The Spectrum

Issue 07 06 July 2006

Words From the President

Field Day 2006 was a blast!

It was a great event to be in the company of such great individuals as our membership has! Thanks to Bob Zogg for his work as Field Day chairman. Thanks to Paul and Dennis for the get lunch and dinner we all enjoyed consuming.

Thanks to everyone who helped out in any way.

I hope everyone has an enjoyable 4th of July holiday with family and friend!

Our July meeting is a dinner meeting at the Silver Diner on Battlefield Blvd on July 10th starting at 6:30 pm. Hope to see everyone there!

The tower work on our repeaters has finally started with the city installing our new 300 Ft transmitting antenna out at Bower's Hill. We have a new controller for the 146.61 machine on order and hope to have that working shortly. Next step is for the new antennas to go on the tower at Butt's Station off of Greenbrier Parkway. This will be the new home of the 146.82 which will be operating on a new Motorola repeater. The 440 repeater will also be at this location. We hope to have the 6 meter repeater operating before the end of the year. In the process of finding equipment now.

Things are looking up for the club! Thanks to all for being a part of a great organization.

73's
Keith
KG4ZXK

I would like to thank all of the CARS members and friends for there great response to the Heart Lung Support Group Special Day of Issue Postage Stamp fund raiser. Through the clubs emails, we will have sold at least 15 once the orders are picked up. This is a great help for those transplant patients having insurance and/or social security problems. If you are interested in one of these issues, please contact me at 757 485 3762.
God Bless

WA4BUE

INSIDE THIS ISSUE

Links of Interest

Virginia Beach Amateur Radio Club

Portsmouth Amateur Radio Club

Home - KG4ZXK.COM - IRLP and much more!

Atlantic Basin Hurricane Tracking Chart

W4CAR Field Day Pics

MM Hamsoft - Home of MMSTV

Silver Diner - Map

Upcoming Events

CARS Dinner Meeting

Monday,July10, 6:30
Silver Diner
1401 Tintern St.
Chesapeake, VA 23320

Public Service/ARES

Saturday, July 22nd , 0900
QRM Room

The 30-meter Poltergeist

Some lessons learned come from textbooks, the Internet and other written material. However, I often find that personal experience can be the most illustrative. So begins my tale and hopeful resolution of a long-standing problem I have had with one of my radios. It may not have all the excitement of a Greek Epic or the allure of a trashy novel or the suspense of a Stephen King novel, but it has a number of educational points.

My first HF rig was an Alinco DX 77T, which is still a very nice radio. It was feeding a LDG remote autotuner, a remote 4:1 balun, 300 Ohm TV twin lead and a 280 ft horizontal loop. The problem with some of the older autotuners, is that in finding the right setting some very high SWR's are reached transiently. Most "tune" buttons on modern HF rigs do drop the final output to around 20 watts, but my poor Alinco ultimately tired of this. New automatic tuners have frequency sensing capabilities and memories, such that wide excursions of SWR are not necessary to find the best settings when repeatedly going back to the same section of a band.

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The CARS 10 Meter Meeting on the Air

Recently with 10 meters coming a live, we are having increased check-ins. Stations from Ohio, Tennessee, Michigan, Georgia, Florida, Missouri, and Texas. Unless he over eats or falls a sleep, Ricky Lee, KC4RIC calls the nets on Monday nights at 8 PM local time on +/- 28.400 MHZ, USB. We may have anywhere from 5 - 20 check ins. The atmosphere is informal, the conversations are great. The net has been in operation for at least 4 - 5 years and was the developed by W3AFH, as a fun HF thing to do. Everyone is welcomed to check in.

WA4BUE

SSTV under $20

When I first read about slow scan TV I thought that sounds nice but, I do not have the money to pay for it at this time. How wrong I was in that I did not realize that everything I need was already in the shack. N5RAG Rich and I were talking one night on the 146.82 Mhz repeater about the technical side of SSTV and he ask if I would like to try receiving it and try out the possibilities of sending it. So, I down loaded the software (MMSSTV Ver. 1.11G) from the internet. The next step was connecting the output for my headphones on the radio to the line input on the soundcard of my computer. With a double male phone cable that was easy to do. After QSY to the digital part of the 2 meter band we went for the receive side and Rich N5RAG help me over the air to adjust the software so that the receive of pictures he was sending was clear. The next step was for me to send and this was done by keying the microphone while holding it next to the headphones of the computer so the sound would go out over the air waves to be demodulated at Rich N5RAG's radio shack. This seemed to work pretty good and both of us were happy that we were able to experiment with SSTV on amateur radio.

After a few months I was working with it on 20 meters mostly receiving but, sending some CQ's out as well when I received a SSTV signal from N5RAG which made my day. When you are working with a new mode of communicating any contact is a good contact no matter the distance. We sent and received several pictures before we both had to QRT.

What I like the most about this is for those of us who do not have money to burn we still can have fun with some of the advance forms of communicating. I like talking simplex on the 2 meter band when the conditions let me get more bang for the watt and with a simple home brew beam two hams can have hours of fun sending SSTV over the 2 meter or 70cm bands FM across town or state. I know Rich N5RAG wrote about SSTV on a shoe string early in the year for the news letter so, this is just to let you out there know I tried it and it works! So, if there are any technicians out there who want more to do on amateur radio but, are not ready for the upgrade test give myself or any of the other active hams out there a call and tell us what you want to do. In the club W4CAR we have people who are proficient in many modes of operations such as, APRS, PSK31, SSTV, packet, SSB (VHF and UHF), satellite, and CW. It should be noted CW is not just for HF and works very well on VHF and UHF when working low power such as on a camping trip.

With that I will say '73
De Jim KG4WOJ

Ted Ambrose, CERT coordinator reading the proclamation declaring June 18th - 24th Amateur Radio Week from Chesapeake City Mayor Dalton Edge

Barry, K5VIP and Tom, KI4HNF putting the finishing touches on our HF beam.

Barry, K5VIP, operated a solar powered station for Field Day.

CARS Field Day 2006

It is both very difficult and easy to describe the ARRL Field Day experience. Looking at all the definitions of "Field Day" in a dictionary, Field day held this year at Deep Creek Lock Park epitomized the best parts of each of them. It was an outdoor social gathering requiring both physical and mental athleticism demonstrating the art and science of Amateur Radio in a competitive environment that built upon and highlighted past successes and was a lot of fun. Now that was a mouthful! Or maybe I should say it is an "Amateur Radio religious experience!" As a showcase of our abilities and a learning experience, it never ceases to amaze all of us who participate, what can be done. For our club, this probably was the most successful in many, many years. The old timers tell me that this was probably the best ever.

I do not have the final tally, but rough estimate suggests that we had some 800 contacts. Although we had planned for a 4A and at the last minute reclassified our station as a 5A, in truth, we were a 6A. We had 2 HF rigs running into 80-meter Carolina Windoms operating from separate trailers. In the main pavilion, we had stations feeding into a vertical, 160-meter Carolina Windom, 80-meter Carolina Windom, a 6-meter beam and 3-element tribander on a crank up tower. Frequency conflicts restricted us to operating 6 transmitters at once.

As has been the case in previous years, concerns about being under resourced were completely unfounded. Planning seemed to ultimately boil down to securing the site, getting the resources to the site, inviting our special local officials and the food. Everything else seemed to be by the seat of the pants. When it comes to food planning and execution, Dennis K4DKR and Paul K4PRB take home the honors! Saturday's lunch and dinner have got to be the best 2 meals I have had outside a 5 star restaurant! Paul and Dennis provided and prepared, steak (we're talking large cuts of top quality beef) cooked to order, hamburgers, hot dogs, salads, watermelon, and cooked vegetables. They cooked for 40 people! Mrs. Meade (Paul KI4IRL's XYL) provided some extra special brownies for dessert and Dennis KI4ORF helped with cooking duties. Jim WB4UVH provided the restaurant quality grill. Hams are a group not known for a shortage of conversation. So the hush while everyone ate the tastiest, melt-in-your mouth quality food seemed like an epiphany.

We were visited by Ted Ambrose, head of the Chesapeake CERT and our liaison to the City, Assistant Fire Chief Elliott and Councilwoman Rebecca Adams. Ted Ambrose read Mayor Dalton's proclamation declaring this Amateur Radio week in gratitude for our service in supporting the city. We have enjoyed tremendous support by the City, both for repeater and station location. Just as we rose to the occasion to erect this first class radio station as an exercise, the City of Chesapeake knows that during an emergency, all of us can be counted upon to assist in any way we can.

This year's field day had PSK31, CW and SSB operations. Operations had grown to now require 4 generators. Gavin KD7GJB got our wireless network running. Barry K5VIP supplied the crank up tower, and demonstrated QRP through a vertical antenna strategically located on the shore of the saltwater marsh. Jim KG4WOJ brought out equipment, which were focal points for discussions on satellite and homebrew design. Bob Zogg, our Field Day chairman and a newcomer to Amateur Radio, logged a few slow speed CW contacts! We had access to Icom IC 706 MKIIG's and an IC 7000, Yaesu FT 847, FT 817 and FT 897D, Kenwood TS 850 and Elecraft K2/100. Many of the new Hams found it useful to see and try out several of the rigs.

Kudos goes to Barry W3AFH, Rich WA4BUE and Paul KI4IRL. Barry again demonstrated his skill as a contest operator (logging some 460 SSB contacts). Rich provided talk-in assistance. Paul KI4IRL demonstrated, that we have other skills, bagging a catfish from the nearby canal during a break. Considering the lack of sleep, the multitude of tasks associated with setting up and taking down the station, there were no major equipment failures or mishaps, although there were some near misses. The weather, in spite of the drenching we got Saturday, cooperated during all the critical activities including meals! As the last one out of the park, it was hard to believe, what had been was now only an empty pavilion.

73
Leo
KG4PWC

My next rig was an Elecraft K2, which was a used high-end kit radio. It worked well, but when hooked up through a 50-Ohm HF low pass filter and my autotuner, it would read very high current and SWR while transmitting on 30 meters at high power. In fact the external SWR meter needle would be pegged all the way to the right and the radio would shut down. When the HF low pass filter was bypassed. I changed my grounding system since ground loops are frequent causes of radios that seem possessed. The radio seemed to work OK, so I did not pursue it much further and left the HF low pass filter out of the system. I decided to run the coax from my balun to a Murch T-match tuner. The autotuner did get most matches under 1:1.5, but some matches were a little higher. In addition to the problem on 30-meters, when I ran higher power on 40 meters, the SWR increased more than the other bands. With the manual tuner, I can get matches down to 1:1.1 or 1:1. With a table of values, adjusting the Murch tuner takes less than one minute. Even with the low SWR verified by an antenna analyzer, I still could not feed my antenna with the HF low pass filter on 30 meters at high power.

As time went on, my antenna broke and I repaired it and made it a little longer. At this point, I could tune my antenna for 30 meters on 10 watts or less but not at higher power with the filter bypassed! The K2 is an interesting rig, in that it is both a QRP rig with a separate amplifier for QRP 0-10 watts and for higher power, 11-100 watts. However, both go through the same set of internal low pass filters to decrease out of band harmonics. It seemed the RF demons were getting stronger.

By chance, the coax and twinlead lengths were such that I could get a 1:2.0 SWR on 30 meters without the transmatch even on high power! Furthermore, I happened to get a Yaesu FT 897D that can be switched in and out of the same antenna system. I prefer the Yaesu for phone work and it doubles as a backup HF and VHF/UHF rig. This radio has no problem running high power on 30 meters through the same antenna systems! This pretty much ruled out some form of ground loop problem. At this point, I knew the rig was possessed.

Elecraft has an upgrade kit for the high power amplifier for better isolation. So I ordered this and installed it. These kits are always a great test of either your courage and skill or stupidity. It involves disassembling the radio and removing parts and installing new ones. I have done several modifications on the radio by this time and felt comfortable, but did manage to pull off one solder pad, which fortunately was not on the critical side of the printed circuit board. It was easy enough to solder back on. The upgrade did seem to fix the situation. However, I turned on the radio the next morning and the same high reflection error was flashing. But it was now intermittent! Elecraft has a great reflector site and its homepage has a wealth of information on troubleshooting. However, nothing in the archives or in the website mentioned anything about this particular problem.

By this time, I was thoroughly convinced the problem was in the radio and in the rig's low pass filter sections. The rig had separate LC circuits for 160, 80, 40 + 30, 20 + 17 and 15 through 10-meter bands. I knew the 30-40 meter low pass section worked, because I could transmit or receive into a dummy load and pick up the signal in my Yaesu. In fact, I could get a low SWR and full output on all bands into a dummy load. With the transmatch bypassed, I still could make contacts! The only thing that could possibly be going on was that somehow other/harmonic frequencies were getting out, which were causing the reflection. So the problem had to be in the low pass section of the higher bands. Pairs of DPST relays when not activated by the band selection button disconnected all lowpass sections. The 15-10 meter low pass section was supposed to be cut out, when operating on the lower frequency bands. Strong harmonics generated by the high power amplifier but not by the QRP section, could be trying to pass through the tuner. Since the tuner was matched for the lower bands, the higher frequencies could be reflected back.

Well low and behold, when I thoroughly inspected the relays for the upper bands, the pair associated with the 15-10 meters section showed much less solder! So I carefully resoldered all the relay connections. The pins on the relays are much smaller than the holes on the board. Plus there were 5 pins per relay. One cold solder joint and the relay will not function properly. Once the pins were resoldered, the problem was solved! Why did this happen for only one band? I believe that somehow, the length of the feedline with the transmatch was such that to the transceiver, at the 30-meter harmonics frequencies, the radio was seeing an open connection. I could now use my HF low pass filter without problems. "Demons be gone!" Also many apologies to anyone I accidentally QRM'd with out-of-band harmonics.

I was impressed with one of the comments on trouble shooting by an Elecraft Elmer, "check the solder joints, check it again and check it again!" The vast majority of problems are either bad solder connections or incorrectly installed components. Well it took about 3 years to solve this mystery. So comes to an end another tale of misadventure.

73
Leo - KG4PWC

Local Nets

SKYWARN NET 146.820 MHz
Fridays 1900 hours.

CARS 2M Net
Sundays 2030 Hours 146.820 MHz

CARS 10 Meter Net 28.400 MHz
2000 hours on Mondays CARS doesn't meet

Hampton Roads Public Service Net 146.970 MHz
Mon-Sat 2100 hours

VBARC 10 Meter Net 28.400 MHz
2000 hours on Thursdays VBARC doesn't meet

Portsmouth "RagChew" Net 146.850 MHz
Monday & Wednesday 1930 hours

Southeastern Virginia Traffic Net 146.850 MHz
Sun, Tues, Thurs @ 2000 hours

Portsmouth Amateur Radio Emergency Services Net
Fridays 2000 hours 146.850 MHz

Tidewater Radio Association WT4RA net
Thursday 1930 hours 147.195 MHz
(code drill follows net)

RASON 145.330 or 442.95 MHz
Sunday thru Friday 1930 hours Repeaters linked
PL: 131.8 for both

CARS CLUB MEETING MINUTES 6/05/06

Not approved by membership

Attendance: 19

Meeting called to order at 7:05 pm

Paul, K4PRB, read the previous club meeting minutes. Reggie, W5SSB, moved to approve as read. Seconded and approved.

Paul, K4PRB, read the Treasurer's Report provided by the Treasurer, Rich, N5RAG.

Repeaters – Bill WF4R reported that we are hopeful of having the the new .82 repeater at Butt's Station operational by Field Day, if the City follows through on their stated plans.

Keith, KG4ZXK told John KI4MYC he may attend the next Air & Space Center Club's BOD Meeting.

Leo, KG4PWC discussed plans for Field Day.

Don W4PRN moved to accept the membership application of Dennis Walker, KI4ORF. Seconded and approved.

Gavin, KD7GJB the 50 – 50 raffle.

Meeting adjourned at 8:35.

Wanted:

1984 ARRL Amateur Radio Handbook, and ARRL Handbooks before 1935 for my collection. I started this collection after my Heart Transplant, and I still enjoy reading them. If you have an old ARRL Amateur Radio Handbook, I am looking for, please contact me at 757 485 3762.

WA4BUE

Still available

For the old timers and new licensees are 85 foot 80/40 meter dipoles. With a good tuner they will tune all bands except for 17, 15, and 12 meters. Just add some rope, coax, and if you choose a 1:1 balun. Available for the cost of materials $40.00. Commercially sold versions sell for about $100.00. Call 757 485 3762

WA4BUE

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CARS : Repeaters

146.610 MHz (PL 100.0)
146.820 MHz
444.000 MHz

W4CAR Trustee: Bill Runyon WF4R

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