



NEVADA COUNTY SHERIFF'S SEARCH & RESCUE

“CAN YOU HEAR ME NOW”

A Guide to Effective SAR
Communications



What are we not going to cover

- FCC Rules
- Radio Programming



What we will cover

- Radio Transmissions & Systems
- Basic SAR Channels
- Typical Field Radios & Basic Controls
- Basic Communications Skills
- Communications Practice



Radio Transmissions & Systems

- Radio channels are VHF (very high frequency, 150 MHz)
- Good for line of sight communications
- Some are simplex (same transmit & receive frequencies)
- Some are duplex (different transmit & receive frequencies – used with repeaters)



NEVADA COUNTY SHERIFF'S SEARCH & RESCUE

NCSSAR SAR Channels

Zone 1

1- BANNER	Repeater on Banner Mountain
2- SIGNAL	Repeater on Signal Peak
3- BOWMAN	Repeater on Cherry Hill
4- DONNER	Repeater on Donner Peak
5- OREGON	Repeater on Oregon Peak
6- TAC 1	Primary Simplex Channel
7- TAC 2	Secondary Simplex Channel
8- CALAW1	State Wide Simplex Channel
9- CALAW2	State Wide Simplex Channel
10- CALCORD	State Wide Simplex Channel (Air to Grnd)
11- STAC RPTR	Repeater on Banner Mtn. (Tactical Only)
12- SAR SGL	Placer Repeater on Signal Peak
13- SAR LINC	Placer Repeater on Mount Lincoln
14- SAR PLUTO	Placer Repeater on Mount Pluto
15- GV TAC	Grass Valley PD Tactical Channel
16- GVPD	Grass Valley PD Primary Channel
17- TRKE TAC3	Truckee PD Tactical Channel
18- TRKE TAC2	Truckee PD Tactical Channel
19- NCSO TAC	Nevada County SO Tactical Channel
20- NSCO ALDR	Nevada County SO Primary Channel on Mount Alder (Truckee)
21- NSCO OREG	Nevada County SO Primary Channel on Mount Oregon (West County)
22- NSCO WOLF	Nevada County SO Primary Channel on Wolf Mountain (South County)
23- TRKE PD	Truckee PD Primary Channel
24- NSCO SGNL	Nevada County SO Primary Channel on Signal Peak (Central County)
25- NSCO BANN	Nevada County SO Primary Channel on Banner Mountain



Radio Transmissions & Systems

- Primarily use SAR Repeater for the area.
- Will use TAC 1 or TAC 2 when line of sight communications is effective.
- Will use the Placer SAR repeaters when our repeaters are ineffective or as a back up.
- Sometimes use searcher as a radio relay to communicate from teams to IC
- If you cannot communicate at all and need to, use NCSO channels to communicate with dispatch as an emergency backup.



Radio Channel Setup - Zones

Radio channels have been grouped into 12 Zones to facilitate ease of use.

1. Zone 1(NC) – NCSSAR (Basic SAR Channels) & NCSO (Sheriff's Office Channels)
2. Zone 2(MA) – SARMARS (Mutual Aid Channels)
3. Zone 3(PC) – Placer (Placer County Channels)
4. Zone 4(SC) – Sierra (Sierra County Channels)
5. Zone 5(BC) – Butte (Butte County Channels)
6. Zone 6(FR) – NC Fire (Fire Service Channels)
7. Zone 7(FS) – State/Federal (Other Agency Channels)
8. Zone 8(WX) – Weather (NOA Weather Channels)
9. Zone 9(K9) – CARDA (K9 Agency Channels)
10. Zone 10(HM) – Ham (Amateur Radio Channels)
11. Zone 11(BA) – Banner Communications
12. Zone 12(YO) – Yosemite (Yosemite SAR Channels)



SAR Mutual Aid Frequencies SARMARS

1- VSAR16

2- CALAW 1

3- CALAW 2

4- VLAW 31

5- VLAW 32

6- CALCORD

7- VCALL 10

8- VTAC 11

9- VTAC 36R

10- VTAC 12

11- VTAC 37R

12- VTAC 13

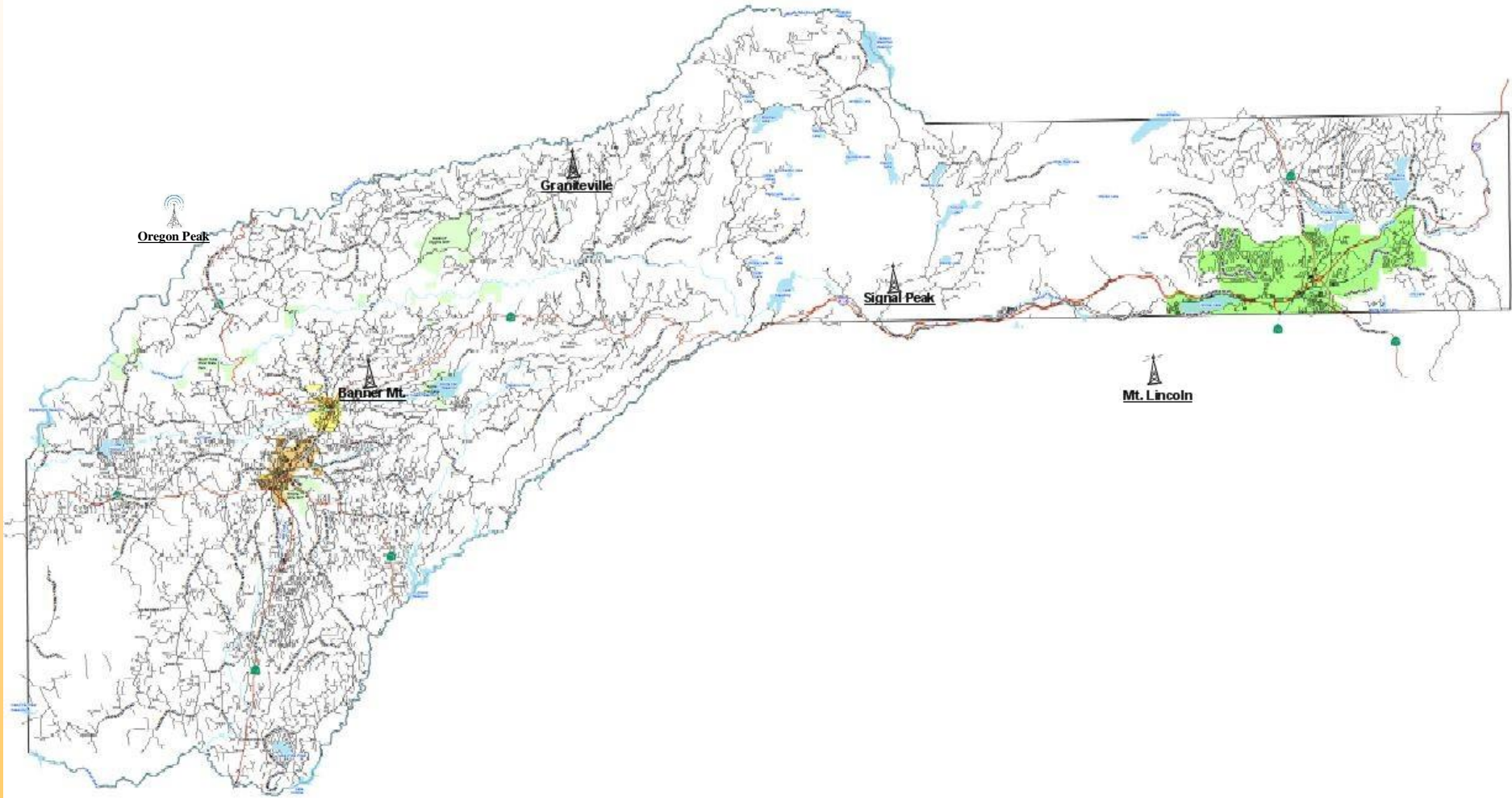
13- VTAC 38R

14- VTAC 14



NEVADA COUNTY SHERIFF'S SEARCH & RESCUE

NCSSAR Repeaters





Typical Field Radios

- Kenwood VHF Hand Portable





Typical Field Radios



Talk Around

Push to talk

Key lock



Programmed Zones

12 Zones

- NCSSAR (NC) - 25
- SARMARS (MA) - 14
- PLACER (PC) - 14
- SIERRA (SC) - 13
- BUTTE (BC) - 4
- NC FIRE (FR) - 18
- FOREST SERVICE (FS) - 27
- WEATHER (WX) - 7
- CARDA (K9) - 3
- HAM (HM) - 8
- BANNER COM (BC) - 1
- YOSEMITE SAR (YO) - 16

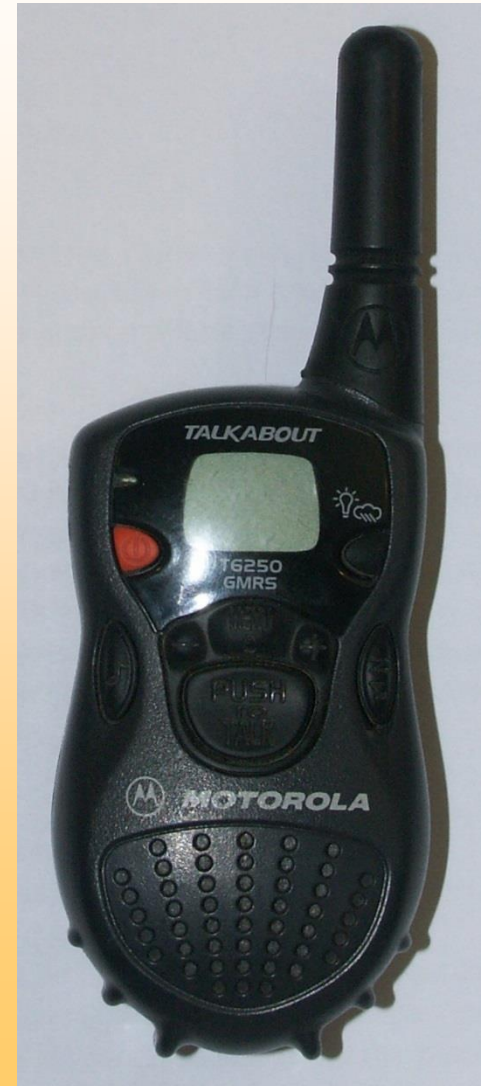


Zone
Control



Typical Team Radios

- Recommend that members acquire a FRS/GMRS Mobile Radio with privacy codes
- Used for intra-team communications





Radio Use

Each team will be assigned 2 radios

- Primary radio will be used for all “Team to IC” and “Team to Team” communications. This radio is equipped with a GPS mike that records your coordinates in IC.
- The second radio is for back up to the primary radio.



Basic Communications Skills

- Listening
- Microphone Techniques
- Brevity & Clarity
- Plain English
- Numbers
- Phonetics
- Ethics
- Procedures



Basic Communications Skills

- Listening
 - At least 50% of communication
 - Focus on your job / tune out distractions
 - Try listening twice as much as you talk



Basic Communications Skills

- Microphone Techniques
 - Hold mic close to cheek ~ 1" away
 - Speak across mic
 - Use normal, calm, clear voice
 - Speak at normal pace
 - Pronounce words carefully
 - Wait one second after keying mic before speaking
 - Always have your brain engaged before keying the mic



Basic Communications Skills

- Brevity & Clarity
 - Think the message through before transmitting
 - Know what you want to say before you say it
 - Say exactly what you mean
 - Communicate one complete subject at a time
 - Don't try and adlib a message



Basic Communications Skills

- Plain English
 - All messages in an emergency should be plain english
 - Refrain from using 10 codes
 - Jargon can cause confusion
 - Avoid words or phrases that carry strong emotions
 - Point out important factors
 - Have the answers available



Basic Communications Skills

- Numbers
 - Numbers are always pronounced individually
 - 14 is spoken “one four”, not “fourteen”
 - 789 is spoken “seven eight nine”, not “seven hundred eighty nine”
 - Try over-enunciating; One - Wun, Two - Tooo
- UTM Coordinates
 - Coordinates are communicated in a 5 x 5 format
 - 10 S 0671842 by 4344475 would be communicated 71842 by 44475



Basic Communications Skills

- Phonetics
 - Used when words or names might be easily mis-understood
 - Don't use for common words
 - Several different alphabets so use alphabet card previously given to you.



Basic Communications Skills

- Ethics
 - Never use profanity
 - Never use racial slurs or jokes
 - Be kind and courteous no matter how stressed
 - Be aware of what is happening in your area by listening
 - Praise in public, criticize in private
 - Everybody is listening - Be professional



Basic Communications Skills

- Procedures
 - Always check your radio before you use it
 - Make sure it is on the proper channel
 - Do a radio check with command base before leaving base
 - When using, hold radio as high and vertical as possible
 - Wait for a clear channel, minimum of 60 seconds



Basic Communications Skills

- Procedures (continued)
 - Include 3 message elements
 - Identification of unit called, then unit calling
 - Text of message
 - Clearance (unit ? clear) if necessary because of nature of communication the end is not clear



Example Communication

An example of correct radio procedure (Team 3 calling Command Base or IC) to report their position and beginning of their search.

- Team 3: IC, ground team 3
- Command Base: go ahead team 3
- Team 3: beginning search of segment C at coordinates five - nine - three - six – six by four - four - four - seven - two
- Command Base: repeat, beginning search at coordinates five - nine - three - six – six by four - four - four - seven - two
- Team 3: affirmative