

Arizona & Southwest Region Varsity Scouts

OPERATION ON-TARGET!

2017 Radio Plan

To Operation On-Target Amateur Radio Operators:

Thank you for accepting the opportunity to help the Varsity Scouts to participate in the annual On Target activity, where they will attempt to flash as many other mountaintops as they can. Your help can be crucial to their Team having success in this team building event.

Your Job

Your job will be to help them confirm the flashes to and from the other mountain peaks. You will help them talk to other radio operators on those peaks as the boys attempt to direct the sun's rays reflecting from their mirrors to those peaks. However, radio traffic may be heavy so don't let the Team stand around waiting for radio contact. They should continue to signal known peak locations from the list attempting to make contact!!

Wide area repeaters will be used to help provide the communications. The repeaters will help get the radio operators together. Then they will finish the confirmation talk on a simplex channel.

The Rim Link repeaters will be used again this year for the Tonto Basin. Mt. Ord may also linked to Flagstaff, Pinal and Greens Peak. When we talk on one of those repeaters, the other linked repeaters can hear it. The west side will use Smith Peak and the White Tanks Repeater, and in the southern areas we will utilize the Mt. Graham EAARS network. Since the Mt. Ord repeater will be the heaviest used repeater, we have cleared its use with the ARA. We thank them for their graciousness!! Also due to the heavy use the Mt Ord repeater at **146.920** MHz will have a net control to coordinate traffic. Please defer to net control when using this repeater. In other areas of the state, and near the borders with New Mexico and California the other linked systems will be used. These are open systems and will not be dedicated to our use since we do not have the density of Teams on mountain peaks in these areas. So please be courteous and follow good repeater etiquette when using these repeaters. www.AZRepeaters.net has a good site on repeater etiquette for your reference.

This year we will have two organized nets; the Tonto Basin Net and the Phoenix Valley of the Sun Net. The repeater on Mt. Ord will continue to be used for the sites in the Tonto basin. The second net will be specifically for the sites closer to Phoenix, in the Valley of the Sun. The sites that should check into the Valley net include (but not limited to):

"A" Mountain	Red Mountain (Mount	Superstition Flatiron
Battleship Mountain	McDowell)	Thomas Road Overpass
Camelback Mountain	Shaw Butte Radio Towers	Thompson Peak
Goldmine Mountain	Silly Mountain	Usery Mountain
Papago Butte	South Mountain	Wind Cave (Pass Mountain)
	Spook Hill	

Some of the sites on this list may also need to check in to the Mt. Ord net as well, as there will be sites along the Rim that want to contact them. The **Tonto Basin net** will be held on the **Mt. Ord repeater, 146.920 + 162.2PL**. And the **Phoenix net** will be held on the **Bishops Storehouse repeater on 146.720 -100PL**.

The Net Control on the Phoenix net will be Gary Goetz, K7WZX. The Net Controls on the Tonto Basin net will be Chuck and Sue Rogers, W7CBR and K7SKH.



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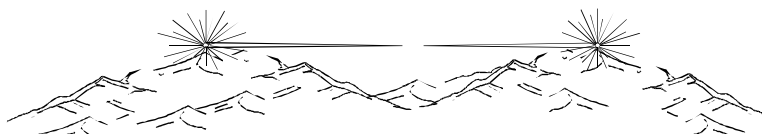
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The Simplex Frequencies

Simplex Frequencies For Coordination Between Peaks	
Frequency	Notes
146.40	
146.42	
146.44	
146.46	
146.48	
146.50	
146.52	National Simplex Calling Frequency (Don't Use for On Target)
146.54	Assigned to Mt. Ord #1
146.56	Commonly Busy – Don't use for On Target
146.58	
147.40	
147.42	
147.44	
147.46	
147.48	
147.50	Assigned to Diamond Point
147.52	
147.54	Assigned to Mt. Ord #2
147.56	

The Repeaters

ARA Rim Link Repeaters (Net Control)				
Frequency	Location	Off-Set	PL-Tone	Notes
149.290	Mt Ord	+	162.2	Net Control – Tonto Basin Hailing Frequency
146.720	Bishops Storehouse	-	100.0	Net Control – Phoenix Hailing Frequency
147.14	Mt Elden	+	162.2	RIMLINK
147.20	Pinal Peak	+	162.2	RIMLINK
146.72	Greens Peak	-	162.2	RIMLINK
EAARS Repeaters				
145.21	Jacks Peak	-	141.3	EAARS (Lordsburg & Silver City)



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145.27	South Mt.	-	141.3	EAARS (Alpine, AZ)
145.41	Pinal Peak	-	141.3	EAARS*** (Globe, AZ)
147.08	Mule Mtn.	+	141.3	EAARS (Bisbee, AZ)
147.16	Mt Lemmon	+	141.3	EAARS (Tucson, AZ)
146.94	Ft. Thomas	-	141.3	
147.28	Guthrie Peak	+	141.3	EAARS (Greenlee Co., AZ)
147.06	Little Florida Mt.	+	141.3	EAARS (Deming, NM)
146.70	Greens Peak	-	141.3	EAARS (Springerville, AZ)
145.47	Caballo Mtn.	-	141.3	EAARS (Truth or Consequences, NM)
145.35	West Peak	-	141.3	EAARS (Mt. Graham)
146.86	Heliograph Pk	-	141.3	EAARS (Mt. Graham)
CALZONA Repeaters				
146.68	Smith Peak	-	162.2	Calzona (Aquila, AZ)
146.94	White Tanks	-	162.2	Calzona*** (West of Phx., AZ)
147.12	Black Mtn.	+	103.5	ECRA (Near Glamis, CA)
147.24	Monument Pk.	+	103.5	ECRA (Laguna Mts., CA)

*** These repeaters have access into parts of Maricopa County. If you are on a peak that will reach out of Maricopa County, use these frequencies.

The Dedicated Simplex Frequencies

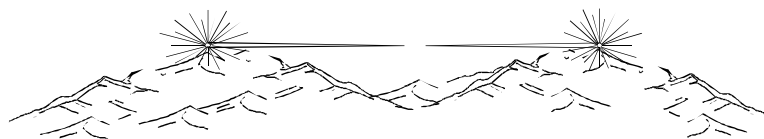
As in the past, we have assigned a dedicated simplex frequency to the busiest locations: Mt. Ord. - Mt. Ord will use 146.54 and 147.54 as their communications frequency. Diamond Point – Diamond Point will use 147.50 as their communications frequency. Those peaks who would like to contact them will find them on that frequency and should not have to call on the repeater asking for them.

Tactical Call Signs

Tactical call signs are used for Public Service events such as bike rides and marathons. They are also sometimes used on Emergency nets. In our case, they help to identify the location of the operator. Each operator will use his mountain peak name as his Tactical call sign. Thus we will hear Mt. Ord (or just Ord), Mt. Peeley, Colcord, Aztec, etc. **These Tactical call signs will be used in lieu of your FCC assigned call sign for all initial calls and exchanges of traffic. You terminate an exchange with your Tactical call sign plus your FCC assigned call sign, as shown in this example: “Diamond Point... We are done for the day... AC7R Clear.” Your FCC call sign at the end indicates “I’m done talking.”**

What to Bring:

You will need at least one radio. A mobile radio can be used if you can get close to the boys with your car or haul the equipment and a battery to where the boys are. The power of the mobile is not usually necessary; however, since we are on mountain tops and our handheld radios (HTs) usually do just fine. Some like to bring two HTs; one to talk to the repeater and one for Simplex operation.



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Program the repeater (+ PL) and Simplex frequencies into the memory channels of your radios before the event, so that you can quickly switch to the assigned frequencies. Practice switching from the Memory to the VFO mode of your radios.

Other items to bring:

2nd charged battery for each radio

Alkaline pack with fresh batteries for each radio (No one likes to run out of power)

Peak list printed from the On Target website

Any special equipment needs, i.e. filter, yagi antenna

When does it happen?

The operational time is from 9:00 a.m. to 12:00 noon on Saturday, **September 16, 2017**. We would like to have a quick check-in on Friday the 15th at 8:30 PM on the Mt. Ord linked repeaters to check out our equipment. We realize not everyone will be able to check in at this time, as some units will be camping overnight in places that may not be able to hit the repeater. Please try from wherever you are so we can work out procedures. On Saturday morning we would like to establish communications with everyone on the repeater frequencies starting around 8:30 a.m. to allow time to work out any glitches that may arise and to make sure our radios are operable.

Proper repeater etiquette

The Net Control Operator (NCO) controls the operation of the net. This is a directed net, meaning that you don't transmit without permission. When you want to check in or you are called by NCO, respond by using your tactical callsign and proceed with your exchange, completing with your FCC callsign.

When the NCO calls a station and while talking to him, all other stations should standby. When the NCO has completed with this station, he will call for any more checkins. Between calls, if you have important information to share with the NCO, you call by saying, "Info".

Typical etiquette is to wait for an opening to insert your desire to call NCO and ask for an assignment to a new simplex frequency. Just remember a Scout is Courteous and this includes on the radio.

We are "borrowing" these repeaters from the ARA and need to be mindful that any emergency traffic will take priority at any time. We usually get a question or two from other radio operators who want to know what is going on. NCO typically responds to these questions from outside persons.

Repeater example:

NCO: On Target Net Control, K7WZX [NCO is now available to take new calls]

Operator 1: "Greens Peak" [net control will wait a little bit for any other stations]

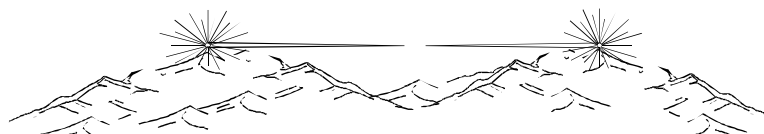
Operator 2: "Milk Ranch"

NCO: "Greens Peak - Net Control - Go ahead"

Operator 1: Would like to contact Aztec Peak

NCO: "Aztec currently on 146.42"

Operator 1: "146.42, KD7QVM" [Operator 1 gave his call sign, indicating he is done. Note that Operator 2 is still waiting]



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NCO: "Milk Ranch - Net Control - Go ahead"

Operator 2: "Milk Ranch would like to contact Peeley"

NCO: "Peeley from Net Control" [all wait for Peeley to respond]

Operator 3: "Peeley"

NCO: "Milk Ranch and Peeley, use 146.46"

Operator 2: "KE7MMP" [Milk Ranch understood, and will comply]

Operator 3: "Peeley, please say again frequency" [Peeley didn't hear the frequency - what to do if you didn't hear]

NCO: "Peeley, use 1 4 6 <decimal> 4 6 " [NCO reads back more slowly as required]

Operator 3: "N7RPL" [Peeley got it this time, end of communication]

NCO: "Net Control - K7WZX" [NCO ready for more check-ins / call now!]

The Process of Confirming a Flash

As we have done in years past, for this activity we will begin on a common "hailing" frequency to establish our initial contacts with the other mountaintop ham operators and their associated Varsity Teams. The Net control operator on the Mt. Ord repeater will monitor the repeater frequency to control the net. His responsibility will be to coordinate the contacts, try to keep order to our communication, and relay any information between stations that may not be in range to make contact directly. Remember to use your Tactical callsign as described above.

Once you have established radio contact with another operator on the repeater and want to try to establish mirror contact, you will be directed to one of the simplex frequencies shown above.

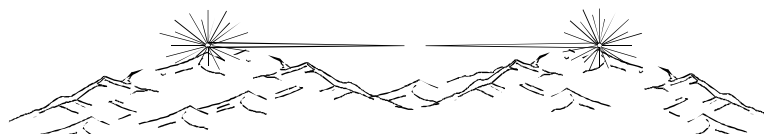
After you have confirmed the mirror flash with the other mountain peak, then QSY back to the repeater frequency for your next radio contact. Then repeat the process again.

Mobile Phones

We have asked for all the Teams to provide a cell phone numbers for phones they will have on the peak. Cell coverage is getting better, but is still questionable in many locations. That said, Units are encouraged to call each other on the cell phones. We suggest that each unit have a couple of cell phones to maximize their ability to communicate. We prefer using HAM Radios, but should make use of the phones to enhance communication.

OTHER NOTES AND TIPS

1. Mt. Ord, being in the middle of the Tonto Basin, is always a very busy mountaintop. It is recommended that at least 2 radio operators be at this site to handle all of the communications and flash coordination. One could at least monitor the net frequency while the other is on the assigned simplex.
2. As you can see from the Peak list, there are several teams that do not have a ham radio operator. If you know of anyone that would be willing to participate, please call or email Mike Heaton, Gary Hinton, or Chuck Rogers. Their contact information is below.
3. Every team has a different skill level in the use of the mirrors. So, the radio coordination will be extremely important, especially for some of the longer distances. Your help is appreciated to help each team make as many successful contacts as possible.



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4. *Don't forget that the repeater and simplex frequencies are open to the ham community and are NOT dedicated to our exclusive use. Please be kind and considerate to other traffic, especially on the repeaters.*
5. When using the Mt. Ord repeater or one of the other linked repeaters, key up for 1-2 seconds before talking, so that those at the far end of the link will hear all that you say.
6. When the boys are finished flashing, let NCO know that your peak is going 'Off the Air.' Or, if you will be off the air for a short period, advise NCO that you will be gone for a short period. Then be sure to check back in when you are back.
7. Involve the boys by letting them handle the radio as well. You are the control operator, but you can let them do the speaking. There may be a future ham radio operator in the team.
8. This is an annual event. We really appreciate your participation and hope that you will be available next year. This is a great activity and is getting bigger and better every year, thanks to you.

Mike Heaton KD7YIE OT Coordinator 480-969-5318 mikeheaton@cox.net	Richard Latimer W7RTL OT-HAM DPA 480-985-2682 rlatimer60@yahoo.com	Chuck Rogers W7CBR Sue Rodgers K7SKH OT Net Control (NCO) 602-339-0109 rogers_charles@hotmail.com
Wendell Carter AB4LE Southern AZ OT Coordinator wendellcarter42@gmail.com	Gary Hinton AC7R OT-HAM DPA 480-833-7173 ghinton1@cox.net	



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