



Are you an emergency services provider?

Save time and lives with ...

# METTAG

**Medical Emergency Triage TAG**



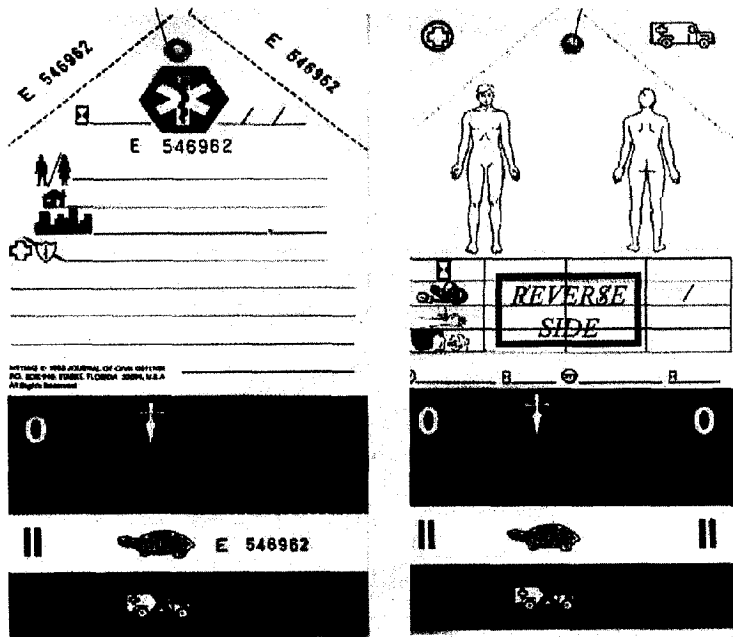
In the US, they've been used at the:

- Oklahoma City Bombing
- Atlanta Olympics Bombing
- World Trade Center Bombing

Recently adopted for use in the Colorado State Triage System.

Colorado's 1998 *Unified Disaster Tag and Triage System: A Guide to MCI* [Multiple/Mass Casualty Incidents] reprints now available for your use.

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## To our readers ...

This issue of the *Journal of Civil Defense (JCD)* begins with Ken Timmerman's sobering article on Russian Intermediate Range Nuclear Forces (INF) treaty violations associated with the SS-23 nuclear tipped mobile missile system. The SS-23 system, with its 100-kiloton nuclear warhead, was supposed to be eliminated under the 1987 INF treaty. Instead, many were secretly forward-deployed in Eastern Europe (others were possibly hidden in Russian locations). These violations are of particular importance since they show, once again, that the Russians cannot be trusted to abide by arms control treaties. Please also see the related article by K. Timmerman on the secretive Yamantau nuclear-hardened facility that is being built by the Russians (from the July – August 2000 edition of the JCD).

Our second article highlights the excellent preparedness efforts of 2000's top 10 Project Impact "Star Communities." This article briefly describes what each community did to receive this award from the Federal Emergency Management Agency (FEMA).

Our next article is a very practical guide on how to survive a nuclear war, even if you do not own a dedicated nuclear bomb shelter.

The final article in this issue of the *Journal* describes the effects of up to 6 tornadoes that struck the community of Bismark, North Dakota on 1 November 2000.

Finally, please consider expanding your Civil Defense library by purchasing the TACDA videos and tapes listed on the back cover.

## Thanks for your continuing support!

*The TACDA Staff*

The *Journal of Civil Defense* is the official publication of the American Civil Defense Association (TACDA). Nancy D. Greene, President; Kathy Eiland, Executive Director. The TACDA Board also includes Ed York, Sharon Packer, Frank L. Williams, Bron Cikotas, Kevin Briggs, Dr. Gerald Looney and Regina Bass. Walter Murphey is the Editor Emeritus of the Journal.

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We're the American Civil Defense Association (TACDA) – a 39-year-old nonprofit organization that promotes sensible precautions to disasters.

An annual membership includes a year's subscription to the *Journal of Civil Defense* plus discounts on selected fund raising packages at the TACDA Store, such as on food supplies and water storage tanks.

An annual membership now costs only \$25 for a single family and \$100 for an organization (if you prefer, you can just receive the *Journal* for \$25 and not be entered on our membership list ...note however, that TACDA will not give our membership list to any other organization). Non-US rates are higher due to postage.

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- Assisting the public in making reasonable preparations for disasters.
- Advocating prudent preparations for tornadoes, earthquakes, volcanic activity, bio-terrorism, and a 50-state ballistic and cruise missile defense, to name a few.

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# Can Moscow Be Trusted?

## *Russia's hidden nuclear missiles*

By Kenneth R. Timmerman  
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*TACDA Editor's note: This is the second article to appear in the Journal of Civil Defense (JCD) from a series of investigative reports on Russian arms-control violations by former Time magazine reporter Kenneth R. Timmerman. A previous article on the secret nuclear war-fighting command centers in Russia was published in the July – August 2000 edition of the JCD.*<sup>1</sup>

WASHINGTON -- As President Clinton met with Russian President Putin in Moscow to discuss nuclear arms control ... an old story from the Cold War has resurfaced that sheds doubt on Russia's reliability as a negotiating partner: nuclear-tipped SS-23 missiles that the Soviet Union never declared to the United States, in direct violation of a 1987 arms-control agreement.

These missiles... were hidden by the Red Army in deep underground bunkers in Czechoslovakia, despite Soviet promises to withdraw all nuclear theater missiles from Europe and destroy them.

...

During the Cold War, the SS-23 missiles were equipped with a 100-kiloton nuclear warhead and were fired from wheeled launchers, making them virtually impossible to destroy once they were deployed from their underground storage sites.

The Soviets secretly deployed the SS-23s in East Germany, Czechoslovakia and Bulgaria in 1986. In the event of war in Europe between NATO and the Warsaw Pact, they would have given the Soviets a clear military advantage by allowing them to launch a surprise nuclear strike at the heart of NATO forces in Germany.

Under the Intermediate Range Nuclear Forces (INF) Agreement signed in Washington, D.C., on Dec. 8, 1987, President Reagan and General Secretary Mikhail Gorbachev agreed to destroy all existing theater nuclear missiles in Europe, including all SS-23s.

While the Soviets allowed U.S. inspectors to witness the destruction of the longer-range SS-20 missiles, which constituted the bulk of their force, they secretly rushed several batteries of the shorter-range SS-23s to East Germany, Czechoslovakia and Bulgaria just prior to signing the Treaty, and never declared them or destroyed them (*Editor's note: these are the 73 "secret" missiles mentioned on page 3*).

"This is a clear violation of the INF Treaty," said Rep. Curt Weldon, R-Pa., "and raises disturbing questions about the commitment of the Russian government to arms control agreements."



*Soviet-era photograph of the 4-axle SS-23 launch vehicle, in launch position, believed to be equipped with an earth-penetrating warhead.*

<sup>1</sup> Excerpts reprinted with permission of the Internet newspaper WorldNetDaily.com. No reprints are permitted on the Internet, only in offline printed publications and with special permission.

Article IV of the INF Treaty states: "Each Party shall eliminate all its intermediate-range missiles and launchers of such missiles, and all support structures and support equipment ... so that no later than three years after entry into force of this Treaty and thereafter no such missiles, launchers, support structures or support equipment shall be possessed by either Party."

The SS-23 was named as one of the missiles slated for total elimination under the Treaty. All SS-20 missiles were reportedly dismantled by June 1991.

Weldon and other members of the House Armed Services Committee are planning to visit the current storage site of the SS-23s in Martin, Slovakia, since the United States is footing the bill for dismantling the missiles....

"We want to film these missiles and then ask the Russians some hard questions about their commitment to arms control," Weldon said.

Weldon and Maryland Republican Roscoe Bartlett are concerned that Russia may be hiding much larger reserves of nuclear weapons in a vast underground site built into the Ural Mountains, known as Yamantau *{TACDA Editor's note: see related Journal of Civil Defense article on Yamantau in the July – August 2000 edition}*.

"We're going to ask the Russians, here's what you were doing in Eastern Europe; what are you doing at home?" said Weldon.

... A total of 73 SS-23s were secretly deployed by the Soviets in Eastern Europe, according to Arms Control and Disarmament Agency compliance reports. If all 73 missiles had been armed with nuclear warheads, their combined firepower would have equaled 365 times the power of the atomic bomb that destroyed Hiroshima.

When the United States received the first reports about the existence of a secret SS-23 force in September 1991, "it sent an electric shock through the intelligence community," a former intelligence analyst told WND. "The realization that the Soviets had a secret nuclear missile force undermined all our premises about arms control."

There had long been a debate about the actual size of the Soviet nuclear force, because of large numbers of non-deployed missiles and warheads the Soviets were known to keep in reserve.

"Here was a real, clandestine missile force -- something the Soviets were trying to hide from us," the analyst said. "It risked undermining every arms control treaty we had ever signed with them."



SS-23 launch vehicle in the travel position, on display with the OKA missile at a Moscow military museum. The Russians identify the SS-23 as having been "destroyed in compliance with the Agreement between USSR and USA to Destroy Medium and Shorter Range Missile Systems."



Soviet-era photo, supplied to the United States in compliance with the INF Treaty in 1987, showing the body of the SS-23 rocket, minus the nuclear warhead.

The Stockholm International Peace Research Institute estimated in 1986 that the Soviet Union had a clandestine strategic "reserve" force of several thousand weapons, as large as Russia's current declared force, making a mockery of arms control commitments with the United States.

Weldon agrees. "If arms control agreements are not upheld by both parties they are meaningless pieces of paper."

The Arms Control and Disarmament Agency, which was recently subsumed within the State Department, quietly accused the Soviets of "bad faith." It equated the secret deployment of the SS-23s in Eastern Europe to other arms-control violations, notably the construction of a phased array radar system at Krasnoyarsk.

Russian officials later admitted that the Krasnoyarsk radar was built on the orders of the Soviet Politburo as a battle-management system, in conscious violation of the Anti-Ballistic Missile (ABM) Treaty.

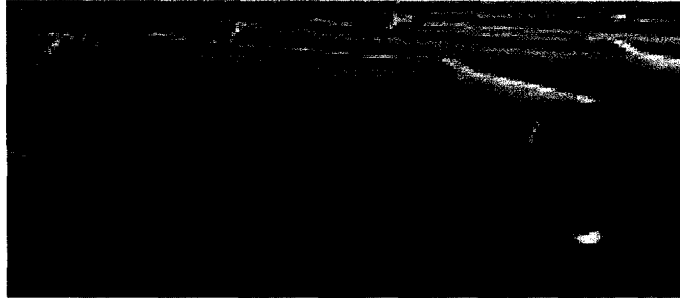
The last mention of the SS-23s appears in the May 1995 ACDA compliance report, which states that the SS-23 missiles were "transferred with their connecting sections, which would enable their use with nuclear warheads." This led the United States to conclude that the Soviet Union had negotiated the INF Treaty "in bad faith."

Despite these concerns, the May 1995 report states, "the United States does not intend to address this issue in future reports but will continue its ongoing efforts to see that these missiles are destroyed."

The first public mention that undeclared missiles still existed in former Warsaw Pact countries dates from August 1997, when State Department spokesman James Rubin told reporters in Washington that negotiations were underway with both Slovakia and Bulgaria to dismantle the missiles. He called the talks "action with friendly governments," and said the U.S. stood ready to help them destroy the SS-23s.

The Bulgarians initially balked at destroying the missiles, stating it was in Bulgaria's national interest to retain them, but eventually complied. Slovakia said it didn't have the money to dismantle the missiles on its own. The controversy dragged on until earlier this year.

Then on April 27, the U.S. chargé d'affaires in Bratislava, Douglas Hengel, signed a memorandum of understanding with Slovakia's Chief of Staff Gen. Milan Cerovsky, providing for U.S. financing of the destruction of the last six SS-23 missiles. Altogether, the destruction will cost U.S. taxpayers \$385,000, according to the memorandum.



A 1988 photograph, published in Paris Match, showing the body of SS-23 rockets withdrawn with Soviet forces from East Germany as part of the 200 declared SS-23s the U.S.S.R. agreed to dismantle and destroy under the INF Treaty. The U.S. now believes the Soviet Union had an additional 73 missiles deployed secretly in Warsaw Pact countries.



Soviet-era photo, supplied to the United States in compliance with the INF Treaty in 1987, showing the 4-axle launch vehicle for the SS-23 system.

The Slovak missiles are from a battery of six missile launchers and 30 missiles, initially deployed to an underground base known as Site Adam about 100 miles northeast of Prague, Czech embassy spokesman Martin Weiss told WND. Site Adam was originally part of a chain of defensive underground sites ringing the borders of Nazi Germany and Austria, Weiss said, built in the 1930s. While many similar sites have been opened to the public -- including one that has become a hot tourist spot -- Site Adam remains off-limits and is still used by the Czech military.

Investigators working with the House Armed Services Committee in Washington told WND

that Site Adam was one of several underground sites in Eastern Europe reinforced by Warsaw Pact forces during the Cold War as a nuclear storage bunker. It is believed to extend some 20 stories below ground.

The Soviet army hastily pulled out of Eastern Europe over the summer of 1990, taking the nuclear warheads from the SS-23s along with them. U.S. officials believe it was not until September 1991 that Czechoslovak President Vaclav Havel learned about the existence of the secret force of SS-23 missiles and informed the United States.

As Czechoslovakia itself began to break up in mid-1992, Havel resigned and the military assets of the country were split between the Czech and Slovak Republics. Havel was elected as president of the newly formed Czech Republic in 1993.

According to the Czech defense ministry, six of the 30 SS-23 missiles were transferred to the Slovak Republic in 1993 as their share of formerly joint military assets. The remaining missiles were dismantled quietly by the Czech Republic in 1995-1996.

Slovakia is now seeking to join NATO, and invited NATO military attachés stationed in Bratislava to view the missiles on May 10.

"Warsaw Pact plans called for these missiles being ready to fire within 20 minutes of deployment," said Slovak diplomat Jan Orlovski. "Our people were able to deploy them in front of NATO military attachés in 17 minutes" in a mock operational exercise conducted near the city of Martin. □ *JCD*



A 1988 photograph, published in Paris Match, showing partially dismantled SS-23 missiles, with the nuclear warheads separated from the rocket bodies.

# Project Impact Star Communities

## *Star Communities Exemplify the Spirit of Disaster Prevention*

### **Derived from recent FEMA news releases**

The Federal Emergency Management Agency (FEMA) recently announced the ten *Project Impact* Star Communities for the Year 2000. The *Project Impact* Star Communities award is given out annually to ten communities that exemplify the spirit, innovation and commitment necessary to be a successful *Project Impact* community. FEMA's *Project Impact: Building Disaster Resistant Communities* aims to educate all Americans about the importance of disaster damage prevention.

"*Project Impact* is about saving lives, protecting property, protecting the economic and social fabric of communities and saving citizens the heartache of disaster," said FEMA Director James Lee Witt. "Our ten Star Communities are all making great strides in educating and protecting their residents from disasters and shine as an inspiration for other communities to follow." Communities receiving the 2000 *Project Impact* Star Communities Award include:

#### **1. City of Saco, Maine**

Saco has taken actions to safeguard the community from the dangers of flooding, hurricanes and winter weather including:

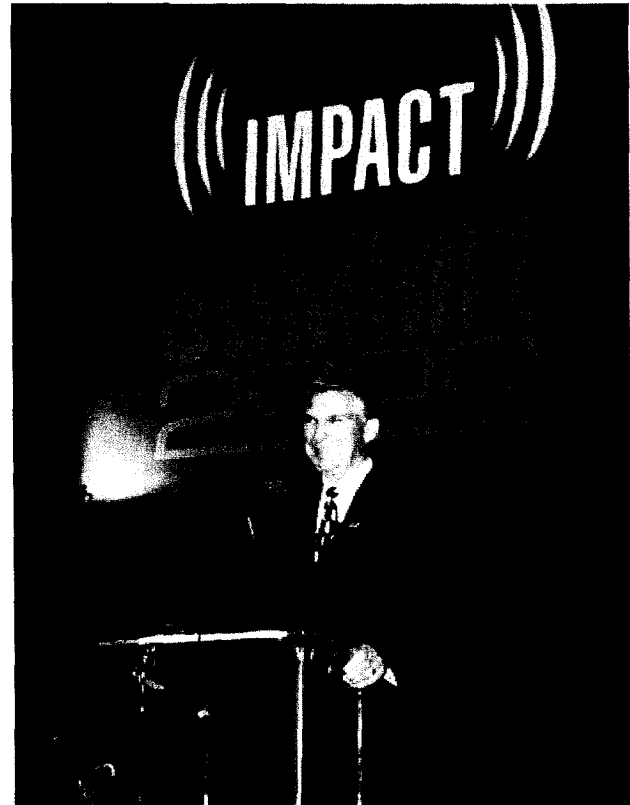
- Drafted an "All Hazard Mitigation Plan" with short and long-term risk reduction activities identified;
- Changed the storm design level from a 25-year to 50-year level;
- Prepared a "Standard Specification" manual for all new and existing developers; and
- Updated the community's comprehensive plan with references about mitigation and the protection of environmentally sensitive areas, especially wetlands and ravines/water courses.

#### **2. Culebra, Puerto Rico**

"Communities like Culebra are making great strides in educating and protecting its residents from disasters and shine as an inspiration for other communities to follow."

Numerous *Project Impact* Partners in Culebra have been instrumental in safeguarding the community from the dangers of floods, hurricanes, earthquakes and storm surges, including:

- The Boy Scouts, who performed an intensive door-to-door mitigation-oriented public awareness campaign;



Project Impact Summit, November 13, 2000  
Opening Plenary Session. FEMA Director James Lee Witt addresses the crowd.  
Photo by Lauren Hobart / FEMA News Photo

- The Rehabilitating Arts Center, which is co-sponsoring *Project Impact* and is developing the Community Effort Program aimed at strengthening the promotional and educational model to take actions for natural disaster mitigation and for an adequate psychosocial management prior to and during a disaster event;
- The College of Engineers and Surveyors, who performed a structural evaluation and assessment of several key buildings and structures; and
- Weather Tech, which designed a disaster planning manual in Spanish and held seminar for small business, and a hurricane planning manual for boaters in Spanish.

### **3. Roanoke, Virginia**

Roanoke has taken actions to safeguard the community from the dangers of floods, wildfires, hurricanes and winter weather storms including:

- Drafted a report and maps for use by the public on which disasters are likely to occur in the valley;
- Created over 2000 elevation certificates; and
- Developed a cartoon character mascot for stormwater management. The mascot, a red-spotted salamander named "Banks McGill," wears a yellow life vest and is featured in an interactive CD for use in schools and libraries.

### **4. Charleston County, South Carolina**

Charleston County has taken actions to safeguard the community from the dangers of hurricanes, floods, earthquakes, tornadoes, wildfires and extreme heat including:

- Created various brochures on mitigation, including Boat Protection for a Hurricane, Generator Safety, Hazard Resistant Landscaping and Hazard "Tips for Tourists"
- Distributed a calendar with hazard tips, a compact disc with *Project Impact* information and promotions for hazard awareness weeks;
- Elevated flood prone properties;
- Developed mobile demonstration models for hazard resistant construction techniques; and
- Created a multi-hazard school curriculum.

### **5. Urbana, Illinois**

Urbana has taken actions to safeguard their community from the dangers of floods, earthquakes, tornadoes, ice and wind storms and winter weather including:

- Produced a wind video and instilling new wind codes;
- Rehabilitated the Boneyard Creek Bridge;
- Conducted a seismic survey and retrofitting; and
- Produced and distributed Red Cross Masters of Disaster kits.

### **6. Ouachita Parish, Louisiana**

Ouachita Parish has taken a variety of actions to safeguard their community from the dangers of flooding:

- Created 3 *Project Impact* videos that review the history of flooding in the Parish and current solutions;
- Hosted a flood-proofing demonstration project as part of community education efforts;
- Participated in a disaster safety fair sponsored by Ouachita Parish Girl Scouts; and
- Hosted the FEMA Region VI *Project Impact* Mentoring Workshop.

## 7. Morgan County, Colorado

Groups and organizations throughout Morgan County have taken actions to safeguard their community from the dangers of floods, high winds and tornadoes, winter weather and wildfires including:

- Weldona completed a new daycare facility utilizing flood mitigation measures for elevation;
- The Weldona Valley School FFA chapter built a tornado safe room in the facility for the children. This safe room was used recently when three tornadoes hit this community. Over 30 preschool students were able to take shelter in the safe room during the severe weather.
- There have been purchases of flood prone property and flood mitigation actions that will allow flood-prone land to be used as open space and act as a retention basin to prevent future flooding in the community.

## 8. Sparks, Nevada

The city of Sparks has over 50 *Project Impact* partners that have played an active role in taking action to safeguard the community from the dangers of earthquakes, wildfires and floods. The city has implemented over 20 projects to date including:

- IBM Global Services conducted a business-by-business review of risks and hazards and provided each of the 40 business participants with an itemized list of recommended actions to avoid or reduce damage from potential hazards;
- Supply One instituted a 'Tool Lending Library' with classes to teach homeowners and business how to install mitigation measures such as foundation bolts, roof tie downs and water heater straps; and
- The University of Nevada Reno Seismology laboratory designed and printed earthquake awareness calendars for the school children of Washoe County.

## 9. Denison, Iowa

Denison has taken a variety of actions to safeguard their community from the dangers of flooding and tornadoes including:

- The buyout of homes after the 1993 flood;
- Construction of ring levees around all critical public facilities;
- Installation of an early flood warning system;
- Restoration and armoring of the East Boyer River including the construction of small earthen dams;
- Continual upgrade of the storm water drainage systems throughout the town.

## 10. Kenai Peninsula Borough/Soldotna, Alaska

Kenai Peninsula Borough and Soldotna have taken a variety of actions to safeguard the communities from the dangers of earthquakes, wildfires and floods including:

- The FireWise Community Action Program - a program designed to create a defensible space around homes and businesses in an areas heavily loaded with wildfire fuels from the spruce bark beetle infestation;
- Non-structural retrofit of schools to brace suspended ceilings and light fixtures as well as seismic restraints for all school computers (approximately 2000 computers); and
- A matching grant program for flood plain residents to retrofit against floodwaters. □ *JCD*

# Survival without a Shelter

By Sharon Packer

Approximately 30% of the world's population have shelters to protect them against the effects of nuclear weapons. Nearly one hundred percent of the population of Switzerland have shelter protection. Russian, China, Finland, Sweden and many other countries have industrial and critical population areas protected against blast, radiation and chemical/biological warfare. Very few people in the United States have adequate shelters and most of our population believes nuclear war is not survivable.

Misinformation, myths and Hollywood productions have lulled most of our citizens into a deep sleep. Their eyes are shut, their ears do not hear. Few read beyond the sports page to realize that Russia continues to modernize every aspect of their strategic nuclear arsenal and proliferates the spread of nuclear weapons to governments of irresponsible leadership. Some people will only awaken to the great noise of the tumult. Others will procrastinate until it is too late. A few of the prudent, however, will prepare and survive to see a better day.

The \$25,000 to \$30,000 cost of well-built, hardened shelters is prohibitive to many families. If built to maximum occupancy (50 persons) the cost is about \$500 per person. This requires, however, the cooperation of 50 like-minded people living within a small proximity to the structure. Steel plate or corrugated steel structures; if properly installed below 8 feet of dry dirt cover will normally provide adequate protection within 1/2 mile of ground zero of a 1-megaton ground burst. This design was tested under actual blast conditions and proved very effective.

## **20 plus miles from target**

Many people in this vicinity can survive outside a hardened facility. The weapons effects of blast, thermal pulse and initial radiation are limited to a fairly small radius. Rural areas outside a 20-mile radius of prime targets will only be affected downwind by fallout. A basement provides a natural protection factor of 20. This means that you would only be exposed to 1/20<sup>th</sup> of the radiation that you would receive outdoors. Two feet of sandbags overhead and on the open sides in a basement will build your protection to a factor of 500. If possible, build a 90-degree turn into your entrance. Keep several 5-gallon buckets with lids for sanitation purposes. Store toilet paper, disinfectant and feminine supplies in the bucket. Store water in 55-gallon drums nearby.

## **5 to 20 miles from target**

Your home may be destroyed or left unlivable in this area. A protection factor of 1000 or greater is needed in this proximity, and can be achieved by placing the equivalent of three feet of dirt around and over your structure. The book, *Nuclear War Survival Skills*, by Cresson Kearney, gives detailed instructions for a blast and fallout shelter that can be hand dug in your yard and costs only a few hundred dollars.

## 0 to 5 miles from target

Evacuation is the only means of survival if your home or business is close to the target, unless you have access to a hardened blast shelter. You would be wise to pre-position food and supplies with friends in your intended evacuation zone. Evacuation requires early warning or an escalating crisis. The only warning of an imminent attack is the attack itself. You must, therefore, learn how to read the EMP early warning signal. Some of these warning signals are listed below.

It is possible that a full-scale nuclear attack from Russia or China would be initiated with a large yield high altitude nuclear weapon arriving via satellite and detonated over the central area of the United States. The electromagnetic pulse (EMP) is a strong electrical field associated with all high altitude nuclear explosives as well as with nuclear ground or low altitude bursts (those where the nuclear fireball interacts with the ground). These induced currents and voltages are designed to cause malfunctions of electrical equipment and interruption of military communications. High altitude nuclear bursts could affect an area of a thousand miles in diameter. Neither blast nor radiation damage is associated with high altitude bursts. This detonation could cause our commercial power to fail so every instance of power failure could be suspected as a possible attack warning. Certain simple tests will quickly reveal whether an EMP attack has occurred.

1. You may see an unusually bright light, which lasts longer than lightning. If this light is associated with a power failure, it should be considered as a possible EMP detonation. Do not look directly at the light, as it may damage your eyes. Not all areas of the United States would necessarily see this light, for example, if there was a cloudy night or in the daytime.
2. Check the telephone for a dial tone. A telephone that operates without an external power supply usually does not fail in a normal power outage, but it would most probably fail as a result of EMP. Note however, that phones requiring external power supplies (such as those with answering machines and those with a mobile handset) will typically not operate during a normal power outage. In addition, phones do fail regularly from other causes and so a third test should be used to help determine if an EMP event may have occurred.
3. Only a small percentage of the radio stations in the nation have been partially protected against EMP. After an EMP event, most of the radio stations would experience equipment and/or power failures and go off the air. Whenever there is a power outage, a battery-powered radio should be used to check for loss of transmission. A simple lightning strike could take out one station, but only an EMP would take out a large number of the radio stations. This transmission failure would be a good indication that an attack was imminent. Keep a small transistor radio wrapped in aluminum foil for this purpose.

The flight time of a missile varies with the distance from the coast. Russian land-based Intercontinental Ballistic Missiles (ICBMs) could arrive in the Midwest as early as 25 minutes from launch. If submarines were used off of the U.S. coast, the Midwest may receive only a few minutes of warning time before the first Submarine Launched Ballistic Missiles (SLBMs) would arrive. Since the end of the cold war, indications are that the Russian missile submarines are no longer in our coastal waters and the SLBMs would have a flight time similar to the ICBMs if these subs did not forward deploy. However, all haste should be made to reach shelter as quickly as possible. These few minutes should be used to find expedient sheltering if away from home, or to quickly access a permanent shelter. If time permits, gas lines to the home should be turned off and curtains or drapes closed to protect against the thermal pulse.

If the EMP occurs during the night, a simple power-drop alarm can be constructed from a battery, relay switch and horn to awaken those who are sleeping. Any electrician can construct this alarm for you. I would suggest using a 12-volt gel-cell battery with a large relay to match and a 12-volt motorcycle horn. Smaller relays may be vulnerable to the EMP and not function as we have planned.

EMP simulations done by the government indicated that the EMP could cause some automobile ignitions and computer systems to malfunction. The report suggested that we could eliminate part of the problem by removing the battery cables from the battery, discharging them by touching them together and reconnecting them to the battery.

Many people are living in rentals and would be unable to construct a shelter. They should look carefully for the nearest available expedient shelter and make plans to carry survival supplies in their car at all times. Consider some of the following places:

- Garages -- (service pit area in quick change places)
- Churches -- (pipe chases from boiler rooms)
- Banks -- (basement vault or safety deposit areas)
- Hospitals -- (usually have massive basements and are well built)
- Residential homes -- (look for basements with maximum soil coverage)
- Schools -- (most schools have pipe chases and some have good basements)
- Mines -- (Stay well back from entrance)  
\*\* Possible danger from gas, falling timber, rocks, or shafts
- Caves -- (Stay well back from entrance)
- Tunnels -- (Many hotels and hospitals have tunnels between buildings)
- Culverts -- look for long runs under highways  
\*\* Possible danger from rats or water runoff
- Boiler Rooms -- In churches, schools, and other large buildings
- Community Swim pools -- (Equipment rooms)  
\*\* Chlorine gas is stored in pressurized containers & could leak from blast damage
- Armories -- (Usually well built)
- Fire Departments
- City and County Buildings -- (Some have underground tunnels)
- Underground parking garages -- (Provides both blast & radiation protection)  
\*\* Danger that building may fall and trap you
- Boats -- (Covered boats in a lake provide good radiation protection, but little blast protection)  
\*\* Must have capability to wash fallout from cover
- State or County Emergency Operation Centers (EOCs) -- (Usually well built and stocked)
- Root cellars -- (Offers better radiation protection than blast protection)

□ JCD

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*Sharon Packer has a Masters degree in Nuclear Engineering from the University of Utah. She is the former President of the Civil Defense Volunteers of Utah and is currently the CEO of Utah Shelter Systems.*

# ***EMERGENCY SHELTERS***

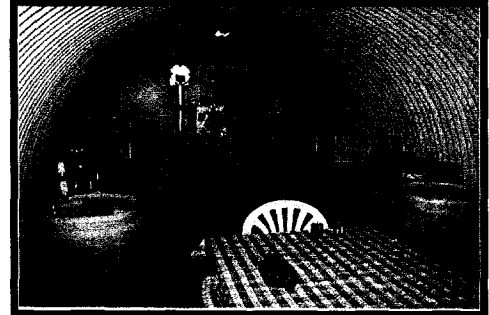
**Steel Shelter Door  
31" x 31"**



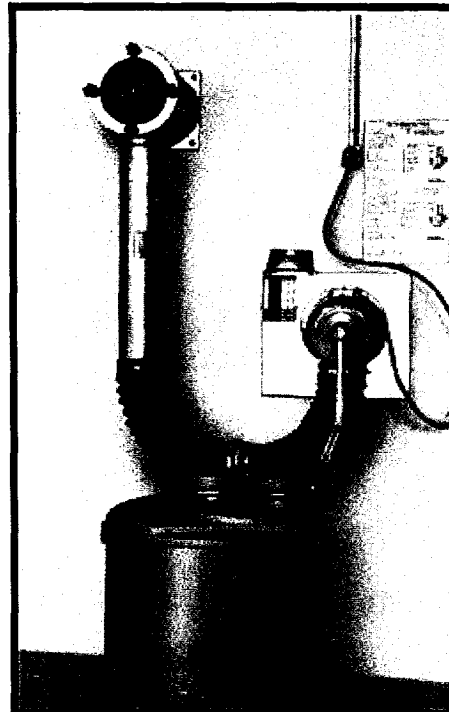
**Nuclear Shelter  
With 90 degree Entrance**



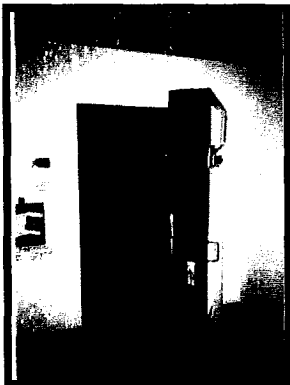
**Corrugated Steel Shelter  
(All sizes)**



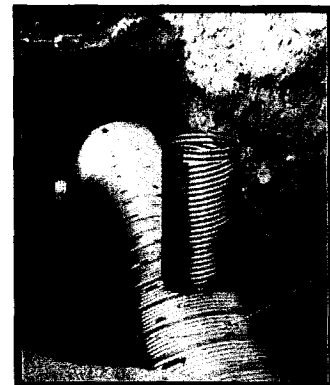
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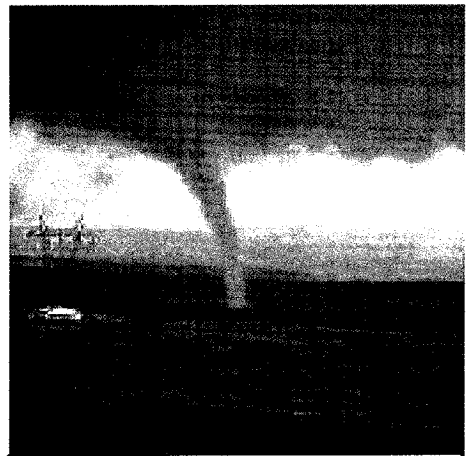
Top entrances decrease the cost and are used when radiation is not an issue. Side entrances have a vertical and horizontal run totaling approximately 22 ft. All Nuclear shelters are constructed with a 90-degree turn.

# Bismarck Tornadoes Remind Us To Prepare

Derived from FEMA reports

The tornadoes that touched down in north Bismarck, ND the day after Halloween provided a stark reminder that disaster has no season.

According to the local National Weather Service office, the storm was more characteristic of late spring, with warm, moist air mass out of South Dakota converging with a cold northerly air mass. The result was an odd combination of hail, lightning and rain to the south, snow-covered highways to the north, and as many as a half a dozen tornadoes in the Bismarck area. Emergency responders reported slight to heavy damage to dozens of homes, but no serious injuries.



On November 1<sup>st</sup>, as many as six tornadoes touched down in the Bismarck area damaging homes and injuring several residents.

- Photo courtesy of the Bismarck Tribune and FEMA.



Erin Dewey plugs her ears to escape the noise of a tornado siren. The tornado damaged the garage of her family home in the background but left the rest of the house undamaged.

- Photo by Mike McCleary of the Bismarck Tribune.

"We all saw this coming, that's why they issued a tornado watch," said Leon Osborne, director of the University of North Dakota's Regional Weather Information Center. "Would we expect a tornado this late in the season? No, the probability is really low, but the climate doesn't necessarily change when the calendar changes."

Osborne complemented the National Weather Service for their swift notification of the public of the potential for dangerous storms and tornadoes and encouraged people to always take emergency warnings seriously. "Be weather wise," Osborne said. "It all comes down to using common sense and at all times being prepared."

"Fortunately there was no loss of life," noted Rick Weiland, regional director for FEMA Region VIII. "But people do need to prepare, regardless of the season. Disaster can strike anywhere at any time, and we must do all we can to protect our communities and our loved ones."

## TACDA Disaster Preparedness Tapes

[Disclaimer note. Videos contain only limited editing from the actual presentations given and are not broadcast quality (however, they are an excellent information resource for concerned citizens). TACDA provides them as a public service. All information in these tapes is for general understanding. Before taking any specific personal actions, professional advice should be sought.]

Title – Speaker – Description	Call 1-800-425-5397 to order! Videos: \$17 Cassettes: \$5
“Preparedness in the Year 2000” Kevin Briggs (former TACDA President) Covers threats and mitigation strategies of key natural and manmade disasters throughout the U.S., to include terrorism and war. [60 minutes]	
“Surviving Weapons of Mass Destruction” – Sharon Packer (President of Civil Defense Volunteers of Utah, MS in Nuclear Engineering) Covers nuclear, chemical, and biological threats and hazard mitigation strategies [32 minutes]	
“From MAD (Mutual Assured Destruction) to MASS (Mutual Assured Security & Survival)” – Nancy Greene (President of TACDA, former Editor of HUMINT Magazine and a well-known international relations expert) Covers the history of the MAD policy, why the DoD has historically neglected active and passive U.S. population defenses, and recommends a mutual Russian & U.S. missile defense strategy. [36 min.]	
“Historical Swiss and Russian Civil Defenses” – Ed York (international civil defense expert, worked on the Manhattan Project and led many civil defense studies). Covers his first-hand experiences with the Swiss Civil Defenses and his extensive research into Russian Civil Defense based on debriefings of Russian immigrants. [30 minutes]	
“US Infrastructure Issues”– Bron Cikotas (former head of the Defense Nuclear Agency’s EMP Division; consultant on U.S. infrastructure) -- Available only in audio cassette for \$5.00	
“US Earthquake Hazards and Mitigation” – Waverly Person, US Geological Survey	
“EMP – Issues and Answers”– Bron Cikotas (former head of the Defense Nuclear Agency’s EMP Division; consultant on U.S. infrastructure) – Audiotape only.	
“Needed: A Radical Rebalancing of Our Defenses” – Kevin Briggs (former President, TACDA) Covers the historical development of Civil Defense in the U.S. and explains why we need both active and passive defense for both manmade and natural disasters. Explains why the current National Missile Defense (NMD) program will not be effective against many threats and discusses how a more effective NMD could be fielded.	

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