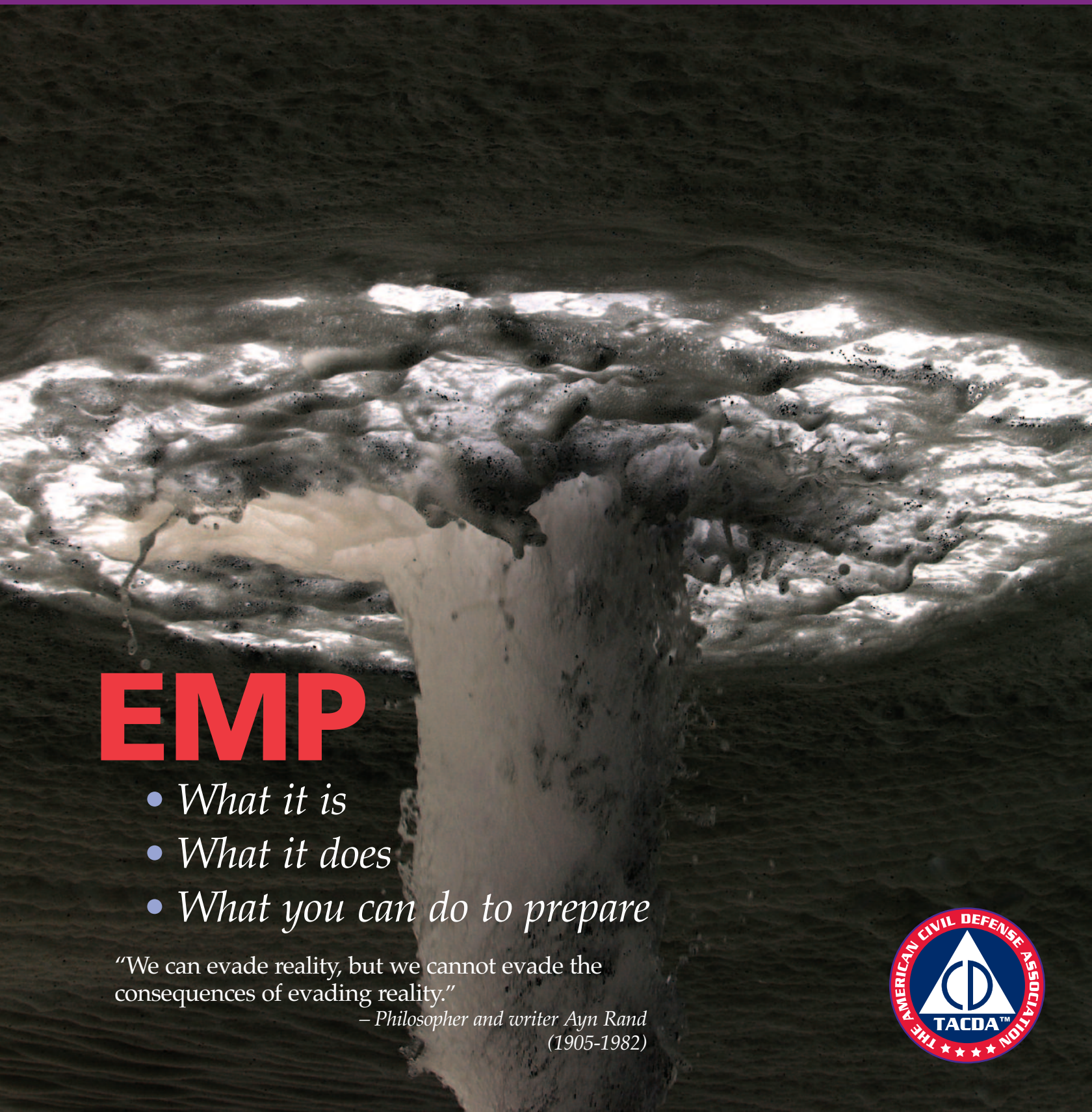
JOURNAL OF

Civil DEFENSE

VOLUME 42 4TH QUARTER | 2009



EMP

- *What it is*
- *What it does*
- *What you can do to prepare*

"We can evade reality, but we cannot evade the consequences of evading reality."

– Philosopher and writer Ayn Rand (1905-1982)

THE AMERICAN CIVIL DEFENSE ASSOCIATION
TACDA™

Protecting your family,

your possessions, and your confidentiality is our #1 priority

- Custom built shelters
- Gun safes and vaults
- Articles and videos
- Hidden passageways
- Safe rooms
- Gun vaults
- Panic rooms
- Wine cellars
- Nuclear bomb shelters
- Emergency supplies
- Fire proof and custom designed

NWSS
NORTHWEST SHELTER SYSTEMS

Articles, videos and more at
northwestsheltersystems.com

1(208) 263-6027

Questions? Ask an expert.
sales@northwestsheltersystems.com




IN THIS ISSUE

TACDA
11576 South State Street, Suite 502
Draper, UT 84020
www.tacda.org
info@tacda.org
Office: (800) 425-5397
Fax: (888) 425-5339

ISSN# 0740-5537

PRESIDENT'S MESSAGE

The Middle East continues to prove troublesome. The following is an update to my article in the previous *Journal of Civil Defense:*

YEMEN: The under reported war in Yemen continues, and the fighting has both escalated and expanded, briefly crossing the border into Saudi Arabia. Both Jordan and Saudi Arabia have troops on the ground in Yemen supporting the Yemeni government. Egypt and the United States continues in a supporting role. The U.S. has increased military aid significantly. The strategic location of Yemen cannot be understated; it is vital to the stability of the region.

PAKISTAN – INDIA: On Jan. 13, 2010 Pakistan expressed concern over a "massive" arms buildup by India. They warned this could destabilize the regional balance of power. Pakistan also warned it refused to be "oblivious" to this buildup. Tension between India and Pakistan has been at a high level since the Mumbai terror attack in late 2008. India blamed the attacks on militants based in Pakistan. They have fought three wars since 1947. Now that they are both nuclear powers the stakes are much higher.

Please continue to help family and friends prepare for potential disaster situations. We are a wealthy country. Most people in the U.S., unlike Haiti, could store a few weeks' supply of food and water. This is a minimum requirement, but could make a huge difference to survival in localized disasters.

Remember, if there is a major disaster or wide spread terrorism we may be on our own for weeks, if not months. It is crucial that we continue to prepare and add to our food and water storage capabilities.

Always pray for the best, but prepare for the worst.

William David Perkins
President, TACDA
Email: kd4fjl@aol.com

FROM THE **EDITOR**

Please accept our apologies for the tardiness of this journal issue. We have had a major computer failure, and it has taken us a while to restore the information and programs necessary to complete this journal.

We have had numerous requests for more information on EMP. This issue includes several articles on the recognition, preparation and protective procedures for EMP. It also includes information for hardening our home shelters and equipment against this effect.

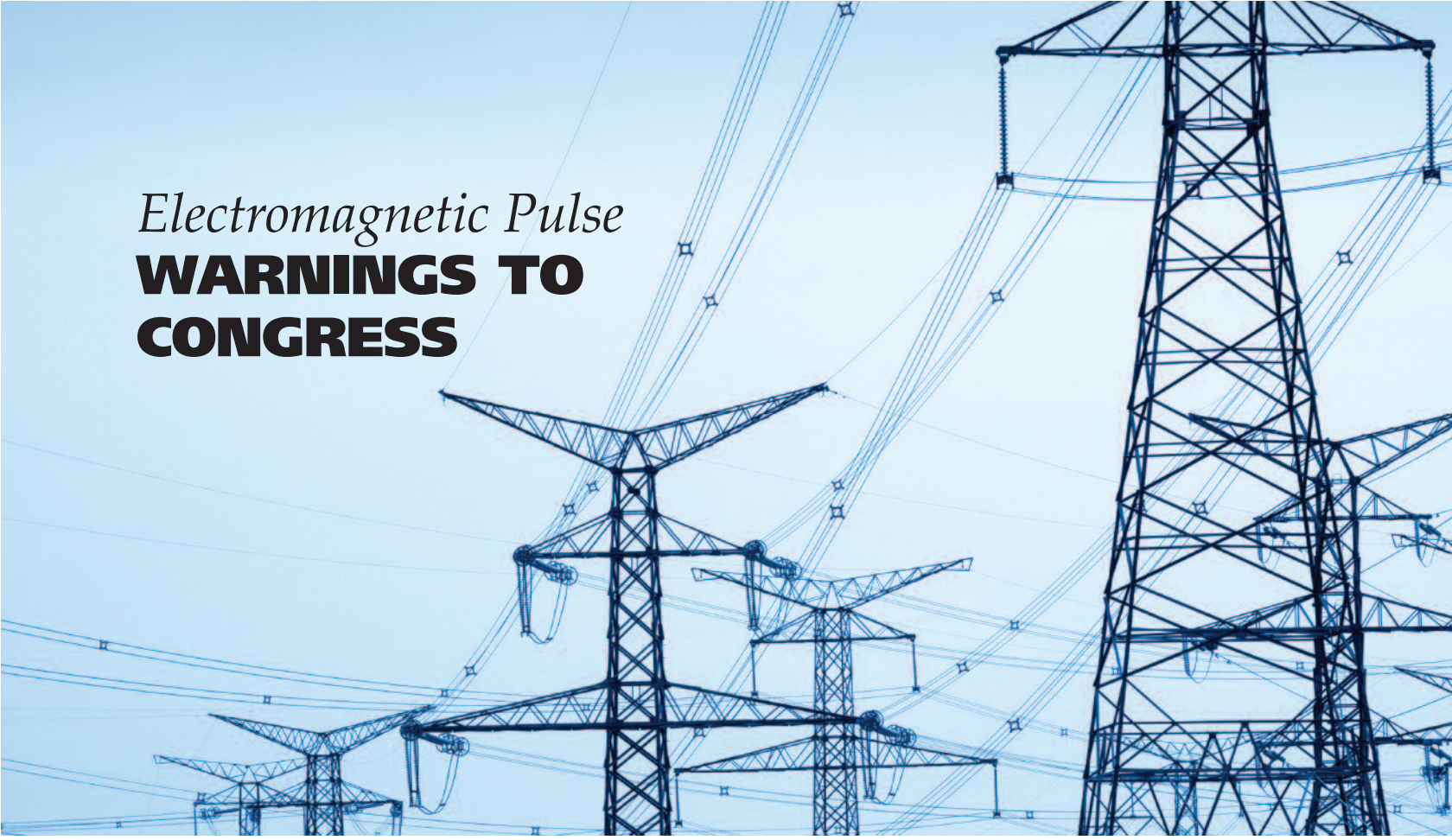
Our next issue is almost ready and will follow within a month in order to bring us current. It will cover a slightly different threat. Few people are aware that a severe geomagnetic storm could cause all the same effects to our economy and infrastructure as those of a high altitude nuclear EMP. This coming journal will feature an article by Bron Cikots, on the societal and economic effects associated with such an event.

Thank you for your telephone inquiries and emails. If you have suggestions for upcoming articles, please let us know.

We appreciate all the well wishes and prayers for the recovery of our friend and TACDA advisor, Paul Seyfried. He is now home and recovering from a successful heart surgery.

Best Regards,

Sharon Packer
Editor,
Journal of Civil Defense



Electromagnetic Pulse WARNINGS TO CONGRESS

In a 2008 briefing to the House Armed Services Committee, a congressional commission reported that "EMP is one of a small number of threats that can hold at risk the continued existence of civil society within the United States, and our ability to maintain national security and project military power anywhere it is needed . . . This threat also places our national economy and worldwide military forces at risk." Another distinguished scientist, Lowell Wood, said, "An electromagnetic pulse attack on the American homeland, is one of only a few ways that the United States could be defeated by its enemies– terrorist or otherwise, and it is probably the easiest." The report stated, "The loss of power beyond emergency power supplies may well cripple financial systems, telecommunication, health care, emergency response, government control, water and food supplies and other critical societal functions–a potentially escalating rather than diminishing situation."

The commission warned that a blackout of the power grid would be "virtually certain" following such an attack. Moreover, the briefing states, the panel predicted a "high proportion of computers" and other systems would be affected; major telecommunications would be interrupted; many high-frequency, VHF and UHF receivers would be damaged; and cell phone, satellite and Internet communications would be hindered.

Other infrastructure impacts could include damage to fuel supply and refineries, the transportation system, water supply and sanitation, chemical plants, financial systems, health care, emergency response and "government integrity."

After the briefing, Senator Jon Kyl reported, "Few if any people would die right away. But the loss of power would have a cascading effect on all aspects of U.S. society. Communication would be largely impossible. Lack of refrigeration would leave food rotting in warehouses, exacerbated by a lack of transportation as those vehicles still working simply ran out of gas (which is pumped by electricity). The inability to sanitize and distribute water would quickly threaten public health, not to mention the safety of anyone in the path of the inevitable fires, which would rage unchecked. And as we have seen in areas of natural and other disasters, such circumstances often result in a fairly rapid breakdown of social order … Not only would there be nobody nearby to help, it could take years to replace destroyed equipment."

As reported by NewsMax 9/9/09):
Dr. Peter Vincent Pry, staff member of the Congressional Commission to Assess the Threat, told reporters at Newsmax, that for a mere $200 to $400 million the government could protect most all of our transformers, which are key elements to the function of our power grid. Dr. Pry said it is scandalous that the congress has not spent this relatively small sum to protect our country's technological infrastructure.

The entire congress was warned about the danger of an EMP attack by this 2008 Subcommittee report. No action by the congress, as yet, has been taken to fund the protection of our power grid. Dr. Jane Orient, in her Civil Defense Perspectives newsletter (vol. 25, #6) has appealed to us to contact our elected representatives concerning this problem. We, at TACDA, add our sense of urgency to hers, and ask each of our TACDA members to act on this appeal.

Recognizing EMP

by Chuck Fenwick

How will I know there has been an EMP? Imagine sitting in a room when suddenly the lights go out. You step out on your front porch and the lights on the whole block are dark. Your LED flashlight doesn't work, so you assume your batteries are dead. You strike a match and look for a candle and finally light one of those decorative candles that smell like lilacs. You decide that you should call the power company, but the phone line is dead. Your laptop is battery powered so you assume you can contact the phone company via Internet. The laptop won't turn on! One of the children reports that they had noticed sparks coming from the electrical outlets in the wall. What in the world is going on? Maybe it's time to drive down the few blocks to the fire station, but the car doesn't start. The car lights work, but that is all.

This is how the EMP begins - with a whimper. The initial force takes out most of the solid-state electronics. Following that, the tremendous energy created in the grid will take a half hour or more to dissipate. Most likely, none of your appliances or devices will ever work again. None of the testing equipment will work either, so even if spare parts were available, diagnosing the problem and making repairs will be next to impossible.

Realizing things could become quite dangerous in the neighborhood you decide to load your pistol--just in case. You keep your medicines, important papers, pistol and extra money in a small safe in the bedroom closet. Just when you thought things couldn't get any worse, you discover that the digital lock on the safe doesn't work. It suddenly dawns on you that what is happening is something you read about a couple of years ago -- There has been an electromagnetic pulse! And if this is a high altitude EMP, most everyone in the United States will be having the same, exasperating experiences!

Depending on who sponsored the attack there are two distinct scenarios that we should consider: The electromagnetic pulse could be a precursor for an all out nuclear attack; or, the EMP could be an isolated incident with no further attack, followed by months of social upheaval and starvation. In either event we would have no power, communication or transportation for what may seem like a lifetime and there is very little we could do about it--after the fact.

Nuclear EMP was first recognized during high altitude bomb tests (code

Photo by iStockphoto

named Starfish) by the United States in 1962. Over 800 miles away in Hawaii, lights failed from the electromagnetic overload of the bomb test. In 1962 our electrical system and electrical powered devices were quite robust and not easily damaged. Since that time virtually all electrical systems are built with printed circuitry and controlled by computers. Printed circuits and computers are the more fragile of electrical components and systems. Any nuclear detonation today would destroy most all critical components in devices and computers now being used outside the military.

EMP causes long runs of wiring, such as in a building or house, to produce additional electricity, which is then added to the electricity already running through these wires. This extra electricity can destroy unprotected circuits in electronic equipment. This includes the wiring and circuitry in computers, radios, televisions, telephones, cars and other devices. This means that a television or computer or radio which is plugged into a socket will have the normal 120 volts, plus hundreds or even thousands more running through the device. The longer the wire, the higher the voltage produced. The huge high-tension electrical lines which run along through the countryside will generate multiple thousands of extra volts which will overload every smaller electrical line, device and transformer in its path.

Nuclear EMP Attack Scenarios: Most references on the EMP pulse scenario show U.S. map graphs with a central point above Kansas and ever widening circles depicting the expected damage from a nuclear weapon exploded high above the continent. The graph map normally shows the area affected by the pulse from one bomb. In reality, it is very unlikely that any enemy nation would use only one bomb. Strategically, three or more weapons detonated at lower altitudes would be used to produce overlapping pulses, to assure as much destruction of our entire grid as possible.

Knowing that the Soviet Union had already conducted high-altitude tests, it became apparent that a high altitude EMP would become a strategic centerpiece in nuclear war-simulations. Several of the scenarios of a Soviet first strike against the United States began with what was called an EMP 'lay-down'. A lay-down is produced by exploding a comparatively small figure of nuclear weapons at high altitude over the continental U.S. The outcome for the typical American civilian will be catastrophic. Following a successful attack many authorities believe there would be as many as one-hundred million fatalities within the first year following the attack.

The purpose for such an attack would be to cause widespread damage to military electronic and electrical systems, thus hindering our ability to retaliate. HEMP would cause even greater damage to civilian systems, which are not hardened to the same extent as the military systems. The lay-down EMP attack would likely be followed by a nuclear weapons ground attack. Recently, some U.S. officials considered a smaller-scale EMP lay-down attack on Iraq during the 1990 Gulf War.

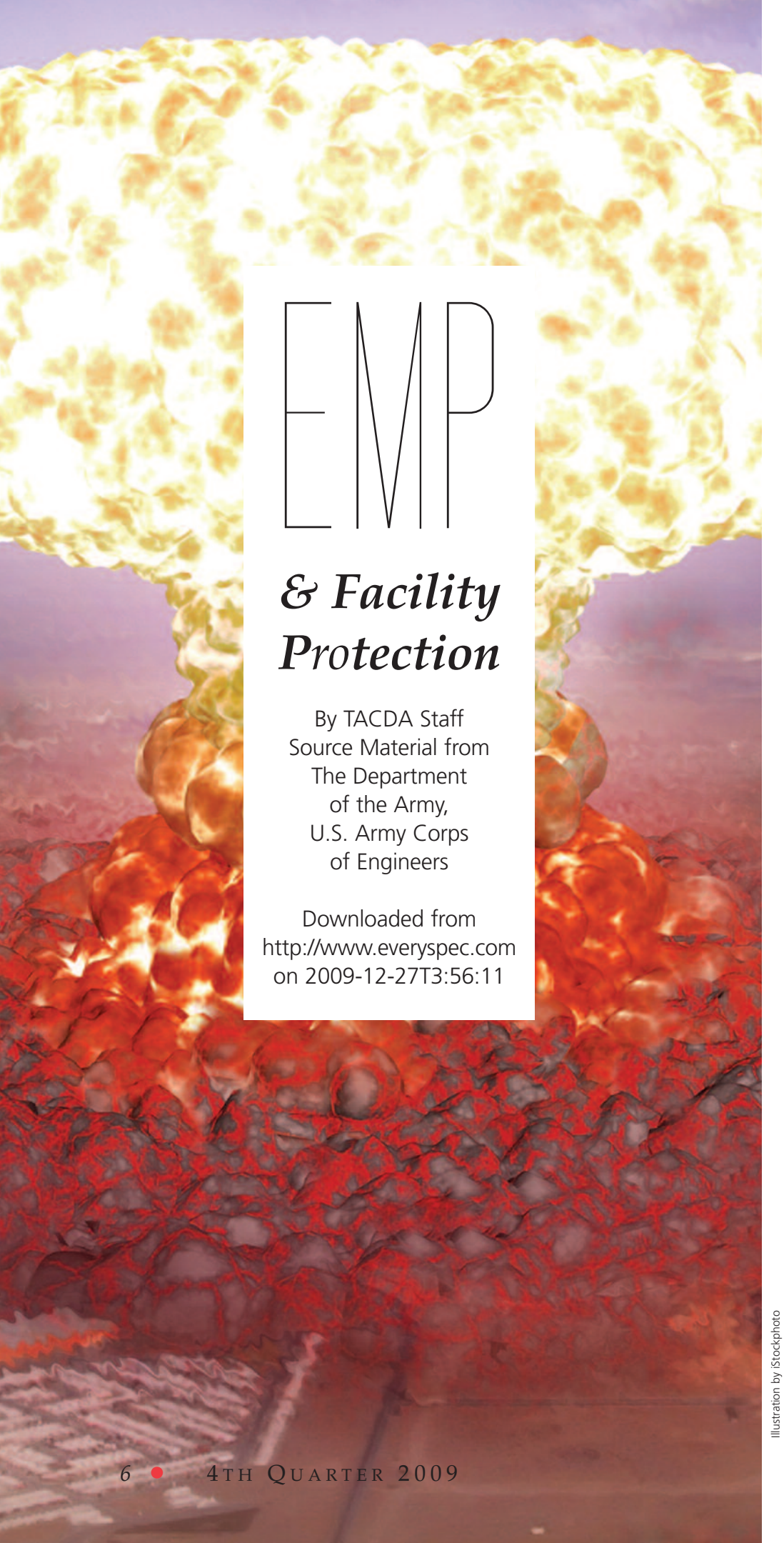
What is a Geomagnetic generated EMP? Solar storms often disrupt communications, but a significant storm, especially in the northern latitudes can produce a tremendous amount of damage. In 1972, a 230,000-volt transformer belonging to the British Columbia Hydroelectric Authority exploded when rapidly shifting magnetic fields caused by solar weather induced excessive current in the grid.

On March 13, 1989, millions of homes and businesses were plunged into darkness when a solar storm (geomagnetic storm) caused a blackout in Quebec.

Solar flares do not always cause geomagnetic storms. Geomagnetic storms are associated with solar flares, but only occur when the sun also produces huge clouds of plasma and their associated magnetic fields called "coronal mass ejections" or CME. In 1859, during a very mild solar cycle (very much like the one we are presently experiencing), a huge geomagnetic flare with CME was so intense that it caused fires in telegraph offices. A recent report by the National Academy of Sciences found that if a similar storm occurred today, it could cause $1 to 2 trillion in damages to society's high-tech infrastructure and require four to ten years for complete recovery.

NOAA and NASA satellites receive real-time solar and geophysical information from ground-based observatories around the world. These warning systems can usually give a 2-day's notice of damaging incoming geomagnetic storms.

Watch for more information in our next issue, on the societal impact of extreme geomagnetic storms. ●



EMP & Facility Protection

By TACDA Staff
Source Material from
The Department
of the Army,
U.S. Army Corps
of Engineers

Illustration by iStockphoto

The information for the following article is taken from 'Source Material from the Department of the Army', (U.S. Army Corps of Engineers). This information is written in a condensed format. For more complete information, we encourage a thorough reading of the source material.

The Electromagnetic Pulse and its Effects

EMP: Any detonation of nuclear or high explosive weapons will produce an electro magnetic pulse (EMP). The EMP field strength is a function of the height of the burst, the yield of the weapon and the latitude of detonation. Peak fields will be smaller near the equator where the earth's magnetic field is weaker. There will be an area of near zero strength north of the burst point, where the magnetic field lines from the burst site intersect with the Earth. If the detonation occurs in the northern hemisphere, the greatest field strength will be in the area south of the detonation and north of the equator.

HEMP: If a nuclear weapon is detonated at 25 miles or more above the earth it is called a High Altitude Electro-magnetic Pulse, or HEMP. High altitude detonations are used to maximize damage to electronics and electrical equipment over large areas. A nuclear weapon detonated at an altitude of 200 miles would affect most of the continental United States.

Gamma radiation from the high altitude nuclear blast streams through the thin upper atmosphere at the speed of light. The gamma rays encounter a thick pancake shaped layer of atmosphere at about 25 miles above the earth and interact with atoms in the atmosphere, ejecting electrons from the atoms in a process called the "Compton Scattering Effect'. The atom is left with fewer electrons than protons and has an overall positive charge. The positively charged atoms

(ions) are left behind, and the current of negatively charged electrons spirals down the earth's geomagnetic field lines. The resulting ionized area is called the "Source Region", and the electric field within the source region reaches peak levels of *50,000 volts per meter.* The electric field gives rise to a magnetic field and the electro-magnetic pulse affects the entire area on the surface of the earth, within line of sight of the burst.

The early time portion of HEMP arrives in 1 microsecond, with frequencies concentrated in the one to several hundred megahertz band. Intermediate HEMP occurs between 1 microsecond and 0.1 second in frequencies between 1 hertz and 100 kilohertz. Late time HEMP lasts from 0.1 to 1,000 or more seconds and affects mostly the very low-frequency bands. The late phase of late time HEMP covers a large surface area. The energy amplitude is lower than for early time HEMP, but it couples with long cables and its extended duration threatens long landlines such as telephone, power lines and submarine cables.

Overall, peak HEMP amplitudes are large enough to damage most unprotected electronic systems that use solid-state technology. Nuclear weapons effects (blast, thermal, and radiation) at those heights have no adverse affects on living organisms. However, if HEMP were to occur over the central United States, the long-term effects to our infrastructure would destroy our current standard of living and a large percentage of our population would die for lack of proper food, sanitation and water.

SREMP: Detonations at low or ground level cause source region ionization at ground level. The EMP generated within the source region is called SREMP, or Source Region Electromagnetic Pulse. The affected area is just a fraction of HEMP, but the field strength in the affected area is much greater.

The source region for a surface burst has a radius of 3 to 5 km (approximately 2 to 3 miles). The gamma rays scatter the Compton electrons radially from the point of detonation, leaving behind the positive ions. The ground is a conductor of electricity and provides a return path for the electrons. The resulting current loops produce strong electric fields with strengths of 100 thousand volts per meter and may even approach 1 million+ Volts per meter, and the accompanying magnetic fields would be in the order of 4,000 amps per meter. SREMP can affect nuclear blast hardened systems such as ICBMs or command centers. Planners wishing to compromise the retaliatory capability of their enemy would use a ground burst weapon. SREMP radiates beyond the source region out to a range of 10 km (6 miles) or more, forming field strengths of amplitudes greater than *5 thousand volts per meter.* The greatest threat in the radiated region is to systems that respond to very low frequencies or that have large energy collectors such as telephone and power lines.

Air Burst EMP: Detonations at altitudes between 2 and 40 kilometers (up to 25 miles) share characteristics of both ground and high altitude detonations. However, large magnetic fields typical of surface and high altitude bursts do not form in that region. Typical strengths of detonations at mid range altitudes are 300 volts per meter out to about a 3 mile radius, with strengths reaching tens of thousands of volts per meter as the detonation reaches peak altitudes of 25 miles. In detonations at low altitudes the electron paths are short, and the peak field amplitudes are limited to hundreds of volts per meter.

EMP Shielding Concepts

It is very difficult to harden against HEMP because of its large area of coverage, broad frequency range, and high amplitude electric and magnetic field strengths.

Systems within the source region of 'airburst' EMP (which has lower frequencies and amplitudes) do not need the same level of EMP protection; however, these systems will not survive unless protected from all other nuclear weapons effects within that range. The huge amplitudes formed in the area of SREMP will even destroy vacuum tubes, which fail at approximately 1 joule.

Modes of EMP Entry: Some shielding is provided by metal rebar and wire mesh reinforcement within concrete walls, but the greatest shielding effectiveness (SE) comes from enclosures of solid metal. The electric field portion of HEMP is more easily shielded than the magnetic field component, which can penetrate through steel walls, allowing a low frequency magnetic field to enter the enclosure.

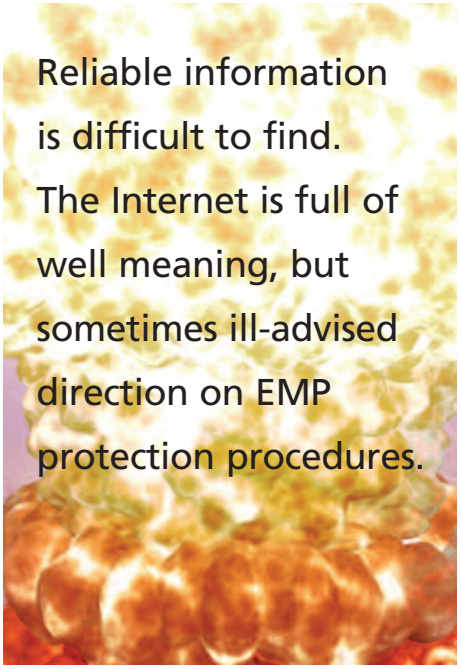
HEMP shielding can be compromised by leakage through doors, windows, seams, improperly terminated cable shields, water pipes, antennas and poorly grounded cables allowing both the electric and magnetic fields to couple with the systems inside the enclosure.

Shielding is very complicated for systems that must continue to function during threat times. Decide on your system's survival requirements. It may not be practical to protect every electrical component. Shielding for non-functioning systems (radios, etc. that are not plugged to a power source), however, is much less complicated and within the reach of every home type shelter. We recommend a thorough study of the information in the Source Material noted above.

Global Shielding: When shielding an entire structure (global shielding) the shield must be placed on the outside of all walls, floor and ceiling of the structure. All penetrations and apertures must be protected at the shield. The most common material for global shielding is sheet metal.

The global shielding could be reduced to a smaller volume that contains all the sensitive equipment needing to be protected. The disadvantage to global shielding is that if a single protective device fails, it can compromise the entire facility.

(Continues)



Tailored Shielding: Small items critical to survival, such as radios, regulators for solar panels, or chargers should be shielded from HEMP in faraday cages (leak proof metal containers). Take care that no gasket material is left in lids or doors. There must be perfect metal-to-metal contact on all areas. Multiple layers of shielding may be necessary (see the previous issue of the JCD). Small faraday cages and cabinets should not be grounded, as long grounding cables may introduce fields that will penetrate the metal container.

It is harder to protect equipment from the magnetic field than from the electric field. Magnetic fields cannot be "blocked", and must be "channeled" away through a metal that has very high magnetic permeability, such as mu-metal. Mu-metal is a nickel-iron alloy (approximately 75% nickel. 15% iron, plus copper and molybdenum). Zonal shielding often incorporates mu-metal for the shielding cage.

Zonal Shielding: Zonal shielding divides the shelter into zones with shielding barriers located such that shields are within shields. The first zone may house robust electrical or electronic equipment and have only dirt and rock above the concrete ceiling and walls. Inside this building may be a sheet metal enclosure that provides limited shielding for zone 2. Another, smaller metal enclosure, zone 3, may lie within the walls of the 2nd enclosure, further decreasing the amplitude of the magnetic field and providing shielding for more sensitive equipment.

Grounding: Grounding is required in any electrical or electronic system for protecting personnel from electrical shock. Grounding does not directly provide protection against EMP, but must be done properly to prevent creation of more serious EMP vulnerabilities.

Doors: Large access doors for vehicles or large equipment require one or more thick steel plates. In order to provide gasket compression force, the door must have a high degree of structural strength. Personnel doors leading from this area should also have EMP protection. Personnel entrances generally use metal finger-stock or EMI/RFI gaskets to provide an electromagnetic seal around the door jam periphery.

When an area of a facility must be protected against the leaking of classified information, interlocking metal doors on each end of a short tunnel protect the area from leakage. This allows for the opening of only one door at a time during the entry of personnel.

Cable Entry Vaults: All electrical penetrations should come through a single cable entry vault, if possible. The vault must be connected directly to the metal lining and to the grounding system of the shielded area. All entry cables must have good electrical connection at the intersection with the entry vault.

Transient suppression: Antennas used for high-frequency (HF) communications (such as in HF amateur radios), are designed to gather EM signals at wavelengths in the EMP frequency spectrum. The EMP associated with an HF antenna can be the largest single EMP source entering a facility. Transient suppression devices are often used in conjunction with filters. Filters are frequency-selective. Surge suppressors are amplitude-selective. Spark gaps do not operate quickly enough to block all HEMP and other protective devices should be used in conjunction with the spark gap.

Optical fibers: Optical fibers can be used to enter shielded zones without compromising the EM shielding. Optical fibers can be used for voice and data communications lines, intrusion detection systems, other security systems, and control systems.

Dielectric isolation: Dielectric isolation is a technique to prevent electrical contact between two regions by placing a nonconductive barrier layer between the two adjacent regions. Dielectric isolation is used for metal water pipes and air ducts entering the shielded area.

Isolation switching: Most home shelters are designed to use commercial electric power during routine operation, and alternative power (such as batteries and generators) during threat time. Commercial power wiring is a potential source of significant HEMP energy. Isolation transformers should be placed on outside power lines. Manual switching from commercial to emergency power must provide adequate switch contact separation to prevent arcing. Most military and large shelters are not connected to commercial power sources and rely on generator power, as no advanced notice of an attack is expected.

Reliable information is difficult to find. The Internet is full of well meaning, but sometimes ill-advised direction on EMP protection procedures. The information from the sited source material is extremely valuable. We recommend that you download and print the entire document and keep it in your EMP files. ●

Specifics of EMP Shielding for **HOME SHELTERS**

by Sharon Packer & Paul Seyfried

Since the 1970's, Switzerland's building codes have required the incorporation of NBC hardened shelters into the construction of all new apartment buildings, homes, businesses, churches, hospitals, and factories. Shelters must be built to rigid government specifications and utilize only components approved by the Swiss Federal Office of Civil Defense (BZS). This demand for approved shelter equipment created a national industry in Switzerland, which continues to this day. If threatened, and on short notice, the Swiss can shelter its entire population of seven and one half million citizens in blast hardened shelters.

The population of Switzerland is well trained in subjects ranging from weapons effects, EMP hardening, first aid, shelter management, and rescue techniques. In order to familiarize the citizenry to shelter life, the government conducts shelter drills, along with large-scale civil defense exercises. It only follows that many millions of man-hours of experience have been gained from these exercises, and modifications to shelters and related equipment designs have evolved into today's proven shelter component lineup. In addition, the Swiss government testing agencies have conducted numerous (and on-going) destructive testing of shelter designs and components. Because of this fierce determination to remain neutral and free, the Swiss are driven to produce only the finest shelter equipment to be found.

The following directions for EMP shielding (hardening) of concrete shelter rooms was written from information received in a personal interview with Michael Riedo, the President of ANDAIR Shelter Components in Andelfingen, Switzerland.

EMP Room Shielding

- Form the walls of the shelter room requiring EMP shielding.
- Grade and smooth the dirt within the parameter of the room.
- Form a closed loop of 4/0 copper wire that fits the inside dimensions of the shielded area, and place it on the ground.
- Connect two lengths (3 feet each) of copper wire to opposite ends of the 4/0 copper loop.
- Pour a thin layer of concrete over the copper loop to protect the wire while completing the construction of the room. This layer does not require the insertion of re-bar. Hold the two, 3 ft. lengths of wire out of the concrete layer.
- Form apertures for plumbing, electrical, communications, etc., using metal conduit, metal-sheathed wire and dielectric and other forms of isolation techniques where necessary.
- Pour the concrete walls, ceiling and floor of the room (all of which require at least two cur-

Photo by iStockphoto

tains of re-bar).

- Frame the concrete walls and ceiling with wooden studs.
- Place a water barrier on the concrete floor.
- Cover the studs (walls and ceiling) and the floor with copper or 12-gauge steel. If using steel, paint the inside wall of the steel with a rust inhibitor.
- All metal seams must be welded.
- Concrete holds humidity. Leave a small opening in the steel lining on opposite sides of the room. Cover the openings with copper wire mesh. Place fans (one configured to push air, and the other configured to pull air) to circulate the air within the studded area between the concrete and the metal lining.
- All wires entering and leaving the shielded structure must be metal sheathed or be pulled through steel conduit (steel conduit is preferable). The metal sheath/conduit must connect to the metal frame through a 'vault' containing surge arrestors. The sheath/conduit must have equal or greater shielding levels than the metal-framed room.
- All entry conduits must have a circumferential weld or provide good electrical connection to the entry vault.
- The single metal vault must be attached to the metal frame and grounded to the copper grounding wire. Connect one of the two copper grounding wires to the vault. Connect the other copper wire to the opposite side of the metal enclosure.
- All electrical equipment must be grounded.
- Power lines coming from the commercial power grid must be protected with an isolation transformer. There most probably will NOT be an alert to an EMP attack, and it is advisable when not in use, to physically disconnect the commercial power source from the sheltered area, leaving a 3-foot separation between the power source and the entry point of the shelter. Use battery and generator power, whenever possible, to limit the threat posed by the outside commercial power source. Always keep an extra charger and regulator inside a faraday cage in the shelter.
- Doors must be solid steel or copper and be electromagnetically sealed around the door periphery. Most EMP doors use metal finger stock or EMI/RFI gaskets. These doors are available on the market.
- The Swiss never use gasoline generators in their shelters because of the explosive nature of gasoline. Public shelters in Switzerland are powered by EMP hardened, diesel generators. It is very difficult to find EMP hardened generators in the United States. Non-hardened generators should be placed in steel-lined, EMP hardened mechanical rooms or in separate steel enclosures. If this is not possible, extra solid-state components for the generators should be stored in faraday cages, along with instructions for replacement. Placing the entire generator in a separate steel container is much less expensive than trying to harden a room of a concrete shelter. These steel containers should be large enough to house both the generator and the diesel fuel. If the generators are kept in hardened rooms within the shelter, the room must be accessed through an airlock.
- Some shelter companies are using conductive concrete containing steel fibers and shavings to form EMP hardened rooms. This is unproven technology. The Swiss require full steel coverage for EMP rooms. We have only one chance to get it right.

It is difficult and expensive to harden an entire shelter, or even single rooms against EMP. The large magnetic pulse component in HEMP and SREMP may penetrate metal wrapped rooms, and two such enclosures may be required to weaken the pulse to the levels needed to protect very sensitive equipment. Every opening and device entering the room is a possible point of EMP entry. It is far easier, safer and less expensive to keep multiple pieces of critical equipment (chargers, regulators, radios, electric starters, etc.) in individual faraday cages.

Please note that you cannot block the magnetic pulse component of EMP. The metal lining is designed to carry the magnetic pulse around the area and away from the interior. Solid steel walls have a greater shielding effect (SE) than enclosures with metal rebar or wire mesh reinforcement. The field that does reach the inner region of a shielded enclosure is basically a low-frequency magnetic field.

Evacuation
During an EMP Crisis

by Sharon Packer

"Getting out of Dodge" immediately after an Electromagnetic pulse (EMP), may not be the best course of action. In some cases, 'In Place Sheltering' for at least 45 minutes after an EMP may be a better option.

If several vehicles on the highway suddenly stop at the same time, and there is no apparent reason for the problem, consider the possibility that there has been an EMP. Turn on the radio to confirm your suspicion. Only one or two stations would be affected by a less sinister power outage, but most stations will cease to function after an EMP. The lack of information will be your confirmation of an EMP event.

An EMP attack may, or may not be followed by a nuclear strike. The 'follow on' nuclear strike would probably occur within 45 minutes of the EMP. Nuclear missiles would reach areas on the West and East Coast several minutes before they would reach the center of the country.

Look for 'targets' in your area. Airports with long runways, military bases, ICBM and Command Centers are all prime targets for a nuclear strike. Prevailing winds generally carry nuclear fallout in a direction from West to East. If targets are beyond 15 miles from your location, or if the target is between you and your shelter, immediately drive north or south of the threat area. If there is no blast after 45 minutes, drive to your home or relocation area.

If you are inside the 15-mile threat area, and can drive out of the boundaries of that area within a few minutes, it may be wise to do so. If not, immediately seek shelter and stay put until it appears that the danger of a nuclear attack has passed. Be particularly careful to protect yourself from the thermal pulse. Think through this plan well ahead of time. Tunnels, deep basements or pipe chases in hospitals, large schools or industrial buildings all make attractive expedient shelters. On a freeway, seek shelter in a culvert or under an underpass. Become aware of your surroundings when traveling regular routes and make your plans well ahead of time.

Vehicles with computerized ignitions could be damaged by an EMP. Older vehicles, manufactured before 1965, should not be affected by an electromagnetic pulse. Recent EMP simulations on various models of automobiles indicated that most vehicles manufactured after the year 2000, will continue to function after an EMP. Some of the late model vehicles, however, did cease to function during the simulation, but in most every instance, the vehicle was able to re-start after the battery cables were removed for a minute and then replaced, allowing the computerized ignition to re-set. Keep a wrench in the vehicle at all times, so the battery cables can temporarily be removed if it becomes necessary. ●

Civil Defense Efforts

Physicians for Civil Defense.org

Dr. Jane Orient, of the Physicians for Civil Defense, has put the following information together for first responders throughout the nation. This is valuable "at a glance" information about radiation fallout and we invite you to copy it and distribute it as you see fit.

Keep in mind that you may need to take shelter for two weeks or more in a full-scale nuclear attack. Be advised, also, that smaller yield weapons detonated in the air will not cause visible fallout but could expose people to significant levels of initial radiation.

60-SECOND NUCLEAR DETONATION TRAINING FOR FIRST RESPONDERS

A. Drop and cover when you see a flash. Stay down behind cover for two full minutes. Even covering with a newspaper can prevent burns. Keep eyes closed during bright light to prevent blindness.

B. 7/10 Rule: Fallout loses 90% of its radioactivity in the first seven hours after a detonation and an additional 90% for every seven-fold increase in time: (90% in the first seven hours; 99% in two days and 99.9% in two weeks).

C. Fallout looks like sand, ash or grit as it falls and accumulates on the ground. If no fallout is visible on the ground, there is no radiation! To be sure, place a piece of white paper, a dinner plate or anything with a smooth surface on the ground and check every 15 minutes for fallout particles. If visual indications of fallout appear, take shelter for two or three days underground or behind thick walls. (These tips are generally true).

This bit of information may be the only nuclear training you get. Knowing A, B, & C, can protect your life and your department. These principles were developed during nuclear weapons tests from the 1940's-1960's and remain valid today! The laws of physics do not change.

Civil Defense Efforts
Los Angeles, CA

The Los Angeles Daily, has recently reported a renewed interest by officials in the county's current disaster management program, in restoring civil defense shelters in their city.

Excerpts from two Los Angeles Daily articles follow:

A Look at How We Braced for the Worst

http://www.dailynews.com/news/ci_13991762

By Troy Anderson, Staff Writer
Updated: 11/15/2009 10:20:07 PM PST

As Los Angeles County celebrates the 50th anniversary of its Civil Defense program this month, officials have rediscovered remarkable treasure troves of relics from the 1950s, a time when nuclear scares haunted average Americans in much the same way terrorism fears do today.

Among the finds are a massive underground bomb shelter in El Monte now used to store new cars, and storage rooms full of old rations and guidebooks that sound almost quaint today in their tips for nuclear-war survivors.

Another find was instructions from the military on what to do in case of a coastal invasion of Southern California.

"I found letters in the storeroom from World War II generals to the area coordinators, saying the last stand would take place in the San Gabriel Valley and they would move all the civilians back to the shelter of the San Gabriel Mountains," said Brenda Hunemiller, an area coordinator for the county's current disaster management program. "It's pretty amazing stuff."

Rummaging through an old Azusa storeroom, Hunemiller recently discovered old Civil Defense materials that included a book listing hundreds of fallout and bomb shelters and 55-gallon drums filled with K- and C-rations, medicines and other survival supplies.

Today, the program has evolved to focus on a variety of potential disasters, such as earthquakes and wildfires. Coordinators in eight Disaster Management Areas work closely with the county's Office of Emergency Management But despite the move away from preparations for nuclear war, OEM spokesman Ken Kondo said the recent discovery of the Civil Defense supplies and a large fallout shelter in El Monte has renewed interest in the Civil Defense program and the shelters.

Among the hundreds of bomb shelters in the county, officials recently discovered a still-intact one below what is now one of the world's largest car dealerships. At Penske Longo Lexus in El Monte, customers can actually pick out their car from inside the former bomb shelter built by a previous business, Kondo said. "It's a big and cavernous place," Kondo said. "It's gigantic. You could sit several football or soccer fields in there."

After WWII, many in the government and the public feared a nuclear attack by the Soviet Union. In an effort to protect the public, the Federal Civil Defense Administration was created in 1951. One of the first campaigns emphasized building and designating fallout and bomb shelters.

"We still have those rusting, old air-raid sirens around," said Joel Bellman, an aide to county Supervisor Zev Yaroslavsky. "Anyone who was a child in California in the 1950s and '60s certainly remembers the Civil Defense symbols, the duck-and-cover drills and the educational films they would show at school."

A fallout shelter sign is still on the wall in the lobby at the county Hall of Records downtown. Underneath the hall and surrounding areas is a labyrinth of underground facilities and tunnels connecting one of the largest government complexes in the nation.

The Glendale Courthouse also still has a fallout shelter in its basement, stocked with medical supplies and processed food that is at least several decades old, said acting court manager Roobina Badalian. However, most of the fallout shelter signs throughout the county have been taken down over the years.

"Although the government no longer stores food or other supplies in shelters and no one is trained as shelter managers or radiological monitors, the shelters today would still provide better fallout protection than private homes in the event of a nuclear attack", said Sharon Packer, executive director of the American Civil Defense Association.

"There would, however, be no security in place, no supplies and no communications to a central command station," Packer said.

The government does, however, continue to maintain well-stocked shelters for critical personnel, including Congress, under a program called "Continuity of Government," she said.

Photo by iStockphoto

http://www.dailynews.com/news/ci_13991762

By Troy Anderson, Staff Writer
Updated:
12/14/2009 12:06:02 PM PST

Local officials taking inventory of bomb and fallout shelters: While the possibility of a nuclear attack in Los Angeles seems almost unthinkable, local officials are inventorying hundreds of old bomb and fallout shelters as part of their preparations for a "radiological or nuclear event."

Los Angeles and other metropolitan areas are drafting emergency plans while federal agencies study how to prepare the public for what county public health Director Jonathan Fielding describes as a "low-likelihood, huge-consequences event."

His department hosted a workshop last week for the emergency operations staff of the county's 88 cities in preparation for "Golden Phoenix," an exercise scheduled for June 2010 that simulates the scenario of a 10-kiloton nuclear device detonated in Los Angeles.

A seminar is planned for the medical community on Jan. 21 to provide information on what to expect and what actions they should take after a nuclear incident.

"These aren't comfortable things to talk about, but it all begins with preparations," said Angelo Bellomo, the county director of environmental health who oversees the Radiation Management unit.

"We think this is a great opportunity for us to open a dialogue with the 88 cities so they can begin to amend their emergency plans to include planning for a nuclear device."

The federal Homeland Security Council is urging state and local governments to prepare in the event of a nuclear detonation in a major city. And Matthew Chandler, a spokesman for the U.S. Department of Homeland Security, said the Federal Emergency Management Agency is studying how to incorporate a nuclear detonation scenario into a citizen preparedness campaign.

President Barack Obama brought the issue to the public's attention during a speech at West Point on Dec. 1, when he called for a troop surge in Afghanistan. "The stakes are even higher within a nuclear-armed Pakistan, because we know that al Qaeda and other extremists seek nuclear weapons, and we have every reason to believe that they would use them," Obama said.

Experts are also concerned about nuclear threats posed by Iran and North Korea and, to a lesser extent, China and Russia. The president of Iran has threatened to wipe Israel off the map and experts believe North Korea has missiles that can hit the West Coast.

Experts are especially concerned about the possibility that Iran one day could launch ship-based nuclear missiles, said Brian Kennedy, president of

The Claremont Institute's Ballistic Missile Defense Project. "The West Coast of the U.S. has limited missile defense against a North Korean missile," Kennedy said. "And, unfortunately, we're almost completely vulnerable to a ship-launched ballistic missile attack."

Kennedy is also concerned a ship-launched nuclear missile detonated at a high altitude would create an electromagnetic pulse, possibly destroying electronic equipment and knocking out the nation's power grid - leaving the country with little or no communications and no ability to provide food and water to potentially hundreds of millions of people.

"Congressional reports suggest such an attack could result in more than 100 million deaths in a year", said Sharon Packer, executive director of the American Civil Defense Association. "I don't mean to minimize the efforts of Los Angeles County in creating fallout shelters," Packer said. "It is very important and a wonderful first step. The larger concern, in my estimation, is in the protection of our electrical grid and the storage of additional transformers to assure the continuance of our infrastructure."

The county's efforts to inventory its bomb and fallout shelters follows the recent discovery of a 1975 book by the county's Emergency Preparedness Commission, "Los Angeles County & Cities Public Shelter Directory," which lists 6,200 fallout shelters with a capacity of 14.5 million people. The shelters, including hundreds in the San Fernando Valley, include the basements and similarly protected areas in places such as hospitals, government buildings, courthouses, post offices, churches, movie studios, parking garages and tunnels. Many businesses are also listed, including McDonald's, J.C. Penney Co. and even a cellar at the Budweiser plant.

Now it's up to us to locate and find these fallout and bomb shelters and make preparations and plans to utilize them in the event that people need to take shelter because of a terrorist attack or man-made event. ●

Selecting Areas for Tornado Protection

Kirk Paradise

are often asked how to choose a safe refuge area in the workplace or at home, in the event of a tornado. Sure protection from an EF4 or EF5 tornado requires massive construction; essentially a hardened underground structure, or an above ground, reinforced vault with walls anchored to the foundation and the roof anchored to the walls and protected entries so that flying debris cannot directly strike the doors.

Imagine a flying brick or concrete block striking a wall or roof in your home or business at 150 mph. Will it penetrate or will it be stopped? These areas may, however, offer the best "refuge" available at the time. A refuge area is just the best available protective area, and it may or may not adequately protect the occupants. You can't call a tornado refuge "safe" since that implies it was designed and built to withstand the forces of a tornado and will reliably protect occupants from injury or death. It is a relative term that varies with the type of construction and building size and also the strength of the tornado. For example, an interior room in an ordinary wood frame house may adequately protect occupants from an EF0 or EF1 tornado, but fail from an EF3, EF4 or EF5 tornado.

When seeking refuge, follow the "barrier" principle, which is simply putting as many walls or floors between you and the outside as possible. Take cover in the most interior room of the lowest floor (a basement is usually best). Each barrier acts as an energy absorber but its effectiveness depends on the strength of the construction materials. A flying object, such as a concrete block, may penetrate one or two walls and be stopped by a third. Now, imagine a 5,000-pound SUV or a swarm of concrete blocks striking your wall or roof at 150 mph. Will it penetrate-- or be stopped?

Concrete construction is far superior to wood framed structures. Wood framed structures are vulnerable to both wind and penetration by flying debris. Windows and doors, especially garage doors, are weak points and are subject to failure. Selecting the most interior rooms on the lowest floor as a refuge area, minimizes - but does not eliminate - the threat from tornadoes.

Selecting refuge areas may be as simple as identifying a room and then counting the number of walls on the North, East, South and West sides plus the floors

above and between that room and the outside. Assuming equivalent construction (again, reinforced concrete trumps wood or metal frames), designate the rooms with the most barriers as First Priority refuge areas. Fill these rooms first. Use rooms with fewer barriers as Second or even Third Priority refuge areas in turn. Based on the number of people who need to take cover, prioritize your use of the refuge areas. If everyone fits in the First Priority space, great! This is usually the case with a family or small business but can be quite different for a large business, school or church. If everyone does not fit in First Priority areas, use the lesser areas until you either run out of people or run out of space.

What if you have more people than refuge areas? In that case, consider allowing people to leave before the bad weather arrives, if you are sure they can safely reach shelter before the tornado arrives. Poor refuge areas inside a building, however, are better than being caught in a car. Have them take cover in whatever space is available. There may also be a ditch or other below ground level area outside the building where people can find shelter. What about employees out on the road? They should be made aware of refuge areas along their route and any refuge areas at their destination.

Even if a space was constructed as a shelter, other variables at work may limit its usefulness. Hazards may be present in the building that precludes its use as an otherwise good refuge. These built-in hazards include steam or hot (>130° F) water lines which, if ruptured, would scald people; hazardous materials that could be released; flammables or gas lines that could be ruptured and ignited; inert atmosphere fire extinguishing systems that could asphyxiate people trapped inside; high voltage transformers or breaker boxes that could become a fire or electrocution hazard; a room subject to flooding; areas within the fall radius of a chimney or the fall range of a wall where there is an abrupt change in the height of walls or rooflines between building sections. These could collapse into a space where people are taking cover. The references following provide guidance in selecting your refuge areas. You may also want to consult an engineer or architect in selecting areas or to minimize hazards

Image by iStockphoto

in the building. If you are planning to add on or build, have your engineer or architect design a true Tornado Shelter into the building that will give you sure protection. When it's done in the planning stage, the cost is minimal. The entire building does not need to be reinforced, just a space large enough to hold the maximum number of people expected to be present.

Identifying the protective area is just one aspect of a Severe Weather Safety Plan. Someone should be assigned, on an ongoing basis, to monitor emergency communications, such as the NOAA All Hazards Radio, local National Weather Service Office website or should have access to a local TV/radio news station. Those in charge of schools and businesses must be able to disseminate information to all persons at all hours/shifts and in all buildings or occupied sites at the facility.

When more than a few people need to take cover quickly, especially if the building has multiple floors or the facility has multiple buildings, a Movement Plan is essential. The Movement Plan consists of a building layout with the refuge areas marked and routes of movement identified. When activated, Traffic Monitors (selected & trained beforehand) go to pre-designated traffic control points and direct pedestrians to the innermost 'First Priority refuge areas' filing them from the most interior areas back toward the outer areas. The purpose of this is to minimize traffic congestion or delays, and to prevent later arrivals from having to step over, on or around early arrivals who stopped just inside the first refuge areas. Consider installing emergency, battery powered lighting leading to and inside areas of refuge.

Consider what happens after a tornado strikes. Could people be trapped inside designated refuge areas? Will cell or hard-wired phones dial out?

Training of all individuals, in all aspects of the plan, is essential. Once a tornado has been sighted, or a warning has been issued, all persons should be able to reach their refuge area within 60 seconds. Hold a drill at least once a year in order to identify unexpected problems that need resolution. In an emergency, people do what they practice. In a real emergency, people who have walked through the Movement Plan can take cover in a fraction of the time of those who have only "read" the plan.

In large buildings or facilities, several complicating factors may be present. Can people on the upper floors reach the refuge areas quickly? Are the stairways adequate or will they be a bottleneck? Can elevators be used (usually, no, if power may be lost)? Are there separate and private sanitation facilities for men and women?

If handicapped persons are normally present, plan ahead and assign someone to assist them. If they are unable to move quickly, anticipate the weather and have them take cover before a Tornado Warning is issued. This prevents them from possibly being injured and from becoming a traffic bottleneck during a rush. Do people who are present after normal hours have access to the NOAA Radio and the designated refuge areas? What about visitors? Who will lead them to take cover? Everyone should be able to take cover as attendance and access constantly change throughout the day.

Consider what happens after a tornado strikes. Could people be trapped inside designated refuge areas? Will cell or hard-wired phones dial out? Are tools (shovel, pry bar) and flashlight and first aid kit stored inside? Who is designated to meet emergency responders and work with them to coordinate search and rescue? Who has the business or school roster? Where is the roster stored off site? Once it is safe to emerge, who is tasked to account for everyone? Who is designated to meet the Utilities Company to turn off the utilities?

Being ready to act instills confidence and enables people to act quickly. Plans must be made and exercised before the crises is upon you. The very lives and welfare of those who depend upon you are at stake.

Following is a generic Severe Weather Plan to assist people in planning for tornadoes. This same plan, with some modification can be used for counties, communities, businesses or homes. Please feel free to adapt it to your own needs. Be aware that these same principals apply when preparing for other natural and man made disasters.

SEVERE WEATHER PLAN FOR

_____

1. Monitor NOAA All Hazards Radio station/channel _____ for severe weather information.

A. The NOAA All Hazards Radio(s) is/are kept at: _____

_____

B. Name(s)] monitors and maintains the radio(s).

_____

_____

_____

"Maintain" means to inspect the radio each week to insure the radio is turned on, plugged in, tuned to the local station, the alarm is set and functioning, the back-up battery is good, and the external antenna, if used, is plugged in. The Weather Service tests the alarm each _____, if the weather is good, between _____ and _____.

C. Monitor the NOAA All Hazards Radio during all hours of operation. Monitor the Weather Service website plus local TV station W_____ & radio station, W_____ as backups.

2. Name(s)] notifies all employees of severe weather warnings via (method or procedure):

_____

_____

_____

3. The best available protective (refuge) area(s) is/are . . .

_____

_____

_____

Take cover there when a Tornado Warning is issued or if a tornado or damaging winds are sighted.

4. The movement plan is:

_____

_____

_____

A. Name(s)] checks the best available protective areas when a Tornado Watch is issued, unlocks any door normally kept locked and ensures protective area(s) is/are open, clear and ready for immediate use. Prior to use, remove or make safe potential hazards in the areas.

_____

_____

B. [Name(s)] notifies (calmly so as not to cause panic) everyone by (method or procedure) "**Tornado Warning (or tornado or damaging winds sighted); TAKE COVER in an orderly manner by** _____" Aim to have everyone take cover within 60 seconds.

_____

_____

C. [Name(s)] leads directs and assists everyone (including visitors and the disabled) to the best available refuge area(s), keeping movement orderly but quick.

5. A practice tornado drill will be held _____

6. Displays showing this plan, the floor plan of the building(s), the movement plan and the best available protective area(s) are posted:

_____

_____

_____

REAL LIFE EXPERIENCES

Lessons learned from hurricane katrina

Ken on the Gulf Coast

I am located on the Gulf Coast, 60 short miles from New Orleans, Louisiana. We were ground zero for Hurricane Katrina, so I have first hand experience of what can happen. I will describe some things that I did right and some things that I did wrong.

When it is not an option to relocate, you should make the best preparations possible in your current location. We were unable to relocate to a more appropriate place, such as Idaho, as we had elderly parents who could not, and probably would not, move.

My mother was born in 1930, the daughter of a sharecropper in the Louisiana delta. They lived a survivor lifestyle as a matter of everyday life. She instilled in me a fear of having absolutely nothing. Until her death in 2007, she refused to run a dishwasher or air conditioner. She could not bring herself to waste electricity, water, or anything for that matter.

Although not as dedicated to thrift as my mother, I did inherit her fear of hunger, and vulnerability to the unexpected. She died in constant fear of the return of depression era conditions. When she died I lost a valuable source of survival information. *(Continues)*

Because of my mother's influence, 36 hours after Hurricane Katrina struck, I was probably one out of 75,000 or so who had lights and running water. The following is what most people did wrong:

A lot of people had generators, but they only had a couple of cans of gas; so, they were all without power in less than 24 hrs. All of the gas stations were disabled. No gas means no power!

Without dogs, you have no warning of intruders. Alarm systems don't work after the batteries are dead.

No one had enough food. The government recommends a three-day supply, but it took almost three days just to get the roads clear.

Few people had guns. I had friends who did not "believe in guns" that ended up borrowing weapons.

No dogs! Without dogs, you have no warning of intruders. Alarm systems don't work after the batteries are dead.

The following are some of the things I did wrong, and some that I did right.

Power

I had a natural gas generator installed. I was up and running in less than 36 hours of the storm. It was a mistake, however, to select natural gas as a fuel source. Upturned trees broke gas lines all over the region. It was only blind luck that left me with gas pressure. A propane system would have been better. I should have had a fuel source independent of the grid.

Water

I had previously drilled a well, and I was able to provide water pressure to my house. City water was out for weeks. I tied the system back to the house by a simple water hose going from a faucet on my pump to one on the house.

I evacuated the elderly mothers and dogs to an area 100+ miles north. Electricity was out over the entire state. My motor home generator powered my sister's house where I left our parents and dogs. I left the dogs at my bug out location before I returned to the disaster area. It was a mistake to leave my dogs, as my parents were in a relatively safe area, and I needed the dogs as my first line of defense.

Refugees

I was unprepared for refugees. I call them refugees because they would have gone hungry without the food in my pantry and freezers. I was totally unprepared for the 16 families looking to me for food and direction.

Food

I fed a lot of people, but I needed more food. In a real 'end of life as we know it' scenario, I would have been forced to choose who I would feed. It's one thing to take care of people when you know help is on the way, quite another when there is no help in sight.

Weapons

I loaned my old shotguns to people who had previously not believed in the private ownership of guns. When gangs and mobs were roaming the streets, the folks who didn't believe in guns didn't hesitate to request assistance from those of us who did.

The following are changes that I have made:

I now have a Bluebird Bus motor home. It has a huge fuel tank that I can use to run the house if the natural gas generator quits. Its diesel generator can put out 12 Kw for a long time.

I have a much larger store of food.

I have a photovoltaic-powered water supply.

I have a bug out vehicle that has a 1,200 to 1,500 mile range. It has a propane refrigerator. It has a water system that can provide water pressure to my house.

In the aftermath of Hurricane Katrina, thieves were cranking up lawn mowers and pushing them up next to running generators after the storm. They would then shut down the running generators and leave the running lawn mowers while they absconded with the generators. You cannot stay awake 24 hours a day. Dogs do not miss much of anything. I can't recommend a breed of dog, but the following work for me: Miniature Schnauzers, Australian shepherds, Catahoula Curs. If you live in the south and have some land, you cannot beat a Catahoula Cur. An Australian Sheppard is a close second for all climates.

I have ten acres and good soil. I am putting in a very large garden. However, I do not feel that I can overcome the huge welfare population we have here. If things get out of hand, I plan to bug out. I now have an RV that has a tremendous range. It has a propane refrigerator, and full facilities. I can literally live on the side of the road for weeks or months. It is equipped to pull a full-size 4WD with trailer. I can evacuate to one of several 'bug out' locations that are within four hours of my home. When I leave I will have dogs, food, tools, and weapons. I also have shortwave radios.

You should develop a survival mentality. You should add to your preparation everyday. Each trip to Wal-Mart is an opportunity to add to your supplies. Ask yourself, if a disaster strikes, how long can you feed and protect your family? I add to my provisions every day. The one thing I learned is that when the storm hits, it's too late to prepare.

Start to prepare now. Think: food, food, and more food, ammo, bandages, and unless you can go without sleep 24 hours a day don't forget the dogs!

TELEPHONE TIPS

to Support Your Emergency Communications Plan

Obviously, you need to have a family communications plan in place prior to emergencies or severe weather events. That means designating someone out of your area (or state) as a central contact, and making sure that all family members know who the contact is and how to call them should you become separated. However, during natural disasters, such as earthquakes, hurricanes or flooding, telephone services can be interrupted for extended periods of time because of high winds, flooding or cell tower damage. As a result, in order to support your family's communication plan, you need to consider various telephone equipment options.

Keep in mind that, during an emergency, a great many people are trying to use their phones at the same time compared to normal call volume. When more people try to call at the same time, the increased call volume may create network congestion leading to "fast busy" signals or slow dial tone. You may also receive a message that says, "Your call cannot be completed at this time."

It is recommended that you have at least one corded telephone that is not dependent on electricity in case of an electrical power outage. Remember most cordless telephones usually have receivers that are electrically charged and will not work during a power outage. Many phones now have batteries inside to allow them to work for some time should a power outage occur. These batteries need to be refreshed regularly similar to your smoke detectors. Another good reason to maintain a "landline" telephone is to facilitate communication between emergency planners and your home via reverse 911 systems where implemented. Using such a system, emergency planners can record an evacuation or shelter-in-place message to be delivered to thousands of homes per minute. Many such systems are capable of geographically targeting homes via a city or county GIS (Geographical Information System).

You can also use your landline home phone to communicate with family and friends by using the voice mail feature (generally available at an additional cost). With this you can leave and retrieve message remotely through a cell phone. It is critical however, to know how to access your home voice mail remotely via your cell phone. During an emergency is no time to try and figure this process out, especially considering you won't have access to your owner's manual.

Additionally, it is a good idea to have a wireless (cell) phone to enable communication when you are away from your home. Tips for using your cell phone include:

- Make sure you program all of your emergency contact numbers into your cell phone (e.g., local police department, fire station, power company(s), insurance providers, local hospital(s), all family members and your emergency contact) Ensure your friends, neighbors and family know your cell phone number as well
- Keep your wireless phone batteries charged at all times
- Have an alternate plan to recharge your battery in case of power outages (i.e. charging via your DC car charger, extra cell phone battery, hand crank generator, or solar device with appropriate adapters)
- Keep your phone dry and out of environments with excessive humidity
- Forward your home phone to your wireless number in the event of an evacuation (call forwarding is based out of the telephone central office, so you will get incoming calls from your landline phone, even if your local telephone service is disrupted at your home)
- Use your wireless phone to access local weather information via a phone service or the Internet (if your phone is so configured).
- If you have a camera phone, you can take, store and send photos of damaged property to your insurance company from your phone (make sure your phone service plan covers this and practice before you need to send photos)
- Make sure your service plan covers text messaging (text messages will often go through quicker than voice calls and again know how to send a text message before you need to). More importantly, text messaging frees up voice lines for emergency personnel.
- When redialing with your cell phone, wait 10 seconds between redial attempts so the data sent from your phone to the cell sites has enough time to clear before you resend the same data

In general, fight the urge to contact everyone you know to see what's going on. Every additional phone call puts a strain on the local phone system. Make only critical calls and keep them short. This will help keep the system accessible to emergency personnel and first responders. ●

TACDA
11576 S. State St.
Suite 502
Draper, UT 84020

www.tacda.org
info@tacda.org
Office: (800) 425-5397
Fax: (888) 425-5339

ISSN# 0740-5537