The background of the entire page is a close-up, slightly blurred image of the American flag, showing the stars and stripes in a diagonal orientation.

**THE ABC'S
OF
NBC WARFARE
SURVIVAL**

**A Public Guide to Surviving
Nuclear, Biological and Chemical
Terrorist Attacks**

Fred Lane

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Dedication

We would like to dedicate this booklet to:

NYC Firefighters

NYC Police

NY/NJ Port Authority Officers

Emergency Medical Personnel

The first response teams who arrived at the World Trade Center and the Pentagon to save those who could not save themselves. Many lost their lives in doing so.

The countless citizens – including those who crossed borders and state lines - to aid in the rescue effort
Passengers and crew of American Airlines Flight 11, United Airlines Flight 175, United Airlines Flight 93
and American Airlines Flight 77

The brave men and women of the armed forces who lost their lives on September 11, and those who continue to protect our borders and freedoms

The Coast Guard, National Guard, Law Enforcement personnel and countless American citizens who will be fighting terrorism on the home front

Every person directly or indirectly affected by the September 11th attacks

The children

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My good friend Jerry D. Young, who never faltered during this project.

The ABC's of NBC Warfare Survival – An Introduction

The Nuclear, Biological and Chemical (NBC) Warfare Survival Training Group was founded on Sept 22nd 2001 as a direct response to the probability of future terrorist attacks on the United States of America. For the first few weeks after the attack, I spent much time contacting political representatives and in-place organizations to determine what measures were being taken to train our public at large in ways to survive an NBC event. I went forth with a private agenda shortly thereafter.

How This Was Done

An advisory core group was formed with focus on processing information which was gathered both from personal experience and existing text on the subject. The objective was to develop a booklet with which to better educate the general public.

You do not need to be a nuclear, chemical or biological expert in order to survive an NBC attack; it is enough (and very important) to know the basics, and this booklet and proposed training course will cover them. For those of you wanting to study this subject further, there are many additional resources available at your library.

For those simply wanting to improve their chances of survival all that is required is a thorough review of this booklet.

It wasn't enough to merely outline the approved gear or expedient equipment you will need. Therefore, I asked the members to tell you where quality items could be found and we have developed a list of suppliers in a separate section (see **List of Suppliers**).

'Expedient' in this booklet refers to advisable and makeshift equipment. This type of gear is **not** state-of-the-art; it is a cheaper alternative that will only provide **some** protection. I wanted to keep these items at a price that the average income-earner could afford. In this booklet, you will also learn what actions to take before, during and after an NBC attack - things that might save your lives.

What This Booklet Covers

This booklet will familiarize you with the ABC's of surviving a Nuclear, Biological and/or Chemical (hereafter referred to as NBC) event. You will find such valuable and life-saving information as:

- Making your own "Ready Kit" (a kit made up of gear you will need to carry with you)
- Purchasing Personal Protective Equipment or Expedient Gear
- Making a protective hood
- The importance of having a safe room
- Sealing a room
- Home preparedness checklists
- Air filtration
- Home and skin decontaminants - what to use and how to make up a kit
- Decontaminating procedures, including the construction of a decontamination shower
- Medicinal alternatives that can be useful at a time when medical stockpiles are low or non-existent
- Stress Management

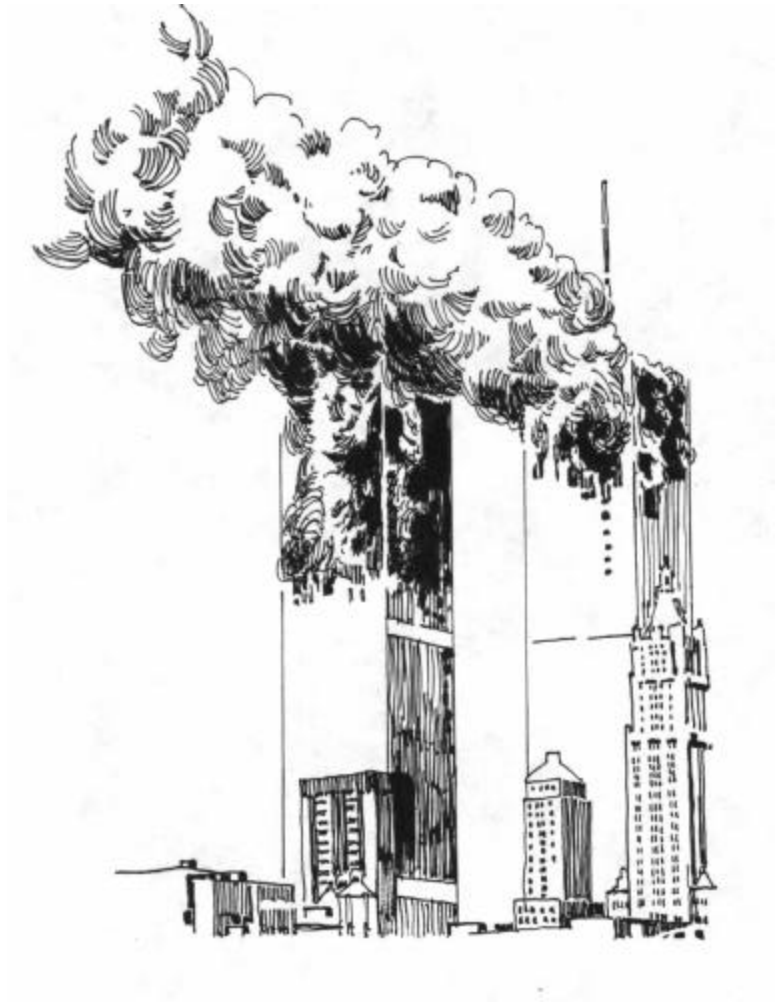
The information herein provided can be applied to any type of NBC attack, whether at a global or local scale.

Conclusion

We cannot provide any guarantees that you will survive an NBC attack. The probability of your survival will ultimately depend on such variables as time, distance, type of weapon, weapon yield/payload and community disaster preparedness response capability. Your chances for survival can improve **if** you read this booklet. Learn and practice the proper procedures.

Fred H. Lane, Founder, NBC Warfare Survival Training Group

Section 1 – The ABC's of NBC Warfare Survival



The ABC's of Nuclear, Biological, and Chemical Warfare Survival

Definitions of words, phrases and abbreviations used throughout this booklet:

- **Ex-pe'di-ent, n 2. A makeshift; a resource; means devised or employed in a situation which demands immediate action, supply or remedy (From Webster's New Universal Unabridged Dictionary).**
- **NBC – Nuclear, Biological, Chemical. Types of weapons and attacks**
- **Bio/Chem – Biological/Chemical. Often grouped together due to the similar nature of attack and defenses against the attacks.**

A Word to the Reader: Rule #1: When in Doubt - Put on Your Gear; Protective Mask First!

So you think you can't survive a nuclear, biological, or chemical attack! All seems lost and there is no hope. Many Americans share this misconception. It is because very few people have the slightest idea of where to begin and even fewer have had the proper training to survive. We are not going to cover the academics of physics, biology, and chemistry and their applications to NBC Warfare. If you want an in-depth study of these subjects there are many textbooks available at your library. What we do is to give you straight talk and suggestions on the basics. It is not our intention to downplay or over-emphasize the severity of an NBC attack. We all know it is serious. That's why you are reading this booklet. If you are willing to try to not give in to what the terrorists want by throwing up your hands in despair, this booklet is for you.

Nuclear, Biological, and Chemical Warfare is an intimidating subject. The fact is you can survive if you equip yourself and your family with a little knowledge about the subject in advance and develop some basic skills. You will also need to provide yourself and your family with adequate supplies. Three to five weeks' of supplies is a good start.

Your chances of surviving will be affected by where you are located in relationship to the point of the attack and the type of attack (nuclear, biological, or chemical). Additionally, the weapon's size in terms of nuclear yield or type and quantity of biological and chemical agents will play an important role as will weather conditions and many other factors.

Nuclear weapons' power is expressed in kilotons and megatons. A one-kiloton weapon is equal to the explosive power of a thousand tons of regular explosives. A one-megaton weapon is equal to a million tons of regular explosives. The bombs dropped on Nagasaki and Hiroshima had yields of 15-16 kilotons. They were small in comparison to some contemporary weapons whose yields are measured in megatons. Modern nuclear weapons range in size from sub kiloton tactical weapons to the multi-megaton weapons targeted at hardened military objectives.

They can be detonated below the surface of the earth, at the surface, in the air well above the surface, or at the edge of space to create specific damage. Sub-surface bursts are to destroy targets under deep cover. Radiation hazards are much greater from surface bursts. Blast effects are greatest in air bursts. Bursts near the edge of space create widespread electromagnetic pulses, which can cause damage and failure of electronic equipment.

The total death toll caused by the bombs in Nagasaki and Hiroshima was approximately 340,000. Fortunately, weapons of this capability are not yet available to terrorists. They do unfortunately have other possible means of nuclear attack. Nuclear power plant sabotage, suitcase bombs, and radiation bombs are all possible means of attack by terrorists.

Most of us are familiar with the term suitcase bomb. It is simply a small nuclear device that is easy to transport and conceal. Radiation bombs (dirty bombs) do not depend on a nuclear explosion (fission or fusion) for their effect. They are made of conventional explosives with radioactive material around the explosive. When it detonates, the bomb scatters radioactive material (waste) around an area.

The sequences of events that occur during an actual nuclear detonation are listed below:

Warheads (bombs) with 1 to 20 megaton yields

Light and Sound

A blaze of light brighter than the sun is produced by a nuclear detonation. It lasts about 11 seconds for a one-megaton and 44 seconds for a 20-megaton yield. Temporary blindness and eye injury can result from the glare if eyes are not shielded (do not look at the light). Nighttime greatly increases the distances that blindness will occur. The blindness however, usually goes away with time. A very loud explosion accompanies a nuclear detonation.

Electromagnetic Pulse (EMP)

Electromagnetic pulse is an intense burst of radio frequency radiation that can be picked up in power lines and through antennas. Your electronic equipment is going to get damaged, if not ruined, by a pulse that occurs at the time of detonation and continues to be a possibility throughout an attack with multiple weapons. To keep from damaging your FM and CB radios use only the internal antennas that are 10 inches or less. Wrap your radio in aluminum foil and store in a freezer bag.

Heat

The heat rays from the explosion travel at the speed of light or about 186,000 miles per second. Depending on yield, they can start fires up to 20 miles away. Many fires are caused when the heat pulse comes through a window to set fire to curtains, paper, clothing and furniture. The heat flash can also set fire to wooden buildings. The possibility of firestorms started from many smaller fires is high.

Some examples of the predictable effects on unprotected skin of the heat flash of a 5-megaton weapon exploded on a clear day (note that thermal burns are treated the same way as any other burn) are:

- Skin is badly burned up to 15 miles from the explosion.
- Skin is blistered up to 18 miles from the explosion.
- Sunburn types of burns up to 23 miles from the explosion.

Blast

The blast wave travels more slowly than the heat flash. Several seconds may pass after you have seen the light or felt the heat before the blast wave reaches you, depending on the distance you are from the explosion. It is like the interval between seeing a flash of lightning and hearing the sound of thunder. For example, at six 6 miles from the center of an explosion, it takes about 22 seconds for the blast wave from a one megaton weapon to reach you. If caught in the open during a nuclear explosion, this time can be used to find some protection from the blast wave. Being thrown about by the blast might injure you, therefore, keep low. Flying glass, bricks, and other debris may injure you as well. The blast from a five megaton explosion could injure people as far away as 15 miles. A 20-megaton air burst will destroy homes up to 16 miles from ground zero. Depending on your distance from ground zero, your eardrums may burst from the blast and increased air pressures.

Fallout

The radioactivity in fallout weakens rapidly in the first hours after an explosion. This weakening is called "decay". After seven hours, fallout has lost about 90% of the strength it had one hour after the explosion. After two days it has lost 99%; in two weeks 99.9% of its strength is gone. Nevertheless, if the radiation at the beginning were high enough, the remaining 0.1% can be dangerous. Ascertain radiation levels before going outdoors. This is the correct time to use your Kearny Fallout Meter (KFM). How much is fatal? A whole-body dose of 350 to 450 roentgens (pronounced "rank-ins") will kill about half those receiving it.

Note: The radiation produced from these weapons can not be seen, felt, heard, tasted, or smelled. 85% of the blast and thermal effects of a nuclear explosion are over in the first 60 seconds. The remaining percentage accounts for nuclear radiation and fallout as well as EMP. The fine particles sucked up into the air will stay suspended from two days to a month, even years, and fall back to earth as material that has lost a lot of radiation.

Symptoms of Radiation Sickness

Radiation illness develops slowly. It is not contagious and cannot be spread to other people. Except for temporary nausea shortly after exposure, evidence of serious effects from radiation may only appear after an interval of a few days to three weeks. These effects include:

- Loss of hair
- Loss of appetite
- Increasing paleness
- Weakness
- Diarrhea
- Sore throat
- Bleeding gums and
- Easy bruising.

Note: A combination of the above symptoms indicates that the individual requires medical attention. Nausea and vomiting may be caused by fright, worry, food poisoning, pregnancy and other common conditions and is not an indicator of radiation sickness by itself.

Pre-Attack Preparation

The very first step is to prepare psychologically. Commit to memory exactly what you intend to do the instant you see or hear of an attack in your area. The decisions you make within the first few seconds are critical ones. Rehearse over and over in your mind exactly what you must do. This same procedure is used, along with physical practice, by our military personnel to create almost automatic responses for any given situation (see the Home Preparedness Section on Family Planning).

Nuclear Attack Procedures When in the Open

General Instructions

- Drop to the ground. **STAY THERE FOR AT LEAST 2 MINUTES!**
- Lay face down toward the detonation and keep arms tucked up under your sides. If you are some distance away from the detonation, lie in a culvert or depression in the earth. Get under a car or truck or up against the wall of a strong building.
- Cover your nose and mouth with handkerchief or any filtering material you may have available.
- Keep down until the blast wave passes and debris stops falling.
- When All Clear, seek good shelter.
- Get your gear on! Use your “Ready Kit” (see section on Expedient Suit, Mask and Ready Kit).

If You Are Away from Home

- If you are away from home take protective cover immediately.
- If you are traveling, stop and take protective cover immediately, or if you are only a few minutes from a safe destination, proceed and take protective cover immediately.
- If you are some distance away from the detonation, lie in a culvert or depression in the earth. Get under a car or truck or up against the wall of a strong building.
- Listen to your radio for further instructions.

Nuclear Attack Procedures when in the Home or Shelter

If there is a Public Warning before Attack

If sirens or warning systems signal impending attack, regardless of where you are or what you are doing, take the best available cover against the blast, heat, and light effects of nuclear explosions.

- If you are at home and do not have a fallout shelter, go to the basement or strongest part of your house or a building which offers the best protection.
- If material is handy, improvise blast protection (see section on Sealed Rooms and Shelters).
- Take your battery radio with you or turn up the house radio so that you can hear it while under cover.
- Stay away from windows.
- Lie down and protect yourself from flying glass and falling debris. Shield your eyes from the flash of an explosion.
- Keep down until the blast wave passes and debris stops falling.
- Monitor your radio for civil defense broadcasts.

If there is no Public Warning before the Attack

- Drop to the floor away from windows and close to a wall. **STAY THERE FOR AT LEAST 2 MINUTES!**
- Cover your nose and mouth with handkerchief or any filtering material you may have available.
- Keep down until the blast wave passes and debris stops falling.
- Go to your shelter.
- Monitor your radio for civil defense broadcasts.

After the Attack

Stay in your sealed room or shelter for at least 2-3 weeks, longer times for very high fallout areas. Radio broadcasts will identify areas that will be affected by the fallout and give instructions and advice. These might include:

- Location of nuclear explosions causing local fallout.
- Information about the parts of the country to be affected by fallout.
- Length of time before fallout is likely to reach specific communities or areas.
- Ways to increase fallout protection.
- Supplies to take to your fallout shelter.
- Whether it is safer to stay in your community or area or to go to other areas.
- Advice on which areas are free of danger.
- Advice on when to leave shelters and for how long as danger from radioactive contamination diminishes.
- Requests for help in rescue operations, such as rescue, fire fighting and medical assistance.
- Advice on conservation of food, water, and fuel.
- How to keep warm when power is off and the weather is cold.

Note: Personal decontamination must start at a time when it is safe to do so (see section on **Decontamination**). Get the dust and debris off yourself as soon as possible. Use your mask during this operation, or at least some sort of covering over the mouth and nose.

Don't Use the Telephone

- When the sirens sound don't use the telephone.
- Listen to a radio or television for information. In the event of an attack, "warning" telephone lines will be required for official use.

If You are Away from Your Sealed Room or Shelter, Get Out and Stay Out of the Contaminated Area.

- If you are already upwind of the area, that is good. Stay there!
- If you are downwind, get upwind as soon as possible and remain upwind.
- Seek shelter.

Note: Learn the prevailing winds in your area (they change with the seasons). Learn how to determine wind direction at any given time. Hold up a piece light material. The direction the wind is coming from is opposite the direction the material is trailing. Observe the direction flags are trailing from their flagstaffs. Turn until the wind is in your face, that is the direction from which it is blowing. Weather forecasts give wind direction as the direction the wind is coming from, not blowing to!

Evacuation

- Early in the attack and during the aftermath, it may be far better to stay where you are rather than risk further contamination by evacuating with others who are contaminated.
- Sit tight and listen to the radio. There may be large traffic jams and mass panic.
- If you decide to evacuate, put on your gear and leave it on until you reach a designated safe area.

Note: Put together an evacuation kit consisting of items you would take on a camping trip. Make sure to include your **Ready Kit**. You should wear your gear if the area you are leaving is still heavily contaminated.

Know How to Get Rid of Radioactive Dust and How to Decontaminate (see section on decontamination)

Contaminated particles can be like sand, flakes, or a powdery substance. If you suspect that your clothes have fallout on them, remove your outer clothing before you come inside your home and leave it outside. Don't shake these clothes inside the house or shelter. You would only scatter the fallout grit and create unnecessary danger to others. If you have water, wash thoroughly, particularly exposed skin and hair. But do not scrub your skin as this might rub in the radioactive particles.

Home-Made and Professional Radiation Detection Systems

The Kearny Fallout Meter (KFM) is an inexpensive kit that works well in measuring radiation doses (See **List of Suppliers**). State of the art systems are also available to you or your community (See **List of Suppliers**).

Bio/Chem Warfare Survival

Biological Warfare

Biological Warfare is perhaps the terrorist's best means of delivering a heavy blow to large populations. Anthrax is probably their agent of choice. Anthrax is persistent and easily manufactured. It has been said that three hundred pounds of anthrax could impact the health of one-third of the population of the United States. In layman's terms, biological warfare is simply germ warfare. Many different types of agents have been developed by various nations over many years. Some of the more serious types that have been around for a while are discussed. Smallpox, anthrax, and plague (Bubonic and Pneumonic) are basic biological agents. Today's modern technology and scientific capability, however, has refined these agents to include Smallpox-Vee, which is a combination of Smallpox and Venezuelan Equine Encephalitis (brain virus). Ebolapox is a combination of the Smallpox virus and Ebola. Finally, but certainly not the least is the Marburg Virus, a virulent "Variant U" that is reported to be a genetically engineered anthrax bacteria. It is 1000 times more lethal than natural anthrax.

Most of these agents were products of Soviet research and manufacturing, but with the collapse of the soviet regime it is thought that other nations have acquired the research. If such weapons are deployed, our medical facilities may be overwhelmed by those stricken by the diseases. Stay in top physical health and

ensure your body's immune system is at its peak. You should **familiarize yourself** with medical alternatives and try to procure extra supplies of prescription antibiotics as well as optional choices (see **Medical Options**).

Biological Agent Symptoms

Anthrax: Incubation period from one to seven days. Anthrax can enter the body through inhalation or small cuts in the skin. The symptoms are tightness of the chest and cold or flu-like indications. Anthrax is not contagious.

Smallpox: Incubation period from seven to 16 days. Smallpox begins as small blisters (like chickenpox) on the face, chest, and hands. The blisters get larger with time. Symptoms include high fever and secondary infection.

Plague (Bubonic and Pneumonic): Incubation period from two to six days. Symptoms are chills, fever, weak, rapid heartbeat, skin smooth and red but not warm. Person is likely to become restless, delirious, confused and uncoordinated, and have swollen lymph nodes. Pneumonic plague is an infection of the lungs and the symptoms are high fever, chills, rapid heartbeat, and severe headaches. A cough with rapid and labored breathing develops in 24 hours.

Other Diseases and Agents:

Brucellosis
Glanders
Pertussis
Varicella
Tuberculosis

Diphtheria
Hantavirus
Q Fever
Tularemia

Ebola
Influenza
Typhoid
Pulmonary

Note: Those wanting a closer insight into Biological Warfare, it is suggested that you read *Bioterrorism, Secrets for Survival* by Duncan Long.

Chemical Warfare

This form of warfare is relatively new and is categorized into three main types: Nerve, Blood and Blister Agents.

Nerve Agents

Nerve agents disrupt the nervous system, thus inhibiting the signals the body needs to perform automatic functions. (The same thing happens to those allergic to insect stings.) Nerve agents affect the body the same way snake and insect venom does. Nerve agents are the hardest to detect, and can enter the body the same way blister agents can. Nerve agents can also be defended against the same way as blister agents can. The most deadly and the least deadly chemicals share a common defense. Once a nerve agent has entered the body, however, life can be touch and go for a while. Unlike blister agents, nerve agents rarely have a smell or color. Sometimes concentrations of nerve agents will show up as brown spots of liquid.

The common defense for nerve agents is Atropine (which over-stimulates the nervous system – or “short circuits” the nervous system). Atropine is then dissipated by 2 Pam Chloride. This is currently unavailable to the general public, so get your gear on and stay covered until you know the area is safe and the threat is over. Again, if you survive the first minute or so of nerve agent ingestion, the chances of living are good (though you are not going to feel very good for a few days).

Blood Agents

Blood agents prevent the body's blood from carrying oxygen as needed, and attack primarily the respiratory system. Blood agents act **JUST LIKE CARBON MONOXIDE POISONING**. Common respirators cannot protect against blood agents. They are unstable and short-lived, therefore not economical to use. If contact with a blood agent is suspected (tightness of chest, loss of breath, redness of overall skin hue, bluish lips), get the affected individual to fresh air, or give oxygen. If you survive the first 60 to 90 seconds of blood agent inhalation, you will most likely live.

Blister Agents

Blister agents irritate and inflame the skin and mucous membranes of the respiratory system or any other parts of the body that can get wet, or are wet. Parts of our body that readily become wet also readily absorb liquid, or vapors (**remember, your skin breaths as well as your lungs**). Most blister agents are dispersed in white or yellowish clouds, and have a PUNGENT ODOR, like ammonia, chlorine, or mustard (vinegar). Blister agents, (with the exception of tear gas), however, are rather obsolete and can be defended against more effectively than other agents. Though not normally fatal, blister agents can debilitate and demoralize. They are also short-lived and have a short range of effectiveness. Mother Nature neutralizes them to their basic elements relatively quickly.'

Chemical Agent Symptoms

S L U D G E

S-Salivation -Drooling.

L-Lacrimation -Tearing.

U-Urination.

D-Defecation.

G-Gastrointestinal; pain and gas.

E-Emesis -Vomiting.

Pre-Attack Preparation

As in the section on Nuclear Warfare, the first step is to prepare psychologically. Commit to memory exactly what you plan to do the instant you see or hear of an attack in your area. The decisions you make within the first few seconds are critical ones. Rehearse over and over exactly what you must do.

How to Detect a Bio/Chem Attack

A chemical agent attack will sometimes appear as an ominous looking cloud. **Most Blister agents are dispersed in white or yellowish clouds and have a PUNGENT ODOR, like ammonia, chlorine, or mustard (vinegar).** Biological agents are disseminated, however, using several methods such as aerosolizing, and contaminating water supplies. These methods are not so obvious to those under attack and require laboratory testing to be identified. A simple to use and inexpensive chemical detection paper that detects the presence of chemical agents by a color change. This paper can also be activated by solvents such as brake fluid, and therefore is currently unavailable to the general public because regulatory agencies believe that it may be misread and cause panic. The military name for it is M8 Chemical Detection Paper.

All biological and chemical procedures (bio/chem) are written assuming that early detection and warning has been given. Currently, only military establishments and designated FEMA agencies (HAZMAT Teams) have this capacity. They should constantly do air samples in metropolitan and other areas of high population densities or at least during times of "peak alert".

Perhaps FEMA will, at sometime, mandate that all disaster control facilities and local fire departments equip their stations with radiation, biological, and chemical monitoring equipment for early detection and warning. An audible alarm or radio frequency could alert the population at risk. Until then, the population is on its own.

It has been argued that it does no good to buy PPE equipment or supply our homes with the necessary items that it will take to possibly survive an NBC attack. The reasoning is that we will already have the disease or condition before we learn of it. This is the same mindset that was in place on September 10th, 2001.

This argument is weak. The actual anthrax event in Washington, D.C. can be used as a case in point. How many people living outside the DC area came down with anthrax who did not receive or handle a contaminated letter? For that matter, how many people in this sprawling metropolis came down with anthrax? not many. Want to know why? Only a small distribution of the substance occurred and it was

contained early. The entire United States is not going to be instantly contaminated by random, or even strategic, bio/chem attacks.

The agent takes time to spread, but once it does, it quickly becomes an epidemic. What is bad news for some is good news for others. Unfortunately, those who do come down with the disease are the early warning detectors for those outside the area.

The authorities will quarantine any area that has an outbreak of a communicable disease such as smallpox (the worst scenario). What happened to the bridges and tunnels in NYC? Closed weren't they? It's in the standard operating orders to quarantine and close down.

The cities, towns, and hamlets across America that are located outside the area where agents are first used and outside the quarantine envelope will have a fighting chance. Once you learn that an area near your location has had a breakout of anything, begin using precautionary health and decontamination measures outlined in this booklet. Keep yourself and your living spaces clean. All inside the area should practice the procedures as well.

Procedures to Follow upon Suspecting a Bio/Chem Attack Near You

If You Are Away from Home

- Put on your gear, mask first! (see section on **Wearing Your Gear**).
- If possible, get upwind and seek shelter.
- Decontaminate any liquid material by blotting it off your gear. Never rub it. That spreads the agent and can force it into the skin (see section on **Decontaminating Procedures**).
- Monitor your radio for civil defense broadcasts.

Note: If you are caught in the open without your gear, button up your clothes and stuff pant bottoms in socks or the tops of shoes. Put something over your nose and mouth (same for nuclear attack).

During the Attack

- Stay put if under cover, or,
- Seek shelter.

After the attack

- Do not leave your sealed room or shelter until you have been told it is safe to do so.
- Begin total personal decontamination (see section on **Decontamination**).
- When conditions permit, you can begin decontamination on the exterior of your home, transport, and equipment (see section on **Decontamination Procedures** for home and equipment).

Procedures to Follow upon Suspecting a Bio/Chem Attack Near You

If You are at Home

- If you were outside, decontaminate yourself before entering your sealed room,
- Then go to your sealed room.
- Monitor your radio for civil defense broadcasts.

During the Attack

- Stay in your sealed room!

After the Attack

- Monitor your radio for civil defense broadcasts.
- Do not leave your sealed room or shelter until you have been told it is safe to do so.

Note: When conditions permit, you can begin decontamination on the exterior of your home, transport, and other equipment (see section on **Decontamination Procedures** for home and equipment).

In Closing

The following titles are covered in detail in this booklet. They are essential items that you *must* provide for yourself and your family if you are to survive a serious attack. It is advisable that after reading this booklet that you begin acquiring the materials and supplies that are discussed.

- Personal Protective Equipment.
- Expedient Suit.
- Ready Kit.
- Decontamination Kit, etc. (see **Expedient Gear** section).
- Sealed Room or shelter.
- Air Filtration System.
- Water
- Food
- Alternative Heating.
- Alternative Lighting.
- Medical Alternatives.

Section 1 Self-Test Questions

1. Define "Expedient".
2. What is Rule #1?
3. How do "dirty bombs" work?
4. What damage can a human sustain from the glare of a nuclear weapon blast?
5. How can you prevent damage from EMP to your FM / CB radio?
6. After 7 hours, radioactive fallout has lost what percentage of its strength?
7. After 2 weeks, 99.9% of the radioactive fallout from a nuclear attack will have decayed. Can the remaining 0.1% be of any danger?
8. Can you see, feel, hear, taste or smell radiation?
9. List procedures to optimize your chances of survival if you are out in the open at the time of a nuclear detonation.
10. What do you do if you are at home at the time of a nuclear detonation?
11. How long can you expect to be in your shelter following a nuclear blast?
12. How can you determine wind direction, and why is this important?
13. Which chemical agent has a pungent odor?
14. What can you do to protect yourself from a chemical attack if you are caught outside without your gear?
15. What types of nuclear attacks are possibly available for terrorists to utilize?

Section 2 – Expedient Gear (Suits, Masks and Hoods)



Expedient Gear (Suits, Masks and Hoods)

Webster Handy College Dictionary:

Definition in the context of which the word “expedient” is intended in this booklet.

Expedient: “ex·pe·di·ent advisable, a makeshift”.

Warning: The NBC Warfare Survival Training Group does not claim that the expedient gear listed in this booklet is certified NBC Warfare Personal Protective Equipment (PPE). It is expedient gear that may offer some protection in the absence of professional grade equipment. We are not encouraging you to choose expedient gear over tested equipment. However, there are many that will not be able to afford tested and commercially manufactured equipment. If you can afford it, buy the best equipment your budget will allow. Contact the dealers we have provided and ask them to recommend the type of personal protective equipment within the limits of what you can afford.

There are many protective suits, boots, gloves, hoods and mask manufactured for First Responder and HAZMAT Teams that are available to private citizens through safety supply houses (see list of suppliers). Each suit is different in the degree of protection it can provide and some are limited to specific types of agents. They do not protect you from gamma radiation (nothing but a proper shelter will). Nuclear radiation in gamma form can only be stopped by a given thickness of various materials (see shelter section). A layer of clothing can shield against Alpha and Beta radioactivity. Alpha particulates present the greatest health threat when swallowed or inhaled and therefore some type of masking is very important while exposed to this form of radiation. Beta radiation results in burns to exposed areas of skin. It is common practice for naval military personnel to button all buttons and tuck their pants legs into the top of their socks and pull the rims of their white hats down over their eyes to reduce burns by beta radiation. Get your bare skin covered as quickly as possible! Nevertheless, Alpha and Beta radiation can be stopped by a thickness of clothing and do not present a large health threat unless swallowed, inhaled or received on exposed skin.

Common sense would suggest that any rubberized waterproof material that sheds liquid could be an expedient suit. US Army manuals suggest that soldiers wear their ponchos when proper gear is not available. It is stated that the ponchos are good only for a very brief time (minutes) against some forms of agents. Listed below some of the options you have in making your own gear or selecting manufactured equipment.

A Low Cost Expedient Suit Would Consist Of the Following Items

- Mask (full face, half mask respirator type and/or the disposable cloth type).
- Goggles if using half mask or disposable mask.
- Rubberized Rain Suit.
- Hood (impermeable).
- Gloves (outer and inner) butyl and surgical.
- Boots (rubber).

Warning: Using waterproof outer garments (rain suits) for an expedient suit can greatly increase heat stress (production and retention of body heat) and heart and lung complications. Avoid extreme exertion while wearing the suit. It is recommended that you wear this suit just long enough to get to a sealed room or shelter that is free of contamination.

Disposable Suits

Disposable chemical suits and masks are available from safety supply houses at a variety of prices. DuPont distributors offer a fine upper end and mid price selection. Their Tyvec Protech F, Tychem 9400 and Tychem ® SL materials have been rigorously tested and are found acceptable for police officers operating

just outside the range of heavily contaminated areas (see **Test Results** at the end of this section). When ordering, ask them to help you determine which suit will best suit your purpose and budget.

Gear for Infants and Small Children

There are some companies making gear for children. The "BARDAS" Youth Protective Suit and "SHMARTAF" Infant Protective Suit is offered by Approved Gas Mask (see suppliers). These suits are expensive to the average wage earner. You may have to create your own infant and child's expedient suit using common sense and methods described for adults. There are powered air supply systems for infants and babies that may not be able to pull air through a respirator or full-face mask. If you cannot afford a powered air supply system for your infant, then other options will have to be considered (see suppliers).

Full and Half-Face Mask Respirators and Disposable Masks

Filters labeled specifically for NBC are available. Ask for the supplier's help in determining which type of mask will fit your requirements and budget. Scott, MSA and North are among those who make top quality gear. HEPA or N95 and Air-Aide Emergency Mask are three types of disposable mask that are available. The Air-Aide mask above is impregnated with a neutralizing substance and distributed by B&A Products. Look in the "Suppliers Section" for a list of companies that carry mask-type respirators and disposable masks.

Tip: Contact with air deteriorates unsealed mask filters. Once your filter is out of its sealed container and on the mask (where it should be) cover the intake opening with duct tape and put the mask and filter in a plastic freezer bag (squeeze out all the air you can)..

Homemade Expedient Hood

A homemade hood can be made of a plastic trash bag with holes cut out for the full-face half mask (respirator style) or disposable mask. You will have to use goggles if you use the half mask (respirator) or disposable mask (the type that covers the mouth and nose). If you chose a disposable mask, we recommend the Air-Aide mask which is impregnated with a neutralizing substance. The manufacturer states the mask will protect against fire and smoke, Hanta virus and toxic chemicals (see suppliers). No specific claims are given in regard to anthrax.

Materials

- Heavy duty clear plastic trash bag.
- Goggles, full-face mask or half mask (respirator type).
- Duct tape.
- Scissors.

Note: Goggles that form an airtight seal tight around eyes with an elastic headband are preferred. Don't purchase the kind that has air vents around the area where they form the seal to your face. Any opening will allow an agent to seep in. A disposable mask is a viable alternative ONLY if the mask types above cannot be located or are cost prohibitive.

Procedure

- Pull trash bag over head and downward so no excess is left at the top of your head.
Warning: Leave loose at bottom or you'll risk suffocation.
- Have someone mark the eyes and mouth with an appropriately colored magic marker crayon or paint marker.
- Insert goggles or full-face mask into trash bag, lining them up with area previously marked for eyes.
- Pull bag flush around goggles or full face mask.
- Trace around this area with magic marker, crayon or paint marker.
- Remove goggles or full-face mask from trash bag.
- Cut out along your trace lines.
- Put goggles or full-face mask back inside bag and insert into cutouts.
- Duct tape the goggles or full-face mask to the cutouts in trash bag.

Procedure when using Full Face Mask, Goggles With Half-Mask or Goggles with Disposable Mask

For Full Face Mask

- Cut out for the full-face mask using the same tracing procedure as above and duct tape it firmly to the hood.

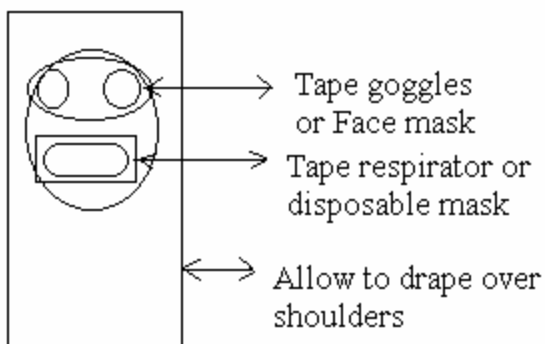
For Goggles with Half Mask Respirator

- Cut out for the respirator using the same tracing procedure as above and duct tape it firmly to the hood or tape a disposable mask over the opening in the plastic bag to provide air intake and wear the respirator under the bag.

For Goggles and Disposable Mask (medical type)

- Cut out the mouth opening and tape one disposable mask over the opening. You should also wear another mask over your nose and mouth.

Note: Make sure the areas where the duct tape and plastic bag joins the mask are smooth. There should be no openings around the taped area to allow seepage.



Plastic trash bag

You can use clear vinyl for the lens with goggles under the mask. There are all kinds of plastics and rubber materials available at fabric shops (they should be water proof). Silicon the stitching or duct tape the seams.

Test Results on some Personal Protective Suits Made from Tyvec Material

The following is an excerpt (partial report) taken from the Internet.

Final; Jan 1999 – Nov 1999

SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Commander, U.S. Army, ECBC
ATTN: AMSSB-REN-HD-DI
Building E5307, Hanlon Road
APG, MD 21010-5424

PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

DIR, ECBC, ATTN: AMSSB-REN-HD-DI, APG, MD 21010-5424
PERFORMINGORGANIZATIONREPORT NUMBER ECBC-TR-131

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This report covers Man In Simulant Testing (MIST) of the following commercially available, Level C chemical protective suits: the Tyvec.... Protective Wear...suit (garage-type, for mechanics), the Kappler CPF...4 suit (model # 4T434), the TyChem.... 9400 (style 94160) suit, the TyChem.... SL (style 72150) suit, and the Tyvec.... ProTech F suit. These suits are being considered by law enforcement agencies for use at scenes where chemical warfare agents have been used by terrorists. This testing examined how well the complete protective suit ensembles protect the wearer against vapor adsorption at the skin by exposing test participants wearing the suits to a chemical agent simulant (methyl salicylate) and measuring the Physiological Protective Dosage Factor (PPDF) the wearers received while performing a set of typical law enforcement activities. The results showed that the suits provided the wearers an average Overall Physiological Protective Dosage Factor (PPDF) of: standard police uniform –

CONCLUSIONS AND RECOMMENDATIONS

This assessment demonstrates that Law Enforcement and EMS personnel can be equipped with an effective low-cost clothing ensemble when responding to an incident of CW terrorism. An ensemble consisting of a high quality respirator, butyl rubber gloves and a commercial chemical over garment (**elastic wrists & hood closures with built in boots**) provides some liquid-droplet and vapor protection to the responder. This level of protection is excellent for personnel working on the perimeter (**cold zone only**) of an incident and also provides some protection in the area around the cold/warm zone boundary (i.e., assisting with the evacuation or decontamination process). However, it must be emphasized that this clothing ensemble is inadequate protection for patrol officers in areas where significant levels of CW agent vapor concentration may be present (hot zone) i.e.: the immediate vicinity of the actual weapon or the weapon's release. This area should only be entered by HazMat qualified personnel.

Warning: The above suits are not Nuclear Bio/Chem state of the art suits, they may however, offer some protection and are better than nothing at all.

As you can see, the suits tested did well in "cold areas" (areas where concentration levels are extremely low). In the "hot zone" where concentrations are high, they would not be suitable.

In summary: It would appear that a rubberized rain suit with hood, gloves, boots and mask would afford a fair amount of short term protection for those not being able to afford manufactured personal protective equipment designed for a specific purpose.

Section 2 Self-Test Questions

1. Will expedient suits protect you from gamma (nuclear) radiation?
2. Will expedient suits protect you from alpha and beta radioactivity?
3. List the 6 components of a low-cost expedient suit.
4. Describe how to make a baking soda disposable mask?
5. Will expedient suits protect you inside a “ hot” zone?
6. How long can you be outside in an expedient suit?
7. An expedient suit is just as good as a manufactured suit intended for specific purposes. (True or False)
8. Gas mask air filters last indefinitely. (True or False)
9. Goggles with porous seals around the edges are just as good as any. (True or False)
10. Can you rely on a disposable mask for full protection? Why or why not?

Section 3 – Procedures for Wearing Your Gear



Suiting Up in Your Personal Protective Equipment **(How to Use Your Expedient Personal Protective Equipment (PPE))**

Practice the following procedure until you can put on your mask, fit, and clear it and check for seal in 10 seconds.

Fitting the Full-Face Mask: (in order to work correctly the mask must be properly fitted to you)

- Place chin in mask.
- Hold the mask firmly against the chin with one hand.
- Center the head harness pad (if provided) in the middle of the back of the head. Hold the pad in place.
- Remove the hand from the chin position and adjust the forehead (top) straps with a pull.
- Tighten each cheek strap (below the ears).
- You can now remove the hand from the head harness pad and pull on the temple straps (they are located above the ears) until they are reasonably tight.
- Clear and check the mask for leaks. Most masks can be cleared by placing palm over outlet valve and exhaling forcefully. If a voicemitter (device that allows you to talk) is used, cover that too.
- Check for seal. Place palm over inlet and breath in. The mask should collapse to your face and stay that way for 10 seconds.
- Make sure the mask remains fitted to your face by checking it periodically.

Note: Procedures may differ slightly depending on the mask. If you have the instructions that came with the mask use them instead of the above procedure. Keep extra filter cartridges available in sealed packages. Contact with the air will deteriorate unsealed mask filters. Once your filter is out of the sealed container and affixed to the mask (where it should be) cover the intake opening to the filter with duct tape and put the mask and filter in a plastic freezer bag (squeeze out all the air you can).

Removing The Mask (Don't do it until you know it's safe)

- Grasp the mask by the bottom.
- Pull down and out.
- Lift up and over your head.

Unmasking Procedures in an Emergency Where Detection Equipment is Not Available

- In a shady area, have someone take a deep breath, hold it, and break their mask seal for 15 seconds with their eyes open.
- Have the person clear and reseal mask. Observe the person for 10 minutes for symptoms.
- If no symptoms appear, have the person break mask seal, take two or three breaths, clear and reseal their mask. Observe the person for 10 minutes for symptoms.
- If no symptoms appear have the same person unmask for 5 minutes and then re-mask. If no symptoms appear in 10 minutes, it is safe to give the all clear signal and unmask.
- Continue to observe the individual in case delayed symptoms develop.

Basic Instructions for Putting on Your Expedient Suit

Put your gear on in the following order

- Mask
- Pants
- Jacket
- Boots
- Inner gloves
- Outer gloves

Note: This assembled unit is not full-proof against all NBC contaminants, but is low cost and does offer significant short term protection to low concentrations of NBC contamination.

Taping Your Suit

- Boots to pant bottoms.
- Pant fly shut.
- Jacket bottom to the pant waist.
- Front closure of the jacket shut.
- Jacket collar to the hood.
- Hood to the mask and to the earflaps of the helmet.
- Jacket cuffs to the gloves.

Taking off Your Gear After the Decontamination Shower (see next section)

Assuming you are in a location away from the contamination and have gone through your decontamination shower, follow the below procedure

- Leave mask and inner gloves on until last (after the decon shower).
- Remove outer gloves. If you don't have inner (surgical type) gloves leave your outer gloves on.
- Remove suit.
- Hang the suit in a designated "clean" location for reuse. If the suit is disposable, place it in a plastic bag and then in a covered garbage container.

Section 3 Self-Test Questions

1. Describe the procedure used to properly fit a full-face mask.
2. In what order do you put on the 7 components of your expedient gear?
3. What 7 areas of your suit do you tape shut to seal?
4. All full-face mask are fitted the same manner. (True or False)
5. After your decontamination shower, what do you do with your expedient suit and its parts?
6. It is not important to check for a proper seal of the full-face mask. (True or False)
7. Clearing the face mask is optional. (True or False)
8. Inner gloves are not really important. (True or False)
9. What is the last resort method of testing the air to determine if it is safe to unmask if you are not in communication with official sources?
10. What can you do to prolong the shelf life of your spare filters after they have been taken out of their original containers?

Section 4 – Ready Kit



Make your Ready Kit

Your ready kit is portable and can be carried with you or left in your car or workplace. Here is what you will need:

- Mask
- Suit
- Goggles (if you use the half mask respirator or disposable kind)
- Boots
- Hood
- Gloves (inner and outer)
- Spray bottle of bleach and water solution (1 to 3 ratio).
- Decontamination Kits (see **Skin and Equipment Decontamination**)
- Rags
- Supply of antibiotics and radiation sickness pills (Potassium Iodide)
- Water bottle (drinking water)
- Safety Helmet (optional)
- Duct tape

Section 4 Self-Test Questions

1. Name the 13 components of a portable Ready Kit.
2. What is a good ratio for common household bleach to water for your Ready Kits spray bottle?
3. Is overheating a concern when wearing a rubberized expedient suit? (See Section 2)
4. Should you have your Ready Kit with you while away from home or are they to be stored with the rest of your preparedness gear?
5. What is rule #1? (see Section 1)

Note: It should be an individual and/or family practice to periodically devote some time to inspecting your full-face mask and checking the fit. Practice putting the mask on during the inspection. You may want to make it a game for the entire family to participate in. Time yourselves; you must get the mask on, cleared and checked for seal in under 10 seconds. Repeat this drill until it becomes second nature.

Write the names of family members on each carrying case and mask to ensure they are not mixed up at a critical time. If you use a backpack to store your Ready Kit, write your name on it as well.

Section 5 – Decontamination

- Household Products and Procedures You Can Use for Decontamination.
- Expedient Decontamination Showers and Procedures for Use.
- Expedient Field Decontamination Kit and Procedures for Use.
- Equipment and Structural Decontamination.



Decontamination of Canned Foods, Medical Instruments and Clothing

(Household Products and Procedures You Can Use for Decontamination)

If The Contaminant Is Radioactive

- Wear full personal protective equipment (PPE).
- Scrub with soap and water or,
- Caustic soda or lye (use manufacturers instructions).

If The Contaminant is Biological

- Wear full personal protective equipment (PPE).
- Scrub with fresh household bleach at ½ to ¾ cup bleach to 1 gallon of water up to full strength or,
- Caustic soda (lye). (use manufacturers instructions).

If The Contaminant Is Chemical

- Wear full personal protective equipment (PPE).
- Scrub with soap and water.

Note: We have not listed bleach here because of the possibility of a reaction with chemical warfare agents that may be used during an attack.

Decontaminating Canned Food

- Wear full personal protective equipment (PPE).
- Immerse the can in full-strength household bleach. Make sure to mark the cans for identification, as the labels will disintegrate.
- Wash thoroughly with soap and water, or
- Bring water to a boil then immerse cans for 20 minutes.

Medical Instruments

- Wear full personal protective equipment (PPE).
- Rubbing Alcohol or,
- Submerge in bleach solution (3 parts water to 1 part bleach) or,
- First bring water to a boil then completely immerse instruments for 20 minutes.

Note: Use this procedure for your eating utensils and other objects that you work with inside the home (tools etc). **Dispose of all contaminated wastewater in a pre-designated area outside your home .**

Clothing

In an emergency, clothing that has been contaminated with radioactive particles or biological agents may be washed in bleach solutions. However, it is recommended that you discard them in a covered container.

Large interior and exterior surfaces are covered in detail under Equipment and Structural Decontamination on page 36 of this section.

Expedient Semi-Permanent Decontamination Shower

A home decontamination shower can easily be built by using the following materials:

Materials List

- 25-50 foot length of garden hose.
- Sprayer used for mixing garden chemicals or lawn fertilizer.
- Child's 6x6 plastic wading pool .
- 9x12 plastic tarp (medium ply) will also be required.

Set Up

- Configure the apparatus in the same fashion as the shower in your home. It can go in your garage or basement or it can go outside the house (weather permitting).
- Attach the water hose to a faucet and hang the hose with the sprayer attached, over a ceiling joist (don't forget to put the decontaminating agent in the sprayer).
- Configure the tarp to make an enclosure, approximately 3 feet on each side.
- Have entry and exit openings in the tarp (in dirty, out clean!)
- Place the bottom edges of the tarp inside the plastic pool to catch all contamination runoff.

Decontamination Agent

Household bleach is a good decontaminant as long as it has not exceeded its shelf life of 1 year.

Mix it in a ½ to ¾ cup per gallon of water solution, fill your sprayer and shake it vigorously before using.

Entry and Exit Paths - Getting To and From Your Decontamination Shower

- Designate separate entry and exit paths to the shower (ALWAYS step into the shower from the "contaminated" area and out into the "clean" area!)
- Use one path to the shower and another from the shower to the house...keep the path into the house decontaminated with the same solution used in the sprayer
- **Never** re-contaminate the clean area or you will track material into your home. Remember, in dirty, out clean!
- Locate a foot bath at the end of the clean path to your home or shelter with the same decontamination solution. **Always** step into the foot bath before you re-enter your home or shelter!

Procedures for Use

- Step into the shower with everything on (mask too) and run the shower for 5 minutes. Scrub yourself thoroughly with a long handled scrub brush.
- Step out on the clean side and take your NBC Suit off (suit, hood, boots and outer gloves) still leaving the mask and inner surgical gloves in place and proceed to the entrance of the safe room or shelter.
- Once inside, have a designated place to hang your clean NBC gear near the entrance of the shelter.
- Remove your outer clothing and place them in a plastic garbage can. (They can be decontaminated later using the same bleach and water solution).
- Remove your mask and wipe your face using a cloth dampened with the same solution as used in the shower.
- Decontaminate the inside of the mask the same way.
- Remove your surgical gloves placing them in a garbage can provided for contaminated items.
- Take a regular shower (remove undergarments) using anti-bacterial soap.

Note: It is convenient to have a mudroom to store your gear before entering the main part of your home or shelter. A door between the mudroom and the main house is ideal because one would have an anti chamber before entering the sealed room and/or living spaces. The next time you suit up to leave the house, empty the plastic pool in a designated location and use this spot each time you empty the pool. Cold weather with freezing temperatures will call for a different set up. In temperatures below 0 Celsius or 32 F the water will

freeze in the hose and sprayer. Take the sprayer off and bring it inside with you; don't forget to decontaminate it.

Note: If the hose on your semi permanent decon shower is to remain in place (recommended), angle the hose so that it will drain out toward the connection to the faucet. This is done to prevent the hose from freezing up during the winter months. Disconnect the hose from the faucet and make sure it is completely drained. If the shower is in the basement and it is equipped with a drain, squeegee any liquid into the drain. Remember to use the same "Entry and Exit Paths" as previously outlined.

If There is no Electricity, And no Pressure to your Well or Water Main

If the power is off and you have no pressure to your well or water main, purchase a sprayer with 2 to 6 gallon capacity from your local garden shop or hardware store and use the same applicable method listed in previous paragraph on "**Procedures for Use**" to decontaminate yourself.

Optional Decon Shower (not as good as the semi fixed but functional)

The following materials are available at your local hardware, greenhouse, building supply, or grocery store.

- 2 to 6 gallon hand pump tank sprayer.
- 8' x 10' plastic tarp medium to heavy ply.
- Long handle scrub brush.
- Plain household bleach (½ to ¾ cups per gallon of water).

Procedure for Using the Optional Decon Shower

- Arrange the tarp to direct runoff to the most contained point available.
- Follow applicable instructions as given in the above "**Procedures for Use**".

Note: You might have to use the sprayer on yourself, have the wand shortened to one-person-usable length. Remember to localize the contaminated material as much as possible in any of the decontaminating procedures you perform.

Expedient Personal Field Decontamination Kit and Procedure for Use

Scenario:

You have been involved in an NBC attack (**for details on how to recognize an NBC attack, see 'ABC's of NBC Warfare Survival'**). You notice droplets on your person, and they appear to be greasy or liquid in consistency. What do you do, and how?

Whether these droplets are bio/chem or not, you should assume they are. If you suspect that you have been exposed to an bio/chem agent, you must follow the decontamination procedure as soon as possible. The droplets must be absorbed from your clothing and gear, and then promptly removed.

This can be accomplished using a personal decontamination kit.

The following list of materials can all be purchased from chemical, industrial, or grocery suppliers. Below, you will notice 2 columns; one for absorbents and one for decontaminants. Any of the ingredients in the list can be used by themselves, however, an absorbent such as sodium carbonate will be more effective when mixed with a decontaminant such as powdered chlorine.

We suggest mixing the below material at a 3 to 1 ratio. For example: let's say you wanted to mix Fuller's Earth with chlorinated lime. If measuring by teaspoons, you would mix 3 teaspoons of Fuller's Earth to 1 teaspoon of chlorinated lime. The unit of measurement can be just about anything ie teaspoons, tablespoons, cups, shovels, etc.

Warning: Do not take any of the following materials internally. Do not inhale. Avoid contact with eyes and other mucous membranes. Apply materials ONLY to affected areas of skin, clothing or NBC gear.

Follow manufacturer's instructions and warnings when using any of the following materials. Strong concentrations of bleaches and limes can be very harmful or fatal if inhaled or taken internally. They can also cause burns.

Materials List

Absorbents

Sodium Carbonate (washing soda, laundry soda)
Fullers Earth (Bentonite)
Talcum Powder
Flour

Decontaminating Agents

Powdered bleach
Chlorinated lime
Powdered chlorine
Scouring powders containing bleach

Note: any of the above absorbents and decontaminants can be mixed with one another.

Storing Your Decontamination Mixtures

- Put 1 or 2 cups of your mixture into the toe of a regular sock or nylon stocking.
- Tie off the open end of the sock or stocking with string or a twist-tie.
- Place the tied sock or stocking into a zippered plastic sandwich bag and store in your Ready Kit (see **Expedient Suit** section for details).

Warning: Do not take internally or inhale. Do not get in your eyes. Apply only to the contaminated skin area or area on your NBC gear that has become contaminated.

Immediate Personal Field Decontamination Procedure (Outside and away from your decon shower)

Assuming that you have your suit on and the situation permits, use the following procedure

- If outside, seek shelter immediately.
- Wipe mask with a rag saturated with the bleach and water mixture in your Ready Kit (see section on **Expedient Suits**).
- Shake some of the decon material (enough to cover and absorb) onto any greasy looking blotches or liquid on your gear and anything else that looks like it may be a contaminant.
- Leave it on for a minute or two until it absorbs the greasy blotch or liquid.
- If using the spray bottle with bleach solution, spray it on the contaminated area and blot or scrape off.
- Get to your decon shower when conditions permit and use the methods described in that section.
- Avoid re-contact.

If you are wearing regular clothing

- If possible, take shelter.
- Immediately decontaminate the affected areas of your skin.
- Decontaminate the affected areas of your clothing.
- Put on your mask and Expedient Suit.

Note: It is advisable to cut away any soiled areas on your clothing after decontaminating if time permits and you are under cover. Spray products like Lysol are said to have no affect on spores. Therefore it would not be advisable to use for Anthrax.

Fisher Scientific (see list of suppliers) has a web page www.fishersci.com that offers several new decontamination products, including skin wipes or liquid that may be carried in your Ready Kit. BACDOWNGEL and BACDOWN skin wipes which are antimicrobial cleansers. BACDOWNGEL p/n L021-04-355-53 is a 16 oz bottle for list price of \$8.90. BACDOWN Skin wipes p/n L021-04-355-60 is a dispenser of 50 wipes for \$10.19 as of Feb 8th 2002.

Equipment and Structural Decontamination (Interiors and Exteriors of your Home)

You will need to determine the type of agent you are decontaminating before you begin the decontamination process. If it is radioactive or chemical, you can use soap and water. If it is biological, use bleach solutions or caustic soda (lye). Bleach or caustic is not recommended for **Chemical** decontamination because of the possibility of a reaction with the chemical warfare agent used during the initial attack. If you are uncertain as to which agent was used, it must be left to your judgement on whether or not to use bleach or caustic soda. However, when a biological agent is strongly suspected...the safest action may be to opt for the bleach or caustic soda decontamination procedure. I personally feel that using bleach or caustic soda in this scenario is the best choice and the risk well justified. Remember that you will not be decontaminating until several days after the attack and a chemical agent will have become dissipated to a large extent.

Warning: The run off water from the following procedures may be highly contaminated and will therefore have to be disposed of safely when time permits. The contaminated earth around your home and buildings will have to be removed and/or buried. Emergency assistance crews will hopefully address this large-scale decontamination evolution on a community wide basis.

Procedures for Interiors and Exteriors (after determining the agent you are decontaminating)

If The Contaminant is Radioactive

- Wear full personal protective equipment (PPE).
- **Use soap and water.** When conditions permit, wash the entire interior and exterior of your home, outbuildings, vehicles and equipment.
- Use a garden hose and spray attachment to apply the solution and where practical, scrub surfaces with a long handled brush.

If The Contaminant is Biological

- Wear full personal protective equipment (PPE).
- **Use fresh household bleach** at $\frac{1}{2}$ to $\frac{3}{4}$ cup bleach to 1 gallon of water up to full strength or **caustic soda (lye)**. When conditions permit, wash the entire interior and exterior of your home, outbuildings, vehicles and equipment with above solutions.
- Use a garden hose and spray attachment to apply the above solutions and where practical, scrub surfaces with a long handled brush.

If The Contaminant Is Chemical

- Wear full personal protective equipment (PPE).
- **Use soap and water.** When conditions permit, wash the entire interior and exterior of your home, outbuildings, vehicles and equipment with the above solution.
- Use a garden hose and spray attachment to mix the soap with the water and where practical, scrub surfaces with a long handled brush.

Note: Common household bleach containing 5.25% hypochlorite is considered effective as a "sporicidal agent" for disinfecting "anthrax" and other spores. Wash down the entire exterior surface of your house and walkways using the garden hose and spray attachment procedure and scrub surfaces where practical. Automobiles and machinery may be decontaminated in the same manner.

Note: When using a garden hose and sprayer make sure they are thoroughly flushed out before adding the bleach or caustic soda (lye) solution. Bleach or caustic soda (lye) may react with chemicals remaining in the hose or sprayer from previous use. The possibility of backflushing any garden chemical residue remaining in the hose or sprayer will also be reduced or eliminated.

More on Home Interiors

As with exteriors, you will need to determine the type of agent you are decontaminating before you begin the decontamination process. Remember, if it is radioactive or chemical; you can use soap and water. If it is biological, use bleach solutions or caustic soda (lye). If you are uncertain, it must be left to your judgement

on whether or not to use bleach or caustic soda. Interiors require more detailed decontamination...you are constantly exposed to the inside environment of your home and therefore it must be as clean as possible. As we have learned, radioactivity and chemical agents are not as persistent as biological agents and decay and dissipate rather quickly. However, even the slightest trace of a biological agent may produce an unhealthy and even fatal condition within your living area.

It should herein be noted that there are other means of decontaminating the interiors of your home that may have been exposed to **Biological** agents. It is inadvisable for you to use the following procedure but in an absolute emergency where professional help is unavailable and unobtainable, it may be the only means you have to provide your family with a safe living space (the rest of your home) outside your safe room or shelter.

Warning: The following chemicals are extremely dangerous and hazardous to your health. It is highly advisable to let a professional decontaminate your home when using formaldehyde or formalin.

Procedure

- **Fully read and understand all instructions from the manufacturer.**
- Wear full personal protective equipment (PPE).
- Mix 5 parts formaldehyde to 3 parts methanol alcohol. It will take 4 to 5 quarts to decontaminate 100 cubic feet of space. Keep the space closed for 8 hours and do not occupy the space for two days. These products can be bought at most pharmacies or specially ordered.
- Formalin - use full strength at 1 quart per 1000 cubic feet. Keep indoor areas closed for 16 hours, and do not occupy the area for **3 days**.

Note: Formaldehyde, Formalin and methanol alcohol can be found at most pharmacies or specially ordered. Many viruses and other bacteria can be destroyed or neutralized with a solution of common household bleach. Use ½ to ¾ cup of bleach per gallon of warm water for interior surfaces. Allow the disinfectant to remain on the surfaces for at least 4 hours. Always read and thoroughly understand the label and any literature that accompanies these chemicals before using for decontamination.

Other Decontaminants, and Where to Find Them

Most decontamination materials are available from commercial cleaning suppliers. Several brand-name cleaning solutions and concentrates are available from local industrial cleaning supply houses. Many of these companies will sell retail. If not, many individuals will know of someone that can purchase the items for them.

Medical supply houses carry biological decontamination solutions. Again, individuals that cannot buy directly from these suppliers often know someone that can, or may be able to purchase them through their employer.

Home-made solutions are not much cheaper than ready-made industrial supplies. Whether home-made or commercial, supplies must be obtained prior to an event or attack. The use and mixture of home-made solutions should be learned in the event that their commercial counterparts are unavailable.

Warning: Those that use home oxygen support systems should not use any petroleum based product on their skin while hooked up to the system. There is an ignition danger.

Section 5 Self-Test Questions

1. When decontaminating any NBC Warfare Agent (including radiation), what must be worn?
2. List the materials needed to build an expedient semi-fixed decontamination shower.
3. What is an optional item that can be used for a portable decontamination unit if the power is off and the water main has no pressure?
4. Why are pre-designated entry and exit paths to your outside decon shower important?
5. You are not wearing your expedient suit during an attack and notice liquid droplets and/or greasy looking blotches on your skin, how do you decontaminate?
6. It is OK to rub contamination off the skin with a rag. (True or False)
7. Why is it important to “contain” wastewater that accumulates while using the decon shower?
8. Is it safe to breath any of the decontaminating agents in your field decontamination kit
ANSWER: ABSOLUTELY NOT!!!
9. In decontaminating the entire exterior of your home, what is an inexpensive decontaminant?
10. The use of Formaldehyde, Formalin and Methanol as decontaminating agents is best left to professionals. (True or False)

Note: Have your family practice personal field decontamination until it becomes almost a reflex, and remember, you can't field decontaminate without your Ready Kit! Keep it well supplied and handy.

Section 6 – Expedient Fallout Shelters and Sealed Rooms



Fallout Shelters and Sealed Rooms

There are some major differences between a fallout shelter and a sealed room type shelter. For example, fallout shelters are for nuclear attacks, but can also be used for biological or chemical attacks if they are well sealed and have an air filtration system. Radioactive contamination (fallout) persists over decades. This type of contaminant must be encapsulated, removed from living areas and buried. Fallout shelters must be able to withstand a nuclear blast and thermal effects. They must also be able to shield against radiation. This is done by knowing the protective values of certain materials. The thickness of a material will determine its ability to reduce a certain amount of radiation (see **ABC's of NBC Warfare**).

The following paragraphs will explain the procedures for neutralizing and protecting yourself from biological and chemical agents. Biological agents are persistent and will multiply and spread. They must be neutralized (killed), encapsulated and removed. It is not likely that all three types of NBC Warfare would be initiated at the same time. For example, a nuclear detonation would render the other types useless. If you are located far enough away from the nuclear detonation, explosion at a nuclear plant or radiation delivered by a (dirty bomb), your sealed room may suffice.

Chemical agents are short-lived, but can be deadly depending on the agent used. They too must be neutralized, encapsulated and removed. Biological and Chemical agents are designed to seek low-lying spaces. This can pose a problem for the individual who is trying to build a shelter that withstands all three types of attack. Basements or crawl spaces can be used as fallout shelters. An upstairs room can be sealed and used with an expedient fallout shelter centered in one of the living spaces in your home. A fallout shelter that is fully sealed with air filtration can do both.

Note: The book, *Nuclear War Survival Skills* by Cresson Kearny has several plans and drawings related to fall out shelters you could build. In addition, we have given numerous manufacturers in the list of suppliers at the end of this booklet.

Expedient Shelter for Nuclear Fallout Using Basement or Crawl Space

If there is little or no danger of biological or chemical agents and there is a high risk of fallout, the following instructions will greatly increase protection against radiation. The first section consists of tips on how to increase your protection in a basement or crawl space. Following that section are general instructions on how to build a small emergency shelter in the interior of your home using furniture, doors, dressers and other materials. The amount of protection you will be afforded will depend on how much time is available before fallout arrives.

- Select a corner of your basement or crawl space, if possible away from windows, in which to build your shelter.
- Remove inside house doors from hinges and lay them on the floor that is above the basement area you will occupy.
- Supports for the improvised roof can be cabinets, chests of drawers, workbench, or anything that will bear a heavy load.
- Either of the above options provides a base for the heavy material you will place on it.
- On the upstairs floor above the corner of the room you select as your shelter area, pile any heavy objects you may have available. Examples are bricks, concrete blocks, earth, sand-filled drawers or boxes, furniture, trunks filled with clothes, dirt-filled boxes, newspapers and other dense items. These will help reduce radiation penetration.
- Build walls of dense materials to provide vertical shielding around the sides and front of your shelter.
- A small cabinet or dirt-filled box may be used at the crawl-in entrance to close behind you after entry.
- Remember, the heavier or more dense the material around you, the greater the protection.
- Block basement windows with earth, bricks, concrete blocks, books or even bundles of newspaper. In winter, if nothing else is available, use packed snow.

- Outside, against above ground walls of the basement around your shelter area, heap earth, sand, bricks, concrete blocks or packed snow.

A half thickness is a given thickness of material that will reduce the amount of radiation by ½ its sum. The following thicknesses of material will stop 99 percent of radiation caused by a nuclear detonation.16 inches of solid brick

- 16 inches of hollow concrete blocks filled with mortar or sand
- 2 feet of packed earth
- 3 feet of loose earth
- 5 inches of steel
- 3 inches of lead
- 3 feet of water

Expedient Shelter for Nuclear Fallout in Homes Without Basement or Crawl Spaces

If your home has no basement or crawl space, build your emergency shelter in a part of the house that is the farthest away from outside walls and the roof (examples are a center hall or clothes closet). Build it as described for houses with basements and crawl spaces. On the floor immediately above your shelter area, and against surrounding walls, pile up furniture, trunks, dressers, dirt-filled boxes or other heavy material that will reduce radioactive penetration into your emergency shelter.

Expedient Sealed Room

The following is a list of materials needed to prepare and occupy an expedient sealed protective room during a nuclear, biological or chemical emergency. Each person using this information must use common sense to determine specific needs, size of area to protect, items to use, and ability to survive in the space based on conditions as time passes.

Note: This type of sealed room may not withstand the blast, heat or intense radiation that occurs near ground zero. This depends on the weapon's yield (see **ABC's of NBC Warfare** section).

Materials list

- Medium or heavy weight sheet plastic (to cover openings).
- Several rolls of duct tape (to attach sheet plastic).
- Scissors, utility knife or box knife (to cut sheet plastic & tape).
- Several old towels or blankets cut to a similar size (to seal bottom of doors).
- Small dishpan (to hold water & baking soda solution to soak towels).
- Water in one to five gallon containers (to wet towels that go at the bottom of the entrance door).
- Box of baking soda (to add to water to soak towels).
- Storage bag or container (to hold items until needed).
- Cardboard, towels or blankets, rigid insulation or similar items (to protect plastic from broken glass).

Note: Materials for making a sealed room can be purchased at local building supply and hardware stores.

Preparing Your Sealed Room

When danger is imminent, bring everyone inside the largest area that you are able to seal (depending on amount of materials at your disposal). The larger the area, the longer the air will remain fresh for a number of occupants. Whatever the case, be sure you have enough materials to cover all openings.

- Cover all windows and heating and air conditioning ducts with the plastic, taping it in place.
- If you have time and materials are available, tape cardboard, blankets or towels, sheet insulation, or anything similar over the window glass before applying the plastic sheeting. This will help prevent the plastic being punctured if the glass is broken by something.
- Cover openings such as electrical outlet boxes with plastic or duct tape.
- If the sealed area includes a kitchen or bathroom take extra care in sealing things such as the exhaust fan, stove hood vent and similar areas that could allow contaminants to enter the room.
- Use long overlapping strips of tape to ensure a good seal.
- Tape the sides and top of the door(s) into the room.
- Soak towels in a dishpan of water/baking soda mix, wringing them out to place along the bottom of the door(s).

Note: If the area is small and there are many occupants, the air supply will become stale and deplete quickly. If possible, have a filtered air system (see section on air filtration) for your sealed room or shelter and use it when necessary to provide filtered air into your room.

The above procedure will provide expedient protection against Biological & Chemical Agents and gaseous radiation such as that from a damaged nuclear power plant. Monitor radio reports for the reduction of danger. It is strongly advised that you stay in your shelter or sealed room until you have heard from an official source that it is safe to come out. If for some reason you must leave the shelter, do so in full NBC gear.

If the structure is well built, plastic can be laid on the ceiling joists. You can then cover the plastic with a thin layer of earth, dry cement, or barite. This can only be done in a few cases, as the amount of weight in even one inch of covering will be too much for the ceiling joists without additional supports.

If you are setting up a sealed room in multi-story building, use intermediate floor locations. This will provide distance shielding from radiation and also provide protection from heavy biological and chemical agents.

Expedient Toilet

You can make a simple toilet by using a five gallon plastic bucket (with or without lid) and lining it with a plastic trash bag. Sprinkle the waste with baking soda or lime to assist in eliminating odors and to slow the decomposition rate. Remove all waste materials and when safe, burn, bury or follow the procedure your local authorities prescribe.

Section 6 Self-Test Questions

1. What is the difference between a fallout shelter and a sealed room shelter?
2. How long does radioactive contamination last?
3. Which area of the home can be utilized as a fallout shelter?
4. Which area of the home can be used as a sealed room shelter?
5. What can you do to reduce the amount of radiation to your basement shelter area?
6. Give examples (and thickness') of materials that will shield against nuclear radiation.
7. Give several examples of the materials needed to prepare and occupy an expedient sealed room.
8. Where can these materials be obtained?
9. When the need arises to utilize your sealed room and everyone is assembled, what are the next steps to take to seal the room?
10. If you must leave your sealed room and/or shelter, what precautions should you take?

Section 7 – Expedient Air Filtration Systems

Air Filtration

A Word About Electrical Air Filtration Systems:

For years, Israeli families have been using vacuum cleaners for biological decontamination. Unfortunately, this requires electrical power. It is therefore recommended that you purchase a generator. This is a formidable power source, and a good backup in case there is a power outage in your area.

Vacuums are available for just about any home or industrial application and come in an assortment of prices (i.e. \$125.00-\$1000.00 for some HEPA name brands). Most top line, special application, industrial vacuums are out of the price range for average citizens. However, there are reasonably priced products that either come with a sealed HEPA filtration system (recommended) or similar filtration devices that afford protection against particulates down to 0.3 microns.

This system would appear to be practical for some grades of Anthrax and radioactive material resulting from fallout. A vacuum system with a HEPA filter is not likely to be effective against a chemical attack using vaporized agents. For chemical weapons one would need a filter for that specific purpose and this would be expensive. In such a case it would probably be better to seal your safe room and eliminate air flow to it. Be sure to wear your mask while inside the safe room. Remain in your safe room until the agent dissipates. Listen to the radio for civil defense announcements informing you that the danger is past.

How and where a biological or chemical contaminant spreads depends on many factors. Some examples are weather, wind currents, people traveling from contaminated areas to clean areas, animals...etc. For example, let's say you live in the north end of town. The wind is blowing from north to south and the south end has just reported a biological or chemical attack. Would you be at risk? Not likely, but you would hopefully prepare yourself, because the wind could change at any time to bring the contaminants to your area.

The Israeli Vacuum Cleaner Trick

Material

Purchase a vacuum cleaner that has an exhaust port and a HEPA filter or similar sealed filtration system

Steps:

- Place the vacuum outside of your dwelling. Run the exhaust hose into the house through a port (such as the dryer exhaust port).
- You may opt to a) cut a hole in the door or b) make a window panel/insert from plywood, cutting a hole for the hose.
- Use silicon or duct tape to seal any seams that would permit unfiltered air from outside to penetrate your home.
- It is recommended that you leave the vacuum running for the **first 24 hours after the attack** providing its' motor is capable of handling the demand.
- If not, run the system until you have enough fresh air in the house, then turn it off. Long run times may wear out the vacuum motor.

Note: A second alternative is to have the vacuum inside the home and place the suction hose in the dryer vent or the port that goes to the outside of your home. Remember to seal all of the seams with duct tape or silicon!

Note: Using the above alternative results in having the vacuum and the contaminated filter inside your home. Therefore, you will have to take the vacuum outside when you want to change filters. **Make sure you are wearing full "Ready Gear" when performing filter removal. You must also decontaminate your entire vacuum and yourself, before coming back inside. Do not re-contaminate your home!**

Other Options

If you have a forced air furnace or central heating and air conditioning in your home, you can purchase HEPA filters from your local HVAC supplier. Common sense must be applied when setting up this type of filtration system; tape off any and all cracks and openings that would allow contaminated air to be drawn in from outside. This system serves another important purpose: the blower from your heating and air conditioning system creates an overpressure in your home that may prevent outside agents from filtering in through the seams, cracks and roof ventilation.

Note: All openings must be tightly sealed. Duct tape or plumbers putty is a good choice. It is advised that you use foam-backing plates behind electrical outlet covers. Your local building supply and hardware stores carry these items. Local heating and air conditioning contractors can install systems to prevent allergens from entering the home of persons having allergies. They may be able to install a system for you or upgrade your existing system.

"Keep it Simple" Air Filtration System: (by Jerry D. Young)

The following filtration system provides the homeowner with the simplest approach to resolving the fresh air supply issue. It should be used for in a small safe room because it would not furnish the larger volume of air needed for several rooms. The two drawings given below are almost identical. The exception being that the first drawing simply illustrates how to use a fan made of cardboard for drawing air through the filters and into your room. The fan should be placed as close to the filters as possible when pulling the air through them.

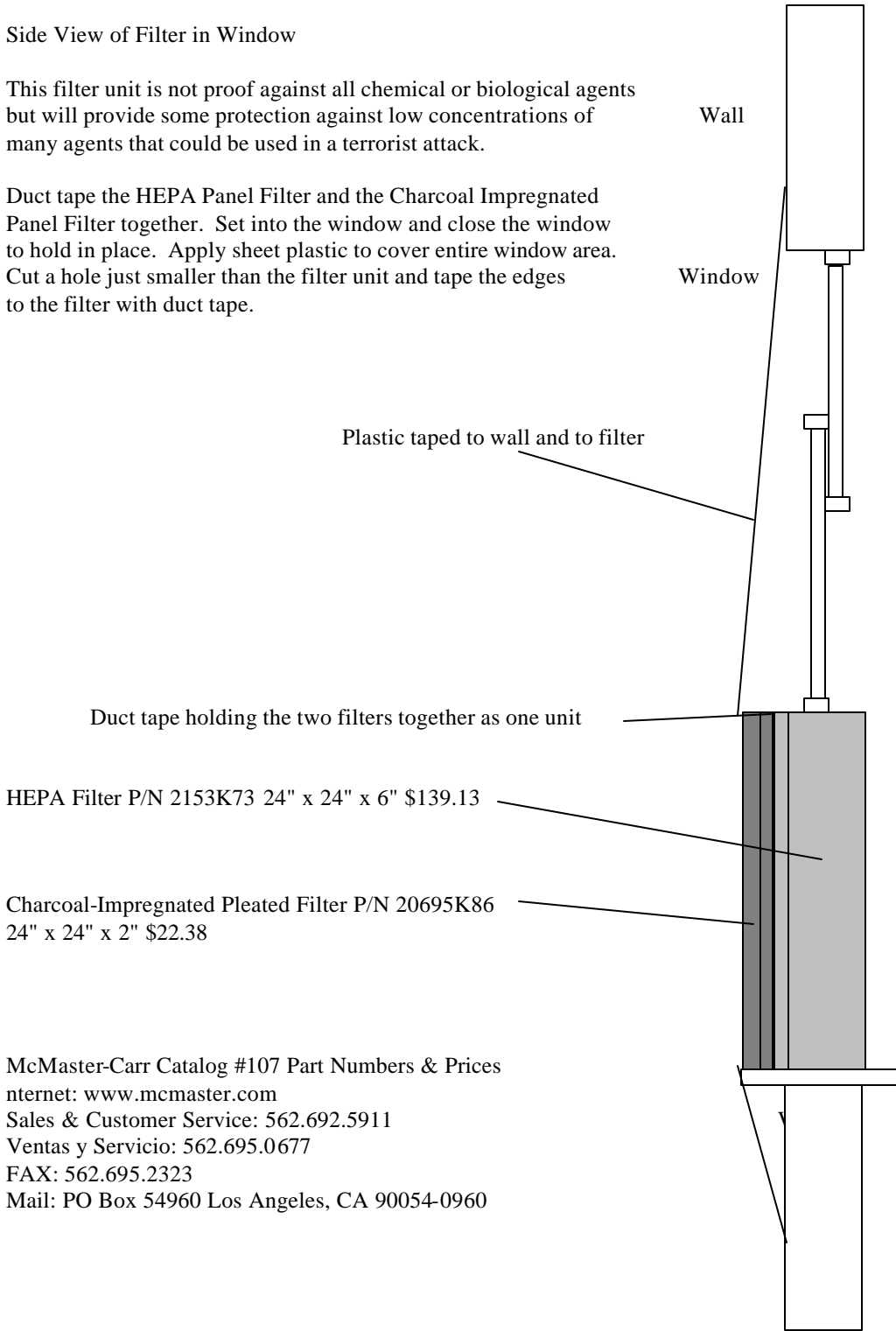
While not as effective as a commercial NBC filter, the two filters will be much better than no filtering at all, and will provide limited protection for low concentrations of war gasses, biological contamination and bio-chemical accidents. It is an effective filter for radioactive particles, however an awning type hood should be placed above the filters on the exterior side of the house to deflect said particles. Care will need to be taken when handling the filters after use in all cases. All components are readily available from local HVAC outlets; W. W. Grainger catalog and retail outlets; and the McMaster-Carr catalog, from which the part numbers and pricing above is taken.

The filter can provide fresh filtered air to a moderately well sealed room. An electric fan placed in front of the filters (if electric power is available) will pull air through the filter. If electricity is not available use a sweep fan as illustrated. Easily available, moderate cost filtration for sealed rooms are provided in this booklet (see **List of Suppliers**).

Side View of Filter in Window

This filter unit is not proof against all chemical or biological agents but will provide some protection against low concentrations of many agents that could be used in a terrorist attack.

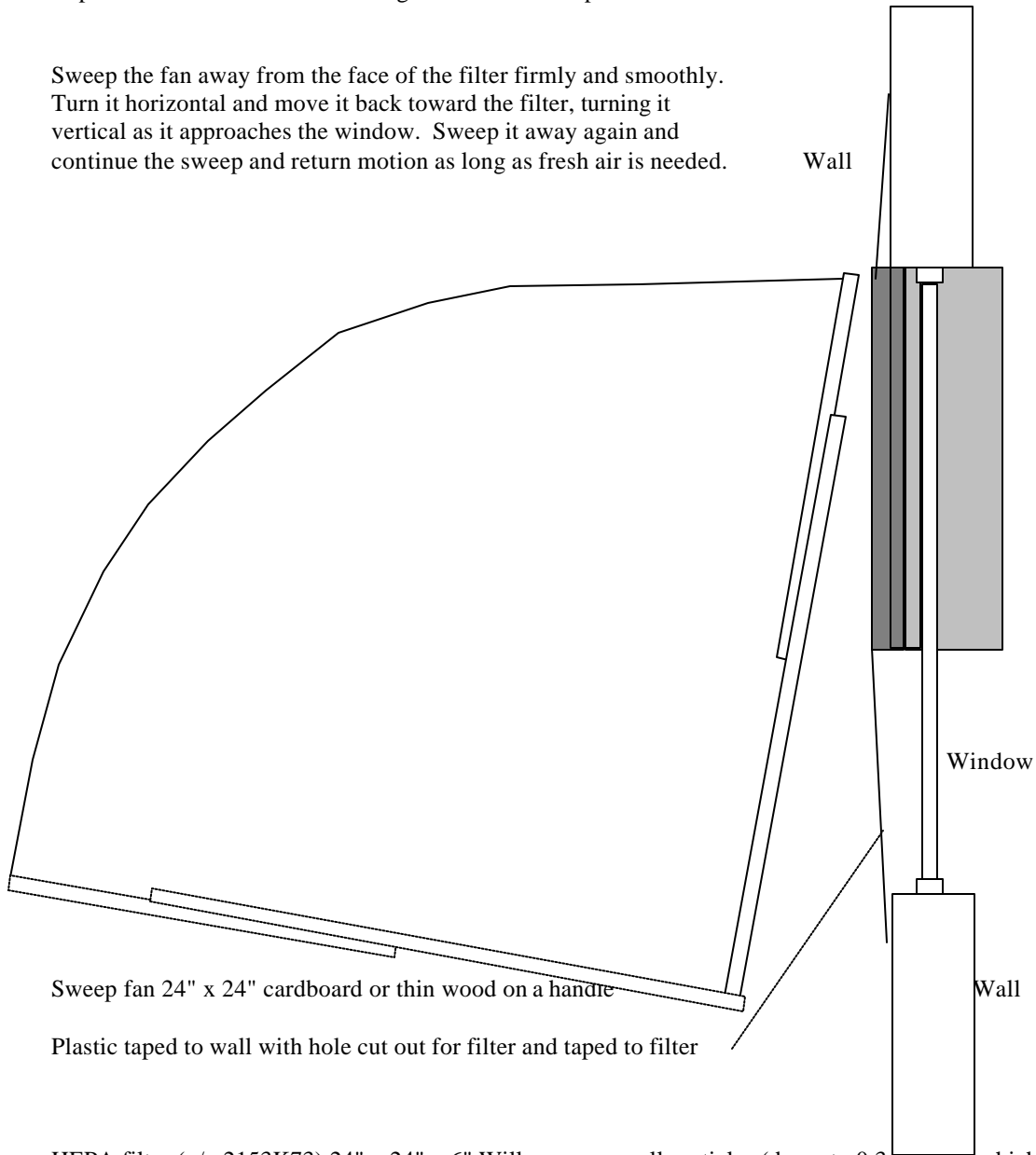
Duct tape the HEPA Panel Filter and the Charcoal Impregnated Panel Filter together. Set into the window and close the window to hold in place. Apply sheet plastic to cover entire window area. Cut a hole just smaller than the filter unit and tape the edges to the filter with duct tape.



McMaster-Carr Catalog #107 Part Numbers & Prices
Internet: www.mcmaster.com
Sales & Customer Service: 562.692.5911
Ventas y Servicio: 562.695.0677
FAX: 562.695.2323
Mail: PO Box 54960 Los Angeles, CA 90054-0960

Top view of installed filter showing the use of a sweep fan

Sweep the fan away from the face of the filter firmly and smoothly. Turn it horizontal and move it back toward the filter, turning it vertical as it approaches the window. Sweep it away again and continue the sweep and return motion as long as fresh air is needed.



Sweep fan 24" x 24" cardboard or thin wood on a handle

Plastic taped to wall with hole cut out for filter and taped to filter

HEPA filter (p/n 2153K73) 24" x 24" x 6" Will remove small particles (down to 0.3 micron) which includes most biological contaminants

Charcoal-impregnated pleated panel filter (p/n 20695K86) 24" x 24" x 2"

McMaster-Carr

PO Box 54960

Los Angeles, CA 90054-0960

Internet: <http://www.mcmaster.com>

Sales & Customer Service: 562.692.5911

Ventas y Servicio: 562.695.0677

FAX: 562.695.2323

(see **List of Suppliers** for other companies offering filters).

Section 7 Self-Test Questions

1. What type of filtration system is recommended on vacuums?
2. Filtration systems given in this booklet are thought to be effective down to how many microns?
3. In which situation would a vacuum system with a HEPA filter not likely be effective?
4. Explain the Israeli Vacuum Cleaner Trick.
5. Explain construction of the two illustrated examples of air filtration systems.
6. Name two methods of moving air through a window mounted expedient air filter system?
7. Name two factors that can affect how and where biological/chemical agents will spread?
8. Name two products that can be used to seal openings in a filtration system or sealed room?
9. What should be added to a window mounted expedient air filter to increase the protection against fallout particles?
10. Name two sources for components to make an expedient air filtration system?

Section 8 – Medical Alternatives



Medical Alternatives

When it comes to medical care, you do have some options to counter some of the threats addressed in this booklet. One of the best things you can do is to get healthy and stay healthy. The effects of biological, chemical and radioactive agents will have a greater impact on one whose health is poor. The stress of the situation complicates matters. General good health is your first defense.

The first, and probably the preferred medical option, is to discuss the risks with your family doctor. Your doctor can tell you the warning signs for which to watch, prescribe the best available medicines for you and your family, and inform you of their proper use. Your doctor should be able to obtain the medical information if he or she does not already have it. Your pharmacist can also be of help for information on storage requirements and shelf life of medications. Many in the medical professions are willing to provide this type of help when they know they can trust their patients not to misuse the information and medications. There may be help available from the authorities and medical personnel during the actual emergency.

Several useful items are available that can be purchased beforehand and stored for times of emergency. Some of these are listed below.

There are antibiotics available over the counter for animal treatment that may be suitable for human use in an emergency such as Terramycin, Auremycin and Penicillin G. Many are the same medication as produced for human consumption, but the packaging, handling and storage requirements are not always the same. The dosages given are for animals, therefore, recalculation of proper human dosage should be performed by a qualified individual. This booklet can not go into enough detail to present the information or assume responsibility for recalculating human dosages. For more information please refer to the sources listed under Medical Options in the supplier section of this booklet. As always, use common sense and find out everything you can about these options before using them. **ALWAYS READ INSTRUCTIONS CAREFULLY!**

WARNING: AS WITH ALL MEDICATIONS, TERRAMYCIN, AUREMYCIN AND PENICILLIN G SHOULD NOT BE TAKEN WITHOUT CONSULTING YOUR PHYSICIAN. AN ALLERGIC REACTION OR INTERACTION WITH OTHER MEDICATIONS YOU ARE ALREADY TAKING COULD BE LIFE THREATENING.

Item list

Beta 1,3/1,6 glucan

Usage: An immune system booster
Distributor: National Supply Corp
3107 North Deer Run Rd., Ste. 14A
Carson City, Nevada 89701
Telephone: 1-888 246-7224 ext 222

Colloidal Silver

Usage: Natural antibiotic
Distributor: Quality Silver
3964 South Mariposa
Englewood, CO. 80110
Telephone: (303) 781-0442

Note: Company offers inexpensive kit for making your own at pennies per gallon.

Hobes Instant Hand Stabilizer

Usage: Antibacterial soap for personal hygiene
Distributor: The Vitamin Shop
4700 Westside Ave
North Bergen, NJ 07047
1-800-223-1216
Note: Any antibacterial soap will suffice.

Penicillin-vk and Doxycycline

Usage: Antibiotics
Distributor: IAS, LTD
PO Box 337
GY1 Channel Islands, Great Britain
Telephone: 011-44-541-514144

WARNING: AS WITH ALL MEDICATIONS, PENICILLIN-VK AND DOXYCYCLINE SHOULD NOT BE TAKEN WITHOUT CONSULTING YOUR PHYSICIAN. AN ALLERGIC REACTION OR INTERACTION WITH OTHER MEDICATIONS YOU ARE ALREADY TAKING COULD BE LIFE THREATENING

Potassium Iodide or Iodate

Usage: Thyroid protection radiation blocker
Distributor: B&A Products
Rte 1 Box 100
Bunch, OK 74931-9705
(918) 696-5998

WARNING: POTASSIUM IODIDE SHOULD NOT BE TAKEN WITHOUT CONSULTING YOUR PHYSICIAN. AN ALLERGIC REACTION OR INTERACTION WITH OTHER MEDICATIONS YOU ARE ALREADY TAKING COULD BE LIFE THREATENING.

Stabilized Oxygen

Usage: An immune system booster and additive to drinking water to kill harmful bacteria.
Distributor: Lets Talk Health
Dept 22753
1229 3rd Ave., Suite C
Chula Vista, CA 91911
Telephone: 1-800 359-6547

Terramycin Soluble Powder

Usage: Antibiotic
Distributor: Look for it at Farmers Markets and feed stores
Note: It is labeled "Not for human consumption," Pfizer has stated that it is identical to the terramycin they sell to drugstores! A scale to weigh out the substance must be purchased.

WARNING: AS WITH ALL MEDICATIONS, TERRAMYCIN SHOULD NOT BE TAKEN WITHOUT CONSULTING YOUR PHYSICIAN. AN ALLERGIC REACTION OR INTERACTION WITH OTHER MEDICATIONS YOU ARE ALREADY TAKING COULD BE LIFE THREATENING.

Thieves and Lavender Oil

Usage: Black Plague medicine
Distributor: Young Living Essential Oils
250 South Main Street
Payson, Utah 84651
1-800-763-9963

RadBlock

Usage: Thyroid protection radiation blocker
Distributor: The American Civil Defense Assoc.
PO Box 1057 118 Court Street
Starke, Fl. 32091
Tele: 1-800-425-5397
e-mail: defense@tacda.org
web address: www.tacda.org

Note: If only a limited number of RAD BLOCK™ or similar pills are available, these should be given to infants, children and young adults first as its effectiveness (and also the risk of thyroid cancer) drops off with adults over 40 years of age. Adults 40 and over should not take KI beyond 1 day unless directed to do so by a physician (or unless the adult is continuing to be exposed to high levels of radioactive iodine that threaten thyroid function).

Some Facts About Potassium Iodide

“Potassium Iodide Solution saturates the thyroid gland. This prevents the thyroid from absorbing radioactive iodine if exposed to radiation. This will help prevent damaging contamination and poisoning. It is best used three days prior to exposure, but the effects of radiation are lessened if taken once receiving the announcement of radiation being detected and present in the air.

(K1) Potassium Iodide is available at chemical supply houses and larger photo supply outlets, and can be utilized in mixing your own solution, which is as effective as prescribed tablets. Few are aware of the fact, but the science lab in most high schools stores enough K1 to protect hundreds of students and residents. A single 500 gram bottle of K1, the usual size available in the science class, can be used as a thyroid blocker with nearly 7700 adult doses and double that amount for children age 3 to 12. If community leaders, pharmacists, science teachers and doctors worked together in utilizing the school stock of K1 in the event of a nuclear emergency, they can save many lives in the community from future thyroid cancer.

Homemade Potassium Iodide (K1 Solution)

Nuclear War Survival Skills written by Cresson H. Kearney for Oak Ridge National Laboratory, states on page 114:

"To prepare a saturated solution of potassium iodide, fill a bottle about 60% full of crystalline or granular potassium iodide. (A 2-fluid ounce bottle made of dark glass and having a solid, non-metallic, screw top, is a good size for a family. About 2 ounces of crystalline or granular potassium iodide is needed to fill a 2-fluid ounce bottle about 60% full.) Next, pour room temperature potable water into the bottle until it is about 90% full. Then close the bottle tightly and shake it vigorously for at least 2 minutes. Some of the solid potassium iodide should remain permanently un-dissolved at the bottom of the bottle; this is proof that the solution is saturated.

An adult needs about 4 drops of the solution as an expedient dosage. A child (age 3 to 12) would require half that amount or two drops.

There are two types of K1: saturated and less than saturated. K1 solution should be even more accurate in dosage when properly mixed. Mixing and dissolving exactly 26 grams of Potassium Iodide USP into a one-liter bottle of water produces 1000ml of solution. There are 200 5 ml servings per one liter bottle. Each dose is equal to one teaspoon of the solution for adults, and half for children.

Regardless of what type of solution you mix (saturated or other) it is very bitter. Each dose should be mixed with juice, milk, or at least water, to dilute it even further before drinking." Copyright © 1986 by Cresson H. Kearny.

IDENTIFICATION AND TREATMENT OF BURNS

Nuclear and Chemical Warfare has the potential for producing serious burns and secondary infection. In closing this section we will address procedures for the identification and treatment of burns. In addition, we suggest that you provide your home with a medical publication in regard to home treatment and/or a first aid manual.

FIRST DEGREE: Also known as "superficial" or "minor". Think "sunburn". Aloe Vera lotion will soothe. Does not require medical attention unless symptoms of infection (colored drainage, fever, increased pain) become apparent. (See Terramycin Powder.) Should heal on it's own within a week.

SECOND DEGREE: Also known as "partial thickness" burns result in blistering. **DO NOT OPEN BLISTERS!** They are the body's own best defense. **DO NOT PUT ICE ON THE BURN!** Cold water for 15 minutes.(running water is best, but immersion is O.K.) **DO NOT PUT BUTTER ON THE BURN!** Aloe Vera lotion will soothe without irritating. Xeroform (petroleum in gauze), zinc oxide, or Silvadene cream can be used on blisters once opened. if allergic to Sulfa, be cautious with use of Silvadene. Wrap gauze **LOOSELY** around/on burn. Expect healing in 2 weeks. Watch for infection.

THIRD DEGREE: Also known as "Full Thickness" or "major" require medical attention as quickly as possible, as this type of burn affects internal organs and can result in shock quickly. The appearance of third degree burns varies from pearly white to dark, leathery brown.

BURNS TO MUCOUS MEMBRANES: Eyes, nose, mouth, genitalia... Require much more attention than burns to dry skin. Flush these areas with cold water for at least 20 minutes, and seek available medical treatment as soon as possible.

LARGE AREAS OF BURNS: For multiple burn areas of more than two to three inches, treat as if they were a grade up. IE; treat a large area of second degree burns as a third degree burn, as there may be risk of compromising internal organs.

CHEMICAL BURNS: Treat as above, but in addition, continue to flush with cold water (20 minutes flush, break the blisters, 20 minutes flush) for as long as moderate to severe pain persists.

Section 8 Self-Test Questions

1. What is the safest way to re-calculate dosages of over-the-counter antibiotics for animal treatment to appropriate dosage for humans?
2. Before taking any medication, what should you do in an ideal situation?
3. Can the emergency medications listed interact with your prescription medication?
4. How do you prepare a saturated solution of potassium iodide?
5. What kind of container should be used to prepare a potassium iodide solution?
6. What is the dosage of potassium iodide solution needed?
7. What can potassium iodide solution be mixed with to make it more bearable to drink?
8. List the three major burn classifications from least to most severe.
9. List the signs and symptoms of each of the burn categories.
10. What should you do for:
 - a. Mucous membrane burns
 - b. Chemical burns
 - c. Burns over a large area of the body.

Section 9 – Home Preparedness

Home Preparedness

This booklet has been designed to be brief but informative. The objective is to get you started in the right direction. You will be able to modify and add to the lists and instructions in this booklet based on your particular circumstances and means. Check with local authorities as well as the others in your neighborhood who might have experience in this field. Apply common sense when making your preparations. Your local Federal Emergency Management Agency (FEMA) has detailed checklists available. The Complete Disaster Home Preparations Guide by Robert Roskind is an excellent source for detailed lists and is available at most bookstores and libraries.

Learn all you can about potential hazards and the means to avoid or survive them. Evaluate the equipment and supplies you currently use in the household, then evaluate the equipment you don't normally use, but that could come in handy in case of emergency (camping gear, etc). Once you have identified the equipment you will use and deem it appropriate, continue by adding other equipment and supplies as you are able. Soon you will have the proper equipment to deal with situations lasting a few hours to a few days, weeks or months. You must plan both for evacuation, and the possibility of having to stay within your home. Develop plans and obtain equipment and supplies for extended emergencies lasting a few weeks, months and even years.

It is up to you, the reader, to decide what is best for you. Every individual and situation is different. Use your best judgment based on the information that is available to you. Take necessary steps to protect yourself, your family and your community from the hazards of terrorist activity, accidents, and nature.

The Family Plan

Protecting your family during an emergency or disaster can be very stressful and traumatic, especially for the children. For this and other reasons we suggest you have your house and family as prepared as possible before having to activate your family plan. This will help to decrease stress and also help to ensure that your plan is executed in an orderly fashion.

We recommend involving your children in the planning process, and when activating your family plan during an emergency. While developing your family plan include various scenarios. Will you be staying in your home or shelter? Will you be packing your belongings to relocate? Will you be at work and the kids in school when an event occurs? Take each of these situations into considerations when preparing your plan.

Give your children individual tasks to complete during each situation and scenario. Assign the size and importance of each task according to their age and maturity level. Run through your plan every now and again as a drill. Make your children aware that it is not a game, but an important task. Try to keep them relaxed while performing their designated duties. If they make a mistake, go over it with them until they are comfortable and confident. Let them know you are relying on them. And when they have learned their part, reward them in some way.

Involving your children in the preparedness plan will teach them that each part is important, regardless of the size of the task. It will also keep them focused on their duties during an actual emergency; they will spend less time focusing on the emergency itself, which will ultimately reduce the stress of the situation. It will also help to move the important procedures along quickly and efficiently.

The family that is involved in preparing together will be much more organized during a true emergency or disaster, and more comfortable when the important work is done. During this 'settling down' period, keep the children occupied with games so that attention is diverted from the emergency, but do remind them of the great job they did carrying out their important parts.

Home Preparedness Checklist

The first six items (in **bold**) are a must for survival in any emergency situation. The remaining items are very important if you are to be prepared for worst case scenarios that may last weeks, months and even years.

- Food:** Canned and dried (non perishable)
- Water:** Minimum 1 (or more) gallons a day per person. Additional water for pets if present. (see section).
- Shelter:** Your Sealed Room and/or shelter.
- Heat:** Alternative sources.
- Light:** Alternative lighting .
- Air Filtration:** Fixed or Portable System manually or auxiliary powered (see section on air filtration).
- Medicines: Generic and prescribed to include every day items such as cough medicines, laxatives etc.
- First aid kit (tweezers and sewing gear included).
- Personal Protection Equipment (PPE): Suit, Mask, Hood, Boots, and Gloves (see section).
- Decontamination materials (see section on **Decontaminants**).
- Decontamination Shower (see section on **Decon Shower**).
- Home monitoring equipment: Kearny Radiation Meter (see **ABC's of NBC Warfare** section)

Basic Survival Item Checklist

Food

- Dried beans
- Rice, grains, dry cereals
- Canned meat and fish
- Canned vegetables
- Canned fruits
- Canned and packaged soups
- Powdered milk and beverages
- Spices
- Baby food
- Pet food
- High protein snacks
- Olive Oil
- Comfort foods (chocolate, sugar, nuts, raisins, etc)

Note: Know and monitor the expiration date and shelf life of each item by referring to the dates on the labels.

Water

- Drinking water.
- Water for cleaning.
- Pump (hand pumps are available at most hardware and building supply centers).
- Purification tablets.
- Distilled (if you have a stabilized oxygen generator, see medicinal supplies).
- Keep the water stored in well sealed containers (see **List of Suppliers** for storage containers).

Note: To purify drinking water, add 8 drops of the household bleach (less than one year old) per (clear) gallon and 16 drops if cloudy. Use 1 oz per 55 gallons if clear and 2 oz per 55 gallons if cloudy. Or, use 2-5 drops of tincture of iodine per (clear) gallon or bring the water to a rapid boil for 15 minutes. At higher altitudes boil for 20-30 minutes longer. Date containers and change every six months.

Heating Alternatives

- Wood
- Oil
- Kerosene
- Coal
- Propane
- Sterno for heat and cooking

Note: Purchase several fire extinguishers that are rated ABC. Store them in areas that will be easy to access.

Warning: The above options are not advisable to those with respiratory conditions and/or on home oxygen. Consult a heating specialist in regard to a system that is suited to your needs.

Lighting Alternatives

- Hand cranked electric lights.
- Household electric generator.
- Flashlights.
- Gas lanterns.
- Kerosene lanterns (use oil as fuel to reduce the amount of smoke produced).
- Light sticks.
- Candles.

Note: Buy extra wicks, mantles and batteries.

Warning: Do not use open flames and oil burning lamps in small enclosed spaces. The oxygen levels will be depleted, resulting in suffocation. Inhaling fumes from the above fuels can be fatal. The above options are not advisable to those with respiratory conditions and/or on home oxygen. Consult a heating specialist in regard to a system that is suited to your needs.

Start up List (additional items for your shelter or sealed room)

- NBC Gear
- Kearny Fallout Meter or other radiation monitoring instrument (see suppliers)
- Bedding i.e. blankets and sleeping bags
- Clothing suited to your area's weather conditions
- Portable AM/FM radio, NOAA All-Hazards warning receiver, cellular phone or portable CB radio.
- Battery or wind up clock
- Batteries and more batteries for everything that uses them
- List of important phone numbers (police, fire, ambulance, neighbours, relatives, work, etc.)
- Personal hygiene kits. (tooth brush, comb, bar soap, feminine products, toilet tissue
- Wash cloth
- Towel
- Dish washing detergent
- Fresh household bleach (duration and number of attacks will vary; therefore, we suggest an initial supply of 10 gallons)
- Hand soap (antibacterial)
- Steel wool
- Rubber gloves
- Bleach-type cleanser
- Freezer bags
- Plastic 5 gallon buckets (for making an expedient toilet and for general use

- ❑ Plastic trash bags (purchase several large 30 gallon rolls; you'll need them for human waste and other things such as disposing of contaminated items)
- ❑ Paper towels
- ❑ Matches
- ❑ Water filters if you have filtered well water
- ❑ Hand operated can opener
- ❑ Eating utensils, cups, plates and/or bowls
- ❑ Baking soda or Lime (preferably) to sprinkle over human waste before sealing. Baking soda can also be used in place of toothpaste.
- ❑ Small tool kit (pliers, cutters, knife, screwdriver, etc.
- ❑ Vitamin and mineral supplements
- ❑ Games/toys for the children
- ❑ Eyedropper and measuring spoons (down to 1/8 teaspoon)
- ❑ Eyeglasses
- ❑ Gasoline for your vehicle and generator/s

Note: Alkaline batteries have a much longer shelf life. Check the dates on them to ensure you get fresh ones. Rechargeable batteries are also an option, but keep in mind that you will require a source of electricity with which to recharge them. It is advisable to keep a full tank of gas in your car and to store quantities for your electric generator. Check with your local fire department to determine if there are any restrictions on storing gasoline in your area and/or proper storage instructions.

Do List:

- Listen to any and all public information sources. Determine what is best for you to do considering your particular situation.
- Rotate food, water, medicines, batteries and all other consumables on a regular basis to ensure freshness when needed.
- Practice your emergency procedures.
- Come up with alternate plans for when some family members are at work, school, etc.
- Include children and every one with special needs in the planning and practice drills.
- Give children and every one with special needs tasks during the emergency. Everyone needs to help, both to ensure safety, as well as the psychological benefit of doing something constructive.
- Prepare everything ahead of time, as every situation is different. Study, learn and practice.
- Do keep all the supplies packed in containers. You may need to evacuate and take them with you.

Section 9 Self-Test Questions

1. Should you involve children and the elderly in your emergency drills? Why?
2. What are the six most important items to have to survive an emergency?
3. What are six very important items to have available in order to survive an emergency?
4. How much water should you have on hand per person?
5. List foods appropriate for shelter use and storage.
6. How can you purify water?
7. List six heating alternatives.
8. What precautions must be taken for using these heating alternatives?
9. List six lighting alternatives.
10. Name some "Start-Up List" items.

Section 10 – Stress Management



Section 10- Stress Management

This section is an overview and does not represent detailed instructions on stress management as applicable to living in confined spaces and dealing with terrorist threats and/or attacks. It is recommended that you purchase a text that offers step-by-step procedures in stress management techniques (see recommended reading).

The last instructional section of this work is on stress management; last but certainly not least. The ability to alleviate stress during long hours and even days one spends in the confined space of a sealed room or shelter is as important as one's preparedness to initially survive a terrorist attack. Much has been written on stress reduction and relaxation but perhaps none address the topic with the simplicity and clarity given in "The Relaxation and Stress Reduction Workbook" by Martha Davis Ph.D., Elizabeth Robbins Eshelman M.S.W and Matthew McKay Ph.D. This concise study is a step by step guide to surviving the mental stressors experienced during every day life and are applicable even in catastrophic situations.

The individual and/or family that recognizes the importance of stress management are far ahead of those that place it near the end of their priority list when preparing for the worst.

In the event of a nuclear, biological or chemical terrorist attack we should be aware of the probability that we are going to be under a great deal of severe mental anguish going into our sealed rooms or shelters. Prudent preparation of what to do while waiting for the all clear or for a reasonably safe amount of time to elapse will determine our ability to function rationally once the time comes to leave them.

The objectives in this section are in keeping with the "keep it simple" theme that runs throughout the booklet. I will abbreviate the material given by mental health professionals and leave it to the reader to research and develop his or her own personal responses, methods and techniques to managing stress in a confined space. I will provide an overview while offering the reader a bulleted list whenever possible and add notations wherever necessary.

Assuming that you have done the pre-planning that has been suggested in previous sections, and have provisioned your sealed rooms and/or shelters, the next step is practice the procedures...you've heard that one before...practice them until your reactions become automatic. You may not be mentally prepared to begin learning what you need to know by flashlight or candle while tucked away in your space. The probabilities of your learning the proper techniques during this time are minimal if not totally impossible. One last resort method you might use is to have a relaxation tape on hand with a tape recorder and fresh batteries. It would be wise if you did this as a backup; sometimes people are unable to read and/or lack the ability to concentrate under extreme stress. In addition, you may want to do scenarios in which family members talk about how they plan to deal with specific stress problems that they think may effect them while restricted to the confines of the shelter. An individual may want to rehearse a daily routine of stress reducing practices tailored to their personal ideas of what may best work for them. Or, you may want to sit around a table and ask family members specific questions in regard to their personal program of stress management.

Lets begin with what some mental health professionals consider absolutely critical to stress management and relaxation:

Diet

Proper nutrition is essential to good mental health. Remember, you will need your full physical and mental capabilities when you emerge from you sealed room or shelter.

- Stock your shelters with a well planned and nutritious food supply
- Store up on special dietary items you may need
- Store a supply of daily vitamins and prescribed drugs
- Avoid sugar...an occasional treat or candy bar is fine but don't rely on energy surges from sugar
- Eat small, frequent meals rather than one or two large meals

Note: Ask your doctor to prescribe an extra supply of any psychotropic drugs you may be taking

Exercise

You will need to get rid of excess calories that build up from all the idle hours and days spent in your shelter. You can bring your body back in balance by working off calories and chemicals that are created from stress by exercising. Depending on the size of your shelter you may want to consider the following:

- Aerobic Exercise- With your doctor's permission it is suggested that you do 20 minutes of aerobic exercise 3-5 times a week.
- Stretching and Toning- If you use a crawl space you are probably going to cramp. A great form of exercise while in a confined space is isometrics.

Note: Stretching can be done at any time. Toning (Isometrics) requires specific sets of repetitions.

Warning: One should consult their health care provider before beginning any regimen of exercise in order to determine the type and extent that they are physically capable of doing. Family members should know the warning signs of over-exertion.

Breathing

Few of us realize the importance of proper breathing and few of us breathe properly. We leave it to our natural reflexes. Breathing can be an excellent way to relieve stress if one follows a few simple techniques:

- Abdominal Breathing (Belly Breathing) Abdominal breathing can really unload stress and can be practiced whenever anyone feels stress beginning to build up.
- Deep Breathing
- Breath Counting- A form of meditation
- The Sigh

Note: Individuals can become so proficient at breathing techniques that they can head off stress attacks by recognizing the symptoms and take action to relieve stress before it occurs.

Meditation

One can only imagine the myriad of negative and depressing thoughts brought on by something as distressing as a nuclear, biological and/or chemical terrorist attack and life in a confined space for a prolonged period of time.

Our minds are capable of a large number of thoughts at any given instant. Concentration requires that we focus on a certain thought. It is the nature of the mind to wander and go lose focus on the issue at hand. For example: The mind's ability to focus allows me to write this page, but if I sit back and ease off the pedal...I'm trout fishing in America and permitting brain chatter from a thousand different thoughts to take me even further off course.

Meditation is a learned practice of consciously training our mind to empty its garbage by focusing on one single thing or object. At first, meditating will take effort, but as the person begins to catch on to this great way to relieve stress, it becomes much easier. It is a good idea to develop a program that includes exercise before you meditate.

Meditation Enables You To:

- Lower your heart rate
- Breathing rate
- Oxygen consumption
- Blood lactate levels
- Lessen obsessive thinking, anxiety, depression and anger

Three Basic Types of Meditation:

- Mantra- Focus on a word or syllable
- Sitting- Focus on breathing
- Breath Counting- Count exhales

Note: Once the individual learns to meditate and let go of thoughts, life on the inside the shelter will be much more manageable. Remember that your mind can take you anywhere you want to go.

Your Thoughts Can Make You Sick

Quote: *Man is not disturbed by events, but by the view he takes of them.* —**Epictetus**

Who doesn't know that! Thoughts can be rational or irrational; positive or negative. It is the mental processes we apply in analyzing the situation at hand that determines the accuracy of our decision. It is the way we react to the way we talk to ourselves! For example, the negative thought "things will get worse" is far more mentally and physically upsetting than positive thought of "things will get better". Another example is, "we are all going to die" instead of "many of us will live". Negative thinking leads to poor physical and mental health. Fortunately, one can choose the mental processes they apply to any given situation and opt for the better choice...the trick is to recognize the option! If one tends to absolutize or finalize a condition, the probability of rational thinking is minimized. It is the old "garbage in garbage out" scenario. Making the "worst possible thing that can happen" case of the situation is a classic example of negativity...things may get worse but they are going to change for the better!

If we learn to process our thoughts while talking to ourselves in a rational manner, we will be far better prepared to cope with any crisis associated with a terrorist threat and /or attack and will be able to think during extreme moments.

Identifying Unhealthy Worry and Re-channeling Our Energies

There are basically two types of worry:

- Healthy (problem solving)
- Unhealthy (what if)

The skill desired is to be able to recognize unhealthy " what if" worry and re-channel it into a problem solving ability. As we have learned, negative thoughts have negative impact and serve little purpose in resolving anything. So does unhealthy worry. An example of applied stress management skills can be demonstrated in the following comments:

"We are not going to live" (negative thought) and "I worry about how long it will take for us to die once we're out of this shelter" (unhealthy worry).

Now lets approach the matter using stress management techniques... "We have survived this long and must be doing something right (reinforced positive thinking) therefore we must continue to practice our survival skills once outside the shelter...lets study!" And therein, lies the problem solving approach to the situation.

Stress & Children

Keep in mind that even the youngest of children feel the effects of "something bad happening." They sense the fear of their parents or other caregivers. Preschoolers & early grade age children most often exhibit regressive behaviors and somatic physical complaints. A return to bed-wetting, thumb-sucking, whining, clinging, stomachaches & headaches may appear at a time when the primary caregiver can least cope with any additional stressors. Keeping this in mind, adults can anticipate these symptoms of emotional overload in children, and provide them with the extra attention and reassurance that they are craving. Honest reassurance is the best policy. Adults should avoid explicit discussions regarding details of the disaster & answer children's questions about it in the simplest terms. The children may request clarification or expansion of an explanation. Keep it simple!

Make sure to have small toys in your ready kits, both new ones that will hold attention, as well as old favorites that are comforting. Decks of cards, small hand-held games, play-doh, crayons & paper, a few matchbox-sized cars, & dolls with changes of clothing are some examples of manageable toys.

Adolescents are prone to feelings of rage, a need for revenge, anger, bravado, acting out against authority, worrying about the changed world they will be a part of after the incident, and blaming themselves, even if they are geographically far away from the incident. Allow them to verbalize their fear in an appropriate manner by sharing your initial fears, but follow up by reassuring them that everything possible is being done to ensure a safe environment for them. Keep board games, such as a multiple-use board for chess, checkers & the like in your sealed room area...Hand-held electronic games (with extra batteries) are a good way for teens to vent their frustrations at events they cannot control, as well as serving to take their minds off things.

Stress & Pre-Existing Illnesses

Diabetics: Both insulin & non-insulin dependent diabetics will encounter wider ranges of both high & low glucose readings due to the stress of a disaster...Make sure to have extra batteries, glucose strips, glucose tablets, & lancets in your ready kit, as you will need to be checking your glucose levels on a more frequent basis until they return to a pre-disaster level.

Cardiac: People who occasionally require nitroglycerin tablets to treat angina, should have extra on hand in case of a disaster. However, the nitroglycerin **MUST** remain in an opaque (amber) container to remain stable...This drug does not last as long as most prescription medication and the expiration date needs to be checked in your ready kit more frequently than other supplies. Have someone who shares your sealed room and/or shelter with you keep track of how many nitro you are using, as stress may cause you to take more than what you should be safely using.

Respiratory: The relaxation tips previously mentioned in this guide are of utmost importance to those suffering from respiratory ailments...Have extra inhalers, nebulizer treatments, and oxygen cannulas on hand...As with those with cardiac conditions, have someone who is with you monitor your inhaler use, as you may be over-using it under stress, therefore further complicating your illness, and putting you at higher risk of complications.

Note: You should consult with your physician about obtaining an extra supply of vital medicines and keep them up-dated. Know the shelf life (how long they are usable) of all your medications.

Test Drive Your New Skills

Ensure your families preparedness to cope with stress in your sealed room and/or shelter.

- Hold a family meeting at which you imagine an attack.

- Choose 3 of the most important things that they would want to have with them in the shelter...consider pets.
- Test drive your shelter...actually seal your room and/ or spend some time in your shelter.

Practice the procedures you learn on stress management techniques from whatever text you choose; they provide you with the ability to cope. Practice the procedures and techniques you have learned in the previous sections of this booklet; they provide you with the skills to survive. Your self-confidence will be increased, and with it, your chances of survival.

Section 10 Self-Test Questions

1. Why is the proper diet important while in your shelter?
2. One should have plenty of candy on hand for instant energy (Why or why not?)
3. What should you do before determining a regimen of exercise while in your sealed room and/or shelter?
4. Name three types of breathing exercise?
5. Name three things that meditation enables you to do?
6. Name two types of worry?
7. Give an example of each type of worry while using a terrorist attack scenario.
8. Give some examples of stress indicators in young children and adolescents.
9. What are three pre existing illnesses that stress may further complicate?
10. Shelf life is not important, my doctor probably won't prescribe an extra supply of medication anyway. (True or False)

Section 11 – List of Suppliers

List of Suppliers

Absorbents (for your Decon kit)

Fullers Earth Powder

For: Skin Decontamination

Distributor: MediChest 25 Van Zandt St. Suite 1A-1 Rear East Norwalk Ct. 06885 Tele: (203) 854-0606
email: sales@medichest.com website: www.medichest.com

Fullers Earth Powder

For: Skin Decontamination

Distributor: Monterey Bay Spice Company 719 Swift St. Suite 106 Santa Cruz, CA. 95060 Tele: 1-800-500-6148
website: www.herbco.com/goto.html

Bentonite (Fuller's Earth) is also available (in 50 and/or 100 pound bags) from well drilling outfits (oil well and water well). It is also used as a pond sealer and can often be purchased from local Farm & Ranch supply outlets. Golf courses also often use it to seal the ground for water traps. Golfers might be able to finagle a supply from their local golf course if the grounds keeper uses it.

Air Filtration Supplies

You may find the products necessary for making your own air filtration system at the below supply houses or a local heating and air conditioning supplier).

Warning: We make no claims other than what the manufacturer list as the maximum micron removal capability on each specific product. The agent used may be refined above the micron removal capability of the filters. Check the micron removal capabilities on the product or package.

McMaster-Carr

Mail: PO Box 54960 Los Angeles, CA 90054-0960

Sales & Customer Service: 562-692-5911

Ventas y Servicio: 562-695-0677

FAX: 562.695.2323

website:Internet: www.mcmaster.com

HEPA Vacuum Cleaners:

For list of distributors in you area call 1-800-NILFISK

Airguard Industries, Inc.

For: HEPA Filters

Distributor: Airguard Industries, Inc. PO Box 32578 Louisville, KY 40232-2578 Tele: (502) 969-2304

HEPA Vacuum Cleaners:

Note: Many local stores sell various name brand vacuums with HEPA filters. In order for these to work as described in the section on the "Israeli Vacuum Cleaner Trick" they must have a hose attachment on the discharge side of the filter. All openings and seams must be sealed so as to prevent leakage of contaminated air.

There are other vacuums that can use HEPA filters! They are very reasonably priced...make sure they are fully sealed and won't pull contaminated air from around the suction, discharge or inside the machine.

Chemicals

The Science Alliance

The Science Alliance 1920 Treble Drive Suite J1 Humble, TX. 77338 Tele: (281) 540-3115 website:
www.sciencealliance.com

Callery Chemicals

For: Chemicals

Distributor: Callery Chemicals 1420 Mars-Evans City Road Evans, PA. 16033 Tele: (412) 967-4141

Email: callery.info@msanet.com

Spectrum Chemical

Customer Service: 1-800-772-8786

<http://chem.com/directory/>

sales@spectrumchemical.com

On Line directory of 500 chemical companies

<http://chem.com/directory/>

Diet Scales (local health food stores):

Precision Weighing Balances

10 Peabody Street

Bradford, MA 01835-7614

Orders Only: 800-881-9570

Manufactures of Blast and Fallout Shelters

The Hive

P.O. Box 223

Cedar Ridge, CA 95924

530-272-4574

FAX 530-274-2907

thehive@jps.net

<http://www.psyber.com/biz/thehive/pricing.html>

Kleen Air Technologies, Inc.

P.O. Box 4145

Frisco, CO 80443

(970) 668-0219

katinc@amigo.net

<http://www.undergroundshelter.com/>

Radius Defense

222 Blakes Hill Road, Northwood NH 03261

Tel. 603.942.5040

Fax. 603.942.5070

radius@worldpath.net

<http://www.radius-defense.com/>

Safe-Trek Outfitters
90 Safe-Trek Place
Bozeman, MT 59715
1-800-424-7870

Shalbi Industries, Ltd.
48 Ruhama St. Ramat Gan
Israel
972-3-6741476
972-3-6772781
shalbi@internet-zahav.net www.shalbi.co.il

Shelters Direct
10756 Rhode Island Ave.
Beltsville, MD 20705
1-800-865-5555
Fax: 301-595-3090
<http://www.sheltersdirect.com/>

Utah Shelter Systems
P.O. Box 638
Heber, Utah 84032-0638
(435) 657-2641 or (801) 280-8303
spacker@netoriginals.com
http://www.netoriginals.com/uss/contact_ordering.html

Home Medicinal Remedies

Warning: The following alternative medicines are said to be not harmful if taken as directed. However, please contact your doctor or pharmacist before using. NBC Warfare Survival Training Group assumes no responsibility for illnesses or death occurring from the use of the below drugs and chemicals. The below products are a compilation of material gathered from various texts on the subject of NBC Warfare Survival.

Potassium Iodide
For: Radiation sickness
Distributor: KI4U 212 Oil Patch Lane Gonzales, Texas 78629
www.ki4u.com
www.RadMeters4u.com
www.RadShelters4u.com

Note: This supplier offers an extensive line of other survival products.

Potassium Iodide
For: Radiation sickness.
Distributor: B&A Products Rte 1 Box 100 Bunch, OK 74931-9705 (918) 696-5998

Note: This supplier also has the Kearny Radiation Meter Kit and an extensive line of other survival products.

Beta 1,3/1,6 glucan
For: Immune system boost
Distributor: National Supply Corp 3107 North Deer Run Rd., Ste. 14A Carson City, Nevada 89701
Telephone: 1-888 246-7224 ext 222

Stabilized Oxygen

For: immune system boost and adding to drinking water to kill harmful bacteria.

Distributor: Lets Talk Health Dept 22753 1229 3rd Ave., Suite C Chula Vista, CA 91911

Telephone: 1-800-359-6547

Thieves and Lavender Oil

For: Plague

Distributor: Young Living Essential Oils

250 South Main Street Payson, Utah 84651 Telephone 1-800-763-9963

Colloidal Silver

For: Biological pathogens...natural antibiotic

Distributor: Quality Silver 3964 South Mariposa Englewood, CO. 80110

Telephone: (303) 781-0442

Note: Company offers inexpensive kit for making your own at pennies per gallon.

Penicillin -vk and Doxycycline

For: Antibiotic

Distributor: IAS, LTD PO Box 337 GY1 Channel Islands, Great Britain Telephone: 011-44-541-514144

Terramycin Soluble Powder

For: Antibiotic

Distributor: Look for it at Farmers Markets and feed stores.

(see **Diet Scale** in this list for measuring instrument)

Note: The product is labeled "Not for human consumption" Pfizer has stated to an undisclosed source stated that it is identical to the terramycin they sell to drugstores (see warnings in medical alternatives).

BioRadDefense ASAP and Disposable Mask

For: Antibiotic and Inhalation Protection

Distributor: The American Civil Defense Assoc. PO Box 1057 118 Court Street Starke, FL. 32091

Tele: 1-800-425-5397 email: defense@tacda.org website: www.tacda.org

Hobes Instant Hand Stabilizer

For: Personal hygiene (antibacterial)

The Vitamin Shop 4700 Westside Ave. North Bergen, NJ 07047 Tele: 1-800-223-1216

Note: Any anti-bacterial soap will suffice.

Manufacturers of Meters and Dosimeters

KI4U, 212 Oil Patch Lane Gonzales, Texas 78629

www.RadMeters4u.com

Kearny Fallout Meter (KFM)

B&A Products

Distributor: B&A Products Rte 1 Box 100 Bunch, OK 74931-9705 Tele: (918) 696-5998

website: www.baproducts.com email: byron@baproducts.com

This supplier carries a wide variety of survival gear and emergency response equipment.

Arrow-Tech

417 Main Ave. West

P.O. Box 1240

Rolla, ND 58367-1240

Phone: 701-477-6461

Fax: 701-477-6464

info@arrowt.com

<http://www.arrowt.com/chargers.htm>

Dosimeter Corporation of America/Artisan Electronics Corp.
5 EASTMANS ROAD
PARSIPPANY, NJ 07054
800-322-8258
<http://www.dosimeter.com/>

Harwell Dosimeters Ltd.
Becquerel Avenue, HARWELL International Business Centre,
DIDCOT, Oxfordshire OX11 0RA, United Kingdom
+44 (0)1235 435704
FAX: +44 (0)1235 436313 email: dosimeters@harwell-dosimeters.co.uk

NDS Products
111 Anderson St.
Pasadena, TX 77506
800-413-4750
FAX: 713-477-6741
info@ndsproducts.com
<http://www.ndsproducts.com/>

Safety and Security Instruments
16701 West Bernardo Drive
San Diego, CA 92127
800-962-1632
Fax: 58-826-9718
securityproducts@saic.com
<http://www.ssio.saic.com/>

Spechtgasse 32, A-2340
Moedling, Austria
phone +43-2236-410450
fax +43-2236-410459
<http://www.elimpex.com/indexv.htm>

Technika
4757 East Greenway Road #103-177
Phoenix, AZ 85032 Tele: 480-348-0278 Fax: 480-348-0279 email: prime@technika.com
<http://www.technika.com/radidx1.htm>

Personal Protective Equipment (PPE) Disposable Mask, Mask, Suits, Gloves and Boots etc.

Approved Gas Mask
For: PPE and **childrens and infants suits and mask**
Box 9509
San Diego, CA 92169
Toll-Free Telephone: 1-(877)-AGM-1010
website: <http://www.approvedgasmasks.com> email: sales@approvedgasmasks.com

B&A Products Disposable Mask
For: PPE and line of related products
Distributor: B&A Products Rte 1 Box 100 Bunch, OK 74931-9705 Tele: (918) 696-5998
website: www.baproducts.com email: byron@baproducts.com

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PO BOX 100001

1025 Cobb International Drive NW Ste. 100
Kennesaw, GA 30156-9217 1-800-228-7344
<http://www.actiongear.com/>

Defcon Tech
For: PPE and related supplies
Distributor: Defcon Tech
website: www.defcontech.com email: sales@defcontech.com

DuPont Personal Protective Equipment
1-877-797-5907
www.dupontprotectiveapprl.com

Fisher Scientific
For PPE and a full line of related quality products including skin decontaminants\
3970 JOHNS CREEK CT, STE 500,
SUWANEE, GA 30024. Tele: 1-800-766-7000 www.fishersci.com

MSA Products
For: Many items of personal protective gear, mask, suits etc.
Distributors: MSA International PO Box 426 Pittsburgh, PA. 15230 Tele: 1-800-MSA-2222

NBC Protect
For: PPE (many high quality items)
Distributor: NBC Protect
website: www.nbcprotect.com Tele: 1-800-296-9898

Nitro-Pak
For: PPE
Distributor: Nitro-Pak 151 N. Main St. Herber, Utah 84032 Tele: 1-800-866-4876

Survive America
For:PPE
Survive America
4100 US 45 N Bruce Crossing, Michigan 49912
Tele: (906)827-3600
website: www.surviveamerica.com email: sales@surviveamerica.com

Other Distributors of Safety Gear

5 Star Safety
4 North 240 Calvary
Bloomington, IL 60108 Tele: 847-351-3080

A 1 Safety
374 Centre Street
Middleboro, MA 02346 Tele: 508-946-0073

Accurate Safety Distributors Inc.
10320 N Thor Dr
Freeland, MI 48623 Tele:517-695-6446

All Safety & Supply Inc
1840 Suntide Rd
Corpus Christi, TX 78410 Tele: 512-265-9613

Brenton Safety
242 Shaw Road
S. San Francisco, CA 94080 Tele 1-800-733-4333
<http://www.brentonsafety.com/>

General Laboratory Supply
438 Pompton Rd
Wayne, NJ 07470 Tele: 973-956-9292
Fax: 973-595-8445

General Safety Equipment
PO Box 909
Niagara Falls, NY 14109 Tele: 716-297-9922

Lab Safety Supply Inc
401 S Wright Rd
Janesville, WI 53547-1368 Tele: 608-757-4805

Marfred Industries
12708 Branford Street
Pacoima, CA 91353
Tele: 1-800-529-5156 <http://www.marfred.com/>

Marmac
P.O. Box 278
McBee, SC 29101 Tele: 1-800-845-6962
<http://www.marmac.com/c.htm>

Note: If you buy a surplus military grade mask make sure both the mask and the filters are still serviceable. Most military surplus supply houses are now offering a line of mask and suits as well as other related PPE gear. If you use one of these suppliers make sure they offer new gear, many air filtration canisters (they go on your mask) are outdated. In addition, you must have more than one replacement filter for your mask because they need to be changed periodically. If you are in an area that is heavily contaminated your filter won't last nearly as long as it would if you were some distance away.

Note: Most local hardware stores carry a line of safety products that can be used as protective clothing and mask that are affordable to the general public. Whereas they are not the best out there, they may offer some form of protection.

References, Reading Material and Recommended Websites

References

21st Century Complete Guide to Bioterrorism, Biological and Chemical Weapons, Germs and Germ Warfare, Nuclear and Radiation Terrorism ISBN1-931828-09-01

Numerous Military Training Manuals included in above reference.

Bioterrorism Secrets for Survival by Duncan Long

Nuclear War Survival Skills by Cresson Kearny

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The Complete Disaster Home Preparation Guide Robert A. Roskind

11 Steps to Survival Canada Emergency Measures Organization

Department of National Defense Blueprint for Survival No. 4. Although protected by Crown Copyright, the contents may be reproduced in whole or in part provided proper acknowledgment of the source is made.

The Relaxation and Stress Reduction Workbook (Fifth Edition) by Martha Davis, Ph.D. - Elizabeth Robbins Eshelman, MSW and Matthew McKay, Ph.D. Published by New Harbinger Publications, Inc.

FEMA Instruction on Sealed Rooms

Recommended Reading

Bioterrorism Secrets for Survival by Duncan Long

B&A Products Rte 1 Box 100 Bunch, OK 74931-9705 (918) 696-5998

Chemical and Biological Warfare by Eric Croddy

Nuclear War Survival Skills by Cresson Kearny

Oregon Institute of Science and Medicine PO Box 1279 Cave Junction, Oregon 97523 (541) 592-4142

The Complete Disaster Home Preparation Guide by Robert A. Roskind

Beginners Guide to Family Preparedness by Rosalie Mason

US Army Special Forces Medical Handbook 31-91B, US Army Institute
by Lyle Stuart

Where There Is No Doctor by David Werner

The Relaxation and Stress Reduction Workbook (Fifth Edition) by Martha Davis, Ph.D. - Elizabeth Robbins Eshelman, MSW and Matthew McKay, Ph.D. Published by New Harbinger Publications, Inc.

Federal Organization

Fema

500C Street

Washington, DC 20472

1-800-238-3358

Recommended Survival Websites

Live Free International <http://www.livefree.net/index.html>

Oregon Institute of Science and Medicine <http://www.oism.org>

Duncan Long, author Bioterrorism Secrets for Survival <http://www.duncanlong.com>

The United American Civil Taskforce owned by Barry Pagliaroli www.uact4t.com

The American Civil Defense Association <http://www.tacda.org>

The Presidents' Citizen Corps <http://www.citizencorps.gov>

Medical Information

Medical Society of the State of New York www.mssny.org

Association for Infection Control Practitioners www.apic.org/bioterror

American College of Physicians www.acponline.org/bioterror/

Infectious Disease Society of America www.idsociety.org

Johns Hopkins Center for Civilian Biodefense www.hopkinsbiodefense.org/faq.html

US Army Medical Research Institute of Infectious Diseases
www.usamriid.army.mil/education/bluebook.html

News and Terrorist Information Site

Soldiers for the Truth (Col. David Hackworth)
<http://www.sftt.org>



Fred Lane served in the United States Navy from 1963-1970, specializing in Damage Control and NBC Warfare aboard the world's first nuclear powered guided missile cruiser, the USS Long Beach CGN-9 and saw duty in the South China Sea during the Vietnam War. He is retired from the Department of Defense with experience in four disciplines: explosive, marine, transportation and industrial safety. Recognizing that official institutions and emergency preparedness authorities were not immediately addressing public training and homeland civil defense measures, Lane began work on the ABC's of NBC Warfare Survival shortly after the terrorist attacks on 9/11/01.

A generalized public knowledge of the practices and procedures for surviving a nuclear, biological, and/or chemical attack is absolutely critical to combating and surviving any terrorist event that employs the use of weapons of mass destruction. The ABC's of NBC Warfare Survival addresses survival techniques in regard to all three categories. Written in concise, simple, and comprehensive language, his work eliminates the need for extensive research by the reader and condenses volumes of material on each subject into a bottom line, no frills text.

An avid sportsman, Mr. Lane's hobbies include deep sea fishing, sailing, downhill and cross-country skiing. In addition, he is a historical researcher, amateur genealogist and is currently working on a historical fiction about the life and times of his Revolutionary War era grandfather. Now residing in upstate NY, he is active in community affairs and is a Citizens Corps Councilman, advocate, and volunteer. Realizing the importance of a unified and educated general population, he encourages all citizens to demonstrate patriotism through participation in any of the numerous programs now being offered in communities throughout America.

Official website: www.survive-nbc.org