Contesting

Progression at HF or VHF: logistics and skills. Here we discuss some techniques and tools that the contest operator can use to increase effectiveness and efficiency, hopefully leading to better contest scores.

Contest success is not only attributable to your equipment and antennas but also to how well you use them. Particularly when handling lots of traffic, it really helps if tasks can be carried out quickly and with ease.

Anything that's physically awkward or that takes too long detracts from your contest score. It's necessary first to identify what can be improved and then to take steps to make things better.

As a generalisation, in almost every contester's shack there's plenty to improve. The suggestions below may help you to achieve better results.

Shack computer, keyboard and typing

Most, if not all, successful contest entrants log on to a computer. As station complexity and operator skills increase, there will probably be more than just a contest or logging program running. There may be several networked PCs or laptops in use. Multiple screens can help to unclutter software windows but make sure that all necessary information is within easy view.

Your keyboard should be right in front of you and at a suitable height with room to rest your wrists. Over a weekend, constant turning or leaning can be very uncomfortable. Most contesters prefer extended keyboards with a separate numeric keypad and large F (function) keys. To navigate the log, the 'Home', 'End', 'Up' and' Down' arrows should have dedicated keys; also, many CW and data operators like to have big 'Ins' (Insert) and '+' (Plus) keys on the numeric keypad to send the main message macros.

As QSO rates increase, you don't want typing to slow you down. Practice can really help here and preferably two hands should be used. Not only is the keyboard used for entering QSO data but also in contest software there are a plethora of keyboard shortcuts that should be committed to memory – again, regular practice helps.

Shortcuts can avoid using the mouse for most activities. For example, turning the rotator, bringing up specific information windows, editing the log, sending chat messages in a multi-op environment, changing CW speed, adding stations to the band map. Always avoid using the mouse and find (or create) shortcuts if possible.

Of course, the best scenario is to touch type but very few operators can do this. Even if you can't type a callsign by the end of a caller's transmission, a skilled operator will generally start saying or sending on CW the callsign and exchange while completing typing the call. Popular contest software allows you to start sending a CW callsign and exchange while you are still typing the callsign.

Hands-free operation

A headset with a built-in microphone and a separate footswitch is best. The footswitch acts as a push-to-talk (PTT) switch for SSB contesters and frees up the hands for typing or other activities. The footswitch needn't be expensive – reasonably priced footswitches are available from online music stores. The main criteria should be a non-slip base, an appropriately angled switch for your seating position, a positive feel and movement and non-latching switch so pressing your foot will always engage the PTT function.

PHOTO 1: **The YCCC SO2R controller is a popular unit built from a kit.**

Many people get good results with relatively cheap PC headsets. Look for advice online among user groups for your particular radio and see K8JHR's notes [1].

Digital voice keyers

Calling CQ for hours is tiring and can eventually lead to loss of voice. Also, it's wasted time that could be used to do something more productive such as listen on another band for multipliers while the CQ is sent.

Fortunately, all popular contesting software supports message recording and playback through the PC's soundcard. For example, you can record a CQ message and allocate it to F1. Then pressing F1 will enable the PTT and send it to the radio for transmission. You may wish to record a message with just your callsign (for calling other stations) or another with '*Thank you* [insert your callsign]*, QRZ*" which could be used to close off a QSO and initiate the next.

Some contest software includes digital voice keying (DVK) that synthesises individual phonetic letters of a callsign rather than playing back pre-recorded audio [2]. However, it is not good practice to mix voices by using someone else's voice on fixed messages and your own to do the rest. In multi-op scenarios, the 'Operator log-on' function in the software should permit each operator to record and select their own voice messages, avoiding the need to record new messages each time you take the hot seat.

Optimising message macros

Message macros are used in CW and data modes to automate sending contest exchanges. With FT* data modes, the macros are fixed. Free format data modes such as RTTY or PSK will be set to default values but you may wish to consider tuning them for your circumstances.

The CQ message should not be too long. You don't want Search and Pounce (S&P) stations having to wait too long before you finish, otherwise they may move on. With CW, I'd recommend one CQ and the callsign sent twice at most. In higher rate contests, the callsign need only be sent once (for example, 'CQ G4IRN TEST') with a gap of two to three seconds between CQs.

Personally, I prefer to end a CW CQ message with 'TEST' since anyone finding me on S&P will immediately know I'm calling CQ and not calling someone else. The same applies on SSB by completing the CQ with 'Contest'.

Remember that the CW and RTTY Reverse Beacon Network (RBN) monitors for 'CQ' and 'TEST' messages so using these will garner more RBN hits.

To save valuable contest time, some stations will increase the speed of the 'TEST' part of the message and the 5NN in the exchange. They may even use abbreviated numbers in the exchange – A for 1, E for 5, N for 9 are the

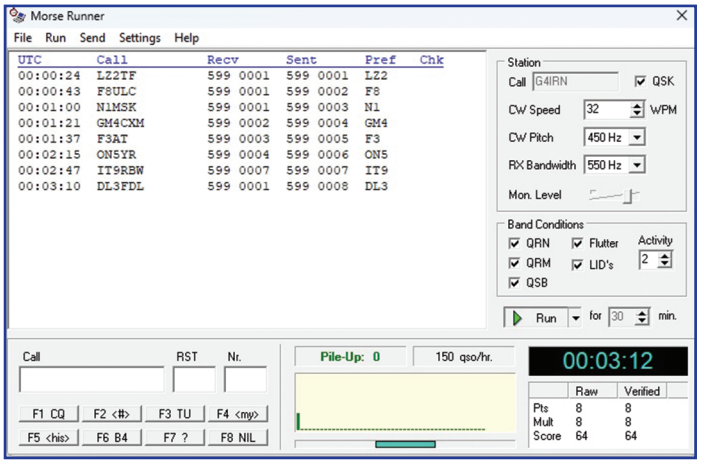

PHOTO 2: Morse Runner contest practice software with its interface, similar to N1MM+.

usual ones. For RST (signal report) and fixed exchanges, these abbreviations are common. However, I'm sceptical about their use for serial numbers since many stations will ask for a repeat.

As rates increase, when completing a QSO consider sending your callsign after every second or third QSO rather than after every QSO. Common contest software supports this but always make sure you send your callsign at least once every minute or as contest rules dictate.

For RTTY and PSK where data are easily corrupted, there is a school of thought that callsigns and exchanges should be sent at least three times so the recipient has a better chance of accurate copy. Where signals are strong, this may not always be necessary.

SO2R: Single Op, Two Radios in practice

We have previously discussed SO2R operation to increase your score **[3]**. With SO2R, you will normally be running (CQing) on one radio (Radio-1) while search-and-pouncing on another (Radio-2). An SO2R Controller is normally used to manage audio, PTT and frequency routing; the benefits of SO2R operation are well proven.

Sending DVK or macro messages for CQ, exchanges and closing QSOs is time when you can be freed up to be productive elsewhere. During contests, if you find yourself browsing the web, sending chat messages, watching TV or looking at a magazine, SO2R is something you should consider – you can use that spare time to gain points.

The minimum requirements for SO2R are a second receiver with separate antenna and some means to switch audio (an SO2R controller, for example) so you can listen to either or both radios simultaneously. You may also find it easier if your contest software has two logging lines, one for each radio. Also, in SO2R you will want to be able to transmit on Radio-1 while listening on Radio-2 so antenna separation and/or band-pass filters (BPFs) are essential.

At the high end, stations often have two transceivers and separate antennas. A popular compromise is to use a single tri-band (10,15,20) antenna with triplexer and BPFs to give three separate antenna connections on switches so either radio can select them.

Two radios and separate mono-band antennas are out of most people's reach but, with some careful planning, it is possible to have an effective SO2R setup on a budget. You don't necessarily need a second transceiver and transmit antenna; you can easily listen on another band with a reasonable receiver and a receive loop, vertical or long-wire antenna.

When you have identified stations to work on Radio-2, add them to the band-map and you can use Radio-1 to go and work them.

Ideally, Radio-2 will be a transceiver so you can work the multipliers as soon as you find them. However, switching between radios becomes more complex – you must consider audio and PTT 'focus' plus the CAT (frequency) connection to the logging software. In this situation you will need an SO2R controller (see **Photo 1** for an example).

Dedicated contest software will support SO2R operation and a controller. It provides two log entry lines, one for each radio and issues switching commands to the controller. While you are sending a CQ message on Radio-1, you can type a callsign from Radio-2 into the second logging line. A keyboard shortcut will switch focus between the two logging lines or you can use two keyboards, one per logging line.

As always, some exploration in the software and lots of practice will help.

Single Op 2BSIQ (Two Bands, Sequential Interleaved QSOs) in practice

This style of operation is considered the most productive, particularly for stations that have a strategy to run (call CQ) on two bands simultaneously. Best used in contests with fixed exchanges, it ensures every moment is used to focus on gaining a QSO on one band or another. While an exchange is going out on one band, QSO progression can be made on another (*RadCom*, March 2025 provides further insight).

This approach requires a robust SO2R station with good filtering. The rest is down to the operator's ability to juggle interleaved QSOs on two bands simultaneously. It's not for the faint-hearted.

Contest simulation and practice

There are more options to practise CW than SSB pile-ups. Both N1MM+ and DXLog have pile-up simulation modes that use Morse Runner as their basis. Tools such as RufzXP and Morse Runner offer global rankings to track your progress and provide some competitive fun.

Morse Runner [4]

Simulates CW contest conditions with realistic QRM, QRN and pile-ups. Great for practising callsign copying and exchange handling under pressure (**Photo 2**).

RufgzXP [5]

Runs stand-alone and focuses on high-speed CW callsign recognition. Ideal for building speed and accuracy in copying.

Of course, the best way to practise contesting is to do it. Dabble in the regular Affiliated Societies Contests on the HF and VHF bands or get together with friends and enter a Field Day contest. Not only will it be great practice but also a lot of fun.

References

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rsgb.services/public/radcom/p54_55_contesting_radcom_Mar25.pdf
[4] MorseRunner by VE3NEA:
dxatlas.com/MorseRunner
[5] RufzXP by DL4MM and IV3XYM:
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