

JOURNAL OF

Civil DEFENSE

VOLUME 41 ISSUE 3

FALL/WINTER 2008

**DISPERSION
DEVICES**

**FAQs about
DIRTY BOMBS**

**CIVIL DEFENSE
EFFORTS**

**TERRORIST
10-KT NUCLEAR WEAPON**



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PRESIDENT'S MESSAGE



It is unpleasant to think about a terrorist attack near our home. However, most people are indifferent to the need to prepare for the unexpected. Others say it is too costly or they have no idea how to prepare.

TACDA has made a special effort in the TACDA Academy to give our members a cost effective way to prepare for most disasters. We have seventeen chapters that deal with many types of terrorism as well as natural disasters. Remember, whatever the disaster, if your family has the ability to stay inside your home for 60 days or longer your chances of survival are greatly enhanced.

We have just witnessed the tragedy in Mumbai, India. It exemplifies what many people have been saying for years, that in a democracy, it is almost impossible to protect soft targets from terrorism. We must all remain vigilant and if we observe a terrorist event, react immediately, call 911 and get out of harms way. Call your family and initiate the family emergency plan. If you do not have a plan, making a plan is a great way to start preparing. (See Chapter 1 in the TACDA Academy.)

In this issue, for the first time, we are going to discuss self defense. During hurricane Katrina there were gangs of looters shooting at the law enforcement officers. The police were there risking their lives to help others. Events like this have caused many people to rethink how they will protect their home.

We each have to determine the risk factors for where we live. If you decide to have a gun in your home

there are several things you should do. First, acquire the gun legally. If you are not proficient with fire arms you must have proper training. You will need training on safety, operation and how to store the weapon properly. If you are going to carry it you will need a concealed weapon permit. Check with local law enforcement to be sure you comply with all laws.

I know many of you are prepared to self quarantine. You have all the provisions your family will require for a period of time. I suggest you not share this information with your neighbors. If times get desperate, they may insist you share your supplies. If you do choose to share, it must be at your own provocation.

As we prepare for whatever may come our way – we always pray for the best – but prepare for the worst. Respectfully,

A handwritten signature in dark ink, appearing to read "William D. Perkins".

William David Perkins
TACDA President

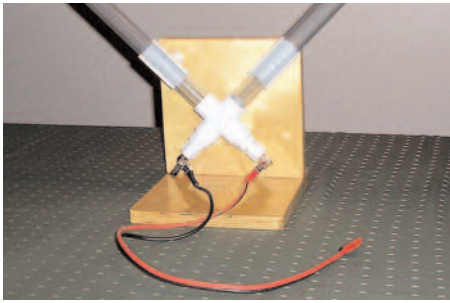


ON THE COVER: Six months after the tragic events of 9/11, where smoke and ashes darkened the daytime sky over New York, two shafts of bright light pierced the night sky on March 11, 2003 in memory of all those who lost their lives in the September 11 attacks.

The lighting of the "Tribute in Light" was one of many ceremonies held across the United States. The twin towers of light are meant to represent the fallen twin towers of the World Trade Center.

Located about a block from "Ground Zero," the banks of 44 searchlights remained lit from dusk until 11 p.m. for 32 days and under certain conditions could be seen for up to 25 miles away.

Correction: The last issue of the *Journal of Civil Defense* was mislabeled "VOLUME 41 ISSUE 3" instead of ISSUE 2. If you are keeping track, you haven't missed an issue. You will now have two that read ISSUE 3. We wanted to get back on the right track.



Salt Cracker electrolyte chlorine solution apparatus.

Dear Editors,

After reading your *Journal* articles [in the last issue] on water purification I still was left with questions.

If I gave you a glass of water (when usual water supplies were absent) which I had just dipped out of the backyard irrigation ditch and told you I had added four drops of bleach to it and it should be safe to drink and as you took the glass in hand and noticed the water was murky in color and as you raised it to your lips and noticed some strange odor and then thinking of how many back yards the water had flowed through, picking up animal waste, lawn and garden fertilizers and other pollutants and as you tasted a small amount and realized it didn't taste just right, would you feel good about drinking it? I think not.

The EPA article mentions, as does the editor's letter, that cryptosporidium and giardia are particularly resistant to chlorination but then, aside from boiling, give no suggestions for handling the problem – also no mention of chemical purity and methodology.

In the front inside cover is an ad for a ceramic filter system but no mention is made in the articles about these items. Activated charcoal filters are also very common – but no mention of these for reducing chemical impurities/taste is made. These are fairly inexpensive items.

Also, the salt cracker chlorine producer could use a diagram otherwise it's practically impossible to picture just how to construct it.

Perhaps your next issue could include some comments on these issues.

Thanks and sincerely –
Landon Beales, MD

From the Editor:

We have included the diagram for the Salt Cracker in this issue of the *Journal*. Thank you for the suggestion. We had several requests for this diagram. We have also included an article on purification of water with Iodine Crystals. Iodine Crystals are very effective against deactivating Giardia cysts. Boiling, however, is still the overall preferred method. I would suggest that our readers refer to the TACDA Academy lesson #9, for a review of other methods of water clarification, filtration and purification.

Under emergency conditions, boiling and chemical treatments of water are not always practical. Consider purchasing a good ceramic filter for emergency and camping use. Carefully research filters before purchasing (they are not all equal). TACDA offers the AquaRain filter at a discounted price to all members. The AquaRain has an absolute pore size of .2 microns and qualifies as a micro filter, removing Giardia, Cryptosporidium, Cholera, E. Coli, and Salmonella.

Advertisement: AquaRain Filters

The AquaRain® Natural Water Filter will provide your family and loved ones with laboratory proven safe drinking water . . . without electricity, without plumbing, and without pressure or chemical pretreatments. Our patented space-age ceramic technology positively removes dangerous living organisms and harmful bacteria from your drinking water . . . naturally . . . using micro-filtration and gravity. A dense and highly adsorptive carbon filter bed has been incorporated within the ceramic shell and sterile metallic silver added to maintain purity in the filter system. The attractive super-sanitary stainless steel housing is press-formed without seams or welds and has easy lift handles. A unique splash guard system insures safe drinking water in daily operation. Here is what may be the best part... the AquaRain® will produce quality drinking water for less than 1¢ per gallon!



What's not commonly known is that many filters have a nominal pore size, not an absolute pore size. "Nominal" means that the majority of the pores are the size claimed. The rest of them can be as large as 20 microns . . . and remember, water follows the path of least resistance, happily flowing through the larger pores and carrying pollutants/contaminants right along.

High-Tech Ceramic Filter Elements

Double filtration, both ceramic and carbon in each element . . . and it filters enough water for 6 people a day (4 element model). It's been manufactured to meet ANSI/NSF standards, the toughest there are. IBR (Inter Basic Resources) 4/4/97 test report states that the AquaRain filter, at absolute 0.2 microns has 99.99 log 5.92 efficiency. Our nearest competitor, the British Berkefeld, certifies at only 0.9 microns with only 99.99 filtering efficiency.)

At the heart of our natural process micro-filters are patented high-tech ceramic filter elements specifically designed for the AquaRain® system. Our state-of-the-art ceramic elements filter water in a very natural way, using gravity to gently draw water down through our cultured ceramic stone in much the same manner as nature processes ground water through the earth. The micro-fine pore structure of our ceramic media will remove dangerous organisms such as protozoan cysts (Cryptosporidium, Giardia lamblia) and microscopic bacteria (E. Coli, Salmonella typhimurium, Anthrax, etc...). Enclosed within the hard ceramic shell we have incorporated a concentrated bed of Granulated Activated Carbon (GAC) that contains a self-sterilizing metallic silver. The silvered GAC bed will adsorb various organic chemicals such as MTBE and pesticides, remove chlorine compounds including carcinogenic halogens, and improve the taste and odor of the water. To the benefit of good health, our system will also leave unchanged the naturally occurring electrolytes and minerals in your filtered water.



Purification of Water with **IODINE CRYSTALS**

Crystalline iodine is a very effective method of chemically purifying contaminated water and is said to be more effective than chlorine-based treatments in deactivating Giardia cysts. Iodine appears safe for short and intermediate length use (three to six months), but questions remain about its safety in long-term usage. It should not be used by persons with allergy to iodine, persons with active thyroid disease, or pregnant women. In the crystallized form, iodine has an infinite shelf life and is quite inexpensive. Great care should be exercised, however, when handling crystalline iodine.

Do not touch iodine crystals!! They can cause severe skin burns and can be fatal if swallowed in sufficient quantity. Add four to eight grams of USP Grade Re-sublimed Iodine Crystals to a one-ounce glass bottle with a leak proof bake-lite cap. Plastic bottles are not acceptable,

since they allow staining and can leak.

After placing the crystals in the bottle, fill the bottle with water, close the cap and shake vigorously for one minute. Allow the bottle to sit for one hour to allow the iodine to dissolve (only a small fraction of the crystals will dissolve) before adding the solution to the water. Add three teaspoons of this solution (1/2 ounce) to a quart of clear water, and let it stand for 30 minutes before drinking. Take great care that **no** crystals escape into your drinking water, as they will cause burns to your mouth and digestive tract. Double the amount (six teaspoons per quart of solution) if the water is cloudy. When the solution in the bottle is used up, just add more water to the crystals and let it stand one hour before using the solution to treat additional water. Four to eight grams of crystalline iodine should be sufficient to treat up to 1,000 quarts of water.

It is currently difficult to purchase iodine crystals in bulk form. Iodine crystals in small containers, however, can be purchased for approximately \$10.50 from the Polar Pure Equipment, Inc., Saratoga, CA. Ask for the Polar Pure Iodine Crystal Kit. The iodine in this kit is packaged in the proper glass bottle and has a screen fitted over the opening to keep the crystals from escaping when the solution is poured into the drinking water. This particular kit contains enough iodine crystals to purify 2,000 quarts of water. See http://www.grannysstore.com/Wilderness_Survival/water_purification.htm.

NOTE: Regardless of the method of chemically disinfecting water, always double the dosage amount if the water is not absolutely clear. If the water temperature is cold (below 45 degrees) increase the treatment time to one hour. ●



TERRORISM

In the News

Globe Staff
November 21, 2008

Boston Launches Flu Vaccination Tracking

Brief Synopsis by TACDA:

Boston disease trackers are creating a vaccination map to help them create a citywide registry of everyone who has had a flu vaccination. Several hundred people were included in the experiment. Each vaccinated person received a bracelet printed with a unique identifier code. Information about the recipient was entered into a handheld device similar to those used by delivery truck drivers.

Infectious disease specialists predicted that the information would be extremely useful in the event of a bioterrorism attack or a global flu epi-

demic. In that event, the registry could be used to track those who had received special vaccines or antidotes to the particular deadly agent.

Read the complete article by Stephen Smith at:
www.boston.com/news/health/articles/2008/11/21/boston_launches_flu_shot_tracking/

NY Times
Dec. 1, 2008

Panel Fears Use of Unconventional Weapons

Brief Synopsis by TACDA:

A Congressional mandated panel recently found that rogue nations pursuing nuclear weapons are outpacing our defense capabilities. It was concluded that, "America's margin of safety is shrinking, not growing".

The panel singled Pakistan as the top security priority of the upcoming administration. The commission wrote, "Were one to map terrorism and weapons of mass destruction today, all roads would intersect in Pakistan...Pakistan is an ally, but there is a grave danger it could also be an unwitting source of a terrorist attack on the United States – possibly with weapons of mass destruction."

The opening sentence of the report states, "Unless the world community acts decisively and with great urgency, it is more likely than not that a weapon of mass destruction will be used in a terrorist attack somewhere

in the world by the end of 2013."

The panel recommended the tightening of security at medical labs, improved bioforensic capabilities, and strengthening international organizations, like the International Atomic Energy Agency.

Read this complete article by Eric Schmitt at
<http://www.nytimes.com/2008/12/01/washington/01bioterror.html>

Associated Press
Nov. 25, 2008

NYPD Opens New Counter-terrorism Nerve Center

Brief Synopsis by TACDA:

The first phase of a \$100 million dollar counter-terrorism project quietly began operating in November 2008 to help protect lower Manhattan from terrorist threats. The center will eventually receive information from devices designed to detect radiological and biological threats posed by passing cars and trucks entering bridges and tunnels in the Manhattan area.

Associated Press
Nov. 25, 2008

Venezuela's Chavez Welcomes Russian Warships

Brief Synopsis by TACDA:

The Russian destroyer Admiral Chabanenko, a nuclear powered

Continues next page





cruiser, Peter the Great, and two Russian support vessels sailed into a Venezuelan port on November 25th. Venezuelan troops greeted the Russian warships with a 21-gun salute, bringing comparisons to the Soviet Union's deployments to Cuba during the Cold War.

It is widely believed that this show of force by Russia was a direct result of the U.S. support for Georgia and for the plans to place a missile-defense system in Europe.

Chavez has encouraged Russia to invest in Venezuelan oil and natural gas projects and to support his plans to build a nuclear reactor. He also wants weapons – Venezuela has bought more than \$4 billion in Russian arms, including Sukhoi fighter jets, helicopters and 100,000 Kalashnikov rifles.

It is believed that the current economic crisis may discourage Russia from joining Chavez in his plan to construct a gas pipeline across South America

More Security for US-bound Private Planes

Brief Synopsis:

The U.S. Homeland Security Secretary Michael Chertoff, has announced that starting next month, there will be new rules for screening

passengers and crew members on private aircraft bound for America. One hour before takeoff, pilots of general aviation aircraft will be required to submit the names and other information of all people on any flight bound to the U.S., allowing time for officials to screen passengers and flight personnel against lists of suspected terrorists.

Radionuclide Half-Life

Many of the articles in this issue of the *Journal of Civil Defense* will note various half-lives of radionuclides. It is necessary to understand the definition of half-life, to fully grasp the significance of the material.

As defined in the book, **The Effects of Nuclear Weapons**, the half-life of a radioactive species, is the time required for the activity of the species to decrease to half of its initial value. The half-life is a characteristic property of each radioactive species and is independent of its amount or condition.

You may find it easier to understand this concept, if you think of each radioactive species as a gun, and the radiation as the ammunition. Each gun has a specified amount of ammunition, and some guns shoot their ammunition at a faster rate than others.

The guns variously shoot gamma, neutron, beta and alpha bullets. Gamma rays have no mass, and will penetrate deeply into the body. Neutron bullets (as found in initial radiation) are very energetic and travel up to 1 1/2 miles before being spent. They are extremely powerful and deadly. The neutron gun shoots all of its bullets within a fraction of a second. Beta bullets are 1/1832 the size of neutron bullets and penetrate only a slight distance into the skin. Iodine 131, for instance, is a beta emitter and shoots half its bullets in 8 days. Alpha bullets are four times the size of a neutron bullet, but won't penetrate through the skin. If alpha and beta bullets reach the inside the body (through inhalation or ingestion of the gun itself) they will do great damage. As alpha and beta bullets continue to be shot from the gun, all their energy is spent in one small area on live tissue.

Polonium-210 has a half-life of 138 days and shoots alpha bullets. In 138 days, half of the alpha bullets will be spent. This concept would intuitively lead us to believe that the remaining bullets would be spent in the next 138 days, but this is not so. In the next 138 days, the Polonium gun will only shoot one-half of the remaining bullets. Inexplicably, the gun knows to conserve its ammunition. In the next 138 days, it again will shoot only one-half of the remaining bullets. After ten half-lives, the gun will have approximately one-one thousandth of the original number of bullets, and will no longer be an effective weapon.

Cobalt-60 has a half-life of five years, and shoots gamma rays. It will be an effective weapon for 50 years. Some radioactive nuclides conserve their ammunition for unimaginable lengths of time, such as Uranium 235, which has a half-life of 703 million years. ●

Furthering **CIVIL DEFENSE** **Efforts**

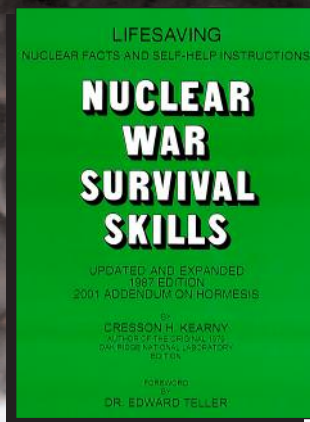


In TACDA's estimation, the book, **Nuclear War Survival Skills**, remains the single most important and useful document ever written on civil defense issues. It was authored by Cresson Kearny. The original edition of this book was published in 1979, by Oak Ridge National Laboratory. Dr. Arthur Robinson, at the Oregon Institute of Science and Medicine in Cave Junction, Oregon, publishes the updated and expanded version of this book, which is available for purchase from the TACDA website. An electronic version of **Nuclear War Survival Skills** is available, free of charge, on Dr. Robinson's web site, www.oism.org/nwss.

Dr. Jane Orient, of the Doctor's for Disaster Preparedness enthusiastically lauds the merits of **Nuclear War Survival Skills**. She recently reminded us that "duck and cover" is not an outdated exercise. The knowledge and practice of that simple concept, alone, could save millions of lives. She reports that the "home-makeable" fallout meter (widely known as the "Kearney Fallout Meter") described in the book, is extremely accurate and has been field tested by renowned scientists from the Oakridge National Laboratory.

Her team recently made the effort to distribute over a hundred copies of **Nuclear War Survival Skills**, donated by The Oregon Institute of Science and Medicine, to members attending the International Association of Emergency Managers. We appreciate their efforts in promoting this remarkable book.

The following is an endorsement of **Nuclear War Survival Skills**, from Kirk Paradise, Plans Coordinator, Huntsville-Madison County, Alabama Emergency Management Agency.: *Continues next page*



Nuclear War Survival Skills

By Cresson Kearny

You and your family can improve your chances of surviving during and after a nuclear attack by learning the nuclear facts and following the self-help instructions provided in this book.

Nuclear War Survival Skills provides instructions that have enabled untrained Americans to make high-protection-factor expedient shelters, effective air pumps to ventilate and cool shelters, the only “home-makeable” fallout radiation meter that is accurate and dependable, and other life-support equipment

TACDA Member price

\$17.95

**CALL TACDA Office at
801-501-0077**

Place your order for this incredible book during February and March and receive an additional 10% off!

Sheltering the Public Against Radiological & Nuclear Attack

by Kirk Paradise

Today, even as you read this, the federal government places the entire burden of sheltering the public from high level radiation events on local government. This is widely advertised to the public online at: http://www.ready.gov/america/_downloads/nuclear.pdf and in FEMA IS-22, “Are you ready?”, which says on page 66:

“Find out from officials if any public buildings in your community have been designated as fallout shelters. If none have been designated, make your own list of potential shelters near your home, workplace and school. These places would include basements or the windowless center of middle floors in high-rise buildings, as well as subways and tunnels.”

If an attack with a nuclear or radiological weapon were to occur, how would you protect your citizens?

Even if it happens hundreds of miles away, what will you tell your elected leaders? The media? They will want to know.

What actions can you instruct people to take that will save their lives? Calm their fears?

The federal Government concentrates on information, not actions to protect the public, other than “find your own fallout shelter.” There is an alternative!

Nuclear War Survival Skills was developed by scientists and engineers at the Oak Ridge National Laboratories as an expedient survival manual. Its topics progress from the threats from nuclear weapons through principles about how to protect families from radiation to practical application of those principles. Uniquely, the NWSS authors field tested the shelters, furnishings and equipment needed for survival. In short, it works!

Your copy of **Nuclear War Survival Skills** will enable you to become proficient enough to ensure survival of not only yourself but that of your family and the public you protect. Use it as a primer and a blueprint for your jurisdiction’s survival plan. The plan is not complex; the principles are simple and the execution within the means of virtually every jurisdiction. The knowledge given in NWSS enables you to ready your jurisdiction against attack with a nuclear or radiological weapon.

TACDA highly recommends **Nuclear War Survival Skills**. The political issues are current, and the expedient and self-help instructions for survival of a nuclear event are as viable today as they were when they were first written. Every home should have a copy of this valuable book, and every emergency manager should use it as a handbook for educating the general public. The lessons on weapons effects are still current. The admoni-

tion to store potassium iodide and the instructions for its use are life saving principals. The instructions for building expedient shelters and ventilation systems are well written and easily understood. We constantly have reports from the public about the construction of their own personal shelters, using this valuable information. We hope all of our readers will make the effort to acquire a copy of this classic and timeless document. ●



"TERRORIST"

10 KT Nuclear Weapon

By Sharon Packer



Edward Teller, the physicist known as the father of the hydrogen bomb, once said, "Every day we spend, without a terrorist detonation of a nuclear weapon in our country, is a gift." Dr. Teller knew and understood the potential for nuclear weapon technology to eventually reach terrorist organizations.

Joseph Farah of World Daily, recently reported "Al-Qaida's prime targets for launching nuclear terrorist attacks are the nine U.S. cities with the highest Jewish populations. This according to captured leaders and documents...."

The cities chosen as optimal targets are New York, Miami, Los Angeles, Philadelphia, Chicago, San Francisco, Las Vegas, Boston, Washington, D.C., New York and Washington top the preferred target list for al-Qaida leadership".

Continues next page



umerous attack scenarios have been formulated by the military, think tanks and government agencies against the above cities. Using advanced computer modeling, they have created and run drills to predict weapons effects, injuries, fatalities, and economic loss. It is widely believed that terrorists could acquire or manufacture a 10 KT weapon. Detonated against a major city, a weapon this size would totally overwhelm the emergency response personnel, hospitals and critical infrastructure of the city

Fission Weapon Types

There are two basic designs of fission weapons that could be constructed by terrorists, the “implosion” type and the “gun type”.

Implosion Type: Implosion type nuclear weapons can use either plutonium or highly enriched uranium (HEU) to create nuclear explosions, but it would be unlikely that terrorists could produce them. This type weapon uses much less fissile material

than the gun type, but they require more complicated explosives and fusing systems.

Gun Type: The gun type weapon uses high explosives to shoot a bullet of one subcritical mass of (HEU) into another, resulting in a critical mass that causes a nuclear explosion. For more information on this type of weapon, see:

<http://www.science.howstuffworks.com/nuclear-bomb5.htm>. The gun type weapon requires more fissile material than the implosion type, but is easier to construct, as it does not require sophisticated explosives and electronic components. The enrichment of uranium is a costly and sophisticated enterprise; however, the HEU (or the weapon itself) could be purchased from a country in possession of these items.

Plutonium is another fissile material used in nuclear weapons. It is much more accessible than HEU, as it is produced in nuclear reactors and relatively easily separated from other elements. It is impossible, however, to use plutonium to create a significant

nuclear explosion in a gun type weapon. Plutonium could conceivably be used successfully in the construction of a dirty bomb, but it would not cause the catastrophic damage and fatalities that would be associated with a true fission weapon.

Weapons Effects:

A 10 KT fission weapon would produce all the weapons effects seen in larger weapons (thermal, blast, initial and residual radiation and EMP) except on a smaller scale.

** Please see the diagrams on pages 13 and 14 for more details on the effects of a 10 KT nuclear weapon.*

Thermal: The thermal pulse travels at the speed of light and arrives before the blast. The heat from a 10 KT explosion can ignite materials and cause serious, or even fatal burns. The distance to second-degree burns to exposed skin is 1.45 miles. This effect is greatly influenced by weather. For instance, the reflection of snow on the ground on a clear day enhances this effect-a rainy day would diminish it.

Blast: Blast effects are measured in pounds per square inch (psi). In the first one-half mile (in all directions from ground zero) the overpressures would range from 200 psi down to 10 psi, and all commercial and residential type structures within that area would be destroyed. Only those in hardened shelters would survive. Heavy damage to commercial type buildings would be expected up to .6 miles, which would be the start of the 5-psi zone. At 5 psi, residential homes would be destroyed. People might survive the blast if they happened to be in their basements at the time of the explosion. Between the six tenths and one-mile radius, commercial type buildings might remain standing, but many fires would be initiated. There would only be light damage to com-

RADIATION PENALTY TABLE			
	Accumulated Exposure (Roentgens)		
	1 Week	1 Month	4 Months
Medical Care Not Needed	150	200	300
Some Need Medical Care Few if Any Deaths	250	350	500
Most Need Medical Care More than 50% Deaths	450	600	*

The rate (R/hr) decreases over time. The accumulated dose, however, increases with time.

At any time the rate is greater than 10 R/hr, the accumulated doses in the first row will most likely be exceeded. The rate is decreased by time, distance and shielding. If the radiation rate in a certain location is greater than 10 R/hr, it would not be prudent to spend time waiting for the rate to decrease. The correct action would be to either put more distance between you and the source (by evacuating from the area), or to place more shielding in the sheltered area.

mercial type buildings between 1 and 1.5 miles, but fires could possibly spread (depending on the density of the buildings and weather conditions) beyond the 1-mile radius.

EMP: The electro magnetic pulse (EMP) within the area of a ground burst is very strong, but the field falls off quickly and will reach out only a few miles. All unprotected electronics within that area would be destroyed. Many people living within a survivable distance from the other weapons effects would lose the use of their radios for emergency communications, unless they keep a radio protected in a faraday cage (see TACDA academy lesson #5 for instructions to build a simple faraday cage). The EMP could also affect, or even destroy, the computerized ignition systems and other computer controlled drive train components in vehicles within the EMP zone.

Initial Nuclear Radiation In small yield nuclear weapons, initial nuclear radiation (INR), consisting of neutrons and prompt gamma radiation, is the dominant effect. INR (like overpressure) is not affected by winds, but affects all areas within a 1.5 mile radius of ground zero. Those surviving the blast at the half-mile radius would receive about 6,000 rads of INR at the moment of the explosion. At .6 mi. they would receive 2,000 rads, and at .7 mile they would receive about 1,000 rads. Almost all those within that area, who survive the blast and thermal effects, will die from radiation sickness, radiation burns or other health issues within a period of two weeks. Some homes and buildings within the .7 mile radius would remain standing, but few if any people would survive beyond that 2 week period. The efforts of the first responders should be spent in rescuing people that have a better chance of survival.

The intensity of Direct Effects diminishes rapidly with distance. At the .75 mile radius, the over pressure would drop to about 3 psi, and many people would survive the blast; but the INR level would remain high (about 500 rads). Approximately half of the people within the area between .7 and .75 miles would survive those levels of INR, but fallout radiation (in the direction of the prevailing winds) would then become the dominant effect. At the .8 mile mark, the INR would decrease to 300 rads, which is a survivable level for most people. The few hundred feet between .7 and .8 miles would be the dividing point between the living and the dead. Emergency response teams should take note of that critical marker. *(Please see the Penalty Chart for further information) At the one-mile radius, the INR would decrease to fewer than 100 rads, and none would be expected to need immediate medical attention. The buildings in densely populated cities might provide some shielding from the initial radiation.

Fallout: Within a very short period, fallout would begin to settle in the direction of the prevailing winds. Ideally, fallout would follow an easterly direction, but it could be blown in several directions by winds at different altitudes. Larger particles would soon give way to dust-type fallout. A 10 KT surface burst would not launch significant amounts of fallout into the stratosphere, but low-altitude winds could carry fallout particles many miles beyond ground zero. Assuming a 15 mph wind, levels of 3,000 R/hr would reach to 2.7 miles. Levels of

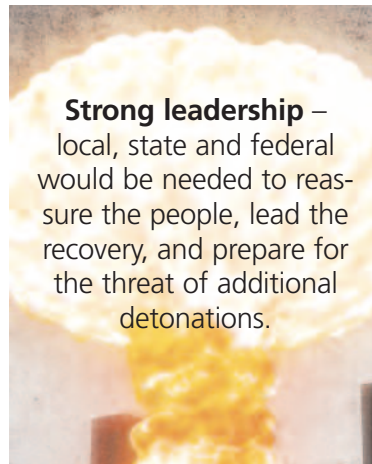
1,000 R/h would reach to 5 miles and levels of 300 R/h would reach to 12.7 miles. Little if any blast damage would occur from 1 to 12.7 miles, but anyone downwind of the blast should immediately evacuate in a direction perpendicular to the path of the cloud. Levels of one hundred R/h would

reach 25 miles down wind, and levels of 30 R/h would reach 85 miles down wind. The 1 R/h level would reach out to about 112 miles. The total area affected with fallout would be approximately 1,127 sq. miles. The maximum width of the fallout deposition would be approximately 10 miles. If possible, people within that area

should self evacuate. Emergency managers should consider sending busses to evacuate the remaining people, and the bus drivers should be rotated to minimize their exposure.

A 10 KT fission weapon could totally destroy one of our major cities, and if that were to occur, a crisis of confidence and economic effects would echo throughout the entire nation. Strong leadership – local, state and federal would be needed to reassure the people, lead the recovery, and prepare for the threat of additional detonations. The physical effects, however, would be limited to a small portion of the country, and our nation as a whole would continue to function and flourish.

We have been very blessed to escape further terrorist attack, since 9/11. Our government leaders have warned us that this good fortune may not last. It would be unfruitful, however, to live in fear of this unknown threat. There are many actions that can be taken to protect our families and loved ones. There is great peace in being prepared.





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Weapons Effects Charts



We have provided two full-page weapons effects charts applicable to a 10 KT nuclear fission weapon – the fallout prediction map and the bar graph showing close-in effects.

We would invite you to make transparencies of each of these charts. The transparencies can then be placed over a map of your city or state of interest. Take a copy of the map of interest and increase (or decrease) the scale of your map to match the scale of the FP transparency.

Fallout Prediction Map:

The Fallout Prediction (FP) map is made to a scale of two inches per 25 miles (as shown at the bottom of the page) and reaches to approximately 112 miles. Place the FP transparency over your map so that the top of the transparency is north, and the radiation cloud is flowing in an easterly direction. Assume that the cloud is moving at 15 mph. Approximate the time and level of radiation that will arrive at different locations on your map.

The fallout cloud should reach out to 45 miles in approximately three hours and the level of rate of radiation at that location should be approximately 30 R/h.

The fallout cloud should reach approximately 67 miles in 4 1/2 hours, and the level of radiation at that location should be approximately 10 R/h.

Bar Graph

The bar graph was made to a scale of 5 inches per mile and shows weapons effects within a 1.8-mile radius (in all directions) of ground zero, for a 10KT weapon. Make a transparency of this map.

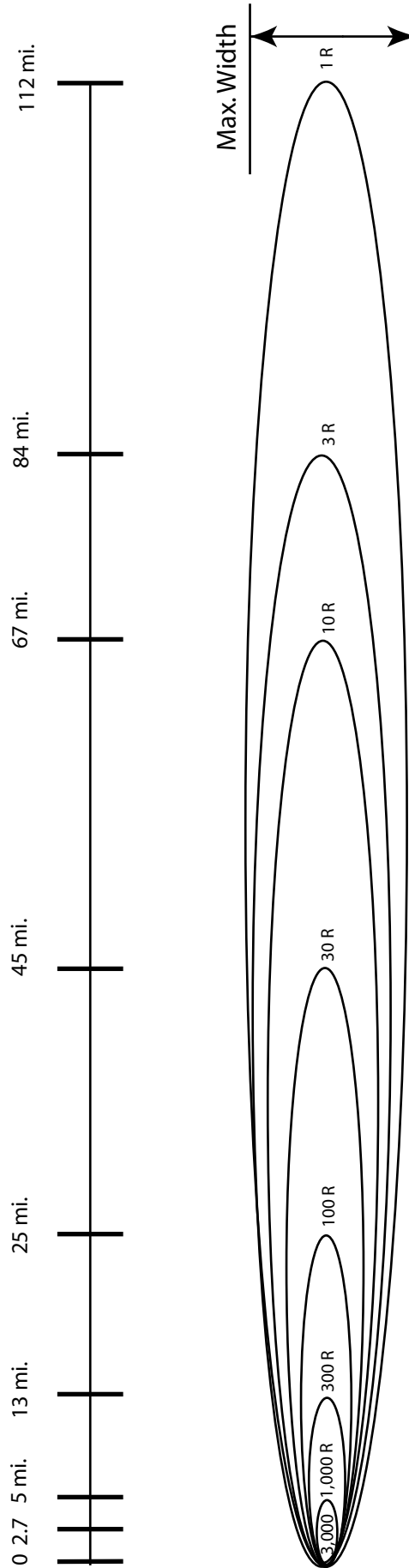
To estimate overpressure, place the far left hand end of the overpressure bar graph at ground zero. Rotate the transparency (holding the end of the graph at ground zero) until the overpressure bar covers your area of interest. Estimate the damage from the graph.

To estimate initial nuclear radiation, place the far left hand end of the initial radiation graph at ground zero. Rotate as above, until the graph covers the point of interest on the city map. Estimate the initial nuclear radiation level from the bar graph.

To estimate the area of residual radiation, the residual radiation bar graph should be placed in an easterly direction from ground zero. Do not rotate the transparency to read this graph. If your area of interest is in an easterly direction, and is covered by this graph, you can expect approximately 3,000 R/h in that area. The maximum width of the fallout deposition would be approximately 10 miles (not shown on bar graph).

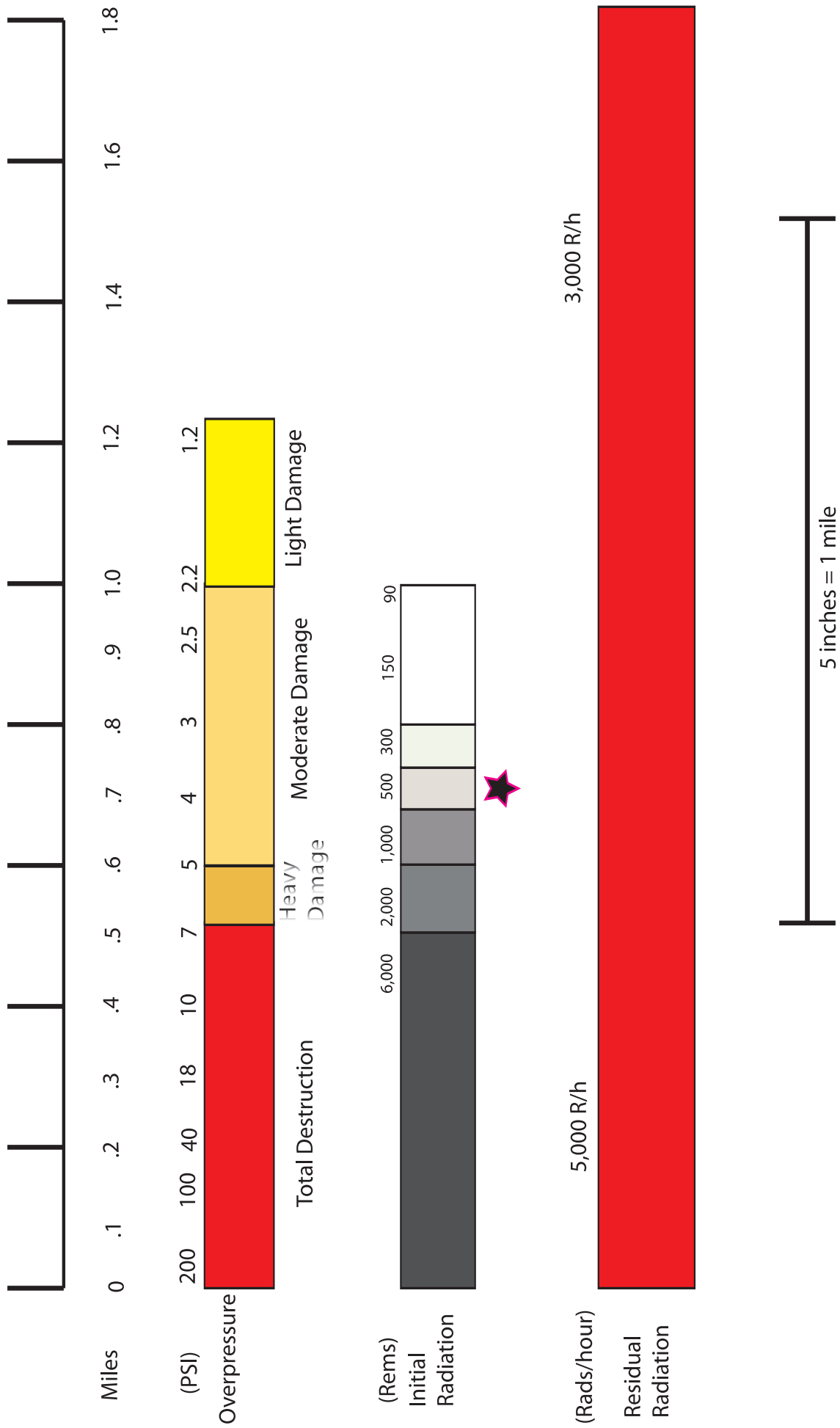
The weapons effects in the maps and articles in this issue of the journal have been approximated from formulas, maps and graphs in the book, *The Effects of Nuclear Weapons*, 1977. The hard- back copy of this book includes a Nuclear Bomb Effects Computer (found in the pocket of back cover). If you can find a copy of this book and computer, you will find them to be very useful in understanding and protecting yourselves from the effects of nuclear weapons.

FALLOUT PREDICTIONS FOR LAND SURFACE BURSTS (10 KT Nuclear Fission Weapon)



SCALE
2 inches = 25 miles

WEAPONS EFFECTS 10 KT





Protective Actions Against **TERRORIST ATTACK**

by The American Civil Defence Association

TERRORIST ATTACKS, unfortunately, seldom come with a pre-warning. Most likely, they will be localized, and people outside the circle of major destruction should be able to evacuate or eventually receive help from outside sources. If you are within the zone of fallout and a hardened or fallout shelter is not immediately available, be prepared to evacuate.

Continues next page

A seemingly localized attack may be broader than it appears. There could be multiple attacks. As soon as possible, try to ascertain the size of the attack.

Before the Attack:

- Make an assessment of possible terrorist targets within a 20-mile radius of your location. Also note any targets within 100 miles upwind (west) of your location for possible fallout contamination.
- Make a fallout shelter outside or in your basement.
- Practice the Drop and Cover actions.
- Store a one-year supply of food, clothing, fuel, medical needs, and other necessities.
- Store fire extinguishers.
- Purchase enough thyroid-blocking agent (TBA) for your entire family.
- Store a 4-week supply of drinking water.
- Purchase a radiation meter and dosimeters, charger and extra batteries.
- Check your place of work for expedient sheltering possibilities.
- Read the TACDA Academy lesson on expedient sheltering.
- Keep a 72-hour kit at your place of work.
- Teach your family what to do if you are unable to return home.
- If you do not have a shelter, plan to evacuate if necessary and carefully map your routes. Watch the cloud carefully. The prevailing winds will probably move from east to west. Fallout may, however, follow local winds. Determine which way the fallout cloud is drifting and move in a direction perpendicular to its direction.
- Have a destination in mind. If you are in a target area, preposition supplies with a friend in a direction north or south of the possible target area.
- Refuel vehicles before they are half empty and carry an extra quart of oil.
- Practice your plan and keep all family members informed of these plans.
- Encourage the schools in your area to prepare emergency plans and shelters.
- Bother your city emergency management officials with your concerns. Ask them to designate appropriate buildings as fallout shelters. Tell them to contact the Huntsville, Alabama emergency management for suggestions on how to protect their own city.
- Treat every explosion as if it contained nuclear, biological or chemical contamination.
- Keep a 72-hour kit for each member of the family in your car.
- Include a raincoat and hat in your kit, to protect against fall-



out contamination of your clothing and hair.

- Keep at least one radio in a faraday cage.

During the Attack:

Upon seeing a bright flash of light, immediately drop and cover under a heavy desk or other structurally secure object. Take a face down fetal position. Teach your family to look away from the blast, as the thermal pulse could burn their eyes. The blast arrives after the thermal pulse. Protect your head and tightly close your eyes to protect from flying glass. Hold your position for at least 15 minutes to see if there may be multiple blasts.

Assume responsibility for your own survival. Do not expect help to arrive quickly. It could be hours or even days before help is mobilized.

After the blast, check for injuries and look for the typical mushroom cloud associated with a nuclear blast. Go to your shelter as quickly as possible. If your shelter is in your basement, put out any small fires that may have been initiated by the thermal pulse.

If you have no shelter, take a moment to evaluate the cloud. If it is moving towards you, immediately evacuate in a direction north or south of the blast. If there are not multiple mushroom clouds, assume this is a localized terrorist attack. The fallout cloud for a 10 KT weapon should not be wider than 10 miles, but continue in a safe direction until you are well away from the cloud.

If at work, consider going to a basement or underground pipe chase.

If you are in your car and see a flash of light, pull off to the side of the

road and drop to the floor. Drive in a north or south direction from the blast. If the roads are impassable, take cover from the radiation in the center portion of a large building, or in a basement, culvert or parking garage.

If outside, shield yourself from the thermal pulse below ground, in a ditch or behind heavy structures.

If possible, monitor radiation lev-

Assume responsibility for your own survival. Do not expect help to arrive quickly. It could be hours or even days before help is mobilized.

els in your shelter. If in a temporary or unequipped shelter, take water supplies from water heaters, toilet tanks (not bowls), storage, etc. Drink only water found in covered sanitary containers for the first two weeks.

After the Attack:

If you are in an area of blast damage (even minimal) you may have received enough initial radiation to require hospitalization. You are also in danger of large amounts of residual radiation. If you have no shelter, evacuate immediately.

If you are well outside the area of blast damage, seek information about local radiation levels and evacuation routes. Locate and tune your radio to emergency frequencies for official information.

In a 10 KT attack, significant levels (30 R/hour) could persist up to 85 miles downwind. At that distance, it could be several hours before the fallout arrives, but do not hesitate. If you

are told to evacuate, do so immediately, as the roads could become jammed with traffic.

If you are in the fallout path, your area may be condemned. Be sure to take important documents and emergency supplies with you as you may not be allowed to return for a long time.

Sheltering:

- If you are in the fallout path, remain in your shelter for 48 to 72 hours and possibly up to two weeks if radiation levels dictate. Short excursions outside can be made after two days.
- Listen to your radio for emergency information.
- If instructed by government officials to do so, begin taking TBA tablets or drops.
- Filter all drinking water if it may have been exposed to fallout and use open water supplies for sanitation purposes, only.
- Eat covered perishable foods first, frozen foods second, and canned foods third.
- Supplies in undamaged refrigerators and freezers should be safe from radiation; however check for spoilage.
- Cook foods with a pressure cooker to conserve fuel.
- Reserve batteries for emergency lighting and communications only.
- Use low wattage lights to conserve batteries.
- Periodically monitor emergency radio communications for instructions and indication of radiological and biological contamination.
- Wash and peel all fresh fruits and vegetables that may have been exposed to fallout.
- Rinse off containers of food before opening to remove possible radioactive fallout. ●



RADIOLOGICAL

DISPERSION DEVICES

by Sharon Packer

Radiological dispersion devices (RDDs) are weapons designed for the release or dispersion of radioactive materials. RDDs using explosives to scatter the radioactive isotopes are called “improvised explosive devices” (IEDs), or “dirty bombs”.

Dirty Bombs

Dirty bombs are not atomic bombs and do not produce the large levels of radiation found in fission type weapons. Dirty bombs use explosives (such as dynamite) to scatter radioactive dust, debris, and smoke in order to cause radioactive contamination over a wide area. The affect of the contamination is more of an economic

issue than a health issue; although, depending on the isotopes used, there could be long-term health effects in the form of a higher risk of contracting cancer.

There are many dirty bomb designs, each of which would cause contamination of different degrees. High explosives are easily obtained and the device would range in size from a backpack, to a small car, to even a truck-sized weapon. Radioactive material used in these devices can be found in thousands of facilities throughout the nation, some of which may not have adequate protection against theft of the material.

A typical dirty bomb would most likely contain 10 to 50 pounds of explosives and would have small amounts of cesium-137 or cobalt-60, both of which are gamma emitters.

Both of these isotopes are found in hospitals and university labs, and are relatively accessible. Cesium-137 is used in a wide variety of instruments in industry and medicine. Cobalt-60, used for food irradiation and medical testing, has a half-life of five years and could be a source of contamination for approximately 50 years. High-level radioactive waste from nuclear power plants would inflict even more damage, but because of the difficulty in handling the material, terrorists would be less likely to use that source.

Other sources of radionuclides might include:

- Natural radioactive uranium isotopes mined for use in nuclear energy.
- Strontium-90 found in nuclear batteries scattered around the for-

one additional diagnosis would result in 441 expected cancer diagnoses-per-one-thousand people.

"...Manhattan would expect an increase of one-in-a-hundred deaths from the residual radiation."

The Commission reported that in addition to the five city blocks, an additional forty city blocks would exceed the Environmental Protection Agency's (EPA) contamination limits with a one-in-ten-thousand increased chance of being diagnosed with cancer if they remained indefinitely in the area (compared to the normal expected 4,440 of 10,000 people diagnosed with cancer, there would then be 4,441 diagnoses of cancer per 10,000 people). For this almost imperceptible increase, the EPA would recommend that these areas be abandoned for decades. The Commission suggested that some experts believe the EPA standards may be too stringent.

The Commission reported that Cobalt-60, which has a half-life of 5.27 years, dispersed by an explosion at the lower tip of Manhattan, would contaminate an area of about three hundred city blocks, but no immediate evacuation would be necessary. There would, however, be an *increased* risk of one-in-ten deaths from cancer for residents living in the contaminated area for forty years.

According to the U.S. National Cancer Institute, the U.S. currently experiences 21.21% deaths (all genders, all sites, all lifetime) from cancer. That means we would expect 2.12 deaths for every 10 people. An increase of one-death-out-of-ten (3.12 deaths for every 10 people) is a 10% increase, which is very significant. If the area could not be decontaminated, the EPA would surely recommend the total demolition of that area, which, in our estimation, would be justified.

Continues next page

mer Soviet Union.

- Spent radioactive fuel from Russian reactors, which have been abandoned in old nuclear submarines, among other places.
- Americium 241 has been used as a portable source of both gamma rays and alpha particles for a number of medical and industrial uses and is found in very tiny amounts in smoke detectors.
- Cobalt-57 used in medical tests.

On March 6, 2002, the Federation of American Scientists gave testimony on dirty bombs to the Senate Committee on Foreign Relations. The entire report can be found at <http://www.fas.org/ssp/docs/030602-kellytestimony.htm>.

The Commission used several scenarios based on different radionu-

clides. In the first scenario, terrorists detonated a small 10 lb. explosive device laced with Cesium (half life of 30.2 years) over a large city. The device contaminated an area of about five city blocks. The Federation reported that the initial passing of the radioactive cloud would be relatively harmless, and that no one would have to evacuate immediately, but if people remained in the area indefinitely, there would be a one-in-a-thousand increase in cancer diagnoses.

Putting this into perspective, according to the National Cancer Institute, there is currently a 44% chance (all races, all sites, all ages) of being diagnosed with cancer during a person's lifetime. That means there are 440 expected cancer diagnoses per 1,000 people (over their lifetime) in the United States. An increase of

The remaining borough of Manhattan would expect an increase of one-in-a-hundred deaths from the residual radiation. Again, with the expected deaths currently at 21.2 per hundred, an additional one-death-per-hundred would be 22.2 deaths per hundred. Adequate decontamination of an area of that size is near impossible. The current EPA standard would cause the recommendation of total demolition of the borough. Would it not be wiser to decontaminate where possible, and limit the population living in the area to those over 21 years of age?


Other gamma emitters (such as iridium and strontium) would produce similar results. No immediate evacuation would be needed, but it could become necessary to abandon or demolish large urban areas, resulting in huge economic and personal losses.

Alpha emitters, such as Americium, would pose an even greater threat. Americium has a half-life of 43 years and would be a source of contamination for 430 years. It is used in very tiny amounts in smoke detectors, and in larger amounts in instruments used to find oil sources. The Senate Committee reported that a small, one pound explosive containing a typical Americium source used in oil well surveying would contaminate an area of approximately twenty city blocks, which would need to be evacuated within half an hour. People within the immediate area of the blast would most likely need medical supervision. Another sixty-block area would eventually need to be evacuated and demolished if it could not be decontaminated, as most of the risk is from long-term exposure. Radioactive material that settles to the ground could later find its way back into the air, where it could then be inhaled and pose additional long-term health hazards.

The above recommendations are

based on the EPA's current guidelines for safe radiation levels, which state that if decontamination efforts cannot reduce the danger of cancer death to one-in-ten-thousand, the EPA would recommend the contaminated area be abandoned. Many experts disagree with these findings, and believe the health risks would be minimal if a few weeks or months were spent in decontamination efforts. When threats are overstated, it often causes an inability and unwillingness to seek solutions. TACDA would hope that our Congress would look at the threat realistically, and that they would do all in their power to mitigate and minimize this very real and urgent terrorist threat.

Smoky Bombs

eter Zimmerman introduced the concept of a smoky bomb in 2006. Mr. Zimmerman, a nuclear physicist, is a professor of science and security in the Department of War Studies at King's College London. He was chief scientist of the United States Senate Foreign Relations Committee from 2001 to 2003. You can read his entire report at: <http://www.nytimes.com/2006/12/19/opinion/19zimmerman.html>

A smoky bomb is a radiological dispersion device that produces smoke through an incendiary device. The smoke would carry the radioactive particles, which would then lodge in the lungs of the victims.

Alpha emitters, such as Polonium 210 (Po 210), would lend themselves to this type of device. A lethal dose of Po 210 is extremely small (about 3 mill curies). Polonium is commonly used by industry in devices that eliminate static electricity. It can also be purchased in small amounts, (about a tenth of a lethal dose) commercially. The Nuclear Regulatory Commission's regulations do not restrict the quantity of polonium used in industry.

Po 210 has a half-life of 138 days, and would remain a viable threat to contaminated areas for about 3 1/2 years.

Americium-241 is a similar toxic alpha radiation emitter with a half-life of about 430 years. Because of its long half-life, it would pose a huge threat to our economy.

The successful use of this device would require high concentrations of smoke, and Mr. Zimmerman conceptualized that the weapon would be used in small, packed arenas or in a crowded street. This would result in the death of dozens or even hundreds of people. First responders would be among the victims, as they do not carry radiation meters that recognize alpha radiation. Hazmat teams typically carry alpha detectors, but they would not be the first responders.

Fred Burton, who is one of the world's foremost experts on security, terrorist and terrorist organizations, recently stated that the threat from all RDDs is real and recognized by both law enforcement agencies and intelligence circles. He stated that a smoky bomb concept is a viable threat, but that it would be difficult to achieve the concentrations of smoke needed to cause immediate casualties. He said that ventilation systems and sprinkler systems inside buildings, and wind and precipitation outside buildings, could disperse the smoke to non-lethal concentrations.

Mr. Zimmerman has suggested that we need tighter regulations on the sale of Polonium, and that the commercial use of this isotope should be stopped. He sees a great need for public education, and for the procurement of proper alpha reading meters for first responders.

A smoke emitting RDD might not result in large numbers of casualties, but it would be a powerful psychological weapon that would incite panic and cause huge economic losses. ●

? FAQs ? ? ? ? ? ? ?



About Dirty Bombs

Centers for Disease Control and Prevention

<http://www.bt.cdc.gov/radiation/dirtybombs.asp>

What are the main dangers of a dirty bomb?

The main danger from a dirty bomb is from the explosion, which can cause serious injuries and property damage. The radioactive

materials used in a dirty bomb would probably not create enough radiation exposure to cause immediate serious illness, except to those people who are very close to the blast site. However, the radioactive

dust and smoke spread farther away could be dangerous to health if it is inhaled. Because people cannot see, smell, feel, or taste radiation, you should take immediate steps to protect yourself and your loved ones.

What immediate actions should I take to protect myself?

These simple steps – recommended by doctors and radiation experts – will help protect you and your loved ones. The steps you should take depend on where you are located when the incident occurs: outside, inside, or in a vehicle.

If you are outside and close to the incident:

- Cover your nose and mouth with a cloth to reduce the risk of breathing in radioactive dust or smoke.
- Don't touch objects thrown off by an explosion – they might be radioactive.
- Quickly go into a building where the walls and windows have not been broken. This area will shield you from radiation that might be outside.
- Once you are inside, take off your outer layer of clothing and seal it in a plastic bag if available. Put the cloth you used to cover your mouth in the bag, too. Removing outer clothes may get rid of up to 90% of radioactive dust.
- Put the plastic bag where others will not touch it and keep it

Continues next page

until authorities tell you what to do with it.

- Shower or wash with soap and water. Be sure to wash your hair. Washing will remove any remaining dust.
- Tune to the local radio or television news for more instructions.

If you are inside and close to the incident:

- If the walls and windows of the building are not broken, stay in the building and do not leave.
- To keep radioactive dust or powder from getting inside, shut all windows, outside doors, and fireplace dampers. Turn off fans and heating and air-conditioning systems that bring in air from the outside. It is not necessary to put duct tape or plastic around doors or windows.
- If the walls and windows of the building are broken, go to an interior room and do not leave. If the building has been heavily damaged, quickly go into a building where the walls and windows have not been broken. If you must go outside, be sure to cover your nose and mouth with a cloth. Once you are inside, take off your outer layer of clothing and seal it in a plastic bag if available. Store the bag where others will not touch it.
- Shower or wash with soap and water, removing any remaining dust. Be sure to wash your hair.
- Tune to local radio or television news for more instructions.

If you are in a car when the incident happens:

- Close the windows and turn off the air conditioner, heater, and

vents.

- Cover your nose and mouth with a cloth to avoid breathing radioactive dust or smoke.
- If you are close to your home, office, or a public building, go there immediately and go inside quickly.
- If you cannot get to your home or another building safely, pull over to the side of the road and stop in the safest place possible. If it is a hot or sunny day, try to stop under a bridge or in a shady spot.
- Turn off the engine and listen to the radio for instructions.
- Stay in the car until you are told it is safe to get back on the road.

What should I do about my children and family?

If your children or family are with you, stay together. Take the same actions to protect your whole family.

If your children or family are in another home or building, they should stay there until you are told it is safe to travel.

Schools have emergency plans and shelters. If your children are at school, they should stay there until it is safe to travel. Do not go to the school until public officials say it is safe to travel.

Please note: *TACDA takes difference to the CDC's suggestion that schools have shelters and emergency plans. In our experience we find some schools have plans but few if any have shelters.*

Should I take potassium iodide?

Potassium iodide, also called KI, only protects a person's thyroid gland from exposure to radioactive iodine. KI will not protect a person from other radioactive materials or protect other parts of the body from

exposure to radiation.

Since there is no way to know at the time of the explosion whether radioactive iodine was used in the explosive device, taking KI would probably not be beneficial. Also, KI can be dangerous to some people.

Will food and water supplies be safe?

Food and water supplies most likely will remain safe. However, any unpackaged food or water that was out in the open and close to the incident may have radioactive dust on it. Therefore, do not consume water or food that was out in the open.

The food inside of cans and other sealed containers will be safe to eat. Wash the outside of the container before opening it.

Authorities will monitor food and water quality for safety and keep the public informed.

How do I know if I've been exposed to radiation or contaminated by radioactive materials?

People cannot see, smell, feel, or taste radiation; so you may not know whether you have been exposed. Police or firefighters will quickly check for radiation by using special equipment to determine how much radiation is present and whether it poses any danger in your area.

Low levels of radiation exposure (like those expected from a dirty bomb situation) do not cause any symptoms. Higher levels of radiation exposure may produce symptoms, such as nausea, vomiting, diarrhea, and swelling and redness of the skin. If you develop any of these symptoms, you should contact your doctor, hospital, or other sites recommended by authorities. ●

Radiological

FAQs

about Smoky Bombs

The American Civil Defense Association

Q Will my personal radiation meter detect all kinds of radiation?

Most standard radiation detectors used by the general public detect only gamma radiation. Some (the old FEMA CDV-700) measure gamma and detect beta radiation, but do not measure or detect alpha radiation. The wand on that meter of the CDV 700 would be a good indicator for the low levels of radiation expected in a dirty bomb incident.

Radiation emitted from alpha emitters (such as Americium or Polonium) is extremely difficult to detect. You could incorrectly assume you have not been exposed to radiation, if you do not get a reading or alarm from your radiation meter. If you are in the vicinity of an explosion, always check with the proper authorities for possible radiation exposure.

Don't expect your first responders to bring sophisticated radiation meters that will detect alpha radiation. The radiation detection equip-

ment will come at a later time, with specially trained Hazmat crews.

Q How can I protect myself from a smoky bomb?

You may want to consider purchasing a good, smoke hood. Make sure it is CE (European Standard) certified. Most give 30 to 60 minutes of protection against carbon monoxide, hydrogen cyanide, hydrogen chloride and acrolein. The mask would probably give some fairly good protection against alpha particles as well, as good masks have particulate filters. It is highly unlikely that you would carry the hood with you at all times, but it could be stored in your car or office.

Smoke rises. Stay below the smoke and leave the area as quickly as possible.

Always carry a small flashlight.

Assume the worst. Remember the basics of radiation protection: Time, Distance and Shielding.

Q Will a positive pressure bubble shelter protect me from fallout from a fission type weapon?

The bubble type shelters sold on the market are not designed to protect against blast or fallout from gamma radiation. The heavy plastic of the shelter will most likely block the alpha and beta radiation. The bubble shelter can be used in conjunction with a basement shelter (which already has the proper fallout shielding and some blast protection in place). We would question their effectiveness against chemical agents, but it is highly unlikely that a chemical agent would ever be used against a personal home. Always ask for certification of the individual components of the shelter. If the ventilator contains both a HEPA and a charcoal filter, the intent would be to protect against chemical and biological warfare and beta and alpha particles. Always ask for certification of the individual components of the shelter. ●



Free Web
SAFETY & EMERGENCY
TOOLS

Presented by Bruce Curley

What is not addressed in discussions of the new social media (Twitter, qik Modulus, and dozens of others) is how useful these tools can be in preparing for, responding to, recovering from, and mitigating emergencies. Here I present four that I use, that may also be useful to you:

Twitter – www.twitter.com

Twitter is a quick way to update others about your current situation. It is a free, social network service (known as micro-blogging) that allows users to send updates (or “tweets”; text-based posts - up to 140 characters long) to the Twitter website, via short message service, instant messaging, or a third-party application (such as Twitterrific).

Updates are displayed on the user’s profile page and instantly delivered to other users who have signed up to receive them. The sender can restrict delivery of each post.

You can receive updates via the Twitter website, instant messaging, SMS, RSS, email or through an application. For SMS, four gateway numbers are currently available: short codes for the USA, Canada, and India, as well as a UK number for international use

Mogulus – www.mogulus.com

Broadcast live via your own TV station twenty-four hours a day for free. You register with Mogulus and they give you software that allows you to create a television show. You are the producer. You can load in existing emergency management videos and you and your staff can watch them at any time. Or you can create your own videos with a digital camera, load them onto your Mogulus TV channel, and create a TV show.

Imagine - you can collaborate with your co-workers, your manager, or another in your profession who is 3,000 miles away or even in another country.

One very useful tool for emergency managers is that you can video a table top exercise or a disaster scene and watch it over and over to learn from it. Anytime you want - anywhere you want - as long as a computer is available. You can watch it from home, on the road, at work, while traveling, or in your boss’s office. It is a very powerful tool

that is easy to learn and use.

Imagine - you can collaborate with your co-workers, your manager, or another in your profession who is 3,000 miles away or even in another country.

Qik - www.qik.com

Their tag line is “from your phone to the world’ and they mean it.

Basically, you download their software and use it to go live with your life by using your phone camera to broadcast video. Think about it. You are at a fire, a chemical spill, or a flood and you use your cell phone camera like a camcorder to stream it live for many hours without using the storage capacity of your cell phone.

Currently, qik supports video streaming on Nokia S60 phones: N71, N73, N75, N76, N77, N80, N91, N92, N93i, N95, E50, E51, E61i, E65, E70m E90 Communicator, 3250, 5500, 5700 Xpress Music, 6110 Navigator, 6120 Classic, 6121 Classic, and 6290. Qik is currently developing support for other cell phones.

Emergency Email and Wireless Network - <http://emergencyemail.org/>

The Emergency Email and Wireless Network provide free email, cell phone and pager emergency notification. Local, regional and national government agencies will update you on breaking weather, disaster or emergency information.

Registration is simple:

- Go to their website.
- Click on your state from a list.
- Add your own email address.
- Repeat for other states (if desired).

Emergency Email also provides radar maps, airport closings and delays, and other notification services. They have been providing these services since 1999.

I have been getting notifications from them for several years. They are always ahead of the media and the local weather channel by at least a few hours.

All these social media tools are even more powerful when used together. Robert Scoble has coined a term, “Social Media Starfish” to explain how. His link below explains it.

<http://www.fastcompany.com/multimedia/2007/12/building-a-political-starfish.html>

Even though Scoble explains how the social media starfish applies to political and business organizations, the same principals apply to emergency management organizations. The new social media will revolutionize your work world.

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