Contesting Tips and Best Practices

Collected Wisdom and Lessons Learned
K2YWE (K3AU)
What’s this about?

- **Objective**
  - Improved Scores

- **How?**
  - Get ‘Psyched’
  - Prepare
  - Adopt Best Practices
Agenda

- Elements of Success
- Preparation
- Strategy
- Q’s and Rate
- Operating Tips and 'Best Practices'
- Station Considerations
- Software
- After Action
- Conclusion
- A Word about SO2R
- Appendix A - Best Practices Collection
- Appendix B – Selected Contest Loggers
Elements of Success

Same principles apply as in most successful endeavors

- The Right Frame of Mind
- Preparation
- Attention to Detail
- Operating Best Practices
- Practice
- Learning and Improvement
- Perseverance
The Right Frame of Mind

_Get in the zone_

- **Don’t forget it _is_ a competition**
  You’ll be in a fraternity of ‘Friendly Competitors’

- **You will _not_ be alone**
  “Contesting skill includes the ability to tolerate high levels of QRM, and if you can’t do that, you might as well hang it up” ... K3ZO

- **Think Big**
  If you think and act like you’re a big dog, you will convince much of the pack that you are. (Of course you may get nipped once in a while)
Preparation

'Now the general who wins a battle makes many calculations in his temple ere the battle is fought.' . . . Sun Tzu

- Have a strategy
  - **Think** the contest **through** beforehand
  - What do you expect?
  - What if . . ?

- Adapt to changes during the contest
  - Execute your ‘what if’ plans

‘The general who loses a battle makes but few calculations beforehand.’
Preparation

*Get your act together before the performance*

- **Check your set-up well in advance**
  - Hardware *and* software
  - Provide enough time for fixes
    (I use my contest software every day)
  - Know the file name or date to re-start

- **Make sure you audio is good contest quality**
  - Monitor and *adjust* over-the-air with another station

- **Check propagation**
  - Listen ahead of the contest to get a feel for conditions
  - Are they in line with your expectations?
Practice

It may not make you perfect, but it will make you better!

- Be thoroughly familiar with your logging software
  - A contest is not the time for a first trial
  - Gain familiarity in non-contest use
  - Exploit helpful features
  - Try different modes
  - Modify settings to suit your style

- Be comfortable with Run techniques
  - Practice with a simulator (Morse Runner)
  - Operate 'run style' on the air (5NN QTH BK . . . TU)
    - Pick days with good conditions on your best band

- Assess your Operating Practices
  - Bounce your operation against the Best Practices in Appendix A

Contest Hound using Morse Runner
Strategy

Having a game plan pays off during the contest

- Consider Propagation predictions
  - Temper them with your observations

- Keep geo-time of day in mind
  - Not everyone is dedicated, some eat and sleep!

- Bands and Run times
  - Make a plan
  - Set ground rules for changes

- A Generic Band Strategy
  - Work bands that may close first. Move with propagation
  - Chase Mults when one band slows, but other hasn't yet opened
  - Try more running when bands are good
  - Keep an eye out for early and low-probability openings
On/Off Times

*Make the best use of your time*

- **Choose Off times at lowest expected Q rates**
  - Consider propagation and rate histories
  - Don’t forget minimum OFF time rules

- **Ensure using your full time allotment**

- **Allow possibility you may want a late slot**
  - Don’t get caught short of time at the end
  - Consider leaving an insurance slot

- **Sync with your personal needs (of course)**
Rate Targets

Setting Rate targets helps you achieve QSO goals

- Set an average rate you want to achieve
  - (Total Q’s) / (Operating Hrs)
  - Keep it in mind

- Adjust target rates over the contest period
  - Track your rate

- Consider a change if you drop below target or rate keeps going down

- Change Freq, Band, Mode
- Swap Running and S&P
- Chase some Mults
- Change your Shirt
- **Change Something!**
About the Score

Q’s and Mult’s

- Total QSO’s give Multipliers their worth
- There will be more Q’s than Mults
- Q’s drive the score

That means **Rate is King!**

Rate Drivers

- **Being Heard** and **Hearing** others
  - At fixed power level, this mainly means better Antennas
- **Operating Efficiency** – wasting less time
  - Operating **Best Practices**
  - Shack Arrangement
- **Available QSO’s . . .**
Sources of QSO’s

Running deepens the pool

- **Runners - Stations calling CQ**
  - You can generate good S&P rates with them
  - They are **Limited** in number

- **Callers - Non-Runners (S&P)**
  - QSO’s you will never make unless you call CQ
  - Some will be multipliers
  - Potential for good sustained rates

**Run as much as you can consistent with rate**
Better conditions favor more run time for little pistols
Strive for efficiency

Higher rates require spending less time per QSO

- Look at rate as **time per QSO**
  - **Time in QSO** + **Time Between QSO’s**
  - Minimize **Both**
  - Most of the **Best Practices** are about this

- **In QSO**
  - Eliminate **wasted words**
    - “Please copy my …”    “Thank you for …”
  - Avoid repetition unless conditions warrant
    - “Maryland Mike Delta”    “Dan Delta Alpha November”
  - Fills - Give only **what’s asked for**
    - “QTH?”    . . .    “TX” not “123B K5ABC JOE 81 TX”
  - Get all fills **before you pass your info**
Strive for efficiency - S&P

Higher rates require spending less time per QSOs

- Between S&P QSO’s
  - Give your call once unless otherwise warranted
    - No more than twice
    - Remember you’re a “Big Dog”
  - Give your whole call
    - Partial calls often lead to an extra transmission
  - Use K3ZO’s ‘Rule of Twice’*
    - If you can't get him after calling Twice, move on
    - If he doesn't ID after transmitting Twice, move on
  - Use the Bandmap
    - Save calls in the Bandmap, even if you are Unassisted

*Modify “twice” as is sensible, but stick to it
Strive for efficiency - Running

Higher rates require spending less time per QSOs

- In QSO’s when Running
  - Eliminate *wasted words* and avoid unnecessary *repetition*
  - Fills - Ask only for what you *need*
    - Often best to ask for one piece at a time
  - Don’t break your run to pull someone through
    - Use K3ZO’s ‘Rule of *Twice*’*
      Move on if you *can’t pull him through* in two tries*
  - *Speed up* if callers are waiting
    - They probably know your exchange
    - You’ll lose impatient Ops
    - *Slow back down* again appropriately

*Modify “twice” as is sensible, but *stick to it*
Strive for efficiency - Running

Higher rates require spending less time per QSOs

- Between QSOs when Running
  - Use only a quick ‘thanks’ (or TU) if stations are waiting
    - They know your call. Don’t waste time on it
    - I use a ‘progression’ as the crowd thins
      “Thanks” (with periodic call appended)
      “K3AU“
      “K3AU Contest “
      [CQ Message]
  - Use a situational CQ message
    - The busier it is, the shorter the message
    - Occasionally expand your CQ to 2x2 for the RBN
    - Arrange keyer macros accordingly

More on running in Best Practices later
Overall Operating Tips

**Important overall practices**

- **Maintain a friendly sense of urgency in your QSOs**
  - Chattiness will slow your rate and lose you contacts

- **Every point counts!**
  - There’s **no** such thing as 'not worthwhile'
  - Call for 'anybody' when it’s really slow

- **Verify the call of the station you're working**
  - Beware of **busted spots**
  - Log what you hear

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You mean that’s a busted call?
Some Phone Tips

Apply these basic phone practices

- **Use conventional or unmistakable phonetics**
  - 'Duck Soup' are poor phonetics for 'D S'
  - Use IPA or 'Common' phonetics (countries, cities . ..)

- **Be mindful of SSB signal bandwidths**
  - Stay away from strong runners not to get covered by an unheard pileup

- **Listen to what’s on your frequency when calling split**
  - If you can hear it, you can better time your call or defer until later
Some CW Tips

Apply these basic CW practices

● **Work at being heard**
  ● Try *moving frequency* a bit if no success calling
  ● Sometimes bandwidths are set narrow
  ● Spots put many stations on the *same frequency*
  ● **Distinguish** yourself through Speed or Weight
  ● **Moderate** your **CQ speed** by conditions & results

● **Don’t let code speed keep you from CW contests**
  ● Start with the slower stations *high in the band*
  ● Don't worry if you need to hear the call or exchange *several times*
  ● Call **CQ higher in the band** at a speed comfortable for you
  ● When you’re ready 😊
Best Practices - Overall

Make the most of your available time

- Don’t waste time repeatedly calling DX that has moderate signals when the band is otherwise quiet from their area
  - They are probably ‘opening the band’ with lots of ERP

- S&P rates can be very high early in the contest
  - Everyone is ‘fresh meat’ for you
  - Quickly hop from station to station with little fear of Dupes
  - It’s often safe to call first and then fill-in the call (some risk)

- Consider using S&P to find a spot to Run
  - Maintain a high rate while searching for a clear spot
  - The alternative is to establish a frequency before the contest

- Be sure to call CQ late in the contest
  - You will be fresh meat to some that have been CQing all along

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Best Practices - Running

Make the most of your available time

- Call CQ when the band is active
  - If CONDX are good for your station

- Call CQ when bands are dead or worked out
  - Big guns and other will be scavenging for Q’s

- Use the widest IF bandwidth you can stand
  - Less chance to miss off-freq callers, especially on CW

- Always work Dupes (set software to allow it)
  - You might not be in his log and it’s usually quickest
Best Practices - Running

Make the most of your available time

- Start sending as soon as the call is in your head
  - Finish typing into the log while it’s being sent (ahead of the buffer)
  - Some programs can do this automatically after $n$ characters

- Send out a full exchange with a partial call
  - Most Ops will correct you, many without a missing a beat
  - Fix the entry during his transmission

- Send the corrected call as part of your ‘bye’ message
  - Enable call sign correction in your software

- Move Multipliers to other bands if you have the time
  - Pick or set up frequencies in advance for quick hops
Best Practices - Running

Make the most of your available time

- If another station calls CQ on your frequency, try ‘QRL’ or ‘Frequency in use, please QSY’

- Don't engage in extended frequency fights
  - If QRL/QSY fails, it almost always pays to move
  - Sometimes you can move up or down a bit to lessen the QRM and still hang on to 'your' frequency

- NEVER NEVER NEVER acknowledge a 'jammer'
  - NEVER. Just keep your pace and don't change your tone of voice on phone or even synchronize your calls to his QRM.
  - Often throwing in a few fake Q’s will discourage the jammer

The Complete Best Practices Collection appears in Appendix A
Station Improvements

Put method behind your madness

- Assess Station Strengths and Weaknesses
  - Take band by band inventory based on performance history

- Attack Weaknesses with biggest payoffs first
  - Incrementally fill in the holes
  - Don’t forget to pick 'low hanging fruit'
  - Every improvement counts – they all add up
  - Expect Antennas to rank high

- Improved Antennas
  - Better sustain runs and snag S&P QSO’s with less calls
  - Hear and work more 'second tier' stations

- Set up for Efficiency . . . Huh?
Station Improvements

*Improvements aimed at higher rates*

- **Footswitch**
  - SSB - Frees hands for keyboard use
  - CW - Quick T/R transition without listening to QSK noise

- **Boom or Headset Mic**
  - Less fatigue, *freedom* to move, respond to local 'QRM'

- **Antenna switches and relays**
  - *Quicker* band or direction changes

- **Rearrange Equipment**
  - Easier *more efficient*, operation
Antenna Improvements

Be innovative within your constraints

- What **assets** exist to hang antennas on?
- Use all the property lines to full advantage
- Add/change antenna to help your **weakest band**
- Try using **monobandners**
- Consider fixed antenna with gain to high QSO area
- Enable a **new band**, like 160m
  - New Mults and more Q’s during slow times
- Add better SNR Rx Ant for low bands
My Antenna Farmette

Three wire monobanders and a 12’ tribander in 1/5th acre

C3SS tri-bander at 45’ on an AB-577 'rocket launcher'

40m Delta also serves for 160-80m Rx and Aux Ant for 20-15-10m

Force 12 C3SS (12’ boom 24ft max element)

80m Droopy-End Dipole

160m 'U'

Started with multi-band horizontal loop
Made incremental changes to address deficient areas
Software (S/W)

*Use a dedicated contest logger, properly configured*

- **Engage Radio and Keying interfaces**
  - Really a competitive ‘must do’

- **Recommended Options** (min)
  - Work Dupes
  - Correct all call signs
  - Check Partial Window(s)
  - Rate (Info) Window
  - Bandmap & Spot List Windows
  - Populate Bandmap on move
  - Available Q’s & Mults (N1MM) Window
  - Score by Band

- **Spotting Network?** - It’s a strategic decision
  - Can be a valuable asset, especially in S&P and on CW (RBN)
  - Does not alleviate you from **confirming** all entries
  - Be careful **not** to get caught up in **chasing Mults**

- **Spectrum & Waterfall displays**
  - Its own full topic! – **sorry, not in this session.**
S/W Features I find most useful

Some software features that pay off

- **Rate (Info) Window**
  - Rates & Targets
  - Band and S&P/Run changes

- **Bandmap**
  - Dupe check & 'check later’ *even if Unassisted*
  - List views
    - Jump to spot (if interfaced)
    - Hotkeys without mouse

- **Super Check Partial (SCP) or Check n and n+1**
  - Call sign possibilities
  - n+1 includes transposed and single char error

- **Available Mults & Q’s (N1MM)**
  - See band activity/‘target density’
After Action (post mortem)

Analyze your performance after the contest is over

- **Note things you wish you had done differently**
  - Run/S&P ratio?
  - Handling Mults – chasing, moving
  - Station changes you wish you’d made

- **Compare notes with local contesters**
  - Miss any openings?
  - Band scores and band changes

- **Perhaps record the contest***
  - Later check against LCR
  - **Do Not** use recording to “fix” your log

* CQWW top 3 finishers must do this
Summary

Use these practices to improve your scores

- Prepare and pay attention to detail
  - Remember Sun Tzu

- Formulate strategies
  - Pick and plan your contests. Use the plan for guidance

- Adopt proven practices
  - Try the Best Practices. Keep what works for you

- Run, big dog, run
  - Try to Run if at all possible

- Make incremental improvements
  - Small changes can be effective. Make a list and work it down

and remember – Rate is King!
A Word About SO2R  [single op 2 radio]

Everyone has their own idea of an efficient SO2R layout . . .

N6MJ two PCs at ZF2MJ (W-T)

Radio A/B switch at DF0WA

An earlier two radio setup (no PC)

N6TR one computer no box (TRlog)

jump to conclusion
A Word About SO2R

Save SO2R until other improvements are well in hand

- **Potential** to add significantly to your score
- **But,** It’s easy for SO2R to be a distraction
- **KISS** (Keep It Simple Stupid) is key
  - Start with a simple to use setup
    - I use two networked computers and keyboards
- **Start using SO2R only** when things are slow
  - CQ on A - S&P on B
  - Alternate (ping-pong) CQs
  - Modify your setup and operation with more experience and skill
- **Try** **SO2V** [Single Op 2 VFO] to get your feet wet
  - Same caveats apply

*I’m not a power SO2R user*
What successful competitors say works for them

note: Order in the table was arranged for fit and is not necessarily logical
<table>
<thead>
<tr>
<th>General Operating</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assume a big dog attitude</td>
<td>• If you act like a big dog, most will believe you. If they bite back painfully, you can find other turf.</td>
</tr>
<tr>
<td>• Maintain an “friendly sense of urgency” in your QSOs</td>
<td>• Chattiness will slow your rate and lose you contacts</td>
</tr>
<tr>
<td>• Always work Dupes</td>
<td>• You may <em>not</em> be in <em>their</em> log</td>
</tr>
<tr>
<td>• Set your software accordingly</td>
<td>• It usually takes more time to rebuff than work</td>
</tr>
<tr>
<td>• Enable and use the Bandmap feature of your logging software even if you are not Assisted.</td>
<td>• If you need to check back later, the Bandmap will have the call sign and frequency noted for you</td>
</tr>
<tr>
<td>• The Bandmap allows you to enter stations yourself on the fly</td>
<td>• You’ll waste less S&amp;P time on waiting for station ID or on calling Dupes</td>
</tr>
</tbody>
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### General Operating - continued

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<td>In general, use K3ZO's 'Rule of TWICE’</td>
<td>Your time can be better spent increasing your rate</td>
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<tr>
<td>Modify ‘TWICE’ to suit your station capabilities and contest situation:</td>
<td>A multiplier can quickly become worth less than the QSOs lost trying</td>
</tr>
<tr>
<td>If you can't get a station after calling him TWICE, move on</td>
<td>You can put his frequency into the Bandmap to check back later</td>
</tr>
<tr>
<td>If the station doesn't ID after transmitting TWICE, move on</td>
<td>Often receiver bandwidths in a crowded band are set very narrow</td>
</tr>
<tr>
<td>Try moving frequency a bit if you don’t seem to be heard</td>
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<tr>
<td><strong>General Operating - continued</strong></td>
<td>Many stations running high power will be heard when propagation is poor, but will not hear you despite elaborate antennas</td>
</tr>
<tr>
<td>• Do not waste time repeatedly calling DX stations that have moderate signals when the band is otherwise quiet from their part of the world</td>
<td>• Remember that 1.5kW vs. 100W is roughly the difference between S-7 and S-3. These are the guys that are S9 or more under better conditions.</td>
</tr>
<tr>
<td>• This is likely to happen when big guns are just ‘opening the band’ or ‘keeping it open’</td>
<td></td>
</tr>
<tr>
<td>• Try another time</td>
<td></td>
</tr>
<tr>
<td>• Send only the missing or wrong part when asked for a correction (FILL)</td>
<td>• Time spent sending known information is wasted.</td>
</tr>
<tr>
<td>• The response to K3? would be ‘ABC’ (a few times if needed) not all of ‘K3ABC’ since K3 wasn’t in question</td>
<td>• You may squander a clear interval or QSB peak on resending known info.</td>
</tr>
<tr>
<td>• Similarly in SS if queried for your CK, don’t send the entire exchange</td>
<td>The time spent sending known info may be a missed opportunity for the Fill to be heard.</td>
</tr>
</tbody>
</table>
## Best Practices

### Running

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<tr>
<td>Call CQ when the band is active if you are able to find and hold a frequency</td>
<td>You will usually beat your S&amp;P rate. An exception is the start of the contest when everyone is ‘fresh meat’ for you and your S&amp;P rate can be very high.</td>
</tr>
<tr>
<td>Call CQ when the bands are dead for the day or worked out near the end of the contest</td>
<td>That’s when the stations that have been CQing will S&amp;P for ‘fresh meat’.</td>
</tr>
<tr>
<td>Consider <em>not</em> asking if the frequency is busy before CQing. You’ll find out soon enough if it is. Do ask if you’re uncomfortable not asking. “?” is a fast reasonable compromise.</td>
<td>QRL? is an announcement to others that it’s clear at your end. Someone else may jump in and CQ. Still low risk and courteous in the contest environment.</td>
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<tr>
<td>Use the widest receiver bandwidth you can stand</td>
<td>Less chance to miss off-frequency callers, especially on CW</td>
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<tr>
<td>If another station calls CQ on your freq and fails to respond to your QRL-QSY message, carry on for a while to see if he leaves. But, don’t do this for very long</td>
<td>Even though he is not hearing you, if you are being heard by others he may not get many responses and might give up quickly. No one likes to waste time</td>
</tr>
<tr>
<td>Don’t engage in long frequency fights. Try ‘QRL’ or ‘frequency in Use, QSY.’ If that fails, it almost always pays to move.</td>
<td>It costs you QSO time</td>
</tr>
<tr>
<td>Sometimes you can move up or down a bit in order to lessen the QRM and still hang on to “your” frequency</td>
<td>You may be in QRM at the other end</td>
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<td>Don’t break a run to pull one station through</td>
<td>Your rate will suffer if you take long</td>
</tr>
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<td>Your rate will go up with speed</td>
<td></td>
</tr>
<tr>
<td>If you can't drag a station's call through after trying TWICE, ignore him and start calling CQ again</td>
<td>You will drive away impatient waiting stations</td>
</tr>
<tr>
<td>Running has to do with how fast you can accurately get Q’s into the log. You don’t want your rate to slow or waiting callers to lose interest</td>
<td></td>
</tr>
<tr>
<td>This is part of K3ZO's /Rule of TWICE./ Modify TWICE to suit your station capabilities and contest circumstances</td>
<td>Equally important, on a crowded band you must transmit often to keep &quot;your&quot; frequency clear</td>
</tr>
<tr>
<td>Speed up if your run is being sustained. This is especially true in contests like SS where the exchange includes your call sign.</td>
<td>Waiting callers likely have your info</td>
</tr>
<tr>
<td>More stations will be inclined to wait</td>
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<tr>
<td>Use only a quick “Thanks” or “TU” without your call sign or QRZ if you heard multiple callers.</td>
<td>Most waiting stations will know your call. Don’t waste time on it.</td>
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<tr>
<td>Throw in your call every few Q’s for new listeners.</td>
<td>Minimizing the time stations have to wait for you will help to keep the impatient ones hanging around and will increase your QSO rate.</td>
</tr>
<tr>
<td>Keep it up until there are no more responses, then build back to your “full” QRZ message and CQ.</td>
<td>Less experienced contesters may not realize you are waiting for them. “TEST” will alert them you are ready for another station to call.</td>
</tr>
<tr>
<td>If you get no responses after just ‘Thanks’, try only your call and ‘TEST’ before resuming a full CQ.</td>
<td>Stations want assurance that you have them correctly. This will keep them from asking QSL? It might also save your from a mistake.</td>
</tr>
<tr>
<td>Send any call you have corrected as part of your goodbye message.</td>
<td></td>
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<tr>
<td>Enable call sign correction in your software on CW.</td>
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<tr>
<td>When the call sign of a responder is questionable, send a complete exchange using the questionable call Correct it during his exchange.</td>
<td>Nearly all contest stations will correct you on their transmission, good Ops without missing a beat.</td>
</tr>
<tr>
<td>You can use SCP to help guess incomplete calls on the first round.</td>
<td>It saves an extra exchange devoted only to getting the callsign right.</td>
</tr>
<tr>
<td><strong>Make sure</strong> you have it right before you let him go.</td>
<td>You can revert to “normal” fill-in procedures if this practice fails.</td>
</tr>
<tr>
<td>Maintain an “friendly sense of urgency” in your QSOs.</td>
<td>Chattiness will slow your rate and lose you contacts.</td>
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<tr>
<td>Move Multipliers if you have the time (a slow run).</td>
<td>It’s a quick way to gain band-Mults.</td>
</tr>
<tr>
<td>Pick frequencies in advance. Give up if you don’t connect in a short while.</td>
<td>Many Ops will go with you.</td>
</tr>
<tr>
<td>You probably won’t make the Q if you don’t connect quickly.</td>
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<td>● If your fingers are like mine, they slightly lag my brain and I am still typing when the other station stops sending.</td>
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<td>● This practice reduces the lag between when the other station finishes calling and when you respond, increasing your rate</td>
</tr>
<tr>
<td>Some software can be set to do this after (n) callsign keystrokes (TR4W and N1MM, for example)</td>
<td></td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>● NEVER NEVER NEVER acknowledge a ‘jammer.’ NEVER!</td>
<td>● With no response to his jamming, he can't be sure he is even bothering you, and it isn't ‘fun’ for him if he doesn't get a reaction</td>
</tr>
<tr>
<td>● Just keep your pace, and don't change your tone of voice on phone or even synchronize your calls to his QRM</td>
<td></td>
</tr>
</tbody>
</table>
Selected Contest Loggers  Appx B
Popular Contest Loggers

Similar capabilities with varying implementations

- All run under Windows OS
- Need varying amounts of learning to fully utilize
  - N1MM logger plus (Free)
    - Most popular Win logger. Continuous cooperative development
  - Win-Test ($)
    - Many features and options. Easy transition for CT users
  - TR4W (Free)
    - Very flexible. Evolution of popular TR DOS program
  - Writelog for Windows ($)  
    - Full-featured contest program with SDR interface
  - N3FJP ($)  
    - Good and improving, but still lacks some contest features
Popular Contest Loggers

Facilitate operating, logging, and exploiting opportunities

- Contesting-specific with advanced features
  - Band Maps with S&P “point & shoot”
  - Rate, Scoring, and other contest visibility tools
  - Enter Sends Message (ESM) mode adaptive behavior
  - SO2R Support
  - Multi Transmitter/Operator Support
  - Spots through Telnet connection
  - Radio, CW & Voice Keying, and Rotator Interfaces
  - Sound card Voice Keyer
  - Digital modes using the sound card (with aux programs)
  - Sound card receive recording (some)
  - Support for External Voice Keyer control (some)
N1MM+ by N1MM et. al. (N1MM, N2AMG, K3CT, N2IC, NA3M, AB5K, KU7T)

Most popular (by far) Windows contest logger

- Cooperative project with multiple participants
  - Rewritten in 2014 as N1MM logger plus (N1MM+) using SQLite
  - Continuous updates and improvements
  - Large user community
  - Over 175 supported contests + over 225 user-defined

- Moderate system needs. Will utilize multi-core

- Extensive features and options
  - Highly customizable
  - Configurable windows
  - Integrated spectrum display
  - Hooks for latest digital modes

- Sound card voice keyer

- RS-232, Parallel, USB support

- Free
Win-Test by F5MZN

Mature written-for-Windows high performance logger

- Efficient with minimal processing and memory needs
  - Strong CT ($K1EA$) keystroke emulation
  - Over 100 supported contests

- Extensive features and options
  - Highly customizable
  - Configurable windows

- Sound card voice keyer
  - Built-in editor

- RS-232, Parallel, USB support

- ~$70 (50€)
  - Proceeds support Radio Amateur Club de Kourou contest activities, including FY5KE (French Guiana)
TR4W by UA4WLI (and UR7QM)

Win version of mature world-class adaptive contest logger

- Small and fast 100% Windows API, 3GL* - Open Source
  - Only 100,000 lines of code in 400KB
  - Over 155 supported contests

- Substantially same features as DOS TRlog by N6TR
  - Based on TRlog code provided by N6TR
  - (First with ESM and descrambler)
  - Continuously adding more features

- Sound card voice keyer
  - Flexible functionality

- RS-232, LPT, USB support
  - USB I/O includes log backup

- Free and Open Source

* Also Runs under Linux/WINE
Writelog for windows by Contesting Software, LLC

Mature written-for-Windows high performance logger

- Recently re-Written
  - Latest version requires Win7
- Configurable windows
- 110 supported contests
  - Also GP logging
- Extensive sound card support
  - Voice Keyer
  - Contest Recorder
  - SDR interface
- RS-232, Parallel, USB support
- $30 incl 1 yr updates ($18 for previous version Win XP OK)
N3FJP by N3FJP

Basic contest log functionality

- Daily logger with contest modules - C#.NET
  - Improved, but still lacks features and flexibility of top loggers
- Single resizable Main Window + floating Bandmap
- 100+ supported contests
  - 34 major + State QP’s and other
- Sound card voice
- RS-232 and USB support
- No SO2R support

- $49 all programs (includes daily log)
  or ala carte
  - $25 Daily Contact Log – Free upgrades
  - $9 each contest separately – Free upgrades
Logs most used in CQWW 2015

N1MM/N1MM+ is overwhelmingly the most popular

Chart generated by NY4I from CQWW Cabrillo logs
Internet Links

Here are a few of the many available resources

- **Contest Organizations, Calendars, Info, & Sponsors**
  - WA7BNM Calendar [hornucopia.com/contestcal]
  - SM3CER Calendar [sk3bg.se/contest]
  - Contesting.com [contesting.com]
  - National Contest Journal (NAQP …) [ncjweb.com]
  - ARRL (Sweepstakes, Field Day, DX …) [arrl.org]
  - CQ Magazine (CQWW, WPX …) [cq-amateur-radio.com]

- **Popular Contest Logging Programs**
  - N1MM [n1mm.hamdocs.com]
  - Win-Test [win-test.com]
  - Writelog for Windows [writelog.com]
  - TR4W [tr4w.net]

Treated in Appendix B
Odds ‘n ends and notes