

# W9DXCC 2024

## Digital Contesting

Tim K9WX



# Today's Trivia Question

How many digital modes are there in ham radio

Per ADIF 3.1.4:

- 43 modes
- 200, modes and submodes combined



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# Today's Trivia Question

How many digital modes are there in ham radio contesting?

Only 2 that matter:

- Radioteletype aka RTTY
- FT8/FT4



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# *Digital contesting: Not everyone is a fan*

- “I only want to operate modes I can decode in my head”
- “There’s no challenge in having two computers work each other”

The first rule of ham radio: Have fun!

And, if you’re not having fun, you’re not doing it right.



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# Digital contesting: Why I'm a Fan

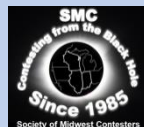
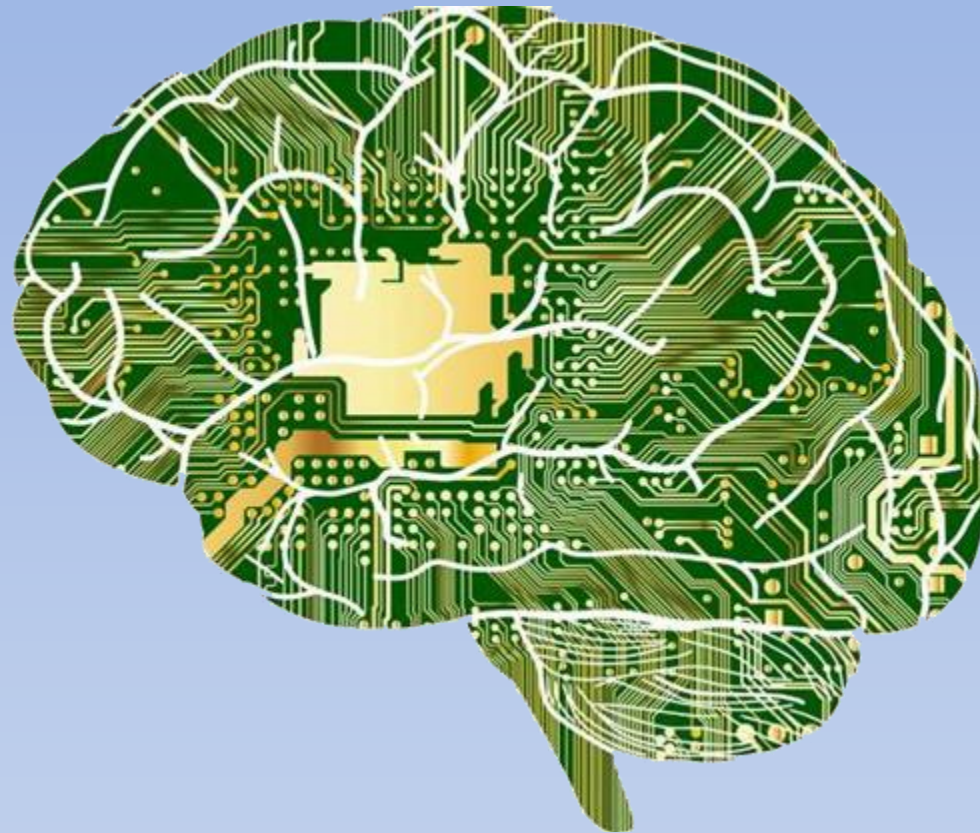
- Phone and CW: Ability to copy is THE skill that separates great contesters from average contesters
- Digital: Ability to head copy is simply not a factor. The decoder copies for you.



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# *Digital contesting: Why I'm a Fan*



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# *Digital contesting: Why I'm a Fan*

- The digital contester can bring other skills, techniques and strategies to the chair
- High-performance contesting is enabled for more participants



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# *Digital contesting: Why I'm a Fan*

- On a good day, I am an average CW contester
- On an average day, I am a good digital contester
- It doesn't matter what day it is, I am a lousy Phone contester



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# *Digital contesting: Why I'm a Fan*

CW contesting is a lean-forward experience:

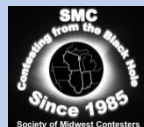
- Tense
- White-knuckled
- Straining to hear every dot and dash through the static



# *Digital contesting: Why I'm a Fan*

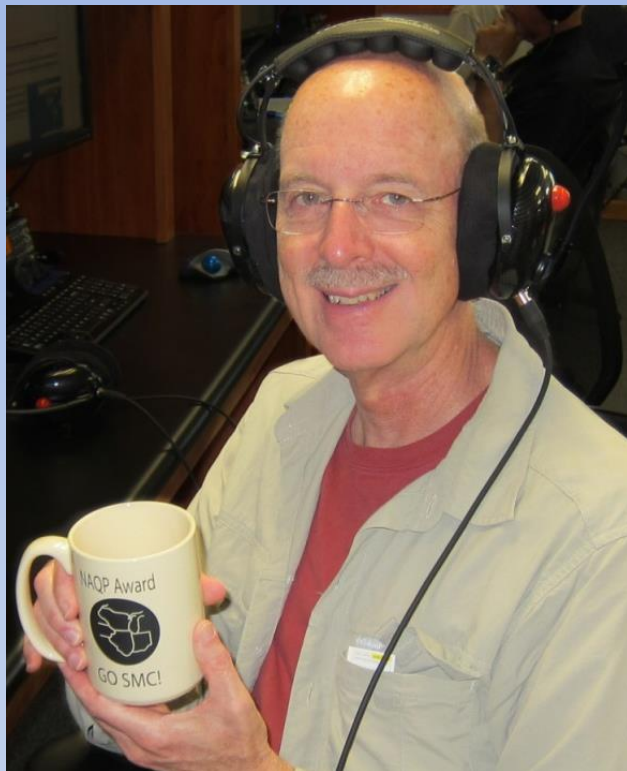
Digital contesting is a lean-back experience

- More relaxed
- Calmer
- I let the computer do some of the hard work



# Digital contesting: Why I'm a Fan

## After Digi Contest



## After CW Contest



# Agenda

- FT8/FT4 (WSJT-X only), RTTY
- A bit of history
- Status of these modes today as contest modes
- Tips and tricks
- ~~Basic setup~~



*July 11, 2017*

WSJT-X 1.8.0-rc1 available for download

Release notes:

- “New Features in WSJT-X: New mode called FT8 . . .”



*July 15, 2017*

## CQ WW VHF Contest

Results article:

“What will the . . . contest be remembered for? Certainly not stellar band conditions . . . (but) as the first contest to use K1JT’s FT8 software, which some believe . . . will revolutionize VHF contesting.”



*July 15, 2017*

## CQ WW VHF Contest

... “So many participants were playing with digital, ... CW and phone were often dead quiet. ... there was a lack of folks using more conventional modes (CW, phone) when the propagation supported it.”



# August 1, 2017

The ARRL news story: *FT8 Mode is Latest Bright Shiny Object in Amateur Radio Digital World*

“In a limited outing for the CQ VHF, Frank Donovan, W3LPL, made 22 FT8 contacts on 6 meters”





# August 1, 2017

The ARRL news story: *FT8 Mode is Latest Bright Shiny Object in Amateur Radio Digital World*

“In a limited outing for the CQ VHF, Frank Donovan, W3LPL, made 22 FT8 contacts on 6 meters, ‘Some of the 22 QSOs may have been difficult to complete on CW (emphasis added).’”



# June-July 2018

## Baker Island KH1/KH7Z DXpedition

### Fox and Hounds Mode

Mode	QSOs
CW	32,442
SSB	18,907
FT8	16,671
RTTY	931

Source: ClubLog



YouTube: DX Mentor  
Episode 46 w. AA7A

## Can it work for HF contesting?



# December 1, 2018

The first-ever FT Roundup, sponsored by Ed,  
W0YK and Don, AA5AU

K1JT advised that “FT8 was not designed with  
HF contesting in mind...” but, in the  
end, “he was on board with his support.”



# *December 1, 2018*

FT Roundup Results:

1,253 logs

2,106 unique callsigns



# Is FT8 A Good Thing?

The W3LPL  
antenna  
farm



# Is FT8 A Good Thing?

Meanwhile,  
just down  
the street . . .



# *Is FT8 A Good Thing?*

“I am very hard of hearing, waiting on insurance approval for a cochlear implant. I love WSJT. It saved my ham radio hobby. I can't do SSB or CW hardly anymore, but I do FT8 every day thankfully.”

WSJT-X groups.io September 2023



# *Major FTx Contests: Long Form*

## FT Roundup – 30 hours

- First full weekend of December
- 1 pt per QSO, SPC mults

## ARRL International Digital – 30 hours

- First full weekend of June
- QSO pts based on 500 km intervals, no mults

## WW Digi – 24 hours

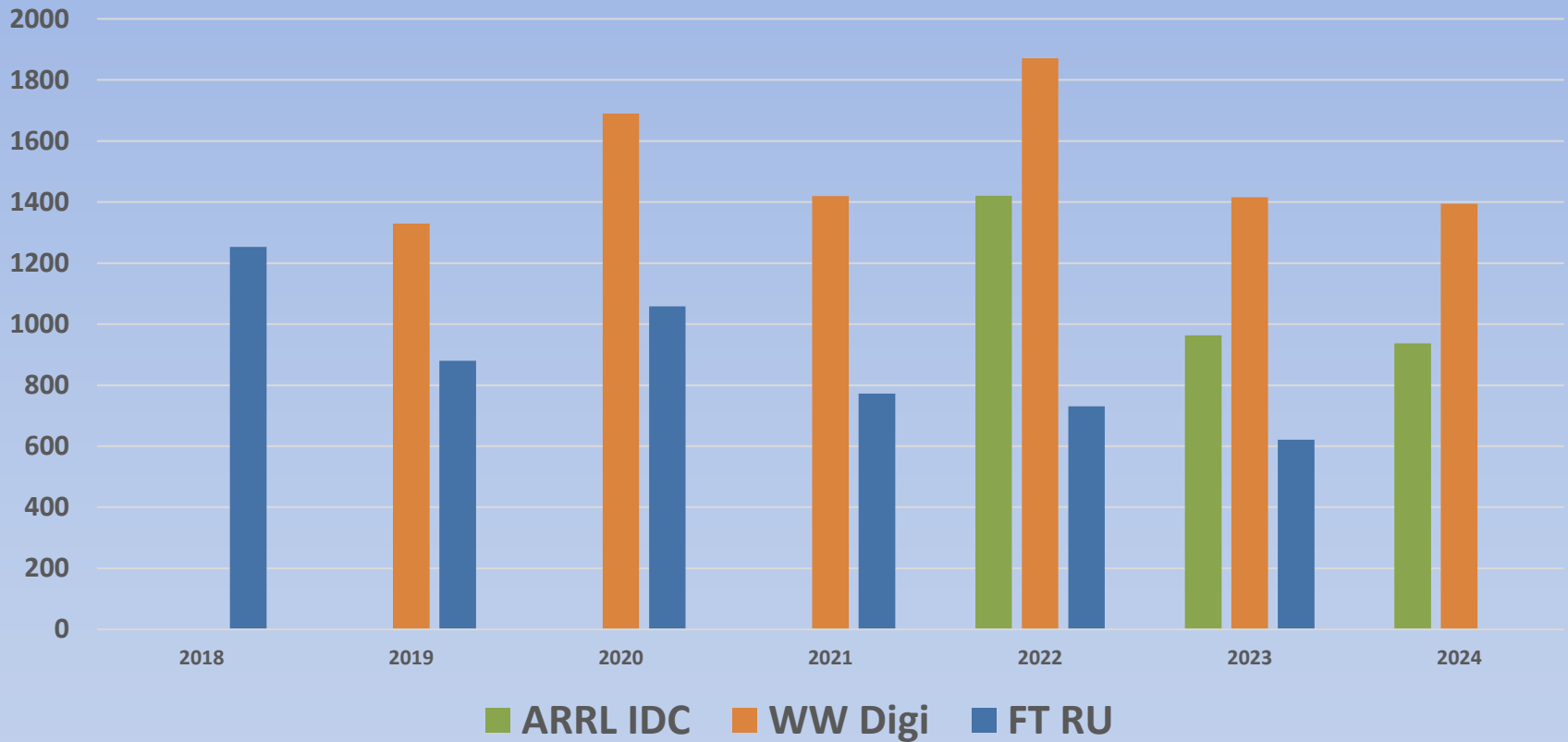
- Last full weekend of August
- QSO pts based on 3000 km intervals, 2-character grid mults





# Major FTx Contests

## Logs Submitted



# *Something Different: NCCC FT4 Sprint*

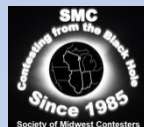
Every Friday at 0100 UTC

1 pt per QSO

Mults are 4-character grid squares

Not adjudicated

30 minutes of mayhem



# *Something Different: NCCC FT4 Sprint*

Theory: QSOs can be completed with just 1  
transmission per station

7.5 seconds x 2 = 15 seconds per QSO

4 QSOs per minute

120 QSOs in the half hour



WSJT-X - ForEW1 v2.7.0-rc2 by K1JT et al.

File Configurations View Mode Decode Save Tools Help

Band Activity					Rx Frequency				
UTC	dB	DT	Freq	Message	UTC	dB	DT	Freq	Message
----- 15m									
010152	-4	-0.3	1711 +	K9WX AJ6V R CM87	010030	Tx	1930 +	CQ NS K9WX EN60	
010152	-3	-0.0	1406 +	WA7BNM N6ZFO CM89	010045	Tx	1930 +	CQ NS K9WX EN60	
					010100	Tx	1930 +	CQ NS K9WX EN60	
					010107	2	-0.2	1711 +	CQ NS AJ6V CM87 U.S.
					010115	Tx	1930 +	AJ6V K9WX EN60	
					010122	-2	-0.3	1711 +	W1UE AJ6V CM87
					010130	Tx	1930 +	AJ6V K9WX EN60	
					010137	-1	-0.3	1711 +	K9WX AJ6V R CM87 a2
					010152	-4	-0.3	1711 +	K9WX AJ6V R CM87
					010200	Tx	1930 +	AJ6V K9WX RR73	

CQ only    Log QSO                         Menus

15m    S   **21.140 000**    Tx even/1st    Hold Tx Freq

H   DX Call   DX Grid  
 FT8   AJ6V   CM87   Rx 1711 Hz  
 FT4   Az: 276   1931 mi   Report -4  
 MSK   Lookup   Add    Auto Seq   CQ: Max Dist  
 Q65   **2023 Aug 18 01:02:06**  
 JT65

Generate Std Msgs	Next	Now
AJ6V K9WX EN60	<input type="radio"/>	Tx 1
AJ6V K9WX EN60	<input type="radio"/>	Tx 2
AJ6V K9WX R EN60	<input type="radio"/>	Tx 3
AJ6V K9WX RR73	<input type="radio"/>	Tx 4
AJ6V K9WX T3	<input type="radio"/>	Tx 5
CQ NS K9WX EN60	<input checked="" type="radio"/>	Tx 6

Receiving   FT4   2   Last Tx: AJ6V K9WX RR73   6/7.5   WD:6m

WSJT-X - ForEW2 v2.7.0-rc2 by K1JT et al.

File Configurations View Mode Decode Save Tools Help

Band Activity					Rx Frequency				
UTC	dB	DT	Freq	Message	UTC	dB	DT	Freq	Message
----- 20m									
010200	-3	-0.1	478 +	CQ CO2A7 EL83	010110	Tx	2660 +	CQ NS K9WX EN60	
010200	23	-0.0	617 +	OH3GLY K1VI R+05 4	010122	Tx	2660 +	CQ NS K9WX EN60	
010200	3	-0.0	889 +	CQ TEST WA8ZNC CN85	010137	Tx	2660 +	CQ NS K9WX EN60	
010200	-10	0.0	1138 +	W83JIS K3UA RR73	010152	Tx	2660 +	CQ NS K9WX EN60	
010200	-13	-0.0	1758 +	CQ ON4KBU JN29	010200	-7	0.0	2660 +	K9WX F4JGI IN94
010200	-7	-0.0	2123 +	CQ SP5EXA KO02					
010200	-7	0.0	2660 +	K9WX F4JGI IN94					

WSJT-X - ForEW2 v2.7.0-rc2 by K1JT et al. - Log QSO

Click OK to confirm the following QSO:

Call                      Start                      End

F4JGI                      8/18/2023 01:02:06                      8/18/2023 01:02:06

Mode	Band	Rpt Sent	Rpt Rcvd	Grid	Name
FT4	20m			IN94	

Tx power                       Retain

Comments                          Retain

Operator   K9WX

Exch sent   EN60                      Rcvd   IN94

Prop Mode                       Retain

Satellite                       Retain

RX Frequency                       Retain

CQ only    Log QSO                         Menus

20m    S   **14.080 000**    Tx even/1st    Hold Tx Freq

H   DX Call   DX Grid  
 FT8   F4JGI   IN94   Rx 2660 Hz  
 FT4   Az: 55   4194 mi   Report -7  
 MSK   Lookup   Add    Auto Seq   CQ: Max Dist  
 Q65   **2023 Aug 18 01:02:06**  
 JT65

Generate Std Msgs	Next	Now
AJ6V K9WX EN60	<input type="radio"/>	Tx 1
AJ6V K9WX R EN60	<input type="radio"/>	Tx 2
AJ6V K9WX RR73	<input type="radio"/>	Tx 3
AJ6V K9WX T3	<input type="radio"/>	Tx 4
CQ NS K9WX EN60	<input checked="" type="radio"/>	Tx 6

Receiving   FT4   7   Last Tx: CQ NS K9WX EN60   6/7.5   WD:6m



# Something Different: NCCC FT4 Sprint


NCCCSprint.com

## NS - THE CONTESTER'S EDGE

Monday Tuesday Wednesday **Thursday** Friday Saturday Sunday

- NS Home
- NS Ladder
- NS Rules
- NS Calculators
- Operating Tips
- Photos
- RTTY NS
- FT4 NS**
- Scoring
- Software
- NCCC Home
- CQP Home
- NA Sprint Home

### FT4 NS



The Northern California Contest Club sponsors weekly sprint practices on CW and RTTY and FT4, named NS (NCCC Sprints). These practices are for all operators. The special QSY rule does not apply to FT4 since the entire band is decoded at once. The new FT4 sprint is focused on achieving high QSO rates and low NIL rates.

**Day-Time**

- FT4 NS practices will be held on each Thursday afternoon-evening.
- FT4 NS start time is 0100 UTC - 45 minutes BEFORE the regular RTTY NS begins
- Maximum operating time = 30 minutes (i.e., 0100-0130 UTC)
- Those operators continuing immediately to the RTTY NS session at 0145 UTC will now have 15 minutes to set up for that session.



# Something Different: NCCC FT4 Sprint

The screenshot displays two instances of the WSJT-X software interface, labeled 'Virtual1' and 'Virtual2'. Both instances show a 'Contest Log' window with the following data:

Band	Freq(MHz)	Mode	Date & Time(UTC)	Call	Sent	Rcvd
20m	14.080	FT4	14.06.2023 18:50:28	VE7AB	J042	CN88
20m	14.082	FT4	14.06.2023 18:50:37	DG2YCB	CN88	J042GB

Below the logs, the 'Band Activity' window shows a list of received messages:

UTC	dB	DT	Freq	Message
185022	52	-0.0	2372	+ DG2YCB VE7AB CN88
185037	52	-0.1	2372	+ DG2YCB VE7AB RR73 Canada
185015	Tx	300	+ CO NCCC DG2YCB J042	
185022	Tx	300	+ DG2YCB VE7AB CN88	
185030	Tx	300	+ VE7AB DG2YCB R J042	
185037	Tx	300	+ DG2YCB VE7AB RR73 Canada	
185045	Tx	300	+ VE7AB DG2YCB 73	

The interface also features a frequency display at 14,080 000 Hz, control buttons for 'Monitor', 'Erase', 'Decode', 'Enable Tx', and 'Halt Tx', and a 'Generate Std Msgs' section with a list of messages to be transmitted.

On the right side of the screen, a video feed shows a participant wearing a blue shirt and glasses, with a call sign 'DG2YCB' visible in the background.



# State QSO Parties

	CW	Phone	Digital
SC 2024	13,760	13,352	?
HI 2023	7,773	5,097	?







# *SCQP Exchange Conversion à la Field Day*

- Submit a separate FT8 log along with your CW/SSB log
- The contest sponsor will convert your FT8 exchanges to counties and states
- And combine your FT8 and your CW/SSB logs to produce a single log for scoring



# State QSO Parties – Results QSOs

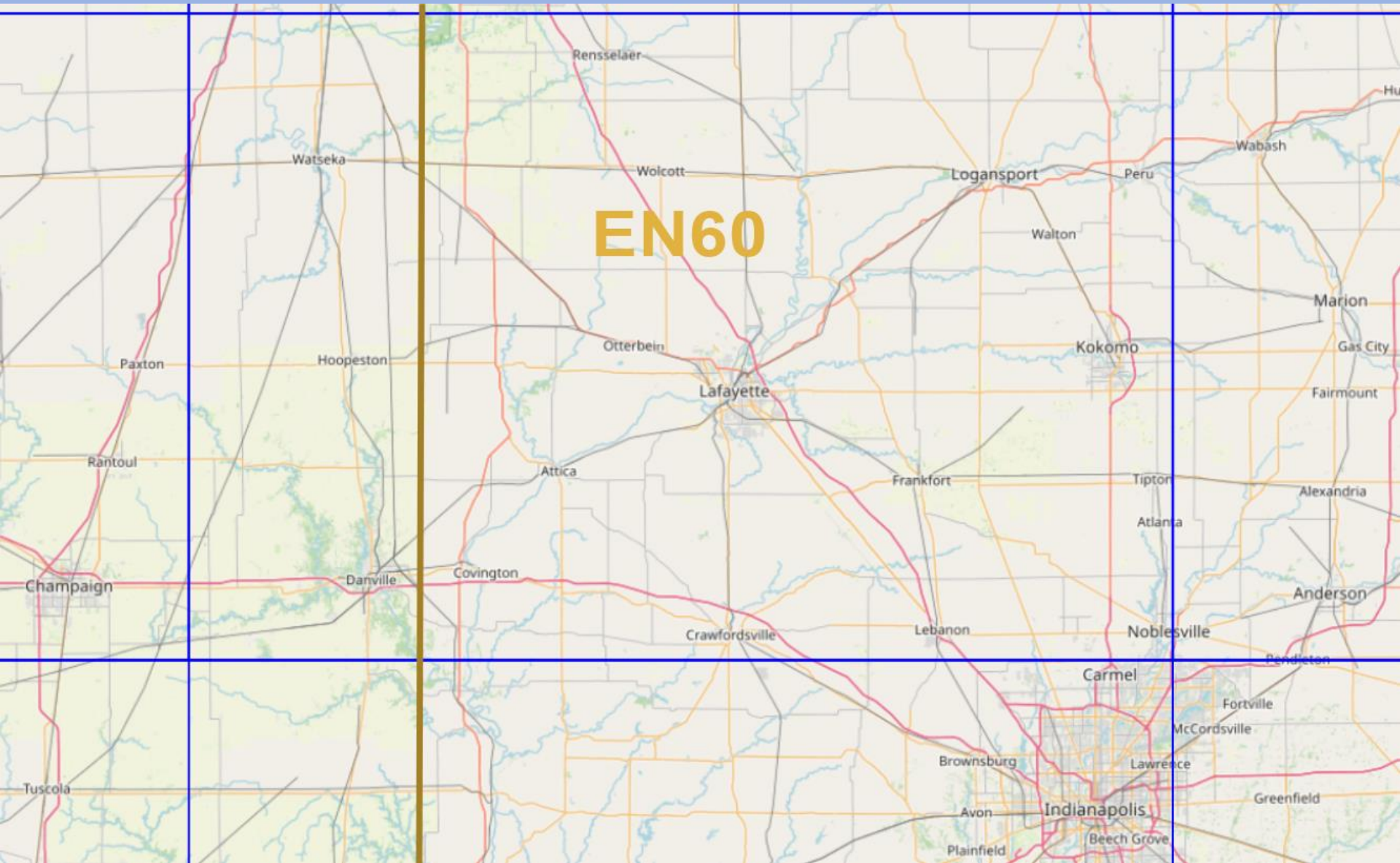
	CW	Phone	Digital
SC 2024	13,760	13,352	176
HI 2023	7,773	5,097	?



# Hawaii QSO Party

- Log grid square
- If your QSO partner does not send a grid square, it's OK to look it up on QRZ and enter that as the received exchange
- HIQP scoring will convert grid square to the most likely state or Hawaii county. “We do not guarantee this to be accurate. We do the best we can.”





EN60



# State QSO Parties – Results QSOs

	CW	Phone	Digital
SC 2024	13,760	13,352	176
HI 2023	7,773	5,097	2,761



# 2023 HIQP Results

KH6 Only: 2,560 DG QSOs  
Everyone Else: 201 DG QSOs

The 48-hour HIQP has a 100% plus overlap with the 24-hour WW Digi Contest



# *How New Contests Are Created*

CW, Phone, RTTY:

- The contest sponsor develops the concepts and rules, including exchange & multiplier
- Logging software developers create a contest-specific module to accommodate the new contest
- Or, the sponsor will develop a UDC module or will piggyback



# *How New Contests Are Created*

FT8 contest creation is upside down:

- WSJT-X support is fixed
- The contest sponsor must design a new contest to use the native WSJT-X exchanges: state/province/section, serial number, grid or Field Day category
- Name, DX, county, age, membership number, Park ID, IOTA# are all non-native exchanges





# *Suggestion 1*

Traditional contesting:

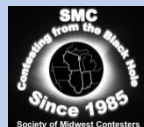
- Rates are typically best when running: find a clear frequency and call CQ!
- “If you’re not running, you’re not winning!”
- Switch to S&P occasionally so you can work the stations that are only running or to find multipliers
- If SO2R, at least one radio is always running



# *Suggestion 1*

FT8 contesting:

- No distinct rate advantage to calling CQ vs responding to CQers
- Rates can be similar for both running or responding



# *Suggestion 1*

## Suggestion #1

- Don't worry about your ratio of Run to S&P
- There are 4 operational states:
  - Even cycle CQ
  - Odd cycle CQ
  - Even cycle S&P
  - Odd cycle S&P
- And each state lets you work different stations



## *Suggestion 2*

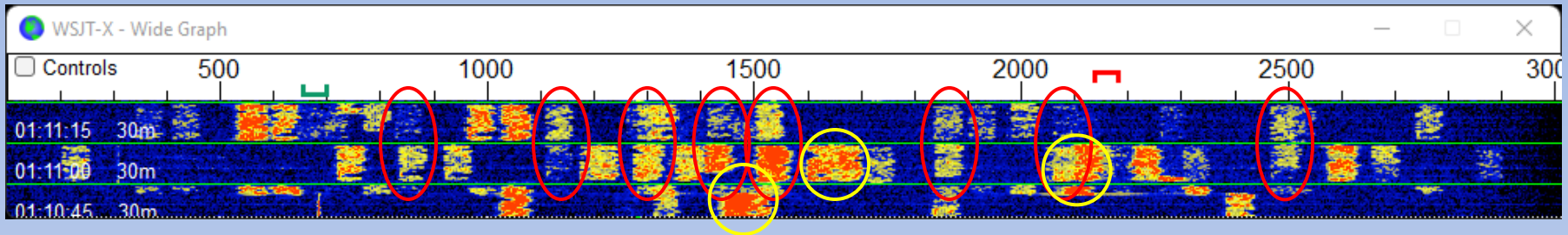
### Traditional contesting

- One CQing station per frequency
- When calling CQ, look for a clear frequency and hold it for as long as you can
- Answer a CQing station by moving to their frequency



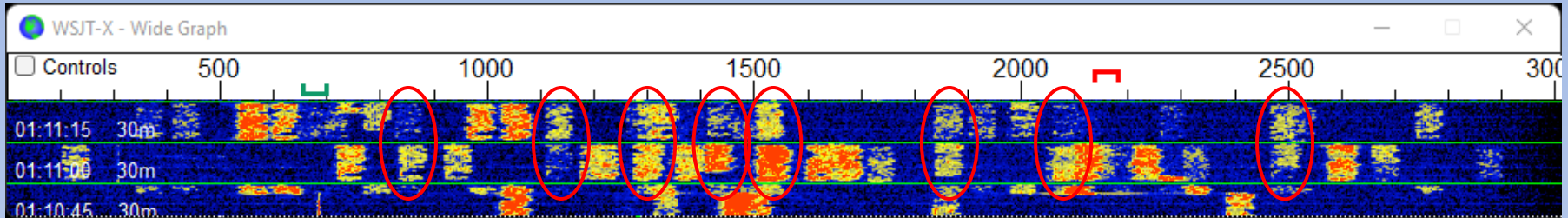
# Suggestion 2

- FT8 contesting: Stations share frequencies, some on even cycles, some on odd, overlap



## Suggestion 2

- FT8 contesting: Stations share frequencies, some on even cycles, some on odd, overlap

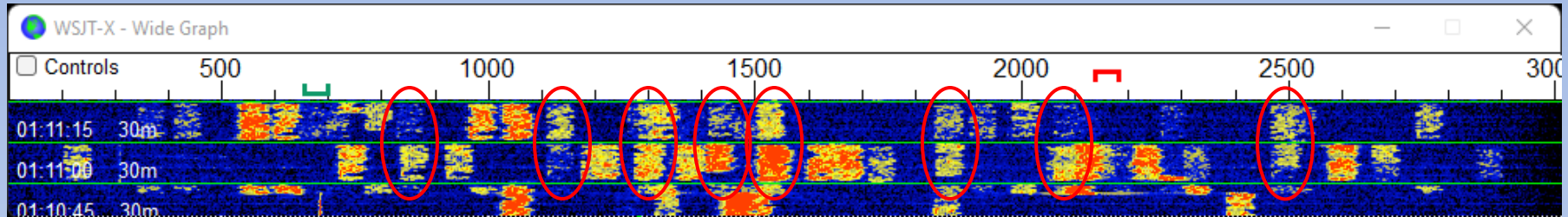


- Whether calling CQ or S&Ping, look for a mostly clear frequency on your cycle and TX there for as long as you can, but that might not be very long.



## Suggestion 2

- FT8 contesting: Stations share frequencies, some on even cycles, some on odd, overlap



- FT8 contesting, NEVER reply to a CQing station by moving to their frequency.



# Suggestion 2

## Hold TX Freq

The screenshot shows the WSJT-X v2.5.2 interface. The top window displays a 'Band Activity' log with columns for UTC, dB, DT, Freq, and Message. The bottom window shows the control panel with a frequency field set to 7.074 000 and a 'Hold TX Freq' checkbox checked. A red circle highlights these elements. The control panel also includes fields for 'Tx 2136 Hz', 'Rx 654 Hz', and 'Report -1'. A 'Generate Std Msgs' section is visible on the right, showing a list of messages with 'Tx 6' selected.

UTC	dB	DT	Freq	Message
111730	-3	1.4	1510	CQ HA4QA EM97 U.S.A.
111730	1	0.4	1281	VB4LIGMA KKA9VRX 73
111730	-1	0.3	1904	N4SMF VG7JC -07
111730	-3	0.6	958	CQ KE3I EN90 U.S.A.
111730	-9	0.3	1905	N4SMF KM4UDX FM18
111730	-9	0.4	474	N4SMF JA6MWM PMS3
111745	-3	0.3	657	YH7OA WC6L -09
111745	7	0.3	1978	KJ4ZBC W2BCC FN21
111745	8	0.1	421	CQ VE3MGY EN92 Canada
111745	2	0.2	2350	JA2IQV KK5PK EM11
111745	8	0.2	2071	WA4BAN KR0P -07
111745	19	0.4	767	CQ W0MU DM79 U.S.A.
111745	-4	0.3	2547	BX6ABC AB7FB DM09
111745	1	0.3	1370	WG6MT WA4NVM EM55
111745	11	0.9	577	YH7OA WA5YZD EM10
111745	3	0.3	1904	JA2IQV N4SMF R-08
111745	18	0.4	1160	CQ KC3Y FM19 U.S.A.
111745	-6	0.4	1732	CQ NP4WV FK68 Puerto R
111745	1	0.1	1472	CQ POTA NF1T EL88 U.S.A.
111745	-10	0.3	1838	<...> WA9EIC EN60
111745	5	0.2	606	W6ZD KO4RSJ 73
111745	-6	0.3	1478	W6ZD KG4IXS FM06
111745	-3	0.6	1998	K8SEL N7TND -11
111745	-18	0.3	1009	N4HB VK3DGO 0E22
111745	-5	0.3	2034	N4HB WY0V 73
111745	-9	0.4	2011	ND7C K8USN R-16
111745	-9	0.3	1983	CQ W6DAH CM97 U.S.A.





# Suggestion 2

Suggestion #2: *Always check “Hold TX Freq.” Always. Never answer a CQing station by moving to its frequency. Never.*

The screenshot shows a radio software interface with the following elements:

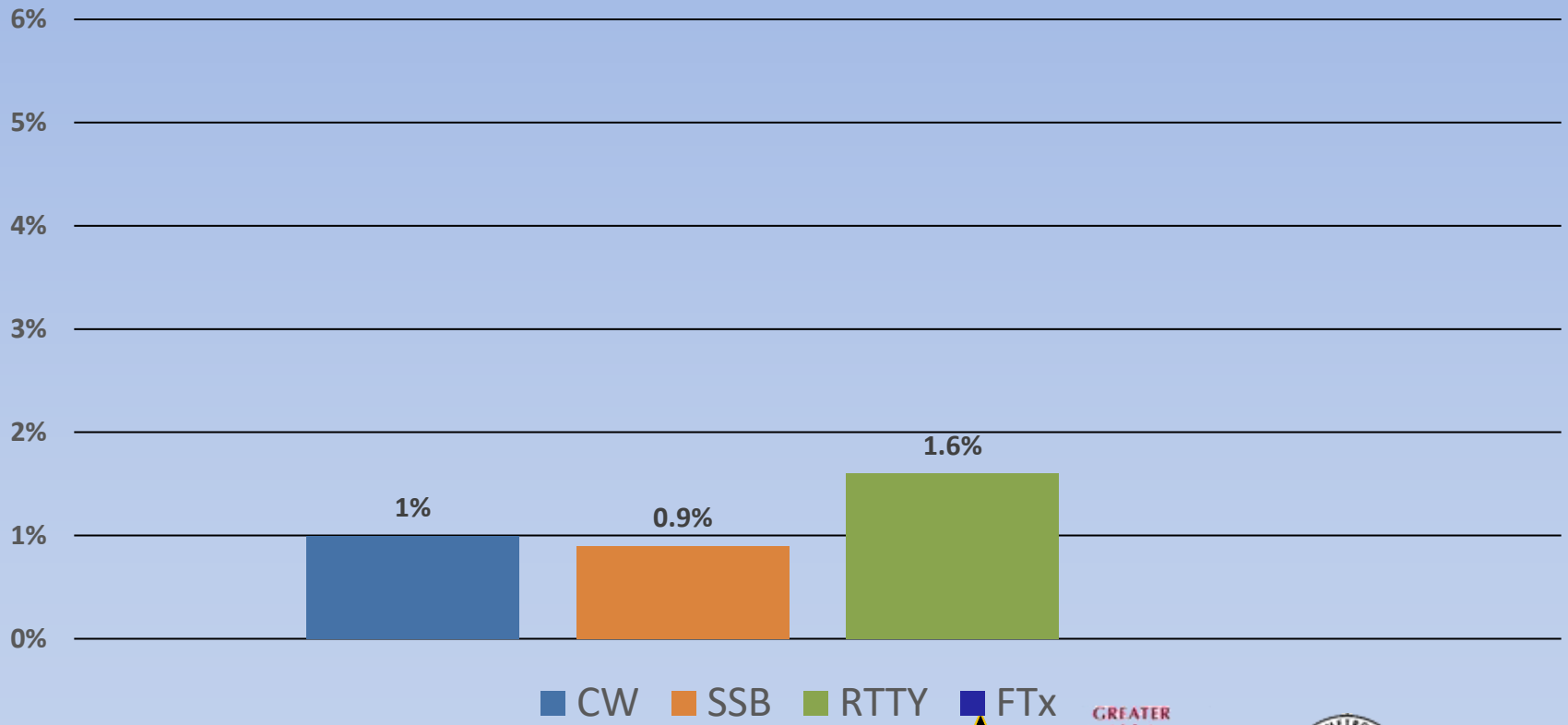
- Buttons: CQ only, Log QSO, Stop, Monitor (highlighted in green), Erase (circled in red), Decode, Enable Tx, Halt Tx, Tune, and a checked Menus button.
- Frequency: 40m band, 7.074 000 MHz.
- Transmit/Receive Settings: Tx 2136 Hz, Rx 654 Hz, Report -1.
- Call and Grid: DX Call 3A/F6EXV, DX Grid empty.
- Sequence: Auto Seq checked, Call 1st checked.
- Message List: A table with columns 'Generate Std Msgs', 'Next', 'Now', and 'Pwr'.

Generate Std Msgs	Next	Now	Pwr
<3A/F6EXV> K9WX EN60	<input type="radio"/>	Tx 1	<input type="checkbox"/>
<3A/F6EXV> K9WX -01	<input type="radio"/>	Tx 2	<input type="checkbox"/>
<3A/F6EXV> K9WX R-01	<input type="radio"/>	Tx 3	<input type="checkbox"/>
3A/F6EXV <K9WX> RR73	<input type="radio"/>	Tx 4	<input type="checkbox"/>
3A/F6EXV <K9WX> 73	<input type="radio"/>	Tx 5	<input type="checkbox"/>
CQ K9WX EN60	<input checked="" type="radio"/>	Tx 6	<input type="checkbox"/>
- Status: Receiving, FT8, Last Tx: 3A/F6EXV <K9WX> 73, 21.
- Time: 2022 Jul 13 11:17:57.



# Suggestion 3

## Average NILs: 2021 WW Contests

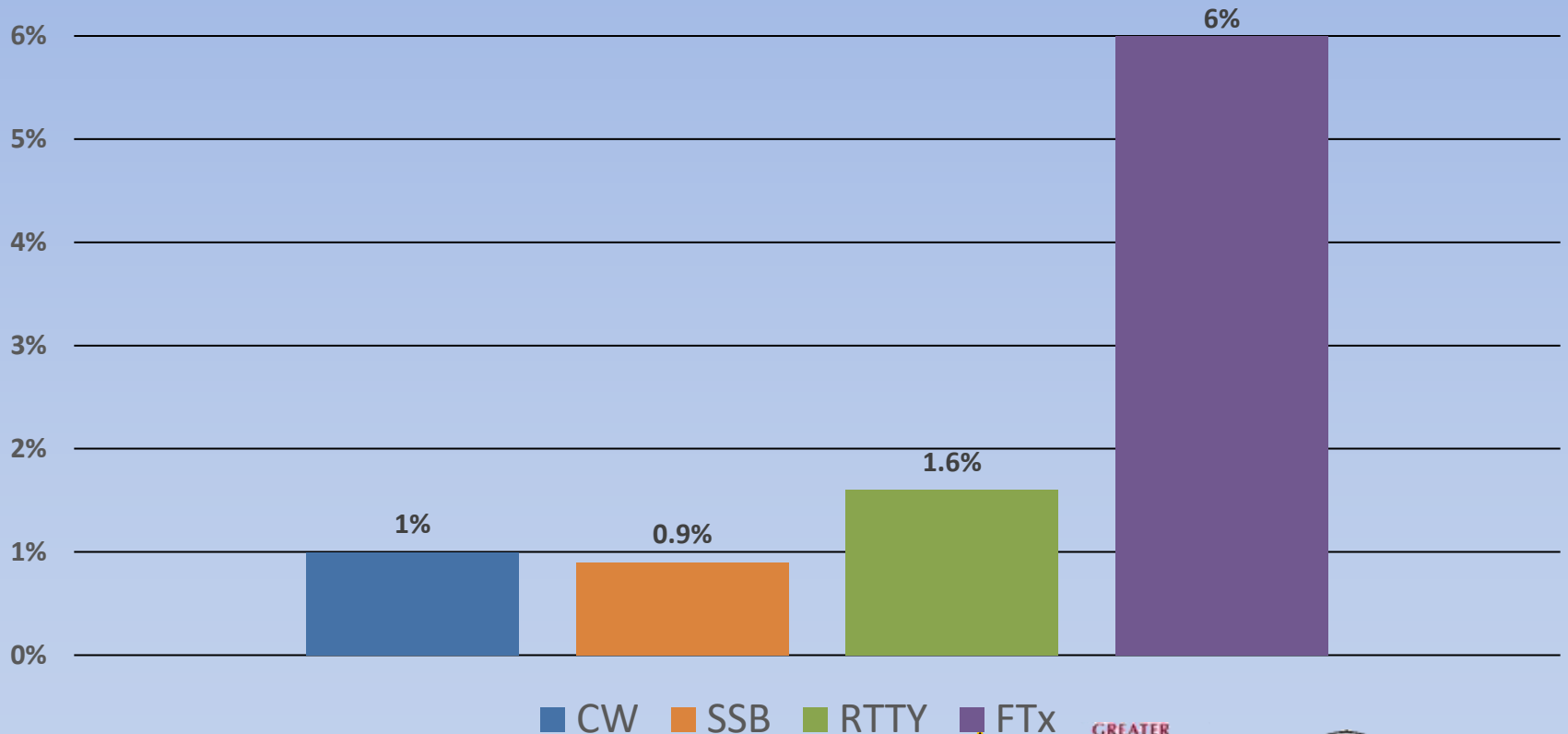


■ CW ■ SSB ■ RTTY ■ FTx



# Suggestion 3

## Average NILs: 2021 WW Contests



# Suggestion 3

When should you log an FT8 contest QSO?



# *Suggestion 3*

## Suggestion #3

- Always log a QSO when you have received RRR, RR73, or 73 from a station you are working
- Log a QSO when you send RR73 or 73 if you are reasonably confident it will be copied. But be sure to watch for any indication that it was not copied.



# Suggestion 4

## How are FT8 messages decoded?

- July/August 2020 QEX

Steve Franke, K9AN

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k9an@arrl.net

Bill Somerville, G4WJS

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High Wycombe HP14 3RP, England;  
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Joe Taylor, K1JT

272 Hartley Ave., Princeton, NJ 08540;  
k1jt@arrl.net

## The FT4 and FT8 Communication Protocols

*Motivation and design of the digital modes FT4 and FT8,  
and some details of how they are implemented in WSJT-X.*

### 1. Introduction

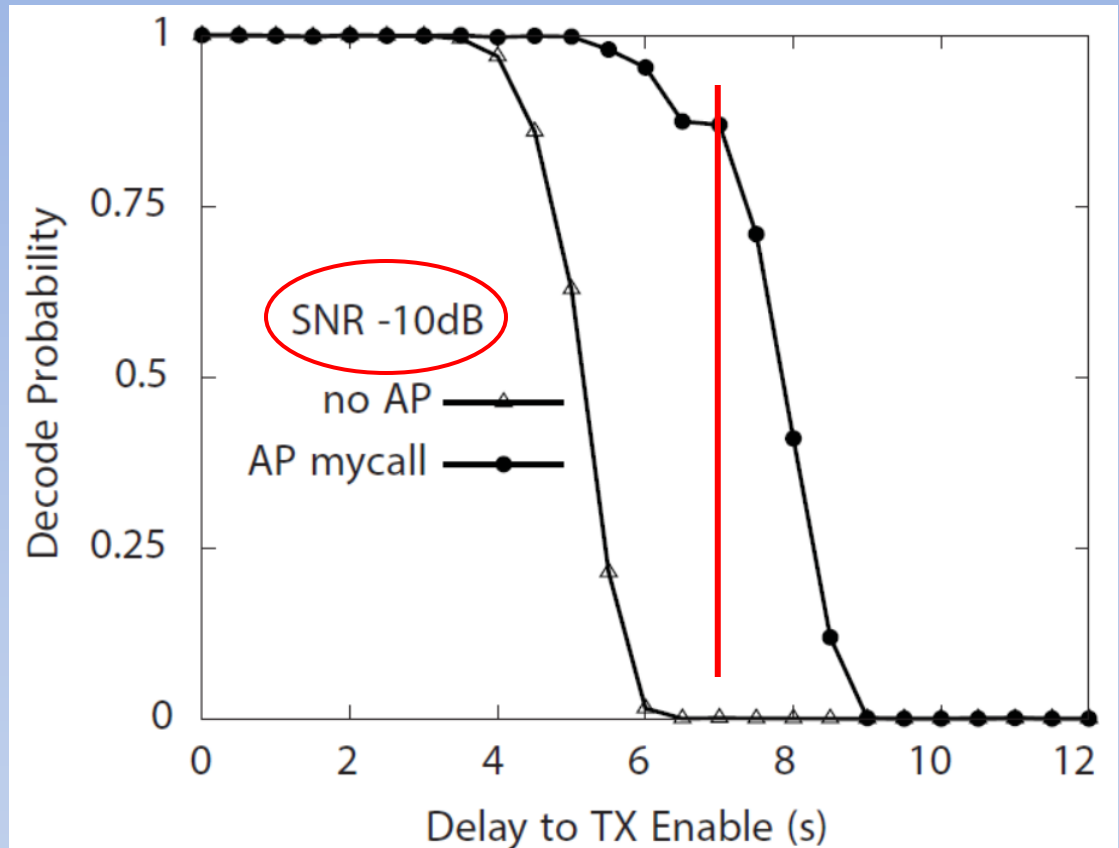
FT4 and FT8 are digital protocols designed for rapid and accurate communication between amateur radio stations, particularly in weak-signal conditions. Information exchanged in a minimal two-station contact typically consists of call signs, four-character Maidenhead

extreme weak-signal performance on the VHF, UHF, and microwave bands. These modes use transmit and receive sequences of one minute, so two-way contacts generally require at least four minutes. By reducing the T/R sequences to just 15 seconds, optimizing the LDPC decoder in several important ways, and accepting a sensitivity



# Suggestion 4

What is the decode probability when the transmitting station starts transmitting after the beginning of a 15 sec interval?



## *Suggestion 4*

- It's OK to arrive late to the FT8 party
- Start a transmit at any point in the 15-second transmit interval
- FT4 not as good





## Suggestion 5

Is FT4 twice as fast as FT8?

- “FT4 (has a) 3.2 dB loss in sensitivity (relative to FT8) but is twice as fast as FT8 and is potentially attractive for contesting at high QSO rates.” *QEX*
- “There has been no hyping of FT4... and we did not suggest that FT4 should necessarily be superior to FT8 for contesting.” K1JT: Dec 2021 groups.io



## *Suggestion 5*

Is FT4 twice as fast as FT8?

- Anecdotal accounts suggest that FT4 also suffers decoding losses when used on a crowded band
- Anecdotal reports often decry the lack of FT4 activity when a band is open (as determined by a high level of FT8 activity)



## *Suggestion 5*

Suggestion #5: If you can choose between FT4 and FT8 in a contest, follow Sutton's Law: "I rob banks because that's where the money is."

- Every multimode contest involves a decision on the choice of modes
- Use a mix of modes to your best advantage if a contest allows more than one mode

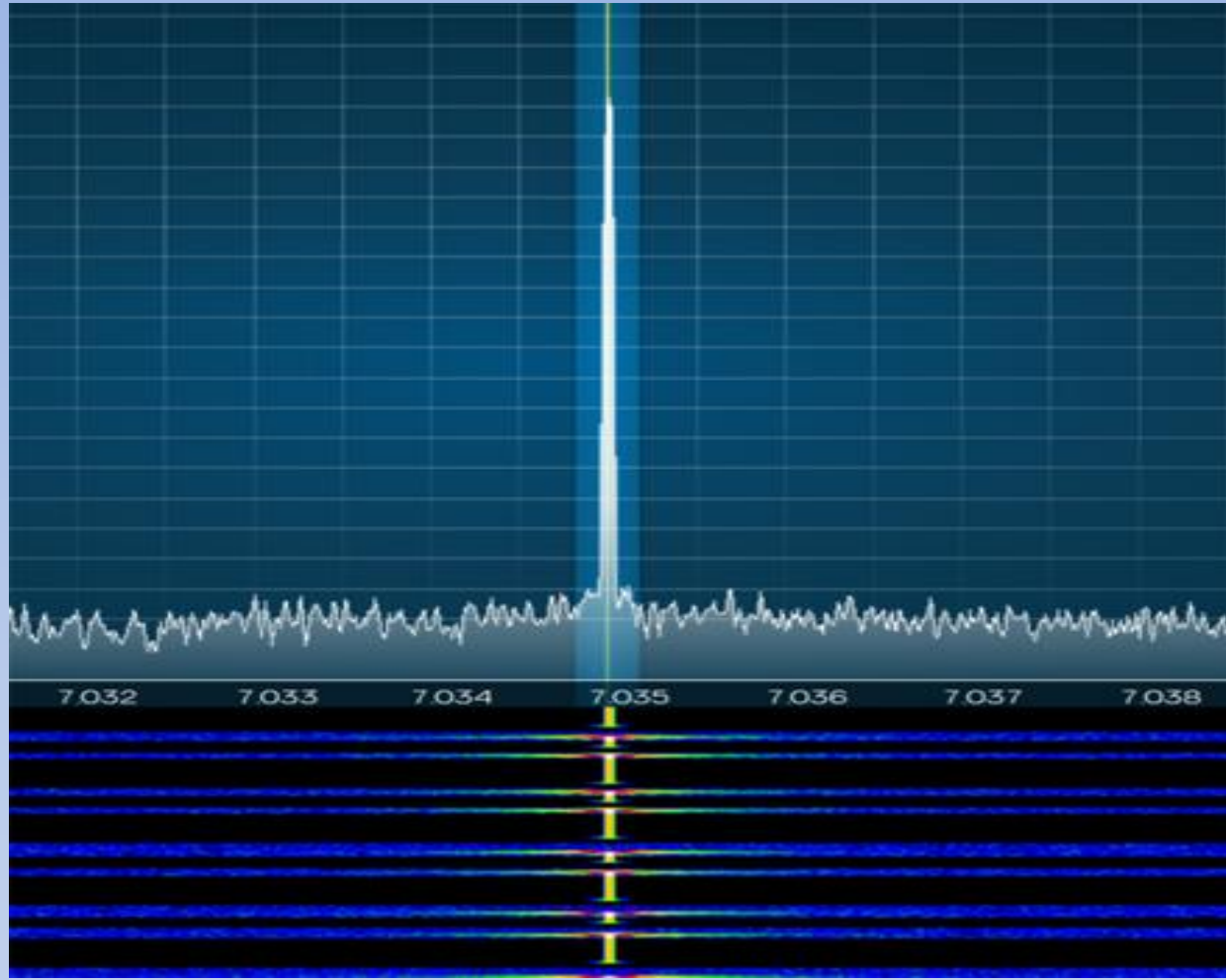


# *RTTY: One of our oldest modes*

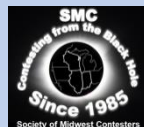
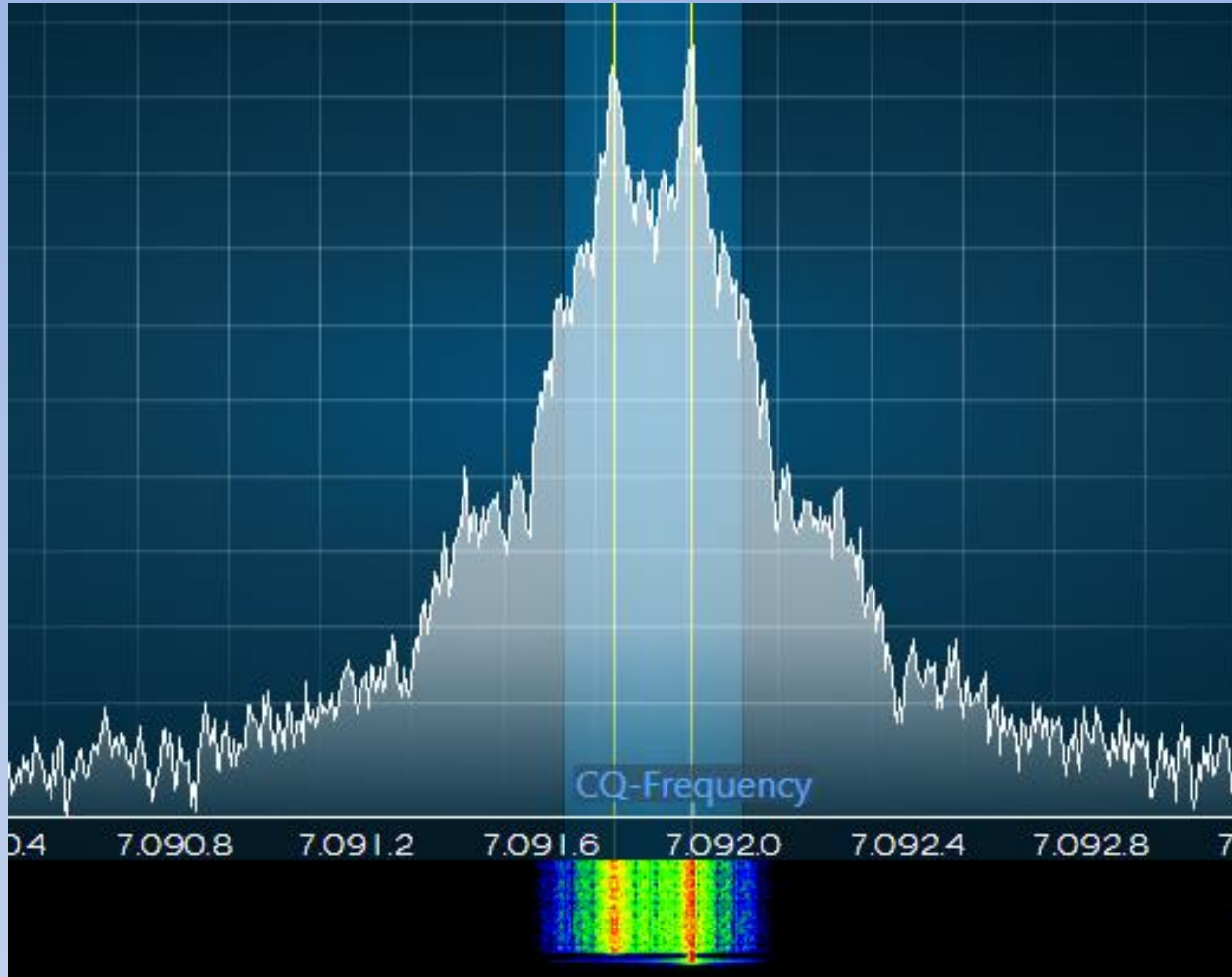
- 1844: Samuel Morse sends his first telegraph message
- 1874: Emile Baudot patented his first printing telegraph... Making RTTY 150 years old this year.



# CW: One Tone



# RTTY: Two Tones



# *RTTY Software*

RTTY Software should:

- Encode your transmissions
- Decode received signals
- Log your QSO's
- Provide contest-enhancing functionality:  
telnet, rates, multipliers, real-time scoring



# *RTTY Software*

## MMTTY

- Has a contest interface but probably not your first choice for contest software
- Has an excellent decoder
- Extensively used as a decoder/encoder with N1MM and WriteLog
- Get MMTTY working on a stand-alone basis as your first step ([hamsoft.ca](http://hamsoft.ca))





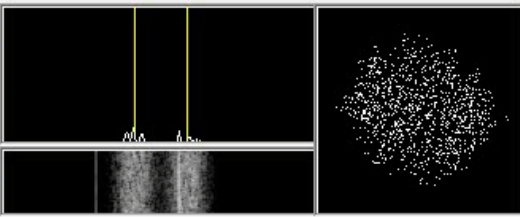
# An NAQP RTTY QSO: Use Your Mouse

**RTTY Engine 1**

View(V) Option(O) Profiles(S)

Control

FIG	Mark	2125	Hz	Type	Rev.	HAM
UOS	Shift	170	Hz	SQ	Not.	BPF
TX	BW	60	Hz			
TXOFF	AV.	70	Hz	ATC	NET	AFC



**28090.00 DI-1 RTTY Mode - Soundcard (MMTTY)**

Setup Interface Help

Letters/Figs	MouseOver

WANOR  
ETUA

HJFJQ4

Clr RX    Align    TX    **RX**    HAM    AFC    REV    Grab    CLR

**28090.00 RTTY Elecraft K3**

File Edit View Tools Config Window Help

RTTY

Name	State

Run  S&P

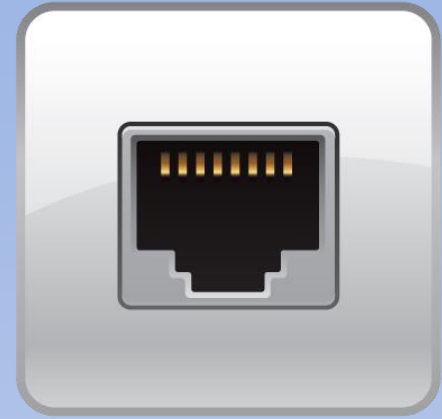
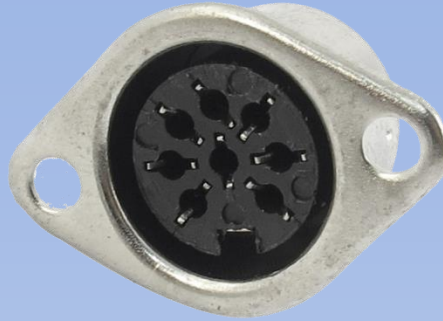
F1 CQ	F2 Exch	F3 RPT E	<b>F4 K9WX</b>	F5 His Call	F6 Rpt Exc
F7 K9WX-4	F8 AGN	F9 NAME?	F10 TU	F11 EXCH	F12 SP

Esc: Stop    Wipe    Log It    Edit    Mark    Store    Spot It    QRZ

No Score    0



# AFSK or FSK?



# ***AFSK or FSK?***

## AFSK: Audio Frequency Shift Keying

- Audio tones generated in PC's sound card, fed into mic or aux audio input on the radio
- OR, tones are generated by the radio's internal audio CODEC
- Radio mode may say AFSK, AFSK-R, Digi-L, RTTY
- Radio TX is really LSB



# *AFSK or FSK?*

## FSK: Frequency Shift Keying

- Directly keys transmitter like CW
- Alternating carriers 170 Hz apart (shift)
- A radio-specific feature
- Radio mode is RTTY or FSK



# *AFSK or FSK? Historically Contentious*



## ***AFSK or FSK?***

FSK or AFSK, which should you use?  
The answer is:

*It won't make any difference to your  
QSO partners.*



# *AFSK or FSK?*

FSK or AFSK, which should you use?

*The interface and setup used for FT8 will probably work for AFSK RTTY.*



# Major RTTY Contests

## ARRL RTTY Roundup – 30 hours

- First full weekend of January
- SPC mults once

## WPX RTTY – 48 hours

- Second full weekend of February
- Serial number exchange
- Prefix mults once

## CQ WW RTTY – 48 hours

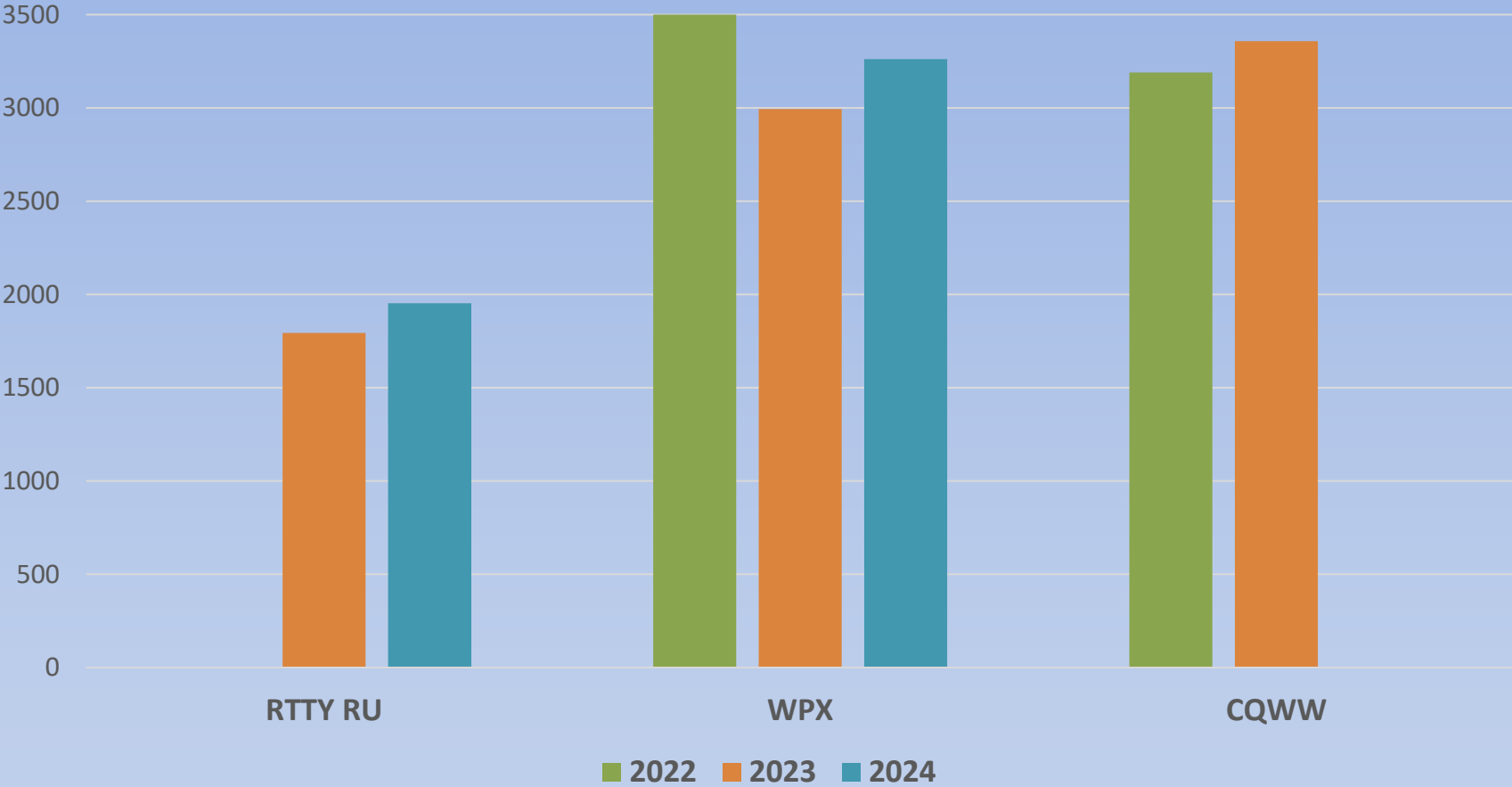
- Last full weekend of September
- SPC and CQ Zone once per band





# Major RTTY Contests

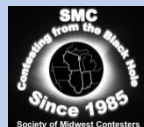
Logs Received



# *Other RTTY Contests*

ContestCalendar.com lists

- 25 other RTTY contests, plus
- The Weekly RTTY Test (30 minutes Thursday night)
- NAQP RTTY Contests, February and July, 12 hours each



# *Suggestion 1*

## Messages Matter: Short as possible

- Manage redundancy: How and when to repeat exchange elements
  - Signal reports: don't include if it's not part of the exchange
  - Signal reports: send once, don't repeat
  - Serial numbers: send twice
  - Name & QTH: send once or twice



# Suggestion 1

14085.13 DI-1 RTTY Mode - Soundcard (MMTTY)

Setup Interface Help

**TX** Letters/Figs MouseOver

LRX/7  
 WSY  
 9WX TU DE KC2IEB QRZ?  
 Y

K9WX K9WX OQFMGh9&  
 K9WX CHRIS NJ-CHRIS NJ-CHRIS NJ K9WX B  
TIM IN IN A OVV3.  
 K9WX TU DE KC2IEB QRZ? XUT

N8EUI  
 N8EUII8EUI  
 AR8DY  
 KK4HEG  
 KD5ILA  
 VK9WX

Cir RX	Align	TX	RX	HAM	AFC	REV
K9WX-2	CQ	IN IN	TIM	IN IN	CQ	K9WX-2

Grab CLR



# *Suggestion 1*

## RTTY Message Length Calculator

- K9WX CHRIS NJ-CHRIS NJ-CHRIS NJ K9WX: 6.92 sec
- TIM IN IN: 1.54 sec
- $\Delta$  of 5.38 sec
- 2,690 seconds for 500 QSOs or 44.8 minutes



# *RTTY: You Can Go FAST*



# Suggestion 1

14087.00 DI-1 RTTY Mode - Soundcard (MMTTY)

Setup Interface Help

**TX** Letters/Figs MouseOver

K9WX JACK JACK JACK AR AR ARKANSAS  
 K9WX OF XQ  
 8/4- X  
 185+9# K9WX QSL TU TIM DE KD5ILA CQ

785") K9~~X~~ Q~~S~~L TU T~~M~~ D~~E~~ KD5ILA CQ

ZPHLMJ,7749'  
 ;:

KD5ILA  
 VK9WX  
 KS10U  
 KF5MU  
 W1QKYTMCS  
 WB2COY

Cir RX	Align	TX	RX	HAM	AFC	REV
K9WX-2	CQ	IN IN	TIM	TIM	IN IN	CQ

Grab CLR



# Suggestion 1

7091.88 DI-1 RTTY Mode - Soundcard (MMTTY)

Setup Interface Help

Letters/Figs MouseOver

U XXMN  
N6DW DE VE3ZDR  
PSE COPY DAVE ON DAVE ON  
JFMDO

PSE COPY DAVE ON DAVE ON  
JLH  
MJGTYAQFNZO O

N6DW  
VE3YDJ  
K3GP  
NA8ARY  
N5RN  
KE4S

Cir RX	Align	TX	RX	HAM	AFC	REV
K9WX-2	CQ	IN IN	TIM	IN IN	CQ	K9WX-2

Grab CLR





# Suggestion 1

7079.72 DI-2 RTTY Mode - Soundcard (MMTTY)

Setup Interface Help

<b>TX</b>	Letters/Figs	MouseOver
'1		GSQ

KEKMIX  
 2  
 1 K9WX DE VE3NUM  
 PSE COPY ADRIENNE ON ADRIENNE ONAWA83  
 BAS TBCUSKM KL GSQ

K9WX DE VE3NUM  
 PSE COPY ADRIENNE ON ADRIENNE ON

Clr RX	Align	<b>TX</b>	RX	HAM	<b>AFC</b>	REV	
K9WX-2	CQ	IN IN	TIM	TIM	IN IN	CQ	K9WX-2

Grab CLR



# Suggestion 2

## Messages Matter

- Always end your CQ message (or your TU message) with a “CQ”
  - **W9SMC**
  - **W9SMC CQ**
  - **W9SMC NA**



# W9DXCC 2024

## Digital Contesting

Tim K9WX

