

DuPage Amateur Radio Club



Field Day Handbook

Tips for a successful Field Day from all around the web, edited with DARC member suggestions included.

Updated October 2014

What is Field Day?

As quoted from the ARRL:

*During the **fourth full weekend in June**, the eyes of the amateur radio community turn towards the annual Field Day operating event. From its beginning back in the 1930's as an event to test the field preparedness and emergency communications abilities of the burgeoning amateur radio community, Field Day has evolved into the largest on-the-air operation during the year. In 2012, contest logs were submitted by a **2,548 clubs**, groups and individuals across the US and Canada to the ARRL Contest Branch. These logs showed participation by 36,560 individuals and over 1.26 million QSOs were reported during the brief 24-hours of the event. **Field Day is officially an operating event not a contest.** The purpose remains today as it did in the beginning: **to demonstrate the communications ability of the amateur radio community in simulated emergency situations.***

*Groups across the continent use Field Day as a literal "show and tell" exhibition. At sites from the tundra of Alaska to the sandy beaches of Puerto Rico, amateur radio brings together its resources to show officials in government and various agencies what "amateur radio can do." Many clubs use Field Day as the focus of their annual calendar. Many hams that are not otherwise interested in contesting or DXing find themselves meeting various challenges to help their club run a successful Field Day operation. It is the thrill of the "**non-contest contest**" that brings out the best in thousands of amateurs who under most circumstances choose not to participate in the various sponsored contests.*

*What makes a good Field Day? Ask that question at any hamfest and you will probably receive a different answer from each person you interview. I offer a few basic ideas to keep in mind as you contemplate a Field Day operation. First, and foremost, is **Field Day should be a fun activity.** Field Day serves as one of the biggest introductory "drawing cards" we offer in trying to expand interest in the hobby. A Field Day that is technical in set-up may well produce a good score. But remember that a Field Day that practices the "**KISS**" principle (**Keep It Simple, Silly**) is more likely to attract interest and participation than one which is run like a hard-core contest. This doesn't mean you don't do the technical planning and preparation to ensure the operation is a good demonstration of what hams can do. It does mean that you should consider having a wide-range of activities and "jobs" which will encourage participation. Yes, 40-meter CW will probably be a great way to rack up points. **But make certain that there are things for the non-CW inclined members of your group to do.** Standing around watching one or two operators make all the contacts is a sure-fire way to kill enthusiasm among your group. For example, several years ago our local club put up its highest Field Day score ever. We had first-class stations and used outstanding operators on the "prime bands." They put in 18-20 hours of hard core contest-style activity. The next year our club score fell approximately in half. But the number of people who actually made a contact using the club call went from eight to thirty-six.*

*This brings us to the second major point: **a successful Field Day is well planned.** Planning entails a wide range of things when it comes to Field Day. But they all start at a common sense point: **set realistic goals for your group.** Plan your operation to bring out the best in your club members. If your club is primarily comprised of no-code operators, then set goals which allow their interests to be highlighted. If your club has lots of experience in various modes and operating conditions, plan a more challenging test for yourself.*

The success of Field Day is not determined by finishing first in your category or with “bragging rights” over your cross-town rival. Success is measured by attaining the goals set for you or your group.

Organizational structure

Field Day Chairman/Committee –

Pre-Field Day:

Responsible for securing site, communicating with site owner, obtaining permits and Certificate of Insurance, acquiring Band Captains, posting location on ARRL Field Day Locator, post updates to web page and Yahoo group, coordinating all subcommittees.

Post-Field Day:

Collect and combine logs, assemble support documentation, submit to ARRL, post to ARRL Soapbox, post results to web, obtain pictures for archive, Thank you letters, report results at Club meeting, write article for NewsWave, submit accounting of expenses and donations to Club Treasurer.

Public Relations – Responsible for posting notices to print and any other media. In general publicizing our event and its location. Field Day press kit is included in the Field Day packet.

Membership – Responsible for providing membership information and guidance to visitors at the site. If a GOTA station is operating, encouraging visitors to operate. Market our Club and its activities to visiting Hams.

Food committee - Responsible for providing a food budget to the Chairman/Committee . Procuring food (donated or bought), food prep and staffing of food tent.

Band Captains - Responsible for coordinating all aspects of their particular station, Such as: equipment, shelter, antennas, staffing.

Club Trustee - The Trustee should ensure operations conform to FCC and event regulations, to protect the club's score & reputation. The Trustee is responsible for seeing that there is a Control Operator of appropriate license grade supervising each station in use.

One particular concern is ensuring that the number of transmitters in use never exceeds the number permitted by the FD class, including ensuring that no two transmitters are under the same exemption at once. Assure a copy of club FCC license is on site.

Safety Officer - Duties include making certain antennas are safely away from power lines. Generators should be grounded properly and operated carefully. Guy wires for temporary structures or towers need to be well marked. The safety officer needs to work closely with the Field Day Chairman to ensure everyone has a safe, as well as fun time.

The above description are not meant to be all inclusive. Every member should do whatever they can to make Field Day a successful and enjoyable event for our membership and guests.

The Calendar of Events

Field Day planning begins early. There are those that say that Field Day should not be a planned event, but rather should be done as spontaneously as possible. To those I point out that no other emergency service does anything without planning and practice. Firefighters do not show up to a fire and then see if anyone knows how to operate the pumper truck! The same principle applies to ham radio communications. When a real emergency does arise, hams should already know what they have to do to get on the air.

The Field Day Chairman wants to know how many Band Captains are returning and how many holes will have to be filled on the roster. Also if you would like a different assignment, this is the time to ask for it. You will find that the Chairman will do whatever can be done for you. Many times the move can be made. If it can't, try to be understanding and pitch in where you can anyway.

In April/May the planning begins in earnest. You should start recruiting people to help with your station by getting in touch with the people that helped you out last year. The first site walk should be done about four to six weeks prior to the event. This site walk is mainly for the Band Captains and anyone who has never been to the site before. The group can survey the site and note any changes that have occurred. Also any changes in the site layout can be discussed at that time. If you have never been to the site or if your station has been moved, you should make sure to go. If you feel you need a second site walk, do so about a week prior to the event. This is also the time to start collecting your equipment. This will keep you from finding out on June 1st that the part you need is back ordered until late July!

You should continue to work quietly behind the scenes. If you get a chance to recruit a new operator, do so. When June hits, the frenzy will begin. A Field Day Net should be held on the DARC 2m repeater. Date and time to be determined. Band Captains should check in and announce if they need any operators or equipment. Likewise members should check in and announce the availability of themselves or their equipment. Last minute changes should be discussed with the Band Captains at that time. The club meeting before the event is usually reserved for Field Day. You should have your station pretty well figured out by this time, but if not you should make any last minute pleas for equipment or operators at the meeting.

Finally the event arrives! All of the Band Captains should be on site for the start of the set up. We have been lucky enough to be able to setup starting Friday night. If you cannot set up Friday, be on site early enough Saturday to be on the air at the 1800z start time. You should recruit enough help to set up their station, however it is common practice for everyone to band together for tougher jobs such as antenna erection and so forth. One other thing to take care of on Friday night is the W1AW bulletin. It will be broadcast on voice, teleprinter, and CW at various times on Friday afternoon and evening. One or two members usually copy the bulletin. The ARRL has been known to inform you of extra bonuses in the bulletin.

Everyone has their own style of operating, so the following is just a suggestion. You could prepare for the upcoming event by "reserving" a frequency. Find an open frequency 10-20 minutes before the start of the contest and call CQ and if possible start a QSO to occupy the frequency. Then as the event starts, you can sign off from the QSO and start calling CQ Field Day.

Field Day will run smoothly (or not) until the evening dinner. This is the highlight of the event! This, however, presents quite a quandary for the Band Captain. Obviously you will want to join in the gathering. At the same time, any time off represents lost operating time and potentially lost QSOs. Some Band Captains will decide to keep working their radios. If that is the case, let the Chairman know so food can be delivered to you. Other operators will simply shut down their stations. A good compromise is to make a shift change at mealtime. Have an operator finish eating and then replace the operator currently on shift. This way both ops get to enjoy the food and the station stays on the air.

The operating will grind through the night and onto the next morning. Breakfast will give everyone a chance to gauge how close the club is to its goal. Then it is back to the radios for the last push to the end. When the final horn sounds, keep your computer handy for the chairman to come around and copy your log.

Operators

Just as it is true that the Field Day Chairman can not run the site without your help, so its true that you can not run your station all by yourself. OK, you probably could but it wouldn't be a lot of fun, especially for the bands that run 24 hours a day! Field Day is an event that is best when it is shared with as many people as possible (that's why we have a big Field Day after all). The bare minimum staff for a station that will be active all twenty-four hours is you and two other operators. You would then rotate in three shifts of eight hours apiece or six shifts of four hours. Either way, you will get enough time off to sleep and perhaps operate another station or two (we should encourage all operators to work from as many stations as they wish). The more the merrier though. Make sure to keep the shifts to no less than two to four hours. You want your operators to feel like they have contributed and to have enough time to get into the swing of operating. While it is exceedingly rare (at our site), too many ops is just as bad as too few. When in doubt, ask your operators how long they would like to spend in front of the rig and schedule accordingly.

One thing to be considered is the rough shifts to operate, the Vampire Shift (middle of the night) and the Grind (the last shift). You will probably have no problem filling shifts in the middle of the day and especially right after the dinner. In fact you may wish to schedule some open time right after eating for drop in operators. The wee hours of the morning may be another story entirely. If you can find an operator that wants to run that shift, hurrah! Otherwise, you should be prepared to run it yourself. For some bands such as 40 and 80 this is the prime time. You won't have trouble finding help, or if you do, it is no problem as you get the best shift! The Grind is another story. The last shift is always the hardest. It seems like you CQ endlessly with few takers. If you search and pounce, it seems like everyone you find is a dupe. This is the time when you or your operators needs to buckle down and keep at it. A lot of contests are won and lost in these last few hours. This is another shift you may need to schedule for yourself. Another option is to make the last shift extra long so the operator that has that shift has the greatest chance to see some good conditions before it becomes a challenge. No matter what, you will have to be creative with your scheduling to accommodate meals, operators' schedules and your own tactics.

One last bit of planning is to gather together your operators a week or two before Field Day. You should familiarize everyone with the equipment you will use. Make sure everyone knows how to run the rig, computer and so forth.

Safety Guidelines

As Field Day approaches I'd like to remind everyone of a few safety considerations:

Please, no alcohol on site Friday Saturday or Sunday .

Any person climbing a tower must be at least 18 years old and must be a member of the Club.

Tower climbers must have a safety harness. Tools must be on a safety leash. No one under the tower while a climber is up there.

Safety shoes and hardhats are a viable option.

When shooting arrows, slingshots, and other methods of getting wires up in trees be sure no one is down range or under the trajectory path of the missile.

Mark all guy wires and other hazards with orange or yellow safety tape and ribbons. Position power cables and antenna feeds so they are not a trip hazard.

If you need any additional information please see the Safety Officer!

Logging Software

We have been using the software authored by N3FJP for several years. It is easy and requires no real learning curve. Once you install the software for the first time, it will prompt you for a call and password. Enter **WB9WOZ** for the call and then enter **47066** as the password. You will get a dialog screen thanking you for registering the software. The program will start and the following screen will show. Enter the values shown below. The Class field will be determined based on how many stations we can put on the air.

Setup (Ctrl S)

Common Fields

Call W9DUP

Country USA

Continent NA

Latitude 41.47

Longitude West is positive 88

CQ Zone 4

ITU Zone 8

Required for Field Day

Class 6A

ARRL Section IL

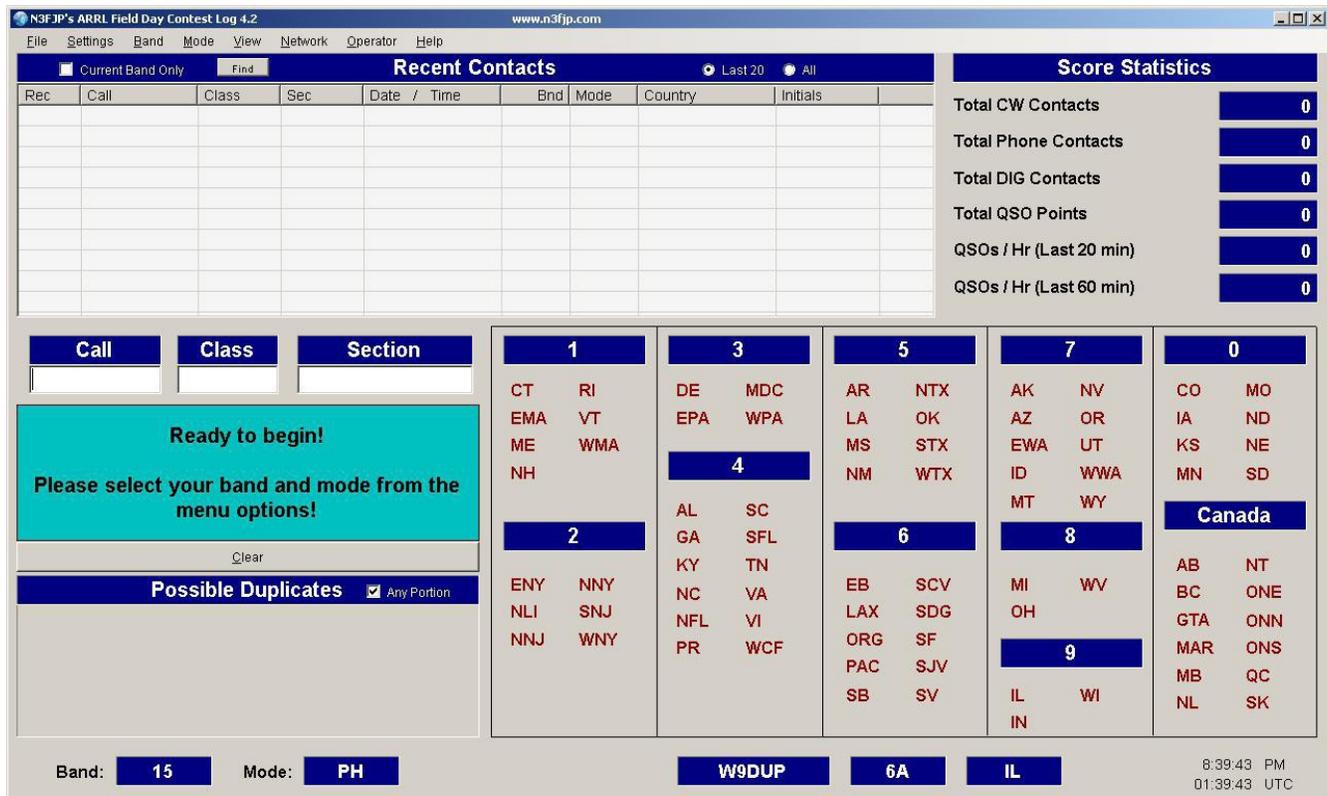
Optional

Operator

Initials

Always display this form on startup (you can display it from the Settings menu at any time).

Help Done



After pressing the DONE button, your screen should look like this.

The fields for **Call**, **Class** and **Section** are the about the only ones you need to use. Enter the Call hit tab, enter the Class hit tab, and then enter the Section. Once the info is confirmed, hit the enter key. The qso is added to the log.

Equipment

Obviously this section could go on forever. However there are a couple of highlights that should be hit.

The first is antennas. You will want to erect as large an antenna as possible without straining the resources of your crew. For the low bands, a dipole is the obvious choice while a directional antenna is best for the high bands. Tribanders and multi-band verticals are popular antennas for Field Day, and why not. They allow you to operate on any band that you are assigned to and often allow you to run a multi-band station off of one antenna. However, if possible use mono band antennas as multi-band antennas can radiate/receive spurious transmissions. Either way, you will want to get the antenna as high above the terrain as is practical. Make sure to keep it simple though. A dipole up ten feet will get you on the air but will not give you a commanding signal. A dipole up high will give you a great signal but not if your center support pole folds halfway up and crumples the antenna.

The corollary to antennas is coax. The most important thing to do is to measure the amount of coax you will need. Some runs can be quite long at Field Day and you won't want to eyeball the distance and then find out that you were off by twenty feet! That being said, it's probably a good idea to bring an extra length of coax and a barrel connector just in case.

The next area to consider is shelter. Conditions can be quite variable. It can be cold, hot, sunny, cloudy, windy, or still, sometimes all within a couple of hours. Your shelter should be able to accommodate all of that. Large dome or cabin tents seem to be the best compromise. Another popular solution is the screen pavilion. Some operators erect both and if the conditions warrant, they move their operating position. The roof material can be another concern. A light color can let in too much light and wash out the display on your computer. A blue colored roof can wash out the blue displays of some older rigs.

Another consideration is sleeping arrangements. While it is another item to pack, setup and tear down, most operators prefer to have a separate sleeping tent. While some operators can get away with sleeping in the same tent with a Field Day station, in most cases it is easier to sleep somewhere else.

The last thing to consider is spares. In a perfect world, you would only have to bring one of each item up to the site. Unfortunately we have to live in our world where things tend to go wrong. It is wise to have some spare parts around. The ultimate would be to have a spare one of everything, but who has the room and resources for that? Also, anything you bring to Field Day is something that could be dropped and broken. Spare rope, coax, and backup dipole antenna are all reasonable items. A spare rig if you are more aggressive. You will have to make up a list that you are comfortable with.

Band Switching

While the site has mono-band stations, there are still a few stations that operate on one band during the day and another at night. Whenever you have one of these stations, the obvious question that arises is when to switch between the two bands. Some times this decision is made for you. One band will fade out before you are ready and you are forced to switch to the other band to continue the contest. More often, you are forced to choose between a band that is fading and another that hasn't quite woken up yet or two bands that are both going gangbusters. In general it is better to switch too soon than too late. The best idea if you have a multi band station is to get on during the weekends prior to Field Day and see when signals for your two bands start appearing and fading out.

Communications while on site

Once you have made it to the Field Day site, you will have no problem getting into the DARC repeaters with a mobile rig. You can even make it into the repeaters with an HT in a few spots at the site. However, we do have a designated frequency for site use. 446.975 simplex with a PL of 114.8 Hz. Sometimes people will come up on the repeater output frequency. We try to have a radio listening on the the 2 meter repeater as a talk-in station.

How to Contest

While Field Day isn't strictly a contest, that is how the entrants are rated. A contest is a great way to evaluate a stations performance. It is also a great way to simulate message handling which will be a big part of any response to an emergency. So what is a contest? Put most simply, in a contest the objective is to make as many contacts in as many places as possible in a prescribed amount of time. For Field Day, the objective is simply to make as many contacts as possible in the 24 hours you are allotted. To make those contacts valid, you have to exchange a certain amount of information. The "exchange" for Field Day is your entry class (number of transmitters) and your ARRL section.

So how do you go about making these contacts? Just as you would for any other QSO in amateur radio, there are only two ways to initiate a conversation. You either have to answer someone who is calling CQ or call CQ yourself and wait for someone to answer you. Which method is better? It is generally accepted that staying in one place, calling CQ and letting the other stations come to you is quicker and less tiring. However, this only works if you have a signal that is loud enough to attract other stations. If you aren't making any contacts or aren't making them fast enough, you are forced to switch to the search and pounce method. Excellent operators can rack up the QSOs almost as fast this way. Which ever method you employ, a Field Day contact sounds like this:

CQ Field Day CQ Field Day this is W9DUP Whiskey Nine Delta Uniform Papa calling CQ Field Day

>>Whiskey One Alfa Whiskey.

W1AW thank you, we are 6 Alpha Illinois, over.

>>Thank you, we are 6 Delta, Connecticut, over.

Thank you, this is Whiskey Nine Delta Uniform Papa, QRZ?

All that is left is to record the contact on your log sheet and get ready for the next contact. Obviously because of the variability of radio propagation and other factors, many contacts aren't this neat and clean and you may need the other operator to repeat portions of the QSO. This is especially true when multiple people are calling you or you are getting interference from another station, but learning to deal with these conditions are part of the lure and purpose of Field Day!

Rules

There really is only one thing to say about the rules. Read them! There is no substitute for another knowledgeable person at the Field Day site. You may keep the club from making a costly error! The rules are available on the FD CD, from the ARRL web site www.arrl.org and the Chairman will have a copy available at the FD site as well.

Get on The Air Station (GOTA) has their own set of rules, which are also included on the Field Day CD. If you are running the GOTA station, the rules are a MUST READ.

Du Page ARC Field Day Checklist

| Item | Staged | Loaded |
|---|--------|--------|
| Shelter/operating position | | |
| Tent (screen or regular) | | |
| Table (no pointed legs) | | |
| Lawn chair (no pointed legs) | | |
| Cardboard or rug to put at door | | |
| Watch or clock for logging | | |
| Small fan | | |
| Clipboard for logging and scratch paper | | |
| Pens,pencils,markers | | |
| Light for nighttime with yellow bug bulb | | |
| Sun tarp | | |
| Extra stakes | | |
| Radio Equipment | | |
| Transceiver with instruction manual | | |
| Stand-by radio | | |
| Radio/Computer interface | | |
| Microphone/key/keyer | | |
| Headphones (operator and logger with Y adapter) | | |
| Dummy load with short coax jumper | | |
| SWR/power meter | | |
| Extra fuses | | |
| Antenna | | |
| Stand-by or second antenna | | |
| Antenna support rope or nylon line | | |
| Antenna tuner | | |
| Coax jumpers and coax switch | | |
| Antenna feed line and connectors | | |

| | | |
|---|--|--|
| Any spare tubes or parts | | |
| Ground rod, clamp and ground wire | | |
| Band pass filters | | |
| Multi mode controller | | |
| Sound card interface | | |
| Extra coax,connectors and adapters | | |
| Logging computer with power cord | | |
| Heavy duty 12v battery or power supply | | |
| Surge protected power strips (at least two) | | |
| Extension cords (14-3 recommended) | | |
| Personal items | | |
| Sleeping bag/pillow/security blanket or teddy | | |
| Air mattress/mattress pad/cot | | |
| Complete change of clothes and toilet articles | | |
| Sweater, jacket, rain gear and boots | | |
| First aid kit, sunscreen and prescription medications | | |
| Insect repellent | | |
| Sunglasses and hat | | |
| Watch, pen, flashlight and extra batteries | | |
| 2m/440 handie talkie | | |
| Small cooler with ice to keep in station tent | | |
| Drinking water | | |
| Snacks for late night | | |
| Camera with batteries or charger | | |
| Tools | | |
| Safety glasses | | |
| Cable ties | | |
| Wrenches/sockets | | |
| Pliers/wire cutters/strippers | | |
| Utility knife | | |

| | | |
|--------------------------------------|--|--|
| Hammer/sledge | | |
| Pry bar | | |
| Matches/lighter/propane torch | | |
| Electrical tape | | |
| Measuring tape | | |
| Duct tape | | |
| Tool bag with assorted hand tools | | |
| Soldering gun and solder | | |
| General | | |
| Copy or Amateur radio license | | |
| Current Section list | | |
| Optional fire extinguisher | | |
| Rope launcher | | |
| Field Day rules packet | | |
| Notebook (make notes for next year) | | |
| Paper towels | | |
| Safety tape (for guy ropes,coax,etc) | | |
| Trash bags | | |

Notes:

Be sure to mark everything you want to keep with your Name, call, and phone number. Email address would be good too.

Obviously not everyone needs every item on this list. It was designed to be overkill. Conversely, your station might need items not on this list. Use your judgment.

Favorite beverages may be limited by site rules. Check with FD chairman for specifics.

Each operator should provide their own headphones. Contact Band Captain for type of connector needed.

Special Thanks

Most items on this list are courtesy of former club member Ron Smith-K9QAM. Other items have been added by DARC members.