

Appendix XI – Improving DSC Calling for Cruisers

Discussion

It has been clear to me for some time now that the factory programming only included one usable calling frequency, 2177.0KHz, for cruiser to cruiser communications. This is because all the other frequencies are duplex frequency intended for calling and talking to shore stations. You may have already found that 2177.0KHz is not a long range communications frequency. While a higher frequency would get you to the US from Mexico, 2177.0 KHz, will probably not make it across the Sea of Cortez.

I have found many standards for distress calling and GMDSS calling, but nothing on enhancing the usability of the DSC calling for cruisers until I stumbled across an article in the forum, SSCA Discussion Board. Notes by a fellow cruiser, John, KA4WJA on s/v Annie Laurie, make a lot of sense and will allow for better DSC usage. If you would like to read all of John's notes on the subject, go to the forum at: <http://www.ssca.org/forum/phpBB3/viewtopic.php?f=5&t=12613&p=70145#p70145>

The Plan

John has been kind enough to authorize my use of his recommendations for the benefit of all cruisers. As a result, this appendix will remain on my web site even after the second revision of "ICOM IC M802 Made Simple for Cruisers" is released (planned for) next summer. The following is a quote from John on the SCCA forum:

*"So, in my M-802, I have 2177.0, 4208.0, 6312.5, 8415.0, 12577.5, and 16805.0 khz, programmed as my DSC Scan frequencies, and in addition to the GMDSS-DSC frequencies, also programmed these in as "Call Frequencies", both transmit and receive (simplex channels).....
And, that means that when using DSC Watch Mode, I'm scanning those frequencies listening for "Routine" DSC calls....."*

So if the IC M802 is scanning for 2177.0, 4208.0, 6312.5, 8415.0, 12577.5, and 16805.0 khz and we are calling and receiving/sending acknowledgment on those frequencies, it will be possible to significantly increase our calling distance with the IC M802 DSC capability.

Issues

In order to effectively utilize DSC calls to other cruisers using John's approach, we must re-program both the channels scanned by the IC M802 and the programmed calling frequencies. This process will take about 15 to 20 minutes. If you have not programmed anything into your radio, this may bring up many questions. Should you have questions, feel free to contact me at p-t_on_sunyside@live.com.

Action

To promote this change, I am posting this planned appendix on my web site, adding it to my "ICOM IC M802 Made Simple for Cruisers" and "Communications Made Simple for Cruisers", and all radios I re-program in the future will be programmed with the above DSC calling frequencies.

IC M802 owner/users actions are to re-program your radio following the procedures below.

Re-Program the ICOM IC M802

Re-programming the IC M802 to utilize simplex calling channels is very simple. For those with my "ICOM IC M802 Made Simple for Cruisers" book, refer to section 4 on page 55, DSC Operation. Note the table showing the scanned frequencies. Re-programming of the radio will change both the transmit and receive frequencies to those listed as the transmit frequencies in the table. The 2177.0 channel is already a simplex channel and will be retained. Both the Scan Frequencies and Call frequencies must be changed. If you do not have my book you might want to write down the receive frequencies before deleting them below so you could return to should the situation require it in the future. While it is unlikely that you would ever want to change back, it is generally a good idea. You can also find the frequencies on line or send me an email.

Programming the new Scan and calling frequencies is located in my book on pages 70-71. The procedure is the same to program the scan frequencies and the calling frequencies. However, in step 5 on page 70, select Scan Frequency or Call Frequency as appropriate and follow the procedure. A custom procedure specific for this change to the radio is provided below to help those that do not have "ICOM IC M802 Made Simple for Cruisers".

Delete the old Scan Frequencies

The Scan Frequency memory is full as the IC M 802 will only scan six frequencies and has been programmed for six frequencies by ICOM. The first procedure is to delete all the scanned duplex channels to allow re-programming the radio for simplex channels.

1. In DSC Watch press [SET/MODE] to display the **DSC MENU**.
2. Rotate the [CH] knob to select **Set up** and press [ENT].
3. Rotate the [CH] knob to select **Scan frequency** and press [ENT]
4. Rotate the [CH] knob to select (each of the duplex frequencies one at a time) and press [ENT].
5. Press and hold the [CE] until two beeps are heard and that memory location will be clear.
6. Repeat this procedure for all except the 2177.0 frequency.

Program the new simplex Scan frequencies

1. Rotate the [CH] knob to select **<add>** and press [ENT].
2. Using the Keypad, enter the desired label for the new frequency, e.g. 4MHz, 6MHz, 8MHz etc.
3. Rotate the [CH] Knob to move to the TX:_____ . _ KHz and enter the new frequency.
{4MHz: 4,208.0; 6MHz: 6,312.5; 8MHz: 8,415.0; 12MHz: 12,577.5; 16MHz: 16,805.0}
4. Rotate the [CH] Knob to move to the RX:_____ . _ KHz and enter the same frequency.
5. Press [ENT] to save the scanned frequency.
6. Repeat this procedure for all five frequencies.
7. Note display should indicate <add> Memory full when all five scan frequencies have been added. (The six frequencies including the 2177.0 we did not erase.)
8. Press [SET/MODE] button to return to **DSC Watch**.

Delete the Duplex Calling Frequencies

Now re-program the calling frequencies the same way. While the Call frequency memory is not full, we would fill the memory before all the simplex channels are entered. So we will start by deleting the INTER 4-1, 6-1, 8-1, 12-1 16-1 frequencies. Leaving the other frequencies programmed, e.g INTER 4-2, 6-2, etc.

1. In DSC Watch press [SET/MODE] to display the **DSC MENU**.
2. Rotate the [CH] knob to select **Set up** and press [ENT].
3. Rotate the [CH] knob to select **Call frequency** and press [ENT]
4. Rotate the [CH] knob to select (INTER 4-1, 6-1, 8-1, 12-1 16-1 duplex frequencies one at a time for deletion) and press [ENT].
5. Press and hold the [CE] until two beeps are heard and that memory location will be clear.
6. Repeat this procedure for each of the INTER frequencies listed above.

Program the new Call frequencies.

1. Rotate the [CH] knob to select **<add>** and press [ENT].
2. Using the Keypad, enter the desired label for the new frequency, e.g. 4MHz, 6MHz, 8MHz etc.
3. Rotate the [CH] Knob to move to the TX: _____ . _ KHz and enter the new frequency.
{4MHz: 4,208.0; 6MHz: 6,312.5; 8MHz: 8,415.0; 12MHz: 12,577.5; 16MHz: 16,805.0}
4. Rotate the [CH] Knob to move to the RX: _____ . _ KHz and enter the same frequency.
5. Press [ENT] to save the scanned frequency.
6. Repeat this procedure for all five frequencies.
7. When completed, you may use any of the xxMHz frequencies to call other cruisers and the INTERxx-x are duplex for shore based calls should shore base stations.
8. Press [SET/MODE] button to return to **DSC Watch**.

When calling other cruisers now you will be able to try and call on any of these new calling frequencies. However, make sure your friends have re-programmed their radios as well or they will only be able to hear your call at short ranges on 2177.0 KHz. Be sure that if you call on a 6MHz channel, you also choose a 6MHz voice channel as the other boat may hear your call, but not you if you were to select say 2A or 4B. **Feel free to share this appendix with as many cruisers as possible to help enhance the cruising communications capability.**