Q65-60A QSO PROCEDURE AND TIPS FOR EME DXPEDITIONS

The new Q65 mode in WSJT-X offers a number of advantages over the older JT65 mode. Because all messages include both callsigns, there no longer can be any confusion regarding the station being sent a message, RRR or 73. And the MULTIDECODER averages callers across the bandpass and displays all stations decoded! In addition, the bandwidth is half that of JT65, so it is much easier for many stations to spread out and still be in the bandpass. And with the new "Q65 Pileup" option, up to 40 stations per day can be kept in program memory for later decoding with maximum sensitivity! However, with Q65, it is **ESSENTIAL** that your computer time is very accurate and your transmitter frequency is very stable, so please make sure of this!

If you are new to Q65, please download the most recent version of WSJT-X and setup your system according to the step-by-step checklist on my website:

http://www.bigskyspaces.com/w7gj/Q65SETUP.pdf

The DXpedition will always transmit in the FIRST SEQUENCE. My plan is to use 50.190, where I usually run my 6m EME schedules, unless there is a problem with that frequency, in which case another frequency such as 50.200 will be announced. Please see the ON4KST EME chat page and the MMM on VHF internet pages for last minute status updates. Q65 averages signals from the callers on each particular offset frequency, so I will lose the benefit of your previous calls if you move! Choose a clear frequency to call on and *stay there*!

Of course, for this to work best, all the callers need to SPREAD OUT so they don't QRM each other. With my Airspy R2 SDR receiver, I have a very nice flat bandpass, and can see callers from 100 to over 2700 Hz. Please spread out and try to leave 100 Hz between you and other callers, and remember to watch that your Doppler shift doesn't move your signal out of my bandpass! I probably will not have internet, so I cannot ask you to move - please coordinate this among yourselves. Fortunately, most modern home stations have the luxury of an internet connection so they can use a chat page to coordinate among themselves to spread out. On 6m EME, the ON4KST EME CHAT page is used:

http://www.on4kst.org/chat/login.php?band=5.

On EME, I now always use the standard Q65-60A digital contest contact procedure, which involves alternating down through the standard messages as we exchange grids. This procedure is now even more sensitive than the standard Q65-60A, so please make sure to use it when you call me so I have the best chance of copying you! **If I call CQ, it will not indicate that I am using anything other than standard Q65-60A mode, so you must be prepared to reply with the correct mode!** As a caller, you can use any of the following modes Q65-60A "Special Operating Activity" modes:

"NA VHF", "WW Digi", or "ARRL Digi"

Each of the above will work and is selected on the WSJT-X FILE/SETTINGS/ADVANCED screen. All three of the above also produce a Contact Log file, which you can ignore. If your WSJT-X version is newer than v2.6.1, you will also have the option of using the new "Q65 Pileup" mode (which does NOT produce a Contact Log file). Only I need to use that particular mode, although you can use it too if you wish. Please make sure you start out with my callsign in the DX CALL box and my grid in the DX GRID box, and then press the GENERATE STANDARD MSGS bar to properly populate the standard messages. And of course, click in the round circle to the left of TX#2 (TX#1 will be grayed out) so you can start out calling ME instead of CQ! I won't be replying to people calling CQ in the DXpedition bandpass!

Typically, on ionospheric propagation, the rule is that stations not call unless you hear the DX station. However, on 6m EME, propagation between linearly polarized stations is often non-reciprocal, so I may copy you even though you are not copying me. I will keep trying to reply to different callers until I decode someone who IS COPYING me right at that time. Please do NOT stop calling me or change your message back to a previous message when I am in QSO with someone else or I fade away – even if we are in the middle of our contact! Because both callsigns are sent with every sequence, I can pick up again with you at the same place we left off after I complete my other contact or signals fade up again for us.

And with the new "Q65 Pileup" mode, it is essential for me to receive at least one decode from a caller during each moonpass in order for me to achieve maximum sensitivity during our eventual contact. Therefore, please keep calling so you can be decoded and stored in my program memory! Also, after hours and hours of not hearing any callers, I may decide to shut down and get some sleep! It is always valuable to know that there are still stations out there trying to make a contact. So I always invite people who are QRV to call even if they are not copying me at that particular time. Often, I will stay operating longer than originally planned if I see stations still calling me, or see their calls accumulate in the AVERAGE column. **Of course, if you have worked me once, please do not call me again!**

I will be moving the antenna by hand to track the moon, so I will have to leave the ham shack from time to time, and may have to stop transmitting during some of these periods (especially when the moon is very high on my end and I don't want to risk having the lower elements burn the guy ropes or me). Please, do NOT stop calling if you see my signal stop! I can still see what was received when I get back to the operating position, or I may even be able to continue transmitting using AUTO SEQUENCE while I am outside aiming the antenna.

Contact speed is essential when things do actually line up for both of us, and this is especially important as the moon is rising and/or setting in different parts of the world and many stations are using ground gain or losing common moon window at the same time! I expect I will usually be the one waiting to receive the final RRR to complete the contact. Depending on the size of the pileup, after I receive your RRR, I may send 73, or I may immediately reply to another caller. **Please use RRR instead of RR73**, as it may take several sequences for me to be able to copy your final RRR. RR73 is only sent once and the contact is automatically logged whether the other station received it or not – **NEVER** use RR73 on EME!!!

If you see my message change, that is an indication to you that I received your RRR. If I see no other callers, I will send you standard message #5 (calls and 73) or switch to message #6 (CQ with my gridsquare), which is very easily decoded by everyone. Usually, however, I will only call CQ when I am not decoding anybody.

If it happens to be me who is sending you message #4 (calls and RRR), I will continue to keep transmitting message #4 until I receive message #5 (calls and 73) from you. When I receive 73 from you, that will be my sign that it is finally OK for me to stop sending you RRR and time for me safely to move on to the next caller. **NOTE:** You may have to uncheck AUTO SEQUENCE and/or press ENABLE TX to keep sending 73 to me! Make sure on your FILE/SETTINGS/BEHAVIOR screen that you have NOT checked the option to DISABLE TX AFTER SENDING 73, since you may have to send 73 a number of times for me to receive it!

As the DX station, I expect to be doing primarily one of the following:

1. Calling CQ with my callsign and grid (Q65 standard message #6). This will be sent only if I have not identified a caller. CQ is most easily decoded by everyone listening, because everyone knows my callsign and gridsquare in advance.

2. Replying to someone by sending both calls, a confirmation of grid reception and my grid (Q65 standard message #3). This is very easily copied by the person involved in the contact, although other listeners may not decode it as easily.

3. Sending final RRR (Q65 standard message #4) or 73 (Q65 standard message #5) to the person with whom I am completing a contact.

In the examples shown below, notice that I always start out trying to answer callers I have decoded. I try to answer people and move on if they don't seem to copy me. Valuable moon window time is not wasted replying to people who cannot copy me at that time. REMEMBER- callers may not actually be DECODING ME at that moment, but if they are SEEING my Q65 trace on the WIDE GRAPH waterfall screen or see my Q65 ORANGE SPIKE below the waterfall, they probably will copy me OK as soon as I reply to them. This is a business requiring careful attention to what you see on the waterfall, as well as deciphering the information shown in the decodes. Be sure to manually clear your average if you see that I have worked someone, because I may be calling you next! You have to pay attention and be ready!

If I have to choose between two stations who currently may be copying me, I try to choose the station with the least amount of moon time left or will try to give priority to callers who have a record of 6m EME DXpeditions or have made a contribution to this DXpedition. Obviously, when operating from the Indian Ocean, priority will be given to NA stations during their moonrise or moonset.

The following is an example of how this contact procedure works with this Special Activity Mode in an EME pileup, using TX7MB in grid CI00 as the DXpedition station:

DX STATION (FIRST SEQUENCE - EVEN MINUTES)	HOME STATION(S) (SECOND SEQUENCE - ODD MINUTES)
CQ TX7MB CI00	TX7MB N0TB EN34
	TX7MB OH2BC KP30
	TX7MB K2ZD FN21
	TX7MB ON4GG JO20
OH2BC TX7MB R CI00	TX7MB OH2BC RRR
	TX7MB K2ZD FN21
	TX7MB ON4GG JO20
	TX7MB G8BCG IO70
K2ZD TX7MB R CI00	TX7MB N0TB EN34
	TX7MB OH2BC RRR
	TX7MB K2ZD FN21
	TX7MB ON4GG JO20
N0TB TX7MB R CI00	TX7MB K2ZD FN21
	TX7MB N0TB RRR
	TX7MB G8BCG IO70
	TX7MB ON4GG JO20
ON4GG TX7MB R CI00	TX7MB G8BCG IO70
	TX7MB K2ZD FN21
	TX7MB ON4GG RRR
K2ZD TX7MB R CI00	TX7MB G8BCG IO70
	TX7MB K2ZD RRR
G8BCG TX7MB R CI00	TX7MB G8BCG RRR
G8BCG TX7MB 73	TX7MB G8BCG RRR
CQ TX7MB CI00	TX7MB G8BCG 73
CQ TX7MB CI00	

Contacts are complete when one station receives final RRR. If you have questions about the procedure or on what frequency and offset to call, please feel free to ask other people on the above chat page. Please also see this page for information on how to safely offset your Q65-60A frequency a given amount with WSJT-X, even if you don't have CAT control:

http://www.bigskyspaces.com/w7gj/Q65%20Offset%20Guide.pdf

EME operators are a very helpful and friendly group and can help you with any other questions you may have! If you are unsuccessful at first, please do keep trying to contact me! The windows will be very short - especially with Region 2 stations - and I want to be able to contact as many stations as possible! But please do not call me if you are already in the log! I hope to be able to provide an update to my log of contacts from time to time, as I am able to access the internet. For updates, watch my web page as well as posts to the MagicEME email list. Good luck and I hope to be able to put you in the log! Thanks for your support and your effort to get on and watch for me.

GL and VY 73, Lance W7GJ   *Revised 3 April, 2023*