Low Power Radio Contesting

DAVE CHERBA WZ8T

2022
SEA-PAC
40th Anniversary

My Background

▶ Electrical Engineer 1975 University of Michigan focused on field theory and numerical methods

▶ Repaired and designed a large variety of equipment and automated controls

▶ PhD. Computer Science 2005 Michigan State University

▶ Always wanted to be an amateur radio operator since 1963 but could never pass the code

▶ Finally got my radio licensed in 1989 earned extra class in 1990
(took three tries on the 20 wpm code)

▶ Relocated from Michigan to Vancouver Washington 2016

▶ Very active in Amateur radio: DXCC, VUCC 2m-6M-70cm-1.25m, Satellite

▶ Active in ARES, RACES and member of WVDXC, CCARC, PNWVHF

▶ Low power contesting DX and Grid squares on HF, VHF

My Station

Antennas

Contest Results Low Power SSB
Primarily: Section/Division/Call Area winner

- CQWW
- CQWPX
- CQWWRTTY
- ARRL Sweepstakes
- ARRL VHF (January, June, September)
- ARRL DX
- 7QP
- IARU
- Salmon Run
- MIQSO

Why do Radio Contesting

► A way to measure the combined strength of your operating skills and station construction

► Build up your skills and knowledge

► Learn to operate sleep deprived and under stress

   ► This is what real emergency or disaster communications will be like

► Have Fun!!!

► Achieve operating goals

   ► WAS, DXCC, VUCC, WAZ, Worked all Counties, Worked Grids

It is not about winning a Certificate or Plaque

- ▶ Did you have Fun?
- ▶ Did you achieve the goals for this contest?
    - ▶ 100 QSO's, 3 new countries, 10 new states, new operating mode
- ▶ What did you learn?
    - ▶ What band and when is it really open for you to XXXXX?
    - ▶ What timing of sending your call worked (tail end, wait, call twice)?
    - ▶ How long to try for the new multiplier or try the next day?
- ▶ Did your operating plan work?
    - ▶ No battle plan survives first contact

This is not a level playing field

- Antennas
  - Stacked/high elevation/tall towers beams HF 6-10 dB
  - Single beam 0 dB
  - Wires -3 dB
- Power
  - High power 10 dB
  - Low power 0 dB
  - QRP   -13 dB
- Operator skill
  - New operator doing search and pounce
  - Moderate skilled operator running stations but mostly S&P
  - Experienced operator running and doing S&P
- Category
  - SO, MS, MM, Assisted, Triband and wires, AB, SB

Mix of operations

- Very few Big Guns
  - Multi-Multi 5-10 towers, four square, latest rig X 10, Big amps X 10
  - Multi Single or Two operators 2-4 towers
- Majority of operators are casual
  - Single tower or wires
- Good operators will out score many of the more powerful stations

Lets get educated and have fun

- ▶ Most contest now make logs public so you can look at and analyze other good operators
  - ▶ CQ WPX - Public Logs
  - ▶ CQ WW - Public Logs
  - ▶ ARRL Public Logs
- ▶ The playing field is not Level, decide which part of the field you want to play on
  - ▶ (low, high, QRP, Assisted, Multi-op, Single- op, Single Band, all band)
- ▶ Selecting contests to participate in
  - ▶ Hundreds of contest to choose from
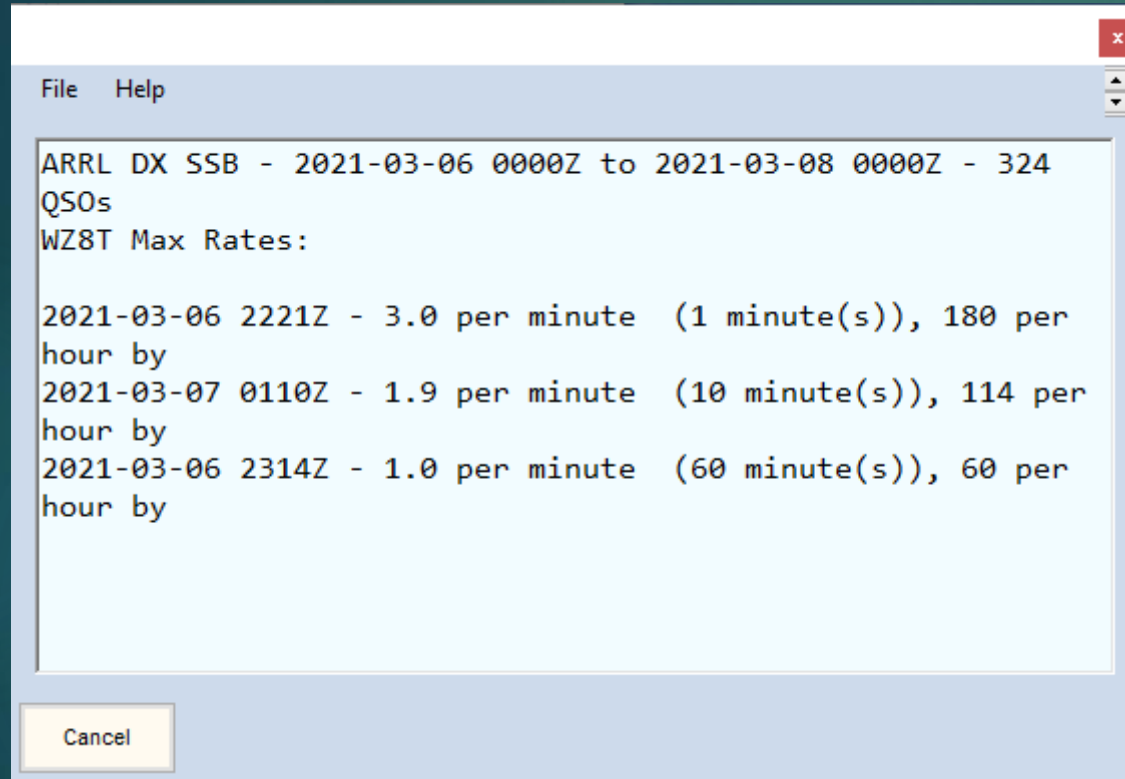 - ▶ Start with QSO parties or sprints

Knowledge and Experience

► Plan by predicting propagation and analyze for you station and location

► Plan by examining logs of successful operators

► When operating S&P stop and listen to good stations running and critique there operating

► Listen to those stations that the frequency owner response too

  ► What did they do right?

► Don't emulate bad behavior

  ► give call and exchange every time

  ► Don't call on top of everyone

Logging software

- There are a variety of logging programs
  - Some do general logging in addition to contest
- Over 70% of logs are from N1MM
  - Free, supports hundreds of contest, can customize
- N1MM communicates/control radios, antennas, Spotting networks
- Full of features
  - Partial Call Check
  - Spotting
  - Rates, score summary
  - Statistics
  - Automated/ recorded messages
  - Integrates with RTTY, CW, FT8 programs
- Built in analysis tools

Analysis tools/Logging

Rate analyses / Off times

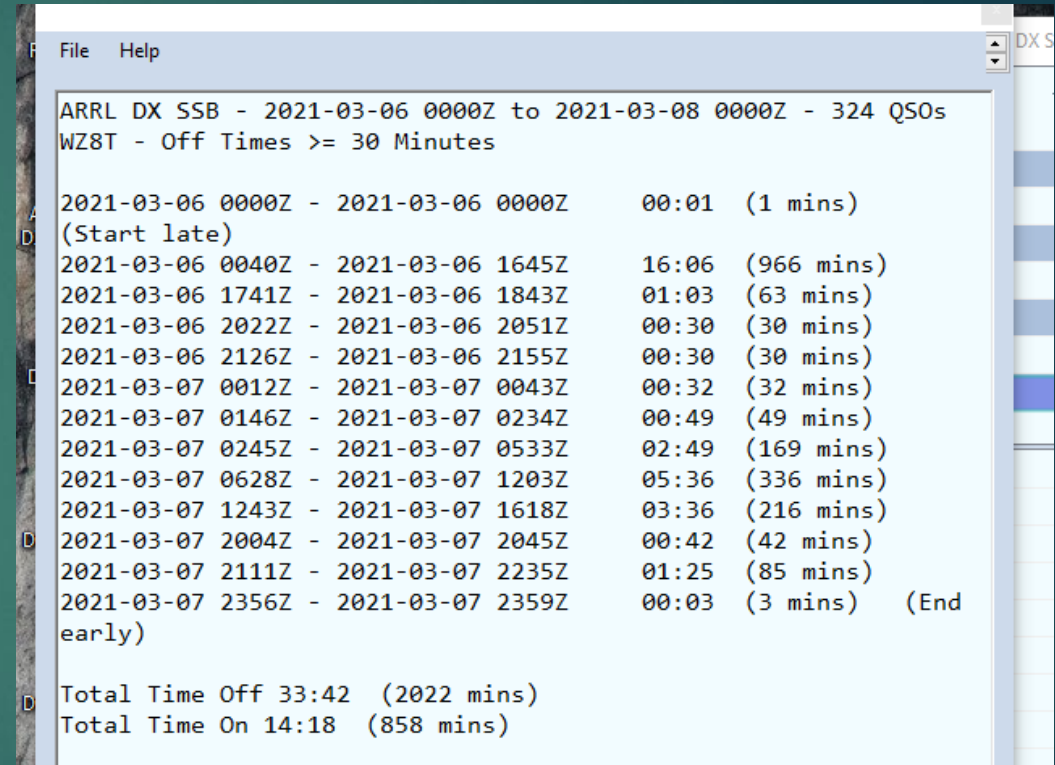ARRL DX SSB - 2021-03-06 0000Z to 2021-03-08 0000Z - 324 QSOs
WZ8T Max Rates:

2021-03-06 2221Z - 3.0 per minute   (1 minute(s)), 180 per hour by
2021-03-07 0110Z - 1.9 per minute   (10 minute(s)), 114 per hour by
2021-03-06 2314Z - 1.0 per minute   (60 minute(s)), 60 per hour by

Cancel

ARRL DX SSB - 2021-03-06 0000Z to 2021-03-08 0000Z - 324 QSOs
WZ8T - Off Times >= 30 Minutes

2021-03-06 0000Z - 2021-03-06 0000Z   00:01 (1 mins)   (Start late)
2021-03-06 0040Z - 2021-03-06 1645Z   16:06 (966 mins)
2021-03-06 1741Z - 2021-03-06 1843Z   01:03 (63 mins)
2021-03-06 2022Z - 2021-03-06 2051Z   00:30 (30 mins)
2021-03-06 2126Z - 2021-03-06 2155Z   00:30 (30 mins)
2021-03-07 0012Z - 2021-03-07 0043Z   00:32 (32 mins)
2021-03-07 0146Z - 2021-03-07 0234Z   00:49 (49 mins)
2021-03-07 0245Z - 2021-03-07 0533Z   02:49 (169 mins)
2021-03-07 0628Z - 2021-03-07 1203Z   05:36 (336 mins)
2021-03-07 1243Z - 2021-03-07 1618Z   03:36 (216 mins)
2021-03-07 2004Z - 2021-03-07 2045Z   00:42 (42 mins)
2021-03-07 2111Z - 2021-03-07 2235Z   01:25 (85 mins)
2021-03-07 2356Z - 2021-03-07 2359Z   00:03 (3 mins)   (End early)

Total Time Off 33:42   (2022 mins)
Total Time On 14:18   (858 mins)

What is specific to low power/modest station operating

▶ Holding a run frequency will be challenging

▶ Develop a realistic operating plan and goals

▶ How to find a run frequency (Band Scope)

▶ What mix of S&P verses Running

▶ Evaluate you chance of getting a new multiplier
(or when you should try)

▶ Are assisted spots really helping

  ▶ Is the spotted call wrong?, Is another station at the spot

  ▶ Did you miss good stuff by not scanning the band

▶ I want to have fun so when does it quit being fun?

▶ When should you sleep, take time off, reduce the frustration factor

General rules

- ▶ Operate on the highest frequency band that is open
- ▶ Switch between all open bands regularly
- ▶ Do S&P looking for an open frequency to call CQ on
  - ▶ Surprisingly it can be low in the band or high in the band
- ▶ If running and your rate drops look for the cause
  - ▶ Big gun .5kc up the band calling CQ
  - ▶ Another station you can't hear on the same frequency
- ▶ Check every spot to make sure it is accurate before you log it
- ▶ Error rates can lead to big score deductions
- ▶ Understand the value of multipliers vs QSO points
- ▶ Not all QSO's get the same number of points

Equipment concerns

- ▶ Is your equipment easy to use (not making costly mistakes)
- ▶ Do you have to tune antennas (make a cheat sheet with settings)
- ▶ Is it easy to switch antennas
- ▶ Get on before the contest and check things
- ▶ Especially check your latest version of software and OS
- ▶ Recorded Voice or synthesis
- ▶ Your health and stamina
- ▶ Headphones
- ▶ Ergonomics of your station
- ▶ Remove QRM and interference
  - ▶ (one area where radio performance counts)

Review points

- BIC (butt in chair) can't make QSO's if your not in the chair
- Choose which part of the playing field you want to play in
- Learn from other station logs and operating methods
- Practice with your station equipment (Just get on the air)
- Pick some contest to just focus on improving your skill
- Set your goals for each contest
- With good skills at a modest station you out perform a lot of high power stations
- You don't need big antennas and big amplifiers to have fun in a contest
- Make it fun

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