



# CIO-LMR

*LAND MOBILE RADIO*

2023

## RADIO TRAINING PROGRAM





# Radio Terms

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- **Freq / Frequency:** The portion of the radio spectrum you are using (example: 168.150 MHz = WWF PROJECT)
- **Tone:** A sub-audible message (Key) sent with your transmission to unlock radio(s) (example: 110.9 Hz)
- **Channel:** A selection on your radio that has a transmit & receive frequency and possibly a tone for communicating with a specific place/group/organization (example: WWF TAC1, Beaver Rptr.)
- **Zone/Group:** The organizing of repeater channels into areas of use (example: WWF Zone/Group 1 = Wallowa Valley/ Hells Can)  
(WWF Zone/Group 2 = WWF LaGrande /So Net)



# Frequency Plan



- All radios in Forest receive the same channel plan/programming annually.
- Enables radios to be used Forest wide and in surrounding forests without the need to reprogram.

<b>Group 1 Wallowa-Whitman Wallowa Eagle Cap RD Repeaters</b>						
<b>Channel #</b>	<b>Name</b>	<b>Display</b>	<b>RX Freq</b>	<b>TX Freq</b>	<b>RXTone</b>	<b>TX Tone</b>
1	WWF Akers	AKERS	173.4500	163.6875	131.8	110.9
2	WWF Buckhorn	BUCKHORN	170.6000	164.9625	131.8	123.0
3	WWF Heavens Gate	HVNS.GATE	170.6000	164.9625	131.8	162.2
4	WWF Mt. Howard	HOWARD	173.4500	163.6875	131.8	156.7
5	WWF Jim Creek	JIM CR	170.6000	164.9625	131.8	146.2
6	WWF Lookout	LOOKOUT	170.6000	164.9625	131.8	114.8
7	WWF Pt . Prominence	PT. PROM	173.4500	163.6875	131.8	127.3
8	WWF Saddle Butte	WWF SADL	173.4500	163.6875	131.8	136.5
9	WWF Somers	SOMERS	170.6000	164.9625	131.8	167.9
10	WWF Project	WWF PROJ	168.1500	168.1500	131.8	131.8
11	WWF Tactical	WWF TAC	167.5500	167.5500	131.8	131.8
12	A/G 44	A/G 44	167.6250	167.6250		
13	A/G 9	A/G 09	166.9125	166.9125		
14	ODF RED	ODF-RED	151.3400	151.3400	156.7	156.7
15	VMED 29	VMED29	155.3475	155.3475	156.7	156.7
16	Air Guard	AIRGUARD	168.6250	168.6250		110.9



**BKR-5000**

- Most recent model from BK
- P25 Digital Radio
- 21-26 oz with battery/rechargeable
- Power: 5watts High / 2watts Low
- Meets NIFC standards
- 512 Channels (32 groups with 16 channels per group)
- Stock



**DPHX5102X**

- Digital Radio
- 24oz with battery
- Power: 5watts high/2watts low
- Meets NIFC standards
- 400 Channels (25 groups with 16 channels per group)



**KNG-P150&S**

- Digital Radio
- 16oz with battery
- Power: 5watts high/2watts low
- Meets NIFC standards
- 512 Channels (32 groups with 16 channels per group)
- Waterproof rated (30 min @1 meter depth)



## DPHX5102X Button and Function Overview

Same buttons for  
DPHX and DPH CMD  
(shown here)



## KNG S-PORTABLE Button and Function Overview







# Portable/Handheld Radio



## BKR-5000 PORTABLE RADIO BUTTON SETTINGS USFS

All radios will have the standard 32 tone picklist (16 for NIFC)

Display Standardization:

1. Zone Label
2. Channel Label
3. Frequency

Minimum required Menu items will be

Cloning	User Tx Tones
Backlight	User Tx NACS
Channel Scan	Tx Power
Channel Scan List	Battery Life
Scan List	Chan Add/Del
Priority Scan	System Check
Priority Channels	Version
Zone Scan	Zone Select
Zone Scan List	Radio Info
Squelch Adjust	Tx Digital
Keypad Program	

- \* Additional items may be added, but these are the minimum required.
- \* Backlight may be set to button press or channel change.
- \* Some buttons have been set to Open to allow user customization.
- \* Assigned portions are not optional.

Diagram of a BKR 5000 radio with the following button settings:

- Keypad Lockout
- A, B, C & D - Priority Zones
- GPS
- Open
- PTT
- Menu
- Open
- Hi/Lo
- Open
- Scan on/off
- Priority Scan
- Open or if applicable User TXCG or NAC
- Zone Select

Open	Open	Open
1	2	3
Open	Open	Open
4	5	6
Open	Open	Open
7	8	9
Open	Open	Zone Select
*	0	#

- There are two draws on your battery in the field.
  - Standby time 12-18 hours depending on conditions
  - Talk time about than an hour on high power, three on low
  
- Keep fresh Batteries on hand, don't leave batteries in clam shells for prolonged periods ( off season)
  
- Rechargeables





## DMH

- Digital Radio
- Power: 50 watts high/ 5 watts low (programmable)
- 400+ Channels (25 groups with 16 channels per group)



## Mobile vs Handheld

**50 watts** out mobile vs **5 watts** out handheld



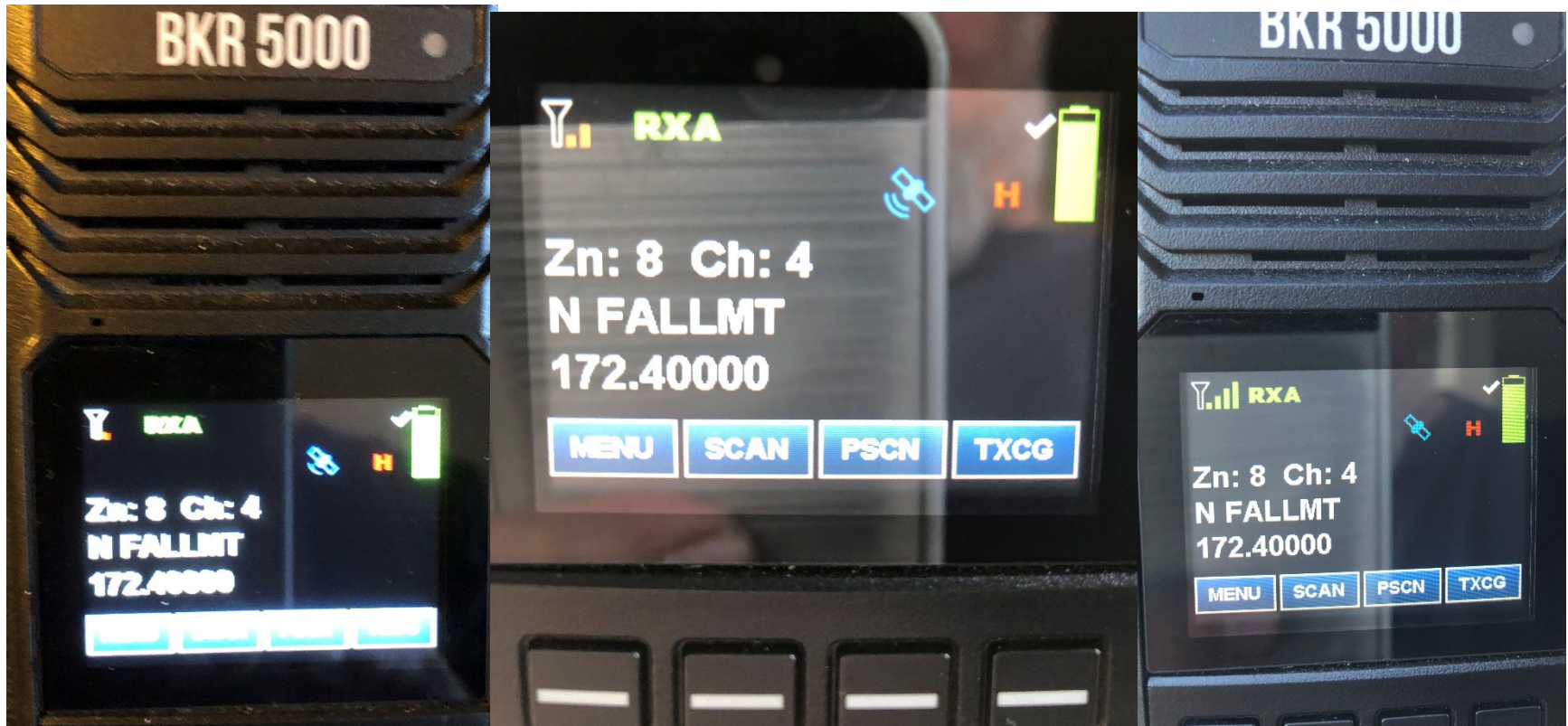


## Menu Items

Backlight	Squelch Adjust
Channel Add/Del	*System Test
Channel Scan	*TX Digital
Channel Scan List	User TX NAC Tones
Channel Select	User TX Tones
Cloning	Version
Monitor	Zone Scan
Priority Channel Select	Zone Scan List
Priority Scan	Zone Select
Scan List	Keypad Programming



- Key Functional Features:
  - Signal Strength
  - Squelch/Code Guard/Monitor
  - Command Zones, Cloning





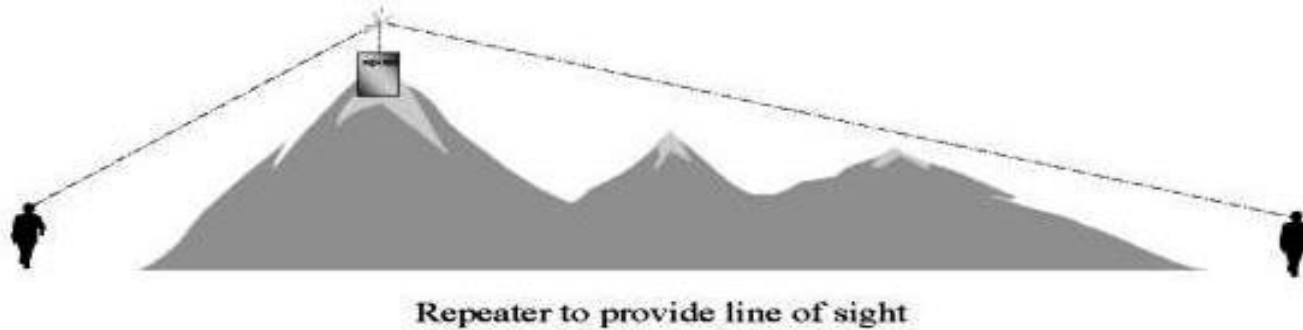
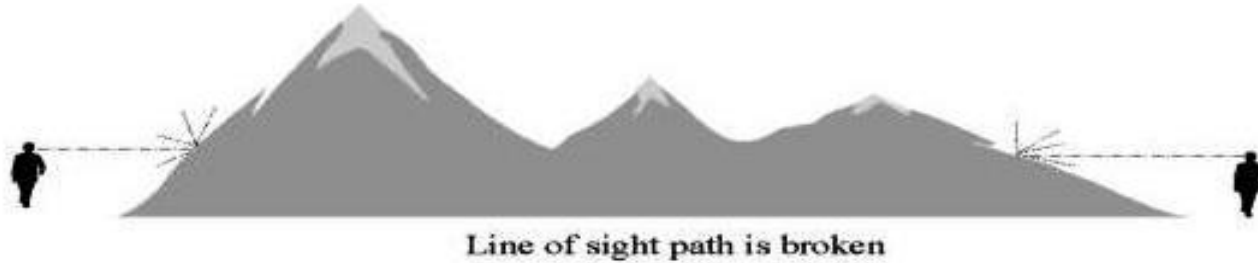
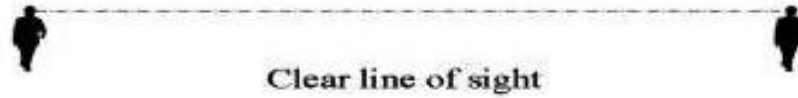
# Radio Numbers and Lifecycle Replacement



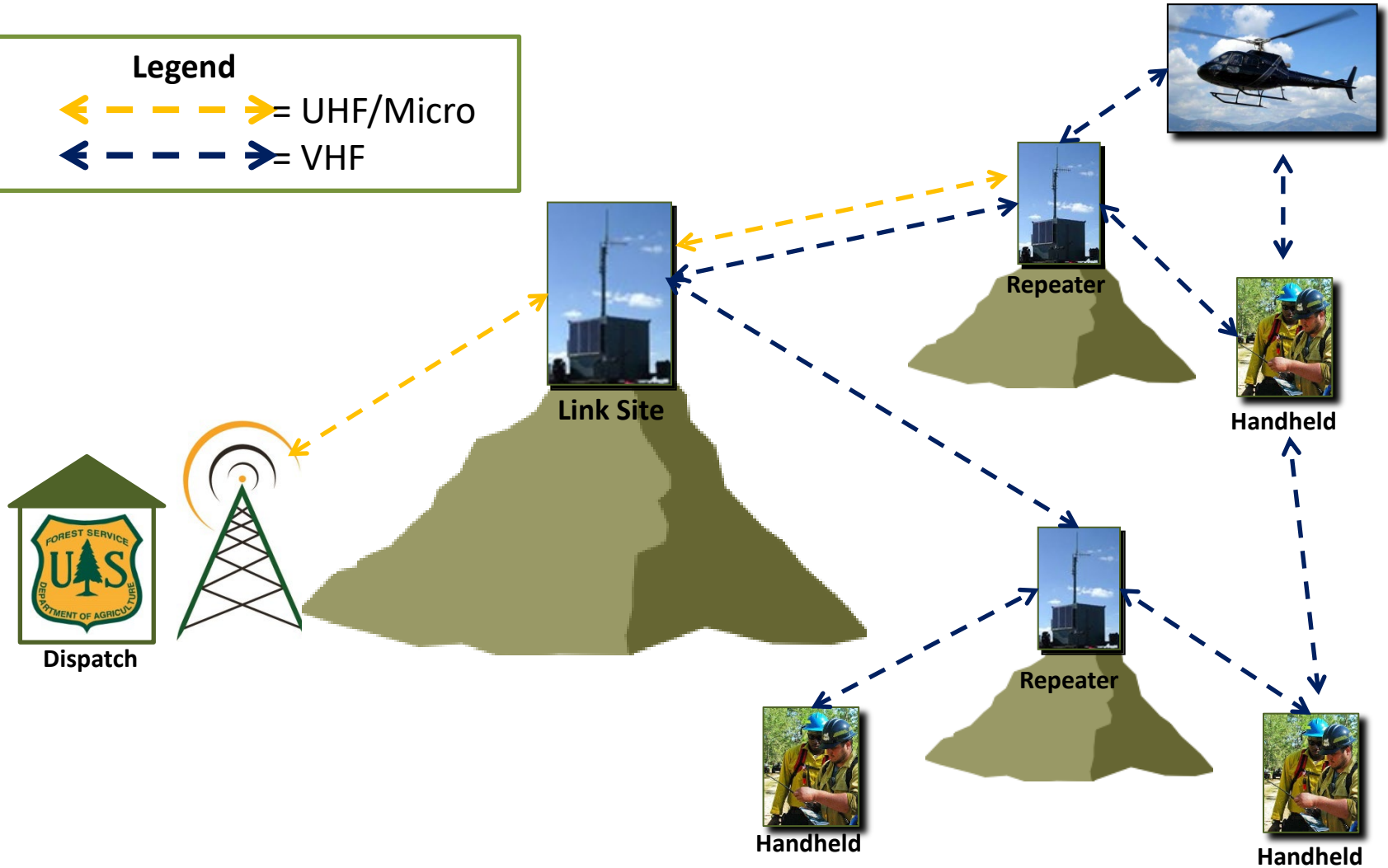
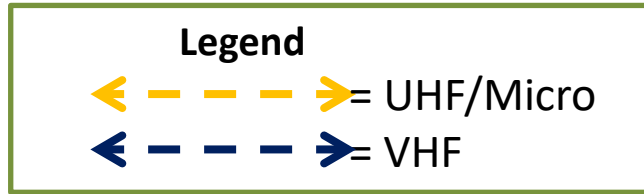
Forest	USFS Decided 2 to 1	Actual	Excess	Supported		End Of Life	
Feb 2023				Portables	Mobiles	Portables	Mobiles
<b>Malheur</b>	585	582	-3	70	137	280	95
<b>Umatilla</b>	385	454	69	77	69	205	103
<b>Wallowa Whitman</b>	558	626	68	91	143	277	115

FITARA: Congress's asset accountability and US Forest Service 2:1  
 Current Contract, BKR / Kenwood 4Yr  
 Mobile: 25 Handheld : 30  
 No new for Lost/Broke/Damaged until numbers balance

# Line Of Sight (LOS)

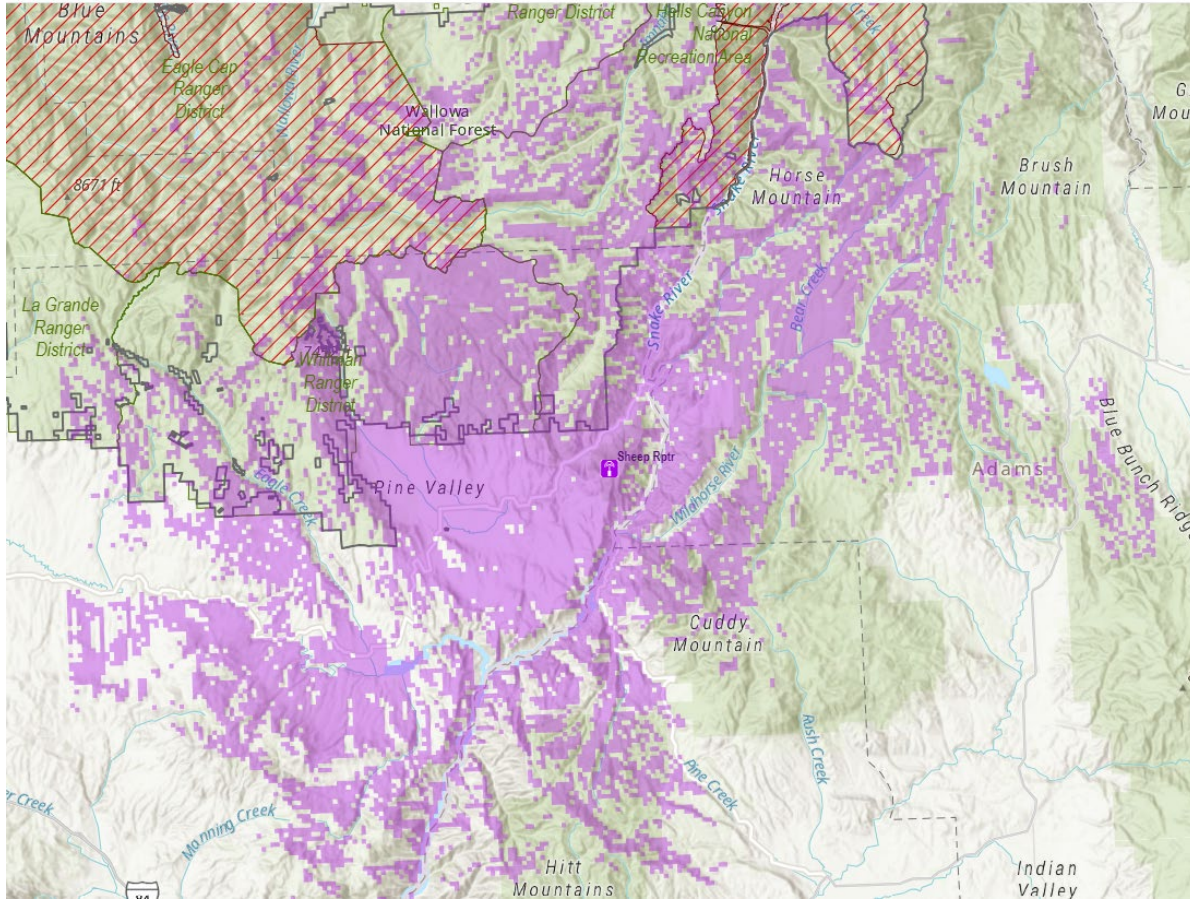






Rptr\_Sheep South.pdf

PrintFiles · Updated Yesterday by Scott R Finck



Beyond Line of Sight (LOS) the other factor is Repeater/Coverage, maps of Repeater locations can be found in the Forest Frequency Plan

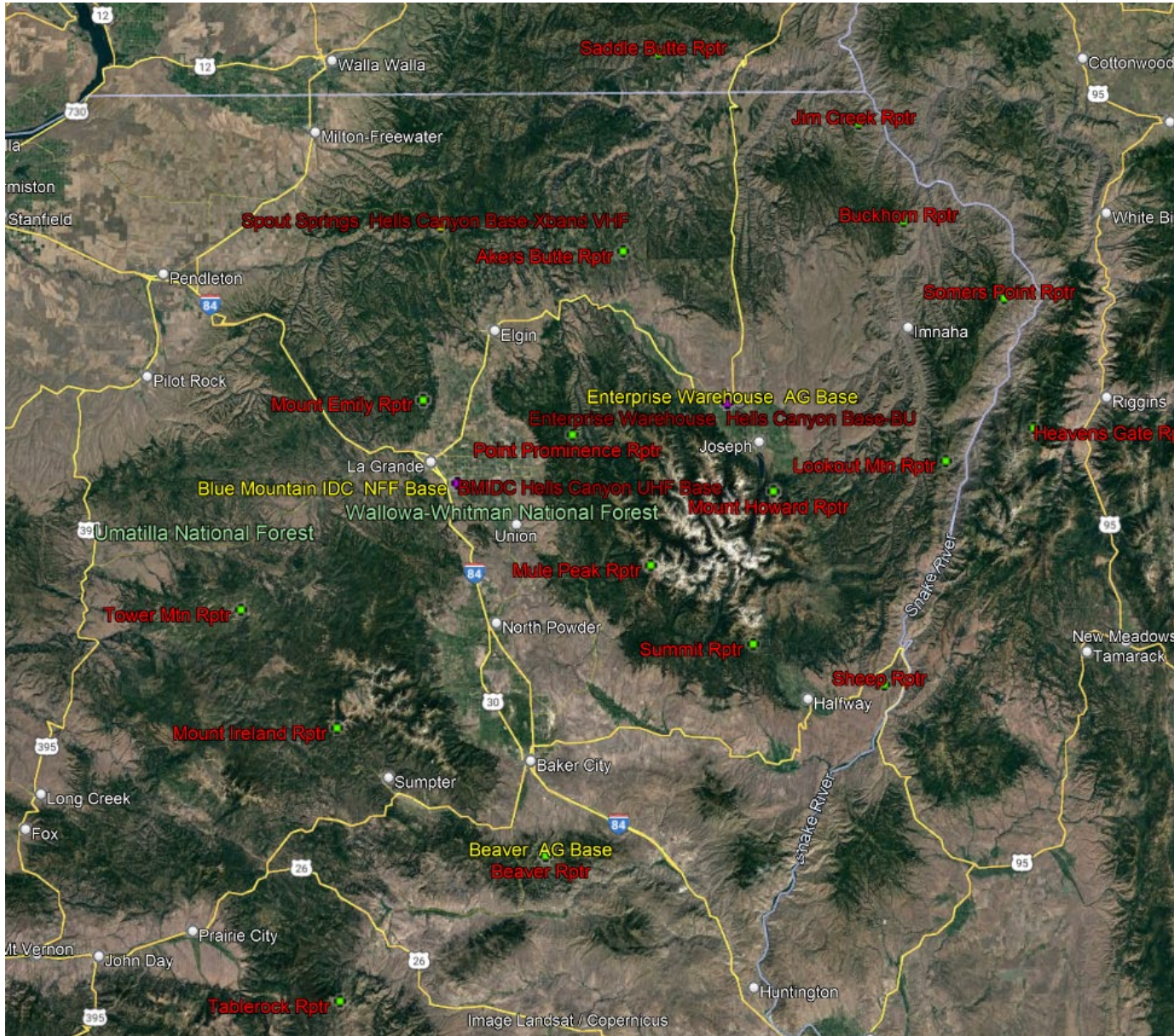
For reliable communications you must have Line of Site **AND** be in the coverage area.

The solution to line of site and coverage problems? Move to different location, Higher, more open terrain , change in geography, away from rock & structure.





# Forest Repeaters





- ✓ Keep radio traffic to a minimum. Be brief and efficient.
- ✓ Think your message through before transmitting.
- ✓ Listen for radio traffic on the channel before transmitting.
- ✓ Hold the Push to Talk (PTT) switch down for 2 seconds before speaking. (This gives the repeater time to key up.)



- ✓ When making a call, identify Unit being called, yourself, and radio channel you are transmitting on.

Example: John Day Dispatch, this is Smokey Bear on North Dixie.

- ✓ Speak in a normal, firm voice, speak clearly, and annunciate your words.
- ✓ Clear radio channel when your conversation is finished.

Example: Good copy, coordinates received, Smokey Bear, clear.





# Radio DO NOT'S

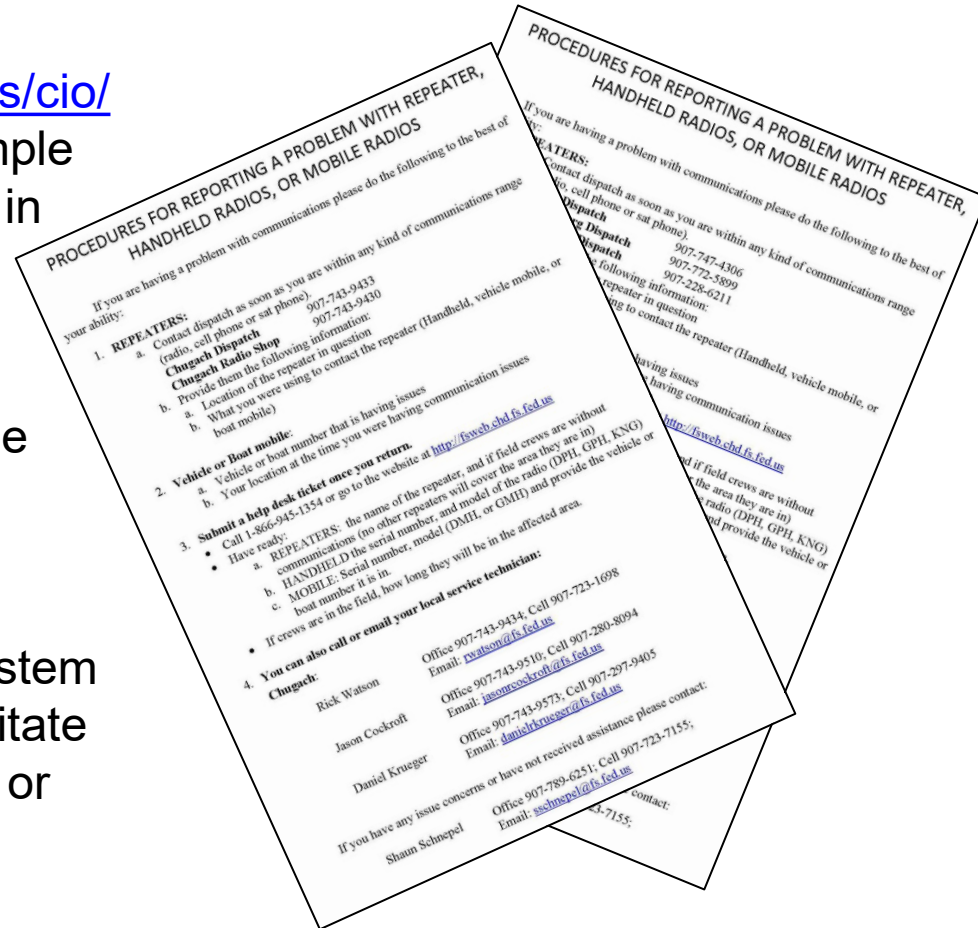
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- **Do Not** use the radio when someone else is transmitting.
- **Do Not** transmit a routine message when emergency traffic is occurring on that channel.
- **Do Not** use foul language, or inappropriate content.
- **Do Not** transmit too closely to another mobile unit or handheld/portable. (This causes feedback and can damage equipment.)
- **Do Not** use your radio near mining operations using blasting caps, or explosives.

# Reporting Issues

- Reporting link and procedures are located at the CIO-LMR website <https://fsweb.wo.fs.fed.us/busops/cio/> under the Helpdesk tab, or a simple phone call or email, contact info in next slide.
- The quicker Radio Techs know there's a problem, the quicker the issue can be resolved.
- Radio Techs want good communication and the radio system to work for you. Do not ever hesitate to call with questions, concerns, or problems. We are here to help!



*Procedures for reporting a problem are found at the LMR SharePoint*



# Contact Info



## Your Local Electronic Radio Technicians:

Forest	Name:	Email:	Phone:
Wallowa Whitman	Kierin Doherty	<a href="mailto:kierin.doherty@usda.gov">kierin.doherty@usda.gov</a>	C: 541-626-3840
Wallowa Whitman	Lane Loennig	<a href="mailto:lane.loennig@usda.gov">lane.loennig@usda.gov</a>	C: 541-805-4342
Umatilla	Claude Smith	<a href="mailto:raymond.smith@usda.gov">raymond.smith@usda.gov</a>	C: 541-215-5256
Umatilla	Vickie Leonard	<a href="mailto:vickie.leonard@usda.gov">vickie.leonard@usda.gov</a>	C: 541-240-0808
Malheur	Jarom Culpepper	<a href="mailto:jarom.culpepper@usda.gov">jarom.culpepper@usda.gov</a>	C: 541-575-3183
Malheur	Juan Vargas	<a href="mailto:juan.vargas2@usda.gov">juan.vargas2@usda.gov</a>	C: 541-620-0069
WWF, UMF, MAF	Brian Houdak	<a href="mailto:brian.houdak@usda.gov">brian.houdak@usda.gov</a>	C: 541-371-1354