	# 2010 Station Manager Report **Jeff Maass K8ND** **6/09 - 5/10**
Caribbean Contesting Consortium **Signal Point PJ2T**	

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Photos by Geoff Howard W0CG/PJ2DX and Jeff Maass K8ND

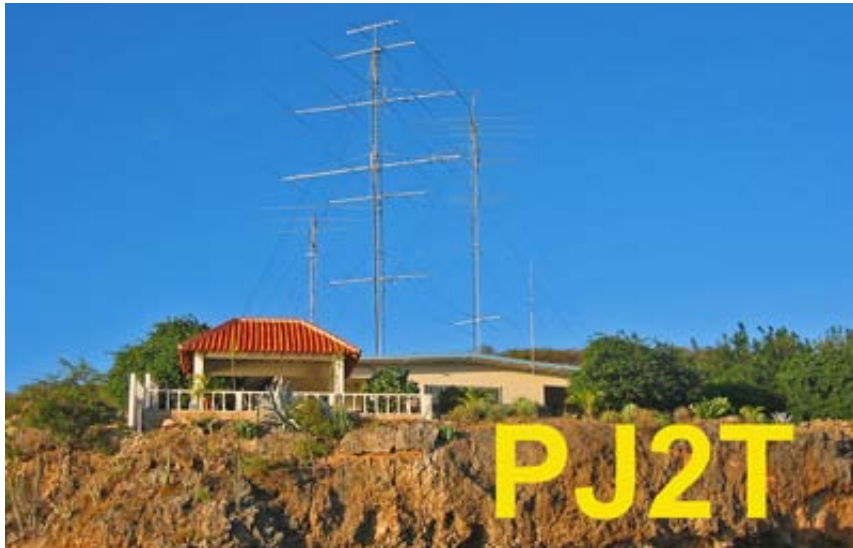|	
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PJ2T Station Status Overview

The 2009-10 year at Signal Point was characterized by mature change – a transition from older hardware to new equipment as the old became unreliable and expensive to maintain.

Once again, failures affecting contest operations were rare, although we needed to call upon the depth of our spares to prevent impact in a couple of cases.

External issues – serious line noise from a power pole, rolling power failures on the island, and security issues resulting from the closing of Sunset Waters – introduced new problems to be addressed.

This report is the first for a couple of years. It does not attempt to cover work on the station from previous years.

TRANSCEIVERS

This year, a new sponsorship agreement with Yaesu USA has allowed us to start transitioning from our aging and limping fleet of FT-1000MP transceivers to the FT-2000 transceivers. Gary K9SG loaned us his FT-2000 to evaluate, and later sold it to us at a much reduced price!

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At the end of this reporting period we have two FT-2000 radios in hand and a third on backorder. The FT-2000 radios have received good reports from those who have used them. Wayne K8LEE has donated the 160m and 80/40 "External u-Tuning units for two of the FT-2000 radios. Wayne has become the de facto staging point for new FT-2000 radios, trying each out before they are transported to the island.

We now have first-class radios for 6-meters, since the FT-2000 radios include that band. Thanks to all who donated funds to accelerate the purchase of these radios!

As they break, the FT-1000MP transceivers are being brought back to the USA, fixed (if possible), cleaned up, and sold, with proceeds to the Station Fund.

In order to attempt to reduce the effect of salt-laden air on the radios when in storage, they are being stored in sealed bags with desiccant packets.

Some operators have been bringing their personal Elecraft K3 radios to the station, although reports from those who have used both compare the FT-2000 and K3 favorably.

AMPLIFIERS

We have also acquired two additional Ameritron AL-1200 amplifiers (bringing us to three) in our effort to transition to reliable full-power amplifiers for contest use. The 3CX1200A7 tubes are rugged and reliable, and will provide 1500 Watts output on all bands when fresh and provided with enough drive.

The Ten Tec Titan II amplifier, which was provided for our use by Ten Tec in February 2002, finally became too expensive (or impossible) to keep running. Several of the parts were no longer available, and failures tended to involve complete boards rather than components. The amplifier was brought back to the USA. The Amplifier itself was given to our long-suffering QSL Manager N9AG (who has a Titan II of his own) to use as spares. The 4CX1600B tubes (from the amp and spares shelf) were given to Tom W8TK, who had purchased and donated them.

 The Ten Tec Titan I (3CX800A7 x 2) and Titan III (4CX800A x 2) amplifiers, and the Cary LK-800 (3CPX800A7 x 2) amplifiers continue to perk along with some maintenance when needed. Two Alpha 76 amplifiers are also still in functional condition for backup use.

COMPUTERS

As time has passed, we've been very conservative about out computers and software. We have been running Windows 98 SE2 on used computers that were neither fast nor flashy – they did not need to be. With the passage of time, Microsoft and most other software manufacturers have discontinued support for the old Windows 98 operating system, and we found that adding hardware became difficult as no new drivers were available for it. So, we have begun to migrate to the Windows XP operating system on slightly faster machines.

This has allowed us to replace the older small LCD displays and all the CRT displays with larger LCD displays at most stations. Devices interfaced with USB seem to work better on these new machines and Windows XP.

We have been purchasing inexpensive PCs that are returned from corporate leases, but we may be better served in the near future by purchasing some new PCs directly from the manufacturer.
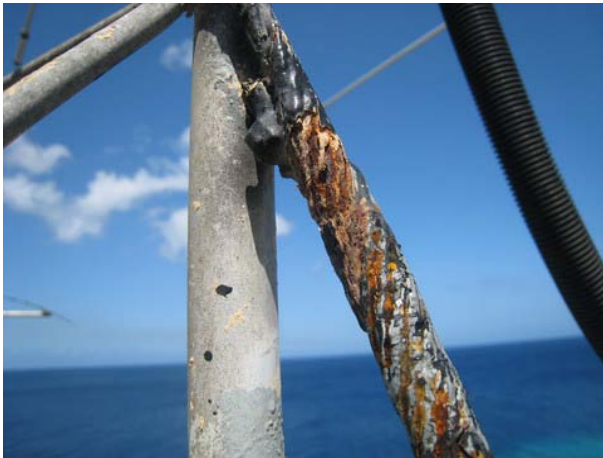
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TOWERS & ANTENNAS

The yagis are in good shape following the major maintenance project of a few years ago, and routine painting continues on the towers (although with ivory-colored epoxy paint!). The guy wire weatherization has been mostly completed with the rework of the WARC tower guys, making everything wrapped and sealed. At least one of the guys weatherized in the earliest part of the process will need to be re-done to bring it up to "current spec".

The Ridge Tower was installed in 2008, but an RCS-4 remote coax switch was added this year to allow placing additional antennas up on the ridge without needing another run of feedline. An 80-meter dipole was installed for test on the ridge tower in addition to the tribander.

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A serious rust hole in the leg of the Europe Rohn 55 tower was discovered when tape holding the feedline to the leg was removed. A splint was devised by WB9Z and applied by Geoff. An additional two permanent splice kits were crafted by WB9Z, and will be carried to the island for possible future use if needed.

An experimental 80-meter antenna was attempted over salt water at the front of the house, but the wind popped-up, and the surf pounded Geoff and Jay WX0B into the cliff, stripping off their masks and snorkels (not recovered). The project was not completed.

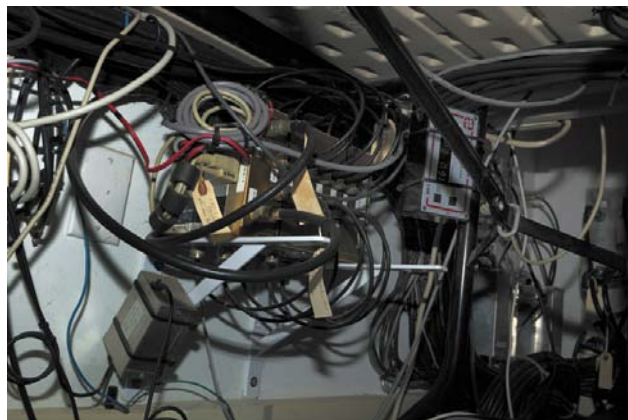|	
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STATION WIRING

A second K9AY RAS-8x2 receive antenna switching unit was installed to make all receive antennas available at Stations 3 and 4 with the same switching method as at Stations 1 and 2. The new switch will make all the same eight antennas available at all stations using the same interface. The switchbox is mounted under the table at Station 3.
http://www.k8nd.com/Radio/Planning/CQWW160/PJ2T_RX_Ant_Distribution100425a.pdf

Although completed in 2008, a major expansion of antenna switching for the transmit antennas was done by Geoff and Goose W8AV. This removed some of the previous limitations on what bands could be run at Stations 3 and 4. In addition the control cables for the Array Solutions StackMatch antenna switches were lengthened to allow them to be moved individually away from Station 1.

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LINE NOISE INTERFERENCE

The dry conditions on the island (and perhaps some of the vandalism following the closing of Sunset Waters) resulted in a serious buzz from one of the power poles near the hotel. This was severe enough to pretty much close-down 160 meters during CQWW CW in 2009.

The ARRL CW Team in February 2010 brought water balloons and a big slingshot, and N1ZZ lied on his back and shot the water balloons through his legs to wet-down the insulators on the pole. This provided a temporary respite from the noise, but permanent resolution will require cooperation from Aqualectra.

Permanent resolution of this issue should be a very high priority in the coming year, as it seriously impacts our ability to score well in contests!
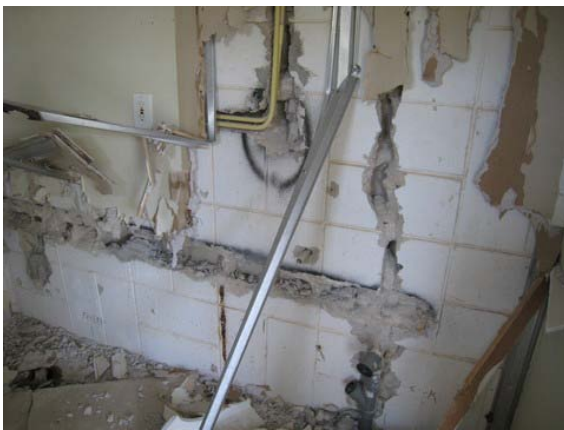
SECURITY

Sunset Waters Beach Resort (SWBR) shut down on July 21 this year when Aqualectra cut off water and electricity due to unpaid bills. The hotel was stripped clean, first by an auction with hundreds of attendees, and then by waves of vandals picking over the bones.

The closing resulted in additional security concerns, as the neighborhood became very remote from civilization. A sophisticated new monitored security system has replaced our venerable old Moose, and a video-monitored gate was added at the entry area of the neighborhood. Geoff created hidey-hole spaces for equipment to be hidden in, and created "Mount Furniture" in the East Bedroom to make it more difficult for any burglars to get into the closets there between times when the house is populated. It makes the station much less a "turn-key" experience, but is necessary given the increased security concerns.
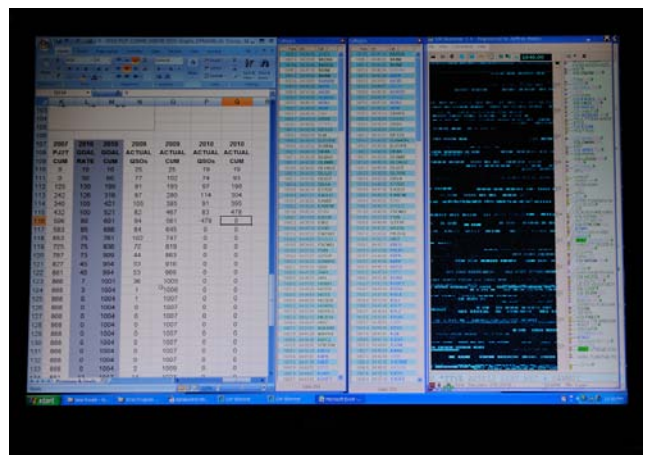
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CW SKIMMER

One of the newest contesting technologies that we've been exploring at PJ2T is the CW Skimmer, using Software Defined Radios and VE3NEA's excellent CW Skimmer software to sample 96-KHz of CW band segments and provide spots to the Writelog bandmap. For the past two CQWW CW contests and CQWW 160 CW contests, Jim W8WTS and I have been providing our RFSpace SDR-IQ receivers and laptops to provide the CW Skimmer to great effect! http://www.k8nd.com/Radio/Planning/CQWW160/pj2t_cw_skimmer_scheme.pdf

We are hoping to expand our CW Skimmer effectiveness by adding an off-site Skimmer Server for the six contest bands plus 6-meters simultaneously, at a site in Willemstad provided by VERONA. Getting the receivers away from the transmitters will make them more effective. In addition, it can be left running all the time, making spots available via telnet from anywhere in the World! Call CQ, and see how loud you are in Curacao! http://www.k8nd.com/Radio/CW_Skimmer/Curacao_Skimmer_Server_Proposed.pdf

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PJ2T Station Changes and Improvements Made 2009-10

1. Purchased three (3) FT-2000 to replace aging FT-1000MP radios as they fail.

2. Added two (2) Ameritron AL-1200 amplifiers, bringing us to three (3).

3. Retired Ten Tec Titan II amplifier due to repeated expensive failures. Tubes removed from amplifier and spares returned to W8TK for disposal.

4. Purchased/installed second K9AY RAS-8x2 receive antenna switching unit, to make all receive antennas available at Stations 3 and 4. The switchbox is mounted under the table at Station 3. http://www.k8nd.com/Radio/Planning/CQWW160/PJ2T_RX_Ant_Distribution100425a.pdf

5. An 80-meter inv-V was installed on the Ridge Tower, and proved to not provide a hoped-for boost of our signal to the USA.

6. Mounting posts for the DX Engineering Receive 4-Square were drilled into the ground (this was actually done in early 2009). The alignment of the array is not correct, and new mount points will be installed this coming year to provide better coverage with the other RX antennas.

7. A serious rust hole in the leg of the Europe tower was discovered when tape holding the feedline to the leg was removed! A splint was devised by WB9Z and W0CG, and applied. Two permanent splice kits were crafted by WB9Z's employees, and will be carried to the island for possible future use.

8. RTTY interface at Station 1 was enhanced, and Goose W8AV operated the WPX RTTY Contest in SOAB category. RigBlaster at Stn 1 for digital modes (you may have this).

9. Repair of Astron RS-35 power supply.

10. Repair of LK-800 (twice) by K8LEE.

11. Installed new radial on Ringo Ranger 2-meter antenna.

12. Installed new (large) knobs from Dayton flea market on most coax switches.

13. Stocked spares shelf with video cards for the newer Windows XP computers, supporting the larger displays.

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PJ2T House Improvements Made 2009-10

1. New outdoor shower;

2. New security system;

3. New lighting fixtures on man-gate pillars;

4. New security lighting in front and both side yards -- auto controlled;

5. New security timers on indoor lights;

6. Complete renovation and repainting of laundry room;

7. Epoxy on patio drain grates;

8. Fresh varnish on front gate;

9. Repaired TV AC wiring;

10. Installed AC outlet on roof;

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Station Enhancement / Project Ideas for 2010-11

1. Add automated bandpass filter switching to Station 3, and move the manual switchbox to Station 4.

2. Install PJ2T/VERONA Skimmer Server at VERONA off-site location.

3. Assemble enhanced AC Power Transformer console / furniture.
   (http://www.k8nd.com/Radio/PJ2T_AC_SYS.pdf)

4. Make permanent the 80-meter wire antenna on the ridge.

5. Test 80-meter vertical near the water.

6. Research: UPS on each station for ~15 minute backup at 100W transmit?

7. Re-install the DX Engineering 4-Square bases to re-point the array.

8. Permanently resolve the line noise problems from nearby power poles. This will require work by Aqualectra.

9. Continue replacing all old computers with Windows 98 with newer PCs with Windows XP (Windows 7?).

10. Install ARB-704 electronic T/R switches at Stations 1, 2, & 4.

11. Standardized voice keyer installation at each station.

12. Keyboard Overlays for contests including non F1-F12 keys for embedded functions. We seem to have to do the research for each contest.

13. Research options, contest logging software: Writelog vs. N1MM?

14. Research options: Backup Internet access.

15. Replace old 10-MB/s network switch with "Gigabit" switch.

16. Equipment shelving over radios.

17. Permanently install K6AM "multiplier operator" switches at each station.

18. Research possible replacements for Heil headsets, perhaps with noise canceling.

19. Install HV modifications on all three AL-1200 amplifiers. Install supplemental filament transformers in two newest AL-1200.

20. Buy one spare 3CX1200A7 tube for AL-1200 amps.

21. Sell FT-1000MP(2) – K8LEE has the radio now.

22. Install third tube socket and parasitic suppressor in LK-800 and add third tune.

23. Prepare comprehensive PowerPoint presentation on how to run the station.

24. Replace rusted-out 160-meter inverted-L base.

25. Replace 160-meter inverted-L feedline (RG-8X) with RG-213.

26. Study re-design of antenna switching system with an eye to making switching more efficient at each station.

27. Tower Projects / Maintenance

   a) Continue painting schedule;
   b) Do 100% inspection of all tower legs, guys, guy attachments on both Rohn towers. Fix where needed.
   c) Replace guy wire deadend on top US/JA ocean guy;
   d) Install new guy tail on Europe tower bottom wall guy;
   e) Maintain & re-coat the WARC antenna concrete base.

House Enhancement / Project Ideas for 2010-11

1. Security Items:

   a) Install hard conduit on the wires to the control box;
   b) Add window-opening sensors in the bedrooms;
   c) Add door-opening sensors in the sunroom;
   d) Add motion sensor in the main room;

2. Replace all outside soffits;

3. Fix tile in West bedroom;

4. New floor tile in East bedroom;

5. New sliding glass door in main room, East side;

6. Complete design for garage and do detailed estimating;

7. Install air condition in main room (estimates in progress);

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