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Our Next Meeting

Elections &
"Identifying, Finding, and Eliminating Power Line and Other Man Made Noise Sources"
by Ira Stoler, K2RD

Date: Monday, 10 April 2006
Time: 6:00pm schmooze, 6:30pm dinner, 7:00pm program
Location: **Harry's Hofbrau Bakery,** 1909 El Camino Real, Redwood City, CA 94063-2112
(650)366-3733

Dinner: Go through the Hofbrau cafeteria-style line and bring your dinner to the meeting room to the left of the front door. Pay individually at the restaurant. Please RSVP to W0YK by Sunday, 9 April.

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P49X – 2006 ARRL RTTY Round-Up

By: Ed Muns, W0YK

I had the pleasure of operating the 2006 ARRL RTTY Round-Up from Aruba and possibly setting a new world record for Single-Op High Power. Although I didn't think this was my goal going into the contest, Mary astutely remarked that I had been on a mission since returning home from the 2005 Round-Up! Once it was pointed out, I guess I can see the truth in her observation. While I took second in the world and set a new South America record in 2005, I was soundly trounced by Jacky, P43P, who beat me by a commanding 15% or over 300 QSOs. So, what changed between 2005 and 2006? Was it really my "mission" to do better or just dumb luck or what? I honestly don't know, but I can describe the differences and we can all speculate.

Experience

Rick, N6XI, sent an email to me in Aruba just after the contest this year, saying "Wow! I thought you were new to RTTY, Ed! What a blowout score! Congrats." Well, ahem, I am a bit new to RTTY. Moreover, I was one of the more cynical club members during the NCCC campaign back in late 2003 when N6DE, AC6JT, K6UFO and W6ZZZ were rallying all of us to get on RTTY and help the NCCC win the club competition gavel offered for the first time in the 2004 ARRL RTYY Round-Up. Having never operated RTTY and hearing that RTTY presentation at an NCCC meeting in the Fall of 2003, my reaction was "what's the big deal? The RTTY software captures received call signs using Super Check Partial and could just as well stuff them into the log, send the exchange and go on to the next caller." The operator didn't really need to do anything and could just go drink beer. Well, of course, it doesn't exactly work that way, once I got into it and learned how it all played

out. So, I ventured into RTTY and specifically RTTY contesting for the first time in the 2004 RTTY Round-Up. NCCC decidedly took the club competition and I was shocked one day when a plaque arrived in the mail for "First Place Single-Op High Power Pacific Division". Gosh, I'd never won a plaque in my entire contesting career. Maybe this RTTY mode was OK after all.

I had wanted to operate a major contest from the excellent Aruba station now owned by John, W6LD/P40L, and Andy, AE6Y/P49Y. But not surprisingly, either John or Andy operates most of the major contests such as CQWW and ARRL DX. So, I signed up for the 2005 RTTY Round-Up, which would be my third outing in RTTY. (I had so much fun in the 2004 Round-Up that I also operated the February 2005 RTTY NAQP, so now I was seasoned expert!) During the several weeks prior to the 2005 event, I corresponded with Don, AA5AU, about my trip and he told me that Jacky was very motivated by my planned operation and had been calling and emailing Don for a couple months about his own setup. Jacky did a lot of preparation to make sure some fledgling RTTYer didn't beat him in his own country.

Well, as stated above, it wasn't even close when the final bell rang at the end of the 2005 contest. Jacky and I went out to dinner afterward and he was excited about his 140 QSOs in the first hour. Huh? My first hour was 161 and my second hour was 150. What happened? In subsequent hours, Jacky simply caught up and then marched away from me over the next 22 hours. AA5AU commented afterward that I should feel good about my results since Jacky has much more RTTY experience that I did. For example, N7MH observed that Jacky was giving out the frequency of his other radio, which I wasn't doing. So, perhaps there were a number of things that I was or wasn't doing that explained the difference in our scores.

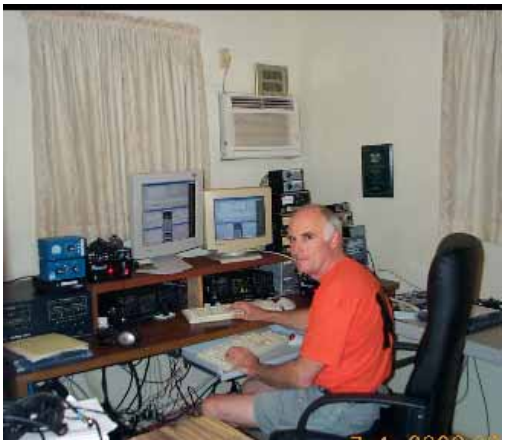
Location & Antennas

I received numerous reports in 2005 that while my signal was loud, I was not coming back to callers who were easily being picked up by P43P. Even Jacky remarked to me a couple days prior to that contest that Europeans were calling me on 80 one evening and I was not getting back to them. I remember that the Beverages didn't seem to make any difference as I was testing on the low bands. And, during the contest, I discovered I couldn't even use the Beverages because of RFI from the second radio getting into them. This year there is a Dunestar band pass filter on the Beverages.

The P40L/P49Y station is on the south side of the island, albeit on a high point, while P43P's station is on the north side with a down slope to salt water not far away. Numerous first places and some world records have been accomplished from Jacky's QTH. So, common wisdom was that it is a superior contest location. Jacky claims that his Beverages work well.

Equipment & Configuration

In my first RTTY outing, the 2004 Round-Up, I ran SO1R with MMTTY decoding the RX audio via the computer sound card in addition to the Hal DXP38 hardware TNC in a second decoding window. This was per the advice of AA5AU and our own local NCCC RTTY aficionados. I ran this way again in the February 2004 RTTY NAQP, but couldn't really see that there was any benefit from the DXP38. So, for my operation from Aruba in the 2005 Round-Up, I only made up some FSK and audio cables for the FT-1000 and FT-990 that were in the station that year. Furthermore, I wasn't convinced that the audio isolation transformer was necessary either, so I dispensed with that. I simply ran the RX audio directly into the computer sound card and let MMTTY do the rest.



Ed is the two-fisted "keyboarder" during the RTTY Round Up

Was there the possibility that I had noise on my audio lines that was obstructing copy of all but the loudest signals? That would help explain my great first couple of hours before the rate dropped off like a rock when I had to start

working the weaker signals. Was there something else in my setup that was keeping me from having clear copy? Was is a combination of these things and my relative inexperience in RTTY and the relative inferiority of the P40L/P49Y location compared to that of P43P?

Ed had some decent aluminum to work with.

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The apparent "mission" that Mary noticed I was on during all of 2005 involved eBay excursions to procure NIR-12 DSP audio filters, DXP38 TNCs, PCMCIA multi-port serial cards, four identical wireless laptops, three W2IHY iBoxes, and various other hardware and software accessories in an effort to create two fully equipped RTTY stations, plus spares, in what is typically regarded as a premium configuration. While I can report this activity now, I wasn't really aware of the overall magnitude of my year's efforts until I tried to pack it all up for the flight. I also underestimated the time needed to configure operating systems, networking, WriteLog, MMTTY, all the cabling, etc. And, of course, just two days before departure, the power went off for five days in a winter storm that PG&E likens to Katrina. Running off a generator, I got some of the software configured and a small bit of testing done with the newly acquired ICOM 756pro2 that AE6Y gave me to take down to the station as a complement to the identical radio that John had used with N6XI, KX7M and N7MH for their MS landslide in CQWW CW. I was jazzed about these radios, even though I had never operated them, because AA5AU claims the 756Pro3 is the best RTTY radio he's ever used.

I arrived in Aruba with two huge overweight suitcases that were 96% radio/computer equipment. Other than that I had a razor, toothbrush, one pair of shorts, sandals and a few T-shirts! Thanks to the TSA inspection of one suitcase, eight of ten ferrite toroids were shattered, having been dumped out on their concrete floor. They were considerate enough to sweep up the shards and put them back in the box in my suitcase. Fortunately, I ultimately didn't need the destroyed ferrites. On the taxi ride from the airport to the cottage, I inquired of the driver about recent rains and he informed me that there had been little rain and I needn't worry about rain during my stay. 10 minutes after arriving at the cottage there was a prolonged torrential rainstorm that rivaled what I had left behind in the Santa Cruz Mountains. The storms continued off and on for the next few days leading up to the contest. Accordingly, the low bands were noisy and the Beverages didn't seem to help much, despite the CQWW CW team just a few weeks prior, plus K6TA/K6KO just days prior, exclaiming how well the receiving antennas worked. In fact, the European Beverage was completely dead, sounding like an open length of coax.

I set up one RTTY station the first afternoon and worked the low bands that night. The next two days were spent alternatively working RTTY on various bands, 80-10 (well, 80-15 since 10 was rarely open) and setting up the second station with the networked computers. The computers couldn't access each other's file systems and I spent over a day groping around in the Microsoft security and permissions quagmire to finally get the basic systems communicating. Once I had SO2R RTTY working, I discovered RFI from one rig to the other on a few band combinations. This again was a surprise because there are band pass filters on both radios plus a rich assortment of W2VJN coax stubs on all the antenna ports. I was really discouraged because my number one concern was being able to hear well.

Turns out the European Beverage was just an open coax, once I ventured out into the cunucu, aka the Aruban jungle, and found someone had snagged the coax and broken it. Repaired, the European Beverage at least sounded like the two US Beverages even if none of them seemed to be better than the transmitting antennas at the time. John and Andy called frequently during the week, partly to help talk me through the RFI issues and partly to cheerlead. John, particularly, was still in CQWW CW afterglow and couldn't imagine how (1) the Beverages weren't anything short of dramatic, (2) there could be any inter-station RFI and (3) how I could do anything but

ace this contest. At one point he responded to my lamenting about the 18dB of RFI from the 80 meter radio onto the 40 meter receiver with "heck, Ed, that's only … what … 2-3 S-units and you'll hear signals much stronger than that!" Since I was there all by myself, it was very easy to get bummed out about problems like this and John's never-ending optimism was a life-saver. In the end I never did reduce the RFI I was seeing. Even removing band pass filters and stubs didn't make it worse (or better). And, adding more stubs and filters for the problem bands had no effect.

The Contest

During each of the two NCCC practice hours on Thursday and Friday prior, I worked about 95 stations, a far cry from my 161 hour in the 2005 Round-Up. However, on Thursday I was still re-learning the WriteLog short-cut keystrokes and other basic operations. On Friday, there seemed to be far less stations participating in the practice. I tried to convince myself that this was not a foreboding of the contest itself. Then, when my first hour in the Round-Up produced only 142 QSOs, I thought I was headed for disaster. The next hour was 162 and while the rate dropped slowly off after that, I was staying close to a 150/hour average for the first 5-6 hours. That was much better than 2005 when the rate dropped below 100 in the third hour, never to go above 100 again. A glimmer of hope for a good contest, but always that fear, as in any contest, of when I'd hit the wall and the rate would plummet.

Well, the rate held up pretty good and when I took my break at 05Z there were 1341 Q's in the log after only 11 hours of operation. I had 1850 Q's for the entire contest in 2005, so things were definitely looking better. With the caveat, of course, that Sunday as we all know is likely going to be much slower. In fact, in 2005, I knocked off an hour earlier with the strategy of starting up again at 10Z and pick up the Asian and Oceania mults and Q's. That was a big mistake last year, so I moved things out an hour this year. Besides my 04Z hour this year had only dropped to 93 compared to 60 in the 03Z hour in 2005.

I took my full 6-hour off time all at once with the idea of getting some good sleep to carry me through the last 13 hours on Sunday. Great idea that totally failed … I couldn't sleep! My body was tired, but my mind just wouldn't shut down. That eleven hours of relatively high RTTY rate had over-stimulated my contesting sensitivities and there was no way I could sleep. So, I read a book. I took a walk. And, I fretted over embarking on a 13-hour stint in the chair, with no more off-time and no sleep.

At 11Z, I pounced on N6DE at K6KM and a couple others on 40 meters. No mults, so I fired off CQ's on both radios (40 and 80) and went for 60-90 seconds with no response, convinced I'd seen the last of any reasonable rate … when, BANG, the pileups commenced again and I had a 78 hour. Not great, but tremendously better than 2005. The 12Z hour dropped to 62, but then I got back over 100/hour and had a peak clock hour of 130 on Sunday! It didn't take long to hit my prior year's total of 1850 Q's with lots of time left. Then, it looked like I'd break Jacky's 2005 total and the question was whether I could get enough beyond it so that points lost in log checking would still leave me above the world record he set then. But, the rate just kept up and then it seemed possible that I might be able to break 2400 Q's or over 100/hour rate for the entire contest. When the 00Z hour clicked over and I was at 2588 (less 49 dupes), I was ecstatic. This was about 20% over Jacky's pre-log-checked result last year which had been the first time anyone had broken the 2000-QSO mark. I was jazzed and threw on my airplane clothes and headed for a great restaurant down on the water to treat myself to a delicious Aruban dinner and French wine. But, not before W6LD called on the phone just 90 seconds after the contest close to congratulate me and drop a hint of "I told you so!" along with it.

What an intoxicating experience and one that was truly a surprise. So, what was the difference between 2005 and 2006? I don't know for sure, but several things can be podnered. First of all, not only did I feel like I was able to copy everyone pretty well this year, but I had virtually no reports of "you can't hear!". John was right about the RFI … I never noticed it during the contest. There were always pileups and I was seldom wanting for stations to work. So much, in fact, that I never really had a chance to tune around for mults. I had my hands full just managing two run stations. Also, the Beverages really worked during the contest, much better than I experienced in the rain-drenched days before. In particular, the three directions were very directive so that I could completely null out the US when working Europe on 80. Second,

there did seem to be more stations on, as is noted in each RTTY contest that passes. RTTY contesting activity continues to grow. I couldn't have worked nearly 2600 contacts if there weren't a lot of active stations and if they didn't call me. There were 162 unique call signs that worked me on all four bands I was on—that was 25% of my contacts. Third, I had the P4 multiplier all to myself since neither Jacky or anyone else from Aruba was on that weekend. Fourth, I really had a pretty good equipment lineup. The DSP Twin Peak Filter for RTTY in the 756Pro2's combined with the NIR-12 and W2IHY audio isolation feeding both MMTTY and the DXP38 really played well. There were times when one decoder pulled call signs out when the other was useless. One such instance was working JA's on 40 meters at 11Z Sunday morning. I hardly ever got a valid call sign out of MMTTY, but the DXP38 consistently printed call signs from the database. Most of the time, however, MMTTY was all I needed. Only when it wasn't copying would I even check the DXP38 window.

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What might I do different next time? I'd like to figure out a way to feel comfortable taking one of the run stations off to search for mults. I missed a lot of mults, some easy like ZL. On the other hand, I had a lot of mults come to me, for example 6W with a low serial number, that I wouldn't have gotten by tuning around. So, it's always a trade-off. The other thing I'd like to experiment with is alternative computer user-interfaces. So far in my limited RTTY contesting, I've used two complete computer systems, one on each radio, networked together just like a multi-two setup. I have two keyboards and trackballs and displays in front of me. My personally derived technique is a combination of "left hand on left keyboard/trackball/radio … right hand on the right system" and sometimes moving both hands to one keyboard or the other. I'm wondering whether a foot-switch actuated UI relay box would be more efficient moving one UI between the two computers. Or, just using the classic SO2R on one computer setup that WriteLog is designed to handle. WK6I has tried the two-computer approach and prefers a single computer instead.

Most probably, the 2006 Round-Up was just one of those wonderful weekends where all the stars lined up perfectly for a blowout weekend. I may never have an experience like this again. Who knows, though? That's why we keep going back for more!

Thanks

The first round of appreciation has to go to all the stations who called in during the contest. The ones that worked me on multiple bands accounted for 75% of the QSOs. Second, like real estate, good contest stations are all about location, location, location. Aruba is an ideal location for a predominantly US/Canada contest like the Round-Up or ARRL DX. Coupled with that great location is a first class station originally pioneered by AI6V and more recently enhanced by W6LD and AE6Y. Thanks, guys, you've pretty much covered all the bases for a premium SO2R station. Next, like many other RTTY ops, I owe a lot of thanks to Don, AA5AU. Not only for his extensive on-line tutorials and other aids, but also for the wonderful friendship and advice he's shared over the past two years. Finally, I have to recognize Dean, N6DE, for getting me into RTTY, against my first impressions. If you haven't tried RTTY, I urge you to give it a spin. You may be surprised how much fun it is. And, you will surely discover that it is much different than either CW or Phone contesting, in either the SO1R or SO2R versions.

Ambidextrous CW Capability – Another View

By: Ed Schuller, K6CTA

I was interested to read Kurt, K7NV's discussion of sending CW with either hand in last month's JUG. Like Kurt, I have been doing this for years, but with a different technique.

My initial attempt to send with the "opposite" hand was prompted by a mad attempt to send something by hand during a contest, with my normal hand position usurped by the keyboard. The result was not pretty – as I started to use the paddle, my forearm brushed up against the keyboard and caused the logging program to initiate an exchange. I mashed the escape key, pushed the keyboard away, and tried to complete what I was sending. Of course, by this time, I had lost the contact! I figured there must be a better way.

Unlike Kurt, my method only uses one set of paddles. Since I am right handed, the normal position of the paddle for day to day use is to the left of the rig, so that my forearm rests on my desk (the "standard" position for sending). My keyboard is off to the right. However, during a contest, I move the keyboard directly in front of the rig, in the center of the operating position. The paddle is still off to the left, but there is now no room for my arm. However, I noticed that if I put my left hand forward in a straight position, my left thumb rests on the side of the paddle that my right thumb does. If I cupped my hand over the paddle, my left forefinger would be on the same side that my right normally is. My brain didn't need to learn anything new, since my left thumb still made dashes, and my left finger still made dits, just like my normal sending hand. My hand is just backwards from what would be a "normal" position (fingers coming from the left, not the right side of the paddle).

Ed's two-handed CW technique goes from this…

… to this.

I practiced for a little bit, and found that I could send well from this position. In fact, I found that after a while, I could send just as fast with my left hand as with my right. In the heat of a contest, if I need to send something manually, it is very simple to just stick my left hand on the key and send whatever I need to. I find this easier than having an additional paddle on the desk. Plus, it allows me to keep my paddle in its normal spot. And, like Kurt, I find that being able to seamlessly move my left hand from the keyboard to the paddle to send CW makes my contest operating more efficient.

This system is not as confusing as it sounds. In fact, I found it fairly intuitive (from a mental standpoint, at least!) once I got used to it – which didn't take very long. You might give it a try and see what happens.

Morse In Perspective

By: Rob Brownstein, K6RB

There is a lot of passion surrounding "the code." Every time a licensing authority proposes doing away with Morse Code as a requirement, it evokes storms of protest and equally strident messages of "what took you so long." There are those hams who feel that Morse Code, as a bedrock fundamental of radio communications, should be preserved as a qualifier for HF license classes. There are others who see it as an anachronism that no longer has any relevance to radio communications. The latter will often cite the fact that commercial shipping no longer is equipped for it.

In trying to put Morse in perspective, it might be helpful to look at the evolution of the automobile, the history of which interestingly is contemporary with that of radio. In its early phase, radio relied on Morse Code as a way of conveying intelligence through the switching on and off of radio waves. The early automobile used mechanical gear shifting as the way of converting the same range of engine rotation speeds to different ranges of drive wheel rotation speeds.

It made sense when licensing people for radio use to test their skills with Morse. It made equal sense when testing for driving competence to test skills with clutch and gear shifting.

Now, roll the tape forward. Progress with radio technology made telephony readily accessible to hams. Automobile progress created the automatic transmission. In both cases, it made it easier for people to use those technologies. In the US, once the automatic transmission became standard equipment, the number of drivers increased dramatically. People no longer had to demonstrate prowess with clutch and gears. The number of licensees also increased dramatically.

Here is where the two histories diverged. Even though radio telephony obviated the need for learning and using Morse, the licensing authorities kept it as a license qualification. And, from shortly before World War II until the mid-1960s, hams using Morse to communicate probably exceeded those using voice. This was certainly the case in Europe.

The advent of SSB transceivers, however, had a major impact on the proportions of those using Morse and those using telephony. For one, transceivers lowered the cost of equipping a telephony-capable station. For another, the suppressed-carrier mode eliminated heterodynes that plagued crowded AM sub-bands. Lastly, SSB, by eliminating the carrier, permitted more power to be applied to the sidebands making this telephony mode more efficient than AM. All these advances helped to make SSB the preferred mode of ham communication on the HF bands.

In the 1960s, in the US, there began a resurgence of interest in manual-gear-shift cars. Sedans were still almost exclusively automatic-shift vehicles, but growing popularity of European-inspired "sports cars" took hold among the baby boomers. "Four-on-the-floor" became a regular part of the vernacular. And, young men and women were learning how to clutch and shift.

The automobile licensing authorities, however, did not reintroduce manual-shifting skills into their qualifications. An aspiring licensee could use his dad's automatic-shift car to qualify for the license, then immediately get behind the wheel of his MG-B.

Meanwhile, the FCC in the 1960s began its incentive licensing program – taking away some privileges from general class operators and giving them back to those who passed higher speed code and more difficult theory exams.

So, where is this comparison leading? On today's roads, there are no lanes reserved for stick-shift drivers and their cars. The licensing authorities still permit license aspirants to take their tests without having to prove competency in clutching and shifting. People drive stick-shift cars because they enjoy it. Unlike the early days of cars; the skill is not necessary in order to drive.

Today, hams primarily communicate using SSB on the HF bands. A shrinking population of hams still derive pleasure from operating Morse (maybe we should call it "sport ham radio"). Even when Morse was no longer a necessary skill for radio communication, it was still a required skill for HF access. I see in today's push for code-free licensing the same kind of decisions taken by the automobile licensors when automatic transmission cars became the mainstream. They decided that most people would never use clutch and stick, so why make doing so a skill qualification. Similarly, the radio licensing authorities – forgetting about tradition – see no need to demand Morse competency for HF access.

Hams, however, do still enjoy one distinction over drivers. For now, anyway, by "gentlemen's agreement," we do have lanes for our stick-shift cars. However, that said, if drivers in adjacent lanes are stacked bumper-to-bumper and see to their side a largely unused lane, well, it doesn't take rocket science to see where this is going.

We can enjoy our preference for Morse communication, and it's fine to feel that we are getting something extra that our telephony brethren cannot fathom. But we cannot take our sub-bands for granted. Radio spectrum is a coveted resource. We have to show, by example, that there are still thousands of Morse-skilled operators, using the mode, and providing value to their nations. This becomes harder and harder to prove.

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