

# FT4 NS GUIDELINES AND TIPS

## Guidelines & Tips

A low NIL rate is achieved by all operators agreeing to log the QSO when they have received the call of QSO partner, exchange (grid) of QSO partner, and a QSL of both their own call and their own exchange. An example sequence of QSOs is shown below. The "red font" **RR 73** explicit acknowledgment and **73** Second Acknowledgement [2] does not need to be transmitted or received.

QSOs are logged at the beginning of the phase marked "+". Each phase is 7.5 seconds long. The special version of WSJT implements the logging function as shown in the table below. With other software, manual logging using the "log\_QSO" button may be required.

| QSO phase | Runner N6AZ transmits              | S&Per transmits                    | N6AZ logs | W6AA logs | N1AC logs | K5AD logs |
|-----------|------------------------------------|------------------------------------|-----------|-----------|-----------|-----------|
| 1         | CQ TEST N6AZ DM23                  |                                    |           |           |           |           |
| 2         |                                    | N6AZ W6AA DM22                     |           |           |           |           |
| 3         | + W6AA N6AZ R DM23                 |                                    | W6AA      |           |           |           |
| 4         |                                    | + N6AZ W6AA RR73<br>N6AZ N1AC FM20 |           | N6AZ      |           |           |
| 5         | W6AA N6AZ 73<br>+ N1AC N6AZ R DM23 |                                    | N1AC      |           |           |           |
| 6         |                                    | + N6AZ N1AC RR73<br>N6AZ K5AD EM10 |           |           | N6AZ      |           |
| 7         | N1AC N6AZ 73<br>+ K5AD N6AZ R DM23 |                                    | K5AD      |           |           |           |
| 8         |                                    | + N6AC K5AD RR73                   |           |           |           | N6AZ      |
| 9         | CQ TEST N6AZ DM23                  |                                    |           |           |           |           |

Note that the runner **N6AZ** can log the QSO at the beginning of phase 3 because the S&Pers **W6AA** responding at phase 2 includes all three valid QSO requirements needed by the runner: (1) runner received S&Pers call, (2) runner received S&Pers grid, (3) runner received implicit QSL of runner's call and grid. The runner does not need to receive the **RR73** explicit QSL of runner's call and grid at phase 4 before logging the QSO so the S&Per does not need to send it. The runner does not need to send the **73** Second Acknowledgment at phase 5 and 7. Instead, the runner sends **R** to the second S&Per **N1AC** and logs the second QSO at the beginning of phase 5 and sends **R** to the third S&Per **K5AD** and logs the third QSO at the beginning of phase 7.

The first S&Per **W6AA** can log the QSO at the beginning of phase 4 after receiving (1) the runner's call, (2) runner's grid during phase 1 and (3) the **R** as an explicit QSL of the S&Pers call and grid from the runner during phase 3. The S&Per does not need to send the **RR73** at phase 4 since the runner has already logged the QSO at the beginning of phase 3. Similarly, the 2nd and 3rd S&Per don't need to send **RR73** but do log their QSOs with the runner at phases 6 and 8.

The runner can complete QSOs in 15 seconds (2 phases) provided there is at least one new caller after the runner sends R. The simultaneous decoding of all transmissions during a phase is the key to high QSO rates. This 240/hour or 4/min theoretical peak QSO rate can double by using SO2R. In practice, the QSO rate will be lower due to lack of available callers and repeat transmissions.

The S&Per can call a new CQer or runner who has just sent **R** instead of sending the **RR73** to the runner already worked and thus S&Pers can also complete QSOs in 2 phases, as shown in the tabelow below. The red text does not need to be transmitted or received. QSOs are logged before the transmissions marked +.

When the S&Per cannot find new runners to call, he calls CQ instead.

| QSO phase | 3 Runners Transmit<br>W6AA N1AC K5AD  | S&Per N6AZ<br>transmits                      | N6AZ<br>logs | W6AA<br>logs | N1AC<br>logs | K5AD<br>logs |
|-----------|---|--|--------------|--------------|--------------|--------------|
| 1         | CQ TEST W6AA DM22<br>CQ TEST N1AC FM20<br>CQ TEST K5AD EM10                         |  |              |              |              |              |
| 2         |   | W6AA N6AZ DM23                               |              |              |              |              |
| 3         | + N6AZ R W6AA DM22<br>CQ TEST N1AC FM20<br>CQ TEST K5AD EM10                        |  |              | N6AZ         |              |              |
| 4         |   | <b>W6AA N6AZ RR73</b><br>+ N1AC N6AZ DM23    | W6AA         |              |              |              |
| 5         | <b>N6AZ W6AA 73</b><br>CQ TEST W6AA DM22<br>+ N6AZ R N1AC FM20<br>CQ TEST K5AD EM10 |  |              |              | N6AZ         |              |
| 6         |   | <b>N1AC N6AZ RR73</b><br>+ K5AD N6AZ DM23    | N1AC         |              |              |              |
| 7         | CQ TEST W6AA DM22<br><b>N6AZ N1AC 73</b><br>CQ TEST N1AC FM20<br>+ N6AZ R K5AD EM10 |  |              |              |              | N6AZ         |
| 8         |   | <b>K5AD N6AZ RR73</b><br>+ CQ TEST N6AZ DM23 | K5AD         |              |              |              |
| 9         | CQ TEST W6AA DM22<br>CQ TEST N1AC FM20<br><b>N6AZ K6AD 73</b><br>CQ TEST K5AD EM10  |  |              |              |              |              |

[1] WSJT User Guide, section 7.4,

[https://wsjt.sourceforge.io/wsjt-doc/wsjt-main-2.6.0.html#CONTEST\\_MSGS](https://wsjt.sourceforge.io/wsjt-doc/wsjt-main-2.6.0.html#CONTEST_MSGS)

[2] Ed Muns W0YK, W0YK, "FT Second Acknowledgment", Digital Contesting, NCJ, Sept/Oct 2022.