulism is a rare but serious paralytic illness caused by a nerve toxin that is produced by the bacterium *Clostridium botulinum*.

Although there are three main kinds of botulism, foodborne botulism is probably the most adaptable to terrorist use and is caused by eating foods that contain the botulism toxin.

Botulism is very often fatal and difficult to treat if not detected early.

Ricin is a toxin derived from the castor bean plant, available worldwide. There have been several documented cases



(Castor Bean Plant)

involving ricin throughout the United States, particularly in rural areas.

Routes of Exposure

The primary routes of exposure for biological agents are inhalation and ingestion. Skin absorption and injection also are potential routes of entry, but are less likely.

Treatment

Treatment should be rendered by medical professionals and is specific for each biological agent. Generally, the treatments include pharmaceuticals, such as antibiotics and antivirals; as well as vaccinations.

Thinking About My Situation...

Suggest some consequences for emergency services responders if it were suddenly realized that terrorists had contaminated the public water supply.

Does your department or organization have standard operating procedures/standard operating guidelines (SOPs/SOGs) to deal with a potential biological incident?

[☐] Yes [☐] No

If not, what would you do?

How closely does your department work with its jurisdictional public health agency?
What can be done to improve coordination with that agency?

2. **Nuclear Incidents.** There are two fundamentally different threats in the area of nuclear terrorism. One is the use, threatened use, or threatened detonation, of a nuclear bomb. The other is the detonation, or threatened detonation, of a conventional explosive incorporating nuclear materials (radiological dispersal devices or RDD). It is **unlikely** that any terrorist organization could acquire or build a nuclear device, or acquire and use a fully functional nuclear weapon.



The number of nations with nuclear capability is small, and each places a high priority on the control of its nuclear weapons. Even if a nation supporting terrorism could develop a nuclear capability, experts believe it would be implausible for that nation to turn a completed weapon over to a group that might use it against them. The theft of a completed nuclear weapon also is unlikely. All nuclear nations have placed their nuclear arsenals under the highest security. All Western and former Soviet nuclear weapons are protected with a Permissible Action Link

(PAL) system that renders the weapon harmless until the proper code is entered. To recap, the theft or manufacture of a nuclear weapon is unlikely, but still a major concern due to the detonation of such a device's impact: environmentally, socially, and medically. Such a detonation would cause massive numbers of fatalities, burn cases, trauma injuries, and acute radiation sicknesses. Electromagnetic fields would be disrupted to the extent that virtually all computer and communication systems would be inoperable.

The greatest potential terrorist threat for a nuclear weapon would be to use such a device as a form of extortion. The U.S. Government has plans to meet such a threatened use. Presently, there is no known instance of any nongovernmental group close to obtaining or producing a nuclear weapon. However, with the fall of the Soviet Union in 1991, many of that country's nuclear devices are "unaccounted for."

The purpose of an attack where nuclear materials are incorporated into a conventional explosive (RDD) would be to spread radioactive materials around the bomb site. This would disrupt normal, day-to-day activities, and would

raise the level of concern among first responders regarding long-term health issues. It would prove to be difficult to perform complete environmental decontamination.

Another possible scenario involving nuclear materials would be the detonation of a large device, such as a truck bomb (large vehicle with high quantities of explosives), in the vicinity of a nuclear power plant or a radiological cargo in transport. A further scenario is to use an aircraft to crash into a nuclear power plant's spent fuel rods. Such an attack could have widespread effects. Also, the frequency of shipments of radiological materials is increasing throughout the world.

There are three main types of nuclear radiation emitted from radioactive materials: alpha, beta, and gamma radiation.

Alpha particles are the heaviest and most highly charged of the nuclear particles. However, alpha particles cannot travel more than a few inches in air and are completely stopped by an ordinary sheet of paper. The outermost layer of dead skin that covers the body can stop even the most energetic alpha particle. However, if ingested through eating, drinking, or breathing contaminated materials, they can become an internal hazard.

Beta particles are smaller and travel much faster than alpha particles. Typical beta particles can travel several millimeters through tissue, but they generally do not penetrate far enough to reach the vital inner organs. Exposure to beta particles from outside the body

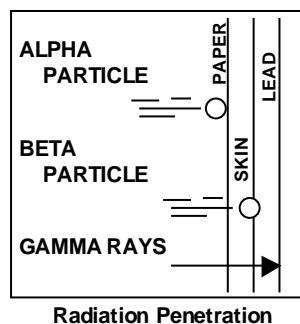
is normally thought of as a slight hazard.

However, if the skin is exposed to large amounts of beta radiation for long periods of time, skin burns may result. If removed from the skin shortly after exposure, beta-emitting materials will not cause serious burns. Like alpha particles, beta particles are considered to be an internal hazard if taken into the body by eating, drinking, or breathing contaminated materials. Beta-emitting contamination also can enter the body through unprotected open wounds.

Gamma rays are a type of electromagnetic radiation transmitted through space in the form of waves.

Gamma rays are pure energy and therefore are the most penetrating type of radiation. They can travel great distances and can penetrate most materials. This creates a problem for humans, because gamma rays can attack all tissues and organs.

Gamma radiation has very distinctive, short-term symptoms. Acute radiation sickness occurs when an individual is exposed to a large amount of radiation within a short period of time. Symptoms of acute radiation sickness include skin irritation, nausea, vomiting, high fever, hair loss, and dermal burns.



Thinking About My Situation...

To whom would you turn in your community for help (such as monitoring training) in becoming better prepared to handle a radiological threat?

What existing training and equipment does your community have to address this threat?

Later in this course, countermeasures for these three hazards will be discussed.

3. Incendiary incidents. An



incendiary device is any mechanical, electrical, or chemical device used intentionally to initiate combustion and start a

fire. A delay mechanism consists of chemical, electrical, or mechanical elements. These elements may be used singly or in combinations. Incendiary materials are materials that burn with a hot flame for a designated period of time. Their purpose is to set fire to other materials or structures.

Incendiary devices may be simple or elaborate and come in all shapes and sizes. The type of device is limited only by the terrorist's imagination and ingenuity. Remember, the airplanes used in the September 11th attacks were essentially huge incendiary devices loaded with aviation fuel. An incendiary device can be a simple match applied to a piece of paper, or a matchbook-and-cigarette arrangement, or a complicated self-igniting chemical device. Normally, an incendiary device is a material or mixture of materials designed to produce

enough heat and flame to cause combustible material to burn once it reaches its ignition temperature.

Each device consists of three basic components: an igniter or fuse, a container or body, and an incendiary material or filler. The container can be glass, metal, plastic, or paper, depending on its desired use. A device containing chemical materials usually will be in a metal or other nonbreakable container. An incendiary device that uses a liquid accelerator usually will be in a breakable container, e.g., glass. Generally, crime scene investigators find three types of incendiary devices: electrical, mechanical, or chemical. These may be used singularly or in combinations.

Only specially trained personnel should handle incendiary devices discovered prior to ignition. Handling of such devices by inexperienced individuals can result in ignition and possible injury or death. In addition, proper handling is critical for crime scene preservation.

4. Chemical incidents. Chemical agents fall into five classes:

- nerve agents, which disrupt nerve impulse transmissions;

- blister agents, also called vesicants, which cause severe burns to eyes, skin, and tissues of the respiratory tract;
- blood agents, which interfere with the ability of blood to transport oxygen;
- choking agents, which severely stress respiratory system tissues; and
- irritating agents, which cause respiratory distress and tearing designed to incapacitate. They also can cause intense pain to the skin, especially in moist areas of the body. They are often called Riot Control Agents.

Note that these terms were originally developed by the military to classify the various chemical agents. Initially, it was thought that each term described how the agent acted on the human body. So, according to this way of thinking the blood agents acted on the blood; while the nerve agents acted on the nerves, and so on. As more research was done it was found that, in reality, a person receiving a large dose of any of these agents could have a systemic result occur--the whole body would be affected. However, although somewhat inaccurate, the terms persist and are a handy way of remembering these agents.

Thinking About My Situation...

Does your department or organization have SOPs/SOGs for responding to an incendiary incident? [] Yes [] No

Has your department been trained to recognize and identify the signs of incendiary fires?

How would your approach to this kind of incident differ from your approach to a more typical incident (house fire or vehicle accident)?

Nerve Agents

Nerve agents are similar in nature to organophosphate pesticides, but with a higher degree of toxicity. Many of these were initially developed as insecticides. All are toxic at small concentrations (a small drop could be fatal). The agents include sarin (GB) used by terrorists against



Japanese civilians and by the Iraqis against Iran; Soman (GD); tabun (GA); and V agent (VX). These materials are liquids that typically are sprayed as an aerosol for dissemination. In the case of GA, GB, and GD, the first letter "G" refers to the country (Germany) that developed the agent, and the second letter indicates the order of development. "GC" was skipped as an acronym because in that era it was the medical abbreviation for gonorrhea. In the case

of VX, named by the British, the "V" stands for "venom" while the "X" represents one of the chemicals in the specific compound.

The victims' symptoms will be an early outward warning sign of the use of nerve agents. There are various generic symptoms similar to organophosphate poisoning. The victims will salivate, lacrimate, urinate, and defecate without much control.

Other symptoms may include

- eyes: pinpointed pupils, dimmed and blurred vision, pain aggravated by sunlight;
- skin: excessive sweating and fine muscle tremors;
- muscles: involuntary twitching and contractions;
- respiratory system: runny nose and nasal congestion, chest pressure and congestion, coughing and difficulty in breathing;
- digestive system: excessive salivation, abdominal pain, nausea and vomiting, involuntary defecation and urination; and
- nervous system: giddiness, anxiety, difficulty in thinking and sleeping (nightmares).

Nerve agents resemble water or light oil in pure form and possess no odor. The most efficient distribution is as an aerosol. Small explosions and equipment to generate mists (spray devices) may be present. Nerve agents kill insect life, birds, and other animals as well as humans. Many dead animals at the scene of an incident may be another outward warning sign or detection clue.

Treatment should be rendered by medical professionals, but in general includes immediate decontamination, atropine, and pralodoxime.

Blister Agents

Blister agents are also referred to as



mustard agents due to their characteristic smell, which is like the common yellow "hot dog" mustard odor.

They are similar in nature to other corrosive materials first responders encounter. They readily penetrate layers of clothing and are quickly absorbed into the skin. Mustard (H, HD), and lewisite (L) are common blister agents. All are very toxic, although much less so than nerve agents. A few drops on the skin can cause severe injury, and three grams absorbed through the skin can be fatal. Clinical symptoms may not appear for hours or days. The symptoms of blister agents include

- eyes: reddening, congestion, tearing, burning, and a "gritty" feeling; in severe cases, swelling of the eyelids, severe pain, and spasm of the eyelids;
- skin: within 1 to 12 hours, initial mild itching followed by redness, tenderness, and burning pain, followed by burns and fluid-filled blisters. The effects are enhanced in the warm, moist areas of the groin and armpits;
- respiratory system: within 2 to 12 hours, burning sensation in the nose and throat, hoarseness, profusely running nose, severe cough, and shortness of breath; and

- digestive system: within two to three hours, abdominal pain, nausea, blood-stained vomiting, and bloody diarrhea.

Blister agents are heavy, oily liquids, dispersed by aerosol or vaporization, so small explosions or spray equipment may be present. In a pure state they are nearly colorless and odorless, but slight impurities give them a dark color and an odor suggesting mustard, garlic, or onions. Outward signs of blister agents include complaints of eye and respiratory irritation along with reports of a garlic-like odor. Similar symptoms will occur among many individuals exposed. As the blisters break, infection prevention becomes a high priority.

Treatment should be rendered by medical professionals, but in general includes immediate decontamination.

Blood Agents

Blood agents interfere with the ability of the blood to transport oxygen, and result in asphyxiation.



Common blood agents include hydrogen cyanide (AC) and cyanogen chloride (CK). Cyanide and

cyanide compounds are common industrial chemicals with which emergency responders sometimes deal. CK can cause tearing of the eyes and irritate the lungs. All blood agents are toxic at high concentrations and lead to rapid death. It should be emphasized that some, such as the cyanides, can cause fatalities in seconds. Affected persons require immediate removal to

fresh air and respiratory therapy. Clinical symptoms of patients affected by blood agents include

- respiratory distress;
- vomiting and diarrhea; and
- vertigo and headaches.

Under pressure, blood agents are liquids. In pure form, they are gasses. Precursor chemicals are typically cyanide salts and



acids. All have the aroma of bitter almonds or peach blossoms. They are common industrial chemicals and are readily available.

Treatment should be rendered by medical professionals, but in general includes immediate decontamination, and for cyanides the administration of amyl nitrite.

Choking Agents



Choking agents stress the respiratory tract. Severe distress causes edema (fluid in the lungs), which can

result in asphyxiation resembling drowning. Chlorine and phosgene, common industrial chemicals, are choking agents. Clinical symptoms include severe eye irritation and respiratory distress (coughing and choking). Most people recognize the odor of chlorine, as it is commonly used in swimming pools. Phosgene has the odor of newly cut hay. As both are gases, they must be stored and transported in bottles or cylinders.

Treatment should be rendered by medical professionals, but in general includes immediate decontamination, and ventilation assistance with oxygen.

Irritating Agents

Irritating agents, also known as riot control agents or tear gas, are designed to incapacitate. Generally, they are nonlethal; however, they can result in asphyxiation under certain circumstances. In addition, they could be employed by terrorists to create disruption or panic. Common irritating agents include chloropicrin, MACE (CN), tear gas (CS), capsicum/pepper spray, and dibenzoxazepine (CR). Clinical symptoms include

- eyes and throat: burning or irritation; tearing of the eyes;
- respiratory system: respiratory distress, coughing, choking, and difficulty breathing; and
- digestive system: high concentrations may lead to nausea and vomiting.

These agents can cause pain, sometimes severe, on the skin, especially in moist areas. Most exposed persons report the odor of pepper or of tear gas. Outward warning signs include the odor of these agents and the presence of dispensing devices. Many are available over the counter.

Treatment should be rendered by medical professionals, but in general includes immediate decontamination.

The primary routes of exposure for chemical agents are inhalation, ingestion, and skin absorption/contact. Injection is a potential source of entry, but is less likely. With the exception of blister agents, inhalation is the primary route of exposure for chemical agents. However, skin absorption/contact with irritant nerve agents and blister agents also is a highly possible route of exposure.

Thinking About My Situation...

Does your department or organization have SOPs/SOGs for responding to a chemical incident? [] Yes [] No

What would be your specific role if you had to respond to a chemical threat?

How would your approach to this incident and your approach to a more typical incident differ?

What ways can your agency improve its preparedness for a chemical incident?

The last category of potential terrorist incidents we need to examine briefly is the explosive incident.

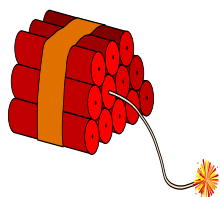
5. Explosive incidents. The U.S.



Department of Transportation (DOT) defines an explosive as a substance fitting into one of these two categories:

- any substance or article, including a device, designed to function by explosion (e.g., an extremely rapid release of gas and heat); or
- any substance or article, including a device, which, by chemical reaction within itself, can function in a similar manner even if not designed to function by explosion, unless the substance or article is otherwise classified.

It is estimated that 70 percent of all terrorist attacks



worldwide involve explosives. It is apparent that bombs are the current weapon of choice amongst terrorist groups, especially in Iraq, Afghanistan, Pakistan, and Israel. The FBI reports that of 3,163 bombing incidents in the U.S. in 1994, 77 percent were due to

explosives. In these situations 78 percent of all bombs detonated or ignited. Another 22 percent failed to function as designed; only 4 percent were preceded by a warning or threat.

Let's compare the 1994 bomb data with more current data from the **U.S. Bomb Data Center** to see if a trend can be detected:

- **2004**--3,790 bombing incidents;
- **2005**--3,722 bombing incidents;
- **2006**--3,445 bombing incidents; and
- **2007**--2,772 bombing incidents.

Although there was an initial increase in bombings; over time the number has dropped. Why, then, are we still so concerned about explosives? There are several reasons, but in particular their extensive use overseas in vehicle-borne explosives incidents is a concern. The results are large numbers of fatalities and injuries, structural collapses, and so forth. Responders have been targeted by secondary devices.

The FBI also noted three other interesting facts:

- When public safety agencies know of the presence of a device, they have only a 20 percent chance of finding it.
- Hundreds more "hoax" bomb incidents are reported each year.

- Residential properties are the most common targets for bombers.

The conclusion is that improvised explosive and incendiary devices are designed and assembled to explode and cause fires. Explosions rapidly release gas and heat, affecting both structures and people. Bombings are the types of terrorist attacks most likely to be encountered. Bombs nearly always work as designed. An important point to remember is that explosions can cause fires, and fires can cause explosions. First responders should always be aware of the potential for secondary devices.

The five types of incidents previously discussed are similar, in some respects, to routine emergencies. Responders still can protect themselves using sound judgment and the basic equipment they are trained to use.

SUMMARY

Today, emergency responders and others in emergency services who support them face new challenges that seriously imperil not only the public but those

very persons whose job it is to protect and help the public. The risks faced in today's world pose threats for which the average emergency responder may not be prepared. These threats go far beyond the usual ones associated with residential fires, vehicular accidents, or even hazardous materials incidents.

It is critical that emergency responders understand the implications of these modern threats and know proper response procedures and the limits of safe and prudent response. This knowledge will help prevent further fatalities. Responders need to translate this knowledge into SOPs/SOGs written to make safety the paramount consideration. Injured or incapacitated responders are no help to anyone.

The emergency services community has tremendous knowledge and resources available from the Federal government, military, public health, and law enforcement agencies, to name some of the more obvious. These resources can be a great help in writing prudent and safe SOPs/SOGs.

Thinking About My Situation...

What are some Federal and State agencies in your area to which you might turn for assistance in preparing SOPs/SOGs for the events discussed in this module?

_____	_____	_____
_____	_____	_____
_____	_____	_____

Thinking About My Situation... (cont'd)

How different would these SOPs/SOGs be from existing ones for the more usual and customary emergencies?

If any one of the incidents discussed in this module happened tomorrow, are you and your emergency services colleagues sufficiently prepared to deal with it? ☐ Yes ☐ No

What are some of the implications of your state of readiness?

Given current budgets and priorities, can your agency take steps to increase your safety? If so, in what specific ways?

What I Will Do As Followup To This Module...

Describe one or two practical, achievable steps you will take as a result of studying this module to help you to be better prepared to deal with one of the incidents described here.

Step One:

Step Two:

How I will accomplish Step One:

How I will accomplish Step Two:
