January 2025 Tech Nite: Remoting for 2025 Winter Field Day / Operating

# NOTE

- This talk starts off explaining why it can be a big advantage to us, to have one transceiver/antenna far away so it doesn't have overload problems with our main EOC station.
- Then it goes into a big explanation of PSK31 the data mode that newcomers might well use.
- Important to recognize that PSK31, and voice too, can also be used on **any** of the EOC stations as well!

# The "free station" Cabin Advantage

- 2024 Summer Field Day Operating multiband vertical from the Cabin
- FREE: Not tied to any antenna multiplexer able to go to 40 / 20/ 15 / 10 at will and not shut down our other stations (as long as different MODE) [COST: Additonal station, antenna]
- Huge Advantage! We could have TWO stations on hot bands one DIG, one CW, both making point after point without interfering with each other – separation > 70 dB just due to DISTANCE

#### Practical Ionosphere Band Limitations

- Previous Winter Field Day 3 stations tied to same Coax cannot have two on same band.
- Daytime: 40 (regional) / 20 (nationwide) / 15 (nationwide) / 10 (may or may not be open) – if 10 and 15 shut down, only have TWO BANDS available....for THREE Stations
- Nighttime: 20 (till approx 11 PM) / 40 (all night) / 80 (all night) but after 11 PM there are only TWO BANDS.....for potentially THREE Stations
- A Solution: Move one station way away (Grassy Field)

#### In Person (lonely/quiet) vs Remote (noisy/fun!)

- Remote station can potentially be operated right from Conference room (so fellowship still intact, food accessible!)
- Remote station (if in trailer) can potentially be operated in person as well
- Requires its own power and if necessary: heating/cooling
- Heating is easy: propane heater / battery powered fan
- Cooling....requires generator to run A/C

## Categories of remote station control:

- Fred Glenn K9SO "Remote Radio Solutions"
- https://www.youtube.com/watch?app=desktop&v=zn6XEORCTsg
- 1: Remote Desktop / CAT Control [EASIEST] Remote Desktop / TeamViewer
- 2: CAT + Serial Server (hardware) [hardware can allow paddles for CW]
- 3: Web server at remote site [sBitx does this]
- 4: Proprietary Radio Software [e.g. ICOM remote software]
- 5: Control Head Linking (removable front hardware)
- (Separate AUDIO channel also required for most of the above)

## Glenn's excellent talk:

- Fred Glenn K9SO "Remote Radio Solutions"
- https://www.youtube.com/watch?app=desktop&v=zn6XEORCTsg
- This slide show is just a snippet of Fred's excellent discussion of multiple ways to remotely control stations. He gives FAR more information than I can provide in this short talk.

#### Hardware Serial Server

- Serial server can take RS232

   and put it across Ethernet.
   DTR or RTS for example can be
   used to move morse code
- If you don't have software to move VOICE, you'll need an additional VOIP system for that to handle microphone



#### Grassy Field Human Operation

- CW remote very, very difficult due to jerkiness of TCP/IP
- Solutions involve hardware "serial server" devices (not worth it)
- Difficult to operate from cramped truck seats.
- If in trailer, station can be easily inhabited and CW ops direct.
- Propane heat (battery operated blower)
- If it is HOT....need generator to run AC

#### Grassy Field: [1] Remote Desktop + CAT Control

- Grass Field Computer: FLDGI connects to RADIO, does all decoding and transmission right THERE. (so glitchy audio doesn't have to go across WIFI link for decoding)
- Grass Field FLDGI controls frequency / PTT etc via CAT
- Grass Field laptop runs TeamViewer or Remote Desktop to allow remote control from EOC
  - Earliest was pcAnywhere (compromised, no longer available)
  - VNC (available for Linux & Windows)
  - TeamViewer free version for non-commercial usage; <u>works over local area net without</u> <u>Internet security checkin</u> (key for us or disaster work)
  - With Earl/Earl help, I have managed to get **Remote Desktop Connectio**n also working.

#### #1 Need to SEE meters to verify operation!

- Good ops periodically visually watch the SWR / Power / ALC to verify modulation level, and antenna tuner operation....
- Problem with balky relay in LDG tuner Summer Field Day (spotted when output power disappeared)
- Vertical OCFD tunes well with just 7300 internal tuner

"PTT Start" will cause it to "auto-tune" if needed



## A way to see the ICOM Screen / etc

• External PC camera on the computer

- CAMERA application set to use that Camera
- From our end can check occasionally or use part of available screen to see continuously

• BETTER SOLUTION: IP CAMERA with microphone

## Grassy Field USB Camera to see radio

Power Output 100%=100W (aim for 80) ALC – minimal to none desired SWR – hopefully < 2, tuned as needed Id (drain current) 15-20 or so



# OUR END (Conference Room)

- Computer running Teamviewer/Remote Desktop Connection
  - Need to know PASSWORD of remote teamviewer to gain access
  - Remote desktop user "remote" password "remote"
  - (forced me to reinstall a huge amount of software...
- Main screen + 2nd Screen
  - One used to see remote computer FLDGI + remote PC camera
  - One used to watch N3FJP to verify logging
- DEMONSTRATION

# Web Server (Technique #3)

- Not for us (at this time)
- Sbitx can do that innately.
- (I don't think it includes VOIP for remote audio)
- Small sBitx demo

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#### Strategies that have worked for us:

- We get operators familiar with, and efficient at modes that make MORE POINTS. DIGITAL techniques have been an entry portal for many operators. (Voice takes real effort, but also works!)
- 2) We get operators on productive bands with good power and good antennas.
- 3) We KEEP IN THE SEAT! Downtime = No Points
- 4) We trade out people as our folks desire so no one is overwhelmed
- 5) We overview our progress and "gently" nudge operators into more efficiency (with variable results)

#### PSK31 Review

- 31 Hz wide signal, somewhat SLOW, tend to be 60kHz up from bottom of band
- Excellent S/N threshold, but NOT ERROR CORRECTED so "garbage" possible
- Canned Text activated by Menu Keys makes WFD ops easy

#### FLDGI PSK31 review



### PSK31: General Hints

- **Different from FT8**: FT8 has separate TX and RX frequencies; but in PSK31, generally you & counterpart are on SAME FREQUENCY (in the bandpass)
  - Run CQ: answerers will click on you to zerobeat you and their responses will then show up
  - Hunt and Pounce: you'll click on them to go right to their spot in the bandpass.
- **Squelch:** if you're not decoding, it may be set too HIGH
- Modulation: with TUNE, should show zero to tiny ALC. Set the radio for 100 watts <u>but adjust MODULATION so you're only getting 60-85 or so out</u> – STAY LINEAR!

#### PSK31: Canned Text Hints

- Left 4 function keys are for "Running CQ" starts with **F1** 
  - You have to click to move through contact (it isn't auto like FT8)
  - When someone answers, you type their call in the CALL box (or left click it)
  - Hit F2 and it will ANSWER them with their call sign and give them your exchange
  - If they don't QSL, F3 will send the exchange twice to help
  - When they send their exchange and you got it OK, hit F4 and system will begin QSL TU QRZ NF4AC WFD K meanwhile you left click on their CATEGORY and SECTION and they AUTOPOPULATE the boxes
  - Then click LOG (F8) and it is logged and boxes cleaned out for next contact

#### Canned Text – Hunt and Pounce

- Other fellow calls CQ-- left click on his call to enter into CALLSIGN BOX
- You hit **F5** and system sends your callsign (competition for the QSO)
- If he answers YOU, left click on his CLASS/CATEGORY, then on SECTION

   will autopopulate boxes
- Hit **F6** to QSL and give him YOUR EXCHANGE
- If he QSLs that, you have a real QSO hit **F8 (LOG)** to log it.
- Wash, Rinse, Repeat!

# Simple PSK31 Contact

• Very little typing involved!!

- Mostly clicking on Function Keys
- Want a keyboard where the function keys can be directly hit (no 2nd key required)
- Contact should show up in N3FJP immediaely after hitting LOG.
- ESC key on computer will do an immediate STOP of transmission.

## Winter Field Day Rules

- Voice contacts = 1 point
- CW or Digital contacts = 2 points
- Multipliers are no longer number of band/modes used
- Instead we get multipliers for desired activities running off emergency power; putting up 2 new antennas; operating 6 hours straight (as a group); operating away from home; using at least 6 bands; making satellite contacts, etc.

#### RunCQ Contact

- Press F1 to generate a CQ. It repeats every 5 seconds if no action
- INSTANTLY on a call, type their callsign in!
- Press F2 to acknowledge and give them our exchange
- (If they don't get it, use F3 to give it to them twice more)
- They send THEIR exchange hopefully you copy it!
- Press F4 to QSL and it immediately QRZ? (who is calling me?) to repeat the cycle. Click LOG to enter the QSO.
- F1, F2, F4  $\rightarrow$  F2, F4  $\rightarrow$  F2, F4 and on and on to glory!

#### Hunt and Pounce Contacts

- Use Hunt and pounce if you're less confident or if Run CQ isn't getting responses.
- Start at one end of the available working frequencies, find the first station doing WFD, grab their call and type it into box
- When they CQ or QRZ press F5 to POUNCE
- If you get acknowledged with exchange, immediately hit F6 to send OUR exchange, then use mouse to click on CATEGORY and SECTION
- If they acknowledge OUR exchange, you're done! Click LOG to log.

# Organization

- IAP is on our front page of web page
- Inside the IAP is a link to SIGN UP for operating time
- Inside the IAP is a link to SIGN UP community stations to midcontest make 6m or 2m simplex contacts

#### Your improvements?

• Send your suggestions to docvacuumtubes at gmail dot com

