

# **Homeland Security Communications**

**Initial Planning  
for the  
Radio Amateur**

**by**

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**K5DZE**

## Forward

September 11, 2001 is surely a date that every adult American will remember for a lifetime. Overnight, we found ourselves in a very real war. For the first time in living memory, a war was being waged against Americans on American soil. It is something none of us had experienced...until now.

War is certainly no stranger to American Amateur Radio operators. Amateurs have served proudly in every branch of military communications and on the home front ever since the inception of Amateur Radio. It will be no different this time; however the Amateur service may well be called upon for new approaches and new ideas. There is an old saying that the military always trains to fight the last war, and while I may be prejudice on this issue, I am sure this is not so of the American military today. However, I am not sure the average Amateur Radio operator is as well prepared to support this very different kind of war effort. In WWII Amateur Radio operators were QRT for the duration when our nation was directly threatened. This time we may be asked not to shut down, but rather to step forward to provide vital communications for Homeland Security.

Hams have demonstrated again and again that they we are prepared to rise to the occasion for natural disasters and other major emergencies. This is not by accident. A great deal of preparation and training led to successful operations. On the other hand, a war waged in your nation, your state, and perhaps in your hometown may bring up situations you may never have considered. *Amateurs will certainly respond, but the question is will we be up to the task as well as may be needed?* Hopefully, this ebook will help you think seriously about how you can help in this effort and how you can start preparing to be of service to your country right now where you are, doing what you do so well.

Surely the first step in this preparation is a new mind set. Let us begin by noting that this is not a guerrilla warfare communications manual. This ebook is about preparation for service in Homeland Security before hostile acts come close to home, or about responding effectively following such acts. It is written to address the events of the day and hopefully it will soon become as obsolete as the Conelrad monitor of the 1950's.

For now, a piece of friendly but serious advice...we must put our old "we have all the answers" attitude on the shelf. There is no place for amateurs that cannot be flexible and learn new approaches. Cooperation and service are the key words for today. *Build on your experience, but be prepared to give more than you get.* War is not a place for credit. Train hard and be serious about how you train. If you are never asked to use your skills and preparations, then be thankful you were never needed. The men and women who fought the cold war spent a lifetime preparing, training and daily serving without credit in difficult places and mostly without accolades. Like them, it should be quite enough for us to say we were ready.

***K5DZE***

**Dedicated to the Amateur Radio Operators who lost their lives and to those who tirelessly served in the weeks following September 11, 2001.**

## Background

Reports of how Radio Amateurs served their community, their state, and their nation during the days following September 11, 2001, showed that Amateurs did a good job of rising to the task. You should take time to search out and read these after action reports to see what worked, what did not, what problems were encountered and how these were resolved, if they were resolved. As you do this, read between the lines. Frustrations, exhaustion, systems failures, manpower shortages, incompatibilities of systems to cross communicate, reliance on high technology that failed, security concerns, anger, grief...and pride all surface. Nothing really new here...much of this is experienced during and after every hurricane, tornado, wildfire, or other disaster. We always try to do better next time and we honestly try to capitalize on our successes and learn from our mistakes. We have indeed made progress since 9-11. However we must realize that this war creates situations where learning from mistakes can very well cost lives and make bad situations worse.

The topic of this short book is *wartime support preparation for Homeland Security*. If it sounds odd to hear the terms *wartime* and *Homeland Security* used, then you get the point. We have not trained for this and while all emergencies have much in common, wartime scenarios can have their own needs and requirements. *This is not a contest*. We are at war and it is not somewhere else this time. What was New York, Washington, Pennsylvania last time could be Missouri, California or Georgia next time. It could also be your hometown or someplace near you.

*If we don't take the threat seriously, then we are destined to repeat history as we have many times before.*

## **The Need for Amateur Radio in Homeland Security**

If you read the after action reports of September 11, one of the things you will note very clearly is that the major communications systems we rely on daily had very real problems or else they failed altogether for some period of time. Cell phones were out or bogged down, TV stations in New York City were mostly out for direct broadcasts, emergency radio systems were inundated with emergency traffic particular to what they were designed to do. In some cases, communications centers and facilities designed to operate in such emergencies were themselves in the middle of an attack and were evacuated. Information needed by numerous agencies trying to respond to the scope of the emergency was slow in coming as communications systems tried to recover. All this happened with an unreal scene of destruction and carnage in an atmosphere of wondering if it was over or going to get worse.

*Welcome to a wartime scenario.*

### **Targets Close to Home**

One almost hesitates to openly discuss targets and vulnerabilities, yet you should understand that terrorists and enemies are way ahead of you in spotting such vulnerable targets. If you can identify a target, it is almost surely already on some terrorist's target list. Using a variety of means such as large aircraft (WTC and the Pentagon), large chemical/fuel mixture bombs in trucks (Oklahoma City), and chemical weapons (nerve agents in Japan), terrorists have struck targets effectively. Other facilities and installations have been mentioned in the papers and media. Major bridges, tunnels, river traffic, dams, power grids, nuclear power sites, research centers, ports, chemical factories, and other skyscrapers are all possible targets. Now put this in a more personal context. What is near your home site (within 100 miles) that would be a major disaster if it were attacked or destroyed? Do trains with multiple chemical cars pass through your town or over a bridge across a major river near you? Could arsonists set multiple fires in the nearby national forest? Is a refinery producing toxic chemicals near you? Again, this is not news to those who would mean us harm so they get no tips from mentioning such targets. Perhaps the only one who has not thought of these issues is you! Suffice to say; in a free and open society like ours, vulnerability comes as part of the package. Surely more vigilance and a little less openness will be the new order of the day, but at least you may now start thinking of what "targets" might be near your hometown.

## So What Do Amateurs Have to Offer Homeland Security?

Obviously we know that Amateur Radio provides a unique service and has much to offer in emergency situations. For Homeland Security, Amateurs are:

- *Licensed* – The licensing process identifies persons with an expressed interest in communications. This process often brings persons with some degree of technical skill into the area of communications. This licensing process also provides emergency personnel with some assurance that the person providing the communications has at least registered with the government, is known, and is agreeable to help if needed.
- *Trained* – Amateur operators, like soldiers, firemen, and anyone else, come with various degrees of capability. Some are electronics professionals, and some are just weekend operators. Some can build an antenna out of almost anything; others can assemble a digital system in a briefcase and go most anywhere. Most amateurs bring something to the table, even if it's just their personal equipment and a willingness and interest to train to be a good operator.
- *Cost Effective* – At a time when there aren't enough communications frequencies, enough operators, enough radios, or enough funds, Amateurs have a great advantage for emergency services. With the economy hit hard at this time, heavy funding for new services and equipment just aren't in the budget for Homeland Security. Amateur radio is a huge asset that costs virtually nothing to the emergency service user. Amateurs are trained communicators that provide their own equipment and who are willing to go where they are needed at virtually no cost...it just doesn't get much more cost effective than this!
- *Available, Ready and On-site* – Amateurs are virtually everywhere from the large metro area to the smallest village. If the call goes out, Amateurs can respond right from the local area.
- *High Tech – Low Tech* – Government systems are often very high tech and when these systems are adopted for use, the lower-tech systems they replace are often reduced or eliminated altogether. Remember when CW was commonplace and HF radio was at least a primary back up system? Amateurs have an advantage in that we still have this all available. We don't have just what is the state of the art, yet we have that too. Satellites and many forms of digital systems abound, as do SSB and CW on HF. Fixed stations, repeaters with emergency power, HTs, portable, and mobile rigs are found across the spectrum, ready to employ. If one system fails there is another system to bring on line. Time and time again when commercial systems fail, Amateur systems continue to provide communications. It happened in the Alaskan earthquake, the Gulf Coast hurricanes, and it happened in New York and Washington. It surely will happen again.

- *Soldiers We aren't – Communicators We Are* – As Homeland Security volunteers, Amateurs are not soldiers or Rambo's in any way. Rather, there are two things that Amateurs certainly bring to the table, and these are *communications skills* and *surveillance capabilities*. A trained, skilled radio operator can be a great asset. In most cases, a trained, skilled operator that is also a trained observer can be an even greater asset. Trained SKYWARN amateur operators are much more than just radio operators, they are trained observers. Likewise, trained amateur operators standing watch at a critical bridge site or fuel storage site provide a dual service and free security forces to address other high priority sites. Amateurs who can monitor VHF/UHF and even HF radio frequencies can also provide a service in a Homeland Security situation.

### **How Can You Make a Difference?**

When the need arises, it will be immediate and it will very likely be critical. It will surely always be serious. If you really want to be a useful and helpful volunteer, there are several things you must do as a minimum.

1. *Make a Serious Commitment* - Once again it must be reiterated that this is not a game, nor is it a contest. A willingness to volunteer and train if not followed through will surely produce a weak link at a critical time. You simply must approach Homeland Security training and support with the commitment that a soldier, sailor, airman or marine takes when he/she joins the service. If you cannot do this, then you need to be honest up front and just find some other way to serve as you can. If you do commit to this effort, then you should expect the same level of commitment from others.
2. *Prepare Mentally* - Consider what is being asked of you and mentally prepare to provide communications even in scenarios where the situation may be bad and getting worse. Thinking carefully through difficult scenarios before they occur will help mitigate such situations if and when they do develop.
3. *Be Flexible* – Realize that you don't have all the answers and be open to listen with others. Seek input on problem solving and be willing to work no matter who gets the credit. Another military axiom says, "*You can't lead, if you can't follow*". Be assured that Homeland Security has a new set of issues to resolve and your flexibility with other amateurs, other agencies, and various 'players' will be important if you are to provide a real service. Commit to those in leadership and give them your full support.
4. *Get involved now* – While Homeland Security has some special considerations that must be addressed, it also has many of the same needs that other

emergency situations require to be address. This means in many cases, you don't need to reinvent the wheel. In short, look at ARES, RACES, MARS, and other entities that already exist and see where you can fit in to help. Then join them and begin training and supporting their work. Homeland Security is creating a requirement that is bringing many of these existing groups together for coordination to meet a new need. They will need to adapt, to modify some of their procedures and to create some new divisions of work, but this will be done on the strength of what they now do best. We begin by working within the system where we can. You can join them and be ready to help expand their role to support a Homeland Security mission.

5. *Make a Plan* – Plans are made at every level and are variable in complexity. A plan can be developed at the state (Section), the community, the club, and even at your own personal level. Let's face it; no one knows your hometown or your local area better than you do. Likewise, you can often best identify most of the weak points in your area that would make a good target or be most subject to attack. Think about who would provide a communications package in an emergency, how it might be done, and under what conditions you might have to do it. The idea is not to defend, protect or stop Homeland Security attacks, but to have a plan on what to do if such attacks occur. A workable plan requires much work, but it will begin to take shape for you as you through this process.
6. *Be A Team Player* – As stated, ARES, RACES, MARS, NTS, and a host of other services work well now. If we coordinate these services at some level and then create an infrastructure to address the new issues, we can create a strong support base in a short time. It will be one that has its roots in years of established, accomplished history. If you haven't been part of such work, volunteer now and join up! If you don't know where to start, begin by joining your area ARES. It is just as the name implies, an Amateur Radio Emergency Service. If there is not a local area organization of ARES where you live, then start one! If it's not working well, then help strengthen it. If it's broken, then help fix it. If you don't know how to start, then begin by contacting your SEC or SM for help. That's what these folks do. They will appreciate your willingness to join in. Remember the first thing you need to do... Make a Serious Commitment...They don't need your name on a roster; they need active, committed, trained co-workers.

Another approach to expanding your capabilities is to form a Communications Team in your area. Several operators who train together and work at preparing to meet the unique wartime needs of Homeland Security can make a very effective team if needed.

## A Battle In Progress

It is almost surreal that this is being written as a very real conflict takes place. As this is written, today's paper has an article of what almost happened a few days ago. It was an attack averted by FBI and law enforcement agencies. Only a week or so ago, another attack plot against American personnel and property overseas was foiled. It is unknown what will happen tomorrow or next week and how this conflict will develop. Will our nation experience another painful disaster on the scale of September 11, or will it be worse yet? Will Homeland Security develop a new State Militia as a homeland military force, or will AmeriCorps be tapped to serve in this capacity? Will Civil Defense again become a commonplace organization to a generation of Americans who have never known it? Will amateur radio be called upon to play a major role in any of this? Much of this remains to be seen, but for us to wait for the answer is to assure that we will be late with the help if help is called for. American radio amateurs have much to offer in this effort and we must be about the task of preparing now! Are you up to it?

The following sections present ideas, methods, resources, and suggestions to get you started in creating a *personal and/or team plan* for Homeland Security support. ***There is no military training program to this. There are no guns, and no guerrilla training ideas recommended.*** While there are some military surplus sources may be recommended, it has to do with the sturdiness and durability of the gear recommended, rather than the camouflage color and the military nature of the item. This is a serious approach to providing ideas that might help you increase your level of preparation to serve if needed. Add to this, your ideas, and you are own your way to create your own personal communications support kit to use. Exercise it and try it all out. Throw out what doesn't work for you and add those things that work better for your situation.

## ORGANIZATIONS

These organizations listed are excellent places to contact for more information about how you can help join in to be of service if and when needed.

AMERICAN RADIO RELAY LEAGUE (ARRL) – This is the national organization for amateur radio in the United States. It also provides a field organization structure for a national emergency service that includes the ARES. Contact your state (section) Section Manager (SM) or Section Emergency Coordinator (SEC). Contact information is available in every copy of QST magazine or you can contact the ARRL direct at 225 Main St., Newington, CT 06111-1494, [www.arrl.org](http://www.arrl.org)

Amateur Radio Emergency Service (ARES) - The ARES is a public service organization coordinated by the ARRL. It consists of licensed Amateur Radio Operators who have voluntarily registered their qualifications and equipment to provide emergency communications for public service events as needed. For more information, contact ARES, 225 Main St., Newington, CT 06111-1494, [www.ares.org](http://www.ares.org), or visit the ARRL web site as noted above.

Radio Amateur Civil Emergency Service (RACES) –RACES is volunteer communications group (licensed amateur radio operators) appointed by state and/or national government Civil Defense to operate a communications system. The Federal Emergency Management Agency (FEMA) provides planning guidance, technical assistance, and funding for establishing a RACES organization at the state and local government level. The RACES web site can be found at [www.races.net](http://www.races.net). A comprehensive RACES manual, Guidance for Radio Amateur Civil Emergency Service, is available on the FEMA Web site <http://www.fema.gov/library/civilpg.htm>.

Military Affiliate Radio System (MARS) - MARS is a Department of Defense sponsored program, established as a separately managed and operated program by the US Army, Navy, and Air Force. The program consists of licensed amateur radio operators who are interested in military communications on a local, national, and international basis as an adjunct to normal communications.

- ARMY MARS contact is HQ USASC, ATTN: AFSC-OPE-MA  
FT. HUACHUCA, AZ 85613-5000 <http://www.asc.army.mil/mars/> .
- AIR FORCE MARS contact is Chief Air Force MARS, HQ AFCA/GCGS (MARS),  
203 W Losey St, Room 3065, Scott AFB, IL 62225-5222.  
<http://public.afca.scott.af.mil/public/mars1.htm>
- NAVY MARS contact is <http://navymars.org> .

Federal Emergency Management Agency (FEMA) The Federal Emergency Management Agency (FEMA) provides planning guidance, technical assistance, and funding for governmental emergency response. This office also provides for the

establishment of the RACES organization at the state and local government level. A comprehensive RACES manual, Guidance for Radio Amateur Civil Emergency Service, is available on the FEMA Web site <http://www.fema.gov/library/civilpg.htm>).

CIVIL AIR PATROL (CAP) – The CAP was formed only days before the Pearl Harbor attack that led to the entry of the US into WWII. The CAP is an official auxiliary of the USAF and provides many emergency services to include Search and Rescue, disaster relief, and the “war on drug” efforts. It also has expanding Homeland Security missions. Civil Air Patrol NHQ/DPH, 105 South Hansell Street, Maxwell AFB, AL 36112, <http://www.capnhq.gov/> .

OFFICE OF HOMELAND SECURITY – This cabinet level office oversees planning and operations for Homeland Security. It is from this office that amateur radio operators will likely receive their orders to come into full support for Homeland Security. Initial information may be obtained at <http://www.dhs.gov/index.shtm>

SKYWARN – This organization was based on a concept developed in the early 1970s that was intended to promote a cooperative effort between the National Weather Service and communities. The emphasis of the effort is often focused on the storm spotter, an individual who takes a position near their community and reports wind gusts, hail size, rainfall, and cloud formations that could signal a developing tornado. Another part of SKYWARN is the receipt and effective distribution of National Weather Service information. <http://www.skywarn.org/>

SATAREN – Salvation Army Team Emergency Radio Network – A communications group that assists the Salvation Army in health and welfare messages during emergencies. [www.gso.com/satern411/](http://www.gso.com/satern411/)

STATE GOVERNMENT – State governments provide web sites that may contain useful information pertaining to state emergency management agencies and in some cases where it has been addressed, information about Homeland Security at the state level. Check your state government web site or your state’s emergency management agency for additional information.

## EMERGENCY PLANNING AND AWARENESS

STEPS TO PLANNING – Actually, the easiest way to create a good plan structure is to use a good plan format that is in place. Government, military, or business all uses such planning structures. There will surely be several formats coming that are suitable for use with Homeland Security plans. For now, in order to prepare a plan there are several basic steps you need to consider for any format you select. These might include:

- Focus on a specific mission – What are you going to do? Understand and perhaps restate what you think an enemy might do and then make your mission specific enough that it can be accomplished, yet not so narrow that it is not flexible. Example: Establishing communications for your city government at all levels may be too broad, and establishing communications for just one precinct of the police department may be too restrictive.
- Decide what assets you have available. Assets include people and equipment, as well as facilities. For amateur purposes you should also consider time. How long can you operate or sustain the communications support? You will make your plan around these assets.
- Think through your operation from first alert until you are mission complete. - How will you get notified to respond, how will you notify others, and who moves first and to where? To what chain of command do you report, amateur, local government, police, military, emergency management? Who establishes shifts for operators, equipment back up, and who tells operators to stand down? In short, who has authority to control the communications system your team will provide? Hard questions resolved now over coffee are much easier than having to resolve such issues during a crisis.
- Prepare appendices or tabs to your plan that address issues that can change without changing the whole plan. These might include:
  - *Logistics* – What is needed and from where does it come? This includes equipment, accessories, message blanks, pens/pencils, computers, batteries, food, water, etc.
  - *Frequencies* – Where does everyone operate and how does it interface?
  - *Operators* – Who is available and how will they phase in/out to sustain an operation. (Folks have jobs and these might intensify in an emergency). What schedule of operations will be established?
  - *Security* – How will you secure your communications site as well as the message traffic you handle? For our purposes under the rules and regulations that currently govern amateur radio, we may have to rely on PSK31, Packet, and even CW as more secure modes for normal traffic, and think of all forms of voice transmissions as open-line communications. Note: Truly classified messages cannot be encrypted

on amateur radio by current law, so never consider such traffic for passage by amateur radio. Nothing amateur radio has to offer is truly secure.

**WRITE YOUR PLAN** – Put your plan on paper and have it reviewed and evaluated across, up and down the chain of command before putting it in place. Remember, plans are living documents. They must be reviewed and updated on a regular basis because conditions, assumptions and terrorist/enemy plans change to counter your plans. It also should go without saying that once you have a good plan, don't lay it all out for publication in the paper, TV, QST, or even on the ham bands. The idea is that you don't make it easy for the enemy by telling him what he needs to know about what you are doing.

**IDENTIFY CRITICAL TARGETS** – This is really unusual for amateurs to deal with, as we have never had to worry about this before. Additionally, this is the job of the government and the military, right? Wrong! Crime is not just the policeman's problem, and terrorist attacks are not just a military problem. The need to identify critical targets in your area comes about because you need to know how to tailor a communications plan to respond to an attack on such targets. True, you only provide communications or perhaps visual security with your communications, but even these tasks can be greatly impacted depending upon what target is attacked. Consider different scenarios such as:

- If a hydroelectric dam is the target, it follows that it might not only cause great loss of life and property, but there won't be any electrical power either.
- If a chemical plant or storage facility is attacked, you won't be set up at the local city hall, but you will be evacuating and communications needs to be ready to be mobile and then to sustain a portable operation from a new temporary site with new antennas, power, and site support.
- If a nuclear power plant is attacked, you obviously have multiple problems. You must operate mobile, portable and worry about yourself and your family as well. Plan for such an operation if this scenario applies to you.
- In any major disaster, transportation as well as communications may well be disrupted. Plan for several amateur stations to be deployed to sites that will be selected on short order. Example: Airports...when emergency medical cargo comes in. At gyms and other facilities that may be called upon to house and feed refugees from an area that must be evacuated. Health and welfare traffic would be intense in such a case just like in any major disaster. Add to this a need to back up or provide primary communications from a city to the state capital or between emergency agencies coordinating supplies.

**KNOW YOUR ENEMY** – *That's right, enemy.* Get it in your mind that *these people will take you and your family out* if given any opportunity and it serves their agenda. The expression, "Know Your Enemy" is nothing new. It is military wisdom that dates back at least to Sun Tzu that that simply says you must understand your adversary. Read and study what you enemy sees as his mission. What does he say he wants to do? What has he talked about in TV interviews, books, and articles? Most terrorists and terrorist organizations are proud to tell the world what they plan to do. The trouble is that most rational people think terrorists are crazy so they pay little attention to them until it is too late. Remember the attack on the World Trade Center was the second such attack, not the first. Adolph Hitler spelled out his plans in Mein Kampf while in prison before WWII, and the current crop of terrorists are providing taped TV interviews! Do not fear them, but neither underestimate them. Study them and know them to help defeat them.

**KNOW YOUR PERSONNEL** – You must also know your people with whom you will work. Many people volunteer, but it a common knowledge that about 20% of any group does 80% of the work. A good leader can help vastly improve this ratio, so know your volunteers and work to bring them into the plan. Know who can work the longest and the hardest, who has limiting health problems, and who has a critical job and cannot be away from it long. Know who can make an antenna from anything, who is a top notch radio repairman, who is a CW or Net operator, who is good at logistical details, and who is good to coordinate with others as well as who is not.

**KNOW THE PERSONNEL AND THE MISSION OF THE ORGANIZATION THAT YOU SUPPORT** – Once you are on tap to provide support to an organization or agency, make a point to get to know the folks for whom you will work. This means get to know the rank and file as well as the leadership in whatever organization it might be. To do this, call first and make an appointment, then drop by right on schedule and visit with them. Taking them to lunch might be a nice gesture. Bring a business card or two (make up a professional card on any computer) and leave it with your contact. (Not a Ham Brag card...just a business contact card!) Also bring any special brochures or informational material about your team and its capabilities that you might have. Provide a telephone listing with cell phone numbers, beeper numbers, and other ways to contact you or members of your team if necessary. Take the approach of giving 110% percent to any requirement. In short, always be willing to do more than your share and more than was expected of you.

**LOOK PROFESSIONAL** – You may immediately think that how you look and dress is no one else's business, but believe this: First impressions make a big difference to people who are required to look and act professional. If you must, go back to what was said early in this book about changing attitudes, commitment, and flexibility. Think about that change in mind set if necessary. You must appear professional if you want to be professional in your communications support. Law enforcement, local/state government officers, military, and other such personnel will learn to use you and trust you based on how fast and well you can go into operation and perform, but you will initially get a seat at the table based in part on how professional you look and act. If

you look like a scraggly ragman, don't be surprised if you are told "we will call you." By the same token, you don't need to show up in a camouflage or black uniform with black boots and a web belt. This too would probably get you an invitation to the parking lot! Such paramilitary uniforms can make professionals wonder if you are playing soldier or trying to imitate a law enforcement officer. Professionals don't work well with loose cannons ...they have enough to worry about! Instead, you might consider showing up clean and neat with an easy to read photo/name tag pre-approved by the agencies you support such as an ARRL or special ID card neck lanyard. A standard baseball or other style team cap, a standardized color pants/shirt outfit for men and women as agreed upon by your team (and approved and recognizable by those you support), or a common color/design jump suit may be good for your needs. Design what will work best in your situation and put it in place, but do it professionally, do it quickly and then move on to more important matters. *Remember, fashion is not what you are about; communicating is what you are about!* Sound like some personal investment and cost here? You're right. Again, welcome to Homeland Security and a war in your backyard!

**DISCUSS OPTIONS** – Don't work in a vacuum. Meet with others working inside and outside the communications arena who are serious and who are willing to work to make a Homeland Security plan a reality. Listen to others who have needs and try to find a reason to say *Yes* to other ideas rather than *No*. If a group is part of the planning, then the group will likewise be available to vote down ideas that don't seem practical. Most likely, they will see things that won't work just as you do and they will help keep a plan on track. Consider multiple ideas to accomplish tasks and always have a Plan B to back up Plan A. Think such ideas through and then talk them out. When people have a part in the plan, they take ownership and will work hard to see their plan succeed.

**CONDUCT TRAINING EXERCISES** – Plans are great for knowing what you and your team plan to do given a set of circumstances, but then things seldom go according to plan. The response to this statement might be, so why write a plan? However, the way to make your plans better and flexible is to exercise them. All the glitches, snags and problems you didn't see may well start to show up in a good exercise. If no problems show up, then either you have a super plan or you aren't exercising it hard enough!

Communications training can start as simply as two amateurs on 440 sending practice traffic or working to see how little power on a repeater will work to hold communications together. A Communications Exercise (Comm Ex) can expand on this and become more complex by requiring exercise traffic to be passed using cross-communications between modes, between frequencies, across nets and even between stations of different emergency services. To this, the evaluator (always have an experienced amateur as an evaluator!) can add problems such as shutting down (simulating) a specific repeater or all the repeaters! What does your team do now? Simulate shutting down the AC power at a HQ site, require CW to be used (do you have CW ops available at each major HQs you support? Doesn't do any good to have them all at the same site!) Or you can make everyone go to an alternate antenna (you might require

them build one on site from what's available). Such tests strengthen your plan by showing you the weaknesses that may not be so apparent on paper.

**CRITIQUE EXERCISES - FIX THE MISTAKES** – Once an exercise is over, always...always sit down with all the players and evaluator(s) to discuss what worked well and what did not. You will want to include representation from the organization that you support. You might want to wait until after the plan has been exercised a few times to include this representation. It's your call. Be prepared to receive sharp comments and expressed feelings of unfair operations that made someone look bad. These may well come to the table. Work through these and understand that once you are in the critique *you are all one team* again. There is no personal intent to make anyone look bad. *The idea is to find where the system will break down so it can be fixed before the real thing breaks it.* Be sure and give a big *Well Done* to those who deserve it. Everyone must work together to make the mistakes a one-time occurrence. The team leader or Emergency Coordinator must show real leadership here to get everyone together. Remember, this is not a game...As strange as this sounds, folks out there are trying to kill you and destroy your home.

## **EQUIPMENT FOR AN EMERGENCY**

QRP vs. QRO – Here is a subject that will surely create a lot of interesting discussion! Obviously, there are advantages on both side of this one. The answer to the question is, it all depends on the situation and on what you are trying to do. For this discussion, there is no need to go into all the pros and cons, but simply stated. Use the power necessary to get the job done for those you support. QRP ops will tell you that putting your efforts into the antenna and then developing your operating skills will go a long way to overcoming a low power from the transmitter. QRO ops will also tell you if you must communicate reliably on a statewide basis, error free, or in poor conditions with a lot of QRM, then extra power is in order. Obviously both sides have a point. You likely won't be an effective NCS for an area net with an FT-817 or an IC-703, but these might be great back up rigs. By the same token, you probably won't get far backpacking a FT-1000 into a national forest. Consider the newer more rugged rigs that are available. Take into conditions available power sources, interference to other operations, portability, security, your mission and a host of other factors and you will develop what is best for your operation. The ultimate goal is reliable and accurate support for those you are serving. We must communicate... whatever it takes... using what we must to do it.

**ANTENNAS** – Surely this is one of the areas in which amateurs seem to excel often even above many other professional communicators. Hams seem to be able to make antennas from almost anything, and they can make them work! Barbed wire, telephone wire, transformer wire, metal tubes, wood, even cardboard and aluminum foil can all make a good antenna when there is no commercial answer. Use this skill and develop it make antennas that work better for what you need to do. Example: Discone

antennas made from hardware cloth, chicken wire, sticks or PVC are not really common for amateur radio, but for our needs in Homeland Security communications, such an antenna might be just the ticket. This one antenna works from 2 meters to 440 MHz and higher and does it well. It might be a good plan to have in your kit where cross band communications or a wide monitoring range is required. This is just one example. There are many more ideas like this. By now, most of you are probably thinking way beyond this one example!

MODES – Choice of modes again is a subject that will depend on what is needed and what is available to you. Voice operation for traffic is fast, but is the least secure within the systems we are limited to using. Anyone listening in will get the copy the traffic as fast as it is sent. Digital operation and CW bring don't really secure a transmission, but these emissions do make it harder for a non-communicator who is monitoring the frequency to know what you are saying. Even plain CW using the ARRL ARL numbered radiograms would make it harder for all but a trained listener to decipher. As noted elsewhere in this guide, codes and ciphers are not permitted on the amateur frequencies. Having said that, let's just touch on what we might offer.

The digital modes bring much to the communications suite for amateurs today. PSK31 can offer direct and hard copy communications that is hard to intercept unless you are set up for it with a computer, software and a receiver working together. The enemy may be good at attacking the Internet or using a bomb, but PSK31 on the fly is just not that easy for a non-amateur. It is also not easy for most news media organizations to copy with their scanners. If you doubt this see how many members of your club are set up copy PSK31 right now. No, it is not a secure mode by any stretch of the term, but it is something we do have available in lieu of *clear* FM voice or SSB. Packet and other digital modes likewise can be of use here for making normal unclassified traffic more difficult to read by the casual listener in a motel using a hand held scanner. SSTV and its relatively easy access today by almost any amateur with a computer permits the relatively fast transmission of digital photographs from the field or between fixed sites using a small rig and a laptop. You can send photos of the bad guys to/from field sites, suspicious vehicles, a view of a field site, a damaged field site, or other information as needed. If you are not skilled at this process or have never tried it from the field, then might try it and work to get skilled at it.

One technique used by the military for years is Burstable CW. Simply stated, the operator records a CW message on a tape/digital recorder rather than sending it directly over the air. In our case this message is non-encrypted, plain CW. Then at a given time, the tape recorder output is fed into a transmitter and sent over radio, only the taped message is speeded up many times. Thus the term burst or burstable. The message is tape/digitally recorded on the receiving end, played back at a slower speed and copied by the operator. The real intent for the military is to minimize the time the transmitter is on the air so it cannot be located or copied. Is this legal on the amateur bands? In our case, it is simply CW and it is plain text, only it is just fast...*very fast!* Recording plain text CW at 5-10 WPM and then transmitting it at 60+ WPM sounds

perfectly legal. No encryption...just speed. Using computers on both ends at fixed sites could make this a good way to protect some sensitive communications. Small modified tape recorders used with portable rigs in the field might also work well to shorten on-the-air time and provide more security. This might be something to check out with the FCC for Homeland Security communications and then play around with on VHF. If you write software, you might play around writing a simple software program to do this task. You can see that there is much that can be done here if amateur ingenuity is put on the task.

**CODES AND CIPHERS** – As mentioned, use of codes and ciphers is not permitted on the amateur bands. **PERIOD!** This might change under Homeland Security rules and operations for special operations, but it likely won't happen on the normal frequencies we use. Avoid crossing this threshold less you wind up the point of interest of an Official Observer who calls the FCC or FBI about a encoded messages on amateur frequencies! (We have enough problems without chasing each other!)

**REPEATERS** – Plan for restricted use of repeaters for emergency operations. Changing the tone access on a daily basis can restrict usage if such restrictions are necessary. Control operators need to be active in monitoring repeaters. In case you haven't thought of it, such communications systems could easily be used against us. Think about it! Plans for emergency power and alternate repeater systems to handle traffic flows or to handle a different type of traffic are considerations to make before the need arises. Likewise, alternate ways to handle traffic coming through repeaters should be considered. Can you go direct? Have other stations relay? Use 6 meters as a link, or put a portable repeater into operation if necessary? All these are situations to address on paper and in training.

**EMERGENCY POWER** – Perhaps the problem here will not be unlike that of the dedicated operators among us who respond to hurricanes, tornadoes, or forest fires. The difference is most amateurs don't do these kinds of operations on a regular basis, so they don't have the experience of amateurs who often do provide this kind of support. Add to this the idea that a wartime approach to communications support has a many different and additional set of needs, and you get the message. Emergency power is often needed, but you simply must plan for it in more mobile, portable and extended site operations. Trying to get generators and batteries together after the AC mains fail just won't cut it. Long life gel cells and new generation rechargeable batteries are practical and relatively inexpensive and should be active considerations. Cable connections need to be standardized; generators need to be tested and ready, and transportable. Service plans (gas, oil, water, maintenance, etc) for generators must be in place. Now is the time to gather assets and plan for the operations that will need power.

PERSONALS – Many pilots have an “R.O.N.” bag, which includes ‘stuff’ you need to R.O.N. (Remain Over Night). You and your team need to plan for what your plan might call for you to do. Likely, an R.O.N. bag for what we are talking about will be more than a night or two in an emergency. Pack a special bag now with a shaving kit, toothbrush, toothpaste, towel, Chapstick, aspirin, dry eye drops, sun glasses, cough tablets, vitamins, bottled water, ...well, you get the point. Like the Minuteman of old, you may need to grab this and go! In a pressure situation, you don’t need to have to think of what you need to pack so have it ready and keep it fresh! If you’re operating QRP in the field, or operating mobile, you have a different set of needs from that of a pre-planned assignment to a refugee center at the local school or a transportation hub. Again, think it through and plan for what might be needed, and then exercise your plan and see what you forgot or what new need arose. (Take your R.O.N. bag with you on your next out of town trip and see how it fairs.) This is a real good discussion exercise for a club/team meeting.

ADMINISTRATIVE SUPPLIES – Pencils, pens, stapler and staples, paper, message forms, tags, rubber stamps, plastic zip lock bags of various sizes for maps, messages and such, flashlights, and the list goes on and on. Don’t depend on the organization you support to bring items like this for you. Put manuals for all equipment into zip lock bags. Multiple photocopies are great to have more than one on hand for those who may need to relocate. If you don’t have it with you when you depart or arrive, you won’t have it when you start up.

PACKING – Surplus footlockers or plastic tubs make great protective packing containers for equipment and personal items. (Need to be heavy duty for equipment...) Travel as light as possible and as self-contained as possible. Stay packed to go, or have a list posted to help you hastily assemble what is needed so you can move out quickly.

HAND TALKIES (HTs) – Program in the needed frequencies for your communications plan *ahead of time*, and include frequencies for other agencies (to monitor as needed). Have HT mini-mics, carrying cases, extra batteries, etc all charged and ready to go. Rotate batteries to keep them fresh and to spot bad cells. Make up portable antennas that can be strung up to increase your range. Put these in zip lock bags for easy transport and use. (Making up several such antennas and packaging them is good club/team project ). An extra rubber duck antenna for each kind of HT is a good idea. Using low power output options will stretch battery life, so practice getting familiar with increasing power on your HT only when needed, and reducing it when you don’t need it. (Cheat sheets in your billfold help save time if you can’t remember what all the button combos are! Who can?) Protective carrying cases are vital in the field or bad weather, so plan for tough weather and hard use. Plastic gallon size zip lock bags are great for maps, repeater directories, manuals, HTs, etc.

CELL PHONES – If you have one, bring it! It might not work for a while, but professional telephone folks will be working to get circuits operational. You will need the charger and perhaps an outside antenna too.

## **CONTACTS FOR AN EMERGENCY**

Make up a contact sheet with points of contact, addresses, and telephone numbers for those agencies you might have to contact. It will never be easier than right now to collect all these numbers/frequencies/names.

If you are coordinating the support of your team with a person in the agency, coordinate through the SEC to get the name of a point-of-contact and their primary call sign (amateur or commercial). List the contacts, phone numbers, or methods to reach other agencies in your area that *might be needed* by you or the agency you support. (Include your own team on this list). Keep this list current and actually check entries once a quarter or once every 6 months for accuracy. Laminate these commercially or put them in plastic zip lock bags.

Insure communicators above you, below you, and equal to you have copies. You can start with this suggested list and create your own list:

### **YOUR TEAM MEMBERS**

ARRL FIELD ORGANIZATION (SM, SEC, DEC, EC, OO..)

RACES

SKYWARN

LOCAL EMS

POLICE

SHERIFF

STATE POLICE

FIRE

EMS

FBI

SS

NATIONAL GUARD/RESERVES

STATE DEFENSE FORCE (IF YOU HAVE ONE IN YOUR STATE)

CIVIL AIR PATROL  
HOSPITALS (ER and other numbers)  
SCHOOLS (or other shelters)  
RED CROSS  
SALVATION ARMY  
AIRPORTS  
WATER PATROL  
COAST GUARD  
CITY UTILITIES  
FORRESTY SERVICE

## PREPARING FOR AN EMERGENCY

ALERT CONDITIONS – In your plan, establish an alert condition procedure (Condition 1, 2, 3, 4, etc) that can be transmitted to your team by an automated repeater announcement, a phone call, or by e-mail. These conditions should cause team members to do certain things as planned. Here is an example of how this *might* be done.

- Condition 4 is an everyday normal level. No action required.
- Condition 3 is notice for team members to actively monitor repeaters, cell phones, and e-mail for possible activation or call up. Members begin to check equipment, pack gear not packed, recharge batteries, prepare personal equipment and inform family and job of a possible activation.
- Condition 2 is a notice to move to a staging area or a move to set up at the supporting agency as preplanned. Communications are not yet formally activated for emergency traffic, but stations and nets may be in operation on a watch status.
- Condition 1 is activation of communications and full operation at assigned areas and in support of assigned tasks.

CALL UP ROSTER – Prepare a roster where you notify a specific 1 to 3 persons of the activation. Then each of these persons call 1 to 3 persons and each of those called then calls others and so on. If you miss a person on the list, call the next one in line he would have called, and they pick up the slack. This notification system works very fast. Also use your local area repeater to activate your team and have them QSL the notice and check them off the list. A draw back to such announcements over a repeater is that persons monitoring with a scanner will hear any traffic sent via the repeater. It might be well to just have the repeater simply announce, “*Condition 2 (or 3, 4 ) is in effect*” Team members will know what to do, but casual listeners will not really know what is going on or if conditions are changing.

TRAINING NETS – Perhaps you might want to establish a new local or area nets on HF,VHF, or UHF dedicated just to Homeland Security? Such nets might eventually connect major agencies (police, state troopers, fire, EMS, refugee centers, hospitals, etc,) when fully activated. Testing and practice via these nets can be done without even going to the on-site locations. Later, you will want to test operations from the actual sites, but at first just practice handling communications as the representative of a various agency. Practice messages will help you exercise your operators and net procedures. Do it off-site and on lightly trafficked VHF/UHF frequencies to practice your skills. You will hit the ground running if the real thing ever comes.

CANNED TRAFFIC – Pre-prepared practice messages, called *canned traffic*, will let you get everyone involved. Write up a couple of dozen or so messages and then pass them out via the Internet with only the messages to be sent by a station to go to that station. When the net comes up, stations begin to pass the traffic as written out by their “agencies” (simulated) with the stations getting the messages responding with their “canned responses” to make the traffic flow. Later, you can have stations actually call an addressee who will respond with a specific message, (you have pre-warned them as to what to say) and the traffic becomes yet more real. Make sure everything is clearly identified as “Exercise Traffic”. It really works!

SET UP / BREAKDOWN – This refers to the training of setting up a rig or rigs and putting a communications ‘system’ on the air at a given site, then taking it down to move it to another location. It doesn’t have to be done miles from home or miles apart, at least not initially. Setting up down the street, on a vacant lot, or from a state park to simulate a field site is as much of a test as setting up at a really remote site. *The rule here is, what you bring with you is all you get to use!* The first few times folks will likely be surprised at what got left behind. “I thought you brought the coax connectors!” “Who has the tape?” “We don’t have any gas for the generator!” This is a great exercise for a vehicle-mounted team that has as its primary mission the deployment of a portable repeater. Tearing down and moving is another very different exercise in all this process. Often, about the third time you move the system begins to go inoperative as parts are lost or broken due to poor breakdown and moving procedures. Timing on setting up and breaking down and setting up again just a mile away is another very interesting test in itself!

FIXED PORTABLE – Remember when it was common to use the term “fixed-portable this and that” on call signs? Our mission here gives new meaning to that term, for a ‘portable’ station that sets up for days or even weeks basically becomes ‘fixed’. You must set up a portable station, but then you must operate it as a fixed station and sustain it for long periods of time. Think through this process and identify the unique problems such an operation brings with it.

COORDINATION – Perhaps this one word addresses one of the toughest areas for amateurs to address in Homeland Security communications efforts. Inherent with coordination is access, in other words, you have to be accepted and have validity as a communications asset to even be able to access those with whom you need to coordinate. *This won’t be easy but it can be done.* If experience is a any guide, agencies you want to help won’t fall all over themselves to use you just because you show up. Much of this attitude probably comes from a lack of trust to outsiders (from their agency) and a reluctance to depend on volunteers to provide such a critical service. By not being the *Rambo of the Radio* and by being professional in your presentation you can get a foot in the door. If you have to do so, start small. Offer to

provide communications between what agencies don't have covered now, as a good first step. Use your personal contacts in business, government, elected officials, National Guard, etc., to open the door. It's called Networking. We do it with communications systems; businesspersons and politicians do it with people. If you aren't good at it, then get someone on the team who is. Use the ARRL leadership or agencies with which you have established a sound working relationship to help you. The bottom line here if you don't have access and validity, there will be nothing for you to coordinate.

Coordination goes left, right, up and down. Don't surprise your "boss" (make no mistake here, your "boss" is the agency you support), nor do you want to surprise elements that support you or work with you. Sharing information is an inexpensive way to share ownership and insure cooperation. Failure to do so guarantees problems and failures.

**ORGANIZATION FOR LEADERSHIP** – Any organization must have leadership; less it become little more than just a gathering. For volunteer organizations, less leadership often seems to be the desired standard. In a Homeland War scenario, leadership is critical for timely, coordinated responses to needs. Elsewhere in this guide the need for cooperation and a willingness to listen, help and respond as asked has been a recurring theme. Emergency agencies and organizations under stress in an emergency *will not* deal well with multiple self-appointed leaders. *They want one go-to person.* Elect one, select one, ask one, or volunteer to be one, but get a person in place for your team, who can do this and make this person your team coordinator or team leader. (These are good names for this job). The team leader will be coordinating and getting the briefing from the agency point of contact while other team members set up antennas and put the rigs in operation. This leader will get directions for work, offer suggestions, and be the liaison for the team to the agency and perhaps to other teams and agencies working in communications. He will bring up team/agency problems for resolution while communications continue, and he will oversee the operation to help the team sustain the operation. He/she may be less of an operator since this requires a lot of work, but it is important and this system works!

## **COORDINATION TECHNIQUES**

**PUT IT IN WRITING** – Personal contact for planning is great, but always follow such contacts up with an e-mail or written note that expresses the desire to confirm a discussion point, a plan or a tasking that was discussed. Sending copies of such information to the agency of support, team members, and a copy for team files is good, if the material is appropriate to share. E-mail makes this routine for normal operations. In an actual emergency, you may need to use a special note pad or whatever works for you. In handling traffic for an agency, don't even think of sending detailed messages without a quick initialing of the message draft by the message originator (the person who dictated or actually wrote the message and gave it to you). Again, this is a

professional approach and it actually speeds up traffic flow, keeping it accurate and on track. It's all part of the training cycle.

**SHORT MEETINGS** – Keep all meetings for planning or training short. Usually shorter meetings scheduled more often are better than really long meetings that run over and are scheduled far apart. You cannot resolve all the planning issues in a couple of meetings and folks will find reasons not to come back if these get long and drawn out.

**PREPARE FOR MEETINGS** – Always be prepared for any meeting that you call with a simple agenda that lists questions for discussion and comment. Have a copy for each attendee with space to write notes following or below the agenda item. Someone must be in charge and should keep the meeting on schedule and keep it moving. Tape the discussion or ask someone to take notes. When the discussion goes off down a 'rabbit trail', the person in charge brings it back on track in a courteous manner.

**FOLLOW UP AND THANK YOU** – Following meetings, particularly with supported agency meetings, an e-mail thank you for the coordination, guidance, or just for the opportunity to help goes a long way to create good feelings. Again, restating what was agreed to or what/who was tasked are good things to list for everyone's benefit. It helps everyone understand what you heard, was actually what was said, and insures no misunderstanding. We are truly all in this together, but folks don't want others whom they don't really control making them look bad or creating more work for them. Keeping these lines of contact open and clear keeps the validity factor high!

**GIVE IT YOUR BEST** - Our mission to provide communications services and in some cases surveillance services to the Homeland Security effort can have a great impact in helping security personnel accomplish their tasks. If we put our best effort into our teams and the supported agency, the probability of success becomes very high. *"There is no limit to what can be accomplished if you don't care who gets the credit"*, is still a very true statement. When you get used to operating that way, it becomes very, very satisfying. In a word, it's called Service.

**KNOW THE MISSION OF THOSE YOU WISH TO SERVE** – Upon arriving at a new duty station in Germany, a former infantry officer just newly transferred into the signal corps was having his initial interview with the colonel of his new unit. It was an infantry unit like those he knew well. Somewhat sharply, the colonel asked the captain, "So Captain, just what do plan to for this Battalion"? Being brand new to the signal corps, the captain thought for a minute and replied. "Sir, since I have never been a signal corps officer before, I don't really know all I am supposed to do in my job, but do I know what you have as your mission. I will make sure I give you what you everything need to accomplish that mission." The colonel pondered the answer for time and then slightly

smiled as he said, "We'll see." It turned out to be the right answer and the right approach the captain used. The same situation applies here. None of us has ever served in Homeland Security Communications before, but that doesn't matter. Find out what your supported agency needs, what is wanted, and then figure out how to meet or exceed their expectations. Remember; give above and beyond what is expected and work to serve those you are sent to support. If you do, your success is assured.

## NEW IDEAS TO EXPLORE

A wartime scenario brings ingenuity into play, and few people have more ingenuity than Amateur Radio operators! Some of what a few amateurs do for enjoyment might be excellent helps for Homeland Security communications support in your area. Think of ways to communicate that might be out of the norm for everyday Ham operation or what might be called short duration emergencies. If you have other interests such as flying, camping, hiking, boating, or even skiing, think how these might be used in support of Homeland Defense if amateur radio is added to the effort. Just because something hasn't been done or tried, doesn't mean it won't work. Think outside the box! Here are a few suggestions to get your idea wheels turning:

**JOINT EFFORT WITH CIVIL AIR PATROL (CAP)** – The men and women of the CAP are members of the USAF auxiliary. They fly search and rescue (SAR) missions and work drug interdiction patrols on a regular and on-going basis. When the time is right and you are organized, why not approach your local area or state CAP office and discuss a joint operation where they might fly an amateur airborne repeater if needed in an emergency situation? The type aircraft they fly can loiter on station for hours, and a specially designed portable repeater in a small container with antennas on the wing struts could provide long-range emergency repeater service for hours. Two systems and two aircraft could relieve each other on station until a ground mounted system could be established. (This was done very effectively in Vietnam for Army FM communications in the field. It was particularly effective when a ground unit got into trouble and needed reliable communications).

One thing to note, CAP communications (call COMM) is not compatible with Amateur communications nor is our equipment used as a basis for CAP communications. This is something to think about and plan for if you need to work with the CAP. It is interesting to note that a great many CAP communications are also Amateurs and this makes the issues easier to deal with in many ways.

CAP aircraft could fly repeater teams, portable systems, and/or operators into areas where fast communications response was needed. Air drops of batteries or other supplies might be possible and could extend amateur radio surveillance teams that were on foot, 3 wheeler, or horse back in the field.

If the CAP unit near you agrees to help, work up a simple Memo of Understanding (MOU) so everyone knows who agreed to what and then make it part of the joint plan for you and the CAP. (Note: The ARRL and CAP National HQ have one.) Remember, once it's agreed upon, it becomes an agreement that you will do your part. Work to do even more than your part!

Don't have a CAP Wing handy? No problem. Look to a local flying club for support or get several pilots together to explain the need. They might organize to help serve in this capacity to "do their part" for Homeland Security. Of course, all FAA and FCC

rules and regulations regarding such operations must be followed. Permission for special operations would have to be requested and coordinated.

#### HOMELAND SECURITY (HS) DESIGNATED REPEATERS WITH VOICE MESSAGES

– As the Homeland Security program develops, there may be a need for designated repeaters for HS use much as there now exists for CAP and MARS communications. Such repeaters would be restricted and activated for HS traffic as your team Alert Levels changed and they might provide voice messages with additional information for operators.

HOMELAND SECURITY NETS (VHF-UHF) – Establishment of a net to discuss, train, and practice on homeland security topics has great merit. Pass some ‘dummy’ traffic emphasizing accuracy and speed. Then perhaps have a very short item dealing with some aspect of homeland security that is pertinent to your area and your team, and then open the net up for discussion. Try doing this on 2 meters to start and then go to 440 to help move operators to an alternate band. They can configure rigs and antennas (test those portable antennas in a zip lock bag to see if they really do work!) as they follow the net. Then perhaps your ARES team can maybe try 6 meters and circle back to work cross band. The intent is to try something different, increase your capabilities and to see how changing frequencies and modes might work. New Hams gain experience by doing this and the more experienced Hams can certainly help in the process. Soon the net can change frequencies and/or modes at the drop of the hat.

EMERGENCY BEEPERS ON VHF/HF FREQS – Surplus radio/tone activated beepers might be converted to work well with local area repeaters or even on HF to call an alert during times of increased alert level.

OFF-ROAD VEHICLE MOBILE – Needless to say, off-road vehicles with amateur mobile units mounted in them can be a great asset to an agency seeking to extend patrols near dams, forests, plants, or to place surveillance on roadways, etc. Such 4x4 trucks, Jeeps, and similar vehicles with amateur radio capability can be a great asset.

ATV/MOTORCYCLE MOBILE – Do you or one of your team members own an ATV (All Terrain Vehicle), dirt bike, or motorcycle? Putting a mobile unit on one of these vehicles might provide an agency with yet another communications asset that can roam an area or patrol an off-road site in time of need. Protecting it and mounting it might also be a challenge! (Backpack?) Surveillance of an airport’s periphery, critical plants, bridges, and power stations are readily accessible with such vehicles. Offering to augment (surveillance only) for security organizations of such installations well outside their facility perimeter might be very acceptable if you approach it correctly. Rough terrain vehicles and motorcycles can obviously go where other vehicles cannot. (Horses might work as well or better if you have access to use them for this effort).

PORTABLES IN A BRIEFCASE – Put an HT/QRP rig, VHF/UHF amp, power supply, a sound card interface, laptop, roll up antenna, and a few accessories in a briefcase and

you have a portable voice, PSK31, or packet station in a box. Walk in and set up virtually anywhere.

HIKERS/BACKPACKING (SUSTAINED OPS) – Backpacking with QRP rigs is a growing pastime for amateur radio operators today. Perhaps this idea could be expanded for use as foot patrols in mountainous terrain to watch power lines, forests, oil/gas lines, camping areas, and more. Visual observation from the ground for sustained periods is a common practice for reconnaissance teams in the military. Amateurs with this mobility and sustainability could be used in a similar manner. Aerial re-supply by CAP or small aircraft extends the range and length of stay of such teams.

OFFICIAL OBSERVERS AND AMATEURS IN THE SURVEILLANCE MODE – When the September 11 attacks came, the FCC asked that amateurs listen to the frequencies for any unusual activities. Think this a bit far fetched that we might hear something? No, it is a very realistic idea. ARRL Official Observers (OO) get to know areas of the bands where they listen very well. Those Hams who for reasons of age, health or other situations, cannot participate in activation plans that move them to a remote site or put them in the field, might be able to actively monitor the frequencies from their home station. Who knows the frequencies better than a Ham or SWL? Amateurs who signed up for a 'band' or a slice of the spectrum to monitor and/or tape record, could provide enough monitoring capability to virtually cover the working spectrum in a given area.

PHYSICAL TRAINING – Want a reason to get more in shape? Homeland Security is it! Start walking or jogging to improve your physical shape to handle the moving of rigs, or the setting up and operating of a station for a long period of time...a very...long period of time without relief. (Look over the Sept 11 after action reports). For those interested in hiking, biking, or outdoors field activations, getting in better shape is just another way to contribute to the Homeland Security effort. Soldiers do the same thing. They do physical training to meet the rigors of sustained combat operations. On a smaller scale, it will work for you too.

BI-WEEKLY CLASSROOM OR ON-THE-AIR TRAINING SESSIONS – Most people start off great in any new endeavor of importance. The catch is to keep the interest and focus going after the initial fast start. Active, realistic, interesting training is one of the keys to this. Your team needs someone to be a training officer to keep the training on track. Whoever does this should have training as his primary focus. One person cannot do it all, so get a good, interested team member to take this position and then don't load them up with other duties.

DEVELOP BROCHURES AND BUSINESS CARDS– Computers and software abound that let you create brochures and business cards. If necessary, get someone to help in creating a few professional looking brochures that can explain what your ARES team can do for local agencies. When you first arrive at agency offices to discuss your team, always present a business card as you start. Remember to explain and show what you

can do in a manner that the reader does not have to be an amateur operator to understand it. Even statements like ...multi-mode VHF/UHF capabilities with Gel Cells... may not really tell a sheriff or police chief what you can offer him. *County wide area or point-to-point communications with s surveillance capability says a lot more to him/her.* Orient on their mission!

## RESOURCES FOR EMERGENCY PREPARATION

Using the Internet as resource, do a search on the Internet for addresses or web sites of companies or organizations that might be source for you to purchase equipment to support ideas presented in this book. Here are some topics or areas to start you off.

**QRP EQUIPMENT and ACTIVITIES** – Of course this is a subset of amateur radio itself. Check out the links and equipment. The versatility of this equipment and its capabilities is incredible. Depending upon your needs and tasks, this approach has much to offer for Homeland Security operations in the field or from a fixed site.

**PORTABLE POWER EQUIPMENT** – Small generators, gel cells, new technology batteries, solar panels are all considerations for the HS communications team. Portable power is chosen based the need, the mission and the method required to accomplish it. Renewable, sustainable power sources are very serious considerations and much thought needs to be given here. Examples: Large gel cells can be tough to back pack into an area, but they are long lasting for low powered rigs. Such systems do well on all-terrain vehicles, but a number of them are bulky. Generators are great, but can easily fail, they can be noisy, and they require fuel, oil, and maintenance and down time to be sustainable. On the other hand these units can power gear for a long time if you can support them. Think it through.

**PACKS AND BAGS** - The proliferation of web gear in the form of bags, packs, and belts makes strapping it on or tying it down is easier to obtain than ever before. Covers and bags to protect as well as to carry equipment can be important choices. Look to modern suppliers for excellent custom gear for QRP backpackers and portable operations. Need to save money? Look to surplus bags and packs from military surplus outlets. Here is where Ham ingenuity will again rise to the occasion!

**PORTABLE ANTENNAS** - There are as many ideas here as there are operators to think them up! No one needs to tell you what to do or how to prepare here. Look at the needs, look at the options, and then prepare for the mission with preferably several antennas to meet multiple needs. Think of omni directional antennas for mission where stations are scattered. Terminated wire antennas are very directional and increase range. Roll-up antennas are super fast to get operational and can get you on the air until larger more efficient antennas are in place. High-gain portable antennas (yagis, quads, etc) may be needed as on-call antennas to switch over to for known weak signal work such as contacting QRP operators on schedules if involved in field surveillance work. High-gain, point-to-point antennas improve communications; allow for lower transmitted power thus less DC power consumptions, while lessening the interference to other communications. On a security note, point-to-point antennas like VHF/UHF quads greatly reduce the ability of anyone not in line with your antenna to copy what you are sending. Everyone has favorites that are known performers, thus another tremendous benefit the amateur offers for communications support.

FIELD EQUIPMENT FOR AMATEURS – At the risk of looking like an *Army Ranger* wannabe, it is obvious that military surplus gear is priced right and has the durability we are looking for in this area we are now entering. Look on-line and in your local Army-Navy Store for a million ideas to use and adapt for your needs. In conversations with your supported agency, mention that you use military surplus gear and explain why you do it. This should help put to rest the “*Here comes Rambo*” fears.

General field gear for equipment and for the hunter-outdoorsman is also prolific now. Check these stores that offer state of the art camping and field gear both on-line and in your area. One caution, be careful with large knives and personal weapons. Our mission is communicating. Armed civilians can be a scary to the professional. Even for military personnel, such items can be restricted from operational and communications sites. Check out what is authorized, acceptable or just preferred by those with whom you work before creating a situation that might upset folks.

SUMMARY – In short, your country needs you and your skills. You have a lot to offer. Why not start working on getting ready now? If the call comes, you can be ready to start right out from the first day.

We all hope this will be only a time of preparation, but if it is not, Amateur Radio can be a great asset.

## **AUTHOR'S BACKGROUND**

K5DZE is an Extra Class amateur with over 50 years experience in amateur radio. He has operated across the country as well as overseas and has held the call signs HL9EZ and DA1EZ. He is been a VE, has served as an Assistant EC and DEC and has been a member/officer in a number of Amateur Radio clubs. Interests include QRP and CW.

Bob spent 5 years with the US Marines, and 25 years with the US Army, retiring as a Lt. Col. He served in the Infantry, Signal Corps and Aviation branches and served two tours in Vietnam as a helicopter pilot. He had duties as a commander, operations officer, staff and plans officer, and a CH-47 flight instructor. He has extensive experience in tactical communications, security, aviation and training.

After Army retirement in 1987, he served as Vice President of Finance and Administration for a college in Missouri until retiring a second time in 2003. He now lives in Northern Kentucky with his wife.