DIGITAL HAPPENINGS #6

Sharon and I just got back from a very successful trip running digital counties in S/W Kansas. We both feel good about the results of the trip, but as usual, I planned to put out too many county lines on Saturday. As a result, we were on the road about 14 hours that day. We have both vowed that we won't do that in the future because we are no longer "spring chickens"! We are going to have to leave 12 hour + days to the "young bucks". Later in this article I give a detailed analysis of the digital results, but here are a few highlights.

Over the 3 ½ days we put out 27 total counties on 3 digital modes each. 24 of the counties were on county lines. We made a total of about 2000 contacts (counting each of us as separate contacts) of which over 800 were digital. The remaining 1200 were mostly SSB on 14.336 with a few scattered CW. On a typical county line run we would make 25 to 30+ QSOs on SSB (200 to 240 loggable contacts) followed by 8 to 10 QSOs each on PSK-63, RTTY, and MFSK-16 (96 to 120 loggable contacts). To do all this usually took about 1 hour, but the time passed quickly as we were very busy. Obviously, the longer time spent on county lines limits the number of counties that can be put out in a reasonable day. Never-the-less, both Sharon and I were very happy with the productivity of this trip as more and more new folk seem to be joining the fun.

This leads into the main topic for this article:

HOW TO OPERATE AS A MOBILE OM/YL TEAM USING DIGITAL MODES

Last month I covered the basics of "putting out" counties using digital modes while operating mobile (one operator). To put out digital counties as a mobile OM/YL team you need to do most of the same things. I will try not to repeat myself here, but concentrate on the added things you need to do as a team. You may wish to review last month's article before going on.

Before you leave on your mobile trip, you will also need to check out your macros and be ready to use them. You should plan on spotting yourself in most cases since there is no formal net as yet for helping digital mobiles. This will require wide-area internet coverage of some kind (some now use their smart phones for this purpose). You can also arrange in advance for a fixed station to follow your progress and spot you.

When putting out counties digitally, I recommend that you do so using at least 3 or 4 different modes on one band. 14074.0 KHz (+/- interference) true frequency is usually a good choice since it is above the 14070-14072 KHz range mostly used by casual PSK operators and is below the 14075 - 14077 KHz range used by JT-65 operators. The four modes we have used the most are PSK-63, RTTY, MFSK-16, and THROB-4 (in that order) all transmitted on 14074.0 KHz. Remember, to transmit on this true frequency, set your radio dial to 14.073.0 KHz and the offset on your waterfall to +1000 Hz. If you wish to keep things a bit more simple (and also save time), you can limit the modes you use to just one (PSK-63).

## RE-VISITING MACROS, ESPECIALLY FOR OM/YL TEAM USE

First, let me state that it is almost impossible to put out digital counties without using macros. They are the KEY to success! Also, all the tips and examples that follow are based on use of Fldigi software. The setup file for Fldigi ("fldigi-3.21.66 setup") can be downloaded at: http://www.w1hkj.com/download.html . Most other

digital software programs (MixW, Digipan, etc.) support the use of macros similar to Fldigi. The main differences are in the lists of available "Tags" and the way the user sees and interacts with the preset macro buttons. I still recommend Fldigi software mainly because of the immense number of modes that it supports and because it is free. It also has excellent free support through a Yahoo support group at (http://groups.yahoo.com/group/win-fldigi/join). Other software has somewhat better macro features and better logging capability, but each of you will need to make your own choice. Because of space and time limitations, I can only provide help related to Fldigi. Also, for those of you who may already be using an earlier version of Fldigi, be sure and download/install the latest version (3.21.66) as it has many important changes.

Now, on to macro setup and use…Fldigi has 4 sets of 12 macros (total of 48) that you can configure and run. The macro buttons can be displayed in many different locations on the Fldigi main screen, but the scheme below works well for me:
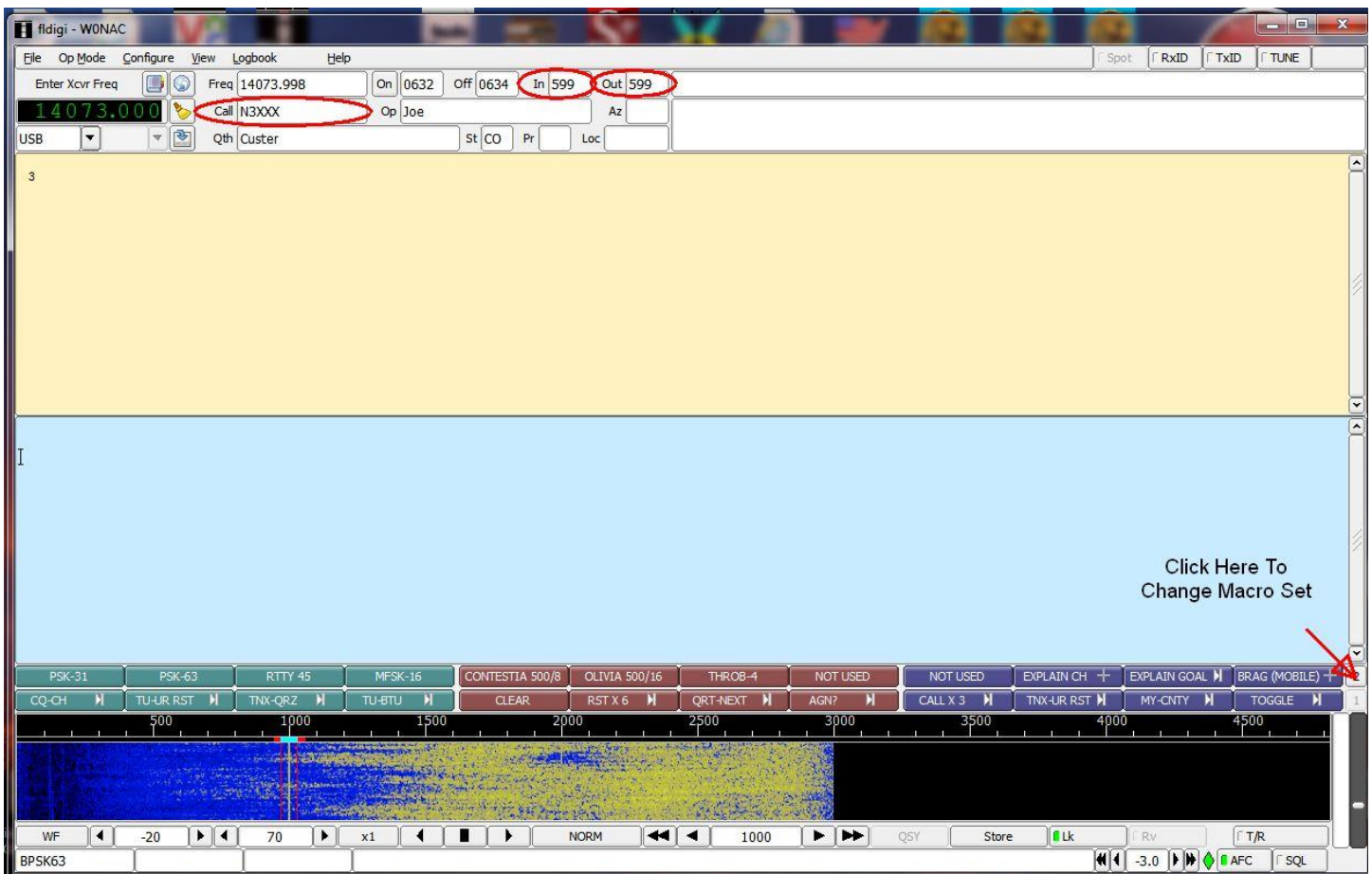
Note that macro sets #1 and #2 are stacked just above the waterfall. Each row has 12 preconfigured macro buttons. You can set up this screen configuration by going to Configure/UI/Macros Tab. When you do, the following selection screen appears:
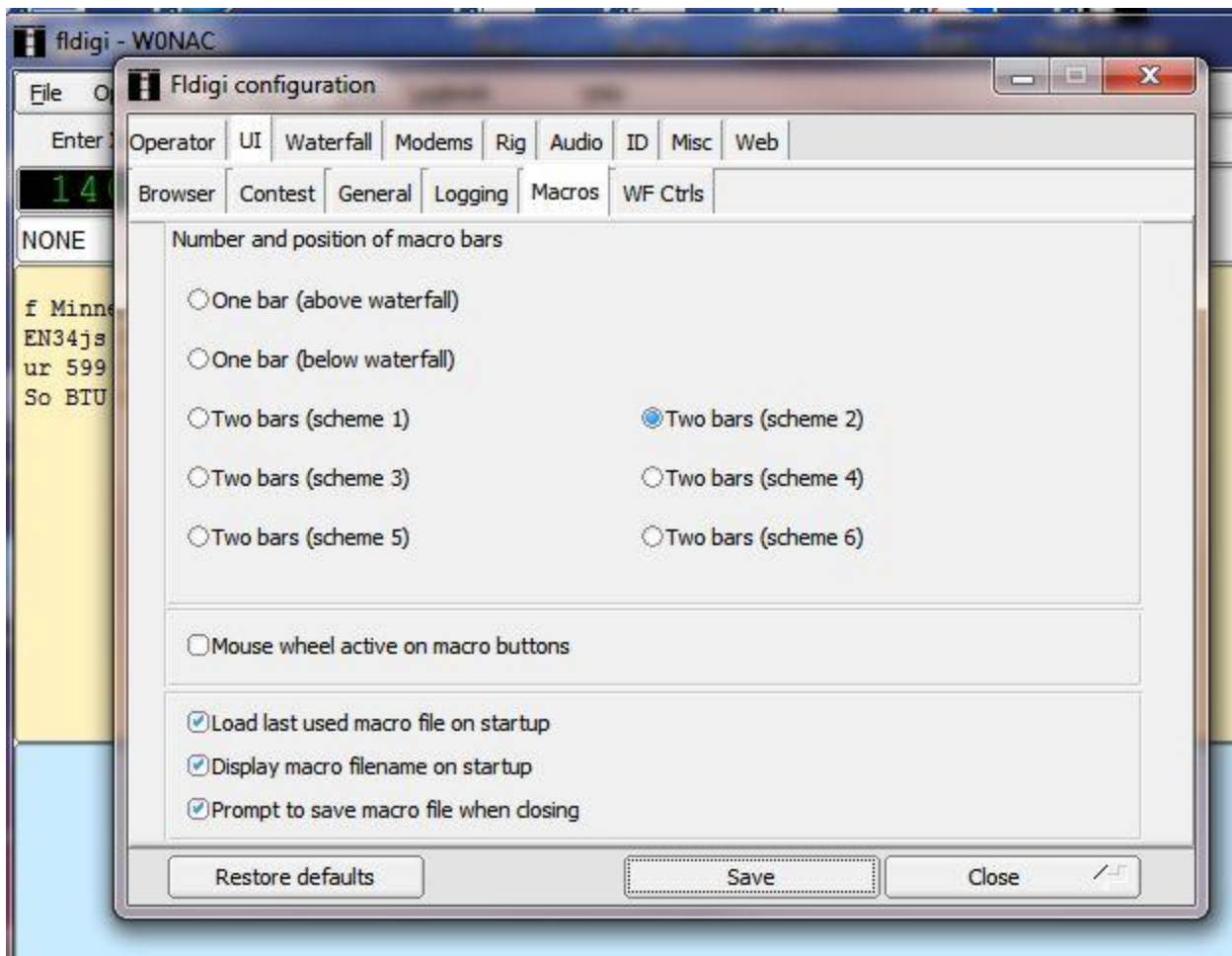
Select or check the same items as indicated on this screen followed by clicking on the "Save" button and then "Close". Note, you won't see any particular response to the "Save" action. This is normal for Fldigi.

Next, you need to download a self-extracting file using the following Dropbox link: https://dl.dropbox.com/u/26171574/Fldigi%20Macros%2001-28-2013.exe . This file contains 4 macro files that you can use as a departure point in creating your own macros. You need to execute the self-expanding file to extract these 4 files into the following folder (assuming you are using Windows 7/Vista): "C:\users\<username>\fldigi.files\macros\ ". If you are using Windows XP, place them into "C:\Documents and Settings\<username>\fldigi.files\macros\ ". You should then see (along with other files created by Fldigi during installation) the following 4 files in your macro folder:

1) "Casual QSO Fixed.mdf"   (For use during casual digital QSOs from your fixed station)
2) "CountyHunter Fixed.mdf"   (Used if you wish to "put out" your home county)
3) "CountyHunter Mobile.mdf"   (For use by single mobile operator putting out digital counties)
4) "CountyHunter Mobile Team.mdf"   (For use by mobile team putting out digital counties)

You can edit these macro files by either use of a text editor (not recommended) or by using the built in editing screen within Fldigi (recommended). To load one of the files (you can only have one active at a time), open the Fldigi program and then click on "Open" under the File drop down menu as shown:
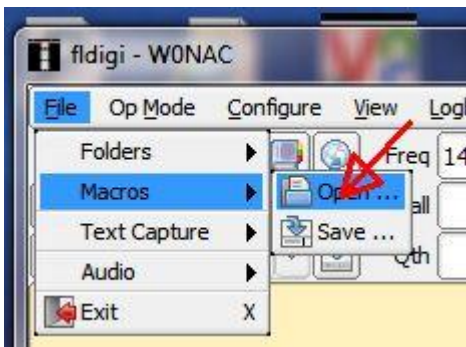
After you click on "Open", you will see the following screen:
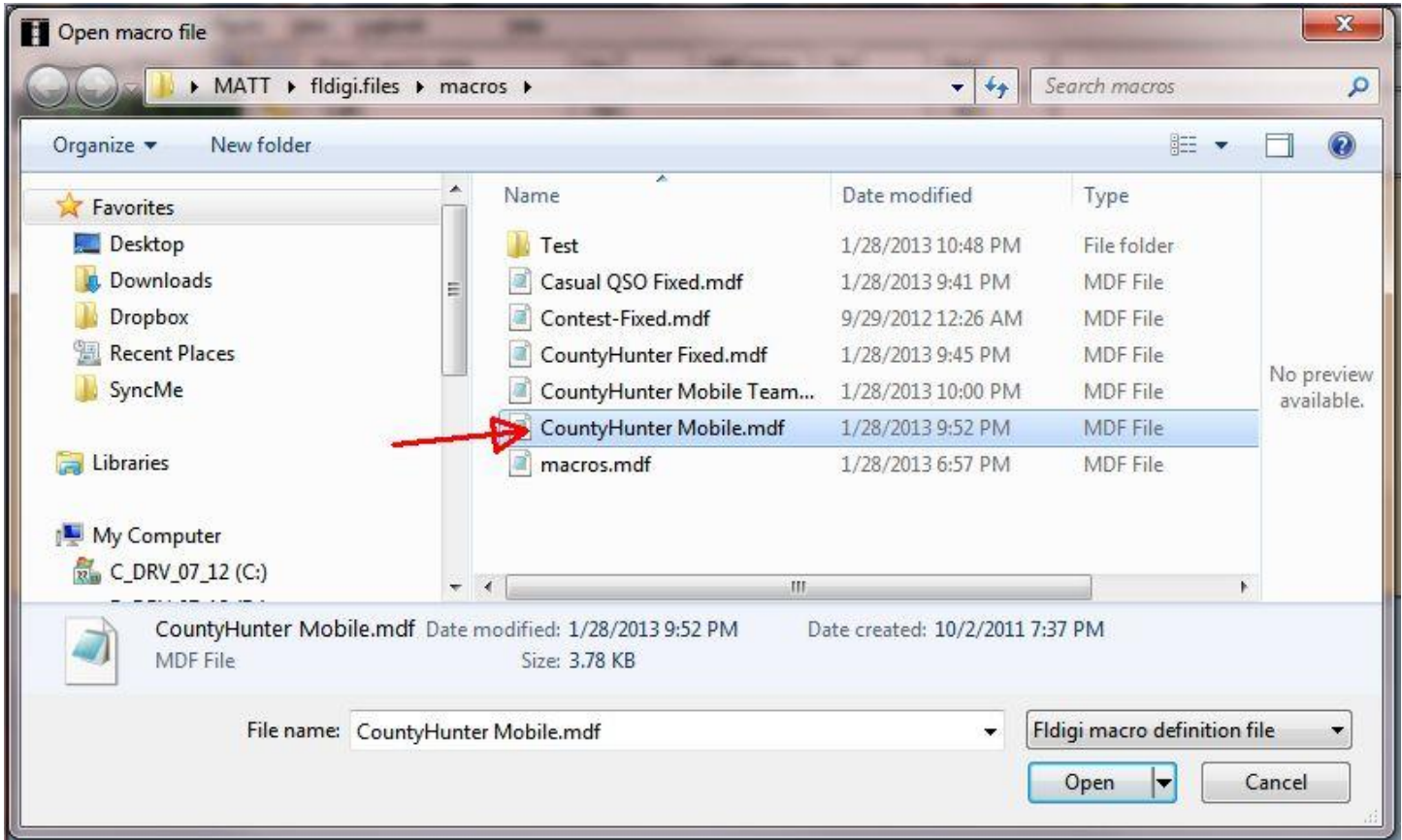
You may have to first browse to the default folder given above. Then, select the macro file indicated with your mouse, then click on the "Open" button to open it. A short message will appear in the RX window telling you what macro file has been opened.

Now we are ready to look at the macro titled "CQ-CH". Open it for editing by **Right** clicking on it with your mouse. When you do, this is what you will see:
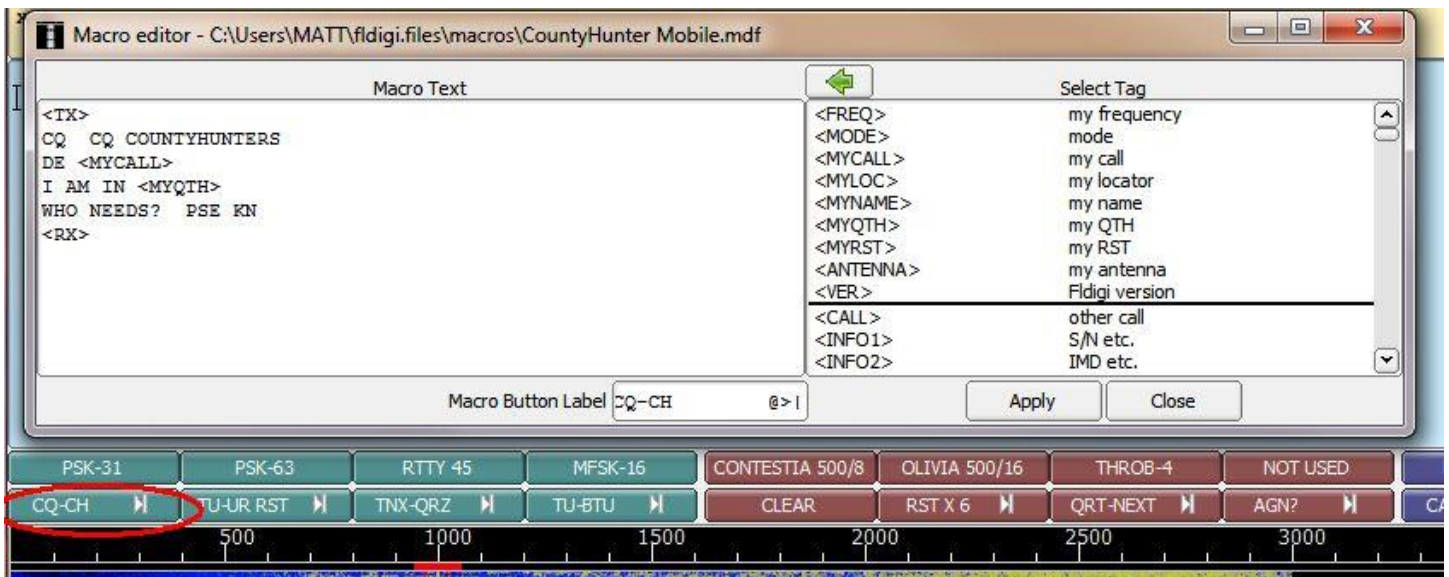
You do your editing in the left half of the editor screen. The right half contains all the various Tags that you may wish to use (These are pulled into the left screen by selecting one, then clicking on the green arrow at the top).

This particular macro starts with <TX> on the first line. This turns your transmitter ON. The next two lines in the macro automatically type in the following text: "CQ CQ COUNTYHUNTERS DE W0NAC". The <MYCALL> Tag simply retrieves your call sign from the Configure/Operator data file.

The next line types in "I AM IN Kit Carson, CO" where the <MYQTH> Tag pulls in whatever you have stored for QTH in the Configure/Operator data file.

The next line types in "WHO NEEDS? PSE KN"

The <RX> Tag on the last line turns your transmitter OFF and returns your transceiver to the receive mode.

Think of macros as a shortcut means of typing what you wish to say plus controlling your transceiver functions at the appropriate time. There are basically two types of macros. The first type is self-contained and stands alone. This macro type will contain a <TX> at the beginning and a <RX> at the end.

The second macro type can be thought of as a quick typing text insertion tool. This macro type is principally used after your transmitter has already been turned ON manually. When activated, the second type macro simply inserts its text starting where you stopped typing manually and then waits for you to resume typing manually.

After modifying a macro, be sure and click the "Apply" button before "Close" or you will lose your changes. Also, be sure and "Save" your changed macro to its file name (or another file name if you wish) before exiting Fldigi.

During operations, you can RUN a macro either of two ways. First, you can LEFT click on the macro button you wish to run. Second, each of the twelve macro buttons in macro set #1 corresponds to Function Keys F-1 through F-12. For example, pressing F-1 will run the "CQ – CH" macro. F-12 will toggle your transmitter ON & OFF each time it is pressed. To run the macros in sets #2, #3, and #4, hold the <SHIFT> key down as you type F-1 through F-12. For example, <SHIFT> F-2 will change the operating mode to PSK-63. If you forget

any of this, simply "hover" your mouse cursor over any macro button and a message box will pop up telling you what keys or mouse clicks you should use to edit or run that macro.

The top row of macros is normally set by default to macro set #2. To switch to macro set #3 or macro set #4, you can either LEFT click on the small box at the extreme right end of the macro row to toggle, OR key in the command <ALT> 3 or <ALT> 4 to switch to the other sets. <ALT> 2 will return you to the default set #2.

Use the <ESC> key as an emergency stop for any executing macro. It will also clear the buffer of any data waiting in line to be transmitted.

Once you are proficient with editing macros, I highly recommend that you either modify the samples I have provided, or create new ones of your own. After any changes, you should test the modified macros by running them and see if they produce the desired results. In any event, it is impractical to have sets of macros that will fit every occasion. You will find that from time to time, you will have to simply toggle the transmitter ON manually (F-12) and start typing exactly what you wish to say.

I have only scratched the surface of macro use in this article. I highly recommend that you dig into the manual under "Macros". You can find the latest on-line help for Fldigi at http://www.w1hkj.com/FldigiHelp-3.21/index.html .

TYPICAL SEQUENCE OF EVENTS FOR MOBILE TEAM:

You have done all your homework and planning as outlined above and your macros are tested and ready to go. It is now time to put out a county line using digital modes. The following is what a typical sequence of events might look like. It can be used as sort of a checklist. Regardless of what is said here, each individual must do what they are comfortable with, so modify it if you wish. What follows is essentially the same sequence that a single mobile operator would use. The main difference for a mobile team is in the wording of the macros. Also, a mobile team can divide the duties of logging, spotting, setting up equipment, and running, where as a single operator must do everything themself! Overall, it is probably a little easier for a mobile team than a single operator. Here is the sequence:

1) Navigate to and stop on the planned county line (or county stopping point).

2) Tune Xcvr dial to 14.0730 MHz and select USB.

3) Tune antenna (if needed) for acceptable SWR and make sure your audio drive level is set for a clean signal.

4) Check that your Fldigi software is running and has the following settings:
    a. Configure/Operator:
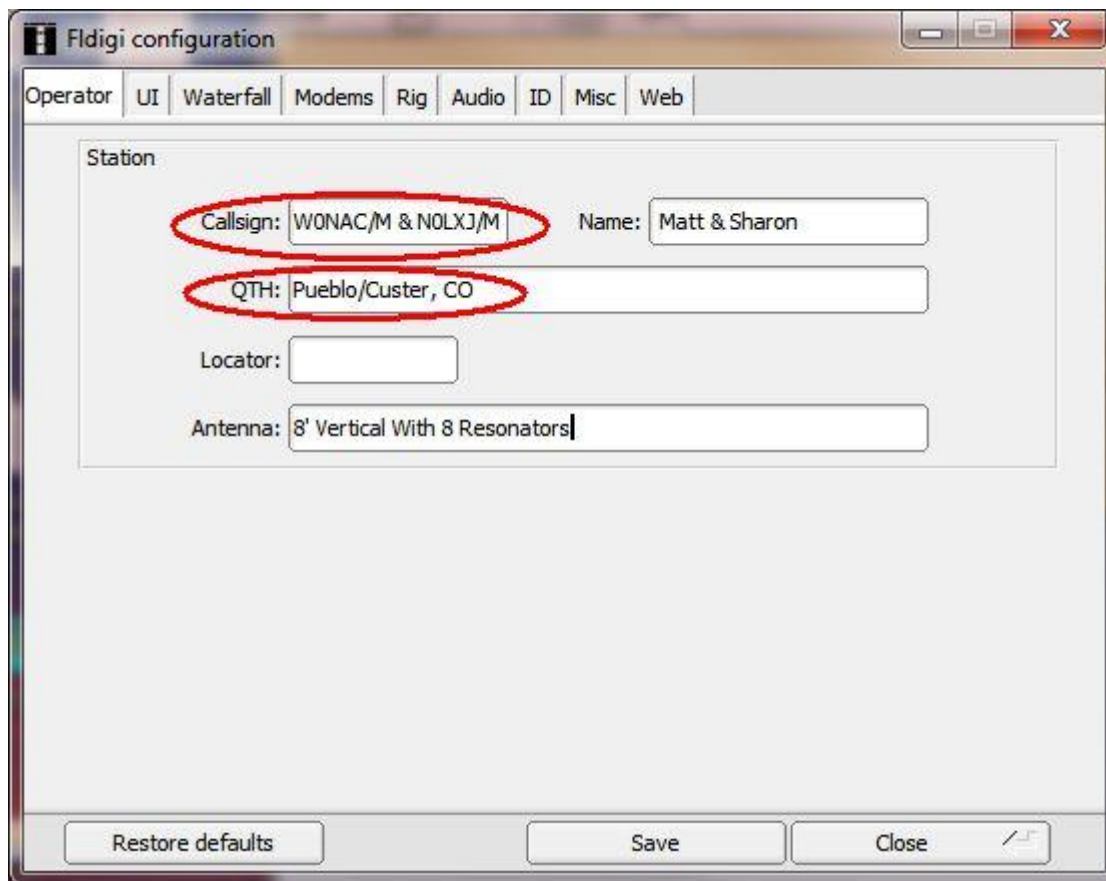
Note: Only the "Callsign:" and "QTH:" items are critical to have correct since they are used as Tags in your macros. Don't forget to "Save" before "Closing" this window. Also, you will need to change the "QTH:" information each time you move to a new county/county line.

b. Check that "OpMode" is set to the desired mode (You can use the macros in Set #2 to do this quickly).
c. Enter/Modify "Xcvr Freq" (if you want the "freq" box to indicate the true operating frequency).
d. Set waterfall offset to ~ 1000 Hz (move up/down a bit to avoid interfering with other signals if present).
e. Confirm that the "CountyHunter Mobile Team.mdf" macro file is open and refresh your memory on what each macro does.

5) When all is ready, switch to your web spotting site and spot yourself (or have helper spot you).

6) Click on leftmost macro button (or press the F-1 key) to run the "CQ – CH" macro. Repeat as necessary.

7) When another county hunter replies (usually with their call sign repeated 3 times), double click on their call sign to get it into the buffer (it will show in the Fldigi "Call" box near the top of the screen if you are successful). If needed, manually enter their call by clicking in the "Call" box and typing in their call sign.

8) Then, click on the 2nd (from the left) macro button (Or press the F-2 key). This will acknowledge their call and transmit the standard 599 report.

9) When the calling station acknowledges your 599 report and sends both 599 reports back, click on the 3rd macro button from the left (or press the F-3 key). This will acknowledge receipt of their reports, BREAK, and then ask if others wish to call.

10) If another county hunter does call you, then go back to step 7) and repeat.

11) If no one else calls right away, go back to step 6) and repeat your CQ.

12) When you sense that all stations have completed their contacts with you, announce what you are going to do next. Options here include:

     a. Change to next mode (Don't forget to change spot also)
     b. Going on to next county line/county (be sure and announce your new band/frequency if changing)
     c. Quitting for the day.

13) Drive on to next county line/county.

Please note that the "canned" responses in your macro set may not always be appropriate. You may need to respond to non-county hunter calls or questions by using the keyboard to manually type replies. To reply, toggle the transmitter to "ON" by pressing Function Key 12 (F-12) or clicking on the far right macro on the macro line. When finished typing, toggle your transceiver "OFF" by using the same button or key.

OTHER OPTIONS

For logging mobile team digital contacts I still recommend logging on paper. However, Fldigi has a relatively simple logging capability that some may wish to use. Fldigi does have an ADIF export capability that one might use to import logs directly into Logger, but I have not checked this feature out yet. Maybe someone else would like to do this? (Hint, Hint!)

MixW (and other software) has a more capable logging system which can be used within your macros to automatically log contacts which can be imported into Logger later. I have not had time to use this capability yet, but Lloyd (NX4W) uses this method extensively. Please contact him if you need more information on automatic logging using MixW macros.

I don't recommend using the near real time logging capability in Logger as I find it to be too awkward and slow to use, mainly because it requires constant screen switching (multi-tasking), but you may find it to your liking.

You can, of course, use digital modes other than the 4 suggested above. The new **5 – Mode Award** allows using any of 33 approved modes. Of these 33 modes, 26 are considered to be digital modes (CW excluded). If sub-modes are included, one has nearly 100 mode/sub-mode combinations to choose from. However, a few of these modes are not very useful for putting out counties when mobile. For example, JT-65 contacts take 5-6 minutes to complete one short QSO which pretty much rules it out. Even so, there is still a wide variety of modes/sub-mode combinations that are just waiting for someone to try them out.

To sum things up, putting out counties as a mobile team using digital modes has about the same level of difficulty as doing it as a single operator. To date, Sharon and I are the only mobile team that has run counties using digital modes. We would love to see more!

DIGITAL ACTIVITIES IN JANUARY

Earlier I promised more detailed results from our 3 day trip around S/W Kansas. The following table shows everyone who made any digital contacts with us and how many contacts they made (1 QSO = 4 contacts if we were on a county line) by mode:

#	CALL SIGN	NAME	PSK	RTTY	MFSK	TOTAL CONTACTS
1	AA3KC*	STEPHEN	0	0	4	4
2	K3SEW*	RONALD	0	4	0	4
3	K4PBX	JIM	4	0	0	4
4	K5WAF	BILL	4	4	4	12
5	K7REL	TOM	8	0	0	8
6	K8QWY	ED	30	4	2	36
7	KC7YE	JACK	4	0	0	4
8	KG4Q*	LARRY	4	4	4	12
9	KM6HB	MARK	0	6	0	6
10	N0KV	BARRY	0	4	0	4
11	N1API	AL	4	4	0	8
12	N4JT	JIM	20	20	20	60
13	N5MLP	RON	20	24	20	64
14	N6PDB	DENNIS	40	36	40	116
15	N8CIJ	DICK	24	24	24	72
16	NA8W	DARL	4	4	12	20
17	NT2A	GENE	8	2	6	16
18	NX4W	LLOYD	32	40	24	96
19	W1ATV	WALT	4	4	0	8
20	W3DLM	DON	20	16	12	48
21	W4KDK*	KENNETH	0	4	0	4
22	W4YDY	DAVE	16	12	12	40
23	W7IN	LARRY	2	0	0	2
24	W9SUQ	LARRY	2	0	0	2
25	WA4UNS	DOUG	16	24	20	60
26	WB2ABD	PAUL	28	32	28	88
27	WD4OIN	JACK	16	16	0	32
	TOTALS:		310	288	232	830

* = Not A MARAC Member

We really do thank everyone for their support on this trip!

During January I provided advice and support in varying degrees to several people who called. As always, I stand ready to help anyone who has problems or wishes to get started with digital operations. Just email me or call me on the phone. My email is w0nac@comcast.net and my phone number is 303-799-3658. Call any time.

Table 1 has again been updated from last month. If I have left anyone off the list you have my sincere apology! Just drop me a quick email and include your stats, if you know them, and I will be pleased to add you to the list. Conversely, if you are on the list and feel that you don't belong, please also drop me an email and I will remove you.

Logger will currently give you your status for the **USA – Digital Award** (go to "View/Edit/Book/USA-Digital/All"), but for the **5 - Mode Award**, Logger only reports those counties which have been worked using all 5 different modes. You can see your **5 - Mode Award** status by going to "View/Edit/Book/5 - Mode/All". A fix is still in the works that will report on the status of 1, 2, 3, and 4 completed counties also, but it may be awhile before this is released. While waiting, the 1, 2, 3, and 4 completed county columns for the **5 - Mode Award** will have to

remain blank for most folk. If you wish to send me your call sign database file (Mine is named "County Hunter – W0NAC.mdb") I can determine how many counties you have completed for 1, 2, 3, and 4 modes and place it in Table 1. However, be sure you have recently recalculated your 5 – Mode book before sending your file. Here is the updated Table:

Table 1 – Active Digital County Hunters Award Status

#	CALL	NAME	STATUS* (M,F,I)	USA - DIGITAL Counties (of 3077)	(1 MODE)	(2 MODES)	FIVE MODE COUNTIES (3 MODES)	(4 MODES)	(5 MODES)	LAST UPDATED
1	AA8R	Randy	F	1000+	-	-	-	-	-	9/30/2012
2	AC0B	Cliff	F	205	-	-	-	-	-	12/10/2012
3	AD1C	Jim	F	-	-	-	-	-	-	
4	K0DEQ	Bill	F	-	-	-	-	-	-	
5	K0PVW	Rob	F	-	-	-	-	-	-	
6	K0WJ	Lou	F	-	-	-	-	-	-	
7	K4PBX	Jim	F	-	-	-	-	-	-	
8	K5GE	Gene	F	-	-	-	-	-	-	
9	K5SF	Dick	F	-	-	-	-	-	-	
10	K5WAF	Bill	F	-	-	-	-	-	-	
11	K7REL	Tom	F	-	-	-	-	-	-	
12	K8QWY	Ed	F	-	-	-	-	-	-	
13	K8ZZ	Ed	F	-	-	-	-	-	-	
14	KC3X	Hollis	F	-	-	-	-	-	-	
15	KC6AWX	Bob	F	-	-	-	-	-	-	
16	KC7YE	Jack	F	-	-	-	-	-	-	
17	KD5YUK	Billy	F	-	-	-	-	-	-	
18	KD7KST	Bill	M/F	1792	-	-	-	-	-	9/30/2012
19	KG5RJ	Gregory	F	389	3048	196	359	57	15	1/2/2013
20	KM1C	Bill	F	-	-	-	-	-	-	
21	KM6HB	Mark	F	-	-	-	-	-	-	
22	N0KV	Barry	M/F	-	-	-	-	-	-	
23	N0LXJ	Sharon	M/F	1313	3077	2209	1128	360	165	1/25/2013
24	N1API	Al	F	-	-	-	-	-	-	
25	N3HOO	Ed	F	-	-	-	-	-	-	
26	N4JT	Jim	F	572	3077	3058	575	99	55	10/30/2012
27	N5MLP	Ron	M/F	-	-	-	-	-	-	
28	N6PDB	Dennis	F	142	3077	2477	66	0	0	1/23/2013
29	N8CIJ	Dick	F	481	3077	2971	393	117	109	1/21/2013
30	N8HAM	Jim	I							
31	NA8W	Darl	F	428	2972	?	?	?	45	12/3/2012
32	NF0N	Mike	F	785	3077	3077	915	108	50	12/31/2012
33	NN9K	Pete	F	816	3077	859	78	1	0	3/23/2012
34	NT2A	Gene	F	-	-	-	-	-	-	
35	NU4C	Paul	F	-	-	-	-	-	-	
36	NW6S	Jim	F	-	-	-	-	-	-	
37	NX4W	Lloyd	M/F	1070	3077	1098	157	4	0	12/19/2011
38	W0NAC	Matt	M/F	1726	3077	2780	1842	854	267	1/25/2013
39	W3DLM	Dpm	F	-	-	-	-	-	-	
40	W4IHI	Gary	F	-	-	-	-	-	-	
41	W4SIG	Kerry	F							
42	W4YDY	Dave	F	-	-	-	-	-	-	
43	W6RK	Risto	F	-	-	-	-	-	-	
44	W6RLL	Joe	F	-	-	-	-	-	-	
45	W7IN	Larry	F	-	-	-	-	-	-	
46	W7QQ	Bill	M/F	-	-	-	-	-	-	
47	W9JR	Rich	F	90	3077	1674	44	0	0	10/31/2012
48	W9SUQ	Larry	F	-	-	-	-	-	-	
49	WA4UNS	Doug	F	-	-	-	-	-	-	
50	WA7JHQ	Sterling	F	-	-	-	-	-	-	
51	WB0M	Jeff	F	-	-	-	-	-	-	
52	WB2ABD	Paul	F	-	-	-	-	-	-	
53	WD4OIN	Jack	F	-	-	-	-	-	-	
54	WQ7A	Terry	F	-	-	-	-	-	-	
55	WY4D	Bennie	F	-	-	-	-	-	-	

Possible topics for the coming months include –

"How to log your digital contacts in Logger"
"How to fine tune your Interface"
"Other Interesting digital modes (JT-65)"

"Award Difficulty Index"
"New Digital Awards ?"

So long again…..Please email me with your comments/suggestions at w0nac@comcast.net and don't forget to send me your counties worked status on the **USA – Digital** and **5 - Mode Award** s so I can update the Digital County Hunter Status List again next month.

73's and we'll see you down the waterfall,

Matt – W0NAC