



# 2021 ARRL FIELD DAY GUIDE



QST Supplement, June 2021  
Sponsored by Ham Radio Outlet  
[hamradio.com](http://hamradio.com)



# HAM RADIO OUTLET®

WORLDWIDE DISTRIBUTION



## SUPPORTING FIELD DAY Since 1971

No matter where you operate from on field day, you can always rely on Ham Radio Outlet for sales and service. For 50 years we have been helping you 'Gear Up' and 'Get Out' every June. And we will be right here providing you the same excellence in service now and for the next 50 years!



**FT-3DR**  
VHF/UHF  
Analog &  
C4FM Digital  
With APRS  
& Bluetooth



**FT-818**  
6W All Mode HF/VHF/UHF  
Ultra Portable QRP



**FT-991A**  
100W All Mode HF+VHF+UHF  
Analog + C4FM Digital With Spectrum Scope

# GEAR UP AT HAMRADIO.COM



# SIX TIPS FOR FIELD DAY SUCCESS

1

## BE SAFE

Practice social distancing and review the ARRL pandemic-modified Field Day rules at [arrl.org/FDWaivers](http://arrl.org/FDWaivers).

2

## HAVE A PLAN

All successful endeavors begin with a plan. Decide in advance how many stations you'll set up, and what category you will be operating. Get commitments from your group and create a plan for packing, setup, and tear-down. Planning ensures that things go off without a hitch, which reduces frustration and increases the fun.

3

## ASSIGN TASKS

Begin with the leadership roles. Some clubs use "band captains," who ensure that all aspects of the operation for their band/mode station are taken care of. Other clubs make assignments according to tasks, such as a power team that's in charge of providing power to the stations, and an antenna crew whose job is to safely erect and take down all antennas. It's also a good idea to assign people to provide meals, and to document the event with photos and video.

4

## SCHEDULE OPERATORS

All too often, Field Day stations are off the air at night because nobody is there to run them. By scheduling operator time slots, your club can maximize the number of QSOs they put in the log.

5

## BONUS POINTS

Teams that score high in Field Day do it by collecting the available bonus points. Look at the list of bonus point activities in the rules (or on page 3 of this guide), then decide which challenges your club wants to do.

6

## SUBMIT YOUR SCORE

It's a good idea to assign one person to collect all the log information and bonus points. Have that person submit your group's Field Day entry via the web app at <https://field-day.arrl.org/fdentry.php>. Submissions must be in by July 27, 2021.





# 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 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 tents so there is no possibility of the antenna and structure falling on operators inside the tent.
- Regularly inspect guy ropes and stakes throughout the weekend.

## 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
	<b>100% Emergency Power.</b> 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
	<b>Media Publicity.</b> 100 bonus points. A copy of a press release, or a copy of the actual media publicity received (newspaper article, news website post, etc.) must be submitted to claim the points.	All
	<b>Set Up in Public Place.</b> 100 bonus points.	A, B, and F
	<b>Public Information Table.</b> 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
	<b>Message to ARRL Section Manager or Section Emergency Coordinator.</b> 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
	<b>W1AW Field Day Message.</b> 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
	<b>Message Handling NTS/ICS-213.</b> 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
	<b>A Satellite QSO.</b> 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
	<b>Natural Power QSOs.</b> 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
	<b>Site Visit by Invited Elected Official.</b> 100 bonus points.	All
	<b>Site Visit by Invited Served Agency Official.</b> 100 bonus points. Visits from ARRL officials (SM, SEC, DEC, EC, etc.) do not qualify for this bonus.	All
	<b>Educational Activity.</b> 100 bonus points.	A, D, E & F. See website for D & E rules
	<b>Youth Participation.</b> <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)
	<b>GOTA Bonus.</b> See Rule 7.3.13 for the bonus point breakdown.	A and F
	<b>Use the Field Day Entry Web App.</b> 50 bonus points. Submit the entry using the web app at <a href="https://field-day.arrl.org/fdentry.php">https://field-day.arrl.org/fdentry.php</a> .	All
	<b>Safety Officer Bonus.</b> 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
	<b>Social Media Bonus.</b> 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
	<b>TOTAL BONUS POINTS CLAIMED</b>	



# Build Your Field Day Antenna

*ARRL has partnered with HF Kits to bring you this easy-to-build four-band antenna kit: an end-fed half-wave (EFHW) antenna. We built it in the ARRL Lab, set it up outside, trimmed the wire for the lowest SWR, and got it on the air. Now it's your turn!*

## What is an EFHW?

The ARRL Antenna Book says the EFHW antenna is a half-wave-length dipole fed at one end. It has become popular with portable operators because of its mechanical simplicity. You'll construct a 49:1 impedance matching network from the kit's included parts.

## Why this antenna?

Every ham can benefit from learning how to build wire antennas. The advantages of an EFHW include the ease of construction, its versatility in a

variety of installation configurations (sloping, horizontal, L, etc.), and the fact that no tuner is needed. This antenna works on four bands: 10, 15, 20, and 40 meters. We chose a 250-watt rated

antenna so you can comfortably transmit the full output power from many off-the-shelf HF transceivers (typically around 100 watts).

## "But I've never built anything!"

We've got your back. ARRL will provide you with step-by-step assembly instructions, photos, and even videos. You'll drill, fasten, and solder (a small amount). Nearly everything goes into the included weather-proof box. Admire, then deploy!

## Who needs this antenna?

- New licensees — Build something, and you're no longer a licensee — you're a ham!
- New HF operators — And anyone seeking an antenna that covers the bands that will become increasingly active with Solar Cycle 25.
- Every Field Day site.
- Experts — Because you'll appreciate a quality kit, and you'll end up with a great antenna you can take anywhere (think vacation).
- Radio clubs seeking a perfect kit for your next project building night!

## Specifications

- Bands: 10/15/20/40
- 250 W
- Impedance network type: 49:1 with included ferrite toroid
- This kit contains all parts to make your antenna, plus 66 feet (approx.) of strong, flexible, low-weight wire (tinned copper braid, Kevlar-core, black UV resistant PE insulated wire). Coaxial cable feed line sold separately.

## Order Today!

End-Fed Half-Wave Antenna Kit available at [arrl.org/shop](http://arrl.org/shop).

Fred Kemmerer, AB1OC, launching the End-Fed Half-Wave antenna.



The End-Fed Half-Wave Antenna Kit includes everything shown here.







**ARRL**  
the national association for  
amateur radio®

**Celebrate Field Day  
every day with our new  
Evergreen Field Day Collection**  
[\*\*arrrl.org/shop/FieldDay\*\*](https://arrrl.org/shop/FieldDay)





# Tips for Satellite Success

*Making one contact via satellite is a 100-point bonus for your Field Day effort. If you've never operated the ham radio satellites before, it will take effort to be successful! Here are some helpful tips.*

**1** Learn all you can in advance of Field Day. There's a lot to learn about the exciting world of ham radio satellites. We recommend starting with the video by Tom Schuessler, N5HYP, at [www.youtube.com/watch?v=yqch-Dt9V0c&t=1501s](http://www.youtube.com/watch?v=yqch-Dt9V0c&t=1501s).



**2** Know your grid square. Satellite operators expect to hear your Maidenhead grid square in your exchange. This information is usually given as two letters and two numbers, and is an indicator of your location. For example, ARRL Headquarters is in grid square FN31. Learn more about grid squares at [www.arrl.org/grid-squares](http://www.arrl.org/grid-squares).

**3** Get the apps. Smartphone apps are available for satellite scheduling and tracking, as well as grid square location. iPhone users can try *SatSat* or *GoSatWatch* for satellites, and *Maidenhead Converter* for location. Android users can try *Satellites* or *WIANT Pro Satellite Tracker*, and *Grid Square Locator*.

**4** Practice before Field Day! Practice scheduling a satellite pass, tracking the satellite during the pass, and copying stations. Once you've done that, try to make contacts on subsequent passes. Try late-night passes, as

the satellite will not be busy and you can experiment.

**5** Wear headphones. If you are using a full duplex radio (which you should), you'll need headphones to keep feedback out of the microphone. They will also help you stay focused if your Field Day site is busy with other activities.

**6** Don't transmit if you can't hear the satellite. The satellite may be hearing much better than you! Transmitting "in the blind" may cause interference to other stations trying to make a contact.

**7** Find open space. When trying to make your contact, stay clear of buildings, trees, and other obstructions, if possible. Ideally, put

yourself somewhere where you can see from horizon to horizon. If that's not possible, find a spot where you can see as much of the sky as possible.

**8** Move on once you've made your contact. There will be many stations trying to get their one contact too, so don't get in the way.

## ACTIVE FM SATELLITES

**SO-50:** 2 meters up/70 centimeters down, 67 Hz CTCSS tone.

**AO-27:** 2 meters up/70 centimeters down, no tone. Each pass is only 4 minutes long!

**PO-101:** 70 centimeters up/2 meters down, 141.3 Hz CTCSS tone. Turned on by a schedule, which is posted at <http://phl-microsat.upd.edu.ph/diwata2>.

**ISS:** The cross-band repeater on the International Space Station (ISS) may be active on Field Day. 2 meters up/70 centimeters down, 67 Hz tone.

**CAS-7A** (expected launch May 2021)

**CAS-7C** (expected launch May 2021)

**CAS-5A** (expected launch June 2021)



# HAM RADIO OUTLET®

WORLDWIDE DISTRIBUTION



**YOUR FIELD DAY PARTNER  
SINCE 1971**



**FTdx10**

100W HF+6M  
TOUCHSCREEN  
3DSS



**FT-891**

100W HF+6M  
ALL MODE  
MOBILE



**FTM-400XDR**

50W VHF/UHF  
ANALOG + C4FM  
MOBILE



**FTdx101D**

100W HF+6M  
TOUCHSCREEN  
3DSS

**Multi-Store Buying Power  
Friendly, Knowledgeable Sales Staff  
Nobody Beats An HRO Deal!**

**COUNT ON US FOR SALES, SERVICE, AND SUPPORT EXCELLENCE**

ANAHEIM, CA: 800-854-6046 | ATLANTA, GA: 800-444-7927 | DENVER, CO: 800-444-9476

MILWAUKEE, WI: 800-558-0411 | NEW CASTLE, DE: 800-644-4476 | PHOENIX, AZ: 800-559-7388

PLANO, TX: 877-455-8750 | PORTLAND, OR: 800-765-4267 | SACRAMENTO, CA: 877-892-1745

SALEM, NH: 800-444-0047 | SAN DIEGO, CA: 877-520-9623 | WOODBRIDGE, VA: 800-444-4799

**HAMRADIO.COM**





# Uncle Grant's Field Day Chili

*It's easy to feed the whole hungry Field Day crew by simmering up a satisfying pot of chili. Whether you have 8877s running hot or 807s freezing cold, this classic chili recipe from ARRL CEO David Minster's, NA2AA, Uncle Grant will get the bands hopping for sure!*

## INGREDIENTS

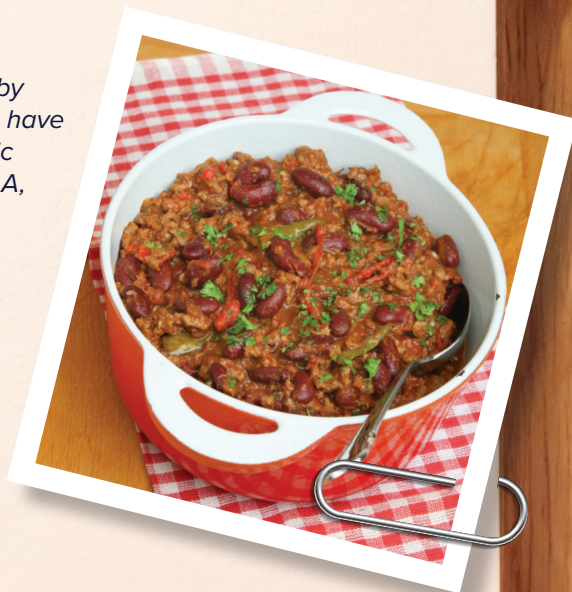
- 1.5 pounds ground beef (80% lean)**
- 1 medium onion, diced**
- 1 green bell pepper, diced**
- 1 tablespoon vegetable oil**
- 1 28-oz. can whole tomatoes, stems removed, diced**
- 2 8-oz. cans tomato sauce**
- 3 tablespoons ARRL's Field Day Chili Seasoning or chili powder (add more to taste)**
- 1 teaspoon salt**
- ½ teaspoon cayenne pepper**
- 1 tablespoon dark brown sugar**
- 2 14-oz. can red kidney beans, rinsed and drained**

## OPTIONAL

- 1 jalapeño, seeded and minced (to make your chili medium spicy)**
- OR**
- 1 teaspoon habanero hot sauce (to make your chili very spicy)**

## SUGGESTED TOPPINGS

**Shredded cheddar cheese**  
**Sour cream**  
**Sliced jalapeños**  
**Avocado slices or guacamole**  
**Lime wedges**



## INSTRUCTIONS

1. Place the oil in a large pot over medium heat, and cook the onions and green peppers (and jalapeño, if using) until soft. Remove vegetables from the pot and set aside.
2. Brown the ground beef in the pot. Depending on how much fat has rendered, drain excess fat from the pot.
3. Add the onions and peppers, the diced whole tomatoes, and the tomato sauce. Stir well and allow the chili to get hot.
4. Add the salt, pepper, and brown sugar (and habanero hot sauce, if using).
5. Stir in the cans of kidney beans.
6. Completely cover the surface of the chili with Field Day Chili Seasoning or chili powder. Stir in completely. Add more seasoning to taste.
7. Reduce heat to low. Allow the chili to cook at least 4 hours, stirring occasionally.
8. Serve in a bowl with shredded cheese or on a grilled hot dog. Enjoy!



FIELD DAY 2021

JUNE  
26—27



10,213

THE RECORD NUMBER  
OF ENTRIES  
RECEIVED IN 2020



LOOKING  
FOR A FIELD  
DAY SITE?  
FIND ONE AT

[ARRL.ORG/  
FIELD-DAY-LOCATOR](https://www.arrl.org/field-day-locator)



MORE THAN

40,000

HAMS PARTICIPATE  
IN FIELD DAY EACH  
YEAR IN THE  
U.S. AND CANADA



PINS, STICKERS,  
AND MORE!

GET YOUR  
GEAR AT

[ARRL.ORG/SHOP/  
FIELDDAY](https://www.arrl.org/shop/fieldday)





# 2021 FIELD DAY



## ARRL/RAC Section Checklist

### UNITED STATES

- ☐ ALABAMA · AL
- ☐ ALASKA · AK
- ☐ ARIZONA · AZ
- ☐ ARKANSAS · AR

### CALIFORNIA

- ☐ EAST BAY CA · EB
- ☐ LOS ANGELES CA · LAX
- ☐ ORANGE CA · ORG
- ☐ SACRAMENTO VLY CA · SV
- ☐ SAN DIEGO CA · SDG
- ☐ SAN FRANCISCO CA · SF
- ☐ SAN JOAQUIN VLY CA · SJV
- ☐ SANTA BARBARA CA · SB
- ☐ SANTA CLARA VLY CA · SCV

- ☐ COLORADO · CO
- ☐ CONNECTICUT · CT
- ☐ DELAWARE · DE

### FLORIDA

- ☐ SOUTHERN FL · SFL
- ☐ NORTHERN FL · NFL
- ☐ WEST CENTRAL FL · WCF

- ☐ GEORGIA · GA
- ☐ HAWAII/PACIFIC · PAC
- ☐ IDAHO · ID
- ☐ ILLINOIS · IL
- ☐ INDIANA · IN
- ☐ IOWA · IA
- ☐ KANSAS · KS
- ☐ KENTUCKY · KY
- ☐ LOUISIANA · LA
- ☐ MAINE · ME
- ☐ MARYLAND/DC · MDC

### MASSACHUSETTS

- ☐ EASTERN MA · EMA
- ☐ WESTERN MA · WMA

- ☐ MICHIGAN · MI
- ☐ MINNESOTA · MN
- ☐ MISSISSIPPI · MS
- ☐ MISSOURI · MO
- ☐ MONTANA · MT
- ☐ NEBRASKA · NE
- ☐ NEVADA · NV
- ☐ NEW HAMPSHIRE · NH

### NEW JERSEY

- ☐ NORTHERN NJ · NNJ
- ☐ SOUTHERN NJ · SNJ

- ☐ NEW MEXICO · NM

### NEW YORK

- ☐ EASTERN NY · ENY
- ☐ NORTHERN NY · NNY
- ☐ WESTERN NY · WNY
- ☐ NYC/LONG ISLAND · NLI

- ☐ NORTH CAROLINA · NC
- ☐ NORTH DAKOTA · ND
- ☐ OHIO · OH
- ☐ OKLAHOMA · OK
- ☐ OREGON · OR

### PENNSYLVANIA

- ☐ EASTERN PA · EPA
- ☐ WESTERN PA · WPA

- ☐ PUERTO RICO · PR
- ☐ RHODE ISLAND · RI
- ☐ SOUTH CAROLINA · SC
- ☐ SOUTH DAKOTA · SD
- ☐ TENNESSEE · TN

### TEXAS

- ☐ NORTH TX · NTX
- ☐ SOUTH TX · STX
- ☐ WEST TX · WTX

- ☐ US VIRGIN ISLANDS · VI
- ☐ UTAH · UT
- ☐ VERMONT · VT
- ☐ VIRGINIA · VA

### WASHINGTON

- ☐ EASTERN WA · EWA
- ☐ WESTERN WA · WWA

- ☐ WEST VIRGINIA · WV
- ☐ WISCONSIN · WI
- ☐ WYOMING · WY

### CANADA

- ☐ ALBERTA · AB
- ☐ BRITISH COLUMBIA · BC
- ☐ GREATER TORONTO AREA · GTA
- ☐ MANITOBA · MB
- ☐ MARITIME · MAR
- ☐ NEWFOUNDLAND/LABRADOR · NL
- ☐ NORTHERN TERRITORIES · NT
- ☐ ONTARIO EAST · ONE
- ☐ ONTARIO NORTH · ONN
- ☐ ONTARIO SOUTH · ONS
- ☐ PRINCE EDWARD ISLAND · PE
- ☐ QUEBEC · QC
- ☐ SASKATCHEWAN · SK