

The DXer

May 2010

The Official Publication Of The Northern California DX Club



MAY MEETING "YI9PSE DXpedition"

Paul Ewing, N6PSE has returned from Iraq with stories of the DXpedition. You won't want to miss this one!

Thursday May 20 6pm – 7:30pm Dinner/Social 7:30pm Club Meeting at Holder's Country Inn 998 S. De Anza Boulevard San Jose, CA

> Main Raffle Prize: ICOM IC-V80 HT

President's Message By Craig Bradley, AE6RR

Hello Everyone,

It was great to see many of you in Visalia last month! It was also great to see a very good turn out of DXers from all over the world. The banquet room was packed on Saturday night and I heard that the registration was well over 700.

I had some fun operating the special event station N6V and putting the new StepIR DB11 to work. This is a new "minimal footprint" 3-element antenna with a boom length of only 11 ft and a width of only 19 ft. It uses the "trombone" type elements and works on 20 through 6 meters. It should be great for those with small lots (and the privilege of being able to erect an antenna). The conditions were not great but we did work a few EU stations and even got a "mini" pileup going at times. The talks were very enjoyable and the vendor's exhibit hall was busy, especially around the Elecraft booth where the new K3 panadaptor and solid state amp were on display. All in all it was a very good show. Congratulations to the SCDXC for a job well done.

I was also able to spend some time talking to Paul, N6PSE at Visalia; freshly returned from his DXpediton to Iraq. Paul has some great stories to tell about the trip and he will be sharing some of them as the main event speaker at our upcoming May meeting. I won't spoil his thunder here; you will have to come to the meeting to hear them in person! YI9PSE was a great success by one of our own members and a great team. I hope that you all were able to get in the log.

ANAHEIM, CA (Near Disneyland) 933 N. Euclid St., 92801

(714) 533-7373 (800) 854-6046 Janet, KL7MF, Mgr. anaheim@hamradio.com

BURBANK, CA 1525 W. Magnolia Blvd, 91506 (818) 842-1786 (877) 892-1748 Eric, K6EJC, Mgr. Magnolia between S. Victory & Buena Vista burbank@hamradio.com

OAKLAND, CA 2210 Livingston St., 94606 (510) 534-5757 (877) 892-1745 Mark, WI7YN, Mgr. I-880 at 23rd Ave. ramp oakland@hamradio.com

SAN DIEGO, CA 5375 Kearny Villa Rd., 92123 (858) 560-4900 (877) 520-9623 Jose, XE2SJB, Mgr. Hwy. 163 & Claremont Mesa sandiego@hamradio.com

SUNNYVALE, CA 510 Lawrence Exp. #102, 94085 (408) 736-9496 (877) 892-1749 Jon, K6WV, Mgr. So. from Hwy. 101 sunnyvale@hamradio.com

NEW CASTLE, DE (Near Philadelphia) 1509 N. Dupont Hwy., 19720 (302) 322-7092 (800) 644-4476 Chuck, N1UC, Mgr. RT.13 1/4 mi., So. 1-295 newcastle@Mamradio.com

PORTLAND, OR 11705 S.W. Pacific Hwy. 97223 (503) 598-0555 (800) 765-4267 Leon, W7AD, Mgr. Tigard-99W exit from Hwy. 5 & 217 portland@hamradio.com

DENVER, CO 8400 E. Iliff Ave. #9, 80231 (303) 745-7373 (800) 444-9476 John, WØIG, Mgr. denver@hamradio.com

NEW LOCATION!

PHOENIX, AZ 10613 N. 43rd Ave, 85029 (602) 242-3515 (800) 559-7388 Gary, N7GJ, Mgr. Corner of 43rd Ave & Peoria Phoenix@hamradio.com

ATLANTA, GA 6071 Buford Hwy., 30340 (770) 263-0700 (800) 444-7927 Mark, KJ4VO, Mgr. Doraville, 1 mi. no. of I-285 atlanta@hamradio.com

WOODBRIDGE, VA (Near Washington D.C.) 14803 Build America Dr. 22191 (703) 643-1063 (800) 444-4799 Steve, W4SHG, Mgr. Exit 161, 1-95, So. to US 1 woodbridge@hamradio.com

SALEM, NH (Near Boston) 224 N. Broadway, 03079 (603) 898-3750 (800) 444-0047 Peter, K11M, Mgr. sales@hamradio.com Exit 1, I-93; 28 mi. No. of Boston salem@hamradio.com





DXCC Awards

Phil, K6TT: Mixed DXCC in 2009

Ted, K6XN in 2009/2010: #1 Honor Roll Award plus country endorsements: 350/338 Mixed Honor Roll Award plus country endorsements: 350/338 Phone Honor Roll Award plus country endorsements: 346/335 CW DXCC Award plus country endorsements: 334/326 Plus separate DXCC awards and endorsements for the 80M, 40M, 20M, 15M and 10M bands.

Charles, W6DPD: 20 Meter DXCC via LOTW in 2009 15 Meter DXCC via LOTW in 2010

Phil, W6TQG: Mixed DXCC in 2009

Please notify the editor, dxer (at ncdxc.org) if you received DXCC awards or endorsements during 2009 or 2010.

President's Message, continued:

The band conditions have been very spotty lately, some days are good and others are just bad. We went back into a period of zero sunspots for a while and then the sun erupted with solar storms. As I write this the current SSN is 70, the SFI is 82 and the Ap index is 11 (it was 22 this morning). 20 meters is as dead as a door nail. Hopefully it will come back to life when the Ap index goes back down. I did hear 9K2GS on 20 M one night last week with a S9 signal on my stealth antenna though.

As we near the end of our year, the annual elections are coming up in June and most of the officer positions will be vacant due to term limits. If you are interested in serving the club and running for office, please contact any board member.

The May meeting will again be at Holder's Country Inn on DeAnza Blvd in San Jose on May 20th.

For now, 73, and good DX! - Craig, AE6RR ae6rr (at arrl.net)



Photos from IDXC 2010 - Visalia

The DXer is published monthly by the Northern California DX Club and sent to all club members via the web. Please obtain permission from the author to re-publish any article in this publication.

Two Guys, A Radio And A Tent The 2009 Chesterfield DXpedition, Part 2 By AA7JV, George Wallner

Re-published with the permission of the editor, George Wallner, AA7JV

First Night on the Magic Band

It is now 1100 UTC on the 3rd of November, we have just finished building the main antenna and our tent is up. We have hooked up the radio, computer, amplifier, antenna coupler, controller, coax and control cables, batteries and battery chargers. The generator is purring happily, the sun has just set over the dark waters of the Coral Sea and the antennas are standing proud in the rising tide of the lagoon.

We switch on the K3 and set it to 1830.5 kHz. The antenna coupler automatically starts tuning and within seconds a green light comes on: we have a good SWR. We slowly increase the power to 1000 watts and are satisfied to see that things are holding: no arcing, no breakdowns – power output and SWR are steady. Within a few seconds, FK8CP sends a quick 599 plus; he knows it is us tuning up. Good. Our signal is getting out! After a quick chat with Remi, VK3ZL calls. Bob is letting us know that he can also hear us at 599+. Even better. Then RW0LT chimes in with another 599. A feeling of relief washes over us: The TX antenna is working!

We go split and the first CQ goes out: "CQ TX3A DWN 5". The first caller is JA2CXF at 1122. He is followed by JI1BEX. Then W5UN punches through with a solid 599 signal at 1123. He is amazingly loud. We are listening down 5 kHz, around 1825.5. For JA-s we go down below 1825.0 and for NA we listen above 1825.0. This strange arrangement is because Japanese stations are not allowed to transmit above 1825.0 kHz. As it turns out, separating JA and NA stations helps. JA-s, on the average, are much

louder then NA stations. Having the two separated allows us to copy the NA stations much better. And when work the JA stations below 1825.0 we are faster as we do not have to waste time searching for the weak NA signals in the loud JA pile-up. Noise is about S6 on the TX antenna and we know that within a few days, as we've worked through the big stations, we will need some good low band RX antennas. For now, however, we are doing well with the TX antenna.

As the terminator moves westward over NA, the east coast stations are replaced by Midwestern ones, and soon W6-s and W7-s are calling. We keep working JA and NA stations at high rates until 1301, when UA4LY is the first European caller. Following him, for the next two hours we are working JA, NA and EU side by side. We have to remind ourselves that this is 160 meters, not 40!

Slowly NA fades out and the European contacts move further west. GM3POI is the first UK station at 1621. Astonishing – it must be full daylight there! We continue working EU (and JA) stations until the band to Europe closes at 1903 with YU1FW being the last contact. The sun is up and the first night on TB is over; and we have 517 QSOs in the log. Oh what a night!

I back-up the log on a memory stick and put it in a zip-lock bag. Tomi is up and we QSY to 80 meters, where he quickly starts working a pile up. I swim to the boat with the zip-lock bag in the back pocket of my shorts. After a quick (hot) shower on board, I will up-load the QSOs to the online log and LoTW, handle e-mails, log fixes and write the daily news update.

Operations

We guickly settled down to a routine. At night we were on the low bands - mostly 160 meters - where I handled most of the 160 meter traffic. Tomi worked 160, 80 and 40 meters during the midnight to 3 AM shift. During the day Tomi handled the pile-ups on whatever band worked best. We did not have an operating plan or schedule; whatever band gave us the highest QSO rate was the one we were on. In the mornings, after swimming to the boat, I answered e-mails, uploaded the log, summarized the previous 24 hours of operation in the news update and at times I uploaded pictures for the TX3A website. Most mornings Tomi came on the boat around 9 AM for a quick shower and breakfast after which he would head back to the island and the pileups. I either went to get some fish or back to the island to build new antennas or to make repairs.

Once we completed the second station, I would work a few hours of RTTY or 30/40 meter CW. Our only warm meal of the day was cooked on the boat and was delivered to the island around 4 PM. After dinner we topped up the generator and I would make the final adjustments to the tent and antennas; getting everything ready for the night. I usually went to sleep at 6 PM for two hours and would get up at 8 PM for the opening of 160 meters to NA. On the average, we were on the air about 20 hours a day.

The Equipment

Our radios were two Elecraft K3 transceivers. We used a home brew pair of splitter-combiners to combine two 500W SG-500 solid-state power amplifiers. The combination gave us a full kW. The dual 500 W amplifier system carried its own redundancy. In the event of an amplifier failure, we would simply fall back onto the remaining amplifier, losing only 3 dB of signal strength.

The antenna coupler was controlled by a remote controller located in the operating tent. This controller is fully integrated with the K3 transceiver and the dual SG-500 PA. Band changes cause the controller to automatically disable the amplifiers, key the transmitter and retune the coupler for the new band. Interlocks between the transceiver, controller and the amplifier – including an ALC connection to the radio – ensure that tuning is performed only with low power (about 20 watts). The interlocks also ensure that it is not possible to run the amplifiers into high SWR or to run power into the coupler unless it is properly tuned.

This level of automation and protection is not a frivolous exercise in feature richness for its own sake. The automation ensures that we can not accidentally damage the equipment: even when we are tired or distracted, or half asleep from long nights of operations, or just in a hurry. Replacement equipment is hard to come by on a place like Chesterfield!

Logging was done on laptops connected to the transceivers. We used the N1MM logger, which seemed to have better data-retention than WriteLog, which lost many QSOs on Mellish Reef.

The RTTY station consisted of the second K3 transceiver, an IBM laptop with N1MM and MMTTY software. We used isolation transformers in the audio paths between the computer and the radio. At times we also used this station as a second station to meet the demand for certain bands.

The transceivers, amplifiers and the antenna coupler and controller were all powered by 12 V DC. We used banks of car batteries that were being constantly charged by three separate battery charges. The key advantage of this system, besides the reserve power it provided, was that the batteries acted as buffers and allowed the use of a single low power generator. Indeed, the entire operation was powered by one 1.5 kW Honda AC generator. This was also an efficient configuration as the generator ran with a relatively even load. The total amount of gasoline used during the entire 28 day operation was just over 300 liters. That is less then 11 liters per day (2.8 US gallons per day), or 8.5 ml per QSO!

More Antennas

For the first 10 days we were constantly building or rebuilding antennas. Someone wrote on one of the DXclusters: "Stop building antennas and start operating." Strange: since the evening of November 3 we have been operating almost non-stop; except when Tomi came onto the boat for two hours each day and one three hour period when we had to lower the main antenna to reconnect wires that were broken by birds flying into them. The rest of the time, even while I was building new antennas, Tomi was continuously on the air handing out TX3A contacts.

Our first work priority was to build RX antennas for 160 and 80 meters. Back on Saumarez Reef. while waiting for better weather, we did some modeling of various RX antennas that we hoped we could erect on the island. Although we had some idea of the layout of the land and knew that there would be a possibility to erect one or two Beverages, the proximity of salt-water caused us to be skeptical about their effectiveness. Earlier, while still back in Miami, I worked with Carlos, N4IS, trying to create a portable and rotatable Waller Flag (see N4IS's website at http://www. n4is.com/wf/NEW WF.html), but that just did not work out mechanically. (A small enough flag that we could handle has a very poor S/N ratio.) Following on the concept of the Waller Flag and the work done by Dr. Dallas Langford on Phased Delta Flag Arrays, I came up with a new design that interconnects two half deltas to create a phased array without the need for two sets of transformers, two loads and the usual phasing cables and combiner circuits. I call this design the Double Half Delta Loop, or DHDL. The DHDL uses two 8 m poles and one short (1.5 m) central support. It has an RDF of 9.8 dB and is only 20 meters long. Details at the TX3A web site at http://tx3a.com/docs/TX3A DOUBLE HALF DELTA LOOP.ZIP .

First we erected one DHDL for NA. It worked quite well. It was much quieter than the TX antenna, which had on most nights S6 noise, sometime S9. The next day we put up a 250 m long Beverage for EU/JA (JA was almost the same direction as EU). The Beverage did not work,

so next day we erected a second DHDL for EU, which worked fine. The day after that we put up a Beverage for NA. That didn't work either! Not ready to give up, we built a third Beverage for the EU/JA direction, but this time we kept it further away from the salt-water, although that limited its length to 180 meters. That night we were rewarded with a pleasant surprise: the new Beverage worked. Indeed, it was a little better than the EU DHDL. This was extremely useful as we now had a short Beverage to compare the DHDL with. The Beverage had higher noise than the DHDL but also stronger signals. First we kept the EU DHDL as it had a better angle for Europe and much lower noise. Later, we cannibalized its coax to make the Beverage reversible for LP Europe, which never bore any contacts on 160. But, it heard NZ really well!

Once we had a reasonable RX antenna farm, we built an antenna for the second station, which we intended to use on the higher bands for RTTY. We set up our remaining 8 meter fiberglass pole for a simple vertical fed by an SG-235 autocoupler. That antenna stood on the water's edge and had three semi-elevated radials. Working in a hurry we forgot to connect the antenna wire to the antenna coupler's output terminal! Still, the coupler tuned up and we did not notice until next morning that we made over 100 RTTY QSOs with no direct antenna connection! Obviously, some RTTY operators have very good receivers.



RTTY Station Antenna Coupler on the First Day We forgot to connect the antenna wire to the coupler's antenna terminal. We made about 100 QSO-s like that.

We were also kept busy with maintenance work. For several days we were having trouble with our generators. We had two 1.5 kW gasoline powered Honda generators. One of them had extensive RF filtering, which we preferred to use. Soon it started to run unevenly and occasionally would completely cut out. We switched over to our back-up generator – the one without the RF filtering – which developed the same problem within a few hours. Eventually, we traced the problem to water and contamination in the feed tank. We used this tank, which came off the dinghy, to extend the fuel capacity of the generator. Unfortunately, over the years that tank had accumulated water and crud, which found their way into the generators. Once we cleaned the tank the problem went away.

On the 10th day we also lost the boat's freezer. We were reluctant to rip it apart as the freezer ran off the same system as the main fridge, which we could not lose. For three days we ate a lot of meat and cooked the rest into a huge curry. (A curry will last in the fridge for over a week.) The day after all that the freezer started working again!

One of our K3 radios also failed; it would not output more than 10 watts. Eventually, we found the problem: a faulty PIN diode in the T/R switch. Fortunately we had a spare PIN diode which we installed and were back in operation again with two radios.

The antennas required constant maintenance. Waves were causing damage and birds were breaking wires. Once we had a bad connection in the antenna coupler. Due to the high winds, we did not want to lower the main mast, so we had to work on the coupler standing in the water. Working on sensitive electronics while standing in 1.2 meters of salt-water is no trivial!

Overall, while maintenance has kept us busy, we rarely had a problem that took us off the air, and never for more than for a couple of hours. One advantage of using a lot of home-brew gear is that you know how to fix it.

Working the Pile-Ups

The pile-ups were big and rowdy. Although not everybody behaved perfectly, we enjoyed working the pile-ups because the vast majority of the callers were very good and knew how to work a DX.

There were exceptions though. Working a rare DX is naturally competitive, so a pile will always have some shoving and pushing. Some, how-ever, were not "good sports" and caused unnecessary QRM and slowed us – and everybody else – down. Here is a brief list of what operators absolutely should NOT do when trying to work a DX:

- 1. Don't call while the DX is in a QSO
- 2. Don't call when the DX is asking for a completely different call-sign
- 3. Don't call if you can't hear the DX

The most effective way of getting a QSO with the DX is different on 160 meters than the higher bands. On 160 you should send your call-sign at least twice. (On the higher bands, only once!) On 160 the sending speed should depend on conditions: When conditions are poor slow down. But don't slow down below 10 WPM because Long Line Buoys (fish beacons) transmit at 5 to 6 WPM and you don't want to sound like one of them! When there is QSB, speed up to 20 to 25 WPM. Once the DX has your correct call and sends your report, do not reply starting with your call-sign, and most certainly do not send your call-sign repeatedly. The DX may think that he has your call-sign wrong and you may lose the QSO! The best is to send "R 5NN urcall TU". Sometimes it is also useful to send a real report, but do it only when the DX hears you well.

On the higher bands speed is of the essence. Work the DX with the highest speed you are comfortable with and do not send anything that is not important. Send your call only once. When the DX comes back with your call and report, just send 5NN or 5NN TU. Don't worry about pleasantries; the most polite thing you can do is to be quick and move on: others have been waiting for hours (maybe days)!



Tomi, HA7RY, is working pile-ups during the day. On the left is the RTTY station.

Life on Chesterfield Reef

In addition to the intense excitement of working the pile-ups 20 hours a day, we had a pleasant life on Chesterfield. Tomi was most enamored with the turtles that came to nest on the island. These were giant Green Sea Turtles that came up on the beach at night to lay their eggs. For some reason one of the turtles liked our tent and insisted on coming in. Perhaps she was just curi-



The Camp at TX3A The generator is visible in the foreground. The small blue tent next to it provides shade for the fuel. The two poles on the right, half way between the generator and the tent, hold the NA DHDL. The pole standing on the beach to the left is the RTTY antenna. The tent is supported on the windward side by driftwood bamboo poles. The antenna lagoon is in the background.

ous or she wanted to lay her eggs inside. Sometimes the turtles messed up our cables and one tore a hole in the side of the tent. Still, they were great "visitors" and a nice diversion.

Our camp was situated on the northern tip of the island where we were away from most of the noisy birds, which were nesting in the bushes to the south.

Overall the weather was excellent the entire time we were on the island. There was a stiff breeze blowing on most days, which at times was strong enough to make life on the boat uncomfortable, but it kept daytime temperatures comfortable. At night, however, the breeze often made the mist laden air feel chilly. The mist came from the waves constantly crashing on the reefs just a few meters to the east of us. The strong winds were a problem only when we had to work on the big antennas. The daytime temperatures were around a comfortable 26 to 27 degrees Celsius (78 to 80 F). It only rained a few times and the rains were never too heavy.

The islands were home to a very large number of birds. They were mostly frigate birds, boobies and sooty terns. The birds made a lot of noise day and night. From past experience we knew to bring noise cancelling head-phones, which again proved to be very useful. At nights there were large numbers of hermit crabs, who liked to explore the inside of the tent. They were looking for food scraps and, along with other crabs, were wandering in and out of the tent like they owned it.

Wrapping Up

The nearly 30 days on Chesterfield went like three days! Partly because of the excitement and partly because we were so busy, we hardly noticed the time passing. By November 28 we had over 30,000 QSOs. As Tomi would be running the CQWW DX contest as a single operator, he spent the night of the 28th on the boat catching up on sleep. I spent the night on 160 meters. Conditions were good and it was very nice to say good-bye to TX3A with 270 QSOs on Top Band. Tomi came to the island in the morning, when we reconfigured the station for the contest – he would be running low power – and I left him to go diving!

Conditions during the contest were poor and as a low power entry, Tomi was not doing great. Still, by the end of the contest, and the end of the TX3A operation, we had a total of 36,148 contacts! More importantly for us, we made 3,435 contacts on 160 meters. QSO totals for each band and mode are listed below.

Band	CW	SSB	RTTY	Total
160	3435	-	-	3435
80	5285	658	-	5943
40	5078	325	127	5530
30	3971	-	374	4345
20	2707	1287	985	4979
17	2236	957	439	3632
15	3507	1259	238	5004
12	1155	442	-	1597
10	1262	421	-	1683
Total:	28,636	5,349	2,163	36,148

The above numbers clearly show that we are primarily CW operators. One anomaly in the numbers needs pointing out: The 40 meter CW QSO count should be higher. It is low because of the Chinese "Dragon" HF radar, which at times made 40 meter operation difficult.

On Monday, Dec 1, we started tearing the station down early. We wanted to be ready to sail early next day as the forecast was calling for a short weather window, which we didn't want to miss. Even before the contest was over, we started removing non-essential gear from the island and taking down the RX antennas that Tomi was not using. As soon as the contest was over, we got going at full speed. I t was intense and hard work. We took down and disassembled the big antennas, pulled apart the station, packed the radios and amplifiers. We started ferrying the gear back onto the boat as soon as it was getting packed. We took down the tent, rolled up the numerous coax, control and power cables, and finally removed the generator and its remaining fuel. By 5 PM we had everything off the island. I did a walk around and final inspection, picking up any small pieces of trash and taking some last photographs.

The intense work of washing and cleaning the gear, however, continued on the boat late into the night. It was not until at 9 PM that we were all done. Everything was cleaned and stashed away. We were dead tired but we prepared a big dinner of freshly caught mahi-mahi in bacon and opened our only bottle of wine: a magnum of 1997 Fox Creek Shiraz. We had a small celebration and crashed for the night.

At 7 AM the next morning (Dec 02) we raised the anchor, and in perfectly calm weather, turned the boat to the west and left Chesterfield behind. The first leg of our trip to Frederick Reef was made overnight in very comfortable conditions. We spent two days on Frederick Reef, mostly sleeping, but also doing some diving. By the time we were ready to leave Frederick Reef the good weather was over and we left for the second leg of our journey in strong winds and huge seas. As we were going in the same direction as the waves, the passage was not uncomfortable, and we continued fishing most of the way. Our first contact with civilization was the Australian customs plane that located us 180 miles off-shore. We reached the Whitsunday Islands, just off the coast of Australia, the next evening. We were back and TX3A was over!

Acknowledgements

Remi Tussard, FK8CP, was instrumental in getting us the TX3A license and its extension. He also made the arrangements with immigrations in Noumea to allow us to clear-in without actually taking the boat to Noumea. Without Remi's help, there would not have been a TX3A DXpedtion! A big thanks to Krisztian Hilderbrand, HA5X, for building and managing the TX3A website and log-seach program. To Tamas Holman, HA5PT, for the almost-real-time posting of QSOs on LoTW and e-QSL. Thanks to previous Chesterfield DXpeditioners Jan, DJ8NK and Eric FK8GM for their advice on suitable locations. Thanks also to George Taft, W8UVZ, for his encouragement and guidance. To Carlos, N4IS, for help with flag RX antennas and other equipment. A very big and heart-felt thanks to all the donors who have generously contributed.

Amateur Radio Technology Day Saturday, May 15 - 8am to 9pm At the SLAC National Accelerator Laboratory http://www.fars.k6ya.org/amtechday

Operations Approved for DXCC Credit

From Bill Moore, NC1L, ARRL Awards Branch Manager, the following operations are approved for DXCC credit:

YI9PSE - Iraq - 2010 Operation

TS8P - Tunisia - 2010 Operation

3V3S - Tunisia - 2009 Operation

D2CQ - Angola - 2010 Operation

D44TXP, D44TXO, D44TXS, D44TXI, D44TXF, D44TXQ, D44TXR - Cape Verde

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Club address: NCDXC Box 608 Menlo Park, CA 94026-0608 Club URL: http://www.ncdxc.org