Signals From The Point

Official Newsletter of the Caribbean Contesting Consortium
Editor: W0CG

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President's Column
Jeff Maass K8ND (ex-PJ2ND: see below)

Most of us have heard of the administrative hoops through which Geoff has jumped over the years, and he has many government and non-government offices with which he must deal to pay taxes, water, electricity, telephone, Internet, and other expenses and to maintain a bank account at an island bank.

As I write this, I am about a week away from traveling to the Signal Point PJ2T station for a non-contest trip, from September 8 – 27. My main goal on this trip is to renew my sedula, the ID card that indicates my status as a "resident" on the island. It expired during the pandemic, and requires an in-person interview at the Immigration office in Punda (where they stamp my passport) and a visit to Kranshi, the municipal building in Otrabanda (to have a new sedula issued). Then off to the Bureau Telecommunicatie en Post (BTP), as my PJ2ND license expired with the sedula (which I only recently realized).

If my mental state gets adversely affected by the heat, I may visit the bank and request a new debit card (which also expired). I tried to do this during my six-week stay in December/January, but the Immigration office was always closed from lack of staff due to COVID. Just before I returned from that trip, I was finally able to have an appointment set up for me, and I appeared early to meet with the Immigration folks. At the door was a young man sending me and others away, as the office was closed AGAIN due to lack of staff. I was unable to return before my departure from the island. Before I leave for the island this time, I am setting up appointments through a helpful private agency on the island. With any luck, I will be able to deal with my administrative/bureaucratic chores early in the trip.

So, what does one do in Paradise in September for ~2 weeks after completing Dutch-style bureaucracy? The 'Worked All Europe (WAE) DX Contest, SSB' is September 10-11, and I will get on to make several hundred QSOs. The monthly meeting of VERONA is on the second Wednesday of each month (September 14), so I will attend that. Frank PH2M is scheduled to be on the island during my stay, and I have invited him to come over to Signal Point for a tour and to sit at one of the stations and use the PJ2T antennas for some time.

I will have my drones and will get updated images from the air of the construction progress over the flats and the site of the former Sunset Waters Beach Resort. I'll spend some time photographing birds, both at the Signal Point grounds and elsewhere on the island. I don't quite have the stamina yet after my "medical adventure" to wander the large cemeteries in the hot sun to photograph them, but I may re-visit the smaller cemeteries at Soto and Barber, with DSLR and drone. And I have books to read and

sunshine to absorb!

Look for me on the air during my stay as PJ2/K8ND, and hopefully as PJ2ND before the trip ends!

News Flash!! Remoting Fabrication Completed

Much follows below about the enhanced remoting project, but I can now report that I finished all of the fabrication on September 14. I have tested everything, all ports and all bands at 1500 watts, and all seems fine thus far. Thanks to KB7Q, N7IR, and W8WTS for their technical counsel along the way, and to Gene for the One Shot box and Gary the RX antenna boxes.

The next step will be to haul it all to the island and start the installation process.

Below is the stack of 19 homebrew high power coax relays, key parts of our new system.

Completed coax relay boxes for the remote: 18 antennas and one spare box

Hotel Construction Site Report

As confirmed by drone videos that K8ND sent on September 11, precisely nothing has happened at the hotel construction site since my departure on July 21. But on September 13 K8ND observed a modest amount of dirt-moving along the old road.

CQWW SSB Contest Update

Our team for CQWW is now fully staffed. We are W0CG, W3ACO+Melissa (W7MAH), DL8OBQ, VE4GV, NN3W, KL2A, ND8L, N6GQ+Julia, W4IPC, N4RV, and JH4RHC. We're wrapping up the final logistics at present. Note that this is a real power team, with two WRTC team leaders at PJ2T: NN3W and W4IPC. The next step in the planning will be for me to generate a draft operating schedule based on all the operators' preferences.

CQWW CW Contest Team Complete

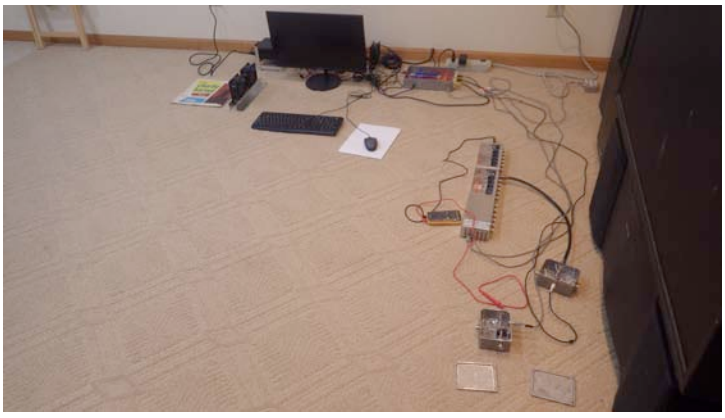
Our CW team is now complete, including W0CG, W8WTS (tentative), K9DR, VE3CX, VE3JM+XYL, VE3EY+XYL, W9NJY, N7IR, NA2U, and KY7M. We will hoist a maple leaf flag in the shack alongside the flag of the State of Arizona!

Quick Summary of Our New Enhanced Remoting Architecture

I started work on the enhanced remoting system in late July, just after returning from the successful fiber optic installation trip. Gene and I discussed the design in a Zoom session and a lot of E-mails, and then I dived in and started ordering parts. Lots of parts. Most everything was shipped to Ohio, and here's the pile of empty boxes in my Ohio QTH after unpacking.

Empty shipping boxes for the remoting parts.

I arrived in Ohio on August 19 and immediately dug in on fabrication of the needed homebrew equipment. That's 100% complete now. The pile of boxes in that photo have been transformed into this complete mock-up of the enhanced PJ2T remote station, shown below. I'll give you a tour.



PJ2T remote station in mock-up in Ohio

At the top left is the gear that will be on two shelves, 48" x 18", mounted high on the wall above and to the

right of Station 1. On the top shelf, left to right, will be the KPA-500 and antenna tuner, the Astron DC supply, the PC, the computer monitor, and several cooling fans, shown later.

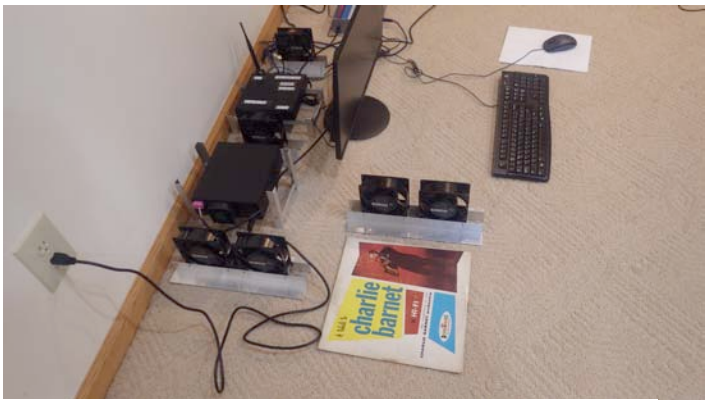
The shelf below will have, left to right, the K3 (depicted by the vinyl record in the photo), cooling fans, and a workspace area for the keyboard and mouse.

Mounted on the wall to the right of the shelves, and slightly below will be the grey box you see here that contains the USB-controlled relay boards. The remote op clicks antenna selection buttons on the PC via Anydesk, and those will key one of 19 DC relays in that box. The 19th relay will key-on the RX antenna box at the top right (built by N7IR) to select either the US or Europe Beverage for the remote.

Each of the 18 transmit antenna relays has an RCA Y-splitter coming out of the USB box. One of those DC lines will go to the 1 x 18 coax switch box that will be on the wall much below the equipment shelves, and the other line goes to each of 18 SPDT coax relay boxes, two of which are shown in the mockup photo. These SPDT boxes will be connected in the antenna coax lines directly at the bulkhead going out to the backyard, with all stubs for each band still inline. When the remote op selects that antenna, that relay will key, grab that one antenna away from the regular PJ2T station, and route the signal to the 1 x 18 box. That 1 x 18 box will simultaneously key one of its 18 relays to select that antenna and connect it to the remote antenna tuner, then to the amp and K3.

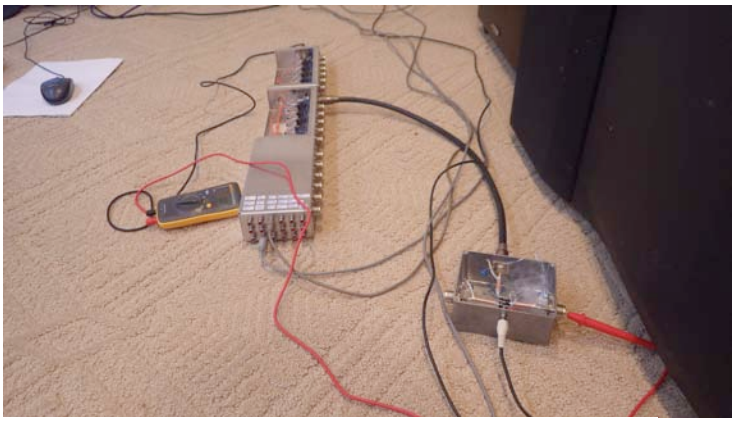
When the remote op selects the Ridge Tribander, an additional DC line connected to the W9NJY remote antenna switch box will key relays in that box which will select the Ridge tribander, power up the triplexer fans, and even turn on the correct red LED light on the front panel. When he selects the Ridge 80 dipole, a different DC control line will key three relays in the W9NJY box such that the dipole is selected on the Ridge, the correct LED light activates, and the triplexer fans are de-activated. This will happen automatically, transparent to the remote operator. I've tested everything at W0CG at 1.5 KW, and it all works fine, with no impact on SWR with the remote equipment connected or removed from my Ohio antennas.

The following photos show a bit more detail. The view following is as if the camera were at the picture window looking down on the two shelves from Station 2. Note that there are dual muffin fans on the KPA amp, and single fans on both the PC power supply and the Astron DC supply. I built open frame aluminum racks for both these boxes such that air will flow around all six sides, even underneath. Our temperatures will be high when the house is unattended, but these fans should do the trick. You can also see dual muffins aimed at the Charlie Barnet mock K3 on the shelf below. These will all come on when the remote op powers up the remote station using an IP switch.



The equipment shelves in mock-up, viewed from the left and above.

Below is a slightly closer look at the parts that will be on the wall.


The 1 x 18 coax relay box and a representative SPDT relay box, covers removed.

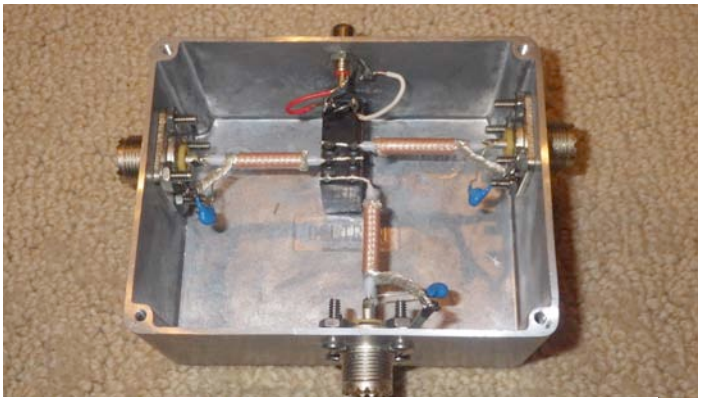
The next photo shows the aluminum cooling racks and fans in a bit more detail. There will also be a couple of DC supply bricks (monitor and PC and maybe the RRC) mounted on these open air cooling racks.

The top shelf viewed from the left

That's the overall scheme. Obviously there are about ten thousand different ways to have done this, but we picked one in which we had high confidence and that could be done very inexpensively, and then plowed ahead. As time goes by we will find problems and flaws, I'm sure, and will tackle them one by one. Also, eventually, we'd like to write our own Python software to control the USB relays, but the off the shelf free software will do for now. Some random photos follow.

Photo Collection from the Enhanced Remoting Project

(These photos are mainly in reverse chronological order.)



One of the 19 SPDT relay boxes, open and closed below. Fabricating all of this stuff required more time than I had planned. I have put in countless days working 12 – 14 hours each day on this. It's a lot of meticulous hand work.

The 1 x 18 coax selector box, not quite finished. I had to gang three Bud boxes together to get this weird size that we needed.

DC inputs to the 1 x 18 to select one of the 18 RF ports.

Another view of the 1 x 18 box, not quite complete. After the photo I shielded and bypassed the DC lines.

USB-controlled relay box, not quite complete. There are 24 contact closures available in this box, of which we are using 19. I laid in two spare boards to have on hand at Signal Point – these are inexpensive. After this photo I added 24 bypass caps at every DC input port.

The plywood looks weird, but it was the easiest way to mount these relay boards, keep them electrically isolated – these came bare with no mounting provisions whatsoever, and make them easy to replace if necessary. I varnished the board to minimize moisture uptake.

USB relay box with 23 keyed DC outlets and one input for +12 VDC from the Astron. The two USB ports are not visible in this view.

I don't have a drill press, so these were as neat as I could get them using fairly crude tools.

The homemade aluminum cooling rack for the Astron that elevates it so that air can flow freely around it.

Here below is a view of the future top shelf from above, showing the right to left cool air chain.

Airflow right to left, away from the wall at the right of the future shelf. The amp will be at the far left.

I made two of these double bank fan assemblies, one for the KPA amp and one for the K3. These are all lower RPM quiet fans, so they will not make a terrible amount of noise.

The W0CG factory in the midst of making the 19 SPDT boxes. (We will have one spare.)

Lots of parts and lots of time – this seemed to take forever.

The 1 x 18 boxes prior to ganging them all into one single unit.

The prior photo is the RX antenna magic tee splitters and the SPDT RX antenna boxes built by N7IR and shipped to me in Ohio. Gary did these very expeditiously.

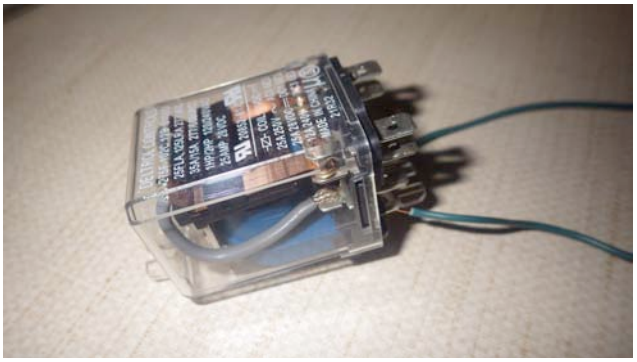
Mounting board for the USB relay box, varnish drying in the sun and breeze.

Early work on the USB relay box. Some day I hope to own a drill press!

We will need a lot of coax jumpers to cable everything together. Here are the 72 crimp PL-259s donated by multiple members, acknowledged later.

Everyone was very generous in helping. Here are some PL-259s as they arrived from Madison.


The Ohio kitchen counter with everything but food.


One of four Deltrol relays I bought to add to the W9NJY box to implement remote control.

NA2U very generously donated the Astron DC supply for the new remote station. Here it is as it arrived from DX Engineering, drop-shipped to me by Fred.

There will be a LOT of fabrication and installation and debugging work once we arrive at the QTH, and I will be distracted for a couple of weeks by a big CQWW SSB effort. This will all get done as fast as time will allow along with many other duties. Thanks in advance for your patience.

Problem Solving with Amazon, by Gene Shea, KB7Q

As you know we're working on expanding the Signal Point remote station and making the operator side less hardware dependent as the Remoterig RCC-1258MKII boxes have become hard to get right now.

One challenge presented itself during bench testing of the new lash-up. One can shut down the Elecraft K3 transceiver (used as the heart of our remote station) with a software command, but unlike an Icom-7300 and many other contemporary rigs there is no software command to turn it back on. We could leave the rig on 24/7, but that doesn't sound like something we really want to do.

Time for some head scratching and problem solving. Powering the rig up does happens when pin 8 on the accessory socket is pulled low for a second or two. We do have an IP enabled switch on the rig's power supply so if we could generate a one-shot low signal when the 13.8 vdc appears at the rig's power connector we'd be in business. It sounded like an IC-555 timer circuit to me.

Rather than breadboarding something up I turned to Amazon to see what I could find. Bingo! For all of $13.99 we could have a programmable microprocessor based timer board (photo next page). It turned out to be a perfect solution. When it sees 13.8 vdc from the power supply it pulls a built-in relay closed for a few

seconds, lets go, and goes quiet until the next power cycle is initiated.

KB7Q's homebrew one-shot box

The board is quite a marvel as it offers seven different timing functions with programmable relay closure and repeat times. Program 6 is just what Elecraft ordered!

https://www.amazon.com/dp/B07RGT5G1X?psc=1&ref=ppx_yo2ov_dt_b_product_details

End of Month Balance

At the end of August the balance in the Station Support fund was $8097.07.

ARRL Club Grant Application News

August 29 notified that we were not funded. They granted about $270,000 against $1.74 million requested. There were 128 applications. Might submit for Round 2.

Thank You for Support of the Remoting Project

Most of this large project was done without use of any funds from the PJ2T Station Support Fund. And I apologize if I missed anyone below.

N7NR donated considerable cash and then made an additional challenge grant gift. N7WA, WI9WI, ND8L, W5GAI, and W0CG made donations in response to that challenge. NA2U donated a new in box Astron DC supply for the remote. PL-259s were sent in by W1FJ, W5GAI, N4RV, and KB7Q, and cash was contributed toward the N7IR connector drive by WX4W, N7WA, W0CG, and N7IR. SM4KYN and W1FJ both made surprise unsolicited cash contributions to the project. KB7Q built the one shot box to enable remote turn-on of the radio. N7IR built two magic tees and an SPDT F-connector relay box for the RX antenna remote control. In addition, KB7Q, N7IR, and W8WTS have been a huge help to me as technical resources as we moved this project along very rapidly. Gene figured out how we could use the RCFORBS remote server framework and has done considerable work configuring the computer and its ability to run as a RCFORBS server.

Very sorry for errors or omissions in the above. This has all been a very fast, very blurry time, these past seven weeks of work.

Photo Stray

Here's Dorothy bag-dragging about 100 pounds of parts for the remoting project, and a rebuilt Tailtwister. She had just arrived in Cleveland on September 10 after hauling all this stuff from Spokane, Washington for us.

Below, a great K8ND drone photo from September 11 showing the result of many months of dirt work at the new hotel project. That flat brown area at the top right used to contain the first couple hundred feet of our Europe Beverage, but I've relocated it to a safe new location.

The new look of Sunset Waters

Historic Shots

July 2001, mixing concrete for tower bases. Note that there are no Rohn towers and there is no perimeter wall at this stage.

W0NB removing concrete forms from the base of the US/JA tower, July, 2001.

VERONA operating in ARRL Field Day in the backyard of Signal Point, June, 2001, long before the wall was built.

Original construction of the PJ2T yagis, built and wrapped in sheets for transport by N8LGP. 73737373