▶ Club Officer information and Table Of Contents are on page 2

▶ For the December Business Meeting Minutes, turn to page 4

▶ See what's going on in the months of January & February: page 20 for January, page 21 for February

JANUARY | 2010 | ISSUE 1

NEXT MEETING: JANUARY 19TH, 8PM @ THE CLUBHOUSE. MEETING STARTS AT 8:00PM. FOOD & SOCIALIZING FUN STARTS IMMEDIATELY AFTER THE MEETING WRAPS. CU THERE!

<www.w3kwh.com>

KiloWatt Harmonics

THE OFFICIAL (AND ONLY) NEWSLETTER OF THE STEEL CITY AMATEUR RADIO CLUB

The Prez Sez.....

Good bye 2009. Hello 2010!! Hope Kris Kringle was good to all.

Can you believe we made it? 2010!! Ten years beyond the dreaded Y2K meltdown that never happened. Beyond all sorts of predicted fiascos we on this big Blue Marble were supposed to face. Interesting to look back and see how we have faired through the years, especially this little slice of heaven we call SCARC. I think we have faired well.

Going from 1941, and the beginning of that year as a bench mark until now, we are at 69 years and counting. WOW! I hope our founding fathers are happy to see that we have kept the filaments lit and continued to burn up the radio spectrum like they did so many years ago. Technology has changed greatly but that magical experience we call radio is still alive and well in many of us and it is up to us to pass that torch on to new generations to come.

Keeping the electrons active these past few Tuesdays has been Walt KA3YNO by operating on 222 from the club station with the guys from the Midwest. Walt and Nat W3SVJ have rocketed up the hill through the snow in a red blur to make the 222 sked. Thanks guys for your efforts! The blurbs in SCARC member email about 222 Tuesdays have appeared many times from the Midwest gang and they are looking to do a Wednesday thing on 144 as well.

2009 has not been bad to us at all. We were successful in moving forward on some important projects to make our little slice of heaven safer and better overall. Something we should be proud of! This year has a change in the officer line up as many are already aware of. Joe WB3AGB will hold the Vice President office formerly held by Mike WA3TTS. I want to especially thank Mike for all he has done while in office and for his expertise in many matters that have helped me through 2009 and will continue to be of value to me this coming year. I also would like to thank the membership for the opportunity to serve as President again in 2010. I'm looking forward to this year even more than the last.

(MORE 'PREZ SEZ' ON PAGE 10)

KiloWatt Harmonics

Deadline for newsletter submissions is the Friday before the 2nd Tuesday of the month.

Club & Officer Info/Table Of Contents

Officers of The Steel City Amateur Radio Club:

President: Robert Lenfestey, WB3HDI
(412) 276-5106
<wb3hdi@w3kwh.com>

VP: Joe Fenn, WB3AGB
(412) 429-9328
<wb3agb@arrl.net>

Treasurer: Walt Adkins, KA3YNO
(412) 276-0825

Recording Secretary: Joe Mielnicki, WA3FWA
(412) 922-6340

Corresponding Secretary: Sue Rakiecz, KA3JKS
(412) 243-3061

License Trustee: Karl Pastorak, WA3VXJ
(412) 429-8055

Newsletter Editor: Greg Babin, NB3C
<kq3dx@hotmail.com>

INSIDE THIS ISSUE: (CLICK ON AN ARTICLE TO READ IT)

KiloWatt Harmonics

January 2010

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Edited by Greg Babin, NB3C

'KiloWatt Harmonics' is published monthly for the members of the Steel City Amateur Radio Club.

All contributions are welcome at: <kq3dx@hotmail.com>

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The Steel City Amateur Radio Club (412) 787-0777
2M Repeater: 147.030/147.630MHz (PL 123.0)
70cm Repeater: 444.450/449.450MHz (PL 103.5)
WA3TTS Beacon: 144.300MHz (CW)
WA3TTS Beacon: 50.070MHz (CW) 1/2 w ERP
ATV Repeater: 426.250MHz (Currently off-line.)
1296MHz Beacon: 1296.269MHz (CW) 1W

AND I COULDN'T HAVE PRODUCED THIS NEWSLETTER WITHOUT THE HELP OF THESE FINE PEOPLE: WB3HDI, WA3FWA, W3WN , ARRL, Wikipedia. THANKS ALL, FOR YOUR EFFORTS. 73 DE NB3C ET AL!

In The World Of DX.....

From various issues of The ARRL DX Bulletin. Thanks, ARRL for permission to reprint here.

⇒ **NIGERIA, 5N.** Ivan, OM3CGN is now QRV as 5N7M. He is active on 40 to 10 meters. QSL to home call.

⇒ **ANTARCTICA.** Felix is QRV as DP1POL from the German Neumayer Station III and has been active on 20 meters using SSB between 0000 and 0100z. He has also been active on 80M around 2300Z QSL via DL1ZBO.

⇒ **WAKE ISLAND, KH9.** Colin, WA2YUN is QRV as KH9/ home call for about one year while on work assignment. He is active in his spare time. QSL via K2PF.

⇒ **GREENLAND, OX.** Fred, KB4DMQ is QRV as OX3QM from Thule for one year. He is currently active on 40 meters. QSL to home call.

⇒ **ANTARCTICA.** Mike, RW1AI is QRV from club station R1ANP from Progress station and is here for about a year while on work assignment. QSL this operation via RW1AI.

⇒ **SUDAN, ST.** Members of the Khartoum Sea Scouts Radio Club are QRV as ST26ASC until January 28, 2010 to celebrate the 26th Arab Scouts Conference under Peace and Unity. They have been active on 20 meters using SSB. QSL via ST2M.

⇒ **ZAMBIA, 9J.** Take is QRV as 9J2FM and has been active on 17 meters around 1900z. QSL via JA4ATV.

⇒ **MOZAMBIQUE, C9.** John, ZS5J is currently QRV as C91J from Bilene, and has been active on 40 meters using CW. QSL to home call.

⇒ **CHILE, CE.** Al, K7CA is QRV as CE1/ homecall until February 23. Activity is on the HF bands using mostly CW.

⇒ **MOROCCO, CN.** To celebrate the New Year 2010 special event station CN10NY is QRV until March 18, 2010. QSL via EA7FTR.

⇒ **IRAN, EP.** Mohammed, EP4MRG has been active on 20 meters using SSB around 1100z to 1300z. QSL direct.

⇒ **THAILAND, HS.** Joerg, DL1MJF will be QRV as HS0ZGQ from December 30 to January 25. This includes a one-week side trip to Koh Samui Island, IOTA AS-101. Activity will be on 40 to 10 meters using CW and SSB. QSL to home call.

⇒ **AUSTRALIA, VK.** Jim, G6PAA is QRV as VK6/homecall from Western Australia, IOTA OC-001, until January 13. Activity is on 80 to 10 meters using CW, SSB, RTTY and PSK. QSL to home call.

⇒ **MALDIVES, 8Q.** Cezar, YO8TLC is QRV as 8Q7CE until January 25. He is active holiday style on 40, 30 and 20 meters using mostly CW. QSL to home call.

⇒ **UNITED ARAB EMIRATES, A6.** Gerry, VE6LB is QRV as A6/homecall from Dubai until February 8. He is active holiday style on 40 to 15 meters using CW. QSL direct to home call.

⇒ **BAHAMAS, C6.** Tom, C6ANM is QRV from Nassau, IOTA NA-001, until April. He is active on 160 to 6 meters using CW and SSB. This includes entries in the upcoming CQ WW 160 Meter contests and the ARRL DX SSB contest. QSL direct via WA2IYO.

⇒ **SOUTH SHETLAND ISLANDS.** Operators Luis, XQ5CIE, Carlos, CE6UFF, Didier, F6DXE and Dagoberto, CE5COX will be QRV as XR9JA from Chilean naval base "Arturo Prat" on Greenwich Island, IOTA AN-010, from January 10 to 24. Activity will be on 160 to 6 meters using CW, SSB and PSK31 and on satellite AO-51. QSL via CE5JA.

⇒ **SOUTH COOK ISLANDS, E5.** Operator AD7AF will be QRV as E51WWA from Rarotonga, IOTA OC-013, from January 12 to February 1. Activity will be on 40 to 10 meters using mainly CW and SSB with some RTTY and PSK31. He may also try to be active on 80 meters. QSL to home call.

⇒ **LIBERIA, EL.** Chris, ZS6RI is QRV as EL8RI for about one month. Activity is mainly on 30 and 20 meters using CW. QSL to home call.

⇒ **THAILAND, HS.** Eddy, ON4AFU will be QRV as HS0ZJF from January 12 to March 8. Activity is on the HF bands using CW only. This includes activity from several IOTAs. QSL to home call.

⇒ **DJIBOUTI, J2.** Darko, E70A is now QRV as J28AA. He is active on 80 to 10 meters using CW, SSB and RTTY. QSL via K2PF.

⇒ **ST. VINCENT, J8.** George, K2CM is QRV as J8/homecall from the Grenadine island of Bequia, IOTA NA-025, until February 12. Activity is mostly on 20 meters using CW and SSB and possibly 40 meters using CW. QSL to home call.

⇒ **BONAIRE, CURACAO, PJ2.** Hennie, PE1MAE will be QRV as PJ4/homecall beginning January 10 from Bonaire, IOTA SA-006, and will be here for several months. Activity is on 40 meters using mainly SSB. QSL via PA2NJC.

(MORE DX NEWS ON PAGE 8)

Business Meeting Minutes: December 2009

The meeting began at PM and was conducted by the President, WB3HDI, Bob. The Pledge of Allegiance was recited and was followed by a moment of silence for our Silent Keys. 21 members and 1 guest answered the Roll Call. The Minutes of the Nov.meeting was accepted and published in the Dec. newsletter. Treasurer's report was given by the Treasurer KA3YNO, Walt and was accepted by the membership.

Committee Reports

Clubhouse WA3VXJ, Karl is preparing food brought by 'HDI Bob and he reported that N3GHO, Gloria helped clean the clubhouse for tonight's meeting.

Technical WA3TTS, Mike reported that he has worked on the Johnson Thunderbolt amplifier and that it will make power. He cautions that members should not spin the tuning knobs on that amplifier if they are not familiar with its operation. KA3YNO, Walt has worked the 222 band on SSB on Tues. nights out to the mid west. The ARRL VHF Sweepstakes contest will be held in January 2010. N3EQP, John has purchased the 2010 edition of the ARRL Handbook and a Microwave handbook for the club library.

Membership WA3BKD, Art gave the 3rd reading for KB3TEI, Dustin who recently passed his General class exam and he was voted into the membership. Welcome Dustin.

Public Service KA3MSE, Lloyd will run the net this Wed. night. He participated in the recent Skywarn Appreciation day at the Moon Twp. weather station along with N3EQP, KA3JKS, WA3FWA and NU3Q.

Ways and Means WA3FWA, Joe will run the 50/50 raffle after the meeting & collect any QSL cards for the outgoing bureau. He also displayed a Christmas card from K3RYA, Bill and presented a package of German cookies and candy sent to us from our DX member DC3RJ, "Andy". This committee in collaboration with the Treasurer recommended that the dues be raised to $ 100.00 per year. This proposal was resoundingly vetoed.

Volunteer Exams AI3V, Mark had 3 applicants for the recent session. 2 upgraded to General class and 1 passed the Tech exam. Next session will be in the spring season.

Old Business Art gave a periodic explanation of the club's scholarship offer to CCAC students who hold a ham license but that there are still no applicants. SCARC members are not eligible. Walt initiated a discussion about obtaining club jackets. See him for selection and ordering details.

Good of the Order WA3FWA said that W3UUH, Jack was not up to strength with his knees to attend the meeting. WA8NLX, Rick has been absent from the club but sends his regards to all. Where is WB3DQV, "Doc" Hoden? No one has seen or heard from him for some time.

Motion to Adjourn by WA3BKD, Art.

50/50 raffle won by NB3C, Greg.

Minutes submitted by Recording Secretary WA3FWA, Joe.

**Our next business meeting will be held on January 19th at 8PM.
CU @ the Clubhouse!!**

THE ARRL WPA SECTION:
SECTION MANAGER:
John V. Rodgers, N3MSE
803 S Main St.. Butler, PA
16001-6326 (724) 287-0424
<n3mse@arrl.org>

ASSISTANT SECTION MANAGER ASM DIGITAL COMUNICATIONS:
Anthony F Petruccelli, KE3ED
473 Park St. Rochester, PA.
15074-1859 (724) 774-4173
<ke3ed@arrl.net>

CHIEF ASSISTANT SECTION MANAGER: Bruce Watson, AA3LX
4347 Highland Ave. Butler, PA.
16001-2959 (724) 482-2756, (412) 482-2756 <aa3lx@aol.com>

ASM MEDIA LIASON:
Tony Zona, WB3KGT
2485 Dorn Rd. Waterford, PA.
16441-4013 <wb3kgt@arrl.net>

AFFILIATED CLUB COORDINATOR:
Keith "Pete" Highlands, N3RLJ
212 N 1st St. Jeannette, PA.
15644-1827 (724) 523-6232
<n3rlj@arrl.net>

OFFICIAL OBSERVER COORDINATOR:
R Ralph Ofchinick Jr, W3ZPI
9 Brooklane Dr. Harrison City, PA.
15636-1515 (724) 744-7180
<w3zpi@arrl.net>

SECTION EMERGENCY COORDINATOR: Larry Keller, AB3ER
3907 Bridgewood Circle
Murrysville, PA. 15668-9478
(724) 325-2220 <ab3er@arrl.net>

SECTION TRAFFIC MANAGER:
POSITION UNFILLED: PLEASE CONSIDER VOLUNTEERING FOR THIS IMPORTANT POSITION.

TECHNICAL COORDINATOR:
David R Heim, KA3SMF
1032 Nimick Ave, Monaca, PA.
15061-1333
(724) 774-3733
<ka3smf@arrl.net>

ARRL WPA Section News

I just returned from a vacation in Florida and what a shock coming back to the frosty cold weather here in W. Pa. I honestly enjoy the winters here for the most part but it was quite a shock going from 86 to 22 degrees here. I guess with the holidays coming in the next two weeks I should expect the colder weather. Now with the cold blustery winter upon us we all are aware of the old adage that antennas perform better when installed in foul weather so perhaps now is the time to do some antenna work. After the high winds last week I checked my antenna and connections and did a little repair work. This might be a good time for us all to take a look at the dipoles and the co-ax and tighten things before we can no longer get to them.

I want to remind everyone that on December 31 is the annual straight key night. Those of us that operate CW should probably dust off the key and connect it to the rig for this fun operating event. Throughout the year I have the paddles and keyer on my rig but I look forward to this event to go back to the days when I had a simple rig with just a straight key attached. Funny how technology can spoil us and make us forget the fun of the hobby when we first started.

I was checking the ARRL website and noticed that we already have 6 ham-fests scheduled and approved for our area. This first will be on February 14, 2010. Check the hamfest schedule at <http://www.arrl.org/hamfests.html> often for upcoming dates and locations.

Another area we should be aware of with the possibility of storms is our potential need for emergency communications. Make sure you check the conditions of your HT batteries and that they are fully charged. Also consider battery backup or a similar device for your HF station if you can. Operation during emergencies can often continue for several days.

I am now scheduling club meetings and events to attend. Any group wishing to have me attend one of their functions should submit a request and a couple of possible dates for me to fit into my calendar. I will try to accommodate all requests. Get your requests in early for the best chance to have me visit and speak to your group.

I want to take this opportunity to thank all the individuals that help throughout the year in various volunteer positions. Without you there is no ARRL. Each of you as a member makes the league; it is not just a place in Connecticut. We need your help in the upcoming year as well. There are positions open that need filled so our programs can continue. One important area is the Section Traffic manager position. Without a leader we will soon be in danger of losing this important function. I cannot do this as well as my position as section manager.

As always I encourage you to join traffic net and help deliver messages to individuals in your community and throughout the country as we continue to keep the keep this activity running strong. The section net is on 3983KHz every evening at approximately 4:45 PM local time due to poor band conditions. Join the nets and lets all get Radio Active.

Wishing each of you and your families a very happy safe holiday season and a new year filled with sunspot activity.

Merry Christmas and Happy New Year.

73
John V. Rodgers, N3MSE
W. Pa. Section Manager

News From The IARU……..

Courtesy of the ARRL

This is the first IARU E-Letter for some period of time. As such, I thought I would take this opportunity to introduce myself. I am Rod Stafford, W6ROD, the new IARU Secretary. I will also be responsible for publishing this E-Letter. I assumed the office of Secretary on October 1, 2009. Dave Sumner, K1ZZ has been the IARU Secretary for the last 10 years and he was also IARU Secretary for a 7-year period in the 1980's. Dave did a great job as Secretary and I hope to continue the high standard that he established. Dave will continue to work closely with the IARU Administrative Council and will be Recording Secretary at the IARU Administrative Council meetings.

I began my association with the American Radio Relay League in 1983 as a Section Manager in the ARRL Field Organization. The Section Manager is a locally elected ARRL Official. In January, 1986, I became an ARRL Director and since that time have served as a Director, First and Second Vice President, President (1995-2000) and as the International Affairs Vice President (2000-present). I have attended 16 regional conferences, numerous regional executive committee meetings and numerous Administrative Council meetings. I'm certain the international experience will assist me as I take on the challenges of being IARU Secretary. In my professional life I have just retired as a Superior Court Judge in the State of California USA. My last day as an active Judge was the day prior to assuming the duties as IARU Secretary.

As far as my amateur radio operating, I enjoy the HF bands, particularly 20 and 40 meters, when I can make time to get on the air. Since I am now retired from full-time employment I should have more time for operating. My favorite ham activity is ragchewing and getting to know the person I work on the ham bands. I also enjoy VHF-UHF operation when I am in the car.

The purpose of this newsletter will be to provide information to the IARU member-societies that can be shared with their members. Many members of IARU societies are unaware of much of what the IARU does and why it does what it does. Hopefully, this newsletter will help disseminate that information. Member-societies are requested to forward this E-Letter to their members electronically or any other appropriate way. Another purpose of the newsletter is to keep the member-societies up to date on the preparations for the upcoming World Radiocommunication Conference in early, 2012 (WRC-12) and how the member-societies can assist in the preparations. The newsletter will also serve as a outlet for information coming from the member-societies. If there is information that is appropriate to be shared with other member-societies around the world, please send me an email with the information and it will be published in this newsletter.

==> WRC-12 Preparations Underway

WRC-12 will start in January, 2012. The year 2012 seems a long way away but it is only slightly more than two years from now. Preparations within national telecom administrations have been underway for some period of time. Regional telecom organizations have been meeting to discuss the WRC agenda items and to arrive at regional positions on each issue.

Each and every IARU member-society capable of doing so should take the initiative to contact their own administration and let the administration know what the IARU position is on those WRC agenda items that impact the amateur radio service. If your society needs some guidance or advice on how best to approach the administration or what the substance of such discussions should be then do not hesitate to contact the IARU International Secretariat for assistance.

It would be very helpful if your society could place a knowledgeable amateur radio operator on the national delegation attending the WRC. If providing the support for an amateur to attend the WRC is not possible, it would be helpful if your society could arrange to have a knowledgeable amateur radio operator attend the national administrations planning meetings or the regional preparatory meetings leading up to the WRC.

Although the preparation process started some time ago it is not too late for your society to get involved. Do it today.

==> IARU Administrative Council Meeting October, 2009

The IARU Administrative Council (AC) held its annual meeting in mid-October, 2009, in Christchurch, New Zealand. IARU President Tim Ellam, VE6SH/G4HUA, presided over his first AC meeting. Also in attendance was Ole Garpestad, LA2RR, Vice President; Rod Stafford, W6ROD, Secretary; Hans Blondeel Timmerman, PB2T, President and Dennis Green, ZS4BS, Secretary, IARU Region 1; Ramón Santoyo, XE1KK, Secretary, and Daniel Lamoureux, VE2KA, Director, IARU Region 2; and Michael J. Owen, VK3KI, Chairman, and Shizuo Endo, JE1MUI, Director, IARU Region 3. Also present was Region 3 Director Peter Lake ZL2AZ along with David Sumner, K1ZZ, as recording secretary.

(MORE IARU NEWS ON PAGE 9)

News From The National Front…….

From various 'ARRL Letter' issues. Thanks ARRL for permission to reprint here.

⇒ ARLB037 Amateur Radio Bill Passes Senate, Moves to the House

On Monday, December 14, S 1755 -- The Amateur Radio Emergency Communications Enhancement Act of 2009 -- passed the Senate by unanimous consent; the bill now goes to the House of Representatives for consideration. Sponsored by Senator Joe Lieberman (ID-CT), and Senator Susan Collins (R-ME), S 1755, if passed, would direct the Department of Homeland Security (DHS) to undertake a study on emergency communications.

S 1755 points out that "There is a strong Federal interest in the effective performance of Amateur Radio Service stations, and that performance must be given -- (A) support at all levels of government; and (B) protection against unreasonable regulation and impediments to the provision of the valuable communications provided by such stations."

Members of the Senate Homeland Security and Governmental Affairs Committee considered S 1755 on December 10. After it passed through Committee, it was placed on the Senate's calendar to be voted on.
"We are grateful to Committee Chairman Lieberman and Ranking Member Collins for sponsoring the bill and arranging for its swift consideration and passage by the Senate," said ARRL Chief Executive Officer David Sumner, K1ZZ.

Similar in language to HR 2160 (also called The Amateur Radio Emergency Communications Enhancement Act of 2009 that was introduced this past April by Representative Sheila Jackson-Lee [D-TX-18]), S 1755 calls on DHS to undertake a study on the uses and capabilities of Amateur Radio Service communications in emergencies and disaster relief and then to submit a report to Congress no more than 180 days after the bill becomes law. The study shall:

Include a review of the importance of Amateur Radio emergency communications in furtherance of homeland security missions relating to disasters, severe weather and other threats to lives and property in the United States, as well as recommendations for enhancements in the voluntary deployment of Amateur Radio licensees in disaster and emergency communications and disaster relief efforts and improved integration of Amateur Radio operators in planning and furtherance of the Department of Homeland Security initiatives.

Identify impediments to enhanced Amateur Radio Service communications, such as the effects of unreasonable or unnecessary private land use regulations on residential antenna installations; and make recommendations regarding such impediments for consideration by other federal departments, agencies and Congress.

In conducting the study, S 1755 directs the Secretary of Homeland Security to "utilize the expertise of stakeholder entities and organizations, including the Amateur Radio, emergency response and disaster communications communities."

S 1755 makes note of the fact that Section 1 of the Joint Resolution entitled Joint Resolution to Recognize the Achievements of Radio Amateurs, and To Establish Support for Such Amateurs as National Policy -- approved October 22, 1994 (Public Law 103-408) -- included a finding that stated: "Reasonable accommodation should be made for the effective operation of Amateur Radio from residences, private vehicles and public areas, and the regulation at all levels of government should facilitate and encourage amateur radio operations as a public benefit."

The bill also pointed out that Section 1805(c) of the Homeland Security Act of 2002 (6 U.S.C. 757(c)) directs the Regional Emergency Communications Coordinating Working Group of the Department of Homeland Security to coordinate their activities with ham and Amateur Radio operators among the 11 other emergency organizations, such as ambulance services, law enforcement and others.

⇒ First Chinese Amateur Radio Satellite Now in Space

AMSAT China (CAMSAT) reports that at around 0230 UTC on December 15, China launched its first Amateur Radio satellite -- named XW-1 -- into space.

The microsatellite -- a secondary payload aboard the CZ-4C rocket launched from the Taiyuan Satellite Launch Center -- was launched into a Sun-synchronous orbit with an apogee of approximately 1200 kilometers. XW-1 successfully reached orbit at 0253 UTC. Members of the XW-1 launch team reported they received a beacon from the satellite shortly after the satellite deployed. In the first few days, the XW-1 team will work on the satellite's FM and store-forward transponder mode and its linear transponder mode. Once those tests are complete, they will upload a new flight program to set up the payload schedule. The satellite's communications payload includes a beacon and three crossband transponders operating in FM, SSB/CW and digital modes.

Uplink and downlink frequencies can be found on the CAMSAT Web site, <http://www.camsat.cn/index.php>, or the AMSAT web site at, <http://www.amsat.org/amsat-new/satellites/status.php>.

(MORE NATIONAL NEWS ON PAGE 17)

Win-EQF Going QRT……

There aren't many ham radio programs that have lasted for more than 20 years, like Log-EQF. It has been a labor of love for most of that time, but sadly, it's time to move on and let younger programmers fill the void.

There will be no further sales of Win-EQF "Log-EQF for Windows" after December 31, 2009. I will continue to provide technical support for at least one year after that, but there will be limited updates to the program.

I'm sorry if this decision disappoints some of you, but the constant work involved in supporting a Windows program for ham radio has become too time-intensive.

The advent of Windows 7 was probably the last straw, on top of the never-ending changes required to accommodate new rigs, rotors, keyers, clusters, modes, contests, awards, callsign databases, etc.

I want to thank all of my loyal users for the many years of support. It's been a real pleasure meeting some of you at hamfests and club meetings. Some of those eyeball QSOs have turned into lasting friendships. In particular, many thanks to John Shelton, K1XN, for his help in recent years to keep Win-EQF in distribution and keeping the DXCC prefix list up-to-date.

73,
Tom N3EQF

Tech Term: 'Intermodulation' or 'Intermod' for short is when 2 or more signals of different frequencies mix together, and form additional signals at frequencies that are not harmonics of either of the original 2 (or more). Wanna hear what intermod sounds like? Just drive up I-279N or S with a 2M rig on! That nasty howling noise between, oh say, the McKnight Road exit and Downtown Pittsburgh is Intermod!

More DX News (from page 3)

⇒ **ST. MAARTEN, SABA, ST. EUSTATIUS, PJ5.** Jim, K1NA will be QRV as PJ5NA from St. Eustatius, IOTA NA-145, from January 10 to March 27. Activity is on the HF bands. This includes activity in several upcoming contests. QSL direct to home call.

⇒ **POLAND, SP.** In celebration of the 80th anniversary of the Polish Amateur Radio Union, PZK and 85th anniversary of the IARU, look for special event station 3Z0RADIO to be active all throughout 2010. QSL via SP9SX.

⇒ **MOUNT ATHOS, SV/A.** Monk Apollo, SV2ASP/A has been QRV using RTTY on 20 meters around 1130z. QSL direct.

⇒ **ANTIGUA, V2.** Valeriy, VE3LFW will be QRV as V26VP from January 15 to 31, and possibly into mid or late February. Activity will be on 80 to 6 meters using SSB. QSL to home call.

IARU News.....(from page 6)

One of the major topics of discussion at the AC meeting involved the upcoming WRC-12, the World Radiocommunication Conference in 2012. The AC adopted preliminary IARU positions on the WRC agenda items that relate to amateur radio or may impact the amateur radio service. The most significant agenda items are:

1. Agenda Item (AI) 1.14 - Implementation of the radiolocation service in the range 30-300 MHz;

2. AI 1.15 - Possible allocations in the range 3-50 MHz to the radiolocation service for oceanographic radar applications;

3. AI 1.19 - Software-defined radio and cognitive radio systems;

4. AI 1.22 - Effect of emissions from short-range devices; and

5. AI 1.23 - To consider an allocation of about 15 kHz in parts of the band 415-526.5 kHz to the amateur service on a secondary basis, taking into account the need to protect existing services.

IARU has a document on the IARU web site that identifies the present and anticipated future requirements for radio spectrum allocations to the Amateur and Amateur-Satellite Services. These requirements are identified so that they may be taken into account in the formulation of national policies with respect to proposed and possible future international allocations conferences. At each AC meeting, those requirements are reviewed and when circumstances change so do the requirements. If you're interested in seeing what the IARU sees as spectrum requirements for the amateur service then log onto the IARU web site at http://www.iaru.org> and look for the "Spectrum Requirements" document.

The IARU 2025 Committee was established a few years ago to explore restructuring IARU to make it more effective to meet the challenges faced by amateur radio. The committee came up with a proposed new structure. However, even though the proposed new structure had a number of beneficial aspects it became obvious early on that funding of the new structure could be problematic. At its recent meeting, the committee was restructured and given a slightly different mandate. If the committee can't develop a funding method for the proposed new structure then the committee may propose a different structure. Additionally, the committee should identify changes which can be implemented in the present structure to address concerns raised by the regional organizations and some member-societies.

There has been a movement in the last several years to try to identify "centers of activity" frequencies across all three IARU regions that can be used in disaster relief operations. It has at times been difficult to arrive at a consensus on what frequencies should be used. The AC noted that all three regions have now reached consensus on three global Center of Activity (CoA) frequencies for use in the event of emergencies: 14.300, 18.160 and 21.360 MHz. When no emergency operations are being conducted, these frequencies are open for normal amateur usage. However, GAREC-09 (more on GAREC later in this report) calls upon IARU member-societies, among others, "whenever emergency communications are being conducted on frequencies that propagate internationally, to use any available real-time communications channels, including but not limited to e-mail bulletins, web-sites, social networking and DX-clusters to draw the attention of the largest possible number of Amateur Radio operators to ongoing emergency communications, in order to avoid interference with emergency traffic." It would be helpful for each member-society to develop an effective method of notifying amateurs within their own country of any such emergency traffic being handled on the CoA frequencies, or elsewhere in the amateur bands.

In 2008, the AC called for a study of the QSL Bureau System. Since the study was initiated over 51 member-societies responded to the study questionnaire. It became clear that in some societies, QSL cards are not handled the same way for members as non-members. There are a small number of societies that dispose of the cards sent through their bureaus for non-members. The AC adopted a resolution stating "that member-societies are strongly encouraged, whenever possible, to provide incoming QSL bureau service to non-members within their operating territory, if such non-members agree to pay the full cost of this service; and if they are not already doing so, to explore appropriate means and methods for delivering QSL cards to non-members."

The AC adopted a protocol to deal with member-societies that no longer exist. If for a period of not less than 5 years: (a) there is no address or other means known to either the International Secretariat or the relevant regional organization by which communication may be made with a member-society; (b) there has been no communication from any person claiming to represent that member-society; and (c) there is no other evidence of the continued existence of that member-society. If those circumstances exist, then the relevant regional organization may request that the AC thereafter publish in the Calendar a notice setting out its belief that the particular Member-Society has ceased to exist, and calling for the submission of any evidence to the contrary within 180 days of the publication of the Calendar. If no such evidence is submitted within 180 days of the publication of the

(CONTINUED ON PAGE 12)

The Prez Sez……(from page 1)

Recently an article appeared in the Signal Item newspaper about our little slice of heaven! Karl WA3VXJ caught me on the repeater and told me about this article and though I usually read "The Item" I only got as far as one of the cover stories about Carnegie Boro holding the line on taxes for 2010. After a small sigh of relief, I put the paper down to finish reading later, to look at other snail mail. Seems this article has at least a handful of us talking about it and Bob NU3Q posted it to SCARC member email. I wonder what spawned the story to begin with, but long time readers of "The Item" know that the writers are starved for material.

How can that be with so many things going on in this weird world? Simple. The focus is on LOCAL goodies and I can certainly understand how the writers feel. Right, Editor Greg? hi hi Since we are listed as Carnegie mailing I am sure this is the impetus with the article information gleaned from our website. This is, as far as I know, the second time our club has been featured in the Signal Item. Many years ago I volunteered to take care of Field Day logs, PR and other paper work. A reporter had come up to the club to do a Field Day article. Of course this was for Field Day points for us but turned into a story of about the same length as I recall. SOMEWHERE in this storage bin that I call a house is a copy or two of that paper carefully preserved in some box or tote. And IF I ever find it will be added to our Historical Archive.

Gary KB3SVF said to me in email, "Looks like some good press", and I have to agree. I think perhaps a follow up article WITH pics and interviews is in order. We have been looking for new members and I cannot help but wonder why didn't we think of this as a way to spread the word about our club and Ham radio? Maybe we can find new ways, or tweak the old, of introducing new comers to this hobby and share with them the magic of radio that we all felt starting out and still feel to this day. Model railroading has been billed for years as the “World’s Greatest Hobby”. Amateur Radio is a service but we call it a hobby. What tagline would best fit this magical thing we call radio? Perhaps a tagline doesn’t work for something that is best “experienced”!

Thank you for reading along and I wish prosperity for all this coming year and beyond.

Very Best 73, Bob WB3HDI

ARRL Atlantic Division News

Both Tom W3TOM and I would like to wish you and your family the very best for a healthy and prosperous 2010.

Did you know that the Atlantic Division has more ARRL affiliated conventions and hamfests than many other divisions? Already, we have 25 such events schedule for 2010 with more applications coming in for this New Year.

Conventions scheduled within our division for 2010 are:

Mar 27-28th - Maryland State Convention -- Timonium, MD Apr 25th - New Jersey State Convention -- Ewing, NJ Jun 5th -- Atlantic Division Convention -- Rochester, NY Aug 22nd -- Western Pennsylvania Section Convention -- New Kensington, PA

The January 2010 ARRL Board Meeting is scheduled in two weeks and will be held in Newington, CT. ARRL President Joel Harrison W5ZN has indicated that he does not intend to run for another term as President. Former Atlantic Division Director, Kay Craigie N3KN, has announced her candidacy for that spot. I believe that Kay is the person who is best qualified for the ARRL Presidency. Stay tuned -- we'll have more info after the board meeting.

73,

Bill Edgar N3LLR
Atlantic Division Director

Tom Abernethy W3TOM
Atlantic Division Vice Director

The Beginner's Help Desk……

Continuing our discussion from last month on Coaxial Cable. Info is from the Wikipedia website and is reprinted here under the conditions and terms granted by the Creative Commons ShareAlike License. Click HERE for details.

⇒ Connectors

Coaxial connectors are designed to maintain a coaxial form across the connection and have the same well-defined impedance as the attached cable. Connectors are often plated with high-conductivity metals such as silver or gold. Due to the skin effect, the RF signal is only carried by the plating and does not penetrate to the connector body. Although silver oxidizes quickly, the silver oxide that is produced is still conductive. While this may pose a cosmetic issue, it does not degrade performance.

⇒ Significance of impedance

The best coaxial cable impedances in high-power, high-voltage, and low-attenuation applications were experimentally determined in 1929 at Bell Laboratories to be 30, 60, and 77 Ohms respectively. For an air dielectric coaxial cable with a diameter of 10 mm the attenuation is lowest at 77 ohms when calculated for 10 GHz.

CATV systems were one of the first applications for very large quantities of coaxial cable. CATV is typically using such low levels of RF power that power handling and high voltage breakdown characteristics were totally unimportant when compared to attenuation. Moreover, many CATV headends used 300 ohm folded dipole antennas to receive off the air TV signals. 75 ohm coax made a nice 4:1 balun transformer for these antennas as well as presented a nice attenuation specification. But this is a bit of a red herring, when normal dielectrics are added to the equation the best loss impedance drops down to values between 64 and 52 ohms. 30 Ohm cable is more difficult to manufacture due to the much larger center conductor and the stiffness and weight it adds.

The arithmetic mean between 30 ohms and 77 ohms is 53.5, the geometric mean is 48 ohms. The selection of 50 ohms as a compromise between power handling capability and attenuation is generally cited as the reason for the number.

50 Ohms works out well for other reasons such as it corresponds very closely to the drive impedance of a half wave dipole antenna in real environments, and provides an acceptable match to the drive impedance of quarter wave monopoles as well. 73 Ohms is an exact match for a centre fed dipole aerial/antenna in free space (approximated by very high dipoles without ground reflections).

RG-62 is a 93 ohm coaxial cable. It is purported that RG-62 cable was originally used in mainframe computer networks. (1970's / early 1980s). It was the cable used to connect the terminals to the terminal cluster controllers. Later some manufacturers of LAN equipment such as ARCNET adopted RG-62 as a standard. It has the lowest capacitance per unit length when compared to other coaxial cables of similar size. Capacitance is the enemy of square wave data transmission and is much more important than power handling or attenuation specifications in these environments.

All of the components of a coaxial system should have the same impedance to reduce internal reflections at connections between components. Such reflections increase signal loss and can result in the reflected signal reaching a receiver with a slight delay from the original. In analog video or TV systems this visual effect is commonly referred to as ghosting.

⇒ Signal leakage

Signal leakage is the passage of electromagnetic fields through the shield of a cable and occurs in both directions. Ingress is the passage of an outside signal into the cable and can result in noise and disruption of the desired signal. Egress is the passage of signal intended to remain within the cable into the outside world and can result in a weaker signal at the end of the cable and radio frequency interference to nearby devices.

For example, in the United States, signal leakage from cable television systems is regulated by the FCC, since cable signals use the same frequencies as aeronautical and radionavigation bands. CATV operators may also choose to monitor their networks for leakage to prevent ingress. Outside signals entering the cable can cause unwanted noise and picture ghosting. Excessive noise can overwhelm the signal, making it useless.

An ideal shield would be a perfect conductor with no holes, gaps or bumps connected to a perfect ground. However, a smooth solid copper shield would be heavy, inflexible, and expensive. Practical cables must make compromises between shield efficacy, flexibility and cost, such as the corrugated surface of hardline, flexible braid, or foil shields. Since the shields are not perfect conductors, electric fields can exist inside the shield, thus allowing radiating electromagnetic fields to go through the shield.

Consider the skin effect. The magnitude of an alternating current in an imperfect conductor decays

(CONTINUED ON PAGE 15)

IARU News……(from page 9)

Calendar, then the member-society shall be deemed to no longer exist from that date. Thereafter, any association of radio amateurs claiming to represent that country or separate territory shall be required to apply for membership in the IARU in accordance with the IARU Constitution and Bylaws.

Promoting and preserving amateur radio is the mainstay of the IARU. The AC has at its disposal a number of expert consultants and technical representatives and relies heavily on such volunteer experts and technical representatives. There is always a need for more assistance by knowledgeable amateurs to attend ITU meetings and other telecommunications meetings to represent IARU. The IARU regional organizations and member-societies can be of assistance by recommending individuals who are capable of attending meetings and effectively promoting the IARU objectives at such meetings. Individuals who are amateurs and who have backgrounds in various technical fields such as broadband or wireless technologies, propagation, radar, satellite communications and spectrum management, just to name a few, can be of assistance. Individuals who may be retired from government work in the field of communications or telecommunication regulation are good candidates for working within the IARU to achieve IARU goals.
Member-society leaders are requested to investigate whether such individuals are members of their society and to determine if those amateurs would be willing to assist the IARU. If they are willing to do so, please contact the International Secretariat with the names and contact information so inquires can be made to determine if they are willing to join the IARU team of experts.

These are some of the important matters discussed at the recent Administrative Council meeting. The complete Summary Record of the meeting can be found at <http://www.iaru.org/admin-council-summaries.html>.

==> GAREC-09

The Fifth Global Amateur Radio Emergency Communications Conference (GAREC-09) took place in Tokyo, Japan, 24 & 25 August 2009. GAREC-09 was hosted by Japan Amateur Radio League (JARL) and was held in conjunction with Japan Ham Fair 2009. Representatives from IARU, the three IARU regional organizations, representatives from a number of IARU member-societies and specialized amateur radio emergency communications groups from all three IARU regions attended the conference.

GAREC-09 produced a statement calling upon IARU member-societies and specialized amateur radio emergency communications groups to:

- to establish close working relationships between the National IARU Member Society and independent specialized Amateur Radio Emergency Communications groups in the respective countries as well as to cooperate internationally,

- to request their national regulatory authorities implement the modifications to Article 25 of the Radio Regulations adopted by the World Radiocommunication Conference 2003 (WRC-03), in particular the regulations governing third-party traffic during emergencies and during training for emergency operations,

- to provide training in emergency communications to as many amateurs as possible in their respective countries with particular emphasis on:

- personal and logistical preparedness, the psychological aspects of entering a disaster area, and familiarity with the civil protection system in their country,

- specific communications techniques of particular value in emergencies, and

- remembering that the skills developed in the amateur service can be of great benefit to disaster relief organizations in maintaining and operating their own telecommunications networks,

- whenever emergency communications are being conducted on frequencies that propagate internationally, to use any available real-time communications channels, including but not limited to e-mail bulletins, web-sites, social networking and DX-clusters to draw the attention of the largest possible number of Amateur Radio operators to on-going emergency communications, in order to avoid interference with emergency traffic,

- to use their contacts with national regulatory authorities to encourage the accession to and implementation of the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations,

- to support the work of the IARU on an international Emergency Communications Handbook and to provide copies of existing agreements with institutional partners in emergency response as well as copies of emergency communication guidelines, manuals, and checklists developed for national or local use as inputs to this work,

- to work towards the implementation of the Memoranda of Understanding established between the IARU and ITU, IFRC, and the United Nations by seeking cooperation with the respective national institutions and organizations in their country,

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IARU News……..(from page 12)

- to continuously improve their awareness of the mission, vision, and values of served agencies, and

- to represent themselves as a human and technical resource able and willing to investigate the communication requirements of served agencies, offer recommendations when asked, and facilitate emergency communications when required.

GAREC-10 is already being planned. GAREC will return to Region 2 in 2010. The Venue will be CURACAO. The dates will be October 11-12, 2010.

The Theme of the Conference will be: "Learning Through Practicing". More details about GAREC-10 will be available as the conference draws closer or on the GAREC web site at <http://www.iaru.org/emergency/>.

==> CONTACT INFORMATION

I can be reached by email at <w6rod@iaru.org>. If you have information that you believe would be of interest to the other IARU member-societies around the world then send the information to me. If you would like to see a particular subject discussed in this E-Letter, don't hesitate to contact me with the suggestion.

73,

Rod Stafford W6ROD Secretary, International Amateur Radio Union

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The SCARC Roster

AA3EE	KB3SVF	
AA3TK	KB3TEI (WELCOME!)	
AE3B	KD3GM	
AE3JM	KD7HR	WA3SYB
AI3J	LX1UN	WA3TTS
AK3J	N3DQ	WA3VXJ
DC3RJ	N3DXE	WA3YCU
DL4ZAA	N3EQP	WA8NLX
K0BUD	N3GHI	WB3AGB
K3FZF	N3GHO	WB3CRC
K3GJS	N3SAF	WB3HDI
K3JHT	N3SBF	WQ3T
K3LAB	N3UUZ	
K3RYA	N3VEF	
KA3JKS	NB3C	
KA3LIW	NU3Q	
KA3MSE	NU3S	
KA3MXQ	W3BC	
KA3YNO	W3HH	
KB3BZR	W3JQJ	
KB3CWE	W3MAC	
KB3GMN	W3MHY	
KB3LED	W3SVJ	
KB3LY	W3UUH	
KB3MDN	W3WTW	
KB3NZX	W6LAC	
KB3ORO	WA3BKD	
KB3PJW	WA3FWA	
KB3PNE	WA3PYU	
KB3RUK	WA3RVD	

Last Call For Rooms For Dayton Hamvention 2010: As mentioned last month, I still have rooms available for Hamvention 2010 at the University Of Dayton. Check out last month's newsletter for more details. If interested, shoot me an E-Mail to:

<KQ3DX@hotmail.com>

& I will add you to the list. If there are no takers by January 31, I will give them back to the University so some somebody else on the waiting list can get them. Remember; if you snooze you lose! See pages 24 & 25 of last month's newsletter for the full poop.
73 de NB3C.

The Computer Corner…….

Yet another one of my brainstorm ideas for making the newsletter just a wee bit better than the others you're reading. Once again, this'll be a (semi) frequent feature where I discuss computer related stuff. Unlike the 'Software-Of-The-Month' stuff I run, I will be focusing on the hardware side of things in this column. I figure what with computers being an integral part of most of our shacks, that this might be a good column to run. Is it gonna make you an expert on computers? Probably not, but at least the next time you're looking at purchasing a new computer, you'll be able to make sense of the alphabet soup on the description/price tag.

YE OLDE EDITOR'S DISCLAIMER: There is none, since I am not referring to any manufacturers or websites. Gotcha! Thanks for reading! 73 de NB3C.

This time out, I'm gonna talk about: RAM & ROM

RAM, short for 'Random Access Memory' is a form of data storage on your computer. It's a temporary storage that holds info for the CPU to process, sort of a 'holding tank' that contains data to be processed by the CPU.

RAM on your computer is 'volatile', which means that when power is lost, so is the data contained within it. Today's RAM module, which plugs into your computer's motherboard, is comprised of millions of transistors and capacitors. In the most common form of memory today, DRAM, a transistor and capacitor are paired together to create a single memory cell. The cap holds a single bit of information: A '0' or a '1'. The transistor will act as a switch that lets circuitry on the chip read the data contained in the capacitor, or change its state.

RAM is not limited to just the memory modules that plug into your motherboard either. You'll find RAM in your CPU, hard-drive, and other components that live inside the box, especially video cards. Video card RAM will help to unload your processor burden, thereby helping to speed up the system. When the CPU is accessing RAM memory, it'll usually do it in a specific order; that being fastest access (such as RAM on the CPU itself) to the slowest access (such as virtual memory being used on a hard drive).

The term 'RAM' is kind of a misnomer, since it can refer to all memory that resides on the CPU, in addition to the memory modules installed on the motherboard, as well as hard-drive space being used as virtual memory.

Don't confuse 'RAM' with 'ROM'. 'ROM' is short for 'Read-Only-Memory'. ROM data cannot be modified as easily or as fast as RAM can. Remember those old CD-ROM drives on your computer? They could not write data to a disk; only read it. A good example of ROM on your computer today is the BIOS, contained on the motherboard. BIOS is boot firmware, residing on the motherboard. This is the first code run by a PC when it is turned on. It'll identify, test and initialize devices in the system, such as video cards, hard drives, etc. BIOS will put the machine into a stable state, so the operating system stored on the hard drive can be loaded and executed, thereby taking over control of the computer.

Here are some of the different RAM & ROM specs/definitions you'll likely see in today's computers:

⇒ **DRAM: Short for 'Dynamic Random Access Memory', it is a type of RAM that stores a single bit of data in a capacitor within an IC. Due to the capacitor leaking it's charge, the information it holds needs to be refreshed occasionally. Due to this requirement it is given the name 'Dynamic' as opposed to Static RAM or SRAM. DRAM's advantage over SRAM is that only one transistor and capacitor are required to hold a single bit of data, as opposed to SRAMS 6 transistors. Therefore, you can pack a lotta punch onto one chip. DRAM is volatile memory; it will lose its data when power is lost.**

⇒ **SRAM: Short for 'Static Random Access Memory' is memory whose data does not need to be refreshed occasionally like DRAM. It is however, still volatile memory.**

⇒ **SDRAM: Short for 'Synchronous Dynamic Random Access Memory'. This type of chip has 'Pipelining' capabilities, where the chip can accept a new instruction to be processed, before it has finished processing the previous one. Later generations of SDRAM, known as DDR, DDR2 and DDR3 are now in widespread use. DDR4 is expected to be available in 2012. It is currently under design.**

⇒ **CAS Latency: Column Address Strobe Latency. This is the delay time that exists between the moment a memory controller tells a memory module to access a memory column on a RAM memory module and the time the data is available on the modules output pins. This is either measured in nanoseconds or clock cycles/ticks. If you're a system builder/enthusiast, this is an important parameter to consider**

(CONTINUED ON PAGE 19)

The Beginner's Help Desk……..(from pg 11)

exponentially with distance beneath the surface, with the depth of penetration being proportional to the square root of the resistivity. This means that in a shield of finite thickness, some small amount of current will still be flowing on the opposite surface of the conductor. With a perfect conductor (i.e., zero resistivity), all of the current would flow at the surface, with no penetration into and through the conductor. Real cables have a shield made of an imperfect, although usually very good, conductor, so there will always be some leakage.

The gaps or holes, allow some of the electromagnetic field to penetrate to the other side. For example, braided shields have many small gaps. The gaps are smaller when using a foil (solid metal) shield, but there is still a seam running the length of the cable. Foil becomes increasingly rigid with increasing thickness, so a thin foil layer is often surrounded by a layer of braided metal, which offers greater flexibility for a given cross-section.

This type of leakage can also occur at locations of poor contact between connectors at either end of the cable.

⇒ Ground loops

A continuous current flow, even if small, along the imperfect shield of a coaxial cable can cause visible or audible interference. In CATV systems distributing analog signals the potential difference between the coaxial network and the electrical grounding system of a house can cause a visible "hum bar" in the picture. This appears as a wide horizontal distortion bar in the picture that scrolls slowly upward. Such differences in potential can be reduced by proper bonding to a common ground at the house. See ground loop.

⇒ Induction

External current sources like switched-mode power supplies create a voltage across the inductance of the outer conductor between sender and receiver. The effect is less when there are several parallel cables, as this reduces the inductance and therefore the voltage. Because the outer conductor carries the reference potential for the signal on the inner conductor, the receiving circuit measures the wrong voltage.

⇒ Transformer effect

The transformer effect is sometimes used to mitigate the effect of currents induced in the shield. The inner and outer conductors form the primary and secondary winding of the transformer, and the effect is enhanced in some high quality cables that have an outer layer of mu-metal. Because of this 1:1 transformer, the aforementioned voltage across the outer conductor is transformed onto the inner conductor so that the two voltages can be cancelled by the receiver. Many sender and receivers have means to reduce the leakage even further. They increase the transformer effect by passing the whole cable through a ferrite core sometimes several times.

⇒ Common mode current and radiation

Common mode current occurs when stray currents in the shield flow in the same direction as the current in the center conductor, causing the coax to radiate.

Most of the shield effect in coax results from opposing currents in the center conductor and shield creating opposite magnetic fields that cancel, and thus do not radiate. The same effect helps ladder line. However, ladder line is extremely sensitive to surrounding metal objects which can enter the fields before they completely cancel. Coax does not have this problem since the field is enclosed in the shield. However, it is still possible for a field to form between the shield and other connected objects, such as the antenna the coax feeds. The current formed by the field between the antenna and the coax shield would flow in the same direction as the current in the center conductor, and thus not be canceled, and would actually cause energy to radiate from the coax itself, making it appear to be part of the antenna, affecting the radiation pattern of the antenna and possibly introducing dangerous radio frequency energy into areas near people, with the risk of radiation burns if the coax is being used for sufficiently high power transmissions. A properly placed and sized balun can prevent common mode radiation in coax.

⇒ Miscellaneous

Some senders and receivers use only a limited range of frequencies and block all others by means of an isolating transformer. Such a transformer breaks the shield for high frequencies. Still others avoid the transformer effect altogether by using two capacitors. If the capacitor for the outer conductor is implemented as one thin gap in the shield, no leakage at high frequencies occurs. At high frequencies, beyond the limits of coaxial cables, it becomes more efficient to use other types of transmission line such as wave guides or optical fiber, which offer low leakage (and much lower losses) around 200 THz and good isolation for all other frequencies.

Most coaxial cables have a characteristic impedance of either 50, 52, 75, or 93 Ohms. The RF industry uses standard type-names for coaxial cables. Thanks to television, RG-6 is the most commonly-used coaxial cable for home use, and the majority of connections outside Europe are by F connectors.

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The Beginner's Help Desk……..(from pg 15)

A series of standard types of coaxial cable were specified for military uses, in the form "RG-#" or "RG-#/U". They date from WW II and were listed in MIL-HDBK-216 published in 1962. These designations are now obsolete. The current military standard is MIL-SPEC MIL-C-17. MIL-C-17 numbers, such as "M17/75-RG214," are given for military cables and manufacturer's catalog numbers for civilian applications. However, the RG-series designations were so common for generations that they are still used, although critical users should be aware that since the handbook is withdrawn there is no standard to guarantee the electrical and physical characteristics of a cable described as "RG-# type". The RG designators are mostly used to identify compatible connectors that fit the inner conductor, dielectric, and jacket dimensions of the old RG-series cables.

Short coaxial cables are commonly used to connect home video equipment, in ham radio setups, and in measurement electronics. They used to be common for implementing computer networks, in particular Ethernet, but twisted pair cables have replaced them in most applications except in the growing consumer cable modem market for broadband Internet access.

Long distance coaxial cable is used to connect radio networks and television networks, though this has largely been superseded by other more high-tech methods (fibre optics, T1/E1, satellite). It still carries cable television signals to the majority of television receivers, and this purpose consumes the majority of coaxial cable production.

Micro coaxial cables are used in a range of consumer devices, military equipment, and also in ultra-sound scanning equipment.

The most common impedances that are widely used are 50 or 52 ohms, and 75 ohms, although other impedances are available for specific applications. The 50 / 52 ohm cables are widely used for industrial and commercial two-way radio frequency applications (including radio, and telecommunications), although 75 ohms is commonly used for broadcast television and radio.

⇒ **Types**

Hard line

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Hard line is often confused with waveguide but the two are not the same. Hard line is used in broadcasting as well as many other forms of radio communication. It is a coaxial cable constructed using round copper, silver or gold tubing or a combination of such metals as a shield. Some lower quality hard line may use aluminum shielding, aluminum however is easily oxidized and unlike silver or gold oxide, aluminum oxide drastically loses effective conductivity. Therefore all connections must be air and water tight. The center conductor may consist of solid copper, or copper plated aluminum. Since skin effect is an issue with RF, copper plating provides sufficient surface for an effective conductor. Most varieties of hardline used for external chassis or when exposed to the elements have a PVC jacket; however, some internal applications may omit the insulation jacket. Hard line can be very thick, typically at least a half inch or 13 mm and up to several times that, and has low loss even at high power. These large scale hard lines are almost always used in the connection between a transmitter on the ground and the antenna or aerial on a tower. Hard line may also be known by trademarked names such as Heliax (Andrew), or Cablewave (RFS/Cablewave). Larger varieties of hardline may consist of a center conductor which is constructed from either rigid or corrugated copper tubing. The dielectric in hard line may consist of polyethylene foam, air or a pressurized gas such as nitrogen or desiccated air (dried air). In gas-charged lines, hard plastics such as nylon are used as spacers to separate the inner and outer conductors. The addition of these gases into the dielectric space reduces moisture contamination, provides a stable dielectric constant, as well as a reduced risk of internal arcing. Gas-filled hardlines are usually used on high powered RF transmitters such as television or radio broadcasting, military transmitters, as well as high powered amateur radio applications but may also be used on some critical lower powered applications such as those in the microwave bands. Although in the microwave region waveguide is more often used than hard line for transmitter to antenna, or antenna to receiver applications. The various shields used in hardline also differ; some forms use rigid tubing, or pipe, others may use a corrugated tubing which makes bending easier, as well as reduces kinking when the cable is bent to conform. Smaller varieties of hard line may be used internally in some high frequency applications, particularly in equipment within the microwave range, to reduce interference between stages of the device.

⇒ **Radiating or Leaky feeder**

Radiating or Leaky Cable is another form of coaxial cable which is constructed in a similar fashion to hard line, however it is constructed with tuned slots cut into the shield. These slots are tuned to the specific RF wavelength of operation or tuned to a specific radio frequency band. This type of cable is to provide a tuned bi-directional "desired" leakage effect between transmitter and receiver. It is often used in elevator shafts, underground, transportation tunnels and in other areas where an antenna is not feasible. One example of this type of cable is Radiax (Andrew).

⇒ **RG/6**

RG/6 is available in three different types designed for various

(CONTINUED ON PAGE 18)

More National News Briefs….(from pg 7)

⇒ WHITE HOUSE NAMES HAM AS NEW CYBER-SECURITY COORDINATOR

On December 22, President Barack Obama named Howard A. Schmidt, W7HAS, as the new White House Cybersecurity Coordinator. According to the White House, Schmidt -- an ARRL member -- is one of the world's leading authorities on computer security, with some 40 years of experience in government, business and law enforcement and "will have regular access to the President and serve as a key member of his National Security Staff. He will also work closely with his economic team to ensure that our cybersecurity efforts keep the Nation secure and prosperous."

In an exclusive interview with the ARRL, Schmidt said that he credits Amateur Radio with getting him involved with technology: "In high school, one of my friends was a ham and he got me interested in shortwave radio, which in turn got me into building shortwave radios and equipment, many from Heathkit. As I got older, I took courses from NRI and Bell and Howell in electronics and built a number of projects, preparing me for my first ham radio ticket. I love technology, and it was Amateur Radio that caused me to build my first computer -- a Sinclair ZX-80 to use for EME calculations. I studied all about the OSCAR systems and would build equipment to monitor when they would pass within range of Arizona. Building these computers to support my ham radio hobby gave me the technical skills that I needed to start doing computer crime investigations and work on the early stages of computer forensics, in turn enabling me to start working on cybersecurity issues."

⇒ 2009 SEES SURGE IN AMATEUR RADIO LICENSES

In 2009, the FCC issued more than 30,000 new Amateur Radio licences -- an almost 3 percent increase in the number of new licenses issued in 2008. At the end of 2009, there were 17,084 Novices, 334,245 Technicians, 150,970 Generals and 119,403 Amateur Extra class licensees. This past year was a banner year for new Amateur Radio licensees. According to ARRL VEC Manager Maria Somma, AB1FM, the FCC issued more than 30,000 new ham radio licenses. "In 2009, the demand for Amateur Radio exam sessions remained elevated and is still running at a higher rate than before the FCC's restructuring of the license requirements in 2007," Somma said. "This high level of exam session activity has produced an elevated influx of new applications, far outpacing recent years." A total of 30,144 new licenses were granted in 2009 -- an increase of almost 7.5 percent from 2008. In 2005, 16,368 new hams joined Amateur Radio's ranks; just five years later, that number had increased by almost 14,000 -- a whopping 84 percent!

⇒ MARS GETS NEW NAME, FINE-TUNES MISSION

On Wednesday, December 23, the Department of Defense (DoD) issued an *Instruction* concerning MARS, effective immediately. This *Instruction* gives the three MARS services -- Army, Air Force and Navy/Marine Corps -- a new focus on homeland security and a new name: Military *Auxiliary* Radio System. The *Instruction* is the first major revision to MARS since January 26, 1988 -- as such, the first revision since the 9/11 attacks and Hurricane Katrina, two major events that changed the way Amateur Radio dealt with emergency communications. In the past, MARS had focused primarily on emergency communications and health and welfare support. The DoD's *Instruction* now directs the three MARS services to provide "contingency radio communications" to support US government operations, DoD components and "civil authorities at all levels," providing for national security and emergency preparedness events. MARS units will still continue to provide health and welfare communications support "to military members, civilian employees and contractors of DoD Components, and civil agency employees and contractors, when in remote or isolated areas, in contingencies or whenever appropriate." MARS must also be capable of operation in "radio only" modes -- without landlines or the Internet -- and sustainable on emergency power (when public utility power has failed); some MARS stations must be transportable for timely deployment.

⇒ KNUT MAGNE HAUGLAND OF NORWAY: SK

Knut Magne Haugland of Norway passed away on December 25. He was 92. Haugland was one of five men, who with Thor Heyerdahl in 1947, successfully crossed the Pacific Ocean in a 45 foot raft made of balsa wood and bamboo -- named *Kon-Tiki* -- to prove that people from South America could have settled Polynesia in pre-Columbian times. Heyerdahl and his companions sailed the raft for 101 days more than 4300 miles across the Pacific Ocean before smashing into a reef in the Tuamotu Islands on August 7, 1947. The expedition used call sign LI2B and carried three watertight radio transmitters. The *Kon-Tiki* also carried a National Radio Company NC-173 receiver. Dry batteries and a hand-cranked generator supplied the power.

The Beginner's Help Desk……..(from page 16)

applications. "Plain" or "house" wire is designed for indoor or external house wiring. "Flooded" cable is infused with heavy waterproofing for use in underground conduit (ideally) or direct burial. "Messenger" may contain some waterproofing but is distinguished by the addition of a steel messenger wire along its length to carry the tension involved in an aerial drop from a utility pole.

⇒ **Triaxial cable**

Triaxial cable or triax is coaxial cable with a third layer of shielding, insulation and sheathing. The outer shield, which is earthed (grounded), protects the inner shield from electromagnetic interference from outside sources.

⇒ **Twin-axial cable**

Twin-axial cable or twinax is a balanced, twisted pair within a cylindrical shield. It allows a nearly perfect differential signal which is both shielded and balanced to pass through. Multi-conductor coaxial cable is also sometimes used.

⇒ **Biaxial cable**

Biaxial cable, biax or Twin-Lead is a figure-8 configuration of two 50 O coaxial cables, externally resembling that of lamp cord, or speaker wire. Biax is used in some proprietary computer networks. Others may be familiar with 75 Ohm biax which at one time was popular on many cable TV services.

⇒ **Semi-rigid**

Semi-rigid cable is a coaxial form using a solid copper outer sheath. This type of coax offers superior screening compared to cables with a braided outer conductor, especially at higher frequencies. The major disadvantage is that the cable, as its name implies, is not very flexible, and is not intended to be flexed after initial forming. (See "hard line")

⇒ **Interference and troubleshooting**

Coaxial cable insulation may degrade, requiring replacement of the cable, especially if it has been exposed to the elements on a continuous basis. The shield is normally grounded, and if even a single thread of the braid or filament of foil touches the center conductor, the signal will be shorted causing significant or total signal loss. This most often occurs at improperly installed end connectors and splices. Also, the connector or splice must be properly attached to the shield, as this provides the path to ground for the interfering signal.

Despite being shielded, interference can occur on coaxial cable lines. Susceptibility to interference has little relationship to broad cable type designations (e.g. RG-59, RG -6) but is strongly related to the composition and configuration of the cable's shielding. For cable television, with frequencies extending well into the UHF range, a foil shield is normally provided, and will provide total coverage as well as high effectiveness against high-frequency interference. Foil shielding is ordinarily accompanied by a tinned copper or aluminum braid shield, with anywhere from 60 to 95% coverage. The braid is important to shield effectiveness because (1) it is more effective than foil at absorbing low-frequency interference, (2) it provides higher conductivity to ground than foil, and (3) it makes attaching a connector easier and more reliable. "Quad-shield" cable, using two low-coverage aluminum braid shields and two layers of foil, is often used in situations involving troublesome interference, but is less effective than a single layer of foil and single high-coverage copper braid shield such as is found on broadcast-quality precision video cable.

In the United States and some other countries, cable television distribution systems use extensive networks of outdoor coaxial cable, often with in-line distribution amplifiers. Leakage of signals into and out of cable TV systems can cause interference to cable subscribers and to over-the-air radio services using the same frequencies as those of the cable system.

Man that's some serious reading! That's the end of the article from Wikipedia. Next month I'll wrap it all up with some FAQ's you might be thinking. Thanks for reading along! 73 de NB3C

The Computer Corner…….(from page 14)

when building your system, or upgrading your memory in your existing computer.

⇒ **DDR RAM: 'Double Data Rate' RAM. This type of RAM is twice as fast as SDRAM. It achieves this by 'double-pumping' which is transferring data on the rising & falling edges of the clock signal, without the need for increasing the clock frequency.**

⇒ **DDR2 RAM: Also a double data rate RAM. Not only does it employ double-pumping as DDR RAM (which BTW can also be referred to DDR1), but it also employs an input-output (I/O) buffer. By doing so, the data bus can be run at twice the speed of the memory clock. The result? It is twice as fast as DDR (AKA DDR1) RAM. NOT compatible with plain old DDR RAM. 'Buffer' is an area of memory used for storing of data.**

⇒ **DDR3 RAM: 'Double Data Rate 3 Synchronous Dynamic RAM. Twice as fast as DDR2 RAM. The DDR3 standard can accomodate 512megaBITS to 8 gigaBITS, which can result in a memory module size of up to 16 gigaBYTES. NOT compatible with DDR2. BTW: A BIT is a basic unit of data storage, usually a '1' or a '0'. A BYTE is a collection of BITS, usually 8 bits. As of right now, DDR3 is the fastest stuff out there. You'll see such speeds as 667MHz, 800MHz, 1333MHz, 1600MHz and 2000MHz on today's machines.**

⇒ **DDR4 RAM: The next step up. Currently under development, and is slated to hit the streets sometime in 2012. They will run at a voltage of 1.2V, vs 1.5V of DDR3, and will have in excess of 2 BILLION data transfers per second. The clock speed on the first chips will be around 1600MHz, and are estimated to rise to as much as 3200MHz, along with a lower operating voltage of just 1V by 2013.**

⇒ **EEPROM: 'Electrically Erasable Programmable Read Only Memory'. A non-volatile memory. A variation of this is used in your little memory stick you carry in your pocket, known as 'Flash Memory'. This type of memory can be electrically erased and programmed as opposed to EPROM. You'll see EEPROM in your cell phone, digital camera, and PDA, among other devices. Flash memory can be erased bits at a time or the entire chip at once.**

⇒ **EPROM: 'Erasable Programmable Read Only Memory'. Also a non-volatile type of memory (remember: non-volatile retains data even if power is off). Not electrically erasable, but must be exposed to ultra-violet light to be erased. You can tell it is an EPROM if there is a window on the chip, thru which the silicon chip is visible, which permits exposure to light during erasing.**

⇒ **TTRAM: 'Twin Transistor RAM'. Currently under development. This type of RAM eliminates the capacitor, which holds the data. It does this by relying on the floating body effect during the silicon/insulator manufacturing process. This effect will cause capacitance to build up between the transistors and the substrate, thereby eliminating the need for a capacitor. 2 transistors are connected in series; one is an access transistor, and the other is the data transistor, which takes the place of the capacitor.**

⇒ **Virtual Memory: Allows a computer program to act as if there is more memory available to it than there is RAM. Your hard disk space is used as virtual memory, and the data there will be sent to RAM as it is required. This type of memory could be fragmented, scattered around in the RAM, with the inactive data stored on a hard disk.**

We've come a long way in RAM since 10 years ago. I remember when I bought my first computer in 1996, it was a 166MHz Pentium, with 24MB of RAM, and I thought I was sitting on top of the world. Yeah; MEGABYTES, NOT GIGA. Now with motherboards supporting 8 and 16GB of RAM, the sky's the limit. BTW: 32 bit Windows will only support 4GB MAX of RAM, whereas 64 Bit Windows operating systems will support UP TO 128GB. Chances are if you buy a computer today, it'll probably come loaded with a 64 bit version of either Windows 7 or Windows Vista, with at least 4GB of RAM pre-installed. Quite an improvement, these last few years, eh what?

Well, I hope you enjoyed my first installment of 'The Computer Corner'. Again, it's not my intention to make you an expert. However, the next time the XYL (or YL) asks you 'Honey, what does DDR3 mean?', you'll be able to baffle her with an extremely technical explanation, thereby making you look very smart & sophisticated in her eyes. Lemme know what you think of the column. And, of course, if you wanna contribute something, that is absolutely AOK with me too! Send it to: <KQ3DX@hotmail.com> and I'll run it here. If it is hardware related, I want it for this column. If you haven't snoozed off to sleep yet, thanks for reading along! 73 de NB3C.....

(Info gleaned from Wikipedia. Also many thanks to Ron, W3WN for proof-reading……..)

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January 2010

The Steel City ARC Monthly Contest/Event Planner

February 2010

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 *New Years Day* *SARTG New Year RTTY* *AGCW New Year Test* **Lighthouse X-Mas Lights QSO Party**	2 *ARRL RTTY Roundup* *EUCW 160M Test*
3 *ARRL RTTY Roundup* *WASH 2M Net* *EUCW 160M Test* **Lighthouse X-Mas ...**	4 *Breezeshooters Net* *GPVHF Society Meeting*	5 *WACOM 2M Net* *WACOM 10M Net* *Skyview Business Meeting*	6 *SCARC Social Nite* *Alleg Co. ARES Net* *WACOM YL Net*	7 *SkyView 2M Net* *WACOM Business Meeting*	8	9 *Midwinter CW Test* *NA QSO Party CW*
10 *WASH 2M Net* *NA QSO Party CW* *NRAU Baltic CW Test* *Midwinter Phone Test* *DARC 10M Test*	11 *Breezeshooters Net*	12 *WACOM 2M Net* *WACOM 10M Net*	13 *SCARC Social Nite* *Alleg Co. ARES Net* *WACOM YL Net* *NHARC Business Meeting*	14 *SkyView 2M Net* *WASH Business Meeting*	15	16 *LZ Open Test* *Hungarian DX Test* *NA QSO Party SSB*
17 *WASH 2M Net* *Hungarian DX Test* *NA QSO Party SSB*	18 *Martin Luther King Day* *Breezeshooters Net* *Run For The Bacon QRP Test*	19 *SCARC Business Meeting* *WACOM 2M Net* *WACOM 10M Net*	20 *Alleg Co. ARES Net* *WACOM YL Net*	21 *SkyView 2M Net*	22	23 *BARTG RTTY Sprint*
24 *WASH 2M Net* *BARTG RTTY Test*	25 *Breezeshooters Net*	26 *WACOM 2M Net* *WACOM 10M Net*	27 *SCARC Social Nite* *Alleg Co. ARES Net* *WACOM YL Net*	28 *SkyView 2M Net*	29 *CQ WW 160M Test CW*	30 *CQ WW 160M Test CW* *REF CW Test* *SARL Youth Day Sprint* *UBA DX Test* *WASH Breakfast*
31 *CQ WW 160M Test CW* *WASH 2M Net* *REF CW Test* *UBA DX Test*						

Complete contests list: <www.hornucopia.com/contestcal/contestcal.html>
& <www.sk3bg.se/contest> ----- Click here for Table Of Contents

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February 2010

The Steel City ARC Monthly Contest/Event Planner

March 2010

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 *Breezeshooters Net* *GPVHF Society Meeting*	2 *WACOM 2M Net* *WACOM 10M Net* *Skyview Business Meeting*	3 *SCARC Social Nite* *Alleg Co. ARES Net* *WACOM YL Net*	4 *SkyView 2M Net* *WACOM Business Meeting*	5	6 *VT QSO Party* *10-10 Int'l Winter Test SSB* *MN QSO Party* *AGCW Straight Key Party* *DE QSO Party* *Mexico RTTY Test*
7 *WASH 2M Net* *VT QSO Party* *10-10 Int'l Winter Test SSB* *DE QSO Party* *Mexico RTTY Test* *NA CW Sprint*	8 *Breezeshooters Net*	9 *WACOM 2M Net* *WACOM 10M Net*	10 *SCARC Social Nite* *Alleg Co. ARES Net* *WACOM YL Net* *AGCW Semi-Autmatic Key Eve* *NHARC Business Meeting*	11 *SkyView 2M Net* *WASH Business Meeting*	12	13 *CQ WW RTTY WPX Test* *SARL Field Day* *Asia-Pacific CW Sprint* *Dutch PACC Test* *FISTS Winter Sprint*
14 *CQ WW RTTY WPX Test* *WASH 2M Net* *SARL Field Day* *Dutch PACC Test* *NA SSB Sprint*	15 *Breezeshooters Net*	16 *SCARC Business Meeting* *WACOM 2M Net* *WACOM 10M Net*	17 *Alleg Co. ARES Net* *WACOM YL Net*	18 *SkyView 2M Net*	19	20 *ARRL Int'l DX CW Test*
21 *ARRL Int'l DX CW Test* *WASH 2M Net*	22 *Breezeshooters Net* *Run For The Bacon QRP Test*	23 *WACOM 2M Net* *WACOM 10M Net*	24 *SCARC Social Nite* *Alleg Co. ARES Net* *WACOM YL Net*	25 *SkyView 2M Net*	26 *CQ WW 160M Test SSB*	27 *CQ WW 160M Test SSB* *WASH Breakfast* *REF SSB Test* *UBA DX CW Test* *NA QSO Party RTTY*
28 *CQ WW 160M Test SSB* *WASH 2M Net* *REF SSB Test* *UBA DX CW Test* *NA QSO Party RTTY* *High Speed Club CW Test*						

Complete contests list: <www.hornucopia.com/contestcal/contestcal.html>
& <www.sk3bg.se/contest> ----- Click here for Table Of Contents

WASHfest 2010

*The South Hills Hamfest — Now in our **FIFTEENTH** big year!*

Sponsored by the WIRELESS ASSOCIATION OF SOUTH HILLS AMATEUR RADIO CLUB, INC.

Sunday, February 28 th, 2010

8:00 AM until 3:00 PM Rain or Shine (or Snow!)

Castle Shannon VFD Memorial Hall

3600 Library Road (State Route 88), Castle Shannon, PA

Talk-In on 146.955(-) and 443.650(+) 131.8 PL

(800) 545-8881

Special Guests:

Atlantic Division Director Bill Edgar N3LLR

WPA Section Manager John Rodgers N3MSE

WPA DXCC Card Checker Art Lund NQ3A

FREE Coffee for the entire Hamfest courtesy of HAM RADIO INSURANCE ASSOCIATES of Canonsburg, PA

Breakfast & Lunch provided by *JACK'S CATERING* of Peters Township

MAIN PRIZES — *You've Got to play to WIN!*

1st Prize:	ICOM IC-7200 HF & 6 Meters
2nd Prize:	ICOM IC-91A/D 2 M/70 cm D-STAR
3rd Prize:	Heil BM 10-5 Boom Headset

Additional Hourly Door Prizes!

Main Prize tickets are $2.00 each, 3 for $5.00, 7 for $10, 15 for $20

All Prizes Subject to last-minute changes

For reservations, or information, Contact:

Kevin Smith N3HKQ at (724) 228-4153, or Carol Danko KB3GMN at (412) 884-1466

E-mail us directly at **washarc@yahoo.com** Check out our website too! **www.n3sh.org**

Hamfest Table Reservation Form—Please PRINT LEGIBLY ALL INFORMATION

Name:_____ Email: _____

Address: _____ Phone: ( ) _____ - _____

City: _____ State: _____ Zip: _____

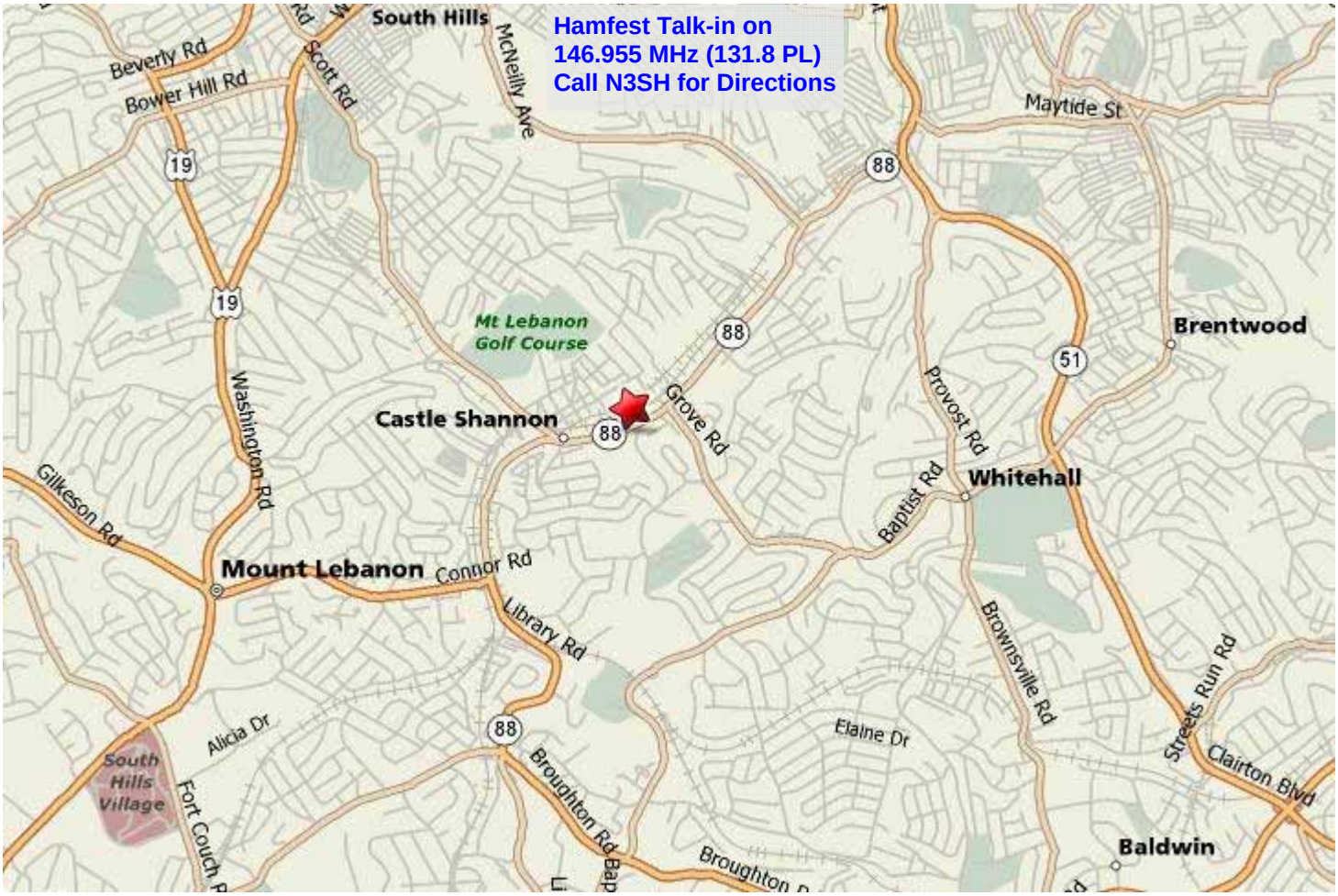
Call Sign: _____

Tables WITH Electricity: _____ X $15.00 = _____

Tables WITHOUT Electricity: _____ X $10.00 = _____

Please make all checks payable to:
WIRELESS ASSOCIATION OF SOUTH HILLS
111 Watson Drive
Monongahela, PA 15063-1045

We reserve the right to resell any tables not occupied by 8 AM, unless prior arrangements have been made!



Directions to WASHFest 2010

From State Route 51 (North or South): Take SR 51 to SR 88 South (Library Road at Saw Mill Run Boulevard. Proceed South about 1½ miles to Grove Road (3rd Traffic Light. Turn Right (North) onto Grove, and an immediate Left into the Parking Lot.

From US 19 South (Washington County): Take US 19 (Washington Road) North past South Hills Village to the intersection of Connor Road (by the Galleria). Turn Right onto Connor Road. At the end of the road, turn Left onto SR 88 (Library Road). Proceed North about1 ½ miles to Grove Road (3rd Traffic Light. Turn Left (North) onto Grove, and an immediate Left into the Parking Lot.

From US-22, Interstate I-76 (PA Turnpike) or I-376 (Parkway East): Follow the Parkway East inbound towards Pittsburgh, to the Boulevard of the Allies. Follow the Boulevard to the exit ramp (on the left) for the Liberty Bridge. Cross the Liberty Bridge and proceed through the Liberty Tunnel. Take the exit for SR 51 South. Proceed about 3 miles to the intersection with SR 88 (Library Road) and proceed as above.

From Interstate I-279 (Parkway North) & I-79 North via I-279: Follow the Parkway North Southbound to the Veteran's Bridge I-579 exit. Cross the Veteran's Bridge and follow I-579 to the exit ramp for the Liberty Bridge. Cross the Liberty Bridge and proceed through the Liberty Tunnel. Take the exit for SR 51 South. Proceed about 3 miles to the intersection with SR 88 (Library Road) and proceed as above.

From State Route 28: Follow the SR-28 inbound to the exit ramp for the Veteran's Bridge I-579. Cross the Veteran's Bridge and follow I-579 to the exit ramp for the Liberty Bridge. Cross the Liberty Bridge and proceed through the Liberty Tunnel. Take the exit for SR 51 South. Proceed about 3 miles to the intersection with SR 88 (Library Road) and proceed as above.

From the West via State Route 60, US 22/30, or the Parkway West: Proceed inbound to the Parkway West. Follow the Parkway inbound to the intersection with SR 51 (exit to the right prior to the Fort Pitt Tunnel). Take SR 51 South and proceed about 4½ miles to the intersection with SR 88 (Library Road) proceed as above.

From Interstate I-79 South: Take I-79 to the intersection with the Parkway West I-279 and proceed as above. If coming from Washington County or further south, exit in Washington Pa to Murtland Avenue North and follow US-19 North.

KiloWatt Harmonics

THE OFFICIAL (AND ONLY) NEWSLETTER OF THE STEEL CITY AMATEUR RADIO CLUB

NEXT MEETING: 8PM 19 JANUARY

BE SURE AND CHECK OUT OUR COOL WEBSITE:

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SCARC
W3KWH

Steel City Amateur Radio Club
P.O. Box 281
Carnegie, Pennsylvania 15106
Phone 412-787-0777
Editor: Greg Babin, NB3C
<KQ3DX@hotmail.com>