HCRA Introduction To Contesting

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Let's Make Contesting Fun!

Your Instructors

Jeffrey Bail - NT1K - Main Interest In Amateur Radio is contesting. First "contest" was Field Day in 1995. Mostly active during contests, Field Day and DXpeds. Part of multi operator, multi radio events.

Matt Wilhelm - W1MSW - Was introduced to contesting by Jim - KK1W & Frandy - N1FJ (it's their fault) after moving to the area and finding HCRA. Very active in HF contesting, especially in the "Big 4". Past national and division category winner in ARRL DX CW using modest home station.

Class Goals

- Introduction to Contesting
    - Understanding what contesting is
    - Choosing the correct contest
    - Understanding rules and guidelines of the contest
    - Software Choices
    - Propagation
    - Getting ready
    - Log Submission, Scoring and Contest Awards
- Improving your score
    - Your Station
    - Tips and Tricks
    - Additional Hardware
    - Do's and Don'ts
- N1MM Logger+ Overview

What is contesting?

It's an event where an operator or a team of operators compete by establishing contact with many operators in a given period of time while exchanging a piece of information.

Most contests are sponsored by an organization, club, group or individual. They are responsible for creating and defining the rules, entry categories, multipliers, and log checking and issuing the awards.

Why Contesting?

- Competitive
- Keeps your station updated/working
- Makes you a better operator
- Obtain awards faster (DXCC, WAS)
- Makes it easier dealing with QRM, QRN
- Great camaraderie with other contesters
- More wallpaper
- Useful in other areas (EmComm, Nets)
- It's Fun!

Some Facts About Contesting

- There are over 550 contests per year.
- Even with similarities, almost each one is unique (Mode, Band, Time, Category)
- Some are more popular than others (CQ WW, ARRL DX, WAE, All Asian)
- State QSO Parties is a great way to start in contesting
- **W**orld **R**adiosport **T**eam **C**hampionship is considered to be the "Olympics" of amateur radio. For 2018, contestants are chosen based on their scores from 12-16 contests during 2015 and 12-16 contests during 2016.
- Contests can last from just a couple hours to over 48 hours

Contesting Myths

- You need acres of aluminum
- You need to pre-register
- You need to pay to play
- You have to have the best, most expensive transceivers
- You must have at least two radios (SO2R)
- You have to be a member of a contesting group or club.
- If you operate as a member of a club, you can't also compete as an individual
- You have to be on the air for the entire event

Different Types of Contests

- Sprint
- Mode specific (SSB only, CW only, RTTY only)
- Band specific (ARRL 10m)
- Part time (NEQP)
- Full time (48hr, CQWW)
- QSO Parties
- Country/Area Specific
- Field Day (US)
- Mixture of the above

Some of Terms and Lingo Used In Contesting

- S&P - Search and Pounce
- Running - Calling CQ
- Q - Contact (QSO)
- Rate (Q Rate) - Contacts Per Hour
- NIL - Not in log
- Multiplier - Contact with station will multiply your score (more about that later)
- Dupe - Duplicate contact
- Cluster / Skimmer (Assisted) - Using the internet to find stations
- Big Gun - Big station optimized for contesting (K1TTT, K3LR, K9CT)
- Little Pistol - Single operator stations
- Cut numbers - In CW, numbers are replaced with letter to shorten the contact
- Busted Call - Callsign you incorrectly copied

What equipment do I need for contesting?

Minimal setup consists of

- Transceiver
- Antenna
- Logging (paper or computer logging)

Preferred setup consists of

- Transceiver with filtering
- Directional antenna, multiple antennas, receive antennas
- Hands free microphone, Automated keyer and **D**igital **V**oice **K**eyer
- Computer with serial in/out (and/or USB) for radio control
- Contest grade logging software (**N1MM**, Wintest, N3FJP)

Make due with what you have! It doesn't have to cost more money to contest. We will go in more detail about setting up your station for contesting later.

How do I start contesting?

Start by looking at what's coming up.

- **WA7BNM's Contest Calendar**
- SM3CER Contest Service
- QST's contest corral (www.arrl.org/contest-calendar)
- Sponsors website directly (NEQP.org, ARRL.org, CQWW.org)
- Last resort... Google.com

We will be using WA7BNM's Contest Calendar in this course
http://www.hornucopia.com/contestcal/

Picking the contest

Using WA7BNM's online calendar sorted by Perpetual month.

Look at what appears to be interesting to you. Use a search engine to see how popular that contest is

We'll focus on the CQ World Wide DX Contest (SSB) as it's a popular (biggest) SSB contest and unofficially kicks off the contest season. Qualifier for WRTC

For 2016, It starts at 0000z (8pm local) on Friday, October 28th until Sunday, October 30th at 2400z (8pm local)

Press the blue + symbol for more information

October 2016	
+ TARA PSK Rumble Contest	0000Z-2400Z, Oct 1
+ Oceania DX Contest, Phone	0800Z, Oct 1 to 0800Z, Oct 2
+ California QSO Party	1600Z, Oct 1 to 2159Z, Oct 2
+ German Telegraphy Contest	0700Z-0959Z, Oct 3
+ SARL 80m QSO Party	1700Z-2000Z, Oct 6
+ Makrothen RTTY Contest	0000Z, Oct 8 to 1559Z, Oct 9
+ Oceania DX Contest, CW	0800Z, Oct 8 to 0800Z, Oct 9
+ SKCC Weekend Sprintathon	1200Z, Oct 8 to 2359Z, Oct 9
+ Scandinavian Activity Contest, SSB	1200Z, Oct 8 to 1200Z, Oct 9
+ Pennsylvania QSO Party	1600Z, Oct 8 to 2200Z, Oct 9
+ Arizona QSO Party	1600Z, Oct 8 to 2359Z, Oct 9
+ FISTS Fall Unlimited Sprint	1700Z-2100Z, Oct 8
+ 10-10 Int. 10-10 Day Sprint	0001Z-2359Z, Oct 10
+ 10-10 Int. Fall Contest, CW	0001Z, Oct 15 to 2359Z, Oct 16
+ New York QSO Party	1400Z, Oct 15 to 0200Z, Oct 16
+ Worked All Germany Contest	1500Z, Oct 15 to 1459Z, Oct 16
+ Asia-Pacific Fall Sprint, CW	0000Z-0200Z, Oct 16
+ Illinois QSO Party	1700Z, Oct 16 to 0100Z, Oct 17
+ Run for the Bacon QRP Contest	0100Z-0300Z, Oct 17
+ SKCC Sprint	0000Z-0200Z, Oct 26
+ CQ Worldwide DX Contest, SSB	0000Z, Oct 29 to 2400Z, Oct 30
November 2016	

Learning about the contest

Based off the information given in the calendar, you can technically operate in the contest without visiting the sponsor's website. However it's important to read and understand the rules and guidelines of each contest

The entry should link to the sponsor (CQWW) and the rules of the contest

Also lists the exchange needed to complete the contact.

If you hear a contest but you are not sure which one it is, you can use the calendar and find out by the date, frequencies, calls and exchange being used.

CQ Worldwide DX Contest, SSB	
Status:	Active
Mode:	SSB
Bands:	160, 80, 40, 20, 15, 10m
Classes:	Single Op All Band (QRP/Low/High)(Option: Classic/Rookie)
	Single Op Single Band (QRP/Low/High)
	Single Op Assisted All Band (QRP/Low/High)
	Single Op Assisted Single Band (QRP/Low/High)
	Multi-Single
	Multi-Two
	Multi-Multi
Max power:	HP: 1500 watts
	LP: 100 watts
	QRP: 5 watts
Exchange:	RS + CQ Zone No.
Work stations:	Once per band
QSO Points:	0 points per QSO with same country (counts as mult)
	1 point per QSO with different country same continent
	2 points per QSO with different country same continent (NA)
	3 points per QSO with different continent
Multipliers:	Each CQ zone once per band
	Each country once per band
Score Calculation:	Total score = total QSO points x total mults
E-mail logs to:	ssb[at]cqww[dot]com
Upload log at:	http://www.cqww.com/logcheck/
Mail logs to:	CQ WW DX Contest
	Box 481
	New Carlisle, OH 45344
	USA
Find rules at:	http://www.cqww.com/rules.htm

Learning about the contest

- Status: Active - Contest is still on

- Mode(s): SSB - Contesting will be using SSB only. Some contests are multimode that use SSB and CW or SSB, CW and Digi.

- Bands(s): 160, 80, 40, 20, 15, 10m used during the contest. Some contests are band specific (ARRL 10m) or some contests are limited to a couple bands. Notice no WARC bands. In most contests, 60, 30, 17 and 12m are off limits

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Learning about the contest

- Classes: AKA Category. This is how you are entering in the contest.
  - SOAB - **Single Op, All bands**
  - SOSB - Single Op, Single Band
  - SOAB/A - Single Op, All Band, Assisted
  - SOSB/A - Single Op, Single Band, Assisted
  - M/S - Multiple Ops, Single Radio
  - M/2 - Multiple Ops, 2 Radios
  - M/M - Multiple Ops, Multiple Radios
- There are different power categories as well (QRP, LP, HP) and some contest have special overlays (portable, emergency power, wires only, T/B wires)
- Common example, SOAB LP or SOAB/A LP if you want to use the spotting network/cluster

CQ Worldwide DX Contest, SSB

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Max power:	HP: 1500 watts LP: 100 watts QRP: 5 watts
Exchange:	RS + CQ Zone No.
Work stations:	Once per band
QSO Points:	0 points per QSO with same country (counts as mult) 1 point per QSO with different country same continent 2 points per QSO with different country same continent (NA) 3 points per QSO with different continent
Multipliers:	Each CQ zone once per band Each country once per band
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Learning about the contest

- Max power: Some contests limit you to a power level or there may be different categories such as Low Power (LP, 100w or less [ARRL <150w]), High Power (HP, >100w[ARRL <150w]) and QRP (5w or less).

- <u>Exchange</u>: The piece of information you exchange with the other operators. Very important to know before attempting to make a contact. The exchange will vary depending on the contest. Easy as RS/RST and CQ Zone for CQWW to difficult as Serial. Precedence, Callsign, check and ARRL section for the ARRL Sweepstakes.

    Sponsor will use the exchange along with the callsign and time to cross check for points.

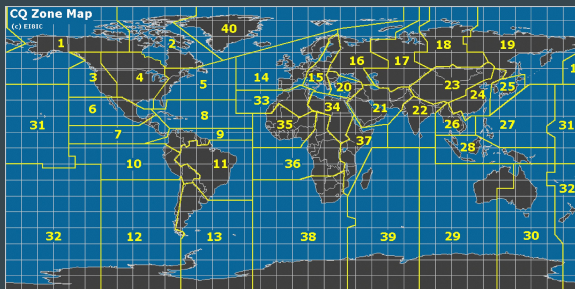| CQ Worldwide DX Contest, SSB	
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Learning about the contest

- Work Stations: Once per band - Telling you that you can only work that station ONCE on each band. Some contests allow multiple contacts per band if the other station is mobile/rover (Sweeps = 1 per contest)

- QSO Points: This is how your contacts are scored. Once again this varies depending on the contest. For CQWW SSB 2016, it's the following
  - 0 points per QSO with someone in the same country (unless you need mult)
  - 1 point per QSO with station in a different country but on the same continent (EU to EU)
  - 2 points per QSO with different country in same continent in North America (US to CA)
  - 3 points per QSO with different continent (US to country outside of North America, DL)

CQ Worldwide DX Contest, SSB

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Learning about the contest - Multipliers

- Multipliers: You can multiply your score by making contact with certain stations. This varies depending on the contest. Examples can be counties, states, ARRL section, CQ Zone, ITU Zone, Country, Province and many others. Some contests have more than one multiplier.

  For CQWW SSB, they have two multipliers that include CQ Zone and Country.

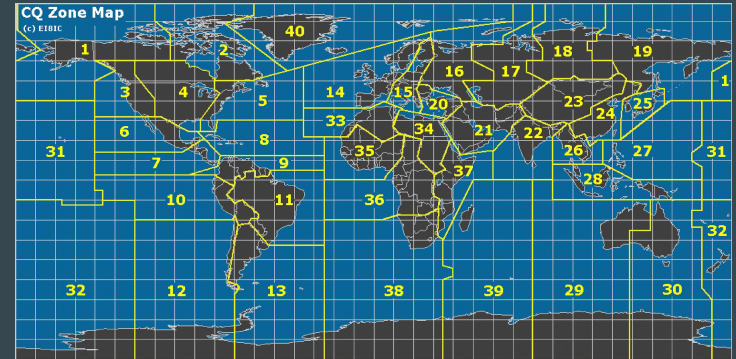| CQ Worldwide DX Contest, SSB	
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Learning about the contest - Multipliers/Score Total

For example, you made your first contact with a german station, you will get 3 points for the contact in CQWW SSB.

Since Germany is a new country, You can multiply your entire score by 1. Since Germany is in Zone 14, you can multiply your score again by 1.

If your next contact is with a French station, you can now multiply your score by 2 but since France is in Zone 14, you will not be able to get a double mult.

At the end of the contest, you would add up your points, multiply it by the total amount of unique countries per band added with the total amount of unique CQ Zones per band. This is where contesting software would come in handy

Learning about the contest

E-mail log information : Most contest sponsors want cabrillo format for log, most contest software will export to cabrillo

Upload log at: Some contests will allow the user to upload their log instead of sending it VIA e-mail.

Mail logs to: Some contests will allow the user to send in their logs if they decide to use paper logs.

As you see the CQWW SSB contest allows multiple ways to send in your logs. There are many contests that will only accept logs VIA e-mail.

If you don't submit a log, you could lose out on awards

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Find rules at:	http://www.cqww.com/rules.htm

Learning about the contest

Find Rules At: (Website, Document)

This is the most important part of this entry. It is very important to read and understand the rules in its entirety before jumping into any contest. Failure to read and understand the sponsor's rules could land you into trouble with the sponsor and/or other operators

Let's click on the link to the rules for CQWW 2016
http://www.cqww.com/rules.htm

You will see why it's important. There is a lot of information that will not be listed on this calendar entry. Rules could change throughout the years.

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Major Contests

CQWW DX SSB
CQWW DX CW
CQWW WPX SSB
CQWW WPX CW
IARU HF Championship - Multimode
ARRL Intl DX SSB
ARRL Intl DX CW
WAE DX SSB
WAE DX CW
All Asian DX SSB
All Asian DX CW

Notable Contests (For HCRA members)

State QSO Parties / NEQP

ARRL 10m - Dec - HCRA participates as a club

ARRL Sweepstakes

ARRL Field Day

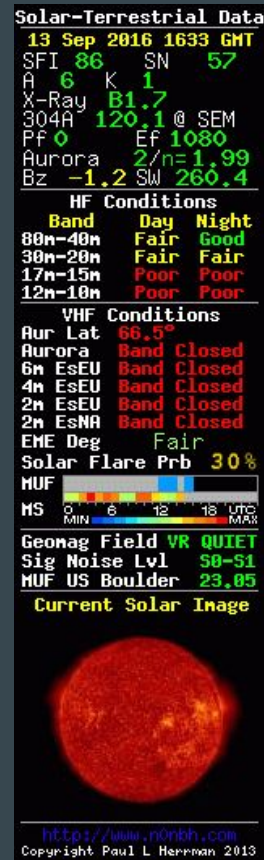NAQP SSB

WPX RTTY

VHF/UHF FM Sprint

Contest Logging Software

- Suggest to use software dedicated for contesting
- General logging software (HRD, DXlabs) lacks options even though they may have a "contest mode" built into the software
- Most popular contesting software are N1MM Logger+, Wintest, N3FJP (US), Writelog, Skookum (OSX) among others.
- There are linux logging software. Most use N1MM+ using WINE
- Computer doesn't have to be "the latest and greatest" but a decent processor/ram will help out with DB entry and some automation (keyer)
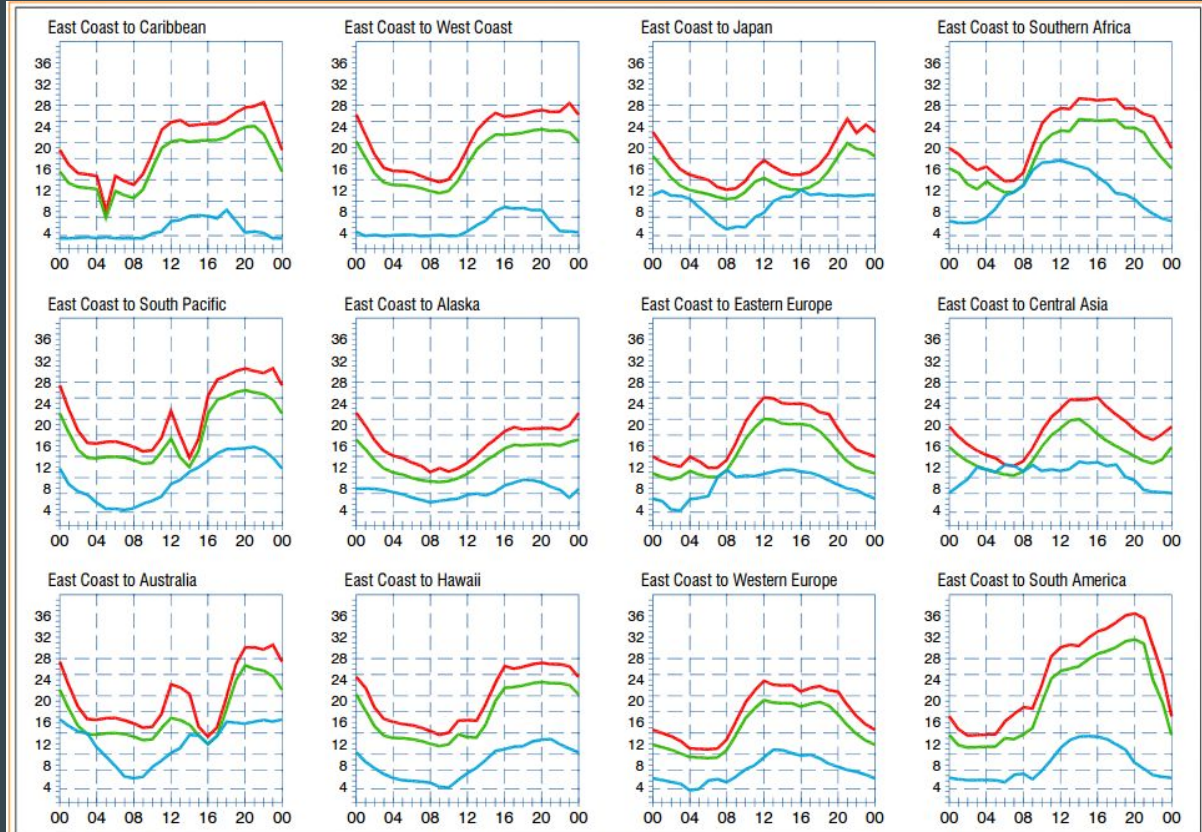- For this course, we will be referencing and learning using N1MM Logger+

Propagation

- Is the study of how radio waves travel from point A to B or into the atmosphere
- Affected by vapor in troposphere and ionization due to solar activity
- Can be predicted based off solar information and past history
- Contesters use predictions as a tool
- Various software and websites can be used
- These tools will give you an idea. Even more useful if you're un-assisted. Use it as a suggestion
- Allows for you to be on the correct band at the correct time.
- VOAcap (Voice Of America) is most popular website/software

Let's visit VOACAP online and try it out http://www.voacap.com/

Solar-Terrestrial Data
13 Sep 2016 1633 GMT
SFI 86   SN 57
A 6   K   1
X-Ray B1.7
304A 120.1 @ SEM
Pf 0   Ef 1080
Aurora   2/n=1.99
Bz -1.2 SW 260.4
HF Conditions
Band   Day Night
80m-40m   Fair Good
30m-20m   Fair Fair
17m-15m   Poor Poor
12m-10m   Poor Poor
VHF Conditions
Aur Lat 66.5°
Aurora   Band Closed
6m EsEU   Band Closed
4m EsEU   Band Closed
2m EsEU   Band Closed
2m EsNA   Band Closed
EME Deg   Fair
Solar Flare Prb 30%
MUF
MS
Geomag Field VR QUIET
Sig Noise Lvl   S0-S1
MUF US Boulder   23.05
Current Solar Image

http://www.n0nbh.com
Copyright Paul L Herrman 2013

Other Propagation Prediction Sources

- ARRL Charts
- N0NBH - Seen on most sites
- NW7US (HFradio.org
- HFpropagation.com (real time)
- N6BV's Charts/Site
- K6TU Site ($ 30yr)

When are the bands open? These charts, generated using CAPman, show probabilities for average HF propagation in the month of **September** for the paths indicated. The horizontal axes show Coordinated Universal Time (UTC), and the vertical axes frequency in MHz. On 10% of the days of this period, the highest frequencies propagated will be at least as high as the upper red curves (HPF, highest possible frequency) and on 50% of the days they will be at least as high as the green curves (MUF, classical maximum usable frequency). The blue curves show the lowest usable frequency (LUF) for a 1500-W CW transmitter. For SSB or a lower transmitter power, the LUF will be somewhat higher than the blue curves indicate. See Oct 1994 *QST*, pp 27-30, and Feb 1995 *QST*, pp 34-36, for more details. The predictions assume an observed 2800-MHz solar flux value of 88. This is a **Low** level of solar activity. See the detailed propagation tables on *The ARRL Antenna Book CD-ROM* .

Contest Preparation

Make sure everything's working days or weeks (not hours) before the contest

- Loved ones know you won't be available?
- Antennas are working?
- Software/hardware working?
- Radio working? (Audio, power, rig interface)
- Propagation working?
- Everything you need during the contest ready to go?