



Journal of Civil Defense™

Summer 2006
Volume 39, Issue 2



COMMUNICATION

Next Issue...Earthquakes

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Summer 2006
Volume 39, Issue 2

Message From The President (page 4)
By Sharon Packer

Letter From The Editor (page 5)
By Alex Coleman

Practical Tips for Emergency Preparedness (page 6)
Part 2 of 2 - From The U.S. Department of Homeland Security

"Radio" Active - The New Ham Advisor (page 10)
Part 2 of 2 - By Mike Davis (N4FOZ)

Do We Sink...or Swim Together? (page 14)
By Chief Hal Brilliant, Ret. (TACDA Member)

FYI - TACDA Amateur Nets and the "Lowly" CB (page 16)
By Sharon Packer

Living a Sheltered Life (page 18)
By Sharon Packer

The News Stand (page 19)
DOD Officials Defining Roles For Disaster Response
By Samantha Quigly (AFPS)

The News Stand (page 20)
Spacesuit goes Overboard For Unusual Mission
By James Oberg (NBC News)

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COMMUNICATION

Next Issue...Earthquakes

Message From The President



Dear TACDA Members,

I would like to express my appreciation to all of you for your support of the TACDA board and officers. Our by-laws allow for a two-year term for officers and my term as president expires this summer. It has been a pleasure serving you in this capacity. Bronius Cikotas has acted as vice president and Jay Whippey as secretary / treasurer. New officers will be in place by the end of the summer.

The change of president will not affect our wonderful staff. Alex Coleman continues in his capacity as the editor of the journal. Alex handles all Information Technology (IT) projects and tasks, including computer software and hardware, networking, Internet use, web programming and file management and is supported in this capacity by Diana Fili. Both Alex and Diana work from their Florida home offices. Polly Wood will continue to manage our Salt Lake office, as both receptionist and accountant. Trey Edwards acts as our Salt Lake office IT technician and is our primary design consultant including graphic design for the journal, the web, and all other printed material.

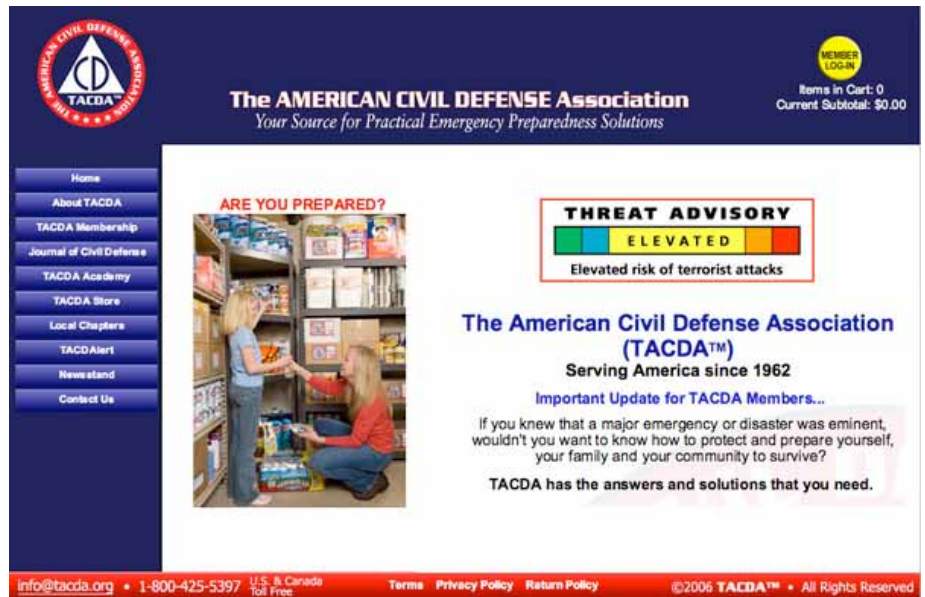
I would like to express my appreciation to Kathy Eiland who served as the executive director of TACDA for many years in Florida and to George Levitt who accepted a short-term interim as executive director in our Salt Lake office to guide the staff and board through the many changes that were needed to streamline our organization. Under his guidance, the board has

upgraded the TACDA by-laws; written an employee's handbook; written a policy and procedures manual including new inventory, accounting and audit procedures and the placement of officers and board liability insurance, and created a complete 'book of minutes'.

During these past two years we have seen many changes. We have moved our headquarters from Florida, and now office in Salt Lake City, Utah. We have added four new board members who have brought great insight, enthusiasm and talent to our ranks. Our board has streamlined our staff to a lean, well oiled and functioning team, and has written 14 chapter lessons with content, lesson plans and supporting visual aids.

is offering articles on communications. Reliable information during a disaster or escalating crisis is paramount to survival. People need to know the scope of the disaster. They need information on evacuation routes and where to find food, water and medical help; and they need to know when and if help is arriving. Two-way communication (receiving and transmitting) is necessary to facilitate and mitigate the needs of the disaster victims. We hope you will find these articles useful in your emergency prep-arations.

We look forward to working with our new officers and hope they will be instrumental in increasing our membership and local chapter programs.



TACDA Website (www.tacda.org)

This year our staff has launched a new web site, enlarged the store, incorporated a chapter program and created several new METTAG products as well as upgraded our original tags. We especially thank our staff for the creation and publication of our new, fresh journal and count it as our greatest accomplishment.

Each quarter the journal emphasizes one of the areas needed to survive a mega-disaster. This quarter the JCD

We pray for your continued support in our efforts to bring you survival information.

Best Regards,

Sharon Packer
TACDA President

Remember, If you are prepared, you have no need to fear.





Alex Coleman - TACDA Journal of Civil Defense Editor

Dear Reader,

On Saturday, July 22, TACDA held its quarterly board meeting, at which time votes were cast to elect a new Executive Committee. According to our bylaws, the Executive Committee can serve a maximum of two consecutive years in their particular offices.



Sharon Packer has served as TACDA President for the past two years, along with Bronius Cikotas as Vice-President and Jay Whimpey as Secretary / Treasurer.

Under Sharon's leadership and guidance, TACDA has been able to move forward with many important projects and has significantly increased its ability to educate Americans to the ever-growing threats that we face and to reasonable and practical solutions to these threats. She has been instrumental in the development of the updated TACDA website and the new TACDA Academy. Sharon has also written many articles for the Journal of Civil Defense and will continue to be a regular contributor to TACDA's quarterly publication.

Although Sharon is no longer working in the capacity of TACDA President, we will still be privileged to benefit from her knowledge and abilities, as she has been reassigned to the position of Acting Executive Director for the next six month period. We are very grateful to be able to have Sharon as a member of the TACDA family, and look forward to many more years of her knowledge and skills enhancing the TACDA mission.

"Thank you Sharon, for all that you have done through your years of service, and for all that you continue to do for TACDA and its members."

Jay Whimpey has graciously accepted the assignment of replacing Sharon Packer as TACDA President, and Bronius Cikotas will continue to serve on the TACDA Board of Directors.

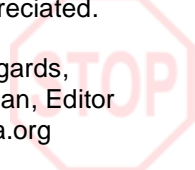
As we turn the page to the next chapter in the existence of The American Civil Defense Association,









we are honored to accept the assignment of our new Executive Committee and Board of Directors, whose names are listed below.

The new Board of Directors will be assigned to the continued growth of TACDA through July, 2007.

On behalf of the TACDA staff and membership, we thank each member of the TACDA Board, past and present, and wish each of them luck with their new assignments. Their skills, expertise and overall support is greatly appreciated.

Kindest Regards,
Alex Coleman, Editor
alex@tacda.org



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|--|---|
| Executive Committee | T |
| Jay Whimpey
(President) |  |
| Dr. Mary Pernicone
(Vice-President) |  |
| Dr. Gary Sadnquist
(Sec./Treas.) |  |
| Board Members | A |
| Dr. Gerald Looney |  |
| William Perkins |  |
| Bronius Cikotas |  |
| Dr. Arthur Robinson |  |
| Kay Goss |  |
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PRACTICAL TIPS FOR EMERGENCY PREPAREDNESS (PART 2 OF 2)

From the U.S. Department of Homeland Security

[Editor's Note: Below are 15 more tips to help you and your family become better prepared for an emergency. See "JCD Volume 39, Issue #1" for the first 15.]

[Look for additional "TACDA NOTES" from the TACDA staff in red italics]

Preparedness Tip #16

One of the easiest ways you can prepare for emergencies is to keep some supplies readily available. Every kit is unique and can be tailored to meet the specific needs of your family, but below is a general list of supplies you may want to consider:

Tools and Supplies (Essential Items Marked with an Asterisk *):

- Mess kits, or paper cups, plates, and plastic utensils
- Emergency preparedness manual and a copy of your disaster plan, including your emergency contacts list
- Battery-operated radio and extra batteries*

- Flashlight and extra batteries*
- Cash or traveler's checks, change*
- Non-electric can opener, utility knife*
- Fire extinguisher: small ABC type stored near where fires are likely to occur such as a kitchen, or near a fireplace. It should not be kept in the disaster supplies kit.
- Tube tent
- Duct Tape*
- Compass
- Matches in a waterproof container
- Aluminum foil
- Plastic storage containers
- Signal flare
- Paper, pencil*
- Needles, thread
- Medicine dropper
- Shut-off wrench or pliers, to turn off household gas and water
- Whistle*
- Plastic sheeting*
- Map of the area (for locating shelters and evacuation routes)

Preparedness Tip #17

Also include items for sanitation in your emergency supply kit. Consider the following:

Sanitation (Essential Items are Marked with an Asterisk *):

- Toilet paper, towelettes*
- Soap, liquid detergent*
- Feminine supplies*
- Personal hygiene items*
- Plastic garbage bags, ties (for personal sanitation uses)*
- Plastic bucket with tight lid
- Disinfectant
- Household chlorine bleach

Preparedness Tip #18

Include at least one complete change of clothing and footwear per person in your emergency supply kit. We suggest long pants and long sleeves for additional protection after a disaster.

Clothing and Bedding (Essential Items Marked with an Asterisk *):

- Sturdy shoes or work boots*
- Rain gear*
- Blankets or sleeping bags*
- Hat and gloves
- Thermal underwear
- Sunglasses

Preparedness Tip #19

You should also keep a smaller version of your emergency supply kit in your vehicle, in case you are commuting or traveling when disaster strikes.

Emergency Kit For Your Vehicle:

- Bottled water and non-perishable high energy foods, such as granola bars, raisins and peanut butter
- Flashlight and extra batteries
- Blanket
- Booster cables
- Fire extinguisher (5 lb., A-B-C type)
- First aid kit and manual
- Maps
- Shovel
- Tire repair kit and pump
- Flares or other emergency marking devices

Preparedness Tip #20

Teach children how to dial 9-1-1 in an

(Continued on next page)



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Corps or contact your local Red Cross chapter for Disasters and Financial Planning: A Guide for Preparedness.

Preparedness Tip #26

Learn if earthquakes are a risk in your area by contacting your local emergency management office, local American Red Cross chapter, or state geological survey or department of natural resources. Information about earthquake risk is also available from the U.S. Geological Survey National Seismic Hazards project.

Preparedness Tip #27

Floods are among the most frequent and costly natural disasters in terms of human hardship and economic loss. As much as 90 percent of the damage related to all natural disasters (excluding drought) is caused by floods and associated debris flow. Most communities in the United States can experience some kind of flooding. Melting snow can combine with rain in the winter and early spring; severe thunderstorms can bring heavy rain in the spring or summer; or hurricanes can bring intense rainfall to coastal and inland states in the summer and fall. Regardless of how a flood occurs, the rule for being safe is simple: head for higher ground and stay away from floodwater. Even a shallow depth of fast-moving floodwater produces more force than most people imagine. You can protect yourself by being prepared and having time to act. Local radio or television stations or a NOAA Weather Radio are the best sources of information in a flood situation.

Preparedness Tip #28

When there is concern about a potential exposure to a chemical or other airborne hazard, local officials may advise you to "shelter-in-place" and "seal the room." This is different from taking shelter on the lowest level of your home in case of a natural disaster like a tornado. If you believe the air may be badly contaminated or if you are instructed by local officials,

follow the instructions below to create a temporary barrier between you and the contaminated air outside.

To shelter-in-place and seal-the-room:

- Close and lock all windows and exterior doors.
- Turn off all fans, heating and air conditioning systems.
- Close the fireplace damper.
- Get your disaster supplies kit and turn on your battery-powered radio.
- Go to an interior room that is above ground level and without windows, if possible. In the case of a chemical threat, an above-ground location is preferable because some chemicals are heavier than air, and may seep into basements even if the windows are closed.
- If directed by local authorities on the radio, use duct tape to seal all cracks around the door and any vents into the room. Tape plastic sheeting, such as heavy-duty plastic garbage bags, over any windows.
- Listen to your radio or television for further instructions. Local officials will tell you when you can leave the room in which you are sheltering, or they may call for evacuation in specific areas at greatest risk in your community.
- **[TACDA NOTES: A 3%+ level of CO2 is lethal. Each person**

requires 88 cu ft. of open space in order to stay in an airtight room for up to 4 hours without replenishing the air.]

If There s an Explosion:

- Take shelter against your desk or a sturdy table.
- Exit the building immediately.
- Do not use elevators.
- Check for fire and other hazards.
- Take your emergency supply kit if time allows.

If There is a Fire:

- Exit the building immediately.
- If there is smoke, crawl under the smoke to the nearest exit and use a cloth, if possible, to cover your nose and mouth.
- Use the back of your hand to feel the upper, lower, and middle parts of closed doors.
- If the door is not hot, brace yourself against it and open slowly.
- If the door is hot, do not open it. Look for another way out.
- Do not use elevators.
- If your clothes catch on fire, stop-drop-and-roll to put out the fire. Do not run.
- If you are at home, go to your previously designated outside meeting place.
- Account for your family members and carefully supervise small children.



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- **GET OUT and STAY OUT!**
Never go back into a burning building.
- Call 9-1-1 or your local emergency number.

Preparedness Tip #30

Unlike an explosion, a biological attack may or may not be immediately obvious. Most likely local health care workers will report a pattern of unusual illness or a wave of sick people seeking medical attention. The best source of information will be radio or television reports. Understand that some biological agents, such as anthrax, do not cause contagious diseases. Others, like the smallpox virus, can result in diseases you can catch from other people. In the event of a biological attack, public health officials may not immediately be able to provide information on what you should do. It will take time to determine exactly what the illness is, how it should be treated, and who may have been exposed. You should watch TV, listen to the radio, or check the Internet for official news including the following:

- Are you in the group or area authorities believe may have been exposed?
- What are the signs and symptoms of the disease?
- Are medications or vaccines being distributed?
- Where? Who should get them and how?
- Where should you seek emergency medical care if you become sick?

During a declared biological emergency:

- If a family member becomes sick, it is important to be suspicious.
- Do not assume, however, that you should go to a hospital emergency room or that any illness is the result of the biological attack. Symptoms of many common illnesses may overlap.



- Use common sense, practice good hygiene and cleanliness to avoid spreading germs, and seek medical advice.
- Consider if you are in the group or area authorities believe to be in danger.
- If your symptoms match those described and you are in the group considered at risk, immediately seek emergency medical attention.

If you are potentially exposed:

- Follow instructions of doctors and other public health officials.
- If the disease is contagious expect to receive medical evaluation and treatment. You may be advised to stay away from others or even deliberately quarantined.
- For non-contagious diseases, expect to receive medical evaluation and treatment.

If you become aware of an unusual and suspicious substance nearby:

- Quickly get away.
- Protect yourself. Cover your mouth and nose with layers of fabric that can filter the air but still allow breathing. Examples include two to three layers of cotton such as a t-shirt, handkerchief or towel. Otherwise, several layers of tissue or paper towels may help.
- Wash with soap and water.
- Contact authorities.
- Watch TV, listen to the radio, or check the Internet for official news and information including what the signs and symptoms of the disease are, if medications or vaccinations are being distributed and where you should seek medical attention if you become sick.
- If you become sick seek emergency medical attention.



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Operational Tips: New Hams may wish to tune into a frequency and listen for a while to see what sounds the radio makes. In 2-meter transmission, the repeater (relay station) makes a sound after each transmission when it resets. It is best to wait for a second after activating the microphone, to allow time for the repeater to reset before you begin to talk.

their transmissions or say the word "contact" or "comment".

Quick Keying. Do not jump in too quickly. Be patient and wait for your chance to join in. Make sure you let the repeater reset before transmitting again. Listen for the sound pattern that indicates the repeater has reset.

Quick ID. You should give your call sign at the beginning and ever 10 minutes during the QSO. You should also give your call sign at the end of the QSO. Hams sometimes give their call sign so quickly that it is difficult to understand. As a new Ham, practice saying your call sign clearly and slowly so that it can be easily understood.

Extra Equipment:

Consider purchasing an external speaker, an extra power cord for your mobile to connect to a Deep Cycle Battery, an SWR/Power meter (for frequency tuning), an extra battery pack and a "plug in" type microphone for the hand held radio.

Joining In. When you hear the repeater reset, give your call sign and say the word "Listening" or "Monitoring". You could also give your call sign and wait for a response. If there is a QSO (conversation) in progress, and you want to join the conversation or make a comment, just give your call sign in between

Ham operators provide a marvelous service in emergency situations. Ham radio operation is a wonderful hobby for all walks of life, and friends and contacts are easily made throughout the entire world. We hope you will consider joining this group of dedicated individuals and become an amateur radio operator.

Emergency Back-up Power:

(Items to Obtain)

- o Flashlight close at hand in your ham shack (base station).
- o Extra power cable for radio.
- o Deep Cycle 12 volt batteries, 6-volt golf cart batteries, or 6-volt gel cell batteries. Gel cell batteries limit the out-gassing problem during charging. Do not purchase automotive batteries for this purpose.
- o Proper "Float" or "Trickle" charger for your batteries (gel cell batteries require a special charger).

What to do. Keep your emergency batteries charged at all times. Clearly label the positive and negative battery terminals and connectors to the charger. Keep all required connectors from the radio near the battery. Have a plan and exercise the procedure on a regular basis.



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- Public safety, emergency management and Homeland Security topics and developments.
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- Advertisements for civil defense and disaster preparedness

The Journal of Civil Defense is published quarterly by The American Civil Defense Association (TACDA) as a main vehicle for the distribution of current and reliable civil defense and disaster preparedness information and resources to our members and subscribers.

The Journal of Civil Defense presents articles that cover a wide spectrum of civil defense and disaster preparedness and mitigation issues on both the personal and the professional levels.

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DO WE SINK... OR SWIM TOGETHER?

**By Chief Hal Brilliant, Ret.
Member of The American Civil
Defense Association (TACDA)**

[Editor's Note: This article was provided to the Journal of Civil Defense in one members attempt to address the importance of community interaction and the synergistic effect of numbers of people bringing different skills and abilities together for the common good.]

Seeing the hurricanes that recently hit Florida and the Gulf Coast, the tsunami that hit southern Asia, the tornado that went through Indiana, the continuing possibility of a major earthquake in California, other recent natural disasters - and not even taking into account the possibility of a terrorist act, you certainly have reason not to be able to sleep at night.

Many Americans are sensibly taking steps to see that some protective measures are in place for themselves and their families. Some are taking the somewhat romantic back-to-the-woods or survivalist approach; that of getting food, gear and guns and possibly a place out in the great somewhere and living "off the land". The problem is that it is difficult, if not impossible to "live off the land" these days. And if a person developed some resources using a small farm someplace, he couldn't protect those resources 24 hours a day, not to mention dealing with necessary replacement of consumables.

The focus of this article is to review why we should be taking appropriate action to include our neighbors and community.

At risk of sounding critical of government, even the best laid plans by the authorities can go askew as evinced by the debacle immediately following hurricane Katrina. So, counting on government response, at



least in the short term, is not a practical idea. And, if the disaster resulted in a long-term breakdown within our society, we, as citizens, might be on our own for an extended time, until services and normalcy can be reinstated. We also recognize that most of us would most likely prefer to stay in our own homes if we had a choice. This is where we are comfortable, have our food, supplies and our own bed. "So, we should think of coping with, and responding to the consequences of a major disaster from a community perspective. After all, we 'are' part of our community.

The American Civil Defense Association has always emphasized personal responsibility in disaster preparedness, and recently Michael Chertoff, the Secretary of the Department of Homeland Security, gave a statement to the Associated Press regarding the importance of personal preparedness. According to Chertoff, for those who say, "Well, I can take care of myself, no matter what. I don't have to prepare", this is an altruistic statement - to the extent that they become a burden on government services, taking away from what's available to help those who can't help themselves. This is a matter of civic virtue."

An article in the Disaster Resource Guide in 2003 emphasized similar points when it focused on personal, family and community preparedness. It further stressed the link between terrorism and all-hazard preparedness. The writer pointed out that the solution was education.

An excellent article in July/August issue of The Journal of Civil Defense by Barbara Salsbury dealt with issues of family and neighbor preparedness. But we must also recognize and review further the comment Secretary Chertoff made regarding "civic virtue" and how it relates back to the community. We do have a responsibility to help educate our family, neighbors, and our community leaders to prepare collectively and as a group. We are also a moral people. After all, could we truly turn our back on those who didn't, or were unable to prepare and would certainly be victims of a catastrophic event if we could have done something to help?

We all know someone who is elderly, sick or handicapped and likely living alone. In our highly mobile society all too many older citizens do not have family living nearby. Many in this group do not grasp the need for, or have the extra money for emergency supplies. Is there anyone planning

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on checking on, much less, to help take care of each of them? What can be done? This issue goes back to education and comprehensive planning.

Local Government:

One step seldom written about is whether the community leaders in your town have adequately taken stock of the potential threats that might impact the town and where the town is most vulnerable. All too often, if they prepare a plan at all, it is found to be a generic plan that isn't realistic to the issues threatening your community. It is more than obvious, for example, that the levees in New Orleans should have been upgraded long ago. It wasn't done. California, to their credit, has for years been issuing upgraded building standards to account for the threat of earthquakes, but there are many communities, I'm sure, that are located on (presently) inactive fault-lines, flood plains, tornado-prone areas or that are vulnerable to brush fires that do not have adequate building codes.

So, does YOUR town have a viable community emergency plan? If it does, your town fathers should promote citizen review of its disaster plan. In fact, the laws in all towns should require public scrutiny as much as possible; i.e. is there a copy in the public library? A plan your town councilman may think adequate may not fully address the needs of hundreds of children enrolled in day care centers every day, or reliable transportation for the residents of the nursing homes, or homes for the elderly. A neighboring community in my county has designated Red Cross shelters but none of them have emergency power. No power means no heat in cold weather, inadequate lighting, and other complications in an already bad situation. Perhaps, local building codes should require at least some of the service (gas) stations to be wired to accommodate an emergency power hookup. Everyone

wants to "gas up" when an emergency occurs, and if the power is out, stalled and out-of-gas vehicles could certainly disrupt an evacuation route. Any unnecessary problems could further complicate an already bad situation.

Churches, lodges and service clubs:

Respected members of the community and/or the leadership in the organizations mentioned above must make the membership aware of the consequences of not including the most helpless of your community in some kind of response plan, and appeal to them to assume part of the task of meeting those needs. An extension of this is to promote an 'anti-crime' Neighborhood Watch Program where the residents of the neighborhood take on the responsibility of finding out who might need assistance in that particular neighborhood, and provide help if/when needed. A service club such as Rotary would be excellent at coordinating a project such as this. The above mentioned groups' program chairmen or lodge leaders could get a speaker from the county's emergency management office to discuss the county's emergency plan and give the group a starting point to localize the community's preparedness needs on a citizen level.

Neighborhoods:

Neighbors must work together for numerous reasons. Three will be mentioned here for the purpose of emphasizing the importance of neighborhood cooperation. Should a widespread disaster reduce or stop the availability of food for a significant period of time, people will start, or increase the size of existing gardens. This is backbreaking work, especially in the possible absence of gasoline for any available tillers. So, it is certainly helpful for those with useable backyards to have help from their neighbors. Plus, shared produce is certainly better than losses from 'midnight shoppers'.

Speaking of theft, your neighborhood must start a 'real' Neighborhood Watch Program. The advertisement of neighborhood unity and support will both reduce plundering or attacks and provide safety in numbers in the event of a threatening gang.

The resources of a neighborhood are simply greater than what any one person can accumulate. A neighbor down the street may have a little tool or machine shop in his basement. Another neighbor on the adjacent street may be a teacher so the kids can continue some semblance of learning until the busses start running and schools open again. There may even be a doctor or nurse in the neighborhood. And one vehicle going somewhere for supplies for several families is certainly more efficient than each family fending for himself.

Individuals:

If your family can link up with a neighbor so you don't have to worry about them every moment, you would be able to volunteer some time with the local fire company, ambulance corps, Red Cross or Amateur Radio ARES/RACES group. Members receive excellent training and prepare themselves for emergencies while helping their community. This is something you should start now; it's really too late after the trouble hits.

Conclusion:

We must also remember that this will be a terrible time of emotional stress. The peace-of-mind that one can experience by being part of a larger group during an emergency situation cannot be overemphasized.

And when limited services i. e. food and water, are finally being shipped in, they will be going to organized communities, to town halls, to areas of population density - and unfortunately for some, not the distant suburbs and certainly not to homes and camps in the hinterland. If fuel is in short supply, and it likely would be, it could be a long walk for those folks. **Good luck.**





TACDA Amateur Nets and The 'Lowly' CB

By Sharon Packer

FCC rules allow for Civil Defense communications on Citizens' Band (CB) radios. The long range of CB band radios allows for links covering massive areas. Many people have CB radios, however the CB radios with sideband channels (SSB) are not widely used and it is much easier to find unused airspace on the sideband channels. SSB radios are excellent radios for emergency use. They are very inexpensive and within the budget of most families.

The Lowly CB:

Citizens Band radios operate in the 11-meter band range. There is no

Channel 9 is limited for emergency communications or road assistance.

The first 23 AM CB stations are often used by truckers and are shunned by many people because of the over crowded airways and the static interference. The range of CB radios is about 10 miles, which is significantly longer than the range for FRS and GMRS radios.

CB Radio operators normally transmit double sideband AM on the first 23 channels. On channels above Channel 23, upper sideband or lower sideband equipment may be used. The FCC limits the carrier power to 4 watts on the AM channels and 12 watts on the SSB channels. You may only use a type-accepted CB Radio transmitter. Any internal modification to a type-accepted CB Radio transmitter cancels the type acceptance, and use of such a transmitter voids your authority to operate the station. Power amplifiers are specifically disallowed for use with a CB Radio.

The FCC allows CB antennas of a maximum of 23 feet above the highest point of the building or tree on which it is mounted.

the ground and there are additional restrictions for areas around airports.

An excellent source on FCC regulations for CB users can be found on the internet at <<http://home.att.net/~wizardoz/cbmw/fccrules.html>>.

CB TACDA Chapter Nets:

Single side band radios can be used to link stations for organized TACDA chapter nets. The people in the net cannot all talk to each other, but information can be linked and repeated throughout the area. The net leader should have an amateur radio license with both a CB radio and a high-powered amateur radio that can be used to receive information for the net. Hams will then transmit this information to the people in the CB net. Existing TACDA nets have chosen upper sideband radio equipment for use in their nets.

CB Net maps:

The individuals on the TACDA net should all be provided with a special map with grid lines using the alphabet for one direction and numbers for the other (such as M3 or some other set of numbers). All people within the net area should be locatable on the map.

The grid numbers for the participants' base location on the map will become their call sign (otherwise known as their "handle") and they will participate in the net using that number. This provides privacy and protection to the participants, as the map will be unique to participants in that chapter and other people listening on those frequencies will not have the same map. Valuable information (such as blocked evacuation routes, road damage, radiation levels, emergency needs) can then be gathered from many sources that would otherwise be unavailable to the Ham operator. The Ham radio operator can then relay



FCC licensing required for CB radio use. There are 40 channels available.

The highest point of the antenna must not be more than 60 feet above

(Continued on next page)



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this information to the Net Operators in other CB net locations. The nets could be linked to other TACDA chapters throughout the nation using this method.

Operating a TACDA CB Net:

Practice often. Set up a regular schedule to 'call in' on your TACDA net. Encourage everyone to give radiation readings for their location during these practice exercises. If possible, a ham operator should be designated as Net Control. If there is no ham operator available, choose a centrally located member of the net with a CB to act as Net Control. Some members of the net may need to relay their information to the Net Control through other members that are in their 'line of sight'.

In an emergency:

1. As soon after the emergency as possible, go to the designated sideband frequency, (CB channel X). Key your Transmitter and say "Net Control, this is Civil Defense Unit #____, monitoring." Net Control will then answer. If Net Control is not on frequency, someone else will pick up the duty or may respond in like manner.

2. If the emergency is severe, follow the same procedure at each 15 minute interval until a Net Control is established. Net control will establish the next check in time.

3. If the emergency is a nuclear event, and you suspect you are in a radioactive environment, wait 2 days and check in at 10:00 p.m. nightly thereafter. Most people will have to leave their shelter to use the radio and will be broadcasting for only very short periods starting at the 10:00 p.m. time. Those who can transmit from a sheltered position may be broadcasting the radiation levels from the first night, however it is recommended that they keep their antennas unhooked when not transmitting because of the potential for EMP damage.

4. A designated person will be NET CONTROL, and will direct traffic as necessary. If that person is not on the air, any unit that has a good central location may act as net control. Transfer Net Control to the designated person when they come on the air and identify themselves.

5. Net Control will ask that unnecessary chatter be moved to a non-call channel. Net Control will handle pertinent traffic in an efficient and organized manner.

6. Net Control will say, "This is Net Control for TACDA unit XX, calling for stations to check into the net." When Net Control starts roll call, he should say, "If you have information on this event, please list your traffic when you check in"; or he may ask, "Please give radiation levels in your area when you check in".

7. He will then ask, "Are there stations in "A" locations, then 'B' locations, etc. on up through the alphabet shown on the map. Each person will then respond by giving their call number (two digit map location number) and any information (traffic) that has been requested. The person might respond by saying, "This is station XX with traffic". Net Control will then say, "Go Ahead Station XX." Station XX will then give his information. Net Control will record all stations and information as it is given.

8. Any time during check in if you have emergency input that cannot wait, you should say "Break, this is XX." Net control will then acknowledge that person's request for input.

9. Net Control may not be able to hear all stations wishing to call in. At the end of the role call, Net Control should go back and repeat the stations he was able to copy and ask if there any relays for stations which he has not acknowledged. After hearing all stations that are within his area, he will then ask a person on the outside edge of the map to give a call

for additional stations. That person may be able to hear some callers that Net Control cannot receive.

10. At the end of the roll call, Net Control will then say, "Does anyone have any additional traffic or comments for the net?" If there are no comments, Net Control will say, "No stations heard". If there is no further traffic, Net Control will give notice of the next roll call time by saying, "This net will re-convene at XX time". He will then say, "Net is closed", or, "Net is now on free time".

All times should be given in military time, as shown in the following table:

Time	Military
Midnight	0000 Hours
1:00 AM	0100 Hours
2:00 AM	0200 Hours
3:00 AM	0300 Hours
4:00 AM	0400 Hours
5:00 AM	0500 Hours
6:00 AM	0600 Hours
7:00 AM	0700 Hours
8:00 AM	0800 Hours
9:00 AM	0900 Hours
10:00 AM	1000 Hours
11:00 AM	1100 Hours
NOON	1200 Hours
1:00 PM	1300 Hours
2:00 PM	1400 Hours
3:00 PM	1500 Hours
4:00 PM	1600 Hours
5:00 PM	1700 Hours
6:00 PM	1800 Hours
7:00 PM	1900 Hours
8:00 PM	2000 Hours
9:00 PM	2100 Hours
10:00 PM	2200 Hours
11:00 PM	2300 Hours

We hope you will organize a TACDA Net within your area and that you will remember and incorporate the PEP concept; Plan, Equip, and Practice. Feel free to contact us with any questions.





By Sharon Packer

Many past and recent experiences confirm that we cannot rely on traditional communication systems during emergency situations. We must, therefore, familiarize ourselves with alternative communication equipment and technology.

Depending on the scope of the crisis, the communication systems we normally rely upon may become unusable. Home phones become overloaded or unusable in many disaster scenarios. Hurricanes and tornados could cause power failures, and without alternative power sources, cell phones and other battery dependent systems could not be recharged. Earthquakes could destroy repeater stations. An electromagnetic pulse has the potential to destroy all unprotected circuitry.

If we are serious about survival we should consider obtaining an Amateur Radio License (otherwise known as a Ham license), which will provide us with a legal means to "train on the job", for communications skills needed in the future. These skills will help us set up, maintain, protect and operate ham radio equipment.

Our family shelter is equipped with amateur radios, citizen bands (CB) sideband, and shortwave capability. We store antennas and power supplies to support each of these radios.

Faraday Cages:

Faraday cages should be used to protect all emergency radios from the effects of an EMP. Any metal container will act as a Faraday cage. However, good metal-to-metal contact is imperative. Remove all gasket material from the lid. If the container has been painted, make sure to remove the painted area around the lid with sand paper.

Build a simple faraday cage from a small metal garbage can and lid. The lid must fit snugly over the can. If the lid does not make good metal-to-metal contact, the open area could act as a 'slot antenna' and allow EMP to damage your equipment. To further protect your equipment, purchase a metal screen about 6 inches wide and as long as the circumference of the can. Fold the metal screen in half, length wise, and place it around and over the lip of the garbage can. The lid should then fit snugly against the screen and garbage can, protecting all equipment contained inside.



An exceptionally expedient faraday cage is a microwave oven. Just remember to leave it unplugged and not use it while radios are inside.

Power Supplies:

Almost all current technology ham radio and CB equipment operates on 12 volts direct current (DC), which is the DC standard voltage. There are many options, but we have chosen to use 6-volt gel-cell batteries configured for 12-volt use. Gel-cell batteries require a special charger and should not be charged from a regular deep-cycle battery charger. We have chosen to use the IOTA DX75 charger.

Solar panels are often used to charge batteries. They will require a regulator to keep the batteries from being over charged. Solar panels with a charge value of at least 15 watts are needed to maintain a battery reasonably well. The higher the charge rate, the better the charging. Deep Cycle batteries could also be used to power inverters to enable the operation of equipment on 120 volts AC.

Our shortwave radio requires the use of an inverter. We purchased the Zantrax (1500 watt surging to 3,000 watts) inverter and it is serving us well.

Generators require a good stock of fuel. During a disaster, however, fuel is usually scarce and not easily replenished. Use your generator sparingly for only a few hours a day, and limit its use to critical equipment. In major emergencies, generator power should only be used to charge batteries, and batteries should only be used to run communication equipment and emergency lights.

PEP (Plan / Equip / Practice):

- *Plan carefully.* Communications are vital to both physical and mental stability during large-scale disasters. Use your resources wisely.
- *Equip wisely.* You cannot afford to have your emergency communication equipment fail during a crises. Purchase extra parts. Purchase several Citizen Band radios (CB). They are inexpensive and extremely valuable. Purchase good quality equipment, and consult trusted advisors.
- *Practice often.* Use your equipment. Be familiar with all the intricacies of your radios. Form a TACDA net (See the article in this journal, "The Lowly CB & TACDA Nets". Get an amateur radio license. Join other emergency nets throughout the country.





Spacesuit Goes Overboard for Unusual Mission

By James Oberg
NBC News space analyst
Jan 31, 2006

HOUSTON - It sounds like a scene from science fiction: A lone figure is cast off from the space station, getting smaller and smaller as it drifts out into empty space.

In this case, however, no human will actually be at risk. When the crew members aboard the international space station toss a worn-out spacesuit over the side, it will be empty except for an interesting amateur radio experiment.

During a spacewalk scheduled this Friday, astronaut Bill McArthur and cosmonaut Valery Tokarev will spend six hours carrying out assembly, repair and inspection work on the space station — and one photogenic feat of "space littering."

It won't be the first time an old Russian spacesuit has been tossed overboard, but "SuitSat," as it is called, has an actual mission.

A simple battery-powered radio transmitter inside the suit will use an antenna mounted to the suit's helmet to send signals down to Earth for up to several days. The data will include temperature readings, a slow-scan TV image and several specially

coded messages for ham radio listeners to figure out.

The project is aimed mainly at students, and SuitSat organizers solicited hundreds of school pictures, artwork, poems and signatures from schools all over the world. A CD with the imagery is being placed inside Suitsat, with another copy of it to be kept on the space station.

SuitSat's transmitting career will be short, however: Its batteries are expected to run out after several days. Within a few weeks, SuitSat itself will burn up in the atmosphere.

SuitSat's ancestors

Russia's spacesuits are excellent for working outdoors in orbit. From a spacewalker's perspective, they're flexible, easy to don and doff, and have excellent visibility, including a porthole in the top of the helmet for looking directly overhead. They're also easy to service and, more so than NASA's spacesuits, are designed for repairs in the field.

Still, such suits have a limited life — usually about 10 to 12 spacewalks. The equipment installed on the suits can be cannibalized for use on newer suits, but the bulky main shells must be disposed of. Sometimes they are stuffed into empty supply drones destined to dive back into the atmosphere. Once, a suit was loaded onto a visiting space shuttle for study back on Earth. But usually, the suits are literally thrown away into space, stuffed with other throwaway items such as empty food containers and dirty clothing.

In October 1993, two cosmonauts aboard the Russian space station Mir added a wry visual gimmick: They stuffed the suit full of trash, shaping it into the posture of a cosmonaut standing erect, arm waving goodbye. They then cast it off in full view of their external television camera. As it slowly cartwheeled away, the empty suit looked like that classic science-fiction staple of the doomed astronaut, saluting as it went to a

fiery Viking funeral in Earth's atmosphere.

For years afterwards, cosmonauts entertained guest astronauts by playing a tape of the spacesuit's final salute. The images were never released to the public — perhaps for fear they could spark sensational rumors. But in 1993 Russia was still using communications relay satellites for television transmissions, and a few dedicated and highly skilled radio amateurs in Europe were able to eavesdrop on the channel and capture the image.

How to tune in to SuitSat

For decades, American and Russian space activities have included projects on behalf of amateur radio operators all around the world. SuitSat — whose "call sign" will be "RS0RS" — will broadcast on a frequency deliberately chosen to be easily accessible.

"All you need is an antenna — the bigger the better — and a radio receiver that you can tune to 145.990 MHz FM," said project engineer Frank Bauer at NASA's Goddard Space Flight Center. "A police band scanner or a hand-talkie ham radio would work just fine."

The satellite will pass across the sky for observers in only a few minutes, so timing is critical.

For the first few days of its deployment, SuitSat will be in the vicinity of the international space station, so you can use NASA's online orbital tracking guide or other station-watching sites to keep tabs on SuitSat as well. As SuitSat's orbit decays, it will gradually drift ahead of the station in its orbital path.

Listeners are asked to log their receptions on the project's home page, SuitSat.org, and to keep up on the project's progress via the home page of AMSAT, the Radio Amateur Satellite Corp., or through NASA's

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