



**INTRODUCTION TO CBRNE TERRORISM RESPONSE
FOR MUSEUM SECURITY AND CULTURAL PROPERTY
PROTECTION OFFICERS**

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Most museums and cultural property institutions are protected by private security guards. They may be proprietary, contract, or a combination of the two. Over 2 million private security guards protect buildings and property throughout the United States. Guards provide a variety of services from guarding museums and other landmark buildings to ensuring the facility is safe for visitors and staff. The responsibilities placed on museum security guards since 9-11 has steadily increased. One of the largest demands on security professionals has been to protect the public from acts of terrorism. As demonstrated recently, even small groups of individuals have the ability to cause massive damage and extensive human suffering with little or no warning. Predictably, firefighters, police officers, EMS personnel, security guards and civilian volunteers will respond and be on the scene moments after any attack occurs. For such events in the future, however, rescue and treatment of victims and control or containment of fire and other hazards will be greatly complicated by the fact that the site may also be contaminated with nuclear, chemical, biological or radiological substances that pose an immediate threat to the health and safety of the emergency responders. Also, the immediate impact of such attacks may reach much further than the scene of the disaster. Thousands of injured and potentially contaminated victims may depart the scene, returning to the suburbs and satellite cities where they reside, or privately seeking medical assistance. Emergency responders, including security guards, in metropolitan areas and far beyond will need to move quickly to deal with this predictable exodus from cities following any attack. This manual is an introduction to the types of weapons security guards may be exposed to in a terrorist attack. Guards need to be ready to deal with any possible situation quickly, efficiently and professionally. Knowledge of nuclear, chemical, and biological weapons (NBC) is needed for every first responder as well as conventional explosives and radiological weapons. This paper is intended to provide an awareness-level introduction to the subject for cultural property protection officers and museum security guards, as well as to give those in museum security enough basic information to safeguard themselves and those for whom they are responsible. This material should also be suitable for use as talking points for public information officers and those training or educating volunteer organizations or the general public. Most importantly it should be of help to the museum security director in risk assessment for his/her facility. The information in this paper is not sufficient to prepare museum security guards to work in contaminated areas. Those workers require training at the operations, technician and higher levels. Instead it is to help guards detect and react to an incident as it unfolds around them. With proper awareness and preparedness, we can save lives and reduce the impact of any potential terrorist attack. This information is provided for academic consideration only. The author assumes no responsibility or liability for its use. The reader uses this material at his or her own risk.

The security guard should not assume that the local law enforcement agencies are better trained in responding to chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents than they are. The level of training and competence in local law enforcement and public safety agencies varies widely. As most security directors know the security guard has a job much more akin to military personnel than to law enforcement officers. This important distinction is often overlooked by many. It is no wonder that much of the information we know about responding to terrorist incidents comes from the military and not law enforcement sources. The well trained museum security guard, propriety or contract, can be an invaluable asset to the community in times of terror attack. It must be remembered that during a city or nationwide terrorist attack, cultural institutions may be on their own in the initial stages of an incident. The better their

preparedness to detect and react to a terrorist incident, the more professionally they will serve their visitors and staff.

WHAT TYPES OF WEAPONS MIGHT BE USED?

Terrorists potentially have a wide range of available weapons, ranging from very simple to exceedingly complex. With knowledge, preparation and training, first responders can safely deal with the consequences of each. In general, terrorist weapons can be categorized into four major types. It is important to remember that different types of weapons can be combined or used sequentially. Terrorist weapons are often referred to as weapons of mass destruction (WMD) because of the ability to kill large numbers of people. These weapons are often referred to as nuclear, biological, and chemical weapons (NBC). The four categories of weapons are:

- *Conventional Weapons & Explosives*
- *Nuclear and Radioactive Weapons*
- *Chemical Weapons*
- *Biological Weapons*

CONVENTIONAL WEAPONS AND EXPLOSIVES

By far, the weapon of choice for terrorists is the bomb. Incidents in Madrid and London tell us the conventional explosive device is still a deadly and effective terrorist tool. Some of these conventional weapons pack a very powerful punch and can bring down large buildings. The casualties could number in the hundreds and even thousands in this type of attack.

ANFO - One example of this type weapon was the fuel oil-fertilizer bomb used to attack the Murrah Federal Building in Oklahoma City. This type of device is known as the ammonium nitrate fuel oil (ANFO) bomb. This type of device is made by mixing regular fuel oil with ammonium nitrate based fertilizers. It is important the security officer knows these two ingredients mixed can form a dangerous explosive. When packed in a small truck or trailer they can generate a huge blast such as was seen in the Oklahoma City bombing.

TATP - The recent bombings in London have given rise to a great number of questions regarding acetone peroxide explosives also known as triacetone triperoxide, peroxyacetone, Mother of Satan, or TATP. This explosive belongs to the organic peroxide family and is favored by amateur chemists because of the ease of synthesis. TATP is an explosive that has been used by radical Islamic extremists before. Israeli authorities routinely encounter the explosive where it is used in attacks in the West Bank. TATP is a favored explosive often associated with Al Qaeda. Probably the most famous attempted use was by the so called "shoe bomber" Richard Reed.

The process for the synthesis of TATP is relatively simple and instructions are available on the Internet. Combining hydrochloric acid or sulfuric acid with acetone and hydrogen peroxide is the chemical synthesis procedure. The explosive can be assembled in a small area such as a kitchen or bathroom. The process requires cooling to below 10 degrees Celsius when combining the reactants so a sink or bathtub filled with ice is required for the process. When not properly cooled during assembly, a very dangerous explosive, dicycloacetone peroxide, will form. When

combined in the proper quantities the substance will explode with a high magnitude force. Friction, heat, or a shock from a detonator is all that is needed to set off the explosive. When combined in improper concentrations, the substance will either burn or explode with a small shock. The substance must be used soon after manufacture, as it will degrade on standing.

The physical appearance of TATP is that of a white crystalline powder. Public safety officials should be on the lookout for the precursors of the chemical. Sulfuric acid can be found in many drain cleaners, while hydrochloric acid is readily available as a pool cleaner. Hydrogen peroxide is available on its own or in hair products and acetone is found in many types of nail polish removers. It is easy to see why an amateur would choose TATP. Small quantities of the chemical can do severe damage with a pound or two being sufficient to cause devastating effects under the right circumstances.

When encountering suspected TATP use extreme caution. Evacuate the area and do not attempt to handle the suspected device. In the London attacks the *modus operandi* was to place TATP in a backpack and set it off with a timing device. Call the bomb squad and do not attempt to handle or move the suspected TATP. Injuries associated with bombings would be expected in a TATP attack, with burns and flying debris injuries being predominate. Decontamination procedures involve flushing the victims with copious amounts of water. Victims near the source of the blast may have explosive residue on their clothing and require flushing, the removal of clothing, washing with detergent or soap and water, and flushing again. Treat the runoff and collected clothing as hazardous waste.

IEDs - Improvised explosive devices (IEDs) are homemade bombs and booby traps. Some can be placed with a timer set to go off at a later date. In a placed bomb a device is left in a busy place and later detonates. This type of bomb was popular with the Puerto Rican liberation group known as the FBLN in the 1970s. Several bombs were left in busy locations and later exploded. One famous fatal attack took place in the busy financial district of Manhattan at Fraunce's Tavern. Security guards should be on the constant lookout for unattended packages. Unattended shopping bags, backpacks, brief cases, and luggage are often used and should always be suspicious.

Booby traps are devices that are set off by the actions of someone approaching. They may use motion detectors or trip wires. The military land mine is a type of booby trap. They are often used to slow down first responders. More often they cause severe injury instead of death so that responders will have divert resources to care for the injured.

Some IEDs are what are known as shaped charges. This type of device delivers all the force of the explosion to one small area. This has the result of delivering all the force of the explosive that would normally be distributed all around in a concentrated force. This is often used to breach armored vehicles and is commonly used against forces in Iraq.

Remote detonated bombs are a very common type of IED. They are used with great efficiency against coalition forces in Iraq. A recent attempt in London in July 2007 attempted to use remote detonated car bombs in a crowded area of the city. Fortunately, alert individuals foiled the attack.

Suicide Belts - Suicide bombers, such as the London train attackers carried an explosive device on their bodies and detonated it when detected or in a large crowd. Terrorist groups from the Middle East often employ this tactic. Be on the look out for people dressed in heavy clothing, especially in the warmer weather, or persons carrying backpacks. Since many people wear heavy coats and carry backpacks, suspicious behavior is sometimes a better indicator. The person may be acting strange and mumbling or chanting religious sayings. They may be sweating profusely or acting under the influence of narcotics or alcohol.

Suicide belts are commonly used by Palestinian terror groups in the Middle East. The explosives are worn on the person and carried to a site of high population where they are detonated. Busses and crowded cafes are often the targets in these attacks. The security officer should be on the lookout for overdressed individuals showing nervous or strange behaviors. Women and children as well as men have delivered suicide bombs in the past so no one should be above suspicion.

Pipe Bombs - One of the easiest devices to make is the pipe bomb. Highly flammable powders like gunpowder are compressed and detonated using some type of fuse. Often pipe bombs are wrapped with nails to increase the damage done by flying shrapnel. Pipe bombs can be effective in small areas and cause large amounts of casualties from flying metal and shattered glass.

Car Bombs - Car bombs can be a type of IED or they can be used as a moving explosive device, much like a torpedo driven to the desired target, or they can be left to detonate later. Car bombs of all types can be devastating with high casualties as we see from past incidents like the attack on the Marine barracks in Lebanon.

Hand Grenades - As cities harden their targets, more simple types of devices might be put to use. Hand grenade attacks could be used in large crowds and in subway and transportation stations with great effect. A more scary scenario has surfaced with tapes captured in Afghanistan showing terrorists using hand grenades and automatic weapons practicing to storm schools. This type of attack has been used in Russia with devastating results. Security officers at schools and public institutions should take particular notice of this storming type of attack using grenades for initial shock followed by intrusion with small arms.

Aircraft - Terrorists recently utilized a new type of conventional weapon, the airplane. Quantities of residual, unburned fuel may remain when an aircraft is used as the weapon of attack. In addition to the resultant fire hazard, aviation gasoline and jet fuel are hazardous substances, and decontamination efforts may need to include removal of fuel contaminant. As with all hazardous materials incidents, refer to the Emergency Response Guidebook for evacuation, protection and decontamination procedures.

Security officers should be alert to the potential for structure collapse as well as secondary explosive devices in the area. Great caution should be used if the explosion seems to do little damage. Terrorists in Iraq often deploy a second bomb timed to go off after the first one to kill first responders on the scene and spread further confusion. A small explosive device might be used to disperse chemical, biological or even radioactive agents. Another purpose of a small device might be to bring large numbers of first responders, who are then subjected to a larger secondary device.

Another immediate problem for security guards and victims is the potential for asbestos exposure. Older buildings may contain asbestos as insulation, pipe coverings, siding or roofing, flooring, adhesives, floor or ceiling tile and wall panels. Any explosion or collapse may cause this asbestos to become airborne in hazardous levels. Immediately, the primary inhalation threat and decontamination problem will be dust. Any expedient breathing protection should be used such as: masks, wet towels, or handkerchiefs while exiting the area immediately. Footbaths and wash-downs are most effective for decontamination of conventional incidents if asbestos exposure is suspected. Eye washing with clean water is usually needed immediately as well.

An observant security guard can do much to prevent and mitigate bomb damage. Knowing what to look for is the most important thing. Never approach a bomb or touch a suspicious device. Your job is to report it and call the proper authorities that are trained to deal with it. Never try to render it harmless yourself.

Look for unattended boxes, backpacks, luggage, shopping bags, cars, vans, and trucks while on patrol. Enforce policies of not leaving baggage unattended. Security officers working in the entertainment industries should look in bathrooms and under every seat in a theater or stadium before and after each show. Transportation security officers should look in bathrooms and under every seat at each destination.

Your nose can be a valuable asset. A security officer should be familiar with the smells associated with explosives such as: gasoline, butane, propane, fuel oil, ammonia, urine, manure, almonds, toluene, and alcohol.

Package and mail bombs will be treated in the section on suspicious mail.

NUCLEAR AND RADIOLOGICAL WEAPONS

It is very unlikely that terrorists will have access to a functional nuclear weapon in the near future. Nevertheless, it should be remembered that suitcase-sized nuclear devices have been reported missing from military storage areas in the former Soviet Union. This does lead to the possibility of these devices becoming available to terrorist organizations. Therefore, response and planning agencies cannot totally rule out the possibility that terrorists will attempt to transport and use nuclear devices.

A nuclear weapon is one that explodes with a very high magnitude force. Even a small device could cause massive damage. These are the old atom bombs and nuclear weapons of the cold war era. There would be devastation surrounding even the smallest nuclear blast. People not killed in the initial blast might be burned or contaminated with radioactive fallout. As unstable countries continue to gain nuclear knowledge, nuclear weapons will become a major issue in the future of security.

It is much more likely that terrorists may attempt to use conventional weapons to attack nuclear power plants or radioactive waste storage or processing facilities. This type of attack is known as a radiological attack and is different from a nuclear one in there is no initial huge atomic explosion. Instead a small conventional device spreads a radioactive material over an area. Some

radioactive materials they are so dangerous that just leaving them in a busy area, like a train station would expose thousand to the dangerous radiation.

Radiation comes from the decay of radioactive isotopes of certain elements and compounds. Radiation can be in the form of alpha, beta, or gamma rays. All three are odorless and colorless and can be detected only with radiation detectors. The primary hazard will be from dust contaminated with radioactive sources. It will be very important for the first responder to use respiratory protection to avoid breathing in the radioactive dust. Footbaths and wash-downs will be a useful in the decontamination of victims. Detergent can be added to the water to remove the radioactive dust. It is very important to collect all water and contain the runoff, as it will also be radioactive. Security officers who are not properly trained and adequately equipped should not enter radioactive areas or make contact with people or items that are contaminated.

This type of attack is highly likely in the near future. Radioactive materials missing in the USA and Canada alone could create many of these dirty bombs. A dirty bomb is simply a conventional explosive that has radioactive material added to it. It spreads the radioactive material in the form of dust and shrapnel over a large area. It is amazing how long an area could remain contaminated from the radiation, even thousands of years. Because radiation is odorless, colorless, and tasteless it needs to be detected using detection devices. Any agency that protects areas of cultural significance should invest in radiation detectors for their security officers and train them in their use. Beware of bombs that do very little damage; always assume they may be spreading radiation. Areas where small devices explode should when possible be swept for radiation before responders move in.

CHEMICAL WEAPONS

Terrorists have used chemical weapons in the recent past and it is likely to happen again. A very large number of casualties could be expected in a successful chemical attack. Chemical agents can enter the body by inhalation of the chemical agents, absorption through the skin or eyes, injection into the body by flying glass or shrapnel, or by ingesting with food or water. A likely delivery method is in the form of a gas or as an aerosol spray. There are numerous chemical agents each with different symptoms and effects. The most common families of chemical agents are:

Nerve Agents: Nerve agents attack the victim's nervous system. Most belong to the family of chemicals known as organophosphates. Many common pesticides belong to this family of chemicals. These are extremely dangerous as a tiny drop on the skin is enough to kill.

Blister Agents: Blister agents also called vesicants attack the skin of the victim resulting in blisters and skin burns. Mustard gas and Lewisite are common blister agents.

Blood Agents: Blood agents attack the ability of the blood to hold and deliver oxygen. The victim suffocates. Cyanide gases and compounds are the most common types of these agents. See more about Cyanide below.

Choking Agents: These chemicals attack the lungs causing them to fill with fluid. Chlorine gas and phosgene are typical choking agents. See more about chlorine gas below.

Incapacitating Agents: These agents usually irritate the skin, mucous membranes, eyes, nose, lips and mouth. They may cause vomiting or intolerable pain. While they may lead to serious medical situations such as seizures or heart attacks, they are not designed to kill or cause permanent harm. Used alone, the intention is to temporarily incapacitate or harass the target, or force them to evacuate the area. However, incapacitating agents may be used in combination with other agents to force responders to remove their gas masks and other protective gear, so that they will be exposed to lethal doses of the other agent. Examples of incapacitating agents are pepper spray, tear gas, riot control agents and several military chemicals from different nations.

Security officers should become aware of Department of Transportation (DOT) placards on trucks that transport dangerous chemicals and monitor once in the vicinity of their facilities. Officers should have ready access to the DOT emergency response guide and receive proper training in using it to identify chemicals by placard. In addition officers should use Right to Know Law information to be aware of all chemicals stored in and around their facility. Officers that work near dangerous chemicals should be equipped and trained to use proper respirators.

Some chemicals are more likely than others to be involved in a terrorist attack and the protection officer should be particularly aware of them.

Chlorine Gas: One thing we know that terrorists are very interested in is attacking chlorine gas sources. Terrorist groups working in Iraq have attacked chlorine storage facilities in an attempt to cause wide spread contamination. It makes sense to think that the experiments with attacking chlorine in Iraq could find its way to domestic sources. Security officers should pay special attention to chlorine storage tanks and trucks. Officers that patrol areas with large chlorine storage should consider carrying protective masks as part of their regular gear.

Chlorine will appear as a green to yellow-green gas. Symptoms would be burning of the eyes, nose, and mouth area as well as respiratory distress. The gas may hang close to the ground. So rare are green gasses that chlorine should always be suspected if a green vapor is present. This green gas will react quickly with water to form highly corrosive hydrochloric acid. Any mucus membranes that come in contact with the gas will be subject to the corrosive effects. Pay attention to wind directions if chlorine is suspected and be sure to evacuate downwind areas.

Cyanide Gas: Cyanide gas forms when the white salt hydrogen cyanide comes in contact with an acid. This is the common reaction used in death chambers in States that use lethal gas for execution. It is likely the two components (liquid and solid) could be carried separately and mixed at the scene of the attack. It could also be contained in gas canisters under pressure. Symptoms of attack would be feelings of lightheadedness, nausea, feeling shaky, and headache.

Sarin: Sarin is a chemical nerve agent. It was used in a terrorist attack in the subways of Japan. It is a highly volatile liquid that would likely be carried in jars or plastic bags for quick dispersal. The vapor it produces is heavier than the air and concentrations down low would be at the highest in an unventilated area. The gas is flammable and colorless. It may have a slight odor of

bitter almonds associated with large quantities. HVAC systems are a likely target of attack.

BIOLOGICAL WEAPONS

Biological weapons present a serious challenge for response planning. There is risk that a biological attack may not be detected until days or even weeks after it happens. First responder resources, therefore, may be of little use at a bioterrorism incident unless it is detected promptly. Basically, there are two types of biological weapons pathogens and toxins. Pathogens are disease-causing organisms, some of which can reproduce and keep spreading long after the attack. The potential for many thousands of casualties is possible but the more likely number is much less because of the difficulty of efficiently delivering the pathogenic agents to large numbers of people. Pathogens can be bacteria such as anthrax, viruses such as smallpox, or fungi like yeast and molds, *mycoplasmas* that cause pneumonia and similar problems, or *rickettsiae*. Plague, smallpox, anthrax, hemorrhagic fever, and rabbit fever are known to be probable biological weapons. Not all diseases are contagious, and many have a low mortality rate when properly treated. Toxins are poisonous substances produced by living things. Many toxins are extremely lethal and small quantities can kill very large numbers of people. In many ways a toxin attack is more like a chemical attack than a biological one. Some possible toxin weapons are Ricin, botulism toxin, and aflatoxin. Again, the difficulty for the terrorist is in finding an effective way to disperse or distribute the toxin.

Because of the discrete nature of biological weapons a much more in depth review of them is included later in this guide. Many security officers are employed in the healthcare industry and will be at a tremendous risk of encountering these weapons if a biological attack occurs. Healthcare security officers should become very familiar with the signs of biological attacks (see “What are the early indicators of a possible NBC attack?”) and the procedures for decontamination of biological agents (see “Emergency Decontamination”).

DEALING WITH SUSPICIOUS MAIL AND PACKAGES

Many security officers are responsible to receive and sometimes open the mail before distribution. Ever since the Anthrax attacks of 2001 there has been a heightened awareness for the need of mail handling procedures. A variety of possible hazards can arrive via the United States Mail and other delivery services including: poisons, biological agents, bombs, radioactive materials, hoaxes, and sharp objects. Following some simple procedures can greatly reduce the risk to facilities and employees handling the mail. The first step in a safe mail handling program is to establish a central receiving area. This area should be isolated as best as possible from the main facility. All deliveries of mail, packages, and freight should be received at this receiving center. It is a good idea to post directions outside all entrances showing the location of the receiving center. An ideal receiving center will have a separate entrance to the outside and should be easy to isolate in case of an emergency. This should also be the place that all mail and packages are opened. The receiving center should be well lit and ventilated and be large enough to handle the volume of mail and freight received by the facility. Wash your hands before and after opening mail with soap and water or a hand sanitizer. It is a good idea to wear a dust mask when opening mail to protect from inhalation hazards. Separate out suspicious packages and mail for further examination.

What makes a piece of mail suspicious?

- It's unexpected or from someone you don't know.
- It's addressed to someone no longer at your address.
- It's handwritten and has no return address, or bears one that you can't confirm as legitimate.
- It's lopsided or lumpy in appearance, or contains inappropriate powders or liquids.
- It's sealed with excessive amounts of tape.
- It's marked with restrictive endorsements such as "Personal" or "Confidential."
- It has excessive postage.
- It seems to have traces of a suspicious powder or liquid, with or without odors.
- The handwriting on the package may be barely legible.
- It may have protruding aluminum foil or wires.

Handling Suspicious Mail

- Do not handle a letter or package that you suspect is contaminated.
- Do not shake it, bump it, or sniff it.
- Cover the suspicious item with paper, plastic or cloth, if handy.
- Turn off fans. Get away.
- Wash your hands thoroughly with soap and water.
- Notify local law enforcement authorities.

EMERGENCY DECONTAMINATION

Decontamination is the removal of harmful substances from people and property. Complete decontamination should be left to trained and well-equipped professionals such as a fire department HAZMAT team. The problem is they are often more than 3 minutes away from the terrorist attack scene. Decontamination of victims is critical within 1-2 minutes if a nerve, blood, blister, or choking agent has been encountered. There may not be time for the security officer to wait for the fire department to arrive. If this is the case do not delay. Use water from any uncontaminated source to spray or douse victims. Garden hoses, shower stalls, or fire hydrants can be used. Do not delay to obtain soap or to remove clothing. Immediately and repeatedly flush the eyes with large amounts of clean water. The flush-strip-flush-run method is easy to remember and can do a great deal of good before professional help arrives.

Flush-Strip-Flush-Run Method

Flush the victims with copious amounts of water. Have victims discard all clothing and go through another water spray, using soap if available: Move them upwind immediately. Avoid contact with the victims or anything they touched if you are not wearing appropriate protective gear. If standard decontamination capability is not available after the above flush-strip-flush-run, have victims quickly get to a safe area and shower with large amounts of warm water, vigorously using detergent soap (such as dishwashing liquid or strong bath soap) and using scrub brushes if available. Avoid contaminated water streaming into the eyes, especially from the hair. If standard

decontamination solution is still not available, start expedient decontamination using a 0.5% hypochlorite solution (1 part household bleach mixed with 9 parts water). Spray or pour the solution over the victims avoiding the face and eyes. Ordinary spray bottles or plant misters may be used. **Do not mix this solution with glass cleaners, such as Windex!** The solution can be used on soft tissue wounds, but must not contact the eyes or enter open wounds of the abdomen, chest, brain, or spine. If biological agents are suspected, leave the hypochlorite solution in contact for 10-15 minutes before rinsing. Less time is needed for chemical agents. Isolate the victims and keep them warm and hydrated until standard decontamination can be performed. Assume that this situation is at least a HAZMAT Level A emergency involving Toxic by-Inhalation- Hazards (TIH). Lacking other guidance, implement isolation and evacuation distances in accordance with Green Pages Section of the Emergency Response Guidebook, for release of a TIH of best-guess quantity. A copy of the Department of transportation Emergency Response Guidebook should be kept at all security stations. Unless security officers are properly trained and equipped, do not send them into the area for rescue or treatment of victims. Ill-prepared, heroic rescue attempts may only worsen the emergency by creating additional victims and seriously reducing response capability. All chemical weapons have the potential for secondary contamination of ambulances, police, fire, security, and medical equipment, hospitals, busses, private vehicles, homes, and other people encountered by victims as they leave the scene. Proper decontamination of victims is necessary before they leave the area and spread the contamination. Ideally, decontamination stations should be set up at all mass transportation sites serving the area in the event of a chemical attack.

You would be amazed how well you can do just by removing clothes and washing down the victims you may remove over 90% of the contaminants from those that are exposed and save countless lives.

Self Protection for Security Guards

Barrier protection, reducing the time of exposure and distancing you from the hazard are the keys to survival for all first responders. The best available barrier should be put between you and the nuclear, chemical, or biological agent. The only way to protect yourself is to keep the hazard from entering or coming in contact with your body. For most situations, your eyes and all of your skin must be covered quickly before you become contaminated, and you must adequately filter the air you breath. In some cases, respirator filters will not fully protect you from all chemical or biological hazards, and supplied-air breathing apparatus must be used if you are in the contaminated area. If you are using a filter respirator, you must make certain that you have installed the correct filter type and that it is certified to protect you from the specific NBC hazard. Reduce the time you are exposed to the agent as much as possible. If you are not properly trained and equipped to deal with a hazardous substance, you should not be in a contaminated area. If you are caught without a mask or other protective equipment, move out of the contamination as quickly as possible, using any expedient means of creating a barrier between yourself and the hazard. Layers of clothing, rain slickers, hats, ski goggles, wet towels or handkerchiefs over the face may help. Get away quickly and decontaminate immediately. After working in the incident area, proper decontamination of you and your equipment will probably be required for your own protection as well as that of others. If in doubt, confirm the need for decontamination with the local police, fire department, or the chief of your local

HAZMAT team before leaving the evacuation assembly area. If you suspect that you or others are contaminated, and you cannot get prompt guidance, you should perform expedient decontamination without delay. Never enter a known contaminated area without personal protective equipment. The proper use of HAZMAT protective gear takes additional training and should only be used by those properly trained to do so.

HOW CAN YOU ESTABLISH A SAFE COMMAND POST FOR THE INCIDENT?

The museum security staff may need to set up a workable command post during and after the incident. Preplanning, training and exercises are essential if you are going to be able to make decisions in a crisis. The following guide is intended to assist planning and preparedness, but local conditions and technical considerations may become overriding factors. Use the following outline as a guide only. Unless there is other guidance, assume that any NBC terrorist attack creates at least a HAZMAT Level A situation involving Toxic-by-Inhalation- Hazards (TIH). Lacking other guidance or specific information, implement evacuation, isolation and protection distances in accordance with Green Pages Section of the Emergency Response Guidebook, for release of a TIH of best-guess quantity. Establish the Incident Command Center and all staging areas well outside the most pessimistic danger zone. With specialized equipment and highly trained teams, it would be possible to deliberately establish operating facilities within the zone of contamination, when no other practical solution exists. If you have the need for this capability, contact your regional Civil Support Team for advice and guidance. If, however, emergency response teams or command officers find themselves suddenly and unexpectedly in an area from which they cannot escape, or if there is no choice but to establish a command post close to the incident site, there are expedient defensive measures that will reduce, but not eliminate, risk. The following precautions may be helpful when forced to operate inside or near the hazard area. Locate the command post upwind from the hazard hot zone. Locate the emergency refuge or command center inside a building as opposed to using a vehicle. Buildings provide greater physical protection and are much easier to seal against chemical and biological hazards. Select the most protected interior room available. As many hazardous fumes are heavier than air, an interior room on a middle floor of the building might be advisable. Shut off central fans and air handling equipment. Establish a decontamination station at the entrance to the facility to prevent contamination from being carried inside. Windows and doors should be covered with plastic and sealed with duct tape. If possible, a HEPA filter should be placed in the temporary field station and a positive room pressure generated. The room should remain sealed until after the chemical or biological plume has totally passed the area. If possible, keep escape vehicles in a nearby garage or other protected area in case emergency evacuation is needed. Cover with plastic or blankets if left outdoors. Establish a site evacuation and rescue plan.

Sealing windows and doors to make a safe room may also be desirable for anyone trapped in the danger area when there is no time to evacuate them to a safer area. It is important to ensure that occupants will have enough air to prevent suffocation.

GENERAL SAFETY PROCEDURES AT TERRORIST INCIDENTS

- Suspect the worst at all terrorist incidents until the air is tested.
- Use barrier protection until the area is tested to be safe.

- Establish decontamination stations as soon as possible.
- Contain all run off from decontamination activities.
- Be on the alert for structural collapses.
- Be on the alert for secondary explosive devices.
- Remember you are part of a crime scene and preserve all evidence when possible.

The indications of explosive attacks will be quite obvious at the time of detonation. The effects of a nuclear, biological, or chemical (NBC) attack will be less noticeable to the untrained person. The security officer should always be aware of the indicators of NBC attack.

WHAT ARE THE EARLY INDICATORS OF A POSSIBLE NBC ATTACK?

There are many early-warning indicators of an NBC attack. In all but the large cities detection equipment may not be available. All security officers should consider whether an attack might have taken place if any of the following are noticed:

- You may find unusual numbers of people dying in an area, or from strange causes
- Unusual numbers of sick or dying animals birds or fish Lack of insect life where it should be seen
- Unusual numbers of people in an area complaining of blisters/rashes, nausea, disorientation, difficulty in breathing, convulsions, localized sweating, conjunctivitis (reddening of the eyes), erythema (reddening of the skin), or any irregular symptoms
- Strange colored smoke or odors coming from a fire or an area of a detonation
- Explosions that seem to do very little damage or which release an unusual amount of smoke, or leave droplets of liquid in the area, or fragments covered with liquid or droplets
- Unusual appearance of any liquid droplets, particularly where there should be none
- Abandoned aerosol sprayers in the area of sick people. People reporting unusual odors or tastes
- Whenever there are unexplained mists or hazes in urban area
- Sudden or unexplained appearance of low-lying clouds
- The presence of low-flying aircraft, particularly crop dusters, over populated areas or at strange times of day

WHAT ARE THE MOST LIKELY TARGETS FOR A NBC ATTACK?

- Government offices
- Military installations
- Landmark buildings & Museums
- Important Cultural Properties
- Events with high populations
- Abortion clinics
- Post offices
- Power facilities
- Water supplies
- Corporate Headquarters
- Police stations
- Train terminals
- Bus terminals
- Airports
- Tunnels
- Bridges
- Fuel depots
- Cruise ships
- Subways
- Trains
- Busses

RESOURCES

At a minimum every museum security department should have a copy of the DOT Emergency Response Guidebook. This is the guide used by all fire and police departments nationwide. The following resource books should be on scene at all main security stations where the risk of terrorist attack is high:

- *Emergency Response Guidebook, DOT*
- *Chem-Bio: Frequently Asked Questions, Tempest Publishing*
- *First Responder, Chem-Bio Handbook, Tempest Publishing*
- *Jane's Chem-Bio Handbook, Jane's Information Group*

CONCLUSION

The museum security guard's role in the post 9-11 world has changed dramatically. The need for security guards trained in counterterrorism is tremendous. Private security guards are now on the front line of homeland security. It is important to be trained in the recognition of terrorist tactics especially those that involve weapons of mass destruction. When approaching a scene that may involve NBC agents, the most critical consideration is the safety of oneself and other responders. Protective clothing and respiratory protection at the appropriate level of safety must be used. Be aware that the presence and identification of NBC agents may not be verifiable, especially in the case of biological agents. Whenever a NBC incident is suspected, immediately put on your protective equipment. Remember the time-distance-shielding rule for protection: Spend as little time as possible in the hazard zone, and keep your distance from the area. Shield yourself from the hazard at all times. Decontaminate as soon and as thoroughly as possible. Remember, your effectiveness as a first responder is compromised when you become a casualty yourself. In addition you take resources away from the incident to care for you if you fall victim to the incident. By being aware of the types and signs of terror attacks the private security officer can protect him or herself while helping others and saving lives.

ABOUT THE AUTHOR

Robert J. Heyer is a security specialist living in the New York Metropolitan area. He holds a Bachelor of Science degree in forensic biology as well as post graduate certificates in private security and criminalistics. His extensive security and counterterrorism experience includes working as a fire captain, hazardous materials specialist, and commanding decontamination units. He has provided counterterrorism training for fire departments, police departments, schools, businesses, and hospitals throughout the New York Metropolitan area. Emergency responders around the world have used his training manuals to provide training to their various departments. Robert commanded two decontamination units, at a hospital and major train station, following the attacks on the World Trade Center on September 11, 2001 and responded to numerous incidents with the Anthrax attacks that followed. He is a certified protection officer (IFPO) and licensed New York State security guard. Robert studies fine art protection in Manhattan where he works as a security management intern at the Solomon R. Guggenheim Museum. He currently is director of security and safety for a large Urban New Jersey high school.