



Contest College  
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# Ham Radio Contesting Topics

- Who am I?
- What and why of contesting
- Different types of contests
- What are contests good for?
- How to prepare.
- Types of operating styles
- Types of antennas
- Different modes for contests & the DO's & DONT'S
- Adapting to the band conditions.

## Who am I?

- I am WA1BXY and I started contesting in 2006. I operate upwards of 40 contests per year, ranging from worldwide, region specific, to state QSO party contests. I use power ranges from QRP to 100W from my home.
- I operate 160-6 meters contests all with home brewed antennas. 99% being wire type.
- I got serious around 2007 and I have achieved numerous awards ranging from first place NEQP to 3<sup>rd</sup> "NA" in 12<sup>th</sup> WW160m CQWW QRP
- Awards ranging from 1-10<sup>th</sup> place in various other contests.
- My mode of choice is CW, but I do operate all modes.

# What and why of contesting

- It is simply that, a contest.
- Different operators use a contest for various purposes, but all with the same hopeful goal of placing first.

## Why would you want to participate in a contest?

### Why contest?

- One of my main reasons to contest is to use it as a tool so I can see how my station is operating.
- Check and see if the new antennas are worth it or adjust my antennas.
- The thrill of entering in the log a station that is tens of thousands of miles away
- To see what needs to be improved: antennas, operating style etc.
- **Foremost, try to place first! If not, I try to at least beat my personal goal or my score from the year before.**

### Types of contests

- There are many different types of contests, all with the same goal: To reach as many stations as possible.
- But within the contests there are some differences:  
The **exchange** given - some are a simple RST and QTH, others require a serial number “QSO count,” some

require locators, either grid square, CQ zone, or ITU zone, and some require more information such as name, date licensed, etc.

### **QSO party**

- A perfect way to get your feet wet.  
Simple exchange of RST and QTH. “county” if operating in your state’s QSO Party contest, if not just RST and state.

### **Field day**

- A good step up from QSO Party “even though it is not a contest.” It is a faster pace and a little more info on the exchange.

### **ARRL, CQWW & Continent contests**

- These are the “top dog” contests. Even though the exchange is little simpler, the pace is fast.

## **How to prepare**

- Pick a contest, weeks in advance,  
<http://www.contestcalendar.com>
- Type of antenna to be used
- The mode, computer interface, logging program or modem program
- Exchange
- Time frame of contest
- Make sure you have lots of COFFEE in the house

- Depends on the contest you have picked, on what type of antenna you would use or build.
- Make sure you are setup for that contest:  
Say you are going to operate in the NAQP SSB contest. You would have your antenna up and working. For us in New England, a multi band dipole works. You would want to make sure your computer interface is working, and you have downloaded a logging program that supports that contest and the Cabrillo format. There are many logging programs to choose from.
- Be sure to read the rules, as they do change year to year. Make sure you understand the exchange to be given and the start and end times of the contest.
- Pick an entry class to operate.
- Most importantly, **BE ON THE AIR**

## Operating styles

There are a few different styles of operating a contest. Depending on what entry class you have chosen.

**S&P** - Search and pounce style.

- When you are turning the VFO or using the cluster and working every station you can from the bottom of the band to the top and back down.
- This is effective when running 100W and a simple “non-gain antenna,” dipole/multi band dipole antenna.
- Here is a video:

## N3FJP Click & Pounce Contesting Using DX Spotting

<https://www.youtube.com/watch?v=PM4EI1ZVOzI>

### Running

- Find a clear frequency within your privileges and call CQ. Most of the time this will consist of just calling “CQ contest.” Remember, during weekends there are many contests going on. So, you may want to abbreviate which contest you are doing. Using NAQP as an example: “CQ NA wa1bxy wa1bxy NA.”
- During an SSB contest, a voice recorder is a huge help. Running is a good style for 100W, mainly for CW and digital contests. It is OK for SSB, if it is a regional contests, North America and even South American contests, as we usually have excellent propagation south.

### SPR

- This is a combination of *search and pounce*, and *running*. You would run bottom to top working stations along the way. As you are working your way up the band note a clear frequency to which you could return once you hit the top of band. If the frequency is still clear, you can occupy this spot calling CQ.
- While this is a great way, with some contests and 100W it is not quite as effective, especially with worldwide contests. So, don't spend too much time, more than a good solid 10 minutes, calling CQ. If it doesn't produce good numbers, return to S&P. There will always be new stations setting up

a run frequency that you can work.

Use these methods and you will get a good return. Remember you want to get as many in the log as you can, so be adaptive.

**Try to do anything you can to keep a good Q-RATE.**

## **Types of antennas**

- Simple mono-band dipoles
- Multi-band dipoles, "OCF"
- Other wire type
- Verticals
- Beams

### **Mono-band dipole.**

Great choice of antenna if you have room to make for 10-80 meters. Or you can configure for a FAN dipole. These antennas will be great for all bands for regional contests. For worldwide contests they will work great 20-15-10m, and possibly 40m, with good conditions.

### **Multi-band dipole, "OCF"**

A real good antenna because you do not have to worry about changing feed lines, re-tuning etc.

OCF usually is an 80-10m antenna excluding 15m. By design, OCF is non-resonant on 15m. With a manual tuner you can make it work, or you can always hang a 15m dipole



from the same balun of the OCF and it will work just fine.

Remember, with dipoles of any sort, height is your friend, the higher the better. Anything 30' feet high or more will work.

## **Wire Antennas**

There is a wide selection that you can make for a cheap price. These all will do well for contesting, DXing and everyday rag chewing.

- Mono-band Moxon
- EDZ - Extended Double Zepp
- Rhombic “terminated” antenna
- Fan dipole
- Sloping dipole “multi-band”
- TFD-Terminated folded dipole
- Loop antenna
- Long wire

## **Verticals**

- Vertical antennas are an excellent choice of antenna for contesting and DXing. It is used mainly for lower bands (30-160m). Due to the takeoff angle of a vertical, higher bands will not be as successful, but they will still work on higher bands. For regional contesting a vertical will work well.
- On the worldwide side of things, a 40-160m vertical antenna is the ticket. Most of the top contesters, when using a vertical, will use a RX antenna to reduce the noise

floor.

- There are many types of verticals. Mono-band, trap, homemade.
- The **key** to vertical antennas is *ground radials*, use as many as you can fit.

## **Beams**

- If you are lucky enough to have tower and a beam, you will have great success in a contest. They work great on 40m and up.
- All top performing contesters use beams for a reason. There are many styles: tri-banders, mono-banders, and multi-band “hex beams.” All will work.
- The best choice, of course, are mono-band beams. With beams, it’s all about how far you want to stretch your wallet.

## **Types of antennas – recap**

- Any antenna can be used for contesting, some will be better than others.
- But provided you can put RF in the air and make contacts, that's the main goal.
- You can always try different antennas to better your score or beat a personal goal.

## **Different modes**

Most contests are mode specific: SSB, CW, or digital. There are,

however, some contests that do allow multi-mode contesting, mainly QSO parties.

**SSB** contests are a fun time.

- They can be a little discouraging to the 100W contester, but even though you're using 100W you still can put up a good score.
- To do this, try to find a clear spot with zero interference from adjacent contesters, which is usually the upper side of the bands.
- Another trick is to find a station that has a good pile up and go just below or above them and try running.

SSB High QSO rate video:

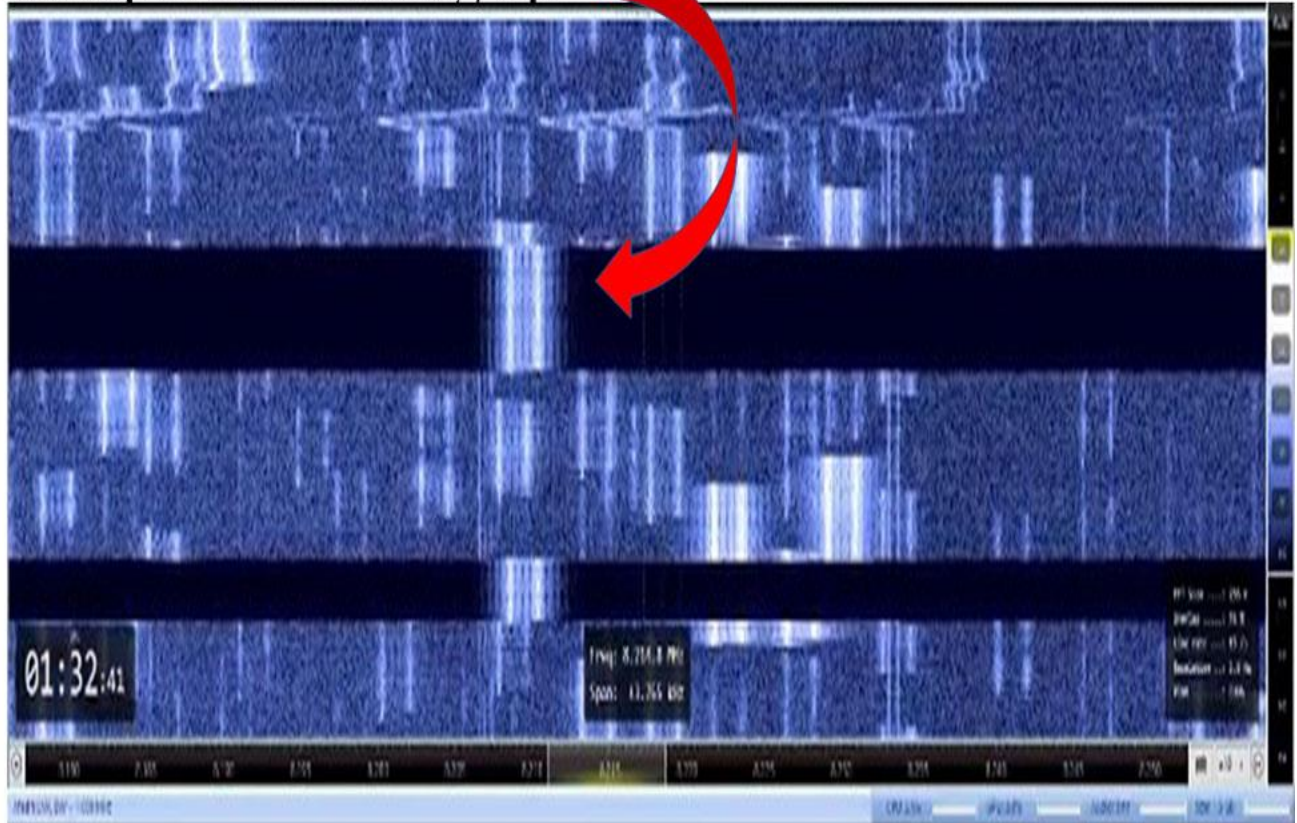
<https://www.youtube.com/watch?v=0cOfAixTWDI>

**RTTY** contests can be fast paced and very busy.

- Having a good filter system is a good idea for these contests, as with other contests.
- An advantage to RTTY & other digital contests is you can fit more signals within a certain bandwidth. This makes for a chance for a higher Q-rate and total contacts. The normal settings for operating a RTTY contest is a filter in the range of 350 Hz wide. For "running" style, the S&P filter is open wide.
- A trick for RTTY running.  
You can ***double up*** with another station provided both signals are clean.

# RTTY

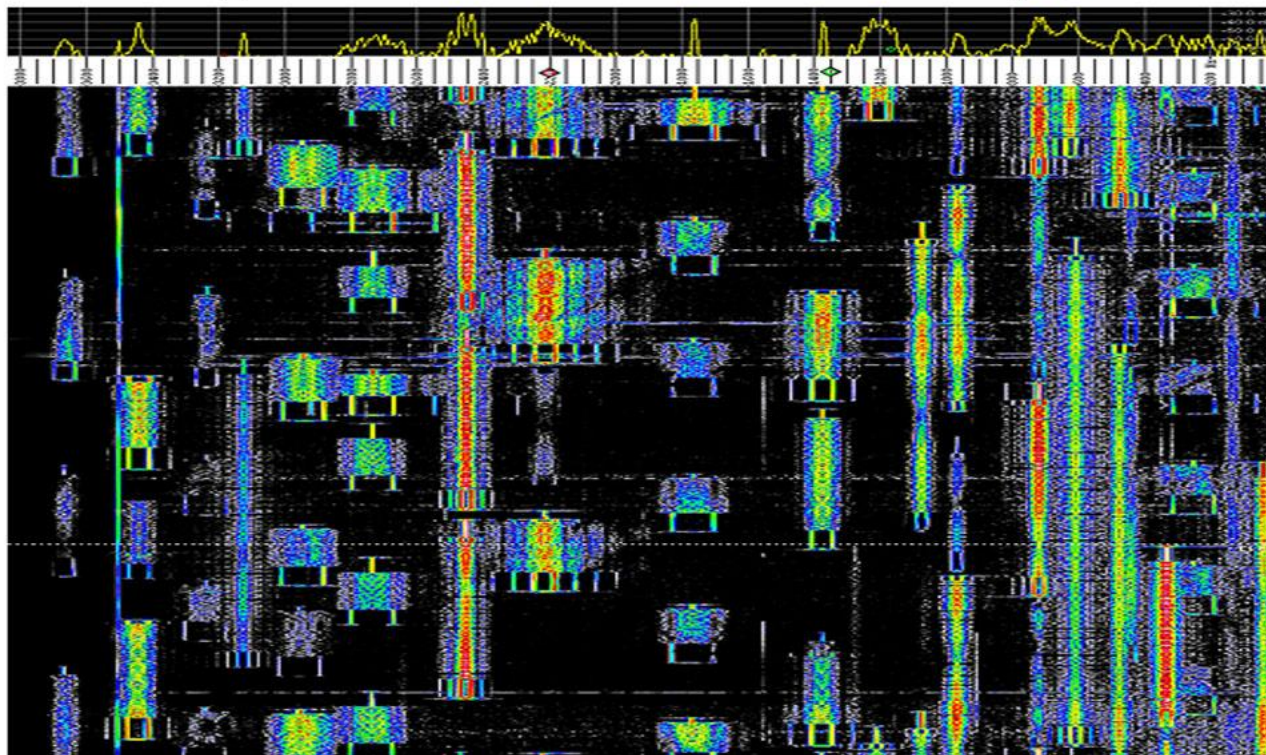
Example of doubling up



**PSK** differs from RTTY since it is a single signal mode. So, doubling up would not work. Running right along another station is possible if both have a clean signal.

## PSK

Typical PSK waterfall. Note the lack of doubling up.



## CW

- CW is one of the styles most contesters tend to prefer. That is due to its small bandwidth. Yes, the bandwidth does vary with the speed.
- Speed is another factor. If you listen to most contesters, their speed will be in the range of 25-40 wpm. Does that mean if you are using a straight key at 10 wpm you can't do a contest? NO!
- Certain contests have a simple exchange and you will hear the speed demons. Any high-speed contester will work you, but don't expect them to slow down very often. But a contact is a point, even a multiplier.
- For a contest with a lengthy exchange, you will hear every op on the band turn down the speed. Less mistakes equal more points.
- One main trick towards getting a good result with low power:
  - Find a BIG GUN and look for a clear spot just below or above them and try running. S&P is also good, but time consuming if you are not using a cluster.
  - Remember, using a cluster may change your *entry class*.

## Two videos

**Icom 7300 RTTY FSK Setup MMTTY N1MM**

<https://www.youtube.com/watch?v=ZCkiuzAMuZI>

**EI2KC fast action in CQWW CW contest 2015**

<https://www.youtube.com/watch?v=VGaay861bQ4>

## Band Conditions

- When operating as a single op, band conditions are one of, if not the biggest thing you much watch out for!!
- In times of low sunspot numbers, bands are going to do strange things. The main contest/DX band is 20m and should be the first band you want to look for DX contests, even if contests start at 0000UTC. Sometimes you may have to start on 40m or even 15m. It all depends on what you are hearing/working. Remember, the name of the game is contacts. Higher Q-rate means more contacts in the log.
- This is where a glance at a cluster or a quick spin of the VFO at the beginning of contest will help. Remember some contests require “10 minutes” interval between band changes. So, make certain you have a good idea of what conditions are on whatever band you choose. Get on 10-15 minutes before the start and throw out some CQs. This is also a good technique to claim a frequency if you are planning to RUN.

# Contesting Recap

- There are many different types of contests to jump in and get your feet wet, along with different modes
- Different ways to operate a contest
- Preparation is needed: times, exchange, mode, entry class
- Antenna selection
- Logging program and interface in working order
- Band conditions:  
This is a crucial part: what band to start, when to change, and what band to switch to.
- Remember logs do not have to be submitted if you enter contest, but is *courteous* to at least submit a *check log*
- Keep the exchange to the point: no unnecessary “rag chewing”
- Most important of all. GET ON THE AIR!!!  
No matter your skill level, speed, etc., get on and see how well you do.