No Compromise
Remote Contesting

Dayton Contest University 2019
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No Compromise vs Regular Remote

- Should not feel like you are remote
- Score should be the same as being on site
- Stations calling should not be able to tell you are remote
- Operator should be the only limiting factor
Internet Connection: The most important piece of the puzzle

- Pure speed is not the only metric to consider
- Latency is the bigger issue, especially on CW
- Consistent connection is the key
- Cable modems very susceptible to the “Netflix effect”
- Fiber or DSL has been the best
- Consider upload speeds especially for SO2R and remote end
- RF the last mile can be OK also
- IQ Router or similar helps
- Use ethernet, not WiFi
Remote Access to Every Peripheral

- PC’s and routers
- Power supplies, battery backups, surge protectors
- Amplifiers
- Antenna switching
- Adds another level of complexity and maintenance
- The devil is in the details!
So what are guys using to win?

- Remoterig RRC-1258MkIIs
  - Private setups - NK7U, K7ZS, N2QV
  - K3/0-Mini or similar most popular, but other rigs also used
  - Commercial - RemoteHamRadio.com (RHR)
- App based systems, no RRC required - RHR
- Lots of other options available, but as far as I can tell every USA remote win has been done using one of these setups
Why is the Remote Rig box so popular?

Pros

● Long history, proven to work
● Can use any radio, but K3 integration is elegant
● Best CW sending so far (controversial - more later)
● Economical
● Allows a true “Big Knob” experience

Cons

● Setup can be cumbersome
● Virtual COM Ports are no fun
● Old technology, things are evolving quickly
Not winning the USA from Oregon, but absolutely “No Compromise”
- K3/0-Mini’s
- RRC’s
- YCCC SO2R Controller
- Each radio has independent controls for antennas and amps, just like being on site
- VNC using two Raspberry Pi 3’s
- Lots of mice!
- Special VPN setup for fully networked Multi-Ops using N1MM+

SO2R into NK7U Super Station
The remote side is usually very clean looking.

This is one side of a growing M/2 or SO2R setup at K7ZS.

**K7ZS (NK7U remote version 2.0)**
SO2R into RHR Network

Same as the previous setup, except logging into the RHR site for all station controls.

- RHR has lots of fail safes and is more forgiving and less complex than a private system typically.
N5DX into N2QV

- One PC
- Impressive software to work with N1MM+
- K3 + TS590
- RRC’s
N2QV side - N5DX
- Similar to KL9A setup
- Separate PC’s for each radio eliminates logging program focus issues - very important for quick antenna changes or adjustments
A great reason to use RRC’s is you can continue to use your logging program of choice and preferred SO2R controller or other peripherals
Notes for multi-op network setup

Notes for general station use

Hamation switching interface

Alpha 9500 control
RHR Interface
- Flex Radios
- Very clean desk
- Start of the next evolution of serious remote contesting
Other Remote Contesting Options

- Remote login to a PC on site for everything, including logging
  - Not No Compromise, but the CW is 100% solid
  - A reasonable option for multi-ops

- Software only interface, no real radio interface to use
  - Not No Compromise, but could be made to work with external knob and button interfaces
  - Expect to see some impressive software in this category in the future

- Detachable head radios - TS480HX etc.
  - Typically not “contest grade”

- Flex Radios
  - The future of remote?
  - No external boxes required
  - Integrated waterfalls are cool
  - Choice of “Big Knob” or software only user interface
  - Not proven yet, still being tested
Why is CW so tricky to get right?

- Timing and latency is critical and any instability is noticeable on the air - we have all heard it!
- Computer keying via the RRC’s is better than paddle sending thanks to the special way Remote Rig handles CW
- Sending CW from the remote side solves this issue
  - Logging into the remote PC via VNC, TeamViewer etc.
  - Unfortunately this is not “No Compromise” remote contesting right now
- Luckily SSB is easy on all systems
  - Use the DVK built into the rig if possible
  - No special hardware required
- This presentation does not address digital contesting
Operating

- Latency and jitter will increase your error rate
- Poor CW or audio will reduce callers, reducing your score
- Grayline map very important if you are far away
  - Montana to Maine is a mindset change, for example
- Strategy research ahead of time is always a good idea, but extra important if you are unfamiliar with conditions where you will be operating from
USA Remote Wins (as best I can tell)

- **N5DX**
  - 2016 WPX CW - USA
  - 2017 IARU Mixed - USA
  - 2018 CQ 160 CW - USA
- **W2RE**
  - 2017 ARRL DX SSB - USA
  - 2017 WPX SSB M/S - USA
  - 2018 WPX SSB - SO(A) USA
  - 2018 CQWW SSB - USA
  - 2019 ARRL DX SSB - Claimed USA
- **KL9A**
  - 2017 Stew Perry 160 - USA
  - 2018 ARRL DX CW - W/VE
  - 2018 WPX CW - USA
- **N4YDU**
  - 2017 WPX CW - USA
  - 2017 WAE CW - USA
  - 2018 IOTA - SO(A) World
  - 2018 Stew Perry - USA
  - 2019 RDXC - Claimed USA

16 remote wins in 3 years!
Thanks!

- The future of remote contesting is bright - exciting stuff is ahead!
- HOA restricted contesters are no longer stuck not being competitive in the game they love
- The investment is not much more than building an “on site” station
- “Guest op” stations available for rent are popping up in desirable locations - pick your service!
- Pictures courtesy of W2RE, N6MJ, N4YDU, N5DX, K7ZS