



2022 ARRL FIELD DAY GUIDE



QST Supplement, June 2022
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Complete Telescopic Fiberglass Tubing and Cam Lock Clamp Kits

These kits make it easy to set up a reliable temporary antenna mast at home or in the field. They feature durable, smoothly telescoped fiberglass tubing collapsible to either 4 or 7.5 feet for convenient transport. Sections are secured in place with easily adjustable cam lock clamps. Available in heights of 15, 25, and 46 feet. Enter "Cam Lock Kit" at DXEngineering.com.

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Antennas

Kelemen Trap Dipole Antennas

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Trap Dipole Antennas from WiMo. Choose from 47 models of high-efficiency, wide-bandwidth monoband or multiband antennas in a range of supported HF bands (160 through 10M), lengths, and power ratings (400W, 1,000W, or 2,000W PEP SSB and CW at resonance). These lightweight antennas come pre-assembled and ready to operate, with balun enclosed in a weatherproof polycarbonate case, clear PVC-insulated stranded copper wire, stainless wire clamps, and insulators. Enter "Kelemen" at DXEngineering.com.



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We've got a great selection of switching and linear power supplies that deliver reliable, clean, and stable voltage for your temporary Field Day stations. From Samlex comes the compact SEC Series models (e.g., SEC-1235P-M) that provide a well-regulated output voltage of 13.8V; suppression of unwanted noise and RFI; and over-current, short-circuit, and over-voltage protection. Also select from many models of dependable Astron power supplies, DC/DC converters, and accessories. Enter "Power Supplies" at DXEngineering.com for full details and more manufacturers.



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SIX TIPS FOR FIELD DAY SUCCESS

1

BE SAFE

Safety should always be your first priority. See the Field Day Safety page in this guide for pointers and resources to share with everyone participating in your Field Day event.

2

HAVE A PLAN

Having a plan reduces frustration and increases the fun. Decide well in advance the number of stations you will have, and what category you will be operating, and get commitments from people who will be in leadership roles, including people who will help with setting up and tearing down the station. You don't want any surprises at setup time, so schedule a time to check out your operating site ahead of the event.

3

ASSIGN TASKS

It's said that many hands make light work, so give everyone something to do in addition to operating. Remember to assign some Field Day mentors — the event is a great opportunity for new hams to learn how to operate, and it's also a chance to give them practical experience in troubleshooting and problem-solving, all with a more experienced ham by their side.

4

SCHEDULE OPERATORS

Your club's station should run for as many hours as possible, including at night, to maximize how many QSOs you can put in the log. Scheduling operators for specific time slots during the event makes this happen!

5

BONUS POINTS

Getting bonus points will increase your Field Day score. Look at the list of bonus point activities in the rules (and in this guide) to decide which challenges your club wants to take on, then assign someone to keep track of any proof that's required to claim bonus points.

6

SUBMIT YOUR SCORE

Collect the log information and bonus point proof and submit your club's Field Day entry through the web app at <https://field-day.arrl.org/fdentry.php>. Remember — if you have club members operating at home, they can submit their individual scores toward the club's aggregate score. Field Day entries are due by July 26, 2022.

Field Day Safety

Field Day is supposed to be fun, and you can help keep it that way by planning a safety-conscious operation. Here are few tips to get you thinking about a few of the many aspects of Field Day safety.

Lightning Safety

- If you hear thunder, lightning is close enough to strike you.
- No place outside is safe when thunderstorms are in the area.
- When you hear thunder, immediately move to safe shelter: a substantial building with electricity or plumbing, or an enclosed, metal-topped vehicle with the windows up.
- Stay in safe shelter for at least 30 minutes after you hear the last sound of thunder.
- Stay away from objects that conduct electricity (antennas, power lines, windmills, etc.).
- Power down and disconnect your radios and generators.

Antenna Safety

- Be aware of and avoid electrical power lines.
- Don't climb towers that use temporary guys.
- Don't climb ladders being used for antenna supports.
- Erect antennas far enough away from operating positions so there is no possibility of the antenna and structure falling on operators and observers.
- Regularly inspect guy ropes and stakes throughout the weekend.
- Ensure that your Field Day station complies with all of the FCC RF exposure requirements. See <http://www.arrl.org/rf-exposure> for information.

Generator and Electrical Safety

- **NEVER** move or add fuel to a running generator.
- Fuel should be stored in approved containers away from generators and ignition sources, in well-ventilated areas away from direct sunlight.
- Centrally locate the generator to keep all branches to stations equal.
- Use an earth ground at the generator and at each station.

Physical Safety

- Avoid tripping hazards. Use fluorescent safety tape to mark guy ropes, stakes, and cables.
- Secure hazardous areas with caution tape to keep people away.
- Escort visitors around your Field Day site.

Medical Safety

- Avoid overexposure to sun.
- Stay hydrated — drink plenty of water.
- Know the signs of heat exhaustion and heat stroke (<https://www.cdc.gov/disasters/extremeheat/warning.html>).
- Keep a First Aid kit on hand.

BONUS POINTS ADD UP!

Use this [Bonus Points Calculator](#) to keep track of your Field Day Bonus Points (see Rule 7.3 for details).

All bonus points require submission of proof and will be verified before being added to your score.

Maximum bonus points are listed unless otherwise noted.

POINTS	ACTIVITY	AVAILABLE CLASSES
	100% Emergency Power. 100 bonus points per transmitter; max. 20 transmitters, max. 2,000 points. Bonus stations (such as the GOTA station and satellite station) do not count toward determining the number of transmitters for the class and do not qualify for transmitter bonus points.	A, B, C, E, and F
	Media Publicity. 100 bonus points. Bonus points may be earned for obtaining publicity from the local media. A copy of the media publicity received (newspaper article, news website post, etc.) must be submitted to claim the points.	All
	Set Up in Public Place. 100 bonus points.	A, B, and F
	Public Information Table. 100 bonus points. A copy of a visitor log, copies of club handouts, or photos are sufficient evidence for claiming this bonus.	A, B, and F
	Message to ARRL Section Manager or Section Emergency Coordinator. 100 bonus points. See Rule 7.3.5 for message format. This message is separate from the messages handled in Rule 7.3.6 and may not be claimed for bonus points under that rule.	All
	W1AW Field Day Message. 100 bonus points. Copy, via amateur radio, the special Field Day bulletin transmitted by W1AW or K6KPH and include an accurate copy of the message with your Field Day entry.	All
	Message Handling NTS/ICS-213. 0 to 100 points maximum, calculated by taking the Number of Messages (max. 10 messages): _____ × 10 bonus points for each formal message originated, relayed, or received and delivered during the Field Day period. Copies of each message must be included with the Field Day entry. The message under Rule 7.3.5 does not count. All messages claimed for bonus points must leave or enter the Field Day operation via amateur radio RF.	All
	A Satellite QSO. 100 bonus points. Satellite QSOs also count for regular QSO credit. List these contacts separately on the summary sheet as a separate "band." The QSO must be between two Earth stations through a satellite. Stations are limited to one (1) completed QSO on any single channel FM satellite.	A, B, and F
	Natural Power QSOs. 100 bonus points. Complete at least five QSOs without using power from commercial mains or petroleum-driven generator. A separate list of natural power QSOs should be submitted with your entry.	A, B, E, and F
	Site Visit by Invited Elected Official. 100 bonus points.	All
	Site Visit by Invited Served Agency Official. 100 bonus points. Visits from ARRL officials (SM, SEC, DEC, EC, etc.) do not qualify for this bonus.	All
	Educational Activity. 100 bonus points.	A, D, E & F. See website for D & E rules
	Youth Participation. <input type="checkbox"/> For Class A, C, D, E, or F groups: 20 bonus points per participant age 18 or younger that completes at least one QSO; max. 100 points. <input type="checkbox"/> For a one-person Class B station: 20 bonus points if the operator is age 18 or younger; max. 20 points. <input type="checkbox"/> For a two-person Class B station: 20 bonus points for each operator age 18 or younger; max. 40 points.	All (see specific points per class)
	GOTA Bonus. See Rule 7.3.13 for the bonus point breakdown.	A and F
	Use the Field Day Entry Web App. 50 bonus points. Submit the entry using the web app at https://field-day.arrl.org/fdentry.php .	All
	Safety Officer Bonus. 100 bonus points. Include a statement with the supporting documentation for your entry, verifying that a designated Safety Officer completed the ARRL Field Day Safety Check List.	A
	Social Media Bonus. 100 bonus points. Promote your Field Day activation to the general public via social media (Facebook, Twitter, Instagram, etc.). Individual participants do not qualify for this bonus. Club websites do not qualify as social media. Available to all classes who welcome visitors to their operation.	All
	TOTAL BONUS POINTS CLAIMED	

How to Fine-Tune EmComm Skills During Field Day

Since the 1930s, Field Day has been an event to test the field preparedness and emergency communications (EmComm) abilities of the amateur radio community. Over the years, it has turned into the largest on-the-air event on the ham calendar. Operators look forward to testing their skills and showing the public what amateur radio can do.

Field Day's traditional EmComm mission has diminished somewhat in recent years to be almost secondary in focus. In many cases, Field Day operation mostly emphasizes contesting, points earned, and standings among stations in each operating class. If your club or group has chosen to spend the weekend having fun in contest mode, here are some ways you can incorporate EmComm activities — and rack up some points in the process.

Operate 100% off the grid.

Hams who volunteered their time in Puerto Rico in the aftermath of Hurricanes Florence and Maria quickly realized that alternative power was the only way to get things done. Don't just rely on generators. Utilize solar, wind power, and batteries where practical. If you want a novel way to charge batteries, rig up a human-powered generator using a stationary bike.

Work in partnership with emergency agencies. Operating Class F encourages ARES, RACES, and local radio club groups to develop and maintain working relationships with



Operating off the grid with an alternate power source, such as solar power, is good practice for emergencies.

their Emergency Operations Center (EOC) and to practice their existing emergency plans. EOCs include federal, state, county, and city agencies or administrative entities, and chapters of national and international service agencies such as the American Red Cross and Salvation Army.

Practice message handling skills. Copy the ARRL Field Day Bulletin, send a message to your Section Manager or SEC, and 10 other messages through traffic nets, packet, or with point-to-point communications. There's an easy 300 points for the taking.

Incorporate VHF operation. Many Field Day operations don't include VHF operation, which is a regular part of local communications networks during storms and local disasters. Class A and F stations can

have a "free" VHF station. Try operating 6- or 2-meter simplex to earn extra QSO points, test your simplex range, or create a local handheld net for coordinating Field Day setup.

Make your Field Day meeting a tabletop exercise. Discuss your roles and responsibilities in setting up your Field Day installation as if it was a real emergency deployment. It could be in conjunction with an existing plan in cooperation with ARES/RACES or your EOC. If you really want to make this authentic, have some volunteers come to Field Day with their go-kits in preparation to stay for the full 24 hours.

This article originally appeared on On All Bands, An Amateur Radio Blog by DX Engineering. Reprinted with permission of DX Engineering.



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Making Field Day Exciting for New Hams and Non-Hams

ARRL Field Day is a great opportunity to reach out to people who are unfamiliar with ham radio. If you want to use Field Day as an outreach tool, but are unsure of where to start, here are some ideas.

Get a GOTA Station. GOTA stands for “Get on the Air,” and it means just that. It gives people who are unlicensed (or who have been licensed for less than a year) a chance at working an HF station — and they’re almost guaranteed to make contacts. Field Day rules allow for up to 1,000 contacts on a GOTA station, and it’s an easy way to get an extra transmitter for your category.

A well-run GOTA station can provide a “home” for people who have an interest in amateur radio, not only by providing a way for them to experience operating a station, but also by providing points of contact for potential hams, as well as hams who are currently unconnected to your club.

Put the Word Out. Seek out someone at your local newspaper and your local television station who will do an interview and run a story about Field Day. Be sure to make it clear that everyone is invited to come experience amateur radio and take part in the fun.

Search various websites for hams in your area, and send a note to invite them. A large number of hams are licensed, but inactive — often because they just don’t know where to go next. That note from you could be the motivation they need to get plugged in.

Make flyers about your operation and post them in your local library and in building lobbies at any colleges that are local to you. Several fields of study on college campuses pair well with amateur radio. The key is letting those programs know you’re there.



Field Day can be fun for hams of all ages and skill levels, as Morgan Bailey, NSØR, and Delaney Bailey, KFØFUP, clearly show.

Find someone in your club who is adept at the various social media platforms and start making posts about Field Day. Hams today follow everything from Facebook to TikTok.

Invite Young People. This will take a little legwork. Schedule appointments to speak to the principal of each local school. Bring copies of your flyers, and explain to the principal what Field Day is, and how it benefits kids. Bring along information about how amateur radio benefits students who get involved — information about ARRL Foundation scholarship winners will offer great talking points. Talk about the hands-on learning that amateur radio offers, and how it relates to STEM or STEAM education programs in school.

Have someone designated to engage kids who show up at your Field Day operation. Get them on the air. Have digital modes running so they can experience the connection between technology they are familiar with, and amateur radio. Before they leave, give them information about your club, and invite them to a meeting. Consider having license study materials available for them to borrow.

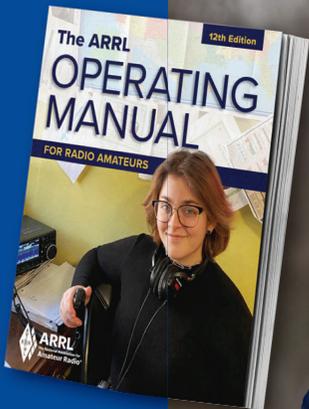
Kids are going to be kids, so let them. They may ask a thousand questions. Whenever possible, demonstrate the answer on the radio. Even better, allow the child to actually experience the learning on the air.

Go Hands-On with Kits. Consider having a station where simple kits can be built. Don’t just schedule a certain time to build one kit — make the station constantly available, and set up a schedule of experienced hams to help run it. That way, no matter when visitors show up, there is something happening to keep them interested and engaged. Keep the kits inexpensive, so people can keep the kit they build, to serve as a reminder of what they accomplished — and possible be the nudge they need to show up to a club meeting and begin their journey in amateur radio.

If you need more information about how to reach out to and engage youth and new hams, contact ARRL Education & Learning Manager Steve Goodgame, KSATA, at sgoodgame@arrl.org.



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Simple Antennas for Field Day

In many parts of the country, weather and setup limitations for ARRL Field Day may not make it conducive to erecting portable guyed towers and masts, or raising large beams. Here are some Field Day antenna ideas that are more portable, buildable, and more easily deployable in cases where your team resources, your weather window, or daylight might be limited.

Mobile-style Antennas

These are easily used by mounting them to your vehicle, or by bolting/magnetically attaching them to

your metallic, temporary antenna mounting structure.

Screwdriver antennas. These come in many varieties and employ

a dc motor that shortens or lengthens load-matching to change the antenna's resonant frequency.

Resonator antennas. These have been popular for the past 4+ decades. In concept, 50-ohm coax is run to an insulated mount (coax ground to the vehicle — coax center to the mount), with the mount then attached to a car or trailer, etc. To change bands, a screw-on resonator topped with a short whip (labeled for the desired band) is replaced with a resonator for a different band. Special mounting brackets will also permit multiple resonators to be connected to one mount, all fed with a single feed line.

Balcony antennas (used interchangeably with mobile antennas). These can be mounted to a balcony, or any metal framed or metal post. Similar in principle to resonators, some have a movable banana-style plug that you use/reposition to change band positions on a single radiating pole.

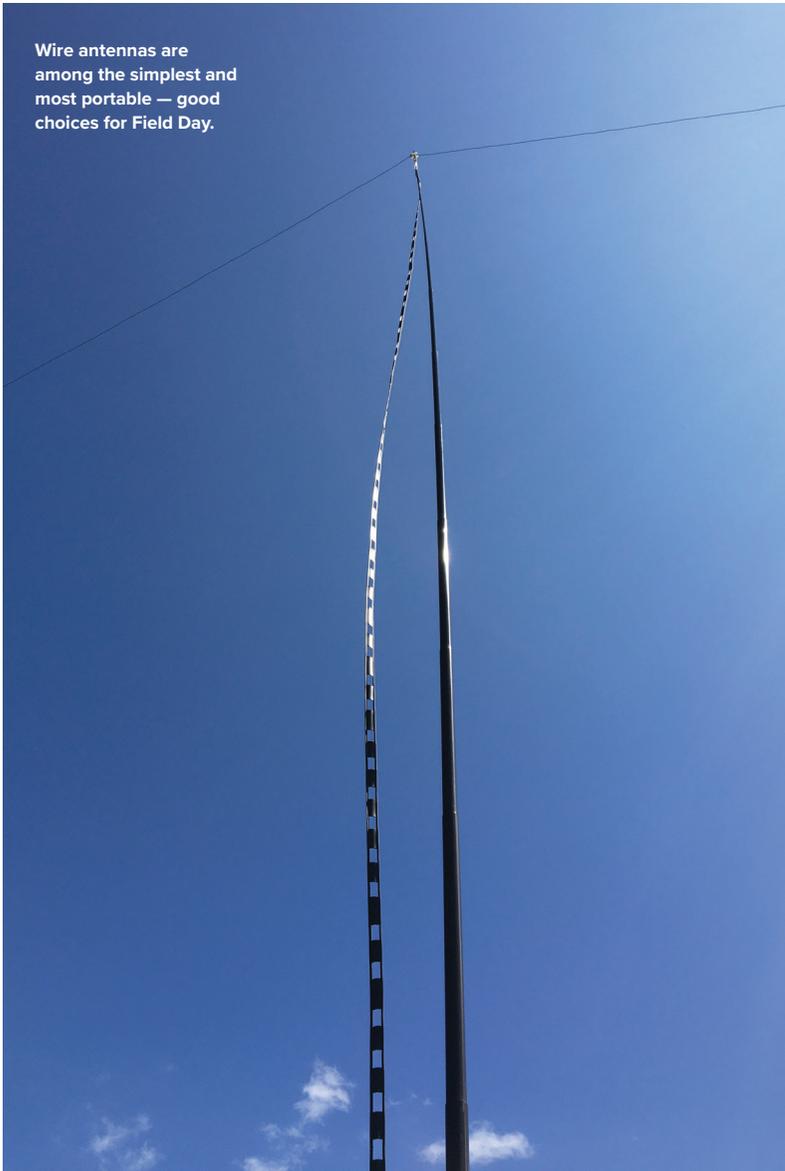
Flagpole or Vertical Mast Antennas

These vertical antennas let you physically lengthen the pole to lower the frequency, or physically shorten the pole to raise the frequency. Alternately, you can use an antenna tuner to deliver a matched load to the antenna, with a few ground radials or a ground post serving as the counterpoise.

Wire Antennas

Fence wire antennas (horse fencing). Quite popular as an antenna strung

Wire antennas are among the simplest and most portable — good choices for Field Day.



closer to the ground, or elevated. Whether end-fed, center-fed or offset-fed, a tuner is generally needed/recommended.

Elevated wire antennas. These go-to antennas for the lower bands can do well at the higher bands as well.

ARRL's End-Fed Half-Wave Antenna (by HF Kits) is a 66-foot-long, four-band, end-fed wire with an interface box that offers a 50-ohm match for your transceiver and does not require a tuner. This antenna is available in the ARRL Store at <https://www.arrl.org/shop/End-Fed-Half-Wave-Antenna-Kit-for-10-15-20-40-Meters/>.

Dipole or end-fed wires of many configurations are popular during Field Day. Starting with a simple, short, end-fed wire per above, to a long-wire that may be several hundred feet long, these can be directional in line with the wire.

Quarter-wave, half-wave or full-wave center-fed dipoles are very popular and are directional broadside to the antenna. Half-wave fan dipoles can offer multi-band use with a single feed line and tuner.

Wire beams are popular with the more enterprising groups. A bidirectional rhombic (or single direction with termination) will be a great performer, and can be used on multiple bands, but has a sharp beamwidth (and is not easily steered). Wire beams are also cheap and fun to experiment with, and can be bidirectional with a driven element.

Consider a quad driven element array with wires for multiple bands. Similar to the fan dipole, the quad driven element is a full-wave loop for one or more bands strung inside a square nonconductive frame. If mounted on a vertical pole with the pivot point at the bottom and guy

ropes at the top, it can be rotated up to 360 degrees. The end result is a rotatable dipole!

For these wire antennas, it's necessary to safely locate trees or other antenna hanging structures (beware of nearby power lines). Antenna launchers of various shapes and sizes are available — slingshots, fishing rods, air launchers, and even flying drones offer some effective mechanisms for hanging your antennas.

Plans for building these simple, yet effective antennas are available on the ARRL website at www.arrl.org/antenna-projects. Planning, building, and testing homebrew wire arrays can be used as a part of your Field Day operation's Educational Activity (100 bonus points!). By assembling your antenna(s) from raw materials, your group can enjoy an increased appreciation for what makes for a successful Field Day experience.



We're All Elmers!

The active operators at DX Engineering have decades of experience filling logbooks on ARRL Field Day (see below). So when you require knowledgeable advice from hams who have been there plus all the gear you need, be sure to make DX Engineering your first Field Day contact!



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FIELD DAY 2022

ARRL/RAC Section Checklist

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- ALASKA · AK
- ARIZONA · AZ
- ARKANSAS · AR

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- LOS ANGELES CA · LAX
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- SAN DIEGO CA · SDG
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- SAN JOAQUIN VLY CA · SJV
- SANTA BARBARA CA · SB
- SANTA CLARA VLY CA · SCV

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- DELAWARE · DE

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- NORTHERN FL · NFL
- WEST CENTRAL FL · WCF

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- LOUISIANA · LA
- MAINE · ME
- MARYLAND/DC · MDC

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- WESTERN MA · WMA

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- MONTANA · MT
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- NEVADA · NV
- NEW HAMPSHIRE · NH

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- SOUTHERN NJ · SNJ

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