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FEATURED ARTICLE

FORMER SAILOR SHARES INSIGHT ON PROTECTION AGAINST DIRTY BOMBS

Timmi Toler, Community Editor

[The following article appeared in the February 19, 2003, issue of "The Liberty," a military newspaper in eastern North Carolina. It is an interview with health physicist Larry Grim regarding the facts about "dirty bombs" and how to protect yourself. This is an excellent summary, and touches on other common-sense means of protection in the case of a chemical release. Please make a special effort to share this important information with your friends, family, community and colleagues.]

[Note that the comments contained in this article are directed toward educating readers to the facts and misconceptions associated with the potential damage caused by a terrorist's use of a "dirty bomb." While our featured article in our previous issue entitled "Facts About Radiation Levels and Exposure" attempts to cover radiation exposure and protection issues from the perspective of an incident involving the detonation of an actual nuclear weapon, this article addresses common issues related to the use of a radiological dispersion device (RDD) such as a "dirty bomb".]

With recent reports that radiation detectors are being tested in our community, many residents are wondering how to be prepared or what to do in the event that a radiological dispersion device (or "dirty bomb") is detonated. The Liberty turned to Larry Grimm for some answers. Grimm, a former Navy Reservist who served as a corpsman with the 1st Marines, Recon Battalion, Alpha Company, is now the senior health physicist for the Radiation Safety Division at UCLA. He has 27 years experience working with a wide variety of radioactive materials and their uses. He offered his personal insights to the following questions to help equip citizens with what he considers the most effective tool available in the fight against terrorism - knowledge.

(Continued on next page)

Q: What is a radiological dispersion device?

A: It is a weapon designed to spread radioactive material over an area. Radioactive materials can be spread via a conventional ("dirty") bomb, an aerosol device or through waterways.

Q: What is the biggest concern from a radiological dispersion device?

A: Two things: the irrational fear it can induce and the expense of cleanup. The possibility of the radiation actually hurting anyone is quite small. We fear what we do not understand, sometimes irrationally. The concepts of radiation are poorly taught in high school, and the only other radiation information we get has been sensationalized by Hollywood, politicians, and those looking to make a buck off of our lack of education. You can beat the fear by learning how radiation works and how to manage it safely (protection techniques). Fear and panic kill people, as any good Marine knows. Radioactive materials are chemicals. Sometimes it is easy to clean them up, sometimes hard. For example, cleaning oil off concrete is hard, but picking up chunks of metal is easy. Fortunately, it only takes a radiation detector to find the radioactive material, so it is easier to find and clean up than a non-radioactive chemical. Likely, the biggest problem will be economic disruption while cleanup takes place. Radiation dispersion devices are really disruption, not destruction, weapons.

Q: How will I know if something is a radioactive device/bomb?

A: You won't know until someone checks and announces it. Most police and fire vehicles carry radiation detectors these days and the announcement is likely to be made quickly. If a bomb went off, I would presume the worst and start practicing the protection techniques listed below. The techniques are also applicable, to a certain extent, if there is a chemical or biological agent; however, there are a few important differences. For example: if you suspect a chemical agent, do not seek shelter in a low space (like a basement). Most chemicals are heavier than air and will settle in low spaces.

Q: What steps should I take if a radiological dirty bomb goes off in the area?

A: There are four simple protection techniques: contamination control, distance, shielding and time. Contamination control and distance are the most useful techniques in a bomb situation.

Also, remember to help others first. Radioactive materials are rarely immediately life threatening. The worst-case terrorism scenarios indicate that there would not be enough radioactive material to cause immediate harm. Did you ever feel anything or see an effect from getting an X-ray? In 99.999% of radiation exposures, no effect is felt or seen. If I went towards the blast area to help someone, I would not fear the radiation. However, I would be cautious and respectful of the radiation. Therefore, I would use the following techniques - no matter if I was escaping the area, trapped in the area, or going in to help.

Contamination Control: Keep the radioactive chemical off and out of your body. Button up clothing and wear a mask (or anything to cover nose and mouth.) A radioactive material is always a chemical, which behaves like the chemical wants to behave. The distance technique is the best protector in a dirty bomb scenario. If I need to be near the source, or if I am down- wind of the blast, I will first practice contamination control. If I suspect that I swallowed or inhaled the chemical, but do not feel ill, I would later seek professional help. Radiation effects take a long time to show up, and I wouldn't want to add to the congestion at the hospital. However, there could be a nasty chemical associated with a radioactive bomb, so if I felt even slightly ill, I would seek medical help in a hurry.

Distance: In even the worst bomb scenario, you would be safe from the radiation if you get just a couple of blocks away and get upwind of potentially airborne material. Think of it as standing next to a campfire - get too close and it could burn you, but if far enough away, you do not get any heat. Exactly like a campfire, you do not want to be in the smoke - so get upwind. The most likely radioactive material in a dirty bomb would be Cobalt or Cesium. If the terrorist could somehow manage to get 10,000 Curies in the bomb, you only need to be about 300 yards (three football fields) away to be safe from the radiation. If you are not down-wind or near the dispersion area, you are safe. Do not "head for the hills". Leave the roadways open so emergency responders can get through.

Shielding: Anything acts as a shield - a building, a car, a hill, et cetera. Your major concern is gamma radiation. Imagine the gamma as a radio wave. When don't you get a radio signal? When you are in the middle of a building, in a basement, behind a hill, et cetera. Whatever shielding decreases a radio signal will decrease gamma rays. I handled 12 million Curies of Cesium (a 1000 times more than a possible bomb) with a mere 20 feet of water for shielding, and I got no dose!

Time: The less you are around the radiation, the less dose you will get. As most people would use distance, and get away in a hurry, they already used the time technique by not hanging around the radiation. Emergency responders may need to use this technique, and all across the US, they are receiving training on how to use it.

Q: If you suspect the chemical is on your clothes or body, what should you do?

A: First, simply remove the clothing. Take off the clothing, put it somewhere distant, and you will get no exposure from what is on the clothes. A common myth is that if radiation hits someone, they become radioactive. The reality is the radioactive chemical that makes you radioactive, not the radiation, so you want to keep the chemical off of yourself.

Second, wash or shower. Most radioactive materials are easily washed off. Another common myth is that you need to scrub hard to get radioactive material off you. In actuality, you should wash lightly and frequently. Scrubbing hard can abrade

the skin and push the chemical into the body. When I practiced Nuclear Medicine, almost every day I got radioactive material on my index finger. With a light washing, it went away every time. Twenty-five years later, my finger is just fine, and still willing to point a Marine towards the vaccination line (a corpsman's pay back for being called "squidly")!

Q: If I am trapped in my house with my children and downwind of the dispersion device, what do I do?

A: How do you keep dust and cold air out of your house? Simple - make sure things are shut tight. It's the same with radioactive materials. Stay put and hunker down. The downwind concern is that the radioactive chemical is airborne. Keep the chemical out of your house and you will be quite safe. Keep doors and windows closed. You might move to the middle of the house or basement, which uses the distance and shielding protection techniques, in case there are levels of radiation nearby. If you must go out, use the time technique and do your task quickly. If the radioactive chemical is heavy, or it is raining, the chemical will not travel far by air, so if you are more than a mile away, there would likely be no problem. In the likely scenarios which use Cobalt or Cesium, they are heavy and do not travel too far in the air. Listen to your radio, as emergency information services should soon tell you if it is safe to go out. Boredom will be your biggest problem.

Q: If I am outside and down- wind of the blast and cannot move quickly, what do I do?

A: Get into the nearest building and do what you would do in your house - keep things shut and move to middle room or basement areas. Get in or stay in your car with windows up and fresh air vents closed. You will keep the chemical out, and the car provides some shielding. If it is hot in the car, recirculating air conditioning is okay to use. If you can move the car, drive a few blocks away.

Q: Will my food become radioactive?

A: Not if it is sealed or covered. Again, another myth about radiation is that it causes other things to become radioactive. The truth is, that this only happens if the chemical gets on it. I would keep bottled water and a few canned goods for emergencies, but the way food is packaged these days, the foods in your cupboards/refrigerator will be just fine. For extra measure, you can rinse things off before you open/use them, but most likely this is not necessary if you have kept the house closed up.

Q: What should I get to prepare for a dirty bomb?

A: Not much. Keep some bottled water on hand and a portable radio. The simple protection techniques are all you need. They work. I know. I use them every day in my work. Use your common sense when applying the techniques and you, and your children, will be very safe.

Q: What are the odds of a radiological dispersion device going off in my area?

A: Pretty slim. A radiological dispersion device is unlikely to kill anyone, unless it is a bomb and the person is in the blast area. Therefore, it is a poor "mass destruction" weapon. On the other hand, it can disrupt things badly, particularly if we respond with fear and panic. Although not hard to build a radiological dispersion device, it is difficult to carry around the large quantity of radioactive material necessary.

Q: What if the radioactive material is put in our water supply?

A: Being a chemical, the radioactive material will dilute in the water. Without going into technical reasons, suffice it to say that by the time it got to your house, there wouldn't be enough to pose a real risk. Smoking one cigarette probably poses more risk than the amount of radioactive material that you could ingest in this scenario. We ingest naturally occurring radioactive materials every day of our lives. Likely by the time it got to you, the terrorists' material would be a pittance of what you normally, naturally take in. Another common misconception is that man-made radioactive materials are different and more dangerous than natural materials. However, there really is no difference. Man-made and natural radioactive material effects are the same. Our bodies are adapted to handling the effects of low levels of radiation, which we receive every moment of our lives. If it is suspected to be in the water supply, and you are concerned, use bottled water. I would likely have no fear of showering with the tap water.

Q: Any final thoughts?

A: Please teach these simple things to others. As more people learn how easy it is to protect themselves from a radiological dispersion device, our collective fear levels decrease.

Learn about radiation, and the fear of it will melt away. As a youngster, I feared electricity, but I learned it can be handled safely. I now respect it, but do not fear it. The same is true of radiation: respect it, but do not fear it. Terrorists feed on fear. Fear is bondage, knowledge is freedom.

[The views and opinions expressed in this article do not necessarily reflect specific policies, view points or opinions held by the Journal of Civil Defense, The American Civil Defense Association or any of its officers or members.]

CIVIL DEFENSE NEWS AND OPINIONS

[As pushing for the development of an effective national missile defense program in the United States has been a long-time mission of TACDA, we felt like the following DoD news release would be of interest for our readers. Although this release, and the event it refers to, will be slightly outdated by the time you receive this newsletter, it will update you on current attempts to further develop this much-needed system.]

PRESS ADVISORY June 16, 2003
No. 070-P
From the United States Department of Defense

The Missile Defense Agency (MDA) and the Navy are scheduled to conduct Aegis Ballistic Missile Defense Flight Mission-5 (FM-5) flight test on June 18, 2003 with a window from 4 to 8 p.m. EDT. FM-5 will involve the launch of a standard missile-3 (SM-3) interceptor from the Aegis ballistic missile defense cruiser USS Lake Erie against an Aries target launched from Pacific Missile Range Facility on Kauai, Hawaii.

The primary objective of this test is to evaluate the SM-3 kinetic warhead's guidance, navigation and control operation in space using an upgraded solid divert and attitude control system (SDACS). While flight tests using an earlier version of the SDACS were successful, the lessons learned from those flight tests and preceding ground tests have been incorporated into this new design to improve performance and production. Performance improvements center on the addition of a high-energy pulse that increases divert (maneuver) capability. Extensive engineering evaluation data will be collected for analysis in preparation for future flight tests.

FM-5 is the second of a planned six flight test series within the Missile Defense Block 2004 time period to develop a sea based ballistic missile defense against short to intermediate range ballistic missiles. FM-5 is the second developmental flight test against more complex, stressing, and operationally realistic ballistic missile engagement scenarios. Increases in operational realism in this test include the addition of the up-range destroyer to provide a cue and maneuvering of the USS Lake Erie during the test. Future tests will continue to increase operational realism.

The Aries target missile will fly a realistic threat trajectory. The target has an on-board transponder for range safety purposes only. This transponder operates in a frequency band that can only be detected by short-based range radars, and not by either the Aegis AN/SPY-1 radars or the SM-3 missile.

The MDA and the Navy manage the Aegis Ballistic Missile Defense Program. Raytheon Missile Systems, Tucson, Ariz., is the prime contractor for the development of the SM-3 missile. Alliant Tech Systems builds the improved SDACS for the SM-3. Lockheed Martin Naval Electronic and Surveillance Systems, Moorestown, N.J. manages the development of the Aegis Weapon System installed in Aegis cruisers and destroyers, including the upgrades for the Aegis BMD System.

News media points of contact are Rick Lehner, MDA Communications at (703) 697-8997, Maj. Cathy Reardon (703) 963-3179 and Chris Taylor at (703) 963-3484.

FOCUS ON EMERGENCY MANAGEMENT AND PUBLIC SAFETY

Casualty Management After a Deliberate Release of Radioactive Material

[The following CDC document contains recommended immediate actions for policemen, firefighters, and emergency medical technicians who may be faced with a nuclear terrorist act.]

The Situation:
A conventional explosion has scattered radioactive material, saboteurs blew up a truck carrying radioactive material, or an aerosol containing radioactive material has been spread over a large area. There may be some injured people, and in the latter situation there may be hundreds of contaminated or exposed people.

Protecting Yourself:
• Approach the release site with caution. If possible, position personnel, vehicles, and command post at a safe distance upwind and uphill of the site. Ensure your own physical safety. Look for fires, exposed high-voltage wires, sharp or falling objects, tripping hazards, or hazardous chemicals. Be alert for changing conditions.
• Wear a mask to reduce the dose from inhalation of radioactive dust. Ideally the mask should be a full face mask with a HEPA filter, but even breathing through a wet handkerchief or cloth will help. There will be little danger from radioactive gases, so a self contained breathing mask, while effective, is not necessary unless there are other gases or toxins present.
• Dust will collect on your clothes. Remove and discard them after you leave the area. Bag the clothing for later disposal. If you fail to remove them you will continue to receive radiation and expose others. Wear loose fitting clothes covering as much of your body as possible. Any removable garment that will prevent the dust from coming into direct contact with your skin will suffice.
• Open wounds or abrasions must be protected from radioactive contamination. • If running water or showers are available, full body rinsing with lukewarm water is advised. Even a fire hose may remove most contamination not already removed with the outer clothing.
• Do not eat, drink, or smoke while exposed to potentially radioactive dust or smoke. Drinking water may be necessary for people working in high temperatures with bulky protective clothing. If absolutely necessary to drink water, drink from a canteen or other closed container. Beware of heat strain.
• If radiation measuring instruments are available, place them in plastic bags to prevent their contamination and use them to map the areas leading up to the highest dose rates. Do not enter the areas of highest dose rate except to save lives, and then make the entry as brief as possible.

Protecting The Injured And Exposed:
• Seriously injured people should be removed from the source of radiation, stabilized, and sent to hospitals first.
• After treatment of serious physical injuries, preventing the spread of the radioactive material or unnecessary exposure of other people is paramount. Carry out the following immediate

response actions without waiting for any radiation measurements.

1) Establish an exclusion zone around the source. Mark the area with ropes or tape. Reroute traffic. Limit entry to rescue personnel only. Detain uninjured people who were near the event or who are inside the control zone until they can be checked for radioactive contamination, but do not delay treatment of injured people or transport to a hospital for this purpose.

2) Take action to limit or stop the release of more radioactive material, if possible, but delay cleanup attempts until radiation protection technicians are on the scene.

3) Tell nearby hospitals to expect the arrival of radioactively contaminated and injured people.

• Everyone near the scene should be checked for radioactive contamination. As soon as you can obtain radiation measuring equipment, establish a decontamination area for this purpose. Decontaminate people whose injuries are not life-threatening (broken arms, etc) before sending them to hospitals. Do not send people without physical injuries to hospitals.

• Record keeping is as important for the long term health of the victims as it is for the emergency responders. Use the appropriate forms to record contact information for all exposed people so they can be given medical examinations later. The Department of Health and Human Services will request this information later.

For More Help:

In the event of a radiation emergency, you should notify your state Radiation Control Program Director. Telephone numbers for each state may be found at http://www.crcpd.org/Map/map.asp. Notify the CDC Emergency Preparedness Branch at their 24-hour telephone number: (770) 488-7100.

Other Information:

The North American Emergency Response Guidebook (Publication A70-010) and its Pocket Edition (A70-010P) contain supplemental information on dealing with radioactive material. These books may be ordered from: UNZ and Co, 700 Central Avenue, New Providence, NJ 07974 (Phone 800-631-3098). For some important lessons learned regarding selection and use of protective clothing from the World Trade Center and Oklahoma City events, see Jackson, B; D.J. Peterson, J. Bartis; T. LaTourette; I. Brahmakulam; A. Houser, J. Sollinger; Protecting Emergency Responders: Lessons Learned from Terrorist Attacks (NIOSH Workshop Proceedings), ISBN: 0-8330-3149-X CF-176-OSTP, at http://www.rand.org/publications/CF/CF176/

[Extracted from documentation by Centers for Disease Control and Prevention, 1600 Clifton Rd., Atlanta, GA 30333.]

LETTER TO MEMBERS

Dear TACDA Member,

Since the tragic events of 9/11, America has been forced into focusing on homeland security issues in all aspects of our existence. The threat of another terrorist attack on American soil has become an everyday part of our lives, and for many, protecting themselves, their families and their community has taken top priority.

As you know, the main mission of TACDA over the past 40+ years has been to educate the American people to the threats that we face as a country, and to encourage reasonable preparedness activities at all sectors of American society. Now, with a large number of post-9/11 organizations (having the same basic mission as TACDA) coming on the seen, and with the new office of Homeland Security and the Federal Emergency Management Agency, the obvious news that "We Need To Prepare!" is more widely publicized and known as it has ever been in the past. Thus, TACDA's most basic mission has been reached, at least in some since. However, a new mission arises:

"Alerting our members to new threats that arise and keeping them updated on the latest news and developments that directly relate to homeland security and national civil defense issues." Once again, it is time for change.

In the next few weeks, TACDA will be launching its new initiative, a program that will serve our members and the public by providing them with access to the latest developments in homeland security and national civil defense, as well as continuing to promote the need for reasonable and prudent preparedness activities and strategies. The first level in this multi-tiered initiative will be to begin distribution of TACDA's premier electronic newsletter and alert service.

The American Civil Defense Association has expanded our horizons in an effort to bring you the most comprehensive and useful national civil defense electronic newsletter available today. This one-of-a-kind resource will be distributed on a weekly basis via email to subscribers (free of charge) and will provide online access to an endless array of valuable resources, news and products to assist you in your efforts to protect yourself in uncertain times. The main objectives of this new resource are to:

· Inform you of new national civil defense and homeland security developments, laws and policies and how they affect you, and keep you updated and alerted to new threats and emergencies as they occur.

· Continue to promote the development and implementation of reasonable and practical disaster and emergency preparedness, mitigation, response and recovery plans and

strategies for all sectors of both private and corporate America.
·Provide you with access to a massive collection of online tools and resources which will better enable you to prepare for and react to most any type of disaster or emergency.

If you are interested in joining the thousands of individuals and corporate entities already set to receive our weekly electronic newsletter and its virtually limitless resources, then we encourage you to visit www.tacda.org/defensealert and submit your email address.

Also, as an added benefit to TACDA membership, as part of our new membership package, TACDA will provide you with the ability to receive national civil defense and homeland security updates as well as disaster alerts in audio form via your cellular phone or other wireless device. This means that subscribers will be able to receive weekly updates and periodic alerts as they occur, regardless of location. You will be receiving additional details and information pertaining to this valuable service in the coming days.

The TACDA staff is very excited about the new changes taking place within the organization and is looking forward to serving you for many years to come.

Until next time...

Thank you for your support.

Kindest Regards,
Kathy Eiland
Executive Director, TACDA

FEATURED PRODUCTS

Rad Block
Potassium Iodide (KI) Tablets

Potassium Iodide (KI) is used in the event of a nuclear/radiological incident where radioactive Iodine, a by-product of nuclear fallout, is released into the air. This radioactive Iodine can be harmful to the thyroid gland, and excessive exposure introduces the potential for serious complications, sometimes not showing up until years after exposure.

Potassium Iodide (KI) works to saturate the Thyroid gland with "good" Iodine, thereby prohibiting it from absorbing the radioactive Iodine associated with nuclear fallout.

Right now, you can purchase a case of 12 bottles of Rad Block Potassium Iodide tablets through the TACDA Store for only $131.40 for TACDA members, and only $151.40 for nonmembers. Each bottle contains 200 tablets at 65 mg each.

Dosimeters & Charging Units

- *Member Cost - $89.95*
- *Nonmember Cost - $99.95*
- *Free shipping within the 48 contiguous states.*

If you were a first responder to a nuclear disaster, such as a terrorist attack on your city, how would you know whether or not there was any radioactive material present? If you live in a region near a nuclear power plant or in an area that may potentially be the focus of a terrorist attack, how would you know if you needed to evacuate or to take shelter from radioactive contamination? If we are ever so unfortunate as to have a nation, like North Korea, Iran or China detonate a nuclear weapon on our soil, how would you know what radiation threat you faced?

A dosimeter or rate meter is the simplest and most portable means of determining whether you need to seek protection. These tools can also help you manage your risk by showing you, in real time, your level of exposure, and can help you decide how much longer you want to keep working in a warm or hot zone. The dosimeters, offered through the TACDA Store, can be extremely useful to personal, medical, scholastic, airport x-ray, industry, and military applications. These dosimeters are rugged precision instruments about the size of a pocket fountain pen, and are used to measure accumulative doses or quantities of gamma (X-ray) radiation. They are not affected by nearby electronic devices as some other dosimeters are. A metal clip is used to attach the dosimeter to an individual's pocket or to any available object in an area to be monitored for total radiation exposure. They utilize an extremely sensitive fiber electrometer type voltmeter and a small volume of air to measure the total amount of radiation to which the instrument has been exposed. A reading may be made at any time by merely looking at a source of light through the eyepiece end of the instrument. These instruments may be totally immersed in water without affecting their performance, and are ruggedized in order to operate reliably in harsh military environments.