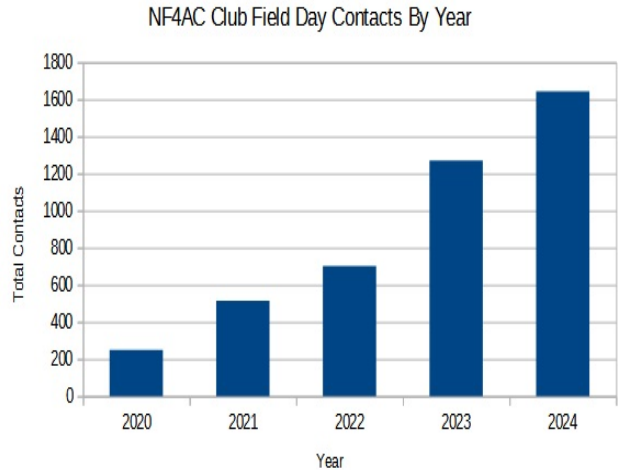



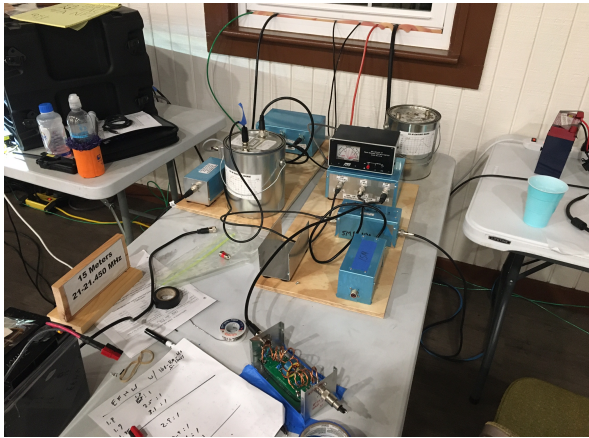
What Seems To Work For Alachua County - Field Day 2024




by Gordon Gibby KX4Z

Our group in Alachua County is **certainly not a contest powerhouse** at all(!) and many of our members feel overwhelmed, so maybe we do TOO much? But we keep improving, and we managed with 17 volunteers to carry out a 4A Field Day operation at a county park, providing diesel/gas generators, two towers, one triband beam, and as many as five stations simultaneously on the air, using a combination of antenna placement, and our six-band soldered-together antenna multiplexer system. Networking was via tcp/ip and microwave Ubiquity mesh. The best part? **We ended up with many, many personal triumphs!** All told, we had 1643 contacts in all US Sections, and 17 foreign countries, most but not all of the bonus points, and a total of 7,890 estimated points.



Every team is different! However, these are the ideas that have worked well for us -- **and I'm interested to get your improvements and even better ideas than these below!!**

<p>Antennas</p>	<p>Stewart Reissener KK4DXF's creation of the tower trailer saved us SIX HOURS of setup in the heat, compared to last year. The sidearm would hold up a wire antenna if needed, and we could put VHF/UHF whip on top.</p> <p>This also allowed us to create "end-on" isolation from the CW station's antenna 600 feet away, and the trailer members held up our 6meter antenna also! (Doug Lynch calls this our "baby MARC unit"!)</p>	
<p>Multiplexer</p>		<p>We expanded VA6AM's 3-band multiplexer kit to SIX bands and in two halves -- and now we can operate <i>many many stations simultaneously covering different nets on different bands at our EOC</i> -- or making contacts at Field Day.</p> <p>(We also had an SWR testing sequence that caught some bad ground connections in the 20m and 10m filters which we quickly fixed just before Field Day operation.)</p>
<p>Isolation</p>	<p>We wanted stations on the SAME BAND (different modes) and practiced measuring isolation using a spectrum analyzer at our "dress rehearsal." 5W transmitted is 36dBm</p>	

	and just subtract the spectrum analyzer reading from this. Using the "side null" of the beam (we graphed out measurements at 3 different points 30° apart) we got 70-80+ dB isolation on 20/15/10 meters! This was <u>horizontal</u> beam end-on, to <u>vertical</u> off center fed dipole (no need for radials) at our 600-foot-away CW station. No problem to run CW and FT8 on 20 meters simultaneously! Allowed many more points on hot bands!	
Wire Antennas x 2	Eric Pleace KO4ZSD used Earl McDow K4ZSW 's "potato-gun-type system" to launch a sinker all the way OVER an oak to give me a CW antenna that has very low loss in Florida soil by being a full sized OCFD 40m vertical with bottom end off the ground. Our other end-fed-half-wave 160m wire was pulled up by the Region 3 MARC tower trailer -- and they LOVE being part of your Field Day as an Exercise for them.	
Cable Spools	Our SETUP SECRET WEAPON! Every minute in the hot Florida Sun is brutal so we used more than a dozen plastic extension cord spools to make delivery and take-down of all lines easy: hundreds of feet of RG8X coax (LMR400 won't bend enough), hundreds of feet of 120V extension cords, and also "green" extension cords used in a ready-to-connect ground system where each ground rod has a receptacle and legs of the tower have male plugs ready to connect. Green extension cords are ONLY used for grounds , and are limp and less likely to trip pedestrians. Ropes, paracord, guy ropes -- EVERYTHING went onto cable spools and then come on and off in moments <i>without tangles and knots</i> . (Got this idea from Susan Halbert KG4VWI's winding techniques .)	
Generator Power	 We built up our own generator utility trailer with a 5kw Diesel generator and a 3kw gas generator. Zero RFI because voltage regulation is mechanical governor and Maxwell's Laws instead of electronic. Audibly Loud for sure, but 18 hours on a tank of diesel! Fiberglass mast if we need more help with antennas.	
Solar Power	We are only consumers at this, but we mounted a MPPT controller system with connectors to easily connect to any solar panel < 70Voc and with an inline current meter to monitor battery charging. We charged at 14A and had batteries ready to go in only a couple hours.	
Networking and Time Services	Earl K4ZSW and Mark McDow KN4POZ are our IT crew and Earl built absolutely gorgeous "go-boxes" for remote networking with Ubiquity microwave high power mesh systems, and local Tenda WIFI. While we suspect some throughput issues with the WIFI, we were also able to use the built-in Ethernet switches and that dramatically sped up the communication to the database and a monitor station.	

CW	David Fox NN4DF kindly taught us how to use the capabilities of Winkeyer and N3FJP to make CW contacts a pure joy with almost no manual transmissions. Thanks!!
FT8/FT4	I think this was the year that digital "gelled" in our group. FT4 became very popular with us because it is about as fast as CW for a non-expert group like us!

Carefully Designed Written Plans: We are the *farthest thing from "experts"* at towers and beams. So we developed safety-focused, step-by-step instructions for how to

- assemble and hoist our new beam and tower (<https://www.nf4rc.club/field-day-pages/tower-trailer-instructions-yagi/>)
- check SWR of all antennas at key frequencies (we literally filled in a table)
- test antenna-to-antenna coupling/isolation (see App. 2 of this portion of our Incident Action Plan: <https://www.nf4rc.club/field-day-pages/2024-field-day-iap-appendices/>)
- get all this done on a fairly tight Saturday morning schedule. (See section 8, "Planned Actions, Strategies and Tactics" <https://www.nf4rc.club/field-day-pages/2024-field-day-main-iap/>)

Dress Rehearsal: Certain members of our group (not naming names, but callsign starts with AA) demand a "dress rehearsal" for major exercises like this. We reported 80 man hours of training practice in that effort! *Everything* got done, including the SWR and isolation measurements -- so on Field Day, people already knew the skillsets. This was especially important because we had new antenna and other assets and everyone **needed training on them.**

This drill/training to get used to these procedures was certainly a ton of work the Saturday before, but it paid off royally when **Earl Sloan KI4OXD** was making the SWR measurements on Field Day morning and caught the mechanically unstable grounds in our 20meter and 10meter bandpass filters! Pavel VA6AM bandpass boards don't have a built-in ground plane, and depend somewhat critically on good connections to the enclosure. Earl and I were able to correct the situation in both filters in an hour's work on Field Day morning with a soldering iron and some hookup wire, and the repaired filters were flawless throughout the day.

Leland Gallup, AA3YB observed: *"For Field Day 2024, however, I saw our people coming together as a superb team....Field Day can play out as as a social or competitive event, or as a combination of the two. For us in Alachua County it was both. Simply put, we did better by numbers of contacts – by far – than we have done in past years. This wasn't by chance or because of propagation during the solar maximum (which didn't hurt!). It was because we were a motivated, competent, and well-functioning team. I was impressed and gratified to see so many giving great time, treasure, and talent to ensure our Field Day was going to be the most skilled and productive in the years of our involvement. And it was."*

Mike Hasselbeck WB2FKO said, *"When 6m looked like it was shutting down on Saturday evening, I wandered over to the open 40m operating position. I saw a lot of activity on FT4 and was interested to see what kind of QSO rate I could maintain. I operated straight through the night, sitting at the table next to David W4JIR who was doing the same on 80m using the same end-fed wire antenna. It's clear that FT4 is fast and efficient, but it can't match the rate of the analog modes in the hands of a competent [CW] operator..... with a good station and propagation. The digital modes do have advantages: greater sensitivity, almost zero chance of incorrectly copying and/or logging call signs and exchanges, and less operator fatigue. Our group was able to use both analog and digital effectively."*



(Front to Back) Susan Halbert KG4VWI, Alice Huckstep W9ALI, David Huckstep W4JIR, and several others at our main lodge lineup of stations.