

ARRL FIELD DAY



FD  25

www.arrl.org

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RST Field Day Plan 2025

By Avery Davis, WB4RTP

Old slides by David Holman,
AC7DS





RST

Radio
Society of Tucson

Hooray! It's time for Field Day!
ARRL Field Day and RST Monsoon Picnic
June 27 – 29.



**STAY IN THE COOL, MEET A
GREAT BUNCH OF HAMS, and
LEARN "RADIO SPORT IN A
LOW-STRESS, LOW
PRESSURE ENVIRONMENT.**



RST will be operating field day from Camp Lawton on Mount Bigalow. We plan operations on 40-, 20-, 15-, and 10-meters. We may even get some of our Boy Scouts to set up a 6-meter station. We will have a Get-On-The-Air (GOTA) station on 2-meters.

PICNIC LUNCH and DINNER

For a free-will donation the scouts will be serving breakfast, lunch, and dinner on Saturday.

RSVP and further information contact K3TYE at joestat4@msn.com or check out the RST website.

www.k7rst.club

What is Field Day

- It's a contest!!
 - *Not Really, but it is*
- It's a social event!!
- It's a radio event



Field Day Is FUN!!!

Field Day is a Practice Deployment Emergency Communications Exercise

When Is Field Day?

June 28-29, 2025

Beginning 1800 UTC (1100 MST) Saturday

Ending 1800 UTC (1100 MST) Sunday

Objective

To contact as many stations as possible on the 160-, 80-, 40-, 20-, 15- and 10-Meter HF bands, as well as all bands 50 MHz and above, and to learn to operate in abnormal situations in less than optimal conditions.

Field Day is open to all amateurs in the areas covered by the ARRL/RAC Field Organizations and countries within IARU Region 2. DX stations residing in other regions may be contacted for credit, but are not eligible to submit entries.

Each claimed contact must include contemporaneous direct initiation by the operator on both sides of the contact. Initiation of a contact may be either locally or by remote. Fully automated contacts are prohibited.

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What Do We Need?

➡ OPERATORS

- Band Captains
- Bonus Captains
- Set Up Crew
- Radios
- Antennas
- Power
- N1MM Loggers



What
openings
can you fill?

We need Band Captains

Task	Leader
Station Capt 160SSB	
Station Capt 160CW	
Station Capt 80SSB	
Station Capt 80CW	
Station Capt 40SSB	
Station Capt 40CW	
Station Capt 20SSB	Avery WB4RTP
Station Capt 20CW	Jeff AD6T
Station Capt 15SSB	
Station Capt 15CW	
Station Capt 10SSB	
Station Capt 10CW	
Station Capt Digital	
Station Capt V/UHF	

What
openings
can you
fill?

We need Bonus Point Captains

FD Bonus Points	Bonus Points Captains
7.3.1. 100% Emergency Power 100pts	Avery WB4RTP
7.3.2. Media Publicity 100pts	
7.3.3. Public Location 100pts	Avery WB4RTP
7.3.4. Public Information Table 100pts	
7.3.5. Message Origination to Section Manager 100pts	
7.3.6. Message Handling 10pts ea	
7.3.7. Satellite QSO 100pts	
7.3.8. Alternate Power 100pts	Avery WB4RTP
7.3.9. W1AW Bulletin 100pts	
7.3.10. Educational activity bonus 100pts	Joe K3TYE
7.3.11. Site Visitation by an elected governmental official 100pts	
7.3.12. Site Visitation by a representative of an agency 100pts	
7.3.13. GOTA Bonus (updated 2024) 100pts + 5pts ea contact	Joe K3TYE
7.3.14. Web submission 50pts	Avery WB4RTP
7.3.15. Field Day Youth Participation 20pts ea max 100pts	Joe K3TYE
7.3.16 Social Media 100pts	
7.3.17 Safety Officer Bonus 100pts	Joe K3TYE
7.3.18 Field Day Responsibilities Bonus (new for 2024) 50pts	

What
openings
can you fill?

We need other leaders and crew

Task	Leader
FD Chair	co-chairs: Joe K3TYE & Avery WB4RTP
Pre-reserve site (early campers)	Joe K3TYE
Set up non-radio related infrastructure (RVs, tents, shelters, tables, etc.)	Joe K3TYE
Food Service Field Kitchen	Joe K3TYE
Set up FD signs	

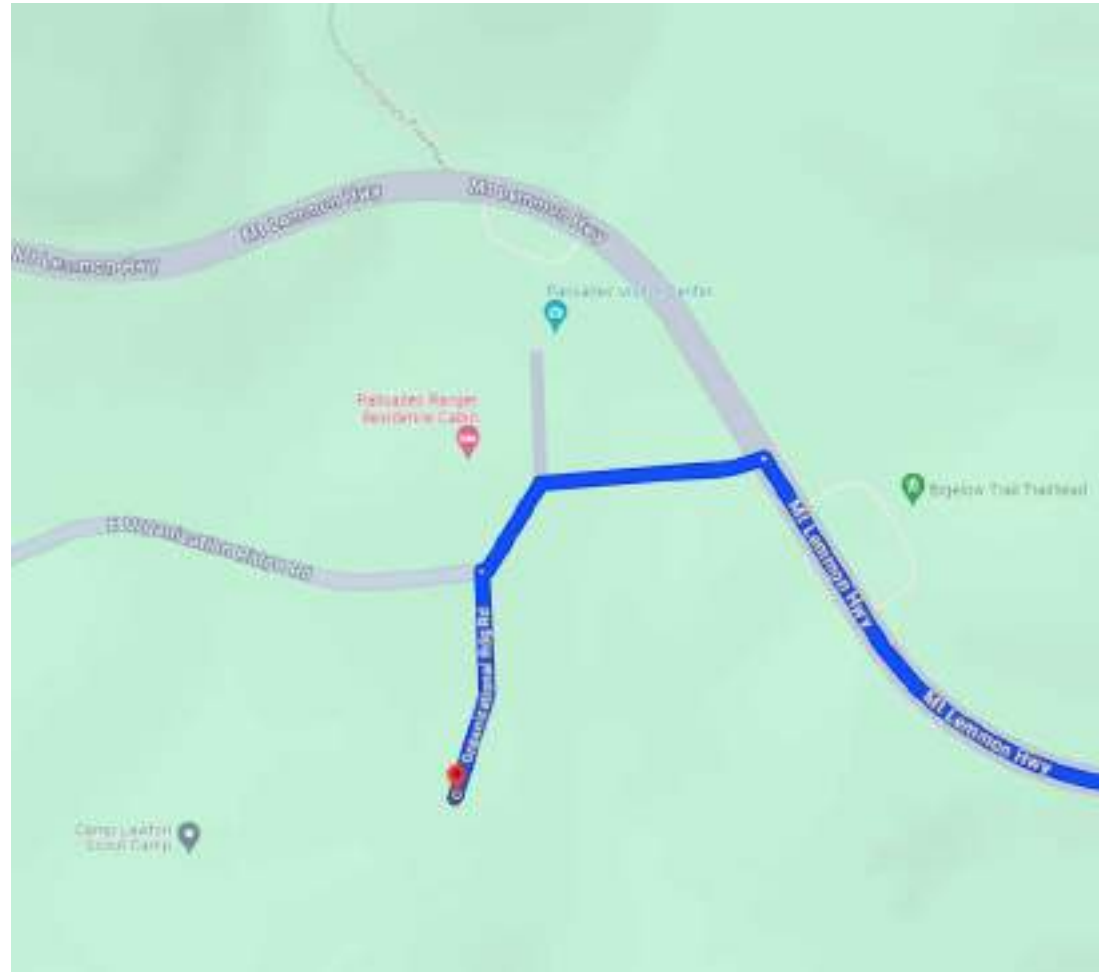
Camp
Lawton
was the
winner

2025 CRCRST FD Site Selection

Feature or Description	Camp Lawton	Bear Wallow	Radio Ridge
Site access	Excellent, right behind USFS Palisades Visitor Center	Big rocks limit access	Small parking lots at several sites
Site reservation	Reserved for us	First come, first serve	First come, first serve
Site size	Lots and lots of parking	Lots of parking	Good parking at several sites
Comfort facilities	Running water, flush toilets, showers, commercial power	Dry site, expensive porta potty rental	Dry site, permanent latrine at top site
Accommodations	Cabins with beds: Maricopa (upper) Cabins on Staff Hill	BYO tents, RVs	BYO tents, RVs
Cooking	Ramada with electric range & oven + gas grill	BYO grill, tables, canopy, etc.	BYO grill, tables, canopy, etc.
Forest Service Quiet Time after 10pm	No, we can run generators 24hrs	Yes	Yes
Cell Service	Very poor	fair	poor
WiFi	Good	none	none
Antennas	Lots of trees, but power lines to avoid	Lots of trees	Lots of trees
High Site	Shadowed by Mt Bigelow to the North	Somewhat shadowed by Mt Bigelow to the East	Somewhat shadowed by Mt Lemmon to the NorthWest
SCORING			
Green, 2 points each	8	3	2
Yellow, 1 point each	2	1	3
TOTAL	18	7	7

Where is Field Day for RST?

11 Scout Camp Lawton on Mt. Bigelow



Take the Catalina Highway to Mt Lemmon Highway

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- For those of you who use GPS to get you where you're going, the Field Day Site is:
- Latitude N 32.4084472 degrees
- Longitude W -110.7163543
- Address: 12900 E Organization Ridge Rd, Mt Lemmon, AZ 85619
- <https://catalinacouncil.org/lawton/>
- 1. Take Catalina Hwy/Mt Lemmon Hwy to E Organization Ridge Rd (just before the Palisade Ranger Station and Visitor Center) and turn left
- 2. Approximately 1/10 mile bear left through the narrow gates
- 3. Back-in parking for quick evacuation in case of fire



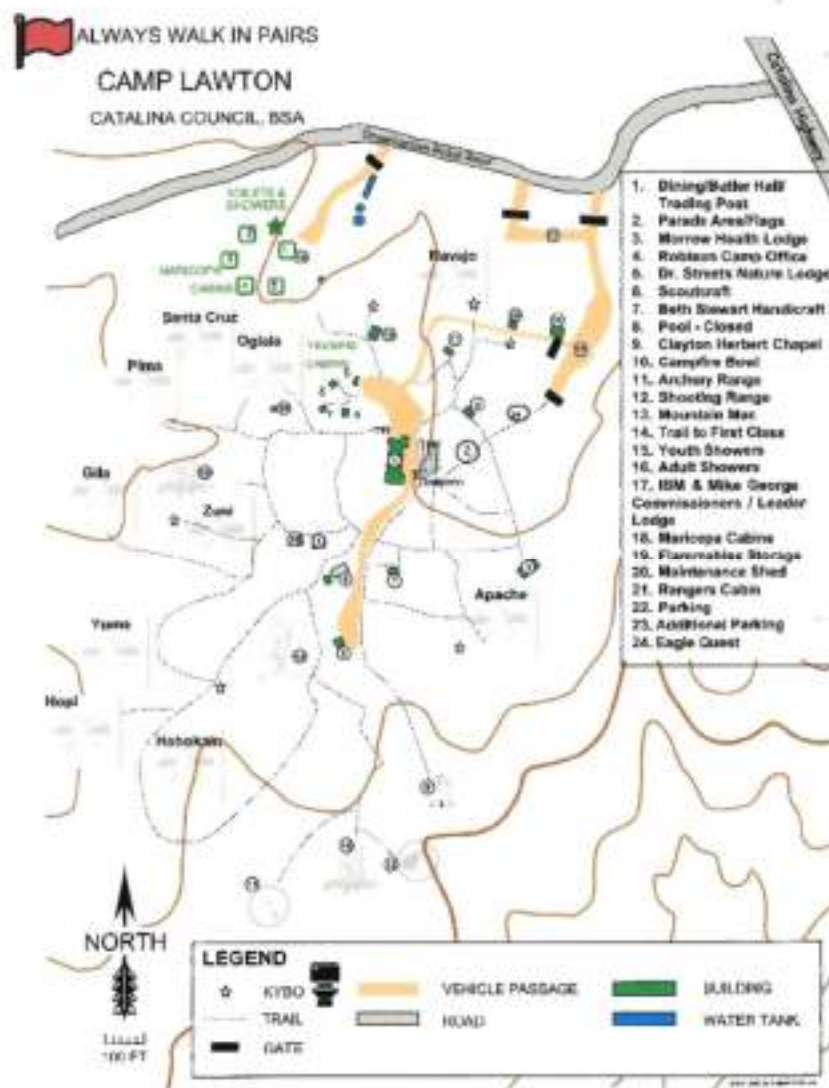
Scout Camp Lawton Map

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Our main area will be the Maricopa Cabins (18) on Staff Hill with the cooking ramada (see photo, below). We might use a cabin for stations, or a ramada, or tents/canopies.

Another nice spot for stations is the patio behind the main dining hall (1) (which will be closed).

Main parking will be at (22), about 900 feet from Staff Hill (18). Additional parking at (23).



Possible FD station locations

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Proposed: put the SSB stations on Staff Hill (18), and the CW stations on the dining hall (1) patio (below) to minimize interference.

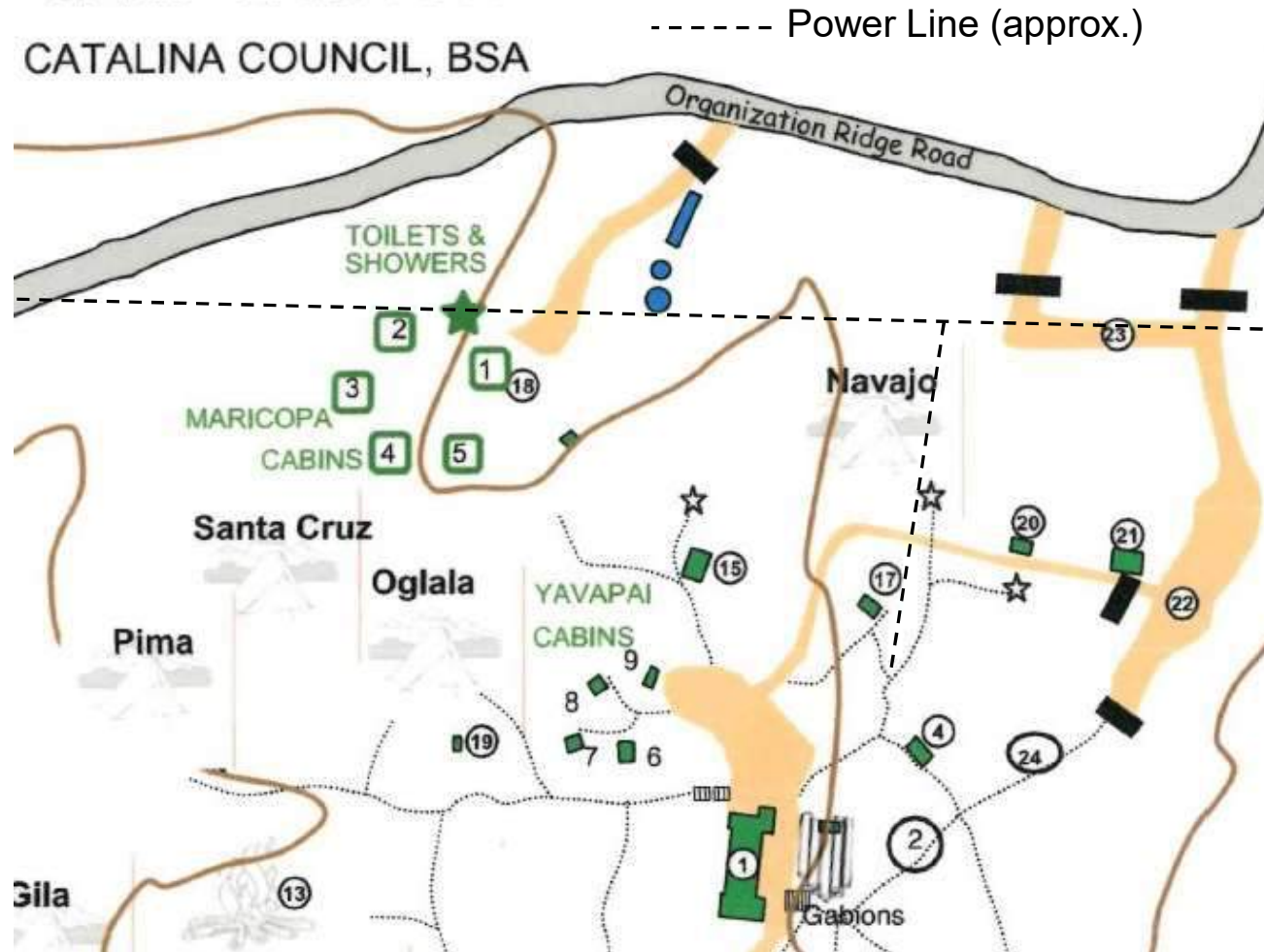
Parking at (1) and (18) should be mainly for band captains & assistants for loading/unloading.

RVs should be in the main parking (22) or additional parking at (23).

These areas may also be used for stations.



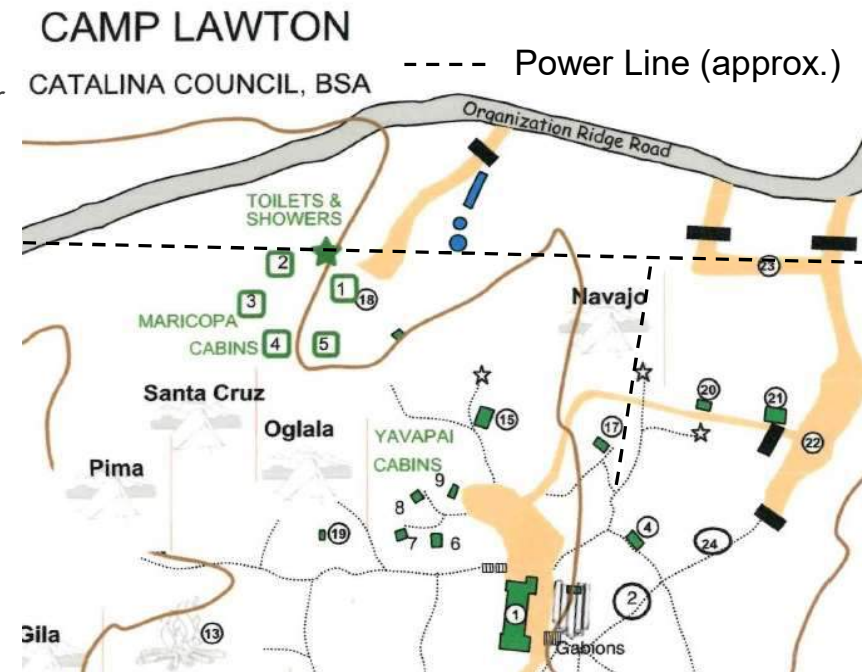
CAMP LAWTON CATALINA COUNCIL, BSA



Camp Lawton Power Line Challenge

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- A power line cuts across the Northern edge of the camp, so it could be a problem at Maricopa Cabins (Staff Hill) (18), and the additional parking area (23) is right under the power line.
 - I have been considering running dipoles North-to-South to try to be at right angles to this line in the Staff Hill area.
 - A spur line runs South over the Navajo camp area, so that would be a problem there.
 - It looks like the power goes underground before it gets to the dining hall, so stations in that area should be fine, and the South end of the main parking area (22) should be fine.
- This is a new site for CRCRST Field Day, so we must expect that we will have to adapt to what we find there. But hey, having "to learn to operate in abnormal situations in less than optimal conditions" is the objective of Field Day.



Simplified Schedule

- Thursday Early Arrival
 - Need reservation with Camp Lawton
- Friday: some band captains arrive
 - Start putting up antennas, after 11:00 am MST
- Field Day Officially Begins 11:00 am on Saturday, 28 June
- Scouts will prepare meals
 - Dinner Friday, breakfast Saturday & Sunday, Lunch Saturday
 - No Pot Luck dinner
 - You should bring your own food for special dietary requirements
- Field Day Officially Ends, Sunday, 29 June, 11:00 am MST
- Pack up everything and decamp early afternoon Sunday

Please be considerate of Scout Camp Lawton Rules

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- No alcohol or illegal substances
- No smoking, no vaping on the property
- No firearms or other weapons
- Pets are OK if on a leash and are friendly. “[A]ll applicable leash and other laws regarding pets will be adhered to.”
- “T-shirts, caps, or other articles of clothing should not violate the Scout Oath and Law (i.e., depicting alcohol, drugs, tobacco products, or vulgar language are prohibited).”
- Any operator staying over night must have Youth Protection Training (YPT).
- See this web page for details:
<https://campreservation.com/011/Camps/618>

Additional Rules and Considerations

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Most vehicles, campers and RVs may be in parking lots only, and backed in (for quick evacuation in case of fire).

- Permission must be obtained to drive to campsites.
- RVs are allowed both in the main parking lot and in the small parking lot near the cabins (staff hill parking).
- Limited commercial electricity is available at the cabin parking lot if requested. Let us know if you need a long extension cord.
- One staff hill cabin is available on Friday evening on staff hill.
- Lower cabins may be rented if necessary
- Five cabins are available on Saturday starting approximately 11:00 AM and are open to us until Sunday afternoon.
- Some camp staff people will be moving out as we move in - Not a big deal. We could set up our equipment on tables outside the cabins and move into the cabins latter in the day. Non-amateur-radio public will be on site; this will be our opportunity to show off what we are, and what we are doing. We do have to be a little flexible Saturday morning.

Some meals provided (preliminary menu)

- Some meals provided by Scout Troop 157 as a **fund raiser**
 - **When you contribute, you are paying for the food plus a little more to pay for the scout's year-long camping program, so *please* plan appropriately when contributing for food costs.**
 - Contact Joe, K3TYE, if you plan on partaking so the proper food quantity may be obtained
- Friday Evening Around 6 PM.
 - Subway type sandwiches. Cold drinks to include popular sodas, water, and seltzer. Cake, cookies, or brownies for desert.
- Saturday Breakfast:
 - Ham and scrambled eggs with cheese, plus pancakes. Cold cereal. Maybe some donuts. Coffee, tea, chocolate milk, plain milk, and orange juice.
- Saturday Lunch:
 - Our traditional chicken spiedies, Polish sausage sandwich, or cheeseburgers with chips, potato salad, and baked beans.
- Saturday Supper:
 - Prepared beef taco with chips, and potato salad. Also left overs from lunch.
- Sunday Morning:
 - Fast Continental Breakfast with some donuts. Coffee, tea, chocolate milk, plain milk, and orange juice.

What To Bring To Field Day

- Bring your own **HEADPHONES** or Headset if you want to operate
- Antenna you want to try
- Radio you want to use
- Friends interested in Ham Radio
- Family
- Food for yourself for special dietary requirements
- Water and beverages
- Camera
- Bug spray
- Sunscreen
- MOST OF ALL JUST AN ENJOYABLE SPIRIT!
 - Its all about having FUN!

Things to do better for Field Day 2025

- Take more pictures
- Get everyone to use the same logging software.
 - Merging logs from different logging software or manual logs was a real pain in the neck.
 - Maybe designate someone whose main task is to provide logging software support for all stations
- Designate someone to take a role or make a roster of participants and visitors
- Get everyone to use Field Day filters
- Bring your own **HEADPHONES** or Headset if you want to operate
 - Get everyone to use headphone splitters for logger

Camping

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Camp Lawton has cabins and tent sites

- Camp Lawton has running water
- Camp Lawton has commercial power
- Camp Lawton has trash receptacles
- No fee for camping
- Camp Lawton has parking for RVs, but no hookups
- No Dump Station



- It's Arizona, but sometimes it really does rain
 - *Come prepared for the weather*
- 20-30 degrees cooler than Tucson
- Sometimes it is actually cold (Yes, it's rare)

Safety

→ Fires

Don't want this....



Safety

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To Become THIS!!!!

Safety

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Fires

- Fires are badder than Bears
 - Fire Danger today: Stage 2 Fire Restrictions (5/12/2025)
 - <https://www.fs.usda.gov/r03/coronado/newsroom/releases/fire-activity-and-dry-conditions-prompt-stage-2-fire-restrictions>
 - *No fire (campfire, charcoal, coal, elevated grill, or wood stove)*
 - *No smoking, except within an enclosed vehicle or building.*
 - *No discharging a firearm ... except while engaged in a lawful hunt*
 - *No fireworks, explosives or target shooting.*
 - *No operating any internal combustion engine off designated roadways.*
 - *No welding, or operating an acetylene or other torch with an open flame.*
 - We have had restrictions in prior years

Important Safety Tips

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Bears (and other critters)

- *At Camp Lawton there are turkeys, white tail deer, ringtails, squirrels, skunks, and the occasional mountain lion or bear.*
- *In no case should any animal be disturbed in any way.*
- We hang antennas, not people
 - But Exceptions can be made
 - Beware of low hanging ropes for antennas
- Watch your step
 - Power Cables on the ground
 - Antenna coax cables on the ground

RF Exposure Calculations for FD

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Power	Mode DC	TX DC	Ant Gain	Freq	Gnd Refl	Controlled Environment		Uncontrolled Environment		Description
						Max PD	Min Safe	Max PD	Min Safe	
Watts	%	TX,RX min	dBi	MHz	y/n	mw/cm2	feet	mw/cm2	feet	
100	50	1,1	2.15	4	y	56.25	0.3999	11.25	0.8941	80m SSB & CW dipole
100	50	1,1	2.15	7	y	18.3673	0.6998	3.6735	1.5647	40m SSB & CW dipole
100	50	1,1	2.15	14	y	4.5918	1.3995	0.9184	3.1294	20m SSB & CW dipole
100	50	1,1	2.15	21	y	2.0408	2.0993	0.4082	4.6941	15m SSB & CW dipole
100	50	1,1	2.15	28	y	1.148	2.799	0.2296	6.2588	10m SSB & CW dipole
100	50	1,1	10	54	y	1	7.4041	0.2	16.556	6m SSB & CW yagi
50	100	1,1	6	146	y	1	4.6716	0.2	10.4461	2m FM 5/8 vertical
50	100	1,1	9	450	y	1.5	5.388	0.3	12.0478	450 MHz FM colinear vertical

From Amateur Radio RF Exposure Calculator at:

<https://www.arrl.org/rf-exposure>

DC is Duty Cycle

TX is transmit, RX is receive

TX DC is TX time and RX time in minutes

PD is Power Density and $1\text{mW}/\text{cm}^2 = 10\text{ W}/\text{m}^2$

Min Safe is minimum safe distance for personnel

Details in backup slides

Emergency Power for Radios for Bonus

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Normally from gas generators that club provides

- These are small generators expecting that stations will have a local battery to provide peak current and backup for when generators need refueling, with a modest 12V power supply to float charge the battery.
- A deep cycle battery would be best. Some prefer LFP (LiFePO₄), but these are expensive.
- Let us know if you need a generator



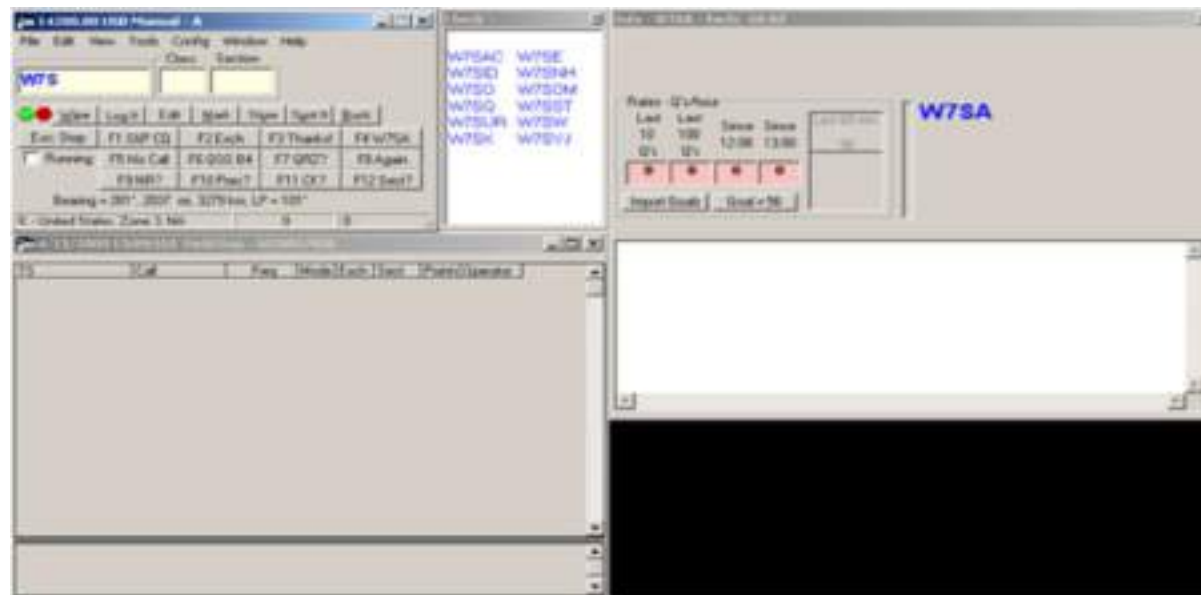
Power – IF NO GENERATORS

- Solar
 - *The trees make this difficult*
- Use your car battery or other battery
 - *Run the car when needed to recharge*
 - *Electric Vehicle has a large battery*
 - *If charged on home solar before FD, this does count for the alternate power bonus!*
 - *Use inverters for AC power distribution from batteries*
- Bicycle Generator
- Treadmill
- Other ideas??



Logging Software

- N1MM has been used very successfully in the past
 - *Open to suggestions for alternatives*
 - *Most important thing is for everyone to use the same logging software to make merging logs easier afterwards*



ARRL Field Day Rules (NEED UPDATE)

- Please review the Official Rules:
 - <https://www.arrl.org/field-day>
- **New for 2025: 4.1.1 Eligibility Criteria for the GOTA station for class A and F station has changed. GOTA station may operate on any FD band, but only one signal at a time.** GOTA station must use different callsign and must use same exchange.
- **New for 2024: 7.3.13 GOTA Bonus (Updated for 2024).**
- **NEW FOR 2023: 4.1.1.5 There is no limit to the number of contacts made by the GOTA station.** QSOs made by this station may be claimed for credit by its primary field day operation. In addition, bonus points may be earned by this station under rule 7.3.13.
- Entries must be postmarked or submitted by Tuesday, July 29, 2025. Late entries cannot be accepted.

Our FD Operating Class

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► 4.2 Class A Portable non-Commercial Power 100W Max

► 7.1. QSO Points:

7.1.1. Phone contacts count one point each.

7.1.2. CW contacts count two points each.

7.1.3. Digital contacts count two points each.

► 7.2.3 Power multiplier is two (2) at 100W max for non-commercial power but motor-driven generators are allowed

► This is what we have done for most Field Days past

► Alternate: 4.2 Class A Battery (AB) 5W max

► 7.2.1 Power multiplier is five (5) for 5W battery on non-commercial mains and no motor-driven generator source allowed

► An EV charged on solar qualifies as non-com/no-motor source

► Fewer contacts, but potentially more points

► Lower power is safer for pacemakers and with lower RF exposure

Operating

- Club Call:
 - K7RST on Mt. Bigelow
 - WN7BSA for GOTA
- Exchange:
 - *Stations in ARRL / RAC sections will exchange their Field Day operating Class and ARRL / RAC section.*
 - *Example: a three transmitter Class A station in Arizona which also has a GOTA station and the extra VHF station:*
 - *Send "3A AZ" on CW or "3 Alpha Alpha Zulu" on Phone.*
- DX stations send operating class and the term DX (i.e. 2A DX).
- Only operate on bands and modes authorized by your band captain!

Example Contact

- “Running”: Find a clear frequency and call...
 - *(us) CQ Field Day (CW: FD), CQ Field Day, this is K7RST, kilo 7 romeo sierra tango*
 - *(them) K7RST from N3TN, November 3 tango november*
 - *(us) N3TN from K7RST*
 - *(them) copy 5 Alpha West PA, 5 Alpha West PA*
 - *(us) QSL your 5 Alpha West PA, we are 3 Alpha Arizona, 3 Alpha Alpha Zulu, good luck (CW: GL) in the contest*
 - *(another caller may follow immediately, if not call CQ again)*
- Or Hunt and Pounce:
 - Find someone calling CQ field day, such as N3TN
 - Check for duplicate before transmitting!
 - *(us) N3TN from K7RST kilo 7 romeo sierra tango*
 - *(them) K7RST from N3TN*
 - *(us) N3TN copy 3 Alpha Arizona, 3 Alpha Alpha Zulu*
 - *(them) copy 5 Alpha West PA, 5 Alpha West PA*
 - *(us) QSL 5 Alpha West PA, thank you (CW: TU) and good luck (CW: GL) in the contest*
- Ask for clarifications as needed

Please be considerate of each other!

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It is requested that everyone participating be vaccinated, and to consider wearing masks if feeling ill.

➡ **Let's all try to help each other enjoy Field Day!**

Detailed Schedule

2025 RST Field Day Planning Schedule			
Date	Time (MST)	Activity	Leader
Tuesday, June 10, 2025	6:30 PM	RST general meeting, and field day preparation opportunity	
Friday, June 13, 2025	9:00 AM	"No Excuses Breakfast" and FD gear transfer opportunity	
Thursday, June 26, 2025		Set up FD signs	
Thursday, June 26, 2025		Begin setting up non-radio related infrastructure (tents, tables, etc.)	Joe K3TYE
Friday, June 27, 2025		Set up food service field kitchen	Joe K3TYE
Friday, June 27, 2025	11:00 AM	Station captains should have all station hardware on site and ready to set up	Station captains
Friday, June 27, 2025	11:00 AM	Antenna and station setup begins. Need crew to help setup!	Station captains
Friday, June 27, 2025	5:00 PM	Dinner	Joe K3TYE
Friday, June 27, 2025	5:00 PM	Copy FD bulletin CW	
Friday, June 27, 2025	6:45 PM	Copy FD bulletin phone	
Friday, June 27, 2025	8:00 PM	Copy FD bulletin CW	
Saturday, June 28, 2025	6:00 AM	Breakfast	
Saturday, June 28, 2025	7:00 AM	Copy FD bulletin CW	
Saturday, June 28, 2025	7:30 AM	Copy FD bulletin CW	
Saturday, June 28, 2025	8:00 AM	Copy FD bulletin phone	
Saturday, June 28, 2025	10:00 AM	Functional operations check: Stations (RF), computers and N1MM software	Station captains
Saturday, June 28, 2025	11:00 AM	FIELD DAY OPERATIONS START	Station captains
TBD		Satellite operation demonstration	
Saturday, June 28, 2025	5:00 PM	Dinner	Joe K3TYE
Sunday, June 29, 2025	11:00 AM	FIELD DAY OPERATIONS END	Station captains
Sunday, June 29, 2025	11:00 AM	Equipment teardown and packing up	Station captains

Current Status of RST Field Day

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Mountain is currently open

- *But a lot can happen between now and Field Day*
- *Fire danger today: Stage 2 Fire Restrictions (5/12/2025)*
 - *No fire (campfire, charcoal, coal, elevated grill, or wood stove)*
 - *No smoking, except within an enclosed vehicle or building.*
 - *No discharging a firearm ... except while engaged in a lawful hunt*
 - *No fireworks, explosives or target shooting.*
 - *No operating any internal combustion engine off designated roadways.*
 - *No welding, or operating an acetylene or other torch with an open flame.*
- *We need rain – Do a rain dance a day!!!*
- *Rain Keeps the Mountain OPEN!!*

Summary

- Planning for Field Day started in March.
- Primary plan is to go to Scout Camp Lawton on Mt. Bigelow for Field Day
- RST Plan B is TBD
- Field Day this year is 28-29 June 2025

HISTORICAL SLIDES BACKUP SLIDES

Joint Field Day Effort for 2024



Catalina Radio Club

<https://www.w7sa.org/>



Radio Society of Tucson

<https://www.rstclub.org/>

FD2024 Score: 2,095 Total

- Entry received at: 2024-07-11 04:09:54
- Call Used: K7RST GOTA Station Call: WN7BSA ARRL/RAC Section: AZ Class: 5A
- Participants: 42 Club/Group Name: Catalina Radio Club and Radio Society of Tucson
- Power Source(s): Generator, Battery, Solar
- Power Multiplier: 2X
- Preliminary Total Score: 2,095
- Bonus Points:
 - 100% emergency power 500
 - Public location 100
 - W1AW Field Day message 100
 - Natural power QSOs completed 100
 - Educational activity 100
 - Youth participation (1 x 20, max of 100) 20
 - Safety officer 100
 - Social media 100
 - GOTA Station 15
 - GOTA Coach 100
 - Entry submitted via web 50
- Total bonus points 1,285
- Score Summary: (Cabrillo log/dupe sheet file: K7RST-FD2024.log)
- CW Digital Phone Total
- Total QSOs 137 0 131
- Total Points 274 0 131 405 Claimed Score = (QSO points x power mult) = 810

The R-TEAM Catalina Radio Club Jointly with Radio Society of Tucson Takes Over Boy Scout Camp For Field Day 2024

This year, as we do each year, the R-TEAM Catalina Radio Club (CRC) partnered with the Radio Society of Tucson (RST) to conduct a joint ARRL Field Day (FD) operation, June 22-23, from near the top of Mount Bigelow in the Santa Catalina Mountains. We usually set up our FD operation and camp out on forest service property near the Steward Observation Catalina Station on Mount Bigelow Road. It is a cool place to set up a field operation when the valley floor is at 108-degrees Fahrenheit!

We started planning for this joint venture in early January. The co-chairmen, Avery WB4RTP and Joe K3TYE had already volunteered, and band captains were being sought. Organizing was made easy by having a band captain for each band and mode. The band captains would be responsible for all the equipment for their particular band. For instance, there would be a band captain for 20-meter CW and another for 20-meter phone. Ten-meters had only one band captain because no CW was planned. By early April, band captains were in place for HF bands from 40 meters thru 10 meters as well as VHF and UHF operations.



The R-TEAM CRC Jointly with RST and Scout Troop 157 operated GOTA Station

The Get-On-The-Air (GOTA) station is usually set up and run by members of Scout Troop 157. This year Cameron KK7OLN, a star-rank scout in the troop, was put in charge of the GOTA operation. For several years, the two radio clubs have relied on the services of Boy Scout Troop 157 to provide food and snacks to the radio operators. This year was no exception. Arrangements were made. The scouts would camp out on the same national forest service site with the radio operators. The scouts would set up their field kitchen on Friday afternoon*. Meals were to be served from Friday evening through mid-Sunday morning. The food operation is a fund raiser for the scout troop and they always serve a varied, and quality menu.

By the end of April the major plan was in place. April and May came and went and then finally June is here. Time to test out the plan. In early June one of the band captains, Richard K7NSW, decided to check out the usual Field Day site. Oops! The forest service has blocked off some of the trails to vehicular traffic thus making it difficult to access the favored camping sites. Carrying equipment into the site, even with the help of some teenage scouts, was out of the question.



The R-TEAM CRC Jointly with RST and Scout Troop 157 Changed Venue

What next? The Field Day chairmen decided to go ahead anyway with a much scaled down operation. But wait! FD chairman Joe K3TYE noticed that the local scout camp, known as Camp Lawton, was not being used that weekend. What if we rented the scout camp for the weekend? A few quick phone calls and . . . we were in. What an advantage this proved to be!

It was a win-win for everyone. Vehicle access was easy. The Catalina Council's Camp Lawton is far from primitive. The RST and CRC radio operators got to sleep in clean cabins. Clean rest rooms with hot showers were on site. The scouts got to camp for free on familiar property. A permanent and very clean field kitchen was made available. Camp fires were allowed. And the Catalina Council BSA collected a handsome rental fee paid for by the RST Club.

Some of our club members decided to take advantage of the situation and "head for the mountain" on Thursday morning, thus escaping the desert heat. It was a good time to hike some of the trails or just read a book because no FD antennas could be set up until 1800 UTC on Friday (11 AM MST).



The R-TEAM CRC Jointly with RST and Scout Troop 157 FD2024 On The Air!

Our plan was to only work a 24-hour period so antennas started popping up on Friday. By Friday evening, several antennas were in evidence including a variety of tree-supported dipoles and a 3-element fifteen-meter Yagi. The scouts had the 2-meter GOTA station up and on the air in no time. Mister Joe K3TYE conducted an impromptu class on how to read the current, voltage, and RF power meters on the GOTA station before turning supervision of the GOTA station over to Cameron KK7OLN.

Field-Day Saturday dawned cool and calm with the aroma of hot coffee and bacon flooding the campsite; the scouts had gotten up early. The boys and girls were cooking the standard breakfast fare with some of the radio operators already in line for the hot meal.

By 1800 UTC on Saturday the sounds of CQ field day could be heard. Band conditions weren't the greatest, but weather conditions were. That is until about 1230 local. Was that distant thunder we heard? NOAA weather radio was already sounding off with severe weather watches and warnings. By 1300 we were under a pretty decent thunderstorm but fortunately no wind, so radios were shut down and antennas disconnected for safety. Rain continued on and off until around 1800. In spite of the rain, the scouts served a terrific lunch and dinner.



The R-TEAM CRC Jointly with RST and Scout Troop 157 FD2024 Summary

Next year (remember there is always a next year), we are hoping to use Camp Lawton again. Joe K3TYE is already working with the Catalina Council to perhaps turn the ARRL Field Day into a Council wide STEM event held at the camp.

CRCRST 2024 Field Day Participants: total 40. CRC: 8. RST: 14. Some were both.

Field Day Participants (People who actually got on the air and made a contact): 8

Other licensed participants (Not making contacts): 13

Other unlicensed visitors: 19

1. Ten additional youth members of Scout Troop 157
2. Five adult leaders of Scout Troop 157
3. Four unidentified adult guests

Informal poll: Do you want to go back to Scout Camp Lawton?

YES: 8

NO: 0

*Radio operators who camped overnight were required to take the BSA Youth Protection Training (YPT).



FD2024 Feedback: What did you like about the event?

It was great. Of course, the storm put a damper on the activity, but the site was great and it was fun talking to people. - Ken KK7MBX

1 - can you imagine what it would have been like if we had been set up in our usual shelters when the rains and winds hit us this year? Disaster. The Scouts' usual set-up would have been decimated. Mud? Awful. I vote return to Camp Lawton. Any inferior propagation was greatly offset by the great facility that place is for other activities associated with Field Day.

2 - the conduct of the Scouts was very good. The service they provided was very good. The quality of the food was terrific.

3 - the location of Camp Lawton and the conveniences the facility offers is the best I have experienced in my 62 years of attending Field Day events.

6 - cabins are very good. Heat and light. Comfortable beds.

Room for your "stuff". Cabin front porches with swings? Room to operate from them. WOW! Hard to beat those cabins!

7 - toilet facilities: which is better, outhouses OR the individual shower and toilet rooms with heat, light, 120vac outlets and granite counters, access via a long porch for protection from rain? Hot and cold water. Flush toilets with comfortable seats. The choice is a "no brainer" IMHO.

9 - the advantages of using Camp Lawton are so many and great that I am unable to identify things which needed improvement or change. - Richard K7NSW

I liked the cabins, the restrooms, the kitchen area and the trees. I thought that the Scouts and thier parents did a very good job with the food, and the Scouts were well behaved. - Randy Burcham, KD7KEQ

I really enjoyed being at Camp Lawton and would like to be there again next year. Thanks Joe for making it happen with the location and the delicious food. - Les Watson WD6ERS

Good event for me (always learn a lot each time), was able to shake-down / try out a new rig, N1MM software and Microsoft 'surface', a new DC - DC converter (booster to take 12V from lead-acid battery to optimal +13.8V for transceiver), etc.

Appreciate the wonderful meal prep by Scouts

Cabins with roof-overhang over porch area were great protection from rainstorm - Jerry WN7DX

This Field Day site is excellent. It solves a bunch of problems. : Uncertainty of site availability.

If the forest service allowing us to operate.

The need to get there early to secure a site.

Portable Restroom issue.

Need to run generator for non-radio appliances.

The Scout group doing the food was super and well organized.

They even helped deliver to my camp site. - Greg Walker KA7BXA

I Liked the site too. It was nice to have a covered place with seating out of the rain to eat and hold eyeball QSO's - Kristyn KR1SS

I liked the Camp Lawton location. Just a better facility all around. I would be in favor of having the next Field Day there.

All in all, a good time. - Chris Volkman KK7FHO

FD2024 Feedback: What can we improve for next year?

I think what would be fun is for the folks who are operating to have a small speaker so that visitors/gawkers/fans can hear the action. It's not so much fun just watching a guy with a headset on, you have no idea what's happening. A screen showing the logbook filling up, and a little audio speaker to hear the contacts (at least for phone) would make it much more of a spectator sport!! - Ken KK7MBX

The rain put a big damper on things and I hope that all of my equipment will dryout and recover, but we all had fun and learned some important lessons about keeping our equipment dry. - Randy Burcham, KD7KEQ

Camp Lawton was good location but - would like to also consider trying a different location closer to summit (what was that place Avery talked about, that has the 'latrines', that is near top of mountain?) => not in 'shadow' of mountain, and something with line-of-sight for VHF / UHF people

=> we need to convince Randy to use a mast of some sorts, rather than relying on potato-launcher, rope, etc. to get 6m beam in trees.... Had marginal success rate that way for past few years.... 😊 Can bring a 20ft telescopic mast for that if needed; guy it with nylon rope, only needs to be up for 2 days...- Jerry WN7DX

4 - if an individual or group wants to experience the amazing propagation from Radio Ridge at the expense of inferior location conditions, then I suggest they operate there with the RST Club Contest call sign AK7AZ.

5 - I wonder if it would be worth spending more money and get the use of the Camp Lawton Chow Hall and kitchen. I am thinking of all the equipment the Scouts would not need to bring. Good cooking facility, much easier materials management, easier and faster serving & clean-up, etc. Lots of indoor tables and chairs - a greatly increased comfort level. Guaranteed protection from bad weather. Much better nearby parking. The comfort of the dining room for non-meal activities might draw a larger attendance. I wonder if the fireplace is functional? The nearby parking lots would be a plus for those who have an RV?

8 - wherever you go for Field Day the installation of antennas is always a challenge. Using tall pine trees at Lawton to hold unwire antennas is a tough job. Running wires around and/or through tree branches can be a real challenge. At Lawton there were few flat areas useable for raising verticals or other antenna masts. At the Staff Cabin site the available flat area was used for parking.

- Richard K7NSW

We need to improve the efficiency of putting up the antennas. - Les Watson WD6ERS

Downsides: Didn't get practice at pitching tents or leveling RV while setting up antennas at the same time. - Greg Walker KA7BXA

Maybe it's just me, but I had a difficult time finding the site. Maybe we could post more signage to guide people next time?

Parking was tight. If the weather was better on Saturday, I am willing to bet that we would have had more attendance and therefore parking problems.

I would suggest that the Scouts sell the meals via tickets or cash in much the same way they do at a Hamfest so they can recoup their expenditures.- Chris Volkman KK7FHO

If The Mountain Closes – CRC Plan B

- Use the CRC Shack
 - *Develop an operator schedule*
 - *Raytheon employees welcome as visitors*
 - *Can't have everyone in the shack at one time*
 - *Need Instructors to show folks how to use the radios/N1MM*



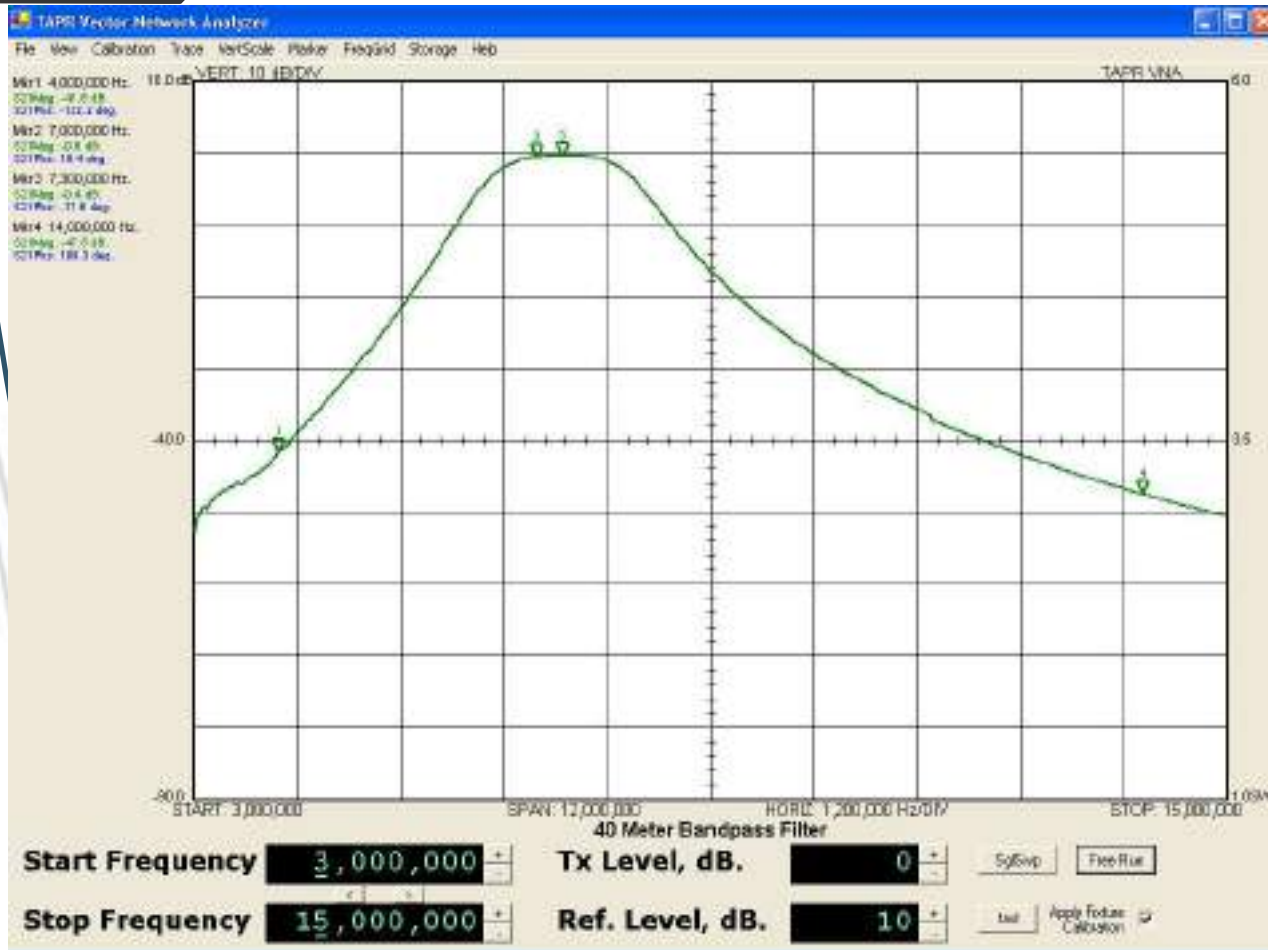
Benefits of using CRC Shack

- Band captains not needed
- Equipment is already set up and ready to go
- Operators will only have to be there for 2-4 hour time slots

Disadvantages of using the CRC Shack

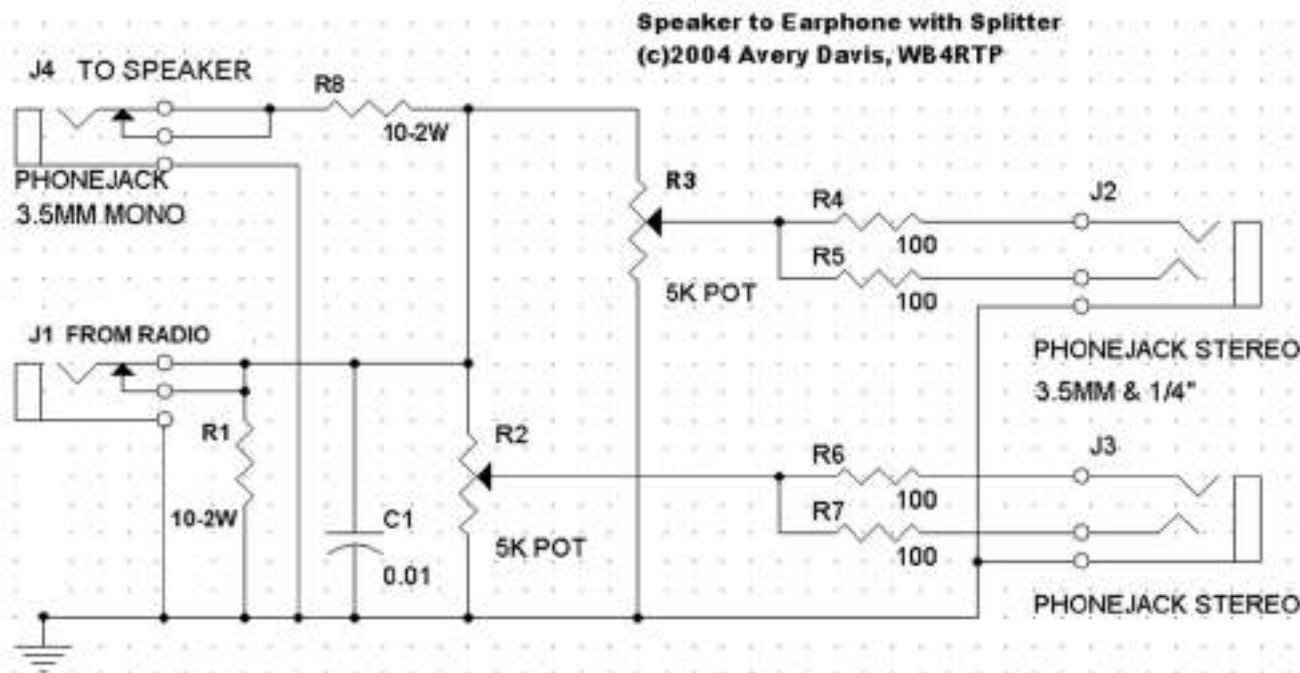
- In the heat!!!
- No extra points for public access, official visits, GOTA station, etc.
- Can't use EOC designator without formal agreements in place
- Getting the retirees on the plantsite
- Limited access to facilities
- No Pictures

Field Day (Contest) Filters



- Band pass transmitting filter for reducing the interference between HF transceivers operated in close proximity
 - NVARC “Ugly” Filter
 - <https://n1nc.org/Filters/>
 - Easy and inexpensive to build
 - Great performance
 - Currently, CRC only has 2: 40m and 20m
 - WB4RTP brings a second 20m filter
 - More are being built

Headphone Splitter



- Allows a second operator/logger to plug in headphones
 - Provides separate volume control for both operators
 - Splits mono output of radio into both left and right channels
 - Has output for lower volume speaker for monitoring by visitors
 - Optional: both 3.5mm and 1/4" stereo jacks for headphones

- Currently, CRC has 4 of these
 - WB4RTP has a fifth provided for 20m PH
 - 3 more of these have been built by Lloyd, K7NX

Field Day Calculations: 80m SSB & CW

RF Exposure Calculator

Parameters:

- Power at Antenna: 100 (watts)
- Mode duty cycle: Conversational SSB, heavy speech processing (duty cycle=50%)
 - The calculator lists "Conversationsl CW (duty cycle = 40%)", so using 50% for contest CW is conservative
- Transmit duty cycle: (time transmitting)
- You transmit for 1 minutes then receive for 1 minutes (and repeat).
- Antenna Gain (dBi): 2.15 (dipole)
- Operating Frequency (MHz): 4
- Include Effects of Ground Reflections

Results for a controlled environment:

- Maximum Allowed Power Density (mw/cm2): 56.2500
- Minimum Safe Distance (feet): 0.3999
- Minimum Safe Distance (meters): 0.1219

For an uncontrolled environment:

- Maximum Allowed Power Density (mw/cm2): 11.2500
- Minimum Safe Distance (feet): 0.8941
- Minimum Safe Distance (meters): 0.2725

Field Day Calculations: 40m SSB & CW

RF Exposure Calculator

Parameters:

- Power at Antenna: 100 (watts)
- Mode duty cycle: Conversational SSB, heavy speech processing (duty cycle=50%)
 - The calculator lists "Conversationsl CW (duty cycle = 40%)", so using 50% for contest CW is conservative
- Transmit duty cycle: (time transmitting)
- You transmit for 1 minutes then receive for 1 minutes (and repeat).
- Antenna Gain (dBi): 2.15 (dipole)
- Operating Frequency (MHz): 7
- Include Effects of Ground Reflections

Results for a controlled environment:

- Maximum Allowed Power Density (mw/cm²): 18.3673
- Minimum Safe Distance (feet): 0.6998
- Minimum Safe Distance (meters): 0.2133

For an uncontrolled environment:

- Maximum Allowed Power Density (mw/cm²): 3.6735
- Minimum Safe Distance (feet): 1.5647
- Minimum Safe Distance (meters): 0.4769

Field Day Calculations: 20m SSB & CW

RF Exposure Calculator

Parameters:

- Power at Antenna: 100 (watts)
- Mode duty cycle: Conversational SSB, heavy speech processing (duty cycle=50%)
 - The calculator lists "Conversationsl CW (duty cycle = 40%)", so using 50% for contest CW is conservative
- Transmit duty cycle: (time transmitting)
- You transmit for 1 minutes then receive for 1 minutes (and repeat).
- Antenna Gain (dBi): 2.15 (dipole)
- Operating Frequency (MHz): 14
- Include Effects of Ground Reflections

Results for a controlled environment:

- Maximum Allowed Power Density (mw/cm2): 4.5918
- Minimum Safe Distance (feet): 1.3995
- Minimum Safe Distance (meters): 0.4266

For an uncontrolled environment:

- Maximum Allowed Power Density (mw/cm2): 0.9184
- Minimum Safe Distance (feet): 3.1294
- Minimum Safe Distance (meters): 0.9538

Field Day Calculations: 15m SSB & CW

RF Exposure Calculator

Parameters:

- Power at Antenna: 100 (watts)
- Mode duty cycle: Conversational SSB, heavy speech processing (duty cycle=50%)
 - The calculator lists "Conversations CW (duty cycle = 40%)", so using 50% for contest CW is conservative
- Transmit duty cycle: (time transmitting)
- You transmit for 1 minutes then receive for 1 minutes (and repeat).
- Antenna Gain (dBi): 2.15 (dipole)
- Operating Frequency (MHz): 21
- Include Effects of Ground Reflections

Results for a controlled environment:

- Maximum Allowed Power Density (mw/cm²): 2.0408
- Minimum Safe Distance (feet): 2.0993
- Minimum Safe Distance (meters): 0.6399

For an uncontrolled environment:

- Maximum Allowed Power Density (mw/cm²): 0.4082
- Minimum Safe Distance (feet): 4.6941
- Minimum Safe Distance (meters): 1.4308

Field Day Calculations: 10m SSB & CW

RF Exposure Calculator

Parameters:

- Power at Antenna: 100 (watts)
- Mode duty cycle: Conversational SSB, heavy speech processing (duty cycle=50%)
 - The calculator lists "Conversationsl CW (duty cycle = 40%)", so using 50% for contest CW is conservative
- Transmit duty cycle: (time transmitting)
- You transmit for 1 minutes then receive for 1 minutes (and repeat).
- Antenna Gain (dBi): 2.15 (dipole)
- Operating Frequency (MHz): 28
- Include Effects of Ground Reflections

Results for a controlled environment:

- Maximum Allowed Power Density (mw/cm2): 1.1480
- Minimum Safe Distance (feet): 2.7990
- Minimum Safe Distance (meters): 0.8531

For an uncontrolled environment:

- Maximum Allowed Power Density (mw/cm2): 0.2296
- Minimum Safe Distance (feet): 6.2588
- Minimum Safe Distance (meters): 1.9077

Field Day Calculations: 6m SSB & CW

RF Exposure Calculator

Parameters:

- Power at Antenna: 100 (watts)
- Mode duty cycle: Conversational SSB, heavy speech processing (duty cycle=50%)
 - The calculator lists "Conversationsl CW (duty cycle = 40%)", so using 50% for contest CW is conservative
- Transmit duty cycle: (time transmitting)
- You transmit for 1 minutes then receive for 1 minutes (and repeat).
- Antenna Gain (dBi): 10 (yagi)
- Operating Frequency (MHz): 54
- Include Effects of Ground Reflections

Results for a controlled environment:

- Maximum Allowed Power Density (mw/cm2): 1.0000
- Minimum Safe Distance (feet): 7.4041
- Minimum Safe Distance (meters): 2.2568

For an uncontrolled environment:

- Maximum Allowed Power Density (mw/cm2): 0.2000
- Minimum Safe Distance (feet): 16.5560
- Minimum Safe Distance (meters): 5.0463

Field Day Calculations: 2m FM

RF Exposure Calculator

Parameters:

- Power at Antenna: 50 (watts)
- Mode duty cycle: FM (duty cycle=100%)
- Transmit duty cycle: (time transmitting)
- You transmit for 1 minutes then receive for 1 minutes (and repeat).
- Antenna Gain (dBi): 6 (5/8 vertical)
- Operating Frequency (MHz): 146
- Include Effects of Ground Reflections

Results for a controlled environment:

- Maximum Allowed Power Density (mw/cm²): 1.0000
- Minimum Safe Distance (feet): 4.6716
- Minimum Safe Distance (meters): 1.4239

For an uncontrolled environment:

- Maximum Allowed Power Density (mw/cm²): 0.2000
- Minimum Safe Distance (feet): 10.4461
- Minimum Safe Distance (meters): 3.1840

Field Day Calculations: 450MHz FM

RF Exposure Calculator

Parameters:

- Power at Antenna: 50 (watts)
- Mode duty cycle: FM (duty cycle=100%)
- Transmit duty cycle: (time transmitting)
- You transmit for 1 minutes then receive for 1 minutes (and repeat).
- Antenna Gain (dBi): 9 (colinear vertical)
- Operating Frequency (MHz): 146
- Include Effects of Ground Reflections

Results for a controlled environment:

- Maximum Allowed Power Density (mw/cm²): 1.5000
- Minimum Safe Distance (feet): 5.3880
- Minimum Safe Distance (meters): 1.6423

For an uncontrolled environment:

- Maximum Allowed Power Density (mw/cm²): 0.3000
- Minimum Safe Distance (feet): 12.0478
- Minimum Safe Distance (meters): 3.6722