

# Search and Rescue

## VHF

## Radio

## Communication

## Information

by

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09 February 2008

## SAR's Radio Procedures'

- A. Get the radio equipment from the mission Communication person.
  1. Radio equipment:
    - a. Hand-held transceiver.
    - b. Antenna
    - c. Extra battery
    - d. Remote micro/speaker (Optional)
    - e. Carrying case (Optional)
  2. Assembly the radio and check it's working condition.
    - a. Install the antenna properly.
    - b. Install the battery. Did you need tools?
    - c. Operate the radio to check for work ability.
    - d. Remove the battery. Did you need tools?
- B. There are a few rules in being the team communication person.
  1. **First**, when a mission has been called and the base has its radio set-up. The radio procedure for the mission is called a Controlled Net. This means the base radio operator is in charge of all communication on the frequency during this mission.
  2. **Second**, as a radio operator for a field team, you must request permission, from the base operator, to use the radio at all times.
  3. **Third**, if the base radio operator has secured all communications, no one is allowed to talk, i.e.... use their radios, except the team that has requested that communications is secured. NO ONE!!!
  4. **Fourth**, always use clear text or prearranged codes.
  5. **Fifth**, base radio operator must air the station call sign and event name every Thirty minutes.
- C. Now that you have a working radio and understand rules. You as the communication person for the field team are ready to start the search.
- D. The following is required of you as the radio operator for your field team.
  1. You must do a radio check out side of the area you received the radio equipment, but inside the base of operations, prior to leaving base camp.
  2. You must inform base of departing base camp for tasking and arriving on site.
  3. You must inform base of starting your tasking with time and location.
  4. If a clue is found, you must inform base of it identification, location and request disposition, before further movement of the team.
  5. If a team member is injured, you must inform base of injury, and if needed, request all communications be stopped, but yours until the situation is resolved.
  6. You must confirm with base every thirty minutes, or as directed by base operations, your field team's location and progress.
  7. If the FTL needs to talk to another FTL, you must request from the base radio operator for the two to communicate, YES they are allowed.
  8. If a find is made, you must inform base of it and request that all communication be stopped, but yours.
  9. You must inform base of completion of tasking and departing site.
  10. You must contact the base radio operator upon arriving at base as completion as radio operator for your assigned team and secure the radio (i.e. turn it off).
- E. To transmit, the procedures is:
  1. The person being called is given first.
  2. Clarification statement: THIS IS.
  3. The person calling is given second.
  4. Proword for end of transmission: OVER
  5. An example: BASE, this is, TEAM ALPHA, OVER.
- F. PROWORDS – These are pronounceable words or phrases that have been assigned meaning for the purpose of expediting voice communication. In no case shall a proword or a combination of prowords be substituted for the textual component of voice communication.
  1. Every transmission will end with either the pro-words CLEAR, OUT or OVER. An explanation follows:
    - a. **CLEAR** – I have finished the communiqué and the base/team is open for further contact(s). It is used when further communication is expected in the near future i.e.. Awaiting an answer from base/team.
    - b. **OUT** – This is the end of my communiqué and no reply is expected.
    - c. **OVER** – This is the end of my communiqué and a reply is expected.
  2. **BREAK** – I have stopping/completed one transmission and am starting another transmission.
  3. **BREAK-BREAK** – I desire to stop all transmission, for I have an EMERGENCY situation.

## SAR's Radio Procedures' (Con't)

4. **WILCO** – I have received your message and will comply.
- G. A radio check is performed to get signal strength and readability report on how well your radio works, the procedure is:
1. BASE, this is, TEAM ALPHA, OVER.
  2. TEAM ALPHA, this is, BASE, OVER.
  3. If the base transmission was loud and clear, say ROGER, TEAM ALPHA OUT.
  4. If not, describe the transmission to the base radio operator, per paragraph H.
  5. BASE OUT.
- H. Reporting signal strength and readability.
1. In the preceding paragraph G, the Rogers, means, I have received your last transmission satisfactorily. The omission of comments on signal strength and readability is understood to mean the reception is loud and clear. If your reception is other than this, it must be described with these prowords:
  2. Signal strength –
    - a. LOUD – The signal is very strong.
    - b. GOOD – The signal is good.
    - c. WEAK – The signal is weak
    - d. VERY WEAK – The signal is very weak
    - e. FADING – At times the signal fades to such an extent that continuous reception cannot be relied upon.
  3. Readability Quality –
    - a. CLEAR – Excellent signal.
    - b. READABLE – The signal is satisfactory
    - c. UNREADABLE – The signal is so bad that I cannot read you
    - d. DISTORTED – The signal is distorted
    - e. WITH INTERFERENCE – The signal has interference with it.
    - f. INTERMITTENT – The signal is intermittent.
- I. Radio procedure:
1. Departing an area, arriving at an area or tasking:
    - a. BASE, this is, TEAM ALPHA, OVER.
    - b. TEAM ALPHA, this is BASE, OVER.
    - c. This is TEAM ALPHA; we are/have (x), OVER
      - Departed/arrived base camp
      - Arrived/departed tasking site
      - Started/finished tasking at Grid location XXXX-XXXX.
      - Checking in at Grid location XXXX-XXXX with XX% completion of task
    - d. ROGER. BASE OUT.
    - e. TEAM ALPHA, OUT.
  2. Reporting a clue.
    - a. BASE, this is, TEAM ALPHA, OVER.
    - b. TEAM ALPHA, this is BASE, OVER.
    - c. This is TEAM ALPHA, we have a clue, it is a (Item description) and it is located at Grid coordinates, ONE, TWO THREE, FOUR, FIVE, SIX. REQUEST DISPOSITION, OVER.
    - d. TEAM ALPHA, this is, BASE, YOU HAVE A (Item description) located at Grid Coordinates, ONE, TWO, THREE, FOUR, FIVE, SIX. PLEASE STAND BY, BASE CLEAR.
    - e. TEAM ALPHA, CLEAR
    - f. TEAM ALPHA, this is, BASE, OVER.
    - g. BASE, this is TEAM ALPHA, OVER.
    - h. TEAM ALPHA, this is, BASE, YOUR CLUE LOCATED AT GRID COORDINATES ONE, TWO, THREE, FOUR, FIVE, SIX IS CLUE NUMBER ONE. PLEASE MARK APPROPRIATELY, BAG AND LEAVE THE CLUE IN LOCATION FOUND. OVER. Or whatever the IC or base operation directs.
    - i. WILCO, TEAM ALPHA OUT.
    - j. BASE OUT
  3. Reporting an injury
    - a. BASE, this is, TEAM ALPHA, OVER.
    - b. TEAM ALPHA, this is BASE, OVER.
    - c. This is TEAM ALPHA; we have a team member injured. Member has “the problem” (x.), OVER.
      - Requesting medical assistance at site and/or pick-up at other location.

## SAR's Radio Procedures' (Con't)

- Member/Team is returning to base (w/assistance).
- d. ROGER, TEAM ALPHA, this is BASE, DO YOU HAVE A MEDICAL EMERGENCY? (YES or NO) OVER.

**Note:** If it is a medical emergency, secure all communication, except to the Team requesting the emergency. See "6. Message to all field teams."

- e. Team Alpha answers question.
- f. ROGER, TEAM ALPHA, this is BASE. PLEASE STAND BY, CLEAR.
- g. TEAM ALPHA, STANDING BY, CLEAR
- h. TEAM ALPHA, this is BASE, OVER
- i. BASE, this is TEAM ALPHA, go ahead
- j. Relay action of base to the team, and verify all information before letting assistance team departs.
- k. ROGER BASE, this is, TEAM ALPHA, OUT

**Note:** If communication was secured, un-secure it.

- l. BASE, OUT

### 4. Reporting a find

- a. BASE, this is, TEAM ALPHA, OVER.
- b. TEAM ALPHA, this is BASE, OVER.
- c. This is TEAM ALPHA; we have a STATUS 1, REQUEST YOU SECURE ALL COMMUNICATIONS, OVER.
- d. ROGER TEAM ALPHA, Go to "6. Message for all field teams."
- e. TEAM ALPHA, this is BASE, OVER.
- f. ROGER BASE, WE HAVE A STATUS TWO, REQUEST EVAC TEAM AND PICKED UP AT GRID COORDINATED SIX, FIVE, FOUR, THREE, TWO, ONE. PLEASE ADVISE OF EVAC TEAM ETA, OVER.
- g. ROGER, TEAM ALPHA, this is BASE, PLEASE STAND BY, CLEAR
- h. ROGER BASE, this is TEAM ALPHA, CLEAR.
- i. TEAM ALPHA, this is BASE, OVER.
- j. BASE, this is TEAM ALPHA, OVER.
- k. TEAM ALPHA, this is BASE, Evac TEAM will be at GRID CORDINATED SIX, FIVE, FOUR, THREE, TWO, ONE IN THREE ZERO MINUTES, OVER.
- l. ROGER BASE, this is TEAM ALPHA, COPY THREE ZERO MINUTES, OUT.
- m. BASE, OUT.

### 5. Requesting direct communication between FTLs.

- a. BASE, this is, TEAM ALPHA, OVER.
- b. TEAM ALPHA, this is BASE, OVER.
- c. This is TEAM ALPHA, REQUEST PERMISSION TO TALK TO TEAM BRAVO DIRECTLY, OVER.
- d. TEAM ALPHA, this is BASE, PERMISSION GRANTED, OVER.
- e. **BREAK**, TEAM BRAVO, this is TEAM ALPHA, OVER
- f. TEAM ALPHA, this is TEAM BRAVO, OVER.

**Note:** Team Alpha and Bravo holds their communication. When finished.

- g. TEAM ALPHA, this is TEAM BRAVO, CLEAR
- h. **BREAK**, BASE, this is TEAM ALPHA, OVER.
- i. TEAM ALPHA, this is BASE, OVER.
- j. BASE, this is TEAM ALPHA, OUT
- k. BASE, OUT

### 6. Message for all field teams.

- a. ALL FIELD TEAMS, this is BASE, STAND BY FOR A ROLL CALL AND IMPORTANT INFORMATION:

**Note:** Only call the teams that are on tasks in the field.

- TEAM "ALPHA" RESPOND?
  - TEAM "ALPHA"
- TEAM "BRAVO" RESPOND?

## SAR's Radio Procedures' (Con't)

- TEAM "BRAVO".
  - TEAM "CHARLIE" RESPOND?
    - TEAM "CHARLIE".
  - Continue with all teams in the field.
- b. Base radio operator will pass what every important information in required:
- Secure all Communication
    - Secure the NET
    - Secure the NET
    - Secure the NET
      - All communication is secured, while we take care of Team "ALPHA" status (X).
      - All communication is secured, while we take care of Team "ALPHA" medical emergency.
    - Or what every is needed.
- c. BASE, CLEAR.

### International Telecommunication Union Phonetic Annunciation

Common phonetic are used so everyone knows what there meaning is. They may be used to clarify the spelling of a word, distinguish acronyms from other words or to help when condition are bad for radio communications.

<u>Letters</u>		<u>Number</u>
A – AL FAH	N – NO VEM BER	1 – WUN
B – BRAH VOH	O – OSS CAH	2 – TOO
C – CHAR LEE	P – PAH PAH	3 – TREE
D – DELL TAH	Q – KEH BECK	4 – FOW ER
E – ECK TAH	R – ROW EM OH	5 – FIFE
F – FOKS TROT	S – SEE AIR RAH	6 – SIX
G – GOLF	T – TANG GO	7 – SEV EN
H – HOH TELL	U – YOU NEE FORM	8 – AIT
I – IN DEE AH	V – VIK TAH	9 – NIN ER
J – JEW LEE ETT	W – WISS KEY	0 – ZE RO
K – KEY LOH	X – ECKS RAY	
L – LEE MAH	Y – YANK KEY	
M – MIKE	Z – ZOO LOO	

**Note:** The **Boldface** syllables are emphasized.

To distinguish numerals from letters, the pro-word **FIGURES** should be used. The decimal point is spoken as **DAY SEE MAL**. When figures and letters are used in combination, the pro-words **MIXED GROUP** should be used. When spelling a word, the pro-word **I SPELL** should be used.

245678 is to be spoken as **TOO FOW-ER FIFE SIX SEV-EN AIT**

10.39 is spoken as **WUN ZERO DAY SEE MAL TREE NIN-ER**

## Basic Communications for the SAR Grunt

by Tom Russo

More and more, a radio is seen as an essential tool for the search and rescue volunteer. But as Bob Cowan pointed out at ESCAPE this weekend: The problem used to be, nobody had a radio, so we could not communicate. Now everyone has a radio and we still cannot communicate. That is to say talking is not the same as communicating, and it is very easy to get into habits leading to poor transfer of information; throwing more radios at the 'COMMs' problem is not the right approach. The point of this mini-lesson and its associated pre-meeting 'handout' is to make you aware of some of the things I think interfere with efficient and effective mission communication, and with any luck, help you to be part of the solution and not part of the problem.

I will begin by discussing basic radio etiquette and rules of the road to put the discussion in the proper frame. And since that will pad the newsletter more than it needs to be, I will leave the rest for this handout.

### What is communication?

Merriam-Webster Collegiate dictionary has two interesting, but different definitions for the word 'Communication'.

Main entry: com-mu-ni-ca-tion

1. An act or instance of transmitting and [...]
- 3a. A process by which information is exchanged between individuals through a common system of symbols, signs or behavior, [ellipsis added]

My position is only '3a' definition should be considered correct in the SAR context. The definition of SAR communication should be **the process by which information is exchanged** and all the rules of the road that we should live by should boil down to improving that process and making sure that the information is exchanged efficiently and accurately. So what should we live by?

### Miss Manner's Guide to Excruciating Correct SAR Geeks

#### Listen:

You have two ears and one mouth. That should mean you listen twice as much as you talk, right? Make extensive use of the RtL 'Release to Listen' button on your hand held radio (HT) (This is commonly referred to as the PtT 'Push to Talk' button, but I think the former label is more appropriate).

#### Keep team-specific terminology off the air:

Remember that you may not be talking to a member of your own team, and explaining your own jargon to others is a waste of time and batteries. Say it in English instead! Certain types of professional terminology are unavoidable, especially when transmitting medical assessment between medical providers, but that's different --- we have got a few other 'rules' below to cover that case. Saying, 'subject is verbal on AVPU' has meaning to the intended recipient. That is distinct from cutie team jargon of 'We have located the subject, he is FDGB' meaning 'Fall Down, Go Boom'.

#### The 'Status Code' is an exception, too:

Sometimes we are deliberately cryptic on the radio. The only reason for this is to relay information to base that should not be made public carelessly. The classic example is the 'Status Code' to designate the status of the subject --- it would be a Very Bad Thing for a family to learn that their loved one is dead by hearing it from TV news reports generated because the reporters heard that information on the scanners before the IC has had a chance to talk to the family personally. You should generally obtain such a special code as part of your mission briefing, and you should use it appropriately to achieve the desired level of discretion. Saying 'Aw, man we got three red sneakers here and boy are they messed up, looks like the coyotes have been chewing on them for a few days! Better send up the OMI.' Would rather defeat the purpose.

#### Avoid contractions:

Under less than ideal conditions, sometimes contractions can be misunderstood. Sometimes that could completely invert the meaning of a transmission. 'Can't' and 'Can' could sound exactly the same with a little static or interference.

#### Use ITU standard phonetic when spelling:

Many letters sound the same when pronounced over the air: B, D, T, P, V may all wind up sounding like 'Ee' after the radio has had its fun with them. If you need to pronounce a letter over the air, use one of the standard phonetics. Please learn them and do not make up new ones on the spot. 'B as in Bravo' is very distinct from 'T as in Tango', but 'B as in Boy' is not distinct from 'T as in Toy'. The standard International Telecommunication Union (ITU) phonetics was chosen so that no two of them can be confused under poor conditions.

### **Pronounce numbers individually:**

Read off numbers one at a time. '487' should be read 'Four-Eight-Seven' not 'Four eighty-seven'. '100' is not 'One hundred' but "One-Zero-Zero". Pronounce '9' as 'Niner' to distinguish it more from '5'. I have also read recommendations to pronounce '3' as 'Tree' and '5' as 'Fife', presumably to keep the sounds as distinct as possible.

### **Do not editorialize:**

This is more of the 'keep irrelevant traffic off the air' stuff. Unless asked for an opinion, stick to the facts. If asked to pass traffic, pass it and do not add anything to the message.

### **Do not be afraid to ask for clarification:**

If a message is directed to you and you do not understand it, by all means, do not be afraid to generate more traffic by asking for clarification.

### **The last rule apply to traffic you are being asked to relay:**

If asked to relay traffic, it is not important whether you understand it or not --- it is only important that you receive it, transcribe it and pass it on verbatim. If the intended recipient asks for clarification, only then should you transmit a request for it. If, for example, base relays a message from an EMT in base to a medical provider on your team of 'What is the subject's TLA?' it is not your place to say 'What is a TLA?' but rather 'Copy', ask our provider 'What is the TLA?' 'Stand by'. And then go ask. When the provider says 'TLA is Blargh and Frobnicating' you do not ask, 'What does that mean?' you simply transmit, 'Base, medical provider says 'TLA is Blargh and Frobnicating''. Of course, you may have to ask the provider how to spell 'Blargh' later on, when the communicator in base thinks 'Huh?' but instead properly says 'Copy 'TLA is Blargh and Frobnicating''. Please spell 'Blargh and Frobnicating' for me, while transcribing the message and relaying it to the intended recipient verbatim.

### **Be Brief and Clear:**

Information is not being exchanged accurately. Are you using confusing constructions and it is not being exchanged efficiently. As when you are using ten words to convey where one will do. So each time you key the mike, consider:

#### **Minimize the number of words you use:**

There are limits to this rule, but you should be able to strike an appropriate balance between brevity and clarity. Say what you need to say gets the information across clearly, but do not clutter the frequency.

#### **Keep irrelevant traffic off the air:**

'We are stopping here, our coordinates are, um, wait a second lemme get the GPD on, I am acquiring now, ah there it is, 038745 easting and 3887152 northing, ah, we need a rest because of the fact Joe is really thirsty and has to get the five gallon jug of water out of the bottom of his pack, we will be here a few minutes' can be easily conveyed more efficiently with 'We are stopping to rest for a few minutes.' --- if Base wants a position they will ask, and the rest of the information is not relevant to the mission. Remember that if you are on the primary frequency, everyone gets to listen to these monologues. **Never, ever, use jargon.** In keeping with the 'common system of symbols, signs or behavior' part of the definition, stick to plain English. Unless you are way out of district, this is a common system of symbols you can count on.

### **There is no need for 10-codes:**

'Ah, 10-4 base, our -20 is 375132 by 3887141, we need a -55 for the subject in about 10 minutes' will probably elicit a 'huh' more than 'We copy that, base, our current coordinates are 0375132 easting 3887141 northing, we will be in base in ten minutes and we need an ambulance for the subject.' More words, yes, but clearer. Besides, 10-codes vary in meaning from agency to agency. For example, until about two years the Albuquerque Police Department and Bernalillo County Sheriff's Department used incompatible 10-codes systems.

### **Do not rely on convention when English will better served:**

Consider this transmission: 'Cibola Sam, Cibola Irving'

Does this mean 'This is Cibola Sam calling Cibola Irving' or 'This is Cibola Irving calling Cibola Sam'? Well, that depends on whether your background is in amateur radio, the military, law enforcement or whatever. Hams would most likely interpret this as 'Cibola Irving calling Cibola Sam' and police would probably interpret it as 'Cibola Sam calling Cibola Irving'. Who knows how a police officer that dabbles in amateur radio would interpret it. This is one case where reducing the number of words has destroyed clarity, and it is one that is very common. Avoiding it is easy. It is far better to say 'Cibola Sam, this is Cibola Irving' or 'Cibola Sam to Cibola Irving' --- it does not matter who listens to either of these, the intent is clear.

### **Some more manners:**

If you are not communicator on your team, strike team or task force, **please, please, please turn off your radio**. There are a number of reasons for this:

If you are not the communicator, having your radio on simply makes un-necessary noise in the field/base.

You are wasting your battery. Twelve hours from now it may be needed.

The 'wrong' people hear sometimes transmissions not meant for general consumption because someone left a radio on. A notable example of this:

During a mission near the Needle in 1998, a technical team below a cliff was tying a litter into a high angle raise system, and communicating with the haul captain at the top of the cliff. At one point there was a transmission from below of 'ready to haul'. This transmission was meant to tell the haul captain that they were ready, not to tell the haulers to start tugging. Unfortunately, a team member at the back of the haul line who had no communications responsibility insisted on having his radio on at full volume, and several members of the haul team began tugging, mistakenly thinking the call was meant for them. The haul captain was not ready for hauling, nor was the rigging complete. Had the radio been turned off as it should have been and people been listening to their haul captain instead this would not have happened. Fortunately nobody was injured and the problem was corrected quickly.

Lastly, when you are on a team that is standing in base camp you should turn off your radio if you are not the base communicator. Base camp is a busy camp, noisy place and you do not need to contribute to the pandemonium. Shutting off you radio while standing in base camp should be an automatic, reflexive action.

Adopted/edited from Cibola Search and Rescue  
<http://www.swcp.com/csar/comm2.shtml>



## Setting Up Communications

### A. The basic for VHF Radio Communication.

1. Review of VHF radio frequencies:
  - a. SAR Comms use the 155.000 MHz range.
  - b. CAP Comms use the 143.000 to 144.000 and 148.000 to 149.000 MHz range.
  - c. HAM Comms use the 144.000 to 148.000 MHz range.
  - d. Some SAR units have programmable radios, which may span the range, but most don't.
  - e. Usually, SAR radios do not operate on RA range.
2. SAR Radio needs
  - a. An antenna
    - Collapsible antenna
    - Tools to put it together
  - b. An antenna mast
    - Types of mast
    - Support equipment (Stakes, lines, etc.)
    - Flagging tape (Safety)
  - c. Feed line
    - Coax cable (50 Ohms) with proper fittings
  - d. Power - 110-v ac
    - Must have to charge portable radio's
    - Base radio power supply
  - e. Power supply for base radio
    - Changes 110 v ac to 12 vdc, recommend a 25 amp one.
    - Battery, 12 v dc
  - f. Frequency – Most SAR frequencies are Public Safety. What this means is they are only assigned to organizations that provide Public Safety to the Community. For example: EMS, Hospitals or Fire and Law enforcement. In some area, the SAR frequencies 155.160, 155.205 and 155.280 MHz is already in use. It is recommended we use the Business Itinerant frequency of 151.625 MHz. Yes, we have to share this frequency, but we do not interfere with EMS, Hospitals or Fire and Law enforcement agencies.

### B. To perform base communications you need to have:

1. A shelter from protected from the weather
2. A separate surface to place battery chargers on
3. A separate surface to place base radio on and enough room to write on.
4. Something to sit on.
5. A location without background noise.
6. Forms:
  - a. Equipment log
  - b. Station log
  - c. Clue log
7. Pad of paper
8. Pencil, Pen
9. Clipboard (3 each)
10. Maps:
  - a. Road
  - b. 1:24,000 w/grid
11. Telephone numbers (Optional)
  - a. Operations
  - b. Team leaders

### C. How to select a base communication site

1. Evaluate the physical location
  - a. A place for the antenna
    - Free of overhead power wires
    - Large enough
    - Within the length of COAX cable
  - b. Location out of the weather
    - Enough space for all the communication equipment
    - Suitable power

## Setting Up Communications (Con't)

- Room for expansion
  - Space for two operators
  - Flat surfaces
- c. Is there any Background Noise?
- Generators
  - Machinery
  - Vehicles

### 2. Communication situation

- a. Physical characteristics of location
- Is base in a low spot or on a ridge nearby?
  - Are mountains/hills blocking the signal?
  - Is the Foliage dense?
  - What is the distance of the search area

### 3. Evaluate the communication needs?

- a. Are landline telephones required?
- b. Are there going to be divisions?
- c. Will an aircraft be used in the search?
- Request air to ground AM communication.
- d. Will CAP HF communication be needed?
- Requested through AFRCC
  - You can operate in an emergency, if not a CAP member.
- e. Will CAP FM communication be needed?
- f. Who will you have to talk to?
- Law enforcement (Sheriff/Police)
  - Rescue squad (EMS)
  - CAP
  - Others

## D. Obtain the necessary paperwork

1. The forms you will be using are:
- a. Communication Equipment Form (SAR-63: 06-99)
  - b. Communication Form (SAR-62: 06-99)
  - c. Clue Tracking Form (SAR-60: 06-99)
  - d. Incident Radio Communication (ICS-205) (Optional)
2. Communication Equipment Log
- a. Look at the form
  - b. The devil is in the details
  - c. Fill in all the appropriate blocks
3. Communication (Station) Log
- a. Look at the form
  - b. The devil is in the details
  - c. Fill in all the appropriate blocks
4. Clue Tracking Log
- a. Look at the form
  - b. The devil is in the details
  - c. Fill in all the appropriate blocks
5. Incident Radio Communication (ICS-205) (Optional)
- a. Look at the form
  - b. The devil is in the details
  - c. Fill in all the appropriate blocks

## E. Summary

1. You need electrical power, radio equipment, flat surfaces, forms, shelter, and maps in order to create viable communication.
2. You first evaluate:
  - a. The physical location, you find yourself in.
  - b. What will affect you ability to communication.
3. Set up
  - a. Is the antenna close enough to the radio?
  - b. Is the antenna and the power cord connected to the radio properly?

### Setting Up Communications (Con't)

- c. Is there enough space for working communicating?
  - d. Is there enough lighting to work the station for twenty-four hours?
  - e. Is there a separate space for charging batteries and storage/issuing radios?
  - f. Is the proper forms ready for use?
4. Respond properly to the needs of the field teams'.

### SAR's Radio Call Signs & Freq (T/R)

#### ASARCo

<u>WPEZ758</u>	- Public Safety	<u>06/10/14</u>	
150.775 MHz	150.790 MHz	<b>155.160 MHz</b>	155.175 MHz
<b>155.205 MHz</b>	155.220 MHz	155.235 MHz	155.265 MHz
<b>155.280 MHz</b>	155.295 MHz		
<u>WQEU871</u>	- Business Itinerant	<u>04/20/16</u>	
151.625 MHz			

#### DOGS East

<u>KA75948</u>	- Public Safety	<u>11/16/14</u>	
<b>155.160 MHz</b>	<b>155.205 MHz</b>	<b>155.280 MHz</b>	

#### GARD

<u>WPVR299</u>	- Business Itinerant	<u>08/05/12</u>	
151.625 MHz	158.400 MHz		

#### K9 Alert

- Public Safety

<b>#7</b> 153.995 MHz	<b>#1</b> <b>155.160 MHz</b>	<b>#2</b> <b>155.205 MHz</b>	<b>#3</b> <b>155.280 MHz</b>
<b>#4</b> 155.340 MHz	<b>#5</b> 155.400 MHz	<b>#8</b> 155.820 MHz	<b>#6</b> 155.895 MHz

#### MAD, Inc

<u>WNSI469</u>	- Public Safety	<u>25/05/15</u>	
150.775 MHz	<b>155.160 MHz</b>	<b>155.205 MHz</b>	155.220 MHz
<b>155.280 MHz</b>	155.340 MHz		

#### PSAR

- Public Safety

Ch	Name	Rx (MHz)	Tx	Note
01	ALFA	155.160 T-127.3	155.160 T-127.3	Nat SAR & SERS
02	CCHARLIE	155.280 T-127.3	155.280 T-127.3	SERS
03	ECHO	155.205 T-127.3	155.205 T-127.3	VA SAR/Disaster \$ SERS
04	FOXTROT	155.220 T-127.3	155.220 T-127.3	SERS
05	GOLF	155.175 T-127.3	155.175 T-127.3	SERS
06	HOTEL	155.235 T-127.3	155.235 T-127.3	SERS
07	INDIA	155.265 T-127.3	155.265 T-127.3	SERS
08	JULIET	155.295 T-127.3	155.295 T-127.3	SERS
09	LIMA-1	151.625 T-127.3	151.625 T-127.3	Logistic/Business
10	ROMEO	150.775 T-127.3	150.775 T-127.3	Retransmitted Romeo
11	SIERRA	150.790 T-127.3	150.790 T-127.3	Retransmitted Sierra
12	VSP-TAC	154.665	000.000	VA SP TAC, Rx only
13	VS-SURV	154.695	000.000	VA SP Surv, Rx only
14	CHARLIE/REMEO	155.280 T-127.3	150.775 T-127.3	Repeater BRMRG
15	MIKE	154.280	154.280 T-100.0	Fire/Rescue Mutual Aid (METRO)
16	DES-TAC	155.895 T-091.5	155.895 T-091.5	VA DES Tactical

#### TSARG

<u>WPUG557</u>	- Public Safety	<u>02/28/12</u>	
<b>155.160 MHz</b>	<b>155.205 MHz</b>	<b>155.280 MHz</b>	
<u>WPWH680</u>	- Business Itinerant	<u>11/19/12</u>	
151.625 MHz	158.400 MHz	451.800 MHz	456.800 MHz

### SAR's Radio Call Signs & Freq (T/R)

#### VDEM

<u>KA5033</u>	- Aviation	<u>08/25/08</u>	
<u>KD2857</u>	- Aviation - Grd	<u>10/05/09</u>	

122.900 MHz

123.100 MHz

KR6011

- Public Safety

02/08/14

153.995 MHz

155.160 MHz

155.205 MHz

155.280 MHz

155.340 MHz

155.820 MHz

155.895 MHz T-91.5

WNVD953

- Oil Spills &amp; HAZMAT 01/10/16

## Base

#1 150.950/158.445 T-167.9 (A)

#3 159.480/154.585 T-167.9 (B)

#2 150.980 T-167.9 (A/Sx)

#4 159.480 T-167.9 (B/Sx)

## Mobile/Port

#1 158.445/150.980 T-167.9 (A)

#4 154.585/159.480 T-167.9 (B)

#2 150.980 T-167.9 (A/Sx)

#5 159.480 T-167.9 (B/Sx)

#3 154.585 T-091.5 (A/Tac)

#6 158.445 T-091.5 (B/Tac)
















**A sample frequency list of what you may want be put in you radios:**

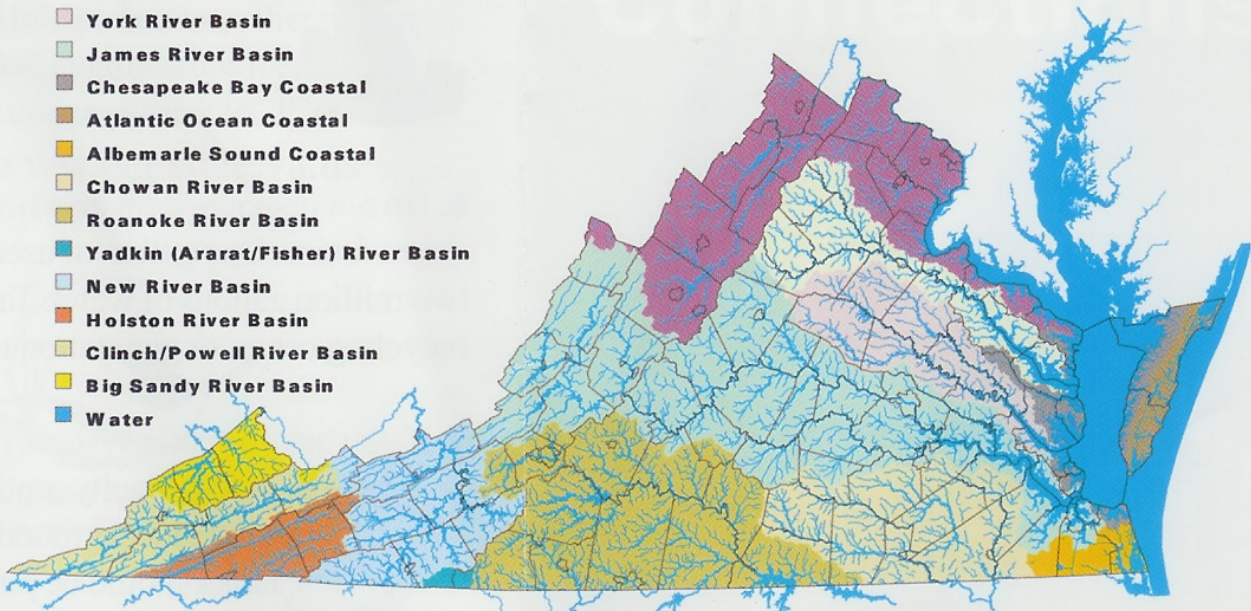
Rx (MHz)	Rx Tone	Tx (MHz)	Tx Tone	Ch #	Name	Notes
155.1600	None	155.1600	None	Ch-01	155.160	Nat SAR & SERS
155.1600	127.3	155.1600	127.3	Ch-02	Alfa-T - PA SAR-1	Nat SAR & SERS
155.1600	None	155.1600	127.3		Nat SAR	PA SAR Co
155.1600	127.3	150.7750	127.3		PA SAR-2	PA SAR Co
155.2800	None	155.2800	None	Ch-03	155.280	SERS
155.2800	127.3	155.2800	127.3	Ch-04	Charlie-T	SERS
155.2050	None	155.2050	None	Ch-05	155.205	VA SAR/SERS
155.2050	127.3	155.2050	127.3	Ch-06	Echo-T	VA SAR/Disaster & SERS
150.7725	None	150.7725	118.0		Romeo - PASAR-Tac	PA SAR Co
151.1375	None	155.1375	None		VTac-1/1Tac-05	Non-Fed PS Interoperability
151.6250	None	151.6250	None	Ch-09	151.625	Logistic/Business
151.6250	127.3	151.2650	127.3	Ch-10	Lima-1-T	Logistic/Business
151.6250	91.5	151.6250	91.5	Ch-11	LOCAL-1-T	Logistic/Business
154.4525	None	154.4525	None		VTac-2/1Tac-13	Non-Fed PS Interoperability
154.5700	186.2	154.5700	168.2		PSAR-3	PA SAR Co
155.1750	None	155.1750	None	Ch-12	155.175	SERS
155.1750	127.3	155.1750	127.3	Ch-13	Golf-T	SERS
155.2350	127.3	155.2300	127.3	Ch-15	Hotel-T	SERS
155.2200	None	155.2200	None	Ch-16	155.220	SERS
155.2200	127.3	155.2200	127.3	Ch-17	Foxtrot-T	SERS
155.2650	None	155.2650	None	Ch-18	155.265	SERS
155.2650	127.3	155.2650	127.3	Ch-19	India-T	SERS
155.2950	None	155.2950	None	Ch-20	155.295	SERS
155.2950	127.3	155.2950	127.3	Ch-21	Juliet-T	SERS
155.7525	None	155.7525	None		VCall/1Cal18	Non-Fed PS Interoperability
155.8950	91.5	155.8950	91.5	Ch-07	155.895	VA DEM Tactical
155.8950	None	155.8950	None	Ch-08	VDEM-TAC	VA DEM Tactical
158.4000	None	158.4000	None	Ch-22	158.400	Logistic/Business
158.4000	114.8	158.4000	114.8	Ch-23	LOCAL-2-T	Logistic/Business
158.7375	None	158.7375	None		VTac-3/1Tac-22	Non-Fed PS Interoperability
159.4725	None	159.4725	None		VTac-4/1Tac-23	Non-Fed PS Interoperability
156.8000	None	156.8000	None	Ch-24	Mar-Ch-16	Calling freq
156.8500	None	156.8500	None	Ch-25	Mar-Ch-17	State Gov -
157.0500	None	157.0500	None	Ch-26	Mar-Ch-21A	US Gov -
157.1000	None	157.1000	None	Ch-27	Mar-Ch-22A	US Gov - USCG
157.1500	None	157.1500	None	Ch-28	Mar-Ch-23A	US Gov -
157.0750	None	157.0750	None	Ch-29	Mar-Ch-81A	US Gov - EPA
157.1250	None	157.1250	None	Ch-30	Mar-Ch-82A	US Gov -
157.1750	None	157.1750	None	Ch-31	Mar-Ch-83A	US Gov - USCG
162.5500	None	None	None	Ch-32	Wx-01	Weather Station (Rec only)
162.4000	None	None	None	Ch-33	Wx-02	Weather Station (Rec only)
162.4750	None	None	None	Ch-34	Wx-03	Weather Station (Rec only)
162.4250	None	None	None	Ch-35	Wx-05	Weather Station (Rec only)
162.4500	None	None	None	Ch-36	Wx-06	Weather Station (Rec only)

Rx (MHz)	Rx Tone	Tx (MHz)	Tx Tone	Ch #	Name	Notes
162.5000	None	None	None	Ch-37	Wx-07	Weather Station (Rec only)
162.5250	None	None	None	Ch-38	Wx-08	Weather Station (Rec only)

**Notes:** Green high-lighted is required by VA and ASRC. Yellow high-lighted is for local help (LE, NPS, SAR Groups or USCG) and Pink high-lighted is to only listen to the local weather stations.

## What's your watershed address?

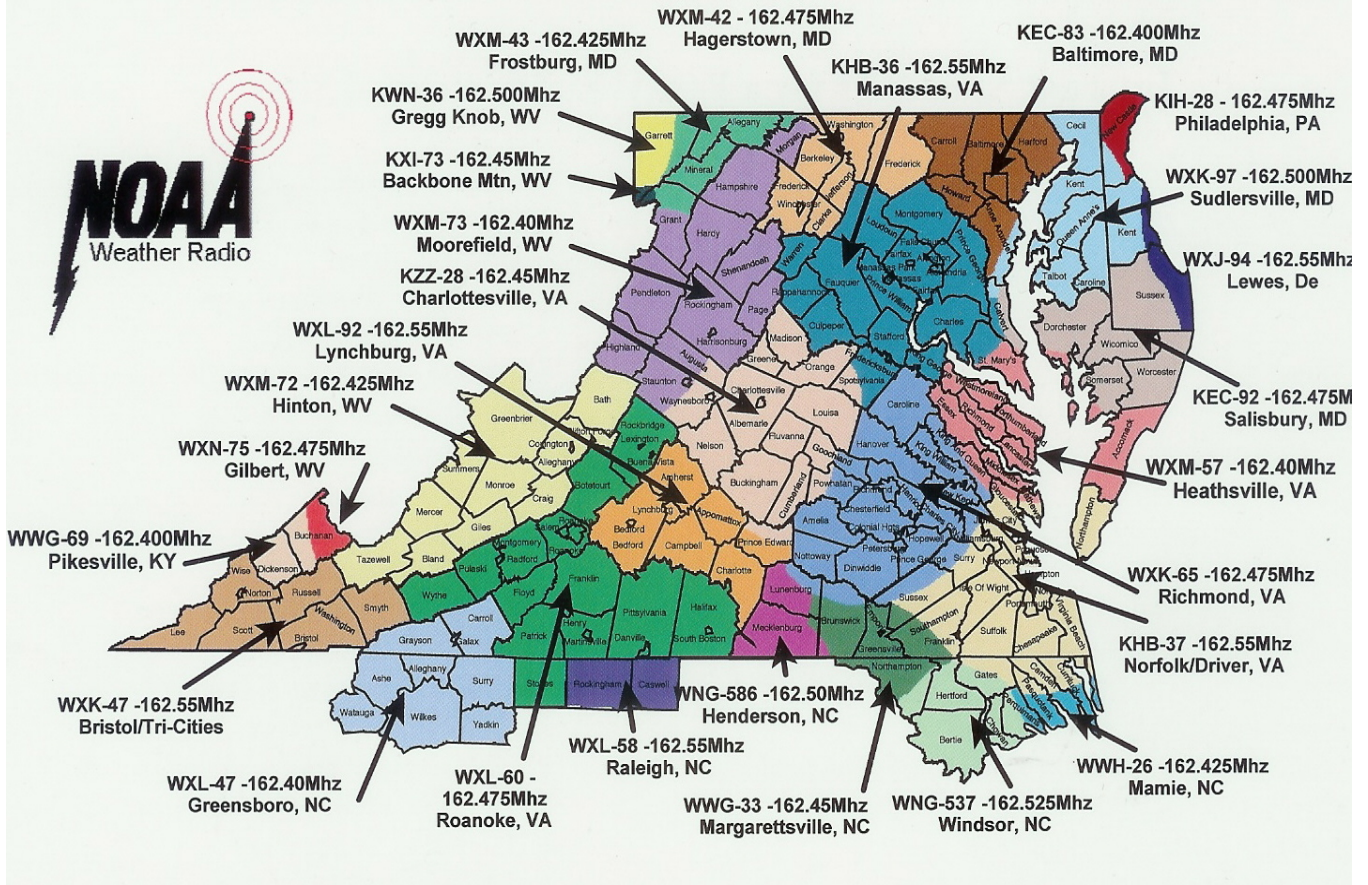
-  Potomac/Shenandoah River Basin
-  Rappahannock River Basin
-  York River Basin
-  James River Basin
-  Chesapeake Bay Coastal
-  Atlantic Ocean Coastal
-  Albemarle Sound Coastal
-  Chowan River Basin
-  Roanoke River Basin
-  Yadkin (Ararat/Fisher) River Basin
-  New River Basin
-  Holston River Basin
-  Clinch/Powell River Basin
-  Big Sandy River Basin
-  Water



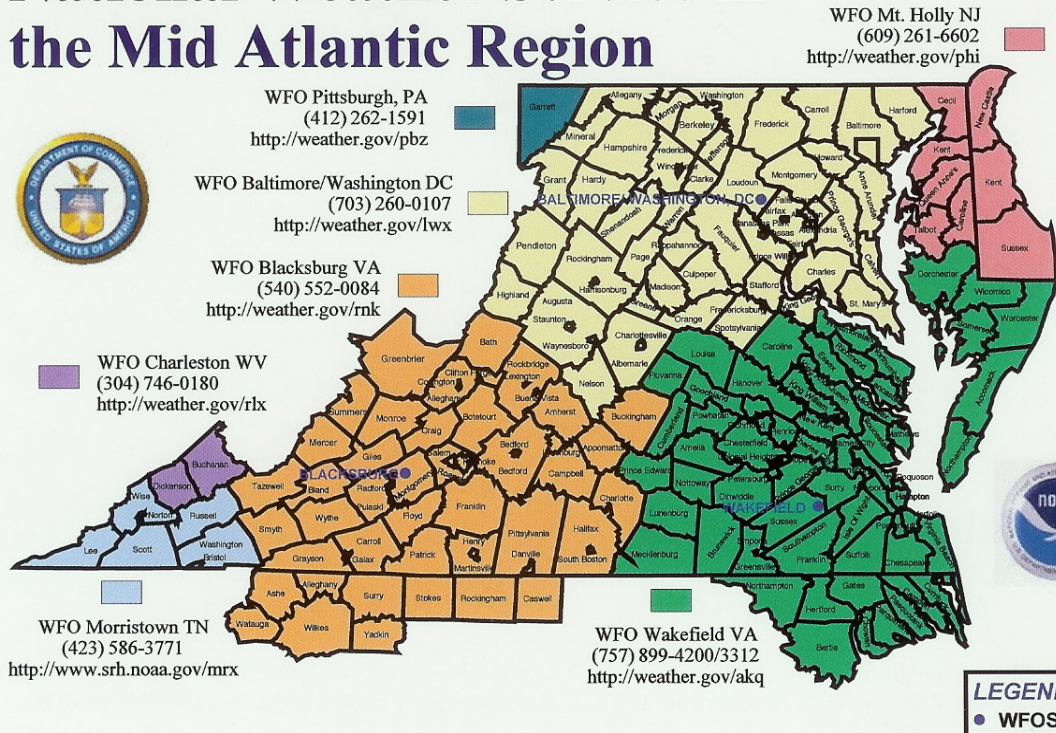
Rivers don't know county boundaries or state borders. It's watersheds that connect us to our waters.



# Mid-Atlantic NOAA Weather Radio



# National Weather Service in the Mid Atlantic Region



**LEGEND**  
● WFOs