

WINTER FIELD DAY CONTACT SUGGESTIONS: CW Alachua County ARES(R) / NFARC

REVISED: 7/01/2023 -- update to SAVE CW SETTINGS

REVISED: 7/04/2023 -- updated with results of experimental testing on HF-1 with WINKEYER

REVISED: 1/09/2024 -- improving wording

OPTIONAL

CW Decoder Software Download: <https://qsl.net/nf4rc/2023/cw%20decoder.exe>
Set the Sound Card to listen to the 7300 and it should work very nicely for you!

COMPUTER MOUSE ISSUES

- Due to RF interference to touchpads, you are likely going to want to use an external mouse (either wired or wireless to a little dongle).
- You may need to adjust the POINTER SPEED to your preferences. Click the Windows icon lower left edge of screen, then the starburst SETTINGS icon; type in the search window "mouse speed" and it will take you to dialog boxes where you can set the pointer speed, size etc.
- The same access will allow you to change the POINTER SIZE

If you wish to use your own personal keyer or paddles with the 7300, just bring them with a 1/4" stereo phone plug and be sure they are OK switching a small positive voltage and a small current.

The IC-7300 allows you to set it to respond to left- and right-paddles (and the 7300 does the automatic keyer function)

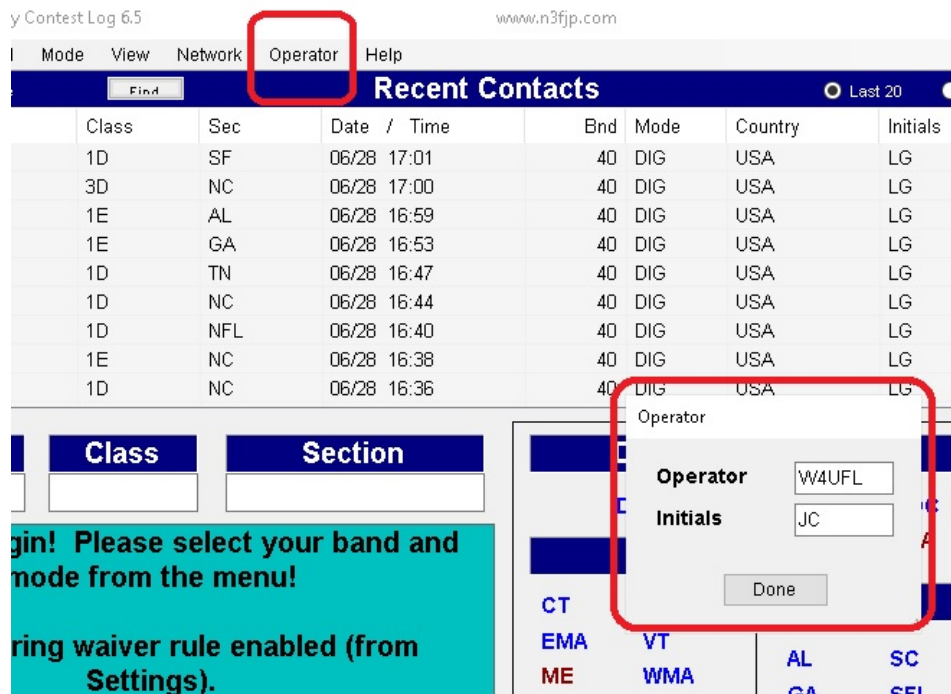
OR

MY PREFERENCE is to use a full external keyer (like WINKEYER) (paddle + electronics) and set the IC-7300 for a "straight key" and your full external keyer, connected to the TIP and SLEEVE of the 1/4" phone plug, will send CW correctly.

In order to use them with the WINKEYER, you'll need a 1/8" stereo plug on your paddle.
Recommended to bring your own WINKEYER AND COMPUTER all set up, if possible.

IF YOU HAVE COMPUTER PORT OR RADIO PORT CONTENTION, ASK FOR HELP FROM EARL OR SOMEONE ELSE. THESE ISSUES CAN BE FRUSTRATING. IT IS RECOMMENDED THAT WHILE YOU ARE WORKING CW, YOU TURN off ANY OTHER SOFTWARE LIKE JS8 OR OTHER PROGRAMS OTHER THAN N3FJP.

OPERATING: FIRST Enter yourself as the operator into the Logging System -- click "Operator" and enter call and initials:



OPERATING: SECOND

Set your **BAND** and **MODE** -- Click on **BAND** to pick the band, and click on **MODE** to select **CW** (This is important to properly check for duplicates)

For CW you're basically going to have log for yourself or with a helper, into N3FJP. You may wish to have CW DECODER. <https://qsl.net/nf4rc/2023/cw%20decoder.exe> If you type into N3FJP it will automatically check for duplicates and it **can transmit extremely helpful macros and repetitive CQ calls**. (The alternatives are to do everything by yourself, or use the memory transmissions options in the IC-7300)

ICOM SETTINGS FOR CW		
ITEM	CHOICE	COMMENT
MODE	Select CW . Touch the current mode (USB LSB, whatever it is) on the screen and you'll get the options	
VOX/BK-IN (left-sided physical)	Set for BKIN (not F-BKIN)	Required for the radio to go into

<p>button just below TUNER button, left hand side of 7300</p>		<p>TRANSMIT when you begin sending.</p>
<p>KEY TYPE</p>	<p>With MODE= CW Press physical button MENU Touchscreen KEYER Touchscreen EDIT/SET Touchscreen CW-KEY SET to choose type of key.</p> <p>Set for either straight key or keyer depending on what you will plug into the 1/4" phone jack on the back.</p> <p>(FOR WINKEYER, SELECT STRAIGHT KEY)</p>	<p>If you have a STRAIGHT KEY it is easy to get a continuous transmit power -- just press and hold the key down.</p> <p>If you're using PADDLES, there are two solutions: a) Change the CW-KEY SET temporarily to either BUG or STRAIGHT KEY to gain the ability to send a long dash, OR b) click the mode RTTY and push the TRANSMIT button -- you'll get a continuous signal to check settings with. Press again to stop transmitting.</p>
<p>OPTION A - Without Winkeyer</p> <p>To Use N3FJP to send Morse Code via the RTS signal from the USB</p> <p><i>I don't do it this way. It works most of the time, but can have some timing issues.</i></p>	<p>ICOM 7300: MENU Set Connections USB SEND -- set to DTR to match instructions below for N3FJP setup</p> <p>MENU Set Connections USB Keying (CW) -- set to RTS to match instructions below for N3FJP setup</p>	<p><i>This presumes RTS used to key morse code, and DTR used as an automatic push-to-transmit control so you don't have to deal with the vox-break-in-delay timing out during your transmission.</i></p> <p>You can certainly use the complete opposite; this is just how I set them up.</p>
<p>OPTION B: TO HAVE N3FJP WORK THROUGH WINKEYER TO TRANSMIT PERFECT CODE</p> <p><i>This is what I do.</i></p>	<p>No need for the DTR stuff. Set up WINKEYER in the N3FJP.</p> <p>BE CERTAIN TO <u>SAVE THE SETTINGS</u> IN THE "CW SETUP FORM 1.4" I didn't know this at first during Summer Field Day and it caused me a lot of</p>	<p><i>The behavior of N3FJP software with Winkeyer is somewhat unusual and is documented in an Appendix at the end of this document.</i></p>

	grief!!!	
N3FJP Setup	<p>Settings Transmit CW Setup</p> <ol style="list-style-type: none"> 1. Pick correct COM port on the COMPUTER. (use Device Manager to check if unsure) 2. IF OPTION A: Set Keying Options to RTS (unless using WINKEYER -- if so, adjust your keying as needed) 3. Click CW PTT for Amps (will use DTR to key push-to-talk) 4. Set WPM (speed) (for WINKEYER, lock to use its control) 5. NON-WINKEYER (OPTION A): : Choose Timing Option, test for good keying performance. TIMER worked well for me. 6. Set your MACROS (see following) 7. Probabaly choose "Faster ESC" so you can stop transmitting immediately if necessary. <p>BE CERTAIN TO "SAVE" YOUR SETTINGS IN THE CW SETUP FORM ESP TO MAKE THE WINKEYER CONTINUE TO WORK</p> <p>You can always transmit using a keyer connected to the back panel key input -- set appropriately for whether you're</p>	Potential MACROS: See Table Below

	using a full external keyer (telling the IC-7300 to presume a "straight key"), or only a paddle (hence needing the internal keyer to work)	
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OPERATING: THIRD -- Helpful hints

POWER LEVEL:

100 Watts -- Adjust the power level by pressing the Multifunction Button, selecting the power and adjusting with the knob.

Morse Code Speed: Faster stations will tend to be down in the Extra Class segments or just above. Slower stations will be at higher frequencies up to about .070 above each band where various digital modes begin. So scan around and find people sending at a comfortable speed!

*Never send CW faster than you can receive...*the other station will respond at or above the speed you send!

Using automated features of IC-7300 (if you aren't going to use the more useful features of N3FJP)

Setting up the MEMORY SEND in the Icom 7300 will take a lot of work off of you. The Speed can be easily changed with the multi-function button.

When you are in CW mode, pressing the physical MENU pushbutton (below touchscreen) and then the softkey KEYS will make the Memory Keyer available. Simply touch one to get it to send.

The MULTIFUNCTION knob allows you to easily change the SPEED of the keyer if you are using the internal electronic keyer (or the memory keyer).

	<p>SUGGESTED CANNED TEXTS YOU MAY WISH TO IMPROVE UPON THEM WITH EXPERIENCE SLOWER OPERATIONS WILL USE DIFFERENT TEXTS FROM FASTER OPERATIONS.</p>
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	These TEXTS are the same whether you are using a WINKEYER or having N3FJP key the 7300 directly. Numbering synhronized with other modes	
FUNCTION KEY	TEXT SENT	How this Function Key is used
F1	CQ WFD NF4AC NF4AC WFD [repeats]	repetive CQ; station K4AAA answers "K4AAA" You type their callsign into N3FJP so you can use it with the \$ in the next step.
F2	\$ 3I 3I NFL NFL BK or \$ 4I NFL BK if folks are being really succinct (Gordon shortened this to \$ 4F NFL BK in the 2023 Field Day with good success)	ANS EXCH (We responded: K4AAA 3I NFL BK) He answers R 1H GA
F3	3I 3I NFL NFL	EXCH ONLY -- you can use this just to send the exchange if needed
F4	QSL TU CQ NF4AC WFD	QSL QRZ? This allows you to confirm to the station you were working and immediately move to a new contact.
HUNT AND POUNCE USEFUL TEXTS		
F5	NF4AC	POUNCE (the other station should reply and send you their exchange)
F6	QSL 3I 3I NFL NFL	QSL EXCH
F7	AGN?	If we need a repeat
F8	\$? AGN PSE	(missed callsign to our CQ)
F9		
F10		
F11	DUPE	to notify someone they would be a duplicate

EXAMPLES: Typical Field Day CW Exchanges

OUR STATION	THEIR STATION	COMMENT
"RUNNING" Holding Frequency and Calling CQ		
NF4AC	Other Station K4AAA	
F1 CQ WFD DE NF4AC NF4AC K		<i>CALL CQ</i>
	K4AAA	
<i>Type in K4AAA into N3FJP Log,</i> F2 \$ (it sends K4AAA) 4A NFL BK		
	R 1H GA	
F3 R TU NF4AC WFD K		END OF QSO
F4 QRZ?		<i>Didn't get the call</i>
Search & Pounce (S&P) Hunt and Pounce Technique		
	CQ FD DE K4AAA K	Other station calling
BE AGGRESSIVE!! ANSWER INSTANTLY OR YOU'LL MISS THE CHANCE!! F8 NF4AC		We answer
	NF4AC 1H GA K	His exchange
F9 R 3I NFL K		Our Exchange
	R TU K4AAA WFD K	End of contact

This Table May Be Helpful To Organize the Canned Texts:

CQ ON FREQUENCY		HUNT & POUNCE			
F1	CQ..de NF4AC K	F5	NF4AC	F9	
F2	ANS EXCH \$ 3I NFL BK	F6	QSL EXCH	F9	
F3	EXCH ONLY 3I 3I NFL NFL	F7	AGN?	F10	
F4	QSL QRZ	F8	\$? AGN PSE (missed callsign)		

THIS TABLE MAY BE HELPFUL TO SUGGEST FREQUENCIES

CW	Typically for non-Extra Class, begins 25 kHz above bottom of band.	CW speeds generally <i>get slower as you get to higher frequencies.</i> DONT GO BEYOND 70 kHz from bottom -- may be PSK31 74 kHz above -- that is where FT8 starts!
PSK31	Typically about 70kHz up from bottom of band, to 3kHz above that 80 M: try 3.580 40 M: try 7.040	
FT8	Typically 74kHz above bottom of band, to 3kHz above that. Note these frequencies: 3.573 50.313	(During FD this may extend slightly higher or lower)
FT4	3.568 3.575 (overlaps FT8 slightly) 7.0475 (pse confirm) 14.080 21.140 28.180 50.318	
JS8	Typically 78 kHz above	

	bottom of band	
RTTY	Typically from 80 kHz above bottom of band to and through the 97.221(b) automated station frequencies.	For 40 meters, may extend up to 7.125 (end of legal frequencies) For 20 meters, may extend up to 14.150 For 15 meters, may extend up to 21.200 For 10 meters, ?? up to 28.3?? (doubt it would get that high at all)

Nitty Gritty of CW Contacs on IC-7300

CW operators typically transmit to each other very near to each others' frequency. This is because some operators use very narrow CW filters....and if you are a few hundred Hz away from THEIR frequency, they may not even hear you!

How do you make sure you answer a station on their exact frequency?

On the IC-7300 it is easy -- dial them in so that their pitch is the same pitch as your CW Sidetone from the 7300.

OR

so that their signal is centered on the display.

(And if there is only one station in the passband, you can hit the AUTO TUNE button and it will take them right there!) If you are using a very narrow filter, this is even easier -- tune them until they are LOUD in your filter and then they are centered.

The IC-7300 like many other CW transceivers, offsets the beat frequency oscillator (BFO) during RECEIVE, about 700Hz - 1 kHz *higher* than your carrier frequency, specifically so you will hear a TONE rather than a "whoossh" on their dits and dahs. In effect, you are receiving in Lower Side Band Mode. A nice outcome of this is that if you turn the dial clockwise to a higher frequency, the received signal INCREASES in pitch.

You can choose what offset you like! Some people like a lower pitch (like 600 Hz) and others like a higher pitch (like 1000 Hz). If you want to change it, there is a CW sidetone pitch adjustment and it automatically adjusts the receiver offset also to match. Pretty cool!

APPENDIX: N3FJP and WINKEYER

N3FJP actions with WINKEYER hardware in CW mode appear to be dependent on loading a saved configuration file, which (if it exists) happens by default in the turn-on sequence. For unknown reasons, the functionkeys appear largely disabled in the CW Setup dialog. If there is no saved configuration, and no configuration is saved/loaded, the keyer is likely to fail to work as desired with the function keys.

The following table documents some states verified by experimental practice.

Condition	Outcome	Notes
Starting N3FJP logging, when cw settings (CW.cws) have already been properly created for Winkeyer and saved; user has logged into N3FJP; CW mode selected both on Icom 7300 and in N3FJP	Everything works as desired: - Paddles work and send CW - Function keys work and send CW as desired	The program appears to read CW.cws configuration at some point in its turn-on process.
IF you go into configuration: SETTINGS Transmit Setup CW Settings	- if previously configured and saved for winkeyer operation, winkeyer button will be found already selected - the F9 test will work in this screen - the other Function Keys WILL NOT WORK (unknown why not)	
Load cw settings	Stil lthe same; F9 test will work, but function keys in this screen will not.	
Click "Configure Winkeyer"	Status will indicate "connected"	The meaning of "connected" is not quite clear
Click "open"	Status will change to "Success" as if it has re-opened the connection to the Winkeyer hardware, however the Function keys still will no work within he CW Setup dialog.	
Click DONE and go back to main program	Everything now works - - Keyer paddles send CW and activate radio - Function keys will send CW scripts as desired.	

Amateurs wishing to operate on either 2,200 or 630 meters must first register with the Utilities Technology Council online at <https://utc.org/utility-database-amateur-notification-process>. You need only register once for each band.

2,200 Meters (135 kHz)
135.7 kHz 1 W EIRP maximum 137.8 kHz
E.A.G

630 Meters (472 kHz)
5 W EIRP maximum, except in Alaska within 498 miles of Russia where the power limit is 1 W EIRP.
472 kHz
E.A.G

160 Meters (1.8 MHz)
Avoid interference to radiolocation operations from 1,900 to 2,000 MHz
1,800 2,000 MHz
E.A.G

80 Meters (3.5 MHz)
3,500 3,600 3,700 4,000 MHz
E A G N.T (200 W)
3,525 3,600

60 Meters (5.3 MHz)
CW, 5332 5348 5368.5 5373 5405 kHz
Dig 2.8 MHz
USB 5330.5 5340.5 5357.0 5371.5 5403.5 kHz
General, Advanced, and Amateur Extra licensees may operate on these five channels on a secondary basis with a maximum effective radiated power (ERP) of 100 W PEP relative to a half-wave dipole. Permitted operating modes include upper sideband voice (USB), CW, RTTY, PSK31 and other digital modes such as PACTOR III. Only one signal at a time is permitted on any channel.

40 Meters (7 MHz)
7,000 7,075 7,100 7,300 MHz
E A G N.T (200 W)
7,025 7,125
7,175
NT outside region 2
ITU 1.3 and FCC region 2 west of 132° west or below 20° north

See Sections 97.305(c), 97.307(f)(11) and 97.301(e). These exemptions do not apply to stations in the continental US.

30 Meters (10.1 MHz)
Avoid interference to fixed services outside the US.
10,100 10,150 MHz
E.A.G

20 Meters (14 MHz)
14,000 14,150 14,350 MHz
E A G
14,025 14,150 14,225

17 Meters (18 MHz)
18,068 18,110 18,168 MHz
E.A.G

15 Meters (21 MHz)
21,000 21,200 21,450 MHz
E A G N.T (200 W)
21,025 21,225 21,275 21,200

12 Meters (24 MHz)
24,800 24,930 24,960 MHz
E.A.G

10 Meters (28 MHz)
28,000 28,300 29,700 MHz
E.A.G N.T (200 W)
28,000 28,500

6 Meters (50 MHz)
50.1 50.0 MHz
E.A.G.T

2 Meters (144 MHz)
144.1 144.0 MHz
E.A.G.T

1.25 Meters (222 MHz)
219.0 220.0 222.0 225.0 MHz
E.A.G.T N (25 W)

70 cm (420 MHz)*
420.0 450.0 MHz
E.A.G.T

33 cm (902 MHz)*
902.0 928.0 MHz
E.A.G.T

23 cm (1240 MHz)*
1240 1300 MHz
E.A.G.T N (5 W)
1270 1295

* Geographical and power restrictions may apply to all bands above 420 MHz. See The ARRL Operating Manual for information about your area.

All licensees except Novices are authorized all modes on the following frequencies:
 2300-2310 MHz 10.0-10.5 GHz † 122.25-123.0 GHz
 2390-2450 MHz 24.0-24.25 GHz 134-141 GHz
 3300-3500 MHz 47.0-47.2 GHz 241-250 GHz
 5650-5925 MHz 76.0-81.0 GHz All above 275 GHz
 † No pulse emissions

KEY

Note: CW operation is permitted throughout all amateur bands.
 MICW is authorized above 50.1 MHz, except for 144.0-144.1 and 219-220 MHz.
 Test transmitters are authorized above 51 MHz, except for 219-220 MHz

= RTTY and data
 = phone and image
 = CW only
 = SSB phone
 = USB phone, CW, RTTY, and data.
 = Fixed digital message forwarding systems only

E = Amateur Extra
 A = Advanced
 G = General
 T = Technician
 N = Novice

See ARRLWeb.org at www.arrl.org for detailed band plans.

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