ARRL FIELD DAY



www.arrl.org







- June 28-29
- Setup: Friday, June 27, 10:00 AM*
- Concord Rod & Gun Club
 - > 74 Strawberry Hill Rd, Concord, MA

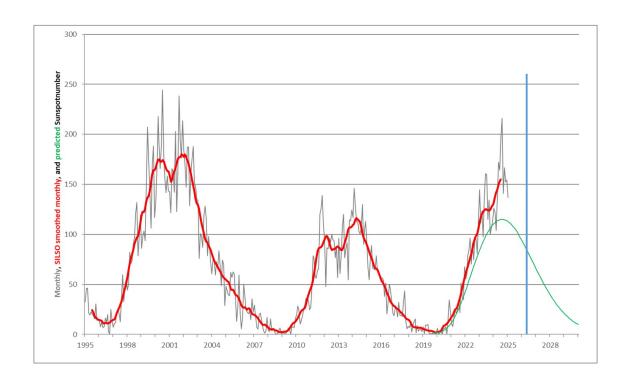
* Time may change depending on weather



Field Day 2025



- No conflicts!
- 100 watts
- CW, Phone, Digital, GOTA, Satellite
- Class: 3A







Stations & Leads

- Phone
 - •George, K1IG
- •GOTA
 - Andy, KB10IQ

- •Digital
 - •Carl, WG1V
- •Satellite
 - Bob, KB1SWZ

- CW
 - Bob, W1IS

Responsible for: rig, connectors, power supply, power distribution, antenna switch, headsets, office supplies, computer, logging SW, lighting, <u>fire extinguisher, first</u> <u>aid kit</u>, spare parts, RF exposure calculations, control operators



Infrastructure Leads

- HF Antennas
 - Bob, W1IS
- Food
 - Rick, W1RAG
- Site Liaison
 - Dale, KB1ZKD

- Safety
 - Dale, KB1ZKD

FIELD DAY

NNFC

- Finance
 - Alan, W1AHM
- Signage
 - Alan, W1AHM



Concord Rod & Gun Club 74 Strawberry Hill Rd, Concord

ARRL FIELD DAY

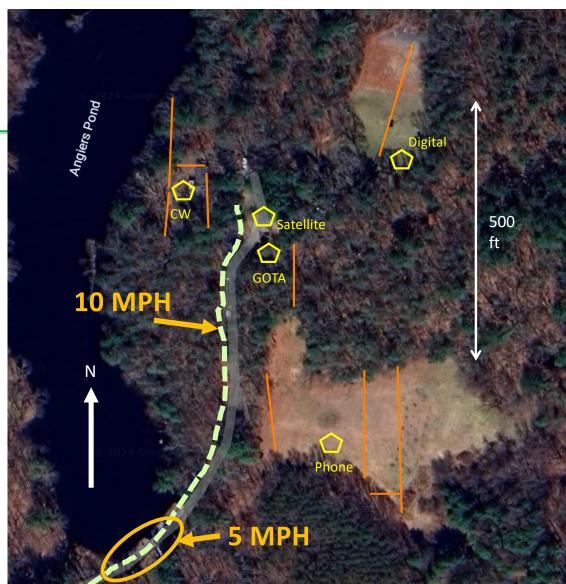
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RADIO CONNECT









Site Plan

Antenna locations are approximate



Schedule



Friday June 27

<u>10:00* AM – ?</u> Antenna Setup

*Weather Permitting Saturday June 28 8:00 AM Rig Setup & Check 11:00 AM Training 12:30 PM Lunch 2:00 PM Operations Begin 6:00 PM Dinner

Sunday June 29

<u>12:00 PM</u> Lunch <u>2:00 PM</u> Operations End Teardown



Weather

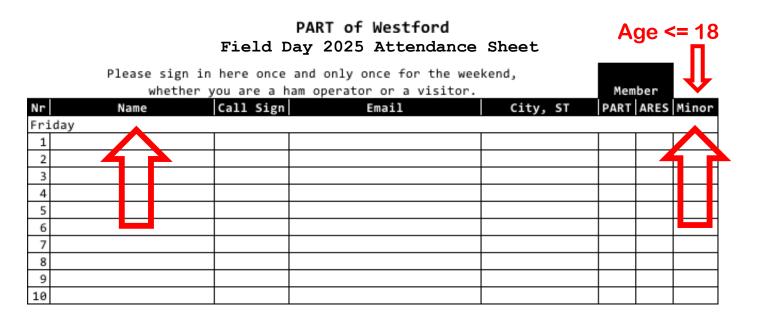


• TBD





Attendance Sheet



EVERYBODY signs in Once, and ONLY once!





- Saturday Lunch
- Saturday Dinner
- Sunday Breakfast?
- Sunday Lunch



Help Wanted!

Food!



Field Day Site Operations

- Safety
- 446.025 simplex for site coordination
- Visitors Likely
 - Wear your badge
 - Invite your neighbors



We're selling Amateur Radio! Greet all the visitors and explain what you're doing!





Bonus Points

- Emergency Power (400 points)
- Media Publicity
- Satellite QSO
- Alternate Power
- W1AW Bulletin
- Educational Activity
- Youth Participation
- Web Submission
- Site Responsibilities

- Public Location
- Public Info Table
- Safety Officer
- Site Visit by Elected Official
- Site Visit by Agency Rep
- Social Media
- Message Handling
- Message to Section Mgr.
- sibilities GOTA Station

Most Items Are Worth Up To 100 Points





Contacts and Logging

RRL FIELD DAY

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CONNECT

- Exchange: Class and ARRL section
- We are: "<u>3A EMA</u>" or "<u>3A Eastern Massachusetts</u>"
- Stations can be worked once per band mode

• Don't say "Please copy"

W1		W6		Canada		
Connecticut	СТ	East Bay	EB	Alberta	AB	
Eastern Massachusetts	EMA	Los Angeles	LAX	British Columbia	BC	
Maine	ME	Orange	ORG	Manitoba	MB	
New Hampshire	NH	Santa Barbara	SB	New Brunswick	NB	
Rhode Island	RI	Santa Clara Valley	SCV	Newfoundland and Labrador	NL	
Vermont	VT	San Diego	SDG	Nova Scotia	NS	
Western Massachusetts	WMA	San Francisco	SF	Ontario East	ONE	🔰 🛏 Canada
		San Joaquin Valley	SJV	Ontario Golden Horseshoe	GH	
W2		Sacramento Valley	SV	Ontario North	ONN	
Eastern New York	ENY	Pacific	PAC	Ontario South	ONS	
New York City - Long Island	d NLI			Prince Edward Island	PE	
Northern New Jersey	NNJ	W7		Quebec	QC	
Northern New York	NNY	Arizona	AZ	Saskatchewan	SK	
Southern New Jersey	SNJ	Eastern Washington	EWA	Territories	TER	
Western New York	WNY	Idaho	ID			
		Montana	MT	DX		
W3		Nevada	NV	DX	DX	



Operator Signup

	PART Field Day	Station O)perators	
	C	W		
	Saturday		Sunday	
Time	Call	Time	Call	
1400		0000		
1430		0030		
1500		0100		
1530		0130		
1600		0200		
1630		0230		
1700		0300		
1730		0330		
1800		0400		

Optional but, Those who sign up have priority!

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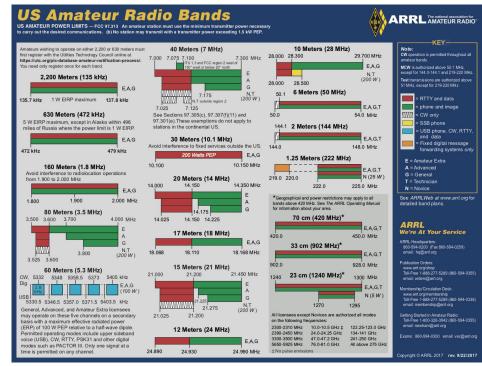
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RADIO CONNECTS



Field Day Operations

The <u>Control Operator's</u> license class determines the band limits



Every station will have a copy of the band plan. ARRL FIELD DAY

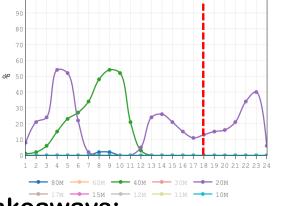
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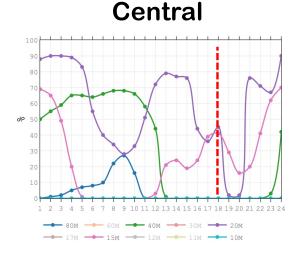
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Propagation Forecast

West Coast

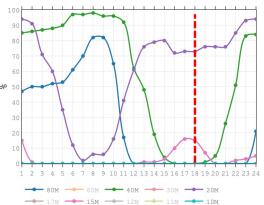




South

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Takeaways:

ΡΔΡ΄

of WESTFORD

- There's a path open to somewhere all the time
- 20 & 40 should be best bands
- Midnight morning operations are very productive
- Try 80 meters! Look for openings on 10 meters!
- Best for HI/AK: 20M (Day), 40M (Night) (Check DX spots)
- Colors 80 Meters 40 Meters 20 Meters 15 Meters 10 Meters



Messages



• One radiogram to Section Manager and 10 others

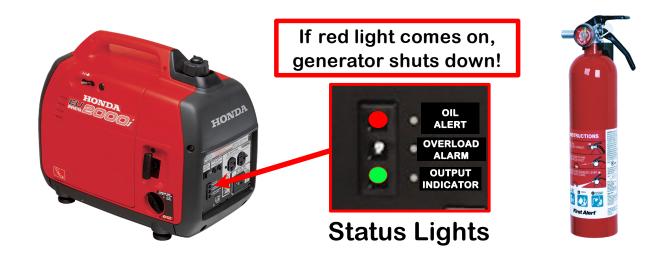
	ARRL — the nati					R ++
NUMBER PRECEDEN	ICE HX STATION OF ORIGIN			PLACE OF ORIGIN	TIME FILE	D DATE
TO PHONE NUMBER		NAME	R STATION	S RADIO MESSAGE WAS	PHONE	
ARL	FIFTY	ON		FIELD		DAY
		TIME	то		DATE	TIME
FROM			SENT			

* "Greetings by Amateur Radio. This message is sent as a free public service by ham radio operators at <u>Field Day</u>. Am having a wonderful time."



Generator Operations

- All stations will have a generator
- Generator can run 24 hours with aux tank









Antennas

Bob, W1IS





FIFI D DAY

- 1,700 ft Rope
- 1,400 ft RG-8X, 150 ft RG-58au (receive antennas)
- Bow and Arrows
- Air Guns
- Slingshots
- Twine
- Safety Tape to mark ends in the woods & trip zones
- At least 15 energetic hams to launch & tear- down!



SSB, GOTA & Digital



SSB

- 800 ft rope, ~400 ft RG-8X, 200 ft RG-213
- 80M-6M End Fed
- 3 element tri-band wire antenna
- 2 element 40 M beam
- 10 M Stacked Dipoles
- Receiving loop 100 ft wire, vertical loop, 9:1 balun
- Safety tape

GOTA – 40M-6M End Fed (200 ft rope, 100 ft RG-8X)

Digital

- Multi-Band 80M OCF
- 300 ft rope, 100 ft RG-8X
- Safety Tape



CW Station



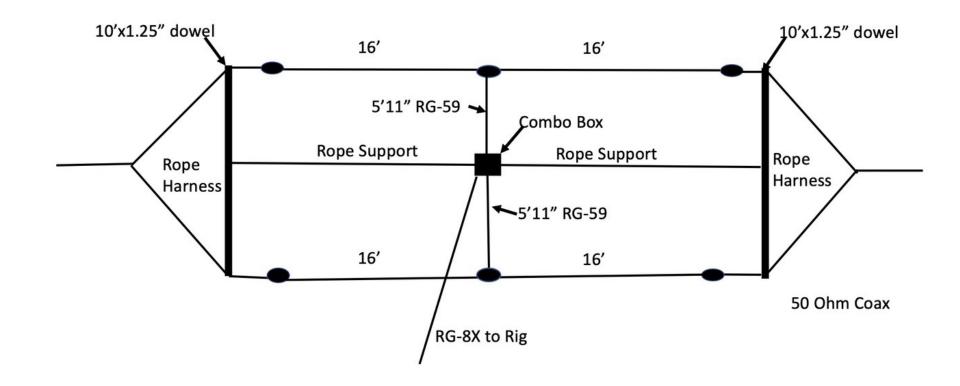
CW

- 600 ft rope, ~ 400 ft RG-8X
- 80M end-fed
- 2 element 40M Beam
- 2 element 20M Phased Dipoles
- Receiving loop 100ft wire, vertical loop, 9:1 balun



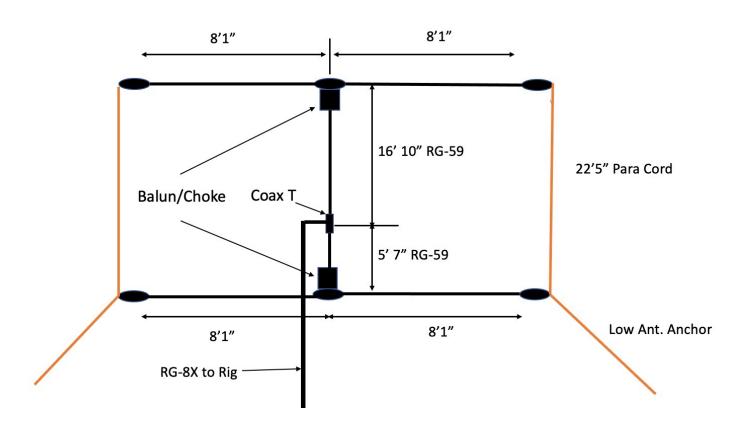
20 Meter Antenna







10 Meter Antenna



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RADIO CONNECTS



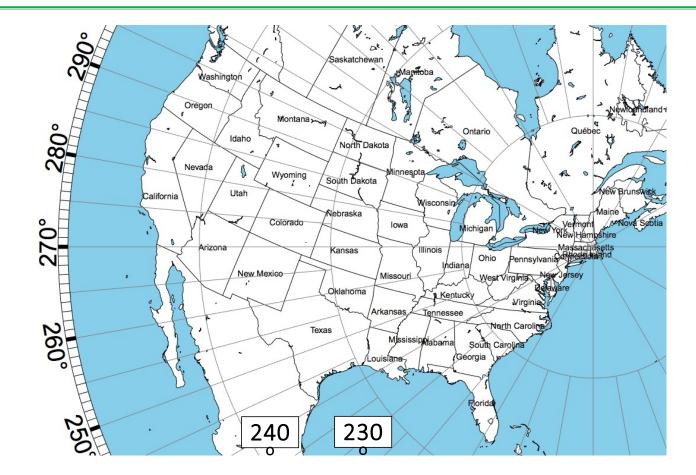
Ready for Set-Up











ARRL FIELD DAY





FIFI D DAY

- Rolling up wires & ropes neatly will save time next year.
- 2 people to roll up beams one spreader at a time.
 - Start at one end & roll towards center
 - Roll up other end rolling in the same direction
 - Watch the ends they tend to slip off when rolling up
- Return cables & ropes to their owners
- Names/Calls on coax really helps, otherwise it's probably W1IS's.





Thank You & Let's Have Fun This Weekend





Field Day Stations



Information Packets

Each station will be given a packet with:

- 1. Station Identifier Sign
- 2. Band Plan
- **3. ARRL Section List**
- 4. Exchange Information Sign
- **5. Operator Sign-Up Sheet**
- 6. ARRL Bulletin Schedule





Get On The Air







Get On The Air (GOTA)

- Station Lead: Andy, KB10IQ
- Rig: Yaesu 857-D
- Antenna: Multi-band dipole
- Power: Generator
- Tent: Provided by Andy, KB10IQ
- Logging Computer: Provided by Andy (KB10IQ)



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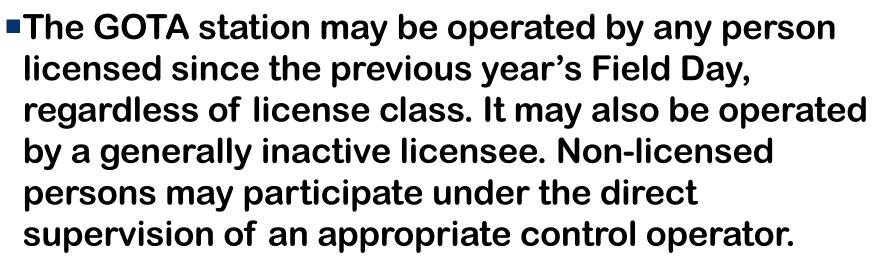
CONNEC[®]





GOTA Station Rules

FIFI D DAY



Each GOTA contact is worth 2 points – no limit.

Full-time coach adds 100 bonus points – coach can't make contacts or log them.



CW Station







Elecraft K3



6







- 1. Main Tuning
- 2. Width Control: Don't Push changes filter type leave in Band-Pass
- 3. Speed Control: Internal Keyer Speed Adjustment
- 4. Volume control
- 5. ATU: Push & Hold to turn on tuner Momentary Push to Tune
- 6. Band Change Buttons
- 7. Pre-ATT: Push for Pre-Amp, Push & Hold for Attenuator (ATT helps with QRM, QRN especially on 80 & 40 M)
- 8. NB: Push for Noise Blanker, Hold to set Blanker Level w/VFO B knob
- 9. Spot: Zero beats signal, very handy
- 10.CWT: CWT turns on tuning meter tune to center to zero beat
- 11.RIT Control: Receiver offset tuning (Use when running a perch)

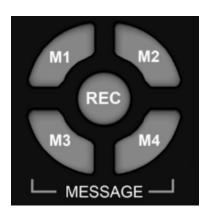






12 – K3 Memory Keyer

- M1 sends K1IG
- M2 sends 4A EMA
- M3 sends CQ FD K1IG
- Same & more also on Keyboard / RumLogNG



FIELD DAY

ONNEC.

• Please don't touch the "Rec" button!

Note that pro-signs like K and AR are rarely used in the heat of "the battle" unless you are dealing with a new operator at the other end. Then do what you can to make it easier for them.



- Don't touch any button with an X unless you are sure what it does. FD is not the time to experiment.
- If you accidentally hit an X button, please contact: George - K1IG or Bob - W1IS.
- If all else fails READ THE MANUAL!







FIELD DAY

ONNEC



- You can do QSOs with keyer, straight key or keyboard.
- Most importantly –

HAVE FUN!



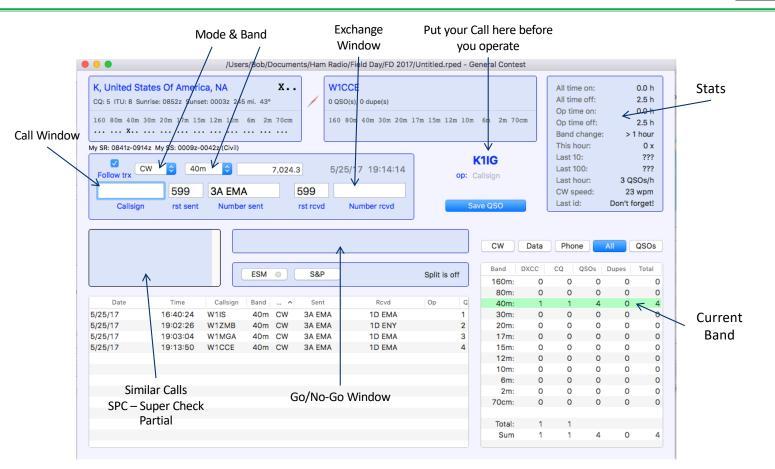


RumLogNG Contest Logger

W1IS, K1IG



Logging Window





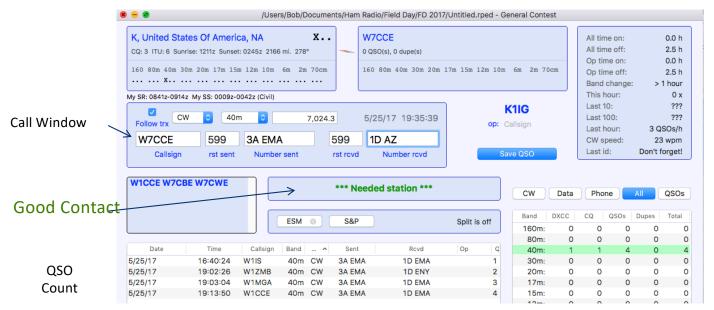


Good S&P Contact

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- 1. Enter Call in Call Window
- 2. "Space" to go to Exchange Window Green means not a Dupe
- 3. Enter Exchange Received in Exchange Window
- 4. F6 to send our Exchange or send it by hand
- 5. "Return" to Log QSO









- 1. Identify Dupe in RED
- 2. If in "Run," Complete QSO SW will remove it before submittal
- 3. If in "S&P" quickly move on

Users/Bob/Documer	nts/Ham	n Radio/F	ield Day/FD 2017	/Untitled.rped - Ge	neral Conte	st				
K, United States Of America, NA X CQ: 5 ITU: 8 Sunrise: 0852z Sunset: 0003z 245 mi. 43°		W1MGA X 1 QSO(s), 0 dupe(s)			•••	All time on: All time off: Op time on:		0.0 h 3.0 h 0.0 h		
160 80m 40m 30m 20m 17m 15m 12m 10m 6m 2m 70cm			50 80m 40m 30m 20m 17m 15m 12m 10m 6m 2m 70cm				Op time off: Band change:		3.0 h > 1 hour	
	3 599 rst rcvd		17 19:45:30 lumber rcvd	op: Ca	allsign ve QSO		This hour Last 10: Last 100: Last hour CW speed Last id:	:		0 x ??? ??? SOs/h wpm orget!
W1RGA	•	*** DU	PE ***		CW	Data	Phone) [QSOs
ESM	S&P	·		Split is off	Band 160m:	DXCC 0	CQ QS	Os I	Dupes 0	Total
Date Time Callsign Band ^	Sent	t	Rcvd	Op Q	80m: 40m:	0	0	0 5	0	(
5/25/17 19:03:04 W1MGA 40m CW	3A EN	AN	1D EMA	1	30m:	0	0	0	0	(

DUPE!!!







- F1 CQ FD K1IG
- F2 **QRZ**
- F3 (Empty for technical reasons)
- F4 K1IG
- F5 Sends Call entered in Call Window
- F6 Sends 4A EMA
- F7 **TU**
- F8 AGN







- 1. Enter Your Call in the "Op" window below K1IG
- 2. CRITICAL Always Check Band & Mode when Starting and Changing Bands
- 3. If RUMlogNG doesn't show same frequency as the rig, follow steps below
 - 1. Transceiver > Reset CAT #1
 - 2. If that doesn't Exit RUMlogNG RUMLog>Exit Rumped or $\Re Q$
 - 3. Restart RUMlogNG Click "Book Icon" on bottom screen menu <
 - 4. If that doesn't work continue.
 - 5. Restart Computer Click Apple Icon in upper left >Restart or Hold on-off button for 10 seconds.
 - 6. If that doesn't work SEEK HELP from K1IG or W1IS









- To Edit a QSO Double click, Edit in new window and SAVE
- Incorrect Band or Frequency Menu at top of screen > Transceiver> Reset CAT #1
- Accidentally get into RST or Number Sent Windows Fix them by hand and Tab to Number Received and complete entry
- Delete QSO Menu on top > QSO>Delete QSO



Phone Station







Elecraft K3





- Generator for rig and fans
- Headsets & mic / speakers
- 4 antennas manual switching



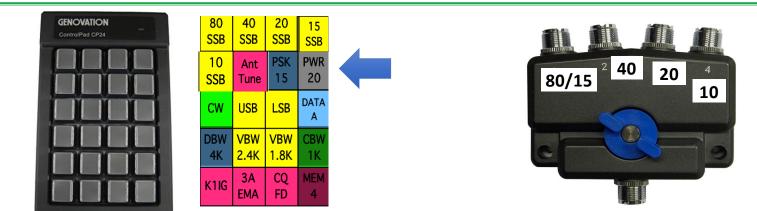


Keypad Control

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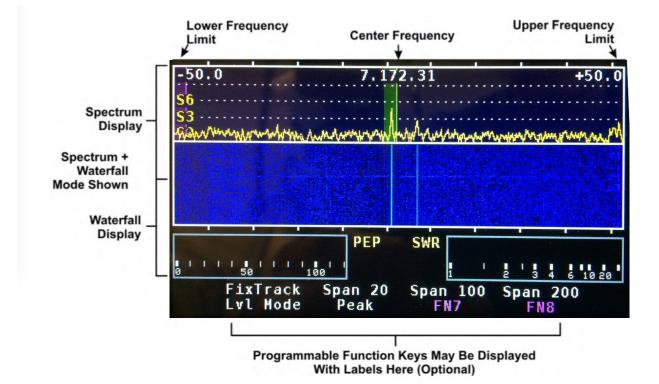
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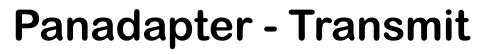
- Single button selects band, mode, power, frequency (bottom of Extra class phone band), sets filter and bandwidth
- For phone operations, just use the yellow buttons (mostly)
- Switch antenna manually then ANT TUNE button!!!











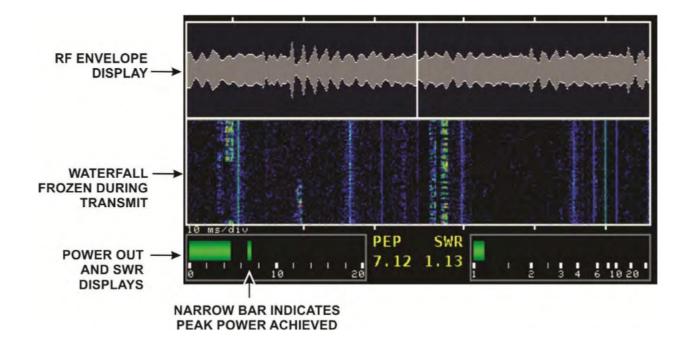
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RADIO CONNECTS







K3 Diversity Reception

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- The K3 has two receivers in diversity mode, each can be on a different receive antenna
- The two receivers are on the same frequency and both are controlled by the same VFO
- Main rcvr: left ear; sub rcvr: right ear







Digital Station

Carl, WG1V



- All digital contacts count 2 points, the same as CW!
- If you are new to digital, use FT8 mode. A full QSO takes about 1 minute

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- Most digital stations run FT8, which allows 60 QSOs per hour
- Advanced stations run FT4 at 120 QSOs per hour, but also requires faster reflexes to decide which stations to work
- Use whichever one you feel most comfortable with
- Be aware that our logging software considers the two modes distinct, but ARRL considers them both "digital", meaning we will see dupes from stations running both modes.
 - 6.3. Field Day contacts are allowed using Phone, CW and Digital (non-CW) modes. Stations can be worked once per band per mode under this rule.
 - 6.7. All non-CW digital contacts are equivalent.



Icom IC-7300



- All-band 160m-70cm SDR transceiver
- Antenna should be a good match for 80m-6m
- 100 watts max output, which we'll run at 50% (50 watts)
- Most functions will be computer controlled via USB

Press and hold to power on



Audio volume control

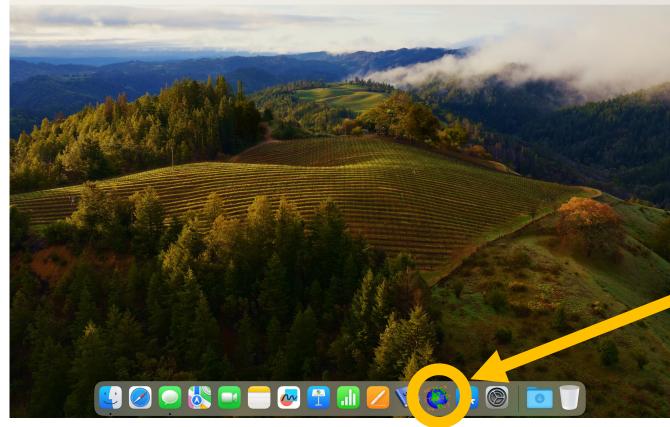


Macbook Pro Screen



🗯 Messages File Edit View Conversation Window Help

🗩 🗢 Q 🖀 Wed Jun 12 3:50 PM



Login credentials: user name: *part* password: *fieldday*

External keyboard and mouse will be provided

Double-click to start WSJTX if it isn't already running

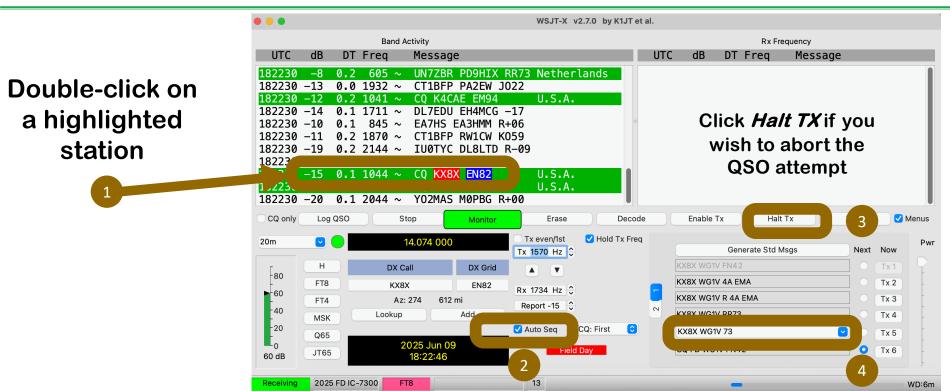


Select Your Band Using the Drop-Down Menu



	•••		WSJT-X v2.7.0 by K1JT et al.							
		Band Activity		lency						
	UTC dB DT Fr	req Message	UTC	dB DT Freq	Message					
	150045 -18 0.1 25	506 ~ CQ W8CTO EN91 20m	U.S.A.							
	150100 -16 0.1 10 150100 -17 0.2 12 150100 -15 0.4 12	249 ~ CQ AF4CZ EM84	U.S.A. U.S.A.							
You should	150115 -7 0.2 17 150115 -10 0.2 4 150115 -15 0.2 25 150115 -17 0.1 15	463 ∼ KB1CRN AC8XI EN82 539 ∼ JA1SJS WD9HSY -11								
never	150115 -17 0.1 15 150115 -20 0.1 10 CQ only Log QSO Log QSO		U.S.A. Erase Decode	Enable Tx Halt Tx	Tune Menus					
need to touch the	20m	14.074 000	even/1st V Hold Tx Freq	Generate Std Msg						
radio itself!	60 FT8 FT4	Rx 1	1734 Hz 🗘 🧧		Tx 1 Tx 2 Tx 3					
	40 MSK 20 Q65	Lookup Add ✓ Au 2025 Jun 09	oort -15 🗘 💦	CQ WG1V FN42	✓ Tx 5 ✓ Tx 6					
	60 dB 2025 FD IC-7300	15:01:34	5		WD:6m					



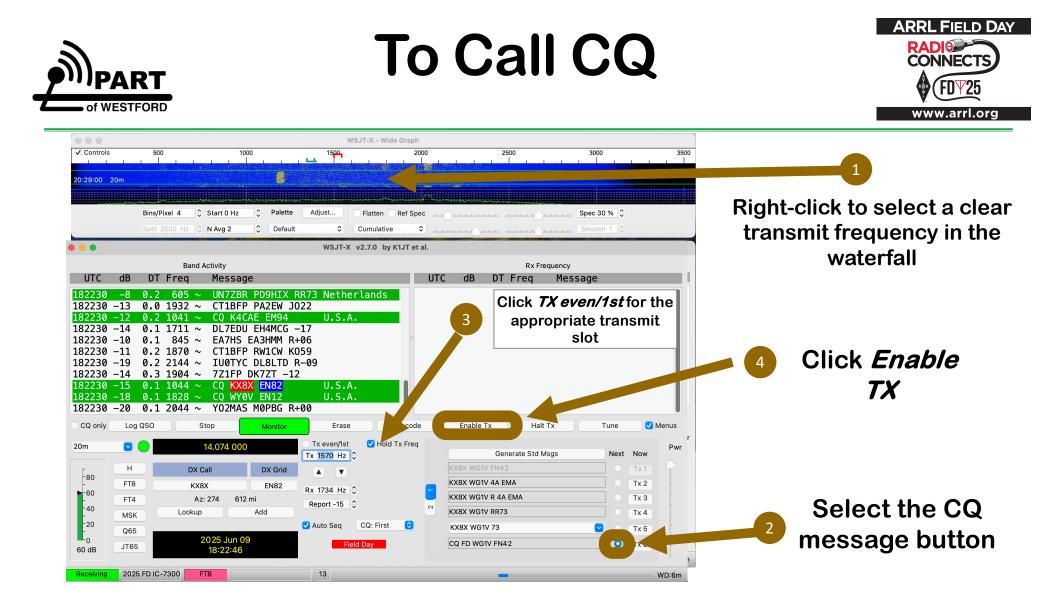


To Answer a CQ

So long as the *Auto Seq* box is checked, the QSO exchange will proceed automatically

of WESTFORD

The contact will be auto-logged if and when 73 is received

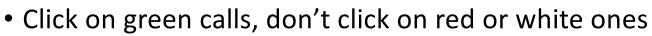




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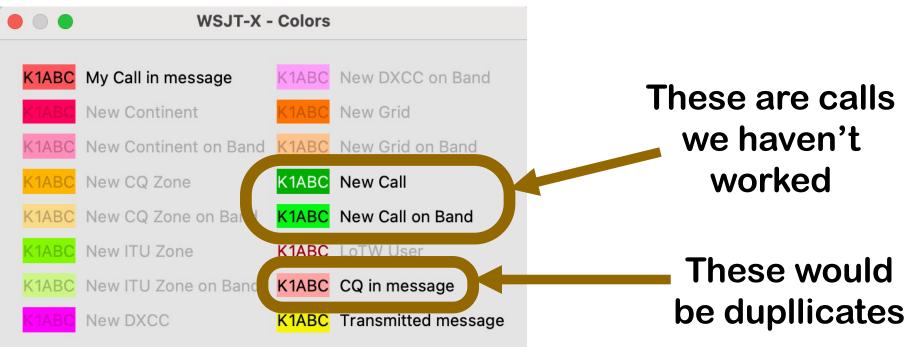
F**D**¥25

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PART

of WESTFORD





- We trained several hams to operate last year who had never done digital before
- It's really pretty easy and addictive!



Satellite Station







We Need



- Antenna Crew
 - Friday, June 27
 - 10:00 AM* to ~2:00 PM (show up any time)
 - At least 15
 - Launcher/slingshot/bow & arrow
 - Major rewards!
- Ambassadors
- Cleanup Crew on Sunday







- 100 watts max
- Use your own call sign & exchange (e.g., 1D EMA)
- Submit your own entry on ARRL FD website
- If you operate at the PART station, you can't contact the PART station for points.

Safety Briefing

PART Field Day 2025

Credits to Steve N1BDA (2016) Since 2017 Dale KB1ZKD







- RF Exposure Calculations @ 100 watts
- FCC rule effective May 3, 2023
- Station Leads are responsible for calculations
- Minimal hazards when antennas are raised



Safety Risks



- Fires
- Critters & plants: ticks, poison ivy
- Weather: lightning, heat
- Generators & fuel
- Tripping hazards
- Guy wires
- Overhead wires
- Antennas







- Safety Officer (or asst.) on site for entire event
- Fuel for generators properly stored
- Fire extinguisher on hand at each location
- First Aid kit(s)
- First Aid, CPR and AED trained participant/s on site for full Field Day period (Send KB1ZKD an email please)
- Access to NWS alerts to monitor for inclement weather







- Tent stakes properly installed and marked
- Temporary antenna structures properly secured and marked
- Site secured from tripping hazards
- Site set up in a neat and orderly manner to reduce hazards
- Stations and equipment properly grounded
- Access to means to contact police/fire/rescue if needed



Checklist (3)





- Safety Officer is designated point of contact for public safety officials (Need more assistants)
- Minimize risks and control hazards to ensure no injuries to public
- As necessary, monitoring participants for hydration and ensure an adequate water supply is available (but we can't drink it for you.)















- Most likely sources are generators and kitchen
 - Fire extinguisher locations (at each site)
 - At first signs of fire, smoke, or burning odor alert folks, and call the Concord Fire Dept.

911 (wired phone) Mobile: 978-318-3400 Site: 446.025 MHz, simplex





Bees, wasps, ticks, and mosquitos pose serious health risks

Risk: Critters (1)

- Mosquitos
 - (treated) long pants & sleeves, light colors
 - Repellant on skin (next slide)
- Ticks
 - (treated) long pants & sleeves esp. outdoors
 - Check often (dark nooks and crannies)
- Bees and wasps
 - Carry your EpiPens <u>and</u> antihistamine pills (let folks around you know about potential problems)



©DESIGNALIKIE









- Skin treatment
 - Be aware of other's personal concerns (e.g. DEET)
 - There are facts and data:
 - <u>https://www.cdc.gov/ncezid/dvbd/about/prevent-bites.html</u>
 - https://www.consumerreports.org/insect-repellent/howsafe-is-deet-insect-repellent-safety/
- Clothing and gear treatment
 - Permethrin works (read the precautions, use it correctly, pre-treat clothes and let them dry)
- Check often
 - Particularly in dark nooks and crannies



DEET vs. Electronics*



* Includes:

- Radios
- Computers

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CONNEC

- Mice
- Keyboards
- Headphones



Risk: Weather





• The primary danger is lightning

- It can occur miles from a storm under clear skies and up to 30 minutes after the storm "ends"
- We will monitor SKYWARN & NOAA radio
- All antennas will be disconnected during a storm and we will go inside
- Old school counting seconds is a myth
- If you can hear thunder you are at risk we will stop and go to the club house basement







- Heat dehydration is a risk
 - There will be bottled water, but bring a water bottle (please) and use it
 - Over hydration (hypernatremia) is also a risk
 - "Clear and copious" means too much water
- Cold onset of hypothermia is the brain making bad decisions
 - You can become hypothermic in warm weather. Don't wait for shivering to start!







- Cables, extension cords, guy wires
- Solar panels
- Cables (antennas, power,....)
 - Taped down (indoors), pegged down
 - Marked with colored flagging
- Tent pegs
 - Marked with colored flagging
- Be careful entering and leaving the clubhouse some steps are odd



Guy Wires: Antennas & Tent



- Be watchful around masts and poles
- Avoid tent corners
- Don't run
- Guy wires marked with colored flagging
- Danger areas flagged off







- There are several around the grounds
- Be careful during antenna setup
- Note where the wires are, especially if you have a tall antenna on your vehicle
 - Lower your antenna
 - Find another route







- Line launchers: slingshots, arrows, and pneumatic "potato" guns
 - Clear area down-range
 - Be sure you have a safety observer
 - Wear safety glasses
- Ropes and wires
 - Avoid fish lines, small cordage, ropes unless you are handling them
 - Look overhead, not just in front of you







- With all these dangers lurking, don't be discouraged from participating
- All these *potential* dangers can be managed if we are aware of them
- Keys:

Common Sense (is rare) Patience (is a virtue)







- Wired phone in the bar
- Life Rings around the pond
- AED in the clubhouse (bar area)
- Trauma kits
 - Dale, KB1ZKD, has one
 - Tan bag under the back seat of his van
 - Above the driver's visor in my van