

WorldRadio

ONLINE

Year 39, Issue 8

FEBRUARY 2010



Hibernating DXers Always Awaken

Echoes From Antarctica

**Boy, I Wish I Had
Recorded That!**

**Lifelong Learning With
Morse Code**

NEWS • FCC • DX • QRP • QCWA • CONTESTS • HAMFESTS • YL • AMSAT • CW



New Large Sunspot

Sunspot 1035 is here. It is one of the largest sunspots seen in years. On December 15th, Spaceweather reported that sunspot 1035 was nearly as wide as seven planet Earths and growing. It said that the fast-growing active region burst into view on December 14th with a magnetic polarity that clearly identifies it as a member of new Solar Cycle 24.

Check <http://www.spaceweather.com> for the latest photos and updates. And let's hope that this sunspot hangs around for a while to bring hams worldwide some long awaited high frequency DX.

(Spaceweather)

Bahrain Grants New Operating Privileges

The Daily DX is reporting that radio amateurs in Bahrain can now operate 50.0 to 50.5 MHz on 6 meters on a primary and exclusive basis, and 50.05 to 52.00 MHz on a secondary basis. The report also adds that they can now operate on additional frequencies on 136 kHz, 1.8 MHz, 7 MHz, 430 MHz and higher bands.

However there is one caveat: Bahrain amateurs cannot operate on these newly allocated frequencies until their licenses are amended.

(Daily DX, OPDX, Southgate, others)

CB Website Warns Truckers to Stay Away from 10 Meters

A CB website is warning trucker CB'ers and Freebanders to keep out of the 10 meter ham band. The home page post on LiveCBRadio.com tells readers that mobile ham operators all over the United States are now observing and reporting truckers talking above 28 MHz. The website notes that the hams will not just report the truck and its company to the FCC, but that they often include video and audio as evidence with their complaints.

The website goes on to note that the FCC contacts the trucking company warning them of potential fines. It says that already there have been cases where both truckers and trucking companies have been fined.

The website warns readers, especially truckers with modified export type CB sets that what is called CB channel 19 High is actually 28.085 MHz. When someone with one of these illegal export radios tunes to 19 High he or she is transmitting full carrier AM in the Morse only area of 10 meters.

The website warns that is best to stay within the common CB channels from 1 to 40. It notes that trucker CB'ers using the 19 High frequency might think that they are gaining extra privacy. In reality what they are doing is drawing national attention from the United States ham radio community and through them from the FCC.

(QRZ, others)

International DX Convention 2010

The 61st Annual International DX Convention takes place April 16th, 17th, 18th at the Holiday Inn Hotel and Conference Center, Visalia, California. The International DX Convention is the world's foremost gathering that attracts DX'ers and aspiring DX'ers from around the world. The show attracts big guns from all over the world as well as North America. Some are there to tell how they have been able to meet and beat the challenge of DXing in an ever-expanding hobby. Others will tell of the challenges of operating from places far removed from the comfort of their home stations. The 2010 event will be sponsored by the Southern California DX Club. Pre-registration began on December 1st. More information is on-line at www.dxconvention.org.

(IDX)

A Ferry Good Idea

Listen for the Special Event call GB2EI, standing for Great Britain to Ireland. It is on the air to celebrate the reintroduction of the Swansea to Cork Ferry service. The original service commenced in 1896. A similar station, EI2GBW, will also be operating from Cork. Both special event callsigns will be operational until March 31st. QSL details are available at qrz.com.

(IRTS)

ARISSAT One to Carry Student Files

Students world-wide are invited to fly a computer file on ARISSAT One, the educational satellite that was originally called Suitsat 2. ARISSAT One will launch in 2010 and like its predecessor Suitsat One, will transmit messages recorded by students. In addition, teachers and their students are invited to include a file on a memory flash drive aboard this amateur radio satellite.

What a teacher or student wants to fly is at their own discretion, but some suggestions from the ARISS team include things the student has prepared, such as a paper or a study done on a science, technology, engineering or math topic. Other possibilities include a drawing of space craft, a schematic, or a journal kept on an educational topic, a story or news article about a science subject.

Dave Jordan, AA4KN, will take delivery of these files and copy them onto a flash drive memory stick, plus make them available on the web for anyone to see. He will look at all of them for content to make certain that they are appropriate to student viewing.

Files can be in any language as long as an English translation is also included. Only JPG or PDF files will be accepted. Please e-mail files to aa4kn@amsat.org.

(ON4WF)

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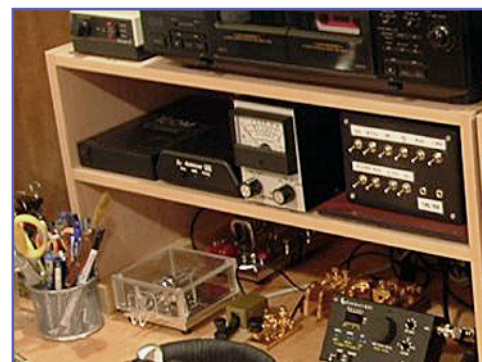
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ON THE COVER: A new tower is successfully installed. Read the complete story in this month's *DX World* column, "Hibernating DXers Always Awaken."



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Happy Valentine's Day

When I received an email from Betty Demaree telling us how proud she is of her husband, Jack, WB9OTX, and his ham radio activities, I knew it would be a good story for our February issue. It isn't often that wives enthusiastically support their husbands' hobbies and Valentine's Day is a good time to thank those who do.

To the observer, ham radio can appear to be a solitary activity that requires the operator to be sequestered in a room. This room is full of mysterious electronic instruments (spouse translation: expensive), some which are unused (spouse translation: wasted money). Cables and wires resemble twisted spaghetti, adding a messy look to the room, and the gear makes the room cluttered - a negative quality in the opinion of many spouses.

When on the air, the operator is generally focused on the squawks and beeps coming out of the radio, or wearing headphones that further isolate him from the family. Interruptions are often met with an unintentionally terse "just a second" or worse - the silent holding up of the operator's hand to indicate that whatever is being heard on the radio is more important than whatever the spouse has to say.

This is, of course, a worst-case scenario, and most of us don't ignore the family for the sake of a contact (unless it's a contest or a rare DX station). But, it is asking a lot of a spouse to be as excited about ham radio as we are. They may get a beginner's license in an attempt to join in, but after the novelty wears off, a handheld is less appealing as a cellphone. The antenna makes it unwieldy to carry and anyone else with a radio can hear what you are saying.

So, getting an email from a wife with an attitude like Betty's made my day. I hope you enjoy reading her story in this issue. And I hope Jack knows what a gem he has in Betty!

On another note, I am sorry to tell you that I have resigned as editor of *WorldRadio Online*. The March issue will be my last one, so I will save my good-byes for the EdLog of that issue.

The magazine will be in the good hands of Richard Fisher, KI6SN, which makes the departure a bit easier for me. Richard, whom you may know from his *Trail-Friendly Radio* column in *WRO* and columns in *CQ* and *Popular Communications*, is a friend of mine and a good CW man. Before the title was changed to *Trail-Friendly Radio*, Richard wrote the QRP column for *WR* for many years.

The transition takes place January 20. People in the magazine business work several issues ahead of the current calendar month, so I'm finishing up the March *WRO* now and the April issue will be Richard's first as editor.

Email sent to worldradioeditor@cq-amateur-radio.com will not be forwarded to me after January 20, it will go to Richard. If you have articles, hamfest or special event notices, you can still use the same email address (worldradioeditor@cq-amateur-radio.com) and they will go to the current editor.

I hope you will stay in touch with me; as always, I can be reached at nancy@tir.com. We've gotten to be like a family over the many years and I will miss hearing from you as much as I'll miss having a hand in *WRO*. But, I said I will save the good-byes for next month, so I'll sign off before I get all mushy!

Happy Valentine's Day and CU next month.

- 73 88 33, Nancy Kott WZ8C.

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Jack Demaree at the operating position of his shack.

Echoes From Antarctica

By Betty Demaree

It wasn't the first time noises from the radio shack in the next room had awakened me. I could hear my husband, Jack, the squirrely SSB sounds, and see the soft reddish glow emitted from the tubes of his Drake R4B receiver. Jack Demaree's interest in electronics started when he was just a boy. He was absorbed and bedazzled as a child and the excitement never left him. I married into this whirlwind, noisy and expensive, but I must say I was fascinated, as I lie awake listening to him open up the airwaves at all hours of the night.

Tonight, after tuning across the band, he heard the word "Lawrenceburg" and this was the beginning of a two-year friendship with Pat Cornelius. Pat was living at the South Pole, Antarctica station, and there was no communication in 1980, except for amateur radio and the phone patch. It was an answered prayer for Pat and a realized dream for Jack because he was able to make it possible for a young man to communicate with his mom and dad from a cold and barren land.

Although Antarctica is on the same planet as the rest of us, this continent at the bottom of the globe isn't a part of the

world the public knows. It is the highest, windiest, driest and most desolate place on earth. The whole continent is buried under one mile of snow and ice, but it rarely snows. Instead, windstorms blow off the surface of the ice, which creates the impression of snowstorms. What is typical today regarding temperatures and general weather conditions for this desolate area was typical in 1980 and 1981. As far as communications for all the scientists living there at the time, there just weren't any. This leads into my story, as told to me by my husband, WB9OTX.

He had been interested in Antarctica for a long time and read nearly everything he could find on the subject. Then, that night in 1980, he was dialing his receiver across the twenty-meter band and he heard the word Lawrenceburg. This is a town about twenty-five miles from where we live. To his surprise, the call-sign the fellow was using was KC4AAA. This told Jack that the fellow was located at the South Pole. He called KC4AAA and the ham answered and told him his name was Pat Cornelius and he was training to be an astronaut. He said his hometown was

Lawrenceburg, Indiana. This was the start of a friendship, not only with Pat, but with his family as well.

They set up a schedule later on, after both realized that Jack could make it possible for Pat to talk to his parents at home by means of the phone patch. Twice a week they would meet on the radio starting at midnight. This was three in the afternoon for Pat. Jack had to leave for work at four a.m. Sometimes, other stations on the Antarctic continent would call and want him to run patches for them after Pat and Jack were finished. How could he refuse? He didn't get a lot of sleep back then, but he was a lot younger.

I believe it was the winter of 1981 at the Pole, which is June or July here, since the seasons are opposite in the two hemispheres. During one of their schedules, Pat told Jack they were going to have an airdrop. This hadn't been attempted before because of the great distance and weather conditions the planes would encounter during their trip from New Zealand. The planes would be C-130s with no skis. Their plans were to drop and make their way right back. The planes would need to refuel mid-air before returning to Christchurch, New Zealand, so you can see this was quite an undertaking. Families of the men (and one woman) were contacted and told they could send one package. The requested items ranged from ice cream to kiwi fruit. Yes, I said ice cream. Pat told Jack he could send a package also, so he sent some information about ham radio and a photo.

The day came for the drop and all the crew were lighting flares (it's dark for about three months) to mark the drop zone. Jack was monitoring on the radio and could hear the planes call the Pole, but neither could get through to the other. He contacted the Pole and told them he could hear both of them. The planes were using a frequency where Jack was not permitted to operate, but they were also listening on the ham frequency, so they could hear him. He transmitted in the ham band and the planes transmitted on the military frequency. This is called operating split. It worked quite well. He relayed the location and arrival times to the Pole. I must say he was feeling pretty important, being so privileged to be a part of this relay and what he considered a monstrous adventure. A few things took place when the planes made the drop, but Jack was sworn to secrecy. Let's just say they were quite low to the ice when they kicked the freight out of the planes. (Nuff said).

Unfortunately, the cargo was full of bacteria and viruses, which in the excessive-cold environment at the Pole were non-existent. After being brought into the dome and heated, the germs spread to the crew and many became ill with colds and such. No one had considered this and additional precautions had to be developed for the future.

I cannot end without mentioning the most emotional experience of the story. It was about three in the afternoon, after Jack had returned home from work, when the phone rang. The young woman on the other end of the phone said it was imperative that she contact her brother as soon as possible. He asked her who her brother was and how he could be of help. She began to cry and after a moment, she said, "I need to get a message to my brother at the Pole to tell him mom has died." She gave him the details and he felt his heart sink as he attempted to muster up enough strength to plan a contact with Pat so he could deliver the message. That night at 11:00 p.m., he began calling on their scheduled frequency. It wasn't long until he heard "WB9OTX this is KC4AAA go ahead." It was Pat and he gave him the name and the message. He secretly wanted Pat to relay the information, but Pat

said he would call on the intercom and then Jack could speak to the man one-on-one. Knowing there would be no way for him to come home, as nothing comes or goes from the Pole in the wintertime, all he could offer to his sister was encouragement. Jack called her back the next day to let her know the message got through and she was very grateful. He asked her how she got his phone number and she replied. "The National Science Foundation gave it to me." To this day, we don't know how or why our phone number was available to her but it just proves Big Brother is always listening.

After Pat's tour at the Pole, he went to Germany pursuing a career in hot air balloons. He never made it as an astronaut. Pat and Jack lost contact, but Jack will never forget the friendship and all the interesting people he met during those two years.

Jack is still a ham after forty years. He holds an advanced license and has worked all states, zones and most countries. He handles messages on 75 meters through an Indiana Traffic Net and belongs to a local repeater club. After many years and numerous awards for public service, his passion remains the same for amateur radio.

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Screen Example



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Boy, I Wish I Had Recorded That!

Setting Up a Tape Recorder For Your Shack

By Bob Patterson K5DZE

There I was ...

I remember a day in the early 1960s when I came into the shack and turned on the equipment. I had a National NC-98 receiver and an Elmac AF-67 transmitter that I used for HF AM/CW. Both of these radios needed a little time to warm up and settle down to hold frequency. That day the gear was set to 15 meters, a band I used a lot back then. As I waited for the equipment to warm up, I picked up a magazine and walked across the room. To my amazement as the receiver came to life, coming from the speaker loud and clear was a station calling MAYDAY! It was an amateur operator who was maritime mobile off the coast of New York on his boat and he was sinking! He did not panic, but he continued to repeat his position. Finally he said this would be his last call because water was coming in the door and he had to abandon ship.

I had scribbled down all the info and was preparing to call the nearest Coast Guard station to pass along what I had copied, but I wanted to let the operator in distress know he had been heard. As I reached to flip the transmitter on, two New York amateurs came up on the frequency. One operator asked the other if he had copied all that and the other operator replied that he had and he had already passed it to a NY area Coast Guard station. He said a rescue vessel was on the way to help. They were monitoring the frequency in case they were needed. Since I could now do little to help, I relaxed knowing help was enroute. Then I thought, "What a great story I had to tell at school!: I always wished I had tape recorded that little episode, but in those days there wasn't funding for that kind of accessory at my shack.

As time passed, I heard more ships at sea, river boats on the Mississippi, pirate broadcast stations near 40m, and military stations passing coded messages to aircraft such as: "Sky King, Sky King, This is Andrews, This is Andrews, Do not answer, Do not answer...." I often copied the well-known 'numbers stations' on both voice and on CW and wondered what spy was getting instructions and where he/she might be. Late one night when 15m was all but dead, I heard a strong signal come on in the middle of the phone band. I wound up having a nice QSO with an amateur who was the pilot of a B-47 bomber flying over my house at 22,000 feet!

Rescue work during Gulf Coast hurricanes was all too often copied from my QTH (I was in North Mississippi). It was a day when amateur radio was often the only communications into and out of disaster areas. In the wake of Hurricane Audrey, I listened to an amateur who, using his personal boat, had made his way to Cameron, Louisiana by water to set up a rig after the



Crane VersaCorder.

hurricane nearly destroyed the town. As I recall, he was the only communications in and out of Cameron for over 24 hours while help tried to get to the devastated town. During his requests for help and supplies, I distinctly remember him asking for body bags for the more than 300 residents who had been killed. At the time, this was pretty heavy stuff for a kid in high school. I wished I had recorded that!

Technology Makes Recording Easy

I decided to set up a simple tape recording system for the shack. I started with a second-hand reel-to-reel tape recorder I got in a trade. Later, I moved to a quality Teac reel-to-reel tape deck, which was a good quality, high-fidelity recorder, but it was a deck and had no audio amplifier or speakers. This worked well, but the big reel of tape often made it hard to separate recordings. I soon learned to log the tape counter settings when taping something. When cassette tape recorders were introduced, recording on individual tape cassettes became more practical and convenient. To me, this was obviously the way to go for amateur work and it really worked great!

While a helicopter pilot during the Vietnam War for a couple of years, I taped a few of my flights by making and inserting a patch cord in the headset line. This cord went to a small cassette recorder I put in the aircraft. I simply turned it on and let it run. In my room at the airfield, I set up a spare military receiver and used it with this little recorder to tape what the amateur bands sounded like from Vietnam near the South China Sea. Several years later, I made a similar recording from Germany and put it on the other side of the cassette. It made a

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neat tape of the HF bands as they sounded from Asia and Europe. Today, these recordings are obviously pretty special.

Recording Equipment For The Shack

With the availability of CDs, MP3 players and a number of other recording devices, cassette tape recorders are not as popular as they once were, but they are still readily available and are even less expensive than in years past.

A quick run through the Internet will produce any number of small cassette recorders that sell for \$29 to \$99. These are quite capable for radio use. On the minimalist side, just pick one that has an AC adaptor and also has a line input for recording. On the higher end of this scale, the \$99 Crane VersaCorder from Universal Radio is made specifically for radio use and offers a host of features such as VOX recording, extended recording (4 hour), and built-in recording timers. Careful selection can get a number of useful features for use in your shack, so spend some time and choose wisely.

If you prefer a front loading, soft touch control, dual-tape deck, these are available for \$90-\$175. You can get a high quality dual-deck cassette tape deck that will provide some neat options for your



Dual Deck Sony TC-WR350Z.

radio recording needs. Among these options are automatic forward and reverse direction (bi-direction) recording, one button instant recording, easy touch controls, and the ability to dub one tape to another to make multiple tape copies on the spot as needed. Recording time is about 45 minutes per side using a 90 minute leaderless tape. Using bi-direction auto recording, you will get a full 90 minutes without having to turn the

tape. Note that these decks require an audio amplifier and speakers if you want to play back tapes for a room filling sound, but this is easy to set up.

Connecting The Recorder

Connecting the recorder to your transceiver/receiver is not complicated. Many amateur transceivers and most modern receivers come with a recording output jack on the back panel. This provides a



The rigs at K5DZE with the ever-ready Sony dual-tape deck on the top left shelf.

fixed output for your recorder that is not affected by your volume control setting or your use of headphones. You simply plug an audio cable from this jack to the recorder's LINE IN jack and you're in business. Note: Some manufacturers offer the recording output jack on the optional outboard speaker rather than on the rig itself.

Some newer transceivers and receivers appear to have replaced this recording output option with a built-in digital voice recorder which offer a few seconds or more of instant recording at the touch of a button. Some rigs offer both. These digital recorders are nice, but their short record times don't meet the needs for long term recording nor can this information be easily saved from the radio.

If a recording output isn't available on your equipment, no problem, you can still easily record your receiver's output. Plugging your recorder directly into the headphone jack won't work very well since the headphone output is high impedance and the recorder input is low impedance. This method of recording would also turn off the headphones and turn off the rig's speaker so you couldn't hear what you were recording. To fix this, get a Radio Shack Mono "Y" Adaptor (RS # 274-310) and plug this into your transceiver/receiver headphone jack. Then get a Radio Shack Attenuating Dubbing Cord (RS # 42-2152). This cord is 6.5' long with 1/8" stereo plugs on both ends. Plug this dubbing cord into one of the Mono Adaptor's two "Y" adaptor jacks and plug the other end of the cable into the recorder. Into the other "Y" adaptor jack, you can plug in your headphones or a speaker.

Note: Make sure these plugs fit your equipment and if not, Radio Shack likely makes adaptors or plugs that will substitute for what you need. (The plugs described here are mono plugs/cables.) The key is to use the dubbing cord for your rig's output to match the recorder input.

Tips

Here are some tips for using a recorder at the rig. I hope they will be of help to you.

- 1 *Always have your recorder connected and ready to record when you are tuning around.* You never know when you will want to quickly record something. If you have to set everything up it's probably going to be too late to catch the signal you wanted.
- 2 *Use a good quality tape.* Not only does it make a better sounding recording, it will last longer.
- 3 *Don't use Dolby or low noise settings for radio recordings unless you have tested recording with and without this feature and you are happy with the results.* Communications tapes often seem to sound better without such settings.
- 4 *Use 90 minute tapes rather than 120 minute or 60 minute tapes.* The 120s use much thinner tape and as a result these are more prone to breaking, jamming and getting tangled in the tape transport mechanism. While the 120 minute tapes are really nice, they are risky. Lose one tape and you could lose 2 hours of recordings! The 60s are OK, but require 6 tape changes for 6 hours of recording vs. 4 tape changes for 6 hours if you use 90 minute tapes.
- 5 *Use Avery White Audio Tape Labels (Avery # 8998) to make great custom cassette tape labels for your station recordings.* You can make these as fancy or simple as you wish, and you can change labels as often as necessary.
- 6 *It really pays to jot down the date and subject on each*

tape you want to keep. If you don't, you will likely find yourself playing tape after tape to find the one you want.

- 7 *Put a simple self-stick color tab such as the 3M #686-2RY on the side of blank tapes that you have at the recorder so you will know they are ready for use.* You can also put a colored rubber band around tapes that you have already used to record signals. This will help you avoid re-recording a tape you wanted to keep.
- 8 *Use leaderless tapes to insure instant and complete recording from the time you push the record button until the tape stops.*
- 9 *You can order color cassette tapes (red, yellow, white, etc) from your local vendor or from the Internet.* Color tapes can help you keep communications tapes separate from commercial tapes or personal music tapes.
- 10 *An inexpensive hand held micro-cassette recorder is also handy for portable or mobile recording should you need to do so.* Just pick it up, press record and set it down next to the speaker. It not as high quality as other methods, but it is better than nothing.

While current technology is also available to allow you to record digitally to your hard drive or a CD, the cassette tape system still has much flexibility and versatility for amateurs and SWLs and doesn't require a computer. Certainly the quality of cassette recorders has never been higher and the cost more reasonable.

Tape recording what you hear is great fun and might be really important for copying details when you hear an emergency, a homeland security situation, a frequency intruder, or when capturing that elusive DX signal. Try a recorder in your shack and you won't wind up saying, "Boy, I wish I had recorded that!"

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The Rules Say...

John B. Johnston, W3BE

MORSE CODE ENDORSEMENT?

Q Our VE team had a request for a Morse code endorsement on a license renewal. Is there such a thing?

A. No. Telegraphy skill is no longer a requirement in qualifying for a FCC-issued amateur operator license.

W3BE-O-GRAM: As you have noted, however, there seems to be a continuing demand for some type of recognition for having that skill. There was a booth at a recent hamfest where a certificate was issued to those passing the various CW speed tests. There were a lot of takers.

Q. There is a semi-secret repeater on 1.25 meters with a call sign that does not return a result on any of the internet call sign search sites. It just keys up from time to time with a voice ID. I have been told that it is one of 12 RACES repeaters in our state. How can a RACES repeater be on the air full time without violating the drill time limitations of Part 97?

A. The station authorization must appear on the ULS or be under the physical control of a person authorized for reciprocal operation. See Section 97.5. Unless a legitimate RACES drill just happens to be taking place whenever you happen to tune in, something is not right.

Section 97.407(e)(4) says that communications for RACES training drills and tests necessary to ensure the establishment and maintenance of orderly and efficient operation of the RACES as ordered by the responsible civil defense organization served. Such drills and tests may not exceed a total time of 1 hour per week. With the approval of the chief officer for emergency planning in the applicable State, Commonwealth, District or territory, however, such tests and drills may be conducted for a period not to exceed 72 hours no more than twice in any calendar year.

W3BE-O-GRAM: If it doesn't check out, alert your Amateur Auxiliary Official Observers.

Q. I've looked through the rules and can't find a specific prohibition for this: Playing a recorded announcement periodically on our repeater. It's a recording of a person delivering the message instead of relying on the recorded "mechanical voices" we currently use to deliver time, identification, weather and other amateur radio related announcements. Am I missing anything?

A. Nope. Section 97.3(c)(5) defines a phone emission type as speech and other sound emissions having certain designators. It doesn't get into whose speech or sound it is.

Q. Can our club use its repeater to retransmit severe weather forecasts from a NOAA Weather Radio Station?

A. Yes, assuming that your question misuses the word "rebroadcast" and that you really mean, "retransmit." Section 97.113(e) specifically authorizes limited retransmissions of

propagation and weather forecast information intended for use by the general public and originated from U.S. Government stations. Such amateur station retransmissions, however, must not be conducted on a regular basis, but only occasionally as an incident of normal amateur radio communications.

For your system, keep in mind that your repeater would be – under the authority of Section 97.111(b)(6) – making a one-way transmission necessary to disseminating an information bulletin. The definition of such a bulletin is stated in Section 97.3(a)(26). It is a message directed only to amateur operators consisting solely of subject matter of direct interest to the amateur service.

Section 97.113(b) says that an amateur station shall not engage in any form of broadcasting. Section 97.3(a)(10) defines the term "broadcasting" as transmissions intended for reception by the general public, either direct or relayed.

W3BE-O-GRAM: Your station should never be broadcasting. It would simply be hamcasting, hamslanguage for transmitting occasionally one-way information bulletins to amateur operators. In this instance, bulletins necessary to providing us with the vital weather information we need to know in order to maintain and operate our stations appropriately. That's our claim, anyway.

From the frequency allocation standpoint, moreover, it can be risky business to use our amateur service bands for the purpose of duplicating transmissions readily receivable on spectrum allocated to some other radio service. Such could raise the interest of government spectrum managers who could view it as proof of an inequitable allocation that needs correction.

Q. What is the NOAA Weather Radio?

A. The National Oceanic & Atmospheric Administration is part of the Department of Commerce. Its NWR is a nationwide network of VHF radio stations broadcasting continuous weather information direct from a nearby National Weather Service Office. The broadcasts include forecasts, watches, warnings and other hazard information for all types of hazards both natural (such as earthquakes and volcano activity) and environmental (such as chemical releases or oil spills). See the website at www.nws.noaa.gov/nwr.

Q. Where are the NWR channels?

A. There are seven NWR channels: 162.400 MHz, 162.425 MHz, 162.450 MHz, 162.475 MHz, 162.500 MHz, 162.525 MHz and 162.559 MHz. Many of our VHF receivers can tune in the broadcasts directly.

Q. The National Weather Service broadcasts sometimes contain tones interspersed with the speaker's voice. Can these tones be retransmitted on our repeater?

A. Yes. Section 97.3(c)(5) says that incidental tones for the purpose of selective calling or alerting or to control the level of a demodulated signal may be considered a phone emission type.

Q. The proper ID after a beacon station transmission should be its call sign and location. Am I missing anything here?

A. The station identification announcement is, as it says in Section 97.119(a), the station's assigned call sign at the end of each communication, and at least every 10 minutes during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions. That assigned call sign is the one appearing on the ULS station license grant under the authority of which the beacon is transmitting.

An e-mail from an AAOO reported that he had observed beacon stations including with their call sign the self-assigned indicator "/B." He claimed that because that prefix is assigned to another country, including it as an indicator is contrary to Section 97.119(c). It says that one or more indicators may be included with the call sign. Each indicator must be separated from the call sign by the slant mark (/) or by any suitable word that denotes the slant mark. If an indicator is self-assigned, it must be included before, after, or both before and after, the call sign. No self-assigned indicator may conflict with any other indicator specified by the FCC Rules or with any prefix assigned to another country.

Note: The indicators specified in Section 97.119(f) are AE, AG and KT. Additionally, the FCC webpage About Amateur Reciprocal Operating Arrangements says that when a station is transmitting under the privileges afforded by an amateur service license granted by the Government of Canada or an amateur service license granted by any other country with which the United States has a multilateral or bilateral agreement, an indicator consisting of the appropriate letter-numeral designating the station location must be included in the station identification announcement. They are KH1, KH2, KH4, KH5, KH5K,

KH6, KH7, KH9, KL7; KP1, KP2, KP4, KP5, W0, W1, W2, W3, W4, W5, W6, W7, W8 and W9.

Q. Our club has a VHF net. The club's station location is changed each week to the then net control's QTH. When acting as net control, should the net control operators identify using their own call letters or should the net control identify using the club's call letters?

A. That's a question to be answered by the license trustee of your club station license and the licensees of the primary stations licensees serving as the net control station. See BE Informed No. 4 WHICH CALL SIGN for a discussion of the several issues that you should be considering.

Q. How about the legality of transmitting the final station ID at greatly reduced power so as not to slow down the DX station?

A. The control operator would have to make an informed determination as to whether or not that procedure would satisfy the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions. See Section 97.119(a).

W3BE-O-GRAM: Hopefully, the control operator would consider the difficulty that procedure might add to the monitoring work of our AAOOs.

Q. Help! After wandering around in the National Archives website for a couple hours, I need help. Where can I find a listing of amateurs in 1913 by the Department of Commerce? I surely would like to see the listings for 1914-16 also. Is there any way I can get a copy?

A. Steve Melachrinis W3HF has an extensive collection of vintage call books. There is a link to his website from my W3BEInformed.org website.

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Diana Eng, KC2UHB: Off the 'Runway' and Into the Field

By Richard Fisher, KI6SN

The haute couture on the fashion runways of New York City may seem light years from jeans and a backpack stuffed with radio gear on a hiking trail in northern New Jersey. But not for Diana Eng, KC2UHB.

As one of the stars of the second season of the wildly popular Bravo television reality series *Project Runway*, she's as comfortable designing high tech clothing and accessories as she is handling a Yaesu FT-857d and an end-fed half wave antenna slung into the trees on a trail-friendly radio excursion.

It's an eclectic coupling of interests, for sure. Sort of like Coco Chanel strolling hand-in-hand with Guglielmo Marconi in Central Park.

"Amateur radio is what I do in my spare time to relax," said the author of "Fashion Geek: Clothes Accessories Tech," a how-to book focusing on her tech-savvy designs. On the high-pressure *Project Runway* she was pitted against 15 other up-and-coming designers in the winner-takes-all competition.

Her fashions are accented with everything from LEDs to electro-luminescent wire and feature integration with cell phones, body monitoring technology, digital photography and more. So a transition to amateur radio is not such a leap.

"I am very much into the hacking scene," UHB said. "I'm cofounder of the NYC Resistor hacker group and I feel like the original hackers were hams. So I like ham radio because it is back to basics." The organization was her entrée to the amateur bands and trail-friendly radio.

Other members of NYC Resistor "started getting their licenses and bringing in hand-held radios and talking on local repeaters," she said. "So a friend and I went out to get our license to join in the fun. We used to meet in the evening on the K2RMX repeater to chat. And sometimes we would listen on the repeater with headphones while walking around the city to see who was on."

UHB's amateur radio interests would only grow.



World-renowned fashion designer Diana Eng, KC2UHB, uses a Yaesu FT-857d transceiver and EF-20 end-fed half wave antenna on an HF trail-friendly radio excursion to Mt. Carmel in Connecticut.

"There has been a big resurgence in DIY (do it yourself) and hardware hacking," she said. "But most DIY projects are not that technically advanced. Ham radio uses a lot of real science."

"I like how hams really have to know how things work to make contacts. I am hoping to share ham radio with the DIY community through (*Make*: magazine's Internet site) makezine. I think ham radio is a really great way to learn (how) technology works and (to) use science principles in real life."

UHB's interest in hands-on DIY and "homebrewing" stems from family life. "I think I really got into it after seeing my little brother building robots all the time," she said. "He is now a graduate student at MIT. He was always doing things with basic stamp (a type of microcontroller), and I thought 'if he can do it, I can too.'"

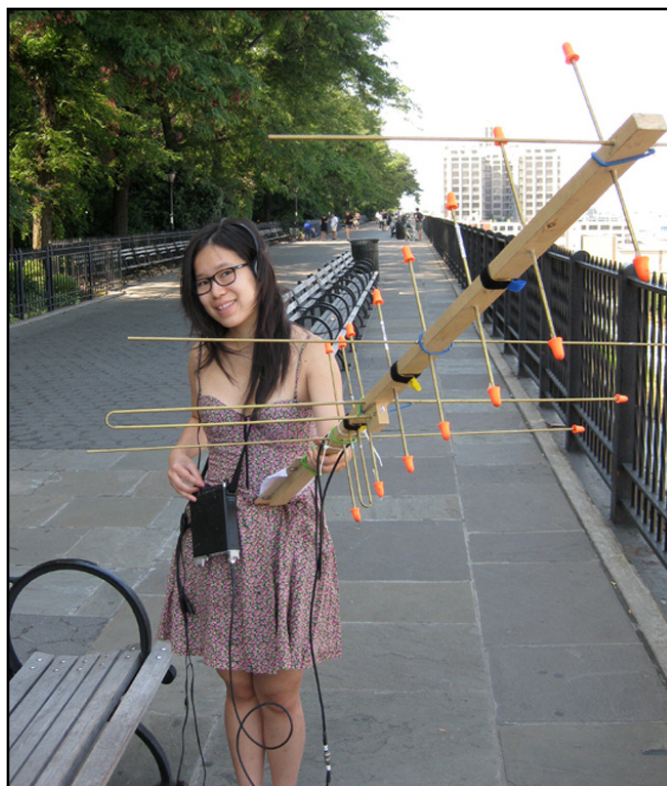
Living in Brooklyn with David Clausen, W2VV, the pair can't put up antennas – the plight of many city apart-

ment dwellers. "We usually operate HF portable at the park – picnic table portable – but even then it is really crowded and there is a lot of interference from cab stations, etc. I feel like city living is best for satellite (operation)."

Their friend, Tom Tumino, N2YTF, "really introduced ('VV and her) to ham hikes through SOTA (Summits On The Air)." 'VV and 'YTF "go every other weekend and have crimps for their shoes for the snow. I am a bit of a fair weather ham, and I enjoy it as pleasant recreation."

UHB's You Tube video "How-To: Set Up An HF Portable Radio While Hiking" is a 5-minute, 50-second tutorial on trail-friendly radio operation which is a must-see for newcomers and seasoned hikers alike. It's posted on the Trail-Friendly Radio Extra Web site: <http://www.TrailFriendlyRadio.blogspot.com>

"Today I'm in New Jersey at High Mountain with W2VV," UHB says to open the video. "We're trying to activate



During urban AMSAT operation in New York City, KC2UHB points a homebrew dual-band yagi toward a passing satellite.

SOTA Summit W2/NJ008 and we're going to be showing some tips for setting up an HF portable radio."

After a hike and T-FR set-up: Success. They made 20 contacts, including QSOs with Europe, South America and the United States, earning credit for the SOTA activation.

"Fall is the perfect time for hiking, it's not too hot and not too cold," the video's synopsis says. "... It's really easy to set up an HF portable radio and not a whole lot to carry up the mountain. This video shows how to get set up including how to hang the antenna in a cluster of trees and making contact with Italy."

'UHB "started out with the technician license. Then upgraded to the general. I've always taken the test with a friend. It's fun to have someone to study with."

She recently took the exam for Extra class, "but did not pass. I have some more studying to do. It's difficult for me to understand some of the concepts because of my background as a fashion designer.

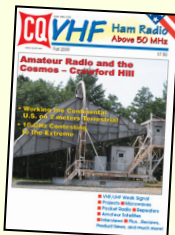
"I'm very lucky to have other hams who are in (NYC Resistor) to explain them to me. I like to work satellites because it's kind of romantic" and on a trip to Turks and Caicos (VP5) she "did a little DXing."

'UHB said operating VP5 "was actually the first time I had operated HF. We operated from the beach with a Buddipole. Being by the water really helped us make contacts that were a lot farther away than what we are normally able to make in Brooklyn. I imagine things were also better because there was a lot less interference."

She says "HF is neat because you can hear people from around the world. VHF/UHF is great on repeaters because the handhelds are portable and you can listen in anytime. And, of course I love the challenge of working satellites on VHF/UHF."

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DX Predictions

FEBRUARY 2010

Maximum usable frequency from West Coast, Central U.S. and East Coast (courtesy of Engineering Systems Inc., Box 1934, Middleburg, VA 20118). The numbers listed in each section are the average maximum usable frequencies (MUF) in MHz for contacting five major areas of the world centered on Africa-Kenya/Nairobi, Asia-Japan/Toyko, Oceania-Australia/Melbourne, Europe-Germany/Frankfurt, and South America-Brazil/Rio de Janeiro. Smoothed sunspot number = 6.

Chance of contact as determined by path loss is indicated as bold *MUF for good, plain MUF for fair, and in (parenthesis) for poor. UTC is hours.

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SA
10	(9)	8	*14	(8)	*12
12	(9)	8	*13	(8)	(12)
14	(17)	8	12	(11)	*23
16	20	10	*17	(15)	*26
18	21	(9)	15	(13)	*27
20	21	15	(17)	(9)	*28
22	18	*19	22	(8)	*28
24	16	*18	25	(8)	*26
2	12	17	26	8	*20
4	11	13	*21	7	*17
6	(10)	10	18	7	*15
8	(9)	*9	15	*8	*13

CENTRAL U.S.A.

UTC	AFRI	ASIA	OCEA	EURO	SA
8	(9)	*8	*13	*8	*13
10	(9)	8	*12	(8)	*12
12	(18)	8	12	(11)	*17
14	21	8	*18	16	*23
16	22	(8)	16	15	*26
18	*22	(8)	(14)	13	*27
20	21	(12)	20	(9)	*28
22	18	16	24	(9)	*28
24	*12	16	27	8	*23
2	11	(12)	22	8	*20
4	10	(9)	17	8	*17
6	(10)	(9)	15	7	*15

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SA
7	(12)	(8)	(13)	*8	*14
9	(11)	8	*12	(7)	*13
11	23	7	12	14	*17
13	*27	8	*18	*17	*22
15	*28	(8)	17	*17	*25
17	*28	(8)	(15)	15	*27
19	*27	(7)	(18)	(12)	*28
21	*22	(14)	22	(9)	*28
23	*15	(14)	26	8	*24
1	*14	(10)	(21)	8	*21
3	*13	(9)	16	8	*18
5	*12	(8)	(14)	7	*15



Diana Eng, KC2UHB, with antenna launcher slingshot at-the-ready, is joined by David Clausen, W2VV, during set-up for outdoor HF operation.



Heading up the trail with T-FR gear in their backpacks are Diana Eng, KC2UHB; and Tom Tumino, N2YTF.

'UHB and 'VV "use a homemade dual-band yagi antenna with a Yaesu VX3 and VX7" for AMSAT operation. Tracing the path of passing satellites with the antenna is great fun, 'UHB said. "I think it's neat that you are working with the satellite's orbit. Also, it feels more satisfying to make a contact."

For more down-to-earth operation, she said "I sometimes carry a Yaesu VX5 to talk on local repeaters."

Asked what *Project Runway* fashion designers' mentor Tim Gunn might say about her video-revealed antenna launching technique, 'UHB had a ready answer: "Make it work."

Links on the Trail-Friendly Radio Extra Web site

In addition to the Diana Eng, KC2UHB, "How-To" YouTube video on amateur radio HF field operation, the Trail-Friendly Radio Extra Web site has links to her fashion designs, her book "Fashion Geek," NYC Resistors hackers group, and makezine. You'll also find more photographs of 'UHB, W2VV and N2YTF on their trail-friendly radio expeditions. Visit: <http://www.TrailFriendlyRadio.blogspot.com>.



Hibernating DXers Always Awaken

Kelly Jones, N0VD

One of the great things about our hobby as DXers is that no matter how long one takes off for “retirement”, once the spark returns, the bands will always be full of life – well, maybe more so if the current solar cycle would get into full swing, but that’s a whole ‘nuther story. This story, however, is about a DXer who took some time off for family and work commitments but has returned to the air with a renewed sparkle in his eye. It’s that sparkle we all experience after making our very first DX contact – one that may hibernate, but never completely go away.

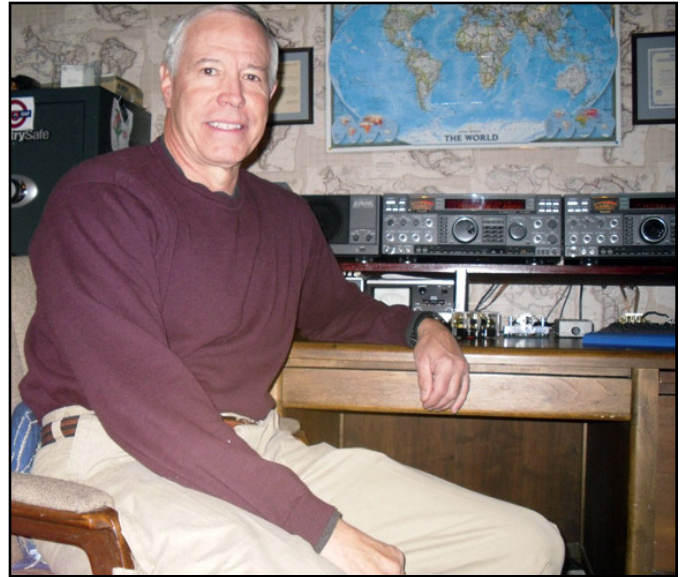
I had the opportunity to meet Jay Temple, W5JQ, shortly after moving to Colorado nearly 10 years ago. Jay had been living in the small town that I ultimately decided to call home for a couple of years, prior to my arrival. Since I was coming from Illinois, it was great to meet some of the local DXers – especially tower climbers like Jay! At the time, he was in the process of replacing his old tower with a new one and also had plans for a much larger Yagi. While he had accomplished DXCC over the years, Jay had never really pursued the multitudes of DX awards, considering himself more of a rag chewer. However, part of the reasoning for installing the new tower and antennas was to become more serious about chasing the 5BDXCC award.

For the next couple of years, Jay was a regular at the local DX club meetings and could often be found in the pileups with the rest of us. Occasionally we’d bump into each other at the local greasy spoon restaurant or at the local hardware store and swap stories of “did you work the last big DXpedition” or bounce around ideas on how to help improve his return QSL rates. For the most part, he was an active DXer enjoying the hobby with the rest of us.

However, as occasionally happens, other life priorities became the focus of Jay’s free time. Work, family and other obligations pretty much silenced his key for a number of years. He quit coming to the DX meetings, the locals never heard him on the air and on the rare occasion we’d see each other in person, I’d ask if he’d worked this or that station. Almost always the answer was “No, I’ve just been too busy with other things.” This was understandable since he had recently expanded his family by two children and his workload took the rest of his time.

One of the things that I learned about Jay was that in all of the years that he had been licensed, he’d never been to a Dayton Hamvention®. In 2003 (while he was still active) I talked him into joining me on the pilgrimage that is Dayton. He enjoyed it so much that in 2005, he asked if he could join me again for the trip. This was a no-brainer, of course, and his second trip to Dayton was “in the books.” Unfortunately, this was about the time he went into “ham radio hibernation” as other life priorities took over. In the following years I only saw Jay a handful of times.

Fast forward to early May, 2009. I had put out a request on our local DX group email reflector asking if somebody might be able to haul a few pieces of gear back to Colorado from



W5JQ ready to work on his 5BDXCC award.

Dayton. I was flying to the Dayton Hamvention® and knew that I would be returning with a few large pieces of gear that wouldn’t fit on the plane. Much to my surprise, W5JQ called me a few days before Dayton and said that he was going to be in Dayton during the Hamvention®. As fate would have it, Jay had been shopping for a 5th wheel trailer and purchased one from a dealer in Dayton, Ohio. I thought this was a little strange, but he told me the story of how the dealer made him an offer he couldn’t refuse and he was driving from Colorado to Dayton to pick it up. Of course, this was perfect timing for me, since I basically had a personal delivery man that could bring back the large pieces of gear.

During Hamvention®, a group of us got together for dinner and urged Jay to at least attend one day of the fest – after all, he was already there and it had been four years since he last went. There was a slight twinkle in his eye when he heard this suggestion. We joked around and enjoyed each other’s company much like we did on his first visit six years earlier. In retrospect, this was quite likely the catalyst that brought him out of hibernation.

Over the course of the next few months, I spoke to him more in one month than I had in the previous five years. The common thread in nearly all of our conversations was that he was seriously thinking about getting back on the air and chasing DX once again.

Then it happened. Jay called me to say he had ordered a HyTower and wanted to get it in the ground before winter. First snow falls tend to come in September in Colorado – and it was already September! Although there is an unwritten law that says the uglier the weather when an antenna is put up, the better it



W5JQ leveling the HyTower base.



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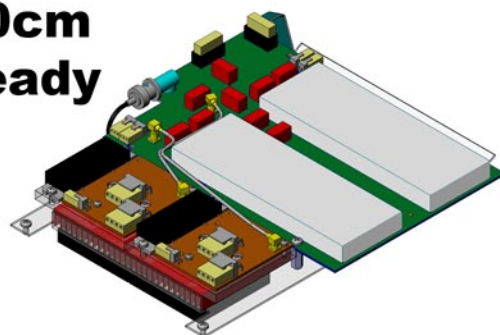
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works, I didn't really want to be standing outside in 10 degree temperatures with snow blowing at 30mph. And due to some order snafus, it looked like it could be December before the antenna would even get here. However, the gods must have been smiling on us because we were able to get the base set in late September (between snow falls) and the rest of the antenna in the air and all radials buried before the ground froze. This now gave W5JQ a complete arsenal for 10-160 meters to chase his goal of 5BDXCC.

Jay's wanted to start working on 80 and 15 meter DXCC. Before the HyTower went up, Jay had managed to work just a handful of entities on 80m. He had many more on 15, but still needed a few to top the 100 mark. As it turned out, the CQWW CW contest was just two weeks away. If you have not already learned the secret to easy DXing, during the six major contests, it is very easy to pick up some exotic and semi-rare DXCC entities. In fact, it's not uncommon to be able to work DXCC over the course of that weekend! So everything was all set: 80m was going to be his focus, with the goal of putting some new band countries in the log on all bands.

Sunday morning of the CQWW CW contest I get a phone call from Jay. He is all excited because not only has he managed 25 new countries on 80, he's also put a few new ones in the log on 15 and 20. All of this from a guy who, just a few short months ago, had inches of dust and cobwebs hanging off his equipment.

In fact, as I write this, Jay and I had sat in a local pub earlier in the evening talking about DXing, QSLing and bigger and better antennas. He's already planning to raise his tower another 10 feet and move his tri-bander up 20 feet this spring. And if that wasn't enough, Jay was talking about participating in one of the 2010 ARRL DX contests from Zone 1! It really great to have an old friend back in the DXing game. Now when I see a 60 over S9 signal on my meter, I don't have to ask myself, "Who's that?" I'm almost certain that it's W5JQ who's forgotten to go split before dumping his call in the DX pileups!

That's it for this month's column. A very special thanks to Jay Temple, W5JQ, for letting me tell your story. I look forward to hearing your comments, complaints or whatever is on your mind. If you have a story or opinion you would like to share, please send it to me at nOvd@dxcentral.com. I'll do my best to include it in an upcoming column. Until next time, see you in pileups - and now on Twitter as NOVD!



Several Short Subjects

By Carl Luetzelschwab, K9LA

This month's column is devoted to several topics that just aren't long enough by themselves. The topics are varied, and I hope you enjoy them (and maybe even learn something!).

DXing From The South Pacific

Last October's Conway Reef DXpedition (3D20CR) reported, "We have about a two hour window around midday where there is little to any activity because of propagation conditions." Likewise, the November 2009 Chesterfield Island DXpedition (TX3A) commented that "Just before noon almost every day (0100 UTC), conditions here deteriorate on the high bands (20 to 10 m) and do not recover until about 3 PM local time."

Both of these DXpeditions experienced the same phenomenon – significantly increased D region absorption around local noon. Figure 1 gives a hint of this.

Figure 1 is an azimuthal equidistant map centered on TX3A. The month and time are set up for the month of this DXpedition at local noon. Note that the Sun (the yellow star underneath the red-dotted QTH flag) is pretty much directly overhead (a solar zenith angle of 0 degrees) at TX3A at local noon. Since absorption is inversely proportional to the solar zenith angle, the most absorption will occur at local noon – and it will be especially high when the Sun is directly overhead.

We can estimate the D region absorption in the ionosphere just to the north of TX3A (assuming paths to Europe, Japan, and North America) by using the figures on pages 297 and 298 in *Ionospheric Radio Propagation* (K. Davies, 1965, NBS Monograph 80). Figure 2 does this for 20m from sunrise (the plus sign at 90 degrees on the left) to sunset (the plus sign at 90 degrees on the right) for a 10 degree elevation angle out of TX3A.

The absorption increases by about 14 dB on 20m from either sunrise or sunset conditions to local noon conditions at TX3A in November. This increase in absorption will also occur on the next hop out of TX3A along a given path (but not to the same degree as the solar zenith angle will be higher farther away from the overhead Sun), so it's easy to see why 20m could drop out around local noon when you're on a DXpedition to the South Pacific in northern hemisphere winter (when the Sun is in the southern hemisphere).

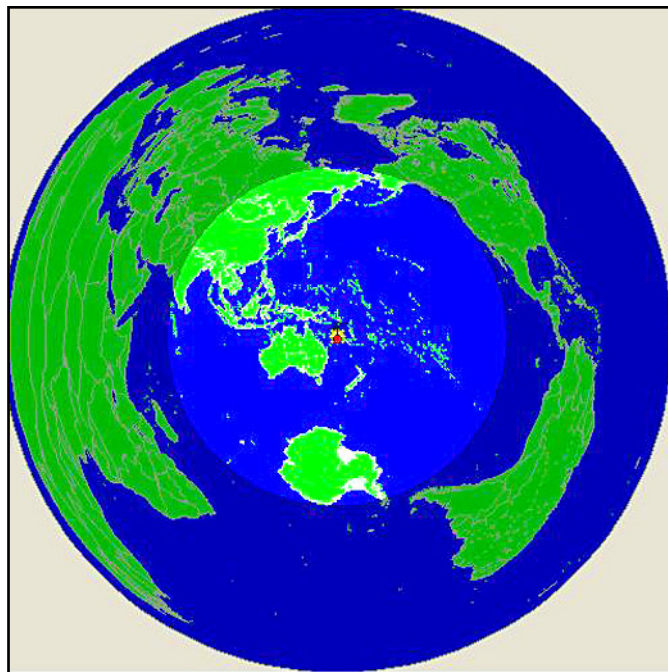


Figure 1 – TX3A in mid November at 0100 UTC.

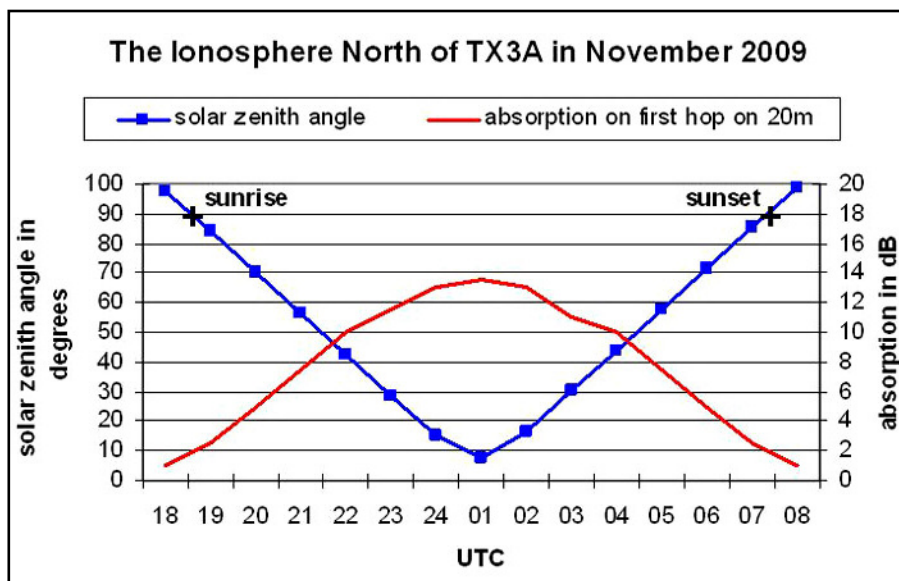


Figure 2 – Absorption near TX3A.

Of course, the solution to this is to move up in frequency, where absorption is less. But unfortunately, these DX-peditions occurred at extreme solar minimum when the MUF at the other end of the path likely wasn't high enough to support the higher frequencies.

Is There DXing On 4 MHz?

An interesting article appeared on the web awhile back. Although the author's explanation of ionization raised my eyebrows, his comment about propagation on 4 MHz was even more puzzling. He said, "80M signals are almost always highly or fully attenuated by the D-layer, and what propagation that occurs on 4 MHz is actually by the signals traveling across the Earth's surface, or ground wave propagation." The author also included a table summarizing propagation on the amateur bands, and for 4 MHz the entry read "Seldom has skip propagation." It's not clear to me if the author is a ham, but I can say for sure if he is he doesn't have any real-world experience on 80m.

Of course, the real fact is that ionospheric absorption on 4 MHz decreases significantly at night, thus allowing

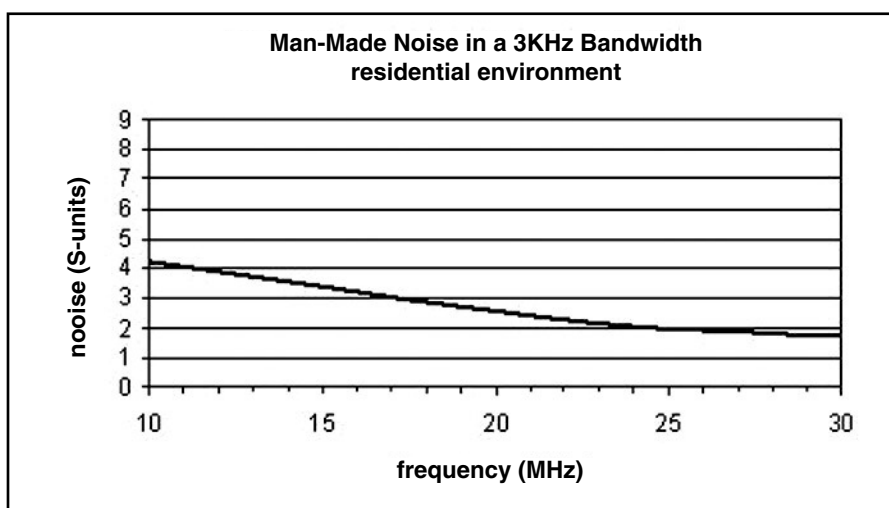


Figure 3 – Trend of Man-Made Noise

worldwide propagation. Sure, it's not there every night due to the night-to-night variation of the ionosphere, but to say 4 MHz seldom has skip propagation is just wrong.

So rest assured that there is DXing on 4 MHz.

Why Is 17m Open, But Not 20m? Or 15m, But Not 10m?

Normally the lower band is open but not the higher band due to the MUF (maximum usable frequency) not being high enough. But when the MUF is high enough, why is the higher band open but not the lower band?

One possibility is the behavior of signal strength and man-made noise. Signal strength usually increases as the frequency goes up due to less ionospheric absorption. Man-made noise usually increases with a lowering of the frequency (see Figure 3). Thus going higher in frequency should result in a stronger signal, with lower background noise. That could make the higher band appear to be open when the lower band isn't.

Another possibility for the higher band being open but not the lower band is a unique mode of propagation. For example, trans-equatorial propagation or sporadic E could be available on the higher band, but not on the lower band.

And yet another possibility is the incoming elevation angle dictated by the ionosphere for the path. The issue is the antenna pattern in terms of electrical height – for a given antenna height, the pattern on the higher band will produce more low angle radiation than the pattern

on the lower band. Thus, an incoming angle at your QTH could be below the main lobe of your antenna system on the lower band, resulting in a significant signal strength disadvantage. But the incoming angle could be right in the main lobe of your antenna system on the higher band, resulting in 'full gain' from your antenna system.

In general, I would expect this phenomenon to be more pronounced on the longer paths.

Index Of Refraction In The Ionosphere

The atmosphere outside the ionosphere (for example, in the troposphere where VHF/UHF ducting can occur) is a non-dispersive medium. Non-dispersive means the index of refraction is independent of the frequency of the electromagnetic wave. The math works out such that an index of refraction greater than 1 causes bending in the atmosphere outside the ionosphere.

In contrast, the ionosphere is a dispersive medium – the index of refraction depends on the frequency of the electromagnetic wave. The math works out such that an index of refraction less than 1 causes bending in the ionosphere (in other words, the refractive index decreases with an increase in electron density). In the ionosphere we necessarily have to use the concept of group velocity as opposed to phase velocity.

For a more detailed discussion of this, see any good ionospheric book (for example, *Ionospheric Radio*, Chapter 3, K. Davies, 1990, Peter Peregrinus Ltd).

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Homeland Security Revisited: Who Will **REALLY** Be There When All Else Fails?



By **Bill Sexton, AAA9PC / AAR1FP / N1IN**

Editor's note: This month, Bill is offering a commentary on the state of *MARS* and the world in which it operates. The opinions expressed are personal and do not necessarily represent those of *Army MARS*, of *WorldRadio Online* or of *CQ Communications*.

With laudable concern for national security, amateur radio—the organized element, anyway—is firmly fixed on homeland security as its overriding mission in these perilous times. And rightly so.

Unfortunately, that focus puts us hams in very lonely company. Unemployment, national debt, war in Afghanistan, health care, the national political logjam, you name it, all eclipse disaster preparedness in the American mindset as this column is being written.

“The question of terrorism barely came up” at the first meeting of Republican governors after the November off-year elections, one commentator noted. There’s little likelihood the other party’s governors would have differed.

It’s not as though people lack reminders of the peril.

Last April, vandals sliced through eight underground fiber cables in northern California, knocking out not only telephones but cash machines, business computers and even internal phone operation at several hospitals and businesses in an area skirting Silicon Valley. The Internet’s total vulnerability was made manifestly clear and was soon forgotten.

More recently, the killings at Ft Hood, TX last November and arrest of five young Muslim men from Virginia five weeks later in Pakistan heightened official alarm about the potential of homegrown terrorist cells springing up undetected here in the homeland.

Regardless of the palpable indifference across America, the natural and manmade risks we face together haven’t gone away just because the public attention has.

The MARS Role

Take a relatively minor example of the national disconnect as it affects one sector of amateur radio: The Military Affiliate Radio System, which by definition is the ham entity most closely aligned with federal emergency response, has been steadily losing budgetary support from its Pentagon sponsors, even as homeland security spending exploded elsewhere following 9/11.

Navy-Marine Corps MARS lives a ticking clock as the Navy determines its future one year at a time. Meanwhile at Army

MARS, the latest budget cut this fall left HQ staff with four employees (a single Army civil servant and three contractors). These four are supposed to manage a thousand and more emergency responders spread across 50 states *plus* military outposts in Europe, Asia and the Pacific. Recruiting, training, answering to the chain of command, writing operational doctrine, exercising control during emergency mobilizations, the lot. Good luck, gang.

And even as the Department of the Army activated a brand-new headquarters for domestic civil support after Hurricane Katrina (ARNORTH), Army MARS was left within the military command charged with conduct of combat communications abroad (NETCOM). “Orphaned” is not too strong a word considering the awesome global responsibilities concentrated in the HQ to which Army MARS still reports. The arrangement made sense in the era of MARSgrams and phone patches for troops fighting abroad, but these services have been supplanted by e-mail and cell phones.

That arguably parochial concern (agreed, there is a war on after all) pales in comparison with the larger evidences of disconnect. Take infrastructure.

A National Dilemma

Experts on homeland security in and out of government have long viewed robust resilience as the best defense against disaster, manmade or natural, and it deserves a lot more attention than airport passenger screening.

The key to resilience is infrastructure. Call it the New Orleans lesson if you will, after Katrina’s impact on neglected levees (which a federal district court has lately blamed squarely on neglect by the Corps of Engineers).

Yet among the priorities of federal and state government today, investment in the desperately-needed upgrading of highways, bridges, dams, ports, toxic chemical factories, etc., is too tiny even to be labeled a “priority.” It barely qualifies as an “after-thought.”

Before taking a closer look at MARS engagement with these issues I should emphasize the opinions expressed here are mine alone and are in no way attributable to past or present MARS leadership. I’ll further concede my recklessness of putting such views down on paper a full two months before this is to be published. Who knows what unpredictable event(s) might uproot the world situation in the meantime?

Otherwise, however, the time is ripe. Stu Carter, a retired Air Force LTC, has been replaced after three years as Chief of

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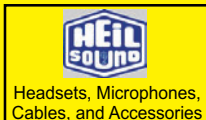
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Infrastructure Security, In the Dutch Manner

Compare the Dutch response to the coastal floodplains to that of the United States:

Worried more about natural calamity than terrorist attack—with good reason—the Netherlands is leading a fight of a different kind,” reported the Washington Post. “How to live with global warming.”

“As sea levels swell and storms intensify, the Dutch are spending billions of euros on ‘floating communities’ that can rise with surging flood waters, on cavernous garages that double as urban floodplains and on re-engineering parts of a coastline as long as North Carolina’s,” the Post reported from Amsterdam. “The government is engaging in ‘selective relocation’ of farmers from flood-prone areas and expanding rivers and canals to contain anticipated swells.

“The measures are putting this water world of dikes, levees and pumps that have kept Dutch feet dry for centuries ahead of the rest of the world in adapting to harsher climates ahead,” the newspaper reported.

Army MARS by ex-Signal Corps communications technician Jim Griffin. This veteran communicator, now a civil servant, had been Carter’s deputy for two years and oversaw renovation of the MARS gateway station at the Ft Huachuca AZ HQ.

Carter was a forward thinker who quickly discerned that MARS hadn’t caught up with the full implications of 9/11 and Katrina. He poured his abundant energy (he’s a marathon biker) into totally restructuring the tactics of emergency

response based on two givens: (a) full readiness to serve the military’s needs if ever called on but in the meantime (b) aggressive pursuit of direct support relationships with civil response agencies, pitching in to help in any way they need. His tenure culminated in a massive retraining program. Failure to pass it meant an end to MARS membership. The new Army MARS is much leaner.

MARS’s Enhanced Toolbox

In referring to tactics, I mean the mechanisms of ecomm support such as: expanding the Army Mars Winlink system, calling for designation of regional deployment teams *before* disaster happens, pressing members to associate themselves with local first-responder units, reorienting HF radio nets to serve the command and control function during emergencies, and establishing an early-warning protocol all EMAs can use. Carter’s was a phenomenal undertaking.

With that transformation well underway, Carter’s successor is inevitably faced with addressing the broader issues of strategy, by which is meant the “where” and “why” and “how” of applying the expanded toolbox. Given the limited resources of his office, it’s not an enviable prospect.

No strategic issue is more significant (nor probably more difficult) than reconciling how *three* different MARS services (Air Force, Navy-Marine Corps and Army) are to relate to one chain of command (civil or military) under the Incident Command System. If there’s one fundamental principle equally central to military and civil response doctrine, it’s unity of command. Yet in the present scheme of things, the three services operate independently. And the MARS chiefs only get to strategize once a

year, and that for only a few hours at the Dayton Hamvention®.

A Defense Department “instruction” to clarify who’s in charge under what circumstances has been in preparation for some years. It hadn’t emerged as this was written.

An ARES Challenge?

There’s rethinking of old attitudes in the wider ham community, too, as evidenced by recent commentaries by Jerry Boyd N7WR, a former police and fire chief and until recently, a longtime contributor to this publication. “In my last *WorldRadio* column I offered the opinion that the days of amateurs providing emergency communications assistance to public-safety agencies is, in many places, drawing to a close,” he wrote in *CQ Magazine* last fall.

His point: Government-funded radio gear and fulltime staffers to operate it are gradually taking over from the amateur force in state and municipal agencies.

In response to his dismaying observation, Boyd said. “At least a dozen writers, some public-safety professionals like me, underscored my point . . . Their common question is, ‘Where do we go next?’ “Boyd’s unhesitating answer was to offer support to hospitals, bus systems, schools, local governments and the Red Cross.

Fresh thinking is showing at the upper levels of government. In one notable instance, Defense Secretary Robert Gates has ordered creation of a new command to defend military networks against computer attacks. As an indication of the priority he assigns cyber-defense, he said he’ll recommend that the President put the Director of the National Security Agency in charge, with the rank of four-star general.

Later it was revealed that NORAD, the North American Aerospace Defense Command, is reviewing the level of its commitment to preventing another 9/11 attack. A top general explained, “The fighter force is extremely expensive, so you always have to ask yourself the question, ‘How much is enough?’ That’s a question that will surely resonate with airline passengers bemused by shoe inspections before boarding planes.

At the Edge of Disaster

Re-evaluating the current preoccupations of homeland security and redirecting its priorities is a constant theme for Stephen Flynn, the security consultant

and former Coast Guard officer whose 2007 book, *The Edge of Disaster*, established him as an eminent thinker in the field. Two years after the book’s publication—and well into the new administration in Washington—Flynn remains distressed by the national focus.

“While there is still room for debate whether DHS was a philosophical mistake,” he wrote in the May-June 2009 issue of *The American Interest*, “there’s no question it has so far proven to be a bureaucratic failure . . . After the photo-ops accompanying its birth in November 2002, DHS was largely orphaned by the White House and Congress. . .

“In short, despite the rhetoric of the past seven years, when it comes to reducing America’s exposure to the threat and consequences of terrorism within U.S. borders, there is not much ‘there’ there, behind the homeland security curtain. . . President Obama has been set up to be blamed for all the shortcomings that he has inherited when disaster strikes again.”

Flynn urged the President “to be truthful in acknowledging that the threat of terrorism can never be fully eradicated, even as he makes clear that its risks and consequences can be successfully managed.” He called on Obama to “challenge [the American people] to share in the responsibility of bolstering the nation’s resilience in the face of all hazards, not just manmade ones.”

Well, resilience is and always has been at the heart of amateur radio’s involvement in homeland security.

It lies at the core of the Army MARS task of providing replacement communications during the initial 48 to 72 hours of a major disaster while federal response gets moving—a commitment that may seem overly brief measured against the lasting impact on communications of a 100-year earthquake or another Katrina.

Or of a really widespread cyber attack along the lines of the sabotage to fiber cables by party or parties unknown who simply climbed down four manholes in Morgan Hill, CA (close by San Jose) in the middle of an April night. New question for DHS: Who guards America’s manholes?

For hams dedicated to homeland security, there’s a lot to think about these days—none of us more so than Chief Griffin of Army MARS and his peers at Air Force and Marine Corps MARS and the senior commanders the three report to. It’s a time for facing facts if there ever was one. Who’ll be there when all else fails?

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Mapping the Road to Recruitment

Devere "Dee" Logan, W1HEO

Expanding the amateur radio population doesn't just happen. It takes initiative by hams. That's you, me, and every licensee who enjoys this great hobby's fun and public service benefits. It's certainly a case of "the more the merrier!"

Recruiting should be an ongoing effort; especially by radio clubs concerned with building membership to insure their future. But recruiting more hams is equally important to each of us. We know how important it is to have a healthy, growing radio service. Without growth, our frequencies could be at risk, perhaps snapped up by others who would love to have them for their own purposes.

While we're not crying wolf, we do see signs that more needs to be done. You may have noted the no-growth status of some radio clubs. Their club members are growing older, less active, and not so involved, while their club is slowly turning into a coffee-and-doughnuts social club. Unless they add activities to attract new members or recruit new hams, their future prospects are bleak.

In contrast, we probably know a number of active radio clubs that present a more positive prospect for the future. Their clubs

have a variety of activities, interesting programs, licensing classes, public service participation, repeaters, nets, newsletters, publicity and more. They're "radio active."

Jump-starting Recruitment

Dictionaries supply several definitions for recruit. The one appropriate in our case is: "to furnish or replenish with a fresh supply; to renew or restore health and strength." Certainly sounds like exactly what we need.

There's no magic tonic that will make this easy. Yet, recruiting can be as simple as individual radio amateurs talking to friends about our hobby, or as organized as a club-wide campaign conducted by a team of members.

Most of us can recall being introduced to ham radio by a friend or relative. These "Elmers" continue to be one of the most effective ways to attract and assist potential licensees. There's nothing like the personal, human touch, and it's still one of the basic magic bullets of recruiting.

The recruiting process consists of several interconnected steps. We identified them when the Ham Radio Promotion



Field Day offers an ideal way to promote amateur radio to the public, using banners such as this one.

Project was formed (www.neoham.org). It all starts with raising awareness of what ham radio is. Publicity and promotion can do this. We as individuals certainly have explained to others what amateur radio is and what it isn't.

Once people are familiar with ham radio, we can next seek out those who appear interested, and consider them prospects for licensing. At that point, we can qualify them as serious candidates, and perhaps steer them to sources of help. This is where the radio club traditionally became the point of entry through licensing classes and Elmering. Today, several alternative sources of help can be found, including study guides and internet websites.

Recruiting Tool Kits

Presenting amateur radio as an interesting, fun hobby and public service activity can be done in a variety of ways. The simplest approach is for individuals to tell others about their own personal radio experiences and possibly to offer a visit to a radio shack. Having promotional literature to pass along can help show the wide range of ham radio activities. Radio magazines and club newsletters are typical and would be a good addition to a one-on-one approach.

Most active hams have a number of interesting personal stories that can be intriguing. Contacts with exotic locales, unusual QSOs, and emergency communication events such as Field Day are typical. A typical comment might be: "I had an interesting chat with a radio ham in England yesterday. He said that they were getting record rainfall in some sections." Such personal stories, included as part of normal conversations, build on the human interest aspects of ham radio.

Once people express interest in our hobby, referring them to a local radio club can be the next step. Clubs that make an effort to welcome visitors and offer to help them on the road to becoming licensed are some of the best recruiting tools that we have. Offering licensing classes, introductory orientation sessions and having a group of helping hams are key ingredients in assisting prospects interested in becoming licensed. The benefit can be a dual one: adding to our ham population and the radio club membership roster as well.

The recruiting process can be made easier by having an assortment of tools. Certainly amateur radio literature, magazines, and radio club newsletters are use-

ful. Having a promotional video, such as "Amateur Radio: Wireless Window to the World," produced by the Ham Radio Promotion Project, is an easy way to present our story. Displays showing photos of typical ham radio activities are valuable additions to club presentations to schools, scout groups etc.

Finding The Audiences

Once the recruiting tools are in hand, it's time to find audiences for our story. Radio clubs can offer a program or talk on ham radio to various groups, issue publicity stories on activities such as Field Day, or sponsor their own presentations at libraries, schools, scout troops etc. Our previous columns have suggested a number of ways to promote and publicize ham radio. Clubs should have some continuing efforts to do this.

Recruiting, like marketing, benefits from having a list of prospects. Clubs can recruit new members by developing a list of area hams and sending e-mail invitations to meetings. A notice to local media also helps, along with word-of-mouth and personal invitations by club members.

Expanding our network of individuals who are familiar with us and can spread the word to others is a worthwhile practice. Social media, such as blogs, Facebook, YouTube, Twitter etc. are additional options, but not all are appropriate or worth the time and effort required to make them effective. There are many ways to get the word out, so find the ones that work best for you or your club and for which you have the necessary resources.

Recruiting is not rocket science. It can be done easily in various ways, from simple individual contacts to well-organized radio club presentations. So let's shift into high gear and hit the road that leads to the growth of amateur radio!

Devere "Dee" Logan, W1HEO, is a veteran public relations counselor and writer. He's been active in radio clubs for more than 40 years.

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Telegrams to Santa

By Jim Wades, WB8SIW

Even an unemployment rate near 20% couldn't dampen the Christmas spirit of Saginaw, Michigan residents during their 2009 "Holidays in the Heart of the City" event. As in previous years, the Saginaw Valley Amateur Radio Association (SVARA) was part of the event, assisting with parade communications and bringing holiday cheer to the children.

For many years, the club has maintained a tradition of collecting radiograms addressed to North Pole, Alaska. These messages to "Santa Claus" allow the children to request gifts, while undoubtedly providing some useful insights to Mom and Dad looking over the children's shoulders as they complete the message forms.

In prior years, these "Santagram" messages were originated via the National Traffic System (NTS). Arrangements were made in advance with Ed Trump, AL7N, of Fairbanks, Alaska to accept the messages and deliver them to North Pole, Alaska, where volunteers have traditionally processed letters addressed to Santa. Unfortunately, in recent years, it was found that few messages made it to their destination. The ongoing deterioration in the level of NTS participation simply resulted in Santagrams disappearing within the system or arriving weeks late.

While planning the event in 2008, SVARA member Joe Turner, K8CQF, a former Michigan Section Traffic Manager, contacted Ed to discuss the problem of disappearing messages. Ed then came up with a simple solution; the use of land-line telegraphy. As originally envisioned, the SVARA group would collect the messages and then transmit the file to me, via ham radio, and I would then put them on a land-line Morse circuit directly to Alaska. After some consideration, I suggested a slightly modified approach. "Why not just originate them via land-line Morse at the event itself?" With that suggestion, an annual demonstration of Morse telegraphy was born!

The process is actually quite simple. A temporary telegraph office is established at the "Holidays in the Heart of the City" event. A link is established through one of the US or Canadian telegraph hub systems, and the telegrams are sent live to Fairbanks, Alaska via American Morse.

The 2009 event took place in two phases. The first phase was the traditional outdoor event. On Friday evening, November 21, the SVARA group set up its communications trailer in a prominent location just outside the entrance to the city zoo, where the main holiday festivities take place. The telegraph office was then set up and connected to Fairbanks. After a few



Children eagerly lined up to send a telegram to Santa.



Members of the Saginaw Amateur Radio Association sent "Santagrams" to Santa Claus via Morse code.

quick tests, things were ready to go for the Santagram portion of the event.

As children and their parents approach the tables, they are assisted by SVARA members as they fill out their Santagram forms. The completed telegram forms are then passed to Jim Wades, who transmits them over the Morse wire to Fairbanks. The steady rhythm of the telegraph sounder does much to adver-

tise the Santagram activity. People hear the Morse from the local sounder, become curious and are attracted to the table where they are encouraged to file their messages to Santa.

For the operator, sitting outside in sub-freezing temperatures pounding on the old Vibroplex bug for a few hours can be a somewhat "chilling" experience. However, seeing the imagination of children at work and observing the fascination of both children and adults who have never seen telegraphy in action makes it well worthwhile.

On Saturday, the event moves to the Saginaw Historical Museum, commonly referred to as the Castle Museum. Here, yet more children are encouraged to send their Christmas wishes to

"Santa's Elves" at the North Pole via telegraph after having visited with Santa himself nearby. As with the previous night's outdoor event, both children and adults are fascinated by the art of telegraphy and they often can't wait to send a message!

While many of the messages are typical requests for toys and the like, some are rather poignant. It is not uncommon for an adult to file a message asking for a "job," a "home" to live in, or even a "new life." Nonetheless, most who visit the telegraph office ask for one or two Christmas gifts with the hope they will bring a bit of joy during the holiday season.

The SVARA members and the telegraph crew have a great time. Most people today, including many radio amateurs, have

Landline Morse Today

In the early days of telegraphy, the Morse system was quite visible. The railroad station agent often did double duty as the Western Union agent, sending and receiving telegrams for the local community. It was at the local depot that one waited for the train, obtained market quotations, picked up express packages or met the drayman. The steady rhythm of the telegraph sounder was a constant presence in the background of daily life.

With the advent of direct-dial long distance telephone service and the decline of rail passenger travel, the telegraph receded from public view, yet it remained a viable, technology widely used for a host of applications including sports play-by-play originations, newsgathering, brokerage work, railroad message service, pipeline work, and so forth. Even the telephone company used telegraphy for internal communications because telegraph circuits could be composited over voice circuits, allowing the later to remain in valuable toll service. The last commercial Morse systems in the United States remained in operation until the 1980s!

In North America, Morse telegraph instruments utilize a normally closed series current loop operating in the vicinity of 20 to 60-mA. Those radio amateurs who recall the old teletype machines will be quite familiar with this, as the mechanical teleprinter operates on the same principle.

Because wire and cable are the most expensive part of any telecommunications infrastructure, engineers are always looking for ways to squeeze the maximum revenue from their expensive physical plant. Over time, the basic simplex telegraph loop evolved to permit multiple telegraph signals to be carried over a single wire. With the arrival of stable vacuum tube oscillator circuits, carrier systems were developed, which greatly increased the number of telegraph circuits, which could be carried on a single wire. Today's modern computer modem owes much of its heritage to the carrier systems of the telegraph era. Listen to the output of a dial-up modem, and one hears "mark" and "space" tones that would be quite familiar to a telegraph engineer from the 1940s.

It is this modem technology, which allows one to use landline telegraphy today. In the 1980s, Ace Holman, a retired AT&T engineer, with the help of Greg Raven, Ed Trump, and other members of the Morse Telegraph Club (MTC), constructed a telegraph hub system built around modems using the old Bell-103 standard. The process of using the hub is actually quite simple:

An operator at a remote telegraph office configures his instruments in a normally closed current loop. Through a simple interface circuit, this loop is coupled to the input of a simple computer modem, such as an old Tandy DCM-6 or Western Union TLA. He then dials into the hub. At the hub side, an auto-answer frame detects the ringing voltage, answers, and automatically couples a dial-tone line to one of several modems associated with the hub. Through this process, multiple telegraph offices can be interconnected and share a common circuit. In practice, the telegraph

instruments behave just as if they were on an actual wire. One can still break the circuit by opening his key, and the sounders and relays at each connected office respond in unison.

Two hubs are currently in operation. The US telegraph hub ("KB") is located at Buchanan, Michigan, and the Canadian telegraph hub (HN) is located in Toronto, Ontario.

Enter The Internet

While the hub systems are still widely utilized, newer members of the MTC are beginning to adopt the "Morse KOB" program (www.morsekob.org) developed by MTC member Les Kerr. This system replaces the older hub technology with a computer server. As with the hub system, the traditional telegraph instruments still work as originally intended. With this system, a local current loop is established to operate the traditional telegraph instruments. This loop is then connected to a computer via a simple serial port interface circuit. Specially designed software is then used to communicate with the remote "KOB" server. With this system, an almost unlimited number of telegraph offices can be linked together, all of which behave just as if they were on a traditional telegraph wire 75-years ago!

The KOB system also allows one to access continuous news broadcasts, weather bulletins and code practice in American Morse code on any one of several channels. These services are ideal for one wishing to learn American Morse code or for those who wish to operate an authentic telegraph sounder in association with a museum exhibit.

The Repeater

I have reworked the Bell System Athearn Repeater originally used by Ace Holman to link the older KB telegraph hub with the more recent Internet based KOB network. On one side of the repeater, is a local current loop interfaced with the KB hub equipment. The other side of the repeater is a local current loop interfaced with the KOB network. This system provides a rare opportunity to see an original 80-year-old telegraph repeater in use in a manner consistent with its original application. A brief discussion of this repeater can be found on "YouTube" at: http://www.youtube.com/watch?v=_l8FpKK37cw

Donations

The MTC is looking for older Bell-103 standard modems. Examples include the old Tandy DCM-6 and the military BZ-277 A/G analog data interface. While these are obsolete for computer applications, telegraphers wishing to become active on the hub systems would be grateful for the donation of these older style modems. Please contact us at the following e-mail address if you have one to donate: jameswades@gmail.com

never seen a landline telegraph circuit in operation. Most are surprised to learn the American Morse code is in use. As a matter of fact, many are unaware that commercial and railroad telegraphers use the original version of the Morse code, which differs significantly from the Continental Code used by radio amateurs. A few individuals even had to be convinced we were actually transmitting the messages! One visitor, after hearing the explanation of how the telegraph circuit works was heard to say "I don't know whether to believe you or not." It took some time to convince him that the telegraph equipment was functional and the operators actually knew what they were doing.

During five or so hours of operation, approximately 322 Santagrams were originated and transmitted to Fairbanks. This is the highest quantity yet, and the interest is stronger with each passing year. We have found that the use of Morse adds an

air of mystery to such events, which would not be present with the use of voice or data communications. The success of the event owes much to the very uniqueness of the process of telegraphy.

After the conclusion of the event, Ed Trump at Fairbanks sends a list of children's first names, ages, and cities to the Editor of the local newspaper, so that children can see their messages made it to the North Pole. This provides both relevant feedback and increases the overall value of the event.

Ultimately, it's a win-win for everyone in which Christmas cheer and hope are provided to the children while the older children and adults are able to witness an important part of our telecommunications history in action. In addition, the local amateur radio club builds goodwill and interest in the community.

There seems little doubt a similar event can be created in other communities.

While an American Morse operator may be hard to come by in many areas, CW could certainly be used and it too would undoubtedly provide the necessary air of mystery, which seems to greatly add to such an event.

If you would like to learn more about land-line telegraphy, visit the web site of the Morse Telegraph Club at: www.morsetelegraphclub.org

One can also visit the Saginaw Valley Amateur Radio Association web page at: www.k8dac.com

Additionally, a brief video of the activity taken by Bob Wades, KA8KDR, during the activities at the Saginaw Historical Museum is available on "YouTube." Simply type "telegraph operator Saginaw" in the "YouTube" search engine.

Upcoming Changes To The Traffic Column

In recent months, much thought and discussion have been given to the future of the *Traffic* column. After several discussions with Editor Nancy Kott, we have decided to change the focus of the column somewhat. While we will continue to discuss traffic handling, the intent will be to expand the focus to include specific issues of emergency communication from home or passing traffic from a basic portable station in times of emergency.

Beginning in our next column, we will be returning to basics. One can expect columns on the theory and "mechanics" of emergency communications ranging from how to check-in to traffic nets to developing emergency power resources or deploying stations in the field.

While we will likely provide occasional insights into the best management practices for EmComm groups, the primary emphasis will be on traffic handling and individual preparedness. Our plan is to promote those skills and capabilities which can allow a radio amateur, either individually or within an organized group, to be genuinely prepared to assist himself, his family, or his community with high-quality emergency communications in the event of a disaster.

In keeping with this change, the name of the column will change to *Traffic and Preparedness*.

Happy 2010!

Finally, with this *Traffic* column, I would like to extend my best wishes for a happy and prosperous new year to all of our *WorldRadio Online* readers.



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NEW JERSEY - New Providence ARC Auction, February 19, New Providence Municipal Building Gym, New Providence. Sellers 5:30 pm, buyers 6:30 PM, auction starts 7 PM. Contact James Kern, KB2FCV, email james1787@aol.com, phone 908-219-4016, www.nparc.org.

PENNSYLVANIA - WACOM Special Event Station - February 1 through February 8th, 1900Z-1900Z, Washington, PA. Washington Amateur communications, W3C, Washington County, Pennsylvania Sportsmen Show. 21.285 14.280 7.260. QSL, Ed Oelschlager, 60 Carl Ave., B2, Eighty Four, PA 15330. For more info: wa3com@gmail.com or www.wacomarc.org

SOUTH CAROLINA - 37th Annual & Original Charleston Hamfest and Computer Show - Saturday, February 2, 8AM - 3 PM, Exchange Park Fairground, 9850 Hwy 78, Ladson. Talk-in The WA4USN linked Repeater System - 146.790-No-Tone Charleston, 145.250-Tone 123.0 Summerville and 147.045+ Tone 103.5 St. George. For more info: email wa4usn@amsat.org, phone Jenny, website www.wa4usn.org

WASHINGTON - Commemorating George Washington's birthday - W7G - Transmitting from the city of George in the state of Washington from 2200 UTC on February 19 through 2359 on February 22. Look for us around: 14.250 18.135 7.225 3.880. QSL via W7BJN.

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SPECIAL EVENT

Angel Santana, WP3GW, holds his Certificate of Participation in the Arecibo Observatory Special Event, activating the callsign KP4AO, November 1, 2009. Standing next to WP3GW is Angel Vazquez, WP3R, President of the radio club and organizer of the event, and an all ham family from the city of Trujillo Alto: Jose, KP4JRS, his father Jose, KP4JFR, his sister Marie, NP3YL and kneeling is Shelia, NP3SI, the wife of KP4JRS.

Photo by Angel Santana, WP3GW

SLOPER ANTENNAS

By Juergen A. Weigl, OE5CWL

Single- and Multi-Element Directive Antennas for the Low Bands

With calculations and practical experience, this book shows which basic concepts have to be considered for sloper antennas for the low bands. These fundamentals are supplemented by construction guidelines for directive antennas using a single element or several elements. Previously, gathering all the necessary information to construct an effective sloper for a particular application was tedious and time consuming. You'll find all the information needed for successful home building of the antennas.

Some of the Topics: Vertical dipole and sloper in free space, over perfect or real ground - sloper with several elements - feeding sloper antennas - multi-band sloper - W3DZZ and double Zepp as a sloper antenna - multi-element sloper antennas for multi-band operation - special types of halfwave sloper antennas and much more!

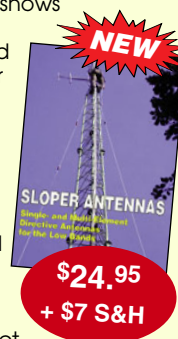
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CW is the Real Language of Love

By Randall Noon, KCØCCR

Some people think French is the language of love. *Au contraire mon ami*. CW is the language of love. Allow me to prove my case.

First, consider the fact that once the basic CW alphabet is known, CW can be more or less understood by persons who have no language at all in common. Using Q-codes is like knowing all the common "Getting Around" phrases in all the Berlitz language books for travelers. Consequently, if a person meets someone on the air using CW that he or she would like to know better, but speaks a foreign language, it is not a problem. On the other hand, if a person is using SSB, NFM, or AM and hears a potential Valentine transmitting from Flanders, and doesn't happen to speak a word of Walloon, Frisian, or Limburgish, the chance of any romance blossoming from the QSO is slim.

Then, there is the fact that CW sounds poetic and musical. Shortwave listeners who don't know CW have told me how they often listen to CW exchanges in the amateur bands just because they sound pretty and they enjoy the rhythms. It's sort of like listening to the ocean waves, rain, or New Age Music. One night during a QSO with a fellow in Ohio, he asked me out of the blue whether I played an instrument. When I told him I did, he then told me he was a retired music teacher and he thought my strings of three consecutive dits in characters like "S" or "3" sounded like triplets being played.

There are publications and web sites that explain how to turn CW messages into music. Two such sites are <http://homepage.ntlworld.com/dmitrismirnov/MorseMusic.html> and www.philtulga.com/morse.html.

Several songs have Morse code letters in their musical themes, and some have even used Morse code alone as a solo part. Everyone knows about the Morse code "V" for victory theme in Beethoven's Fifth Symphony, and one of the National Public Radio bumps is a piano vamp that sounds like "C" followed by "S" repeated over and over.

Have you heard Joe Walsh's *Songs for a Dying Planet*, where the song, *Vote for Me* is preceded by a CW message? Joe Walsh holds an Advanced Class license, by the way, and has sometimes used Morse code solos to introduce other songs. There is a song by Rush called YYZ in their album, *Moving Pictures*. The rhythm that corresponds to the letters "Y-Y-Z" in Morse was inspired by landing at Toronto International Airport, whose three letter airport code is YYZ. In Kate Bush's album, *Hounds of Love*, she worked S-O-S into the song *Watching You Without Me*.

Of course, my personal favorite use of CW in music is done by the Ham Band, who compose and play music for ham operators. My favorite number of theirs is *It's Great to QSO in Morse Again*. For Valentine's Day, however, you may wish to listen to their sad, three-quarter time love song, *The Radio Widow*. There are many more examples of CW in music too

numerous to list here. They all attest to the fact that CW is so much like music that musicians actually incorporate CW into their compositions.

With respect to poetry, there is nothing more romantic than listening to the Bard's sonnets in CW. All 152 of Shakespeare's sonnets have been transcribed into CW for your listening and CW copying improvement pleasure. A person can chose a listening speed at 7, 13 or 20 wpm. The web site for this literary treat is http://www.retards.org/radio/shakespeares_sonnets_cw/. For those who recall the song *Brush up Your Shakespeare*, from *Kiss Me Kate*, the lyrics of that song are still true today:

Brush up your Shakespeare,
Start quoting him now.
Brush up your Shakespeare
And the women you will wow.

By the way, the reader can see the *Brush up Your Shakespeare* number performed on You Tube at <http://www.youtube.com/watch?v=aSmZfnax1yw>. Also, did you know that there are books on CW, such as *The Princess of Mars*? These are great ways to enjoy improving your ability to copy CW. Per license agreement, you can download the Edgar Rice Burroughs science fiction novel at http://www.hotpeppersoftware.com/downloads/pom_downloads.html. It's not a Shakespeare sonnet, but it's certainly fun.

Of course, CW could not be claimed to be the language of love unless it was actually used to bring lovers together, and it has done this very well since the 1840's. Long before the internet and chat rooms, there was Morse code. When telegraph lines were quiet and operators had to ensure that the lines were open, they regularly tested the lines by sending messages of no consequence. When single male telegraphers in small town railroad stations and telegraph offices discovered that the large, central telegraph offices in the cities were often staffed with single ladies, it didn't take long for messages of no consequence to turn into messages carrying all kinds of consequences. As noted in the book, *The Victorian Internet* by Tom Standage, the telegraph was the first instant communication system to promote love and romance at a distance, and Mr. Standage artfully recounts many such romances in his book. Besides male and female telegraphers being smitten by Cupid, there are also many stories of proposals, rendezvous, love notes, assignations and arranged marriages being made via Western Union.

Likewise, CW in radio has been used since it was invented to promote romance. Who hasn't seen a movie on late night television where there was a marriage performed by proxy over the radio using telegraphy during a storm on the high seas? For those who listen the bands in the more quiet regions, such as 14.100 to 14.150, 21.100 to 21.200, or 28.100 to 28.300 MHz there are lots of people passing messages back and forth who

are using CW to get to know one another. And, of course, there are also messages on the CW sub-bands of love gone badly. One night I was listening in the upper 15-meter CW sub-band when I heard an exchange that went something like this.

Ca Op: I can't believe that jerk.

NY Op: Yes, he didn't deserve you.

Ca Op: Boy, I am getting even.

NY Op: How?

Ca Op: I am sitting here in the wow-est lingerie he will never see.

NY Op: Yes, serves him right the cad.

By the way, the power of Cupid on the CW sub-bands should never be underestimated. One trick of Field Day groups to increase contact traffic is to have their YL operators mention their name during the CW exchange like this: de WZ9ZZQ 10-A NE 10-A NE OP IS SUZI SUZI QSL? That exchange often results in an immediate pile up on that frequency.

February is not only the month where CW is the language of love; it is also a month for the love of CW, even when it is freezing cold outside. Here is a Scholastic Aptitude Test type CW analogy question for fun involving February.

If New Zealand is the antipode to Des Moines, Iowa, give or take a few hundred miles, what is the equivalent antipode of Field Day?

Give up? It's "Freeze Your Keys Day." This year "Freeze Your Keys" day falls on Saturday, February 20. Like Field Day, this is a day set aside in the middle of winter where operators go outside, set up Special Event stations, usually QRP, and prove that they can operate even when it is cold enough to freeze your keys. If a person wants to join in the fun, the operating hours for the event are from 1400 to 2200 UTC (8 am to 4 pm CST). One of the clubs operating in the cold on Feb. 20 will be the Kickapoo QRP Amateur Radio Club from Leavenworth, Kansas, who will be on 14.060 and 7.040 MHz. QSL via Gary Auchard, 34058 167th St, Leavenworth, KS 66048-9473.

The FISTS Winter Sprint is Saturday February 13, 1700Z-2100Z. The rules and an entry sheet are available at <http://www.fists.org/sprints.html>. This is a great CW event for first time testers. FISTS are known for being patient with beginners and will slow down when asked ("pse QRS"). Give it a try.

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Lifelong Learning with Morse Code

By Patrick Tice, WAØTDA
wa0tda@arri.net

"Thank you so much for helping me to earn my license. The next thing I want to try is Morse code."

That is a statement we are hearing more and more these days. Our Handiham members who have earned their HF privileges want to keep on learning, and they often suggest Morse code as their next frontier. What this indicates to me is that as Technician class licensees, they have heard Morse code repeater identifiers and wished they could have at least enough knowledge of the code to translate the callsigns. Or perhaps they have heard members of their local radio clubs talking about working DX, or they have seen some of those club programs about DXpeditions and were amazed at the ability of the CW operators to manage a steady flow of contacts. A popular HF rig among blind ops is the Kenwood TS-480SAT. In the June, 2004 QST review of the 480, Rick Lindquist N1RL, says, "...operators still need to know a bit of Morse code when using this (and other) Kenwood radios. The audio tuner sends SWR if it cannot get a match and "T" if it can. Hey, that's four letters right there!"

Being able to work DX is certainly an incentive, and it is convenient to be able to identify repeaters and understand your radio's audio prompts, but do you know what? I don't think those things, as useful as they may be, are the very first reasons no-code amateur radio operators want to reach out and learn code. I think it has more to do with personal goals that a person sets up for himself or herself. You have stepped your way through the learning process, earning Technician, then General, and perhaps even Extra. Learning is actually enjoyable in its own right, and it becomes part of your daily routine. You will feel that something is missing from your day if you don't have that learning goal.

Sometimes I think our Handiham members are torn between the excite-



The Kenwood TS-480SAT, a popular radio with blind users, uses Morse audio prompts to indicate autotune status.

ment, sense of accomplishment, and relief of passing a licensing exam, and the disappointment of not having a goal to work toward after that license has been achieved. I have heard again and again from our members who pass Technician that they want to begin studying immediately for the General. Those who pass General want to get started on Extra. Once you have developed the habit of studying, you sort of miss it when you have made it part of your daily routine.

So where do we go from Here?

There are plenty of goals to be reached in amateur radio, since operating events, contests, and certificates seem to multiply as fast as hams can think them up. Working toward an amateur radio operating goal is a good thing, and something that can help you maintain your mental acuity and social connections. But there is also something to be said for studying and learning. Life-long learning has been said to help us stay mentally and physically healthy. In amateur radio, technology is changing and developing all the time, and that presents us with constant learning opportunities as we explore kit-building, construction and experientia-

tion with circuits and antennas, writing or learning software related to amateur radio, and learning new modes of operation. However, one learning activity stands out as a unique and measured way to progress steadily toward a goal. Better yet, once the goal has been reached, one can move the bar even higher and experience the delight of building skill and true excellence.

Can you guess what that Learning Activity is?

Yes, that's right -- it's learning Morse code! Just think about it: Our Handiham members are used to studying and working through a graduated learning process from Technician to Extra. Success has depended upon regular, usually daily, study for many months and sometimes years. Studying the Morse code can be similar in that one begins at a very basic level and steps through levels of increased competency. Anyone who has learned the code knows that there are natural plateaus in the learning curve. While the old licensing and testing requirements setting 5, 13, and 20 word per minute speeds as "official" goals are gone, there is no reason one cannot set personal goals and work to reach them through daily

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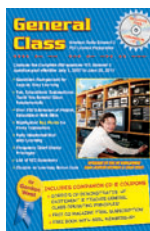
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study and practice. The big difference between learning Morse code and working your way through the licensing elements is that with code you can always set the bar higher, gaining the satisfaction of building your skill and working toward true excellence.

The rewards are many. You start by being able to recognize repeater identifiers. Participation in slow speed nets will offer a chance to make some new friends while building your skill. Eventually the world of DX will open up in a whole new way. But the real reward will be in the satisfaction of accomplishment and the pleasure of lifelong learning.

What can we do to make things easier for our Handiham members who would like to make Morse code part of their routine?

I'm glad you asked that question! These days, there are a lot of Morse code resources available, but you have to know how to find them. When I started in ham radio as a teenager in 1967, I had an LP record of Morse code as a learning aid. Needless to say, that was of limited use because I quickly memorized all of the code groups and phrases in the recording, and that pretty well made it useless after a week or so. My Elmer, K0KLY, was kind enough to loan me an Instructograph, a machine that produced Morse code for practice by running a paper tape with holes punched in it from one reel to another across a switch that closed each time a hole in the tape crossed the switch. That technology is ancient history today, when we have MP3 files avail-



Lyle Koehler, K0LR, designed and built audio beacons that are used at Handiham Radio Camp. The beepers produce Morse code letters continuously, allowing blind campers to navigate the camp and know where they are. For example, the Morse code letter D is placed at the path leading to the dining hall. The Morse code letter W lets the campers know that they are on the path near the waterfront at the lake. The simple solid-state circuitry draws little current and can easily run all week long continuously on a single 9 V square battery. The tiny audio transducer produces a clear note that can easily be heard in the vicinity of each unit, up to and beyond 50 feet, depending upon conditions. It seems like a simple thing, but these audio beacons are often the first introduction to the exciting world of Morse code for our new campers at each radio camp session.

able from a variety of sources, including ARRL. On the air code practice is still reliable and fun. The problem for newcomers to Morse code is that they will need guidance to help find all of these resources and to choose the ones that are best, especially at the very beginning of their Morse code studies. That is where you can help them learn.

Your local radio club is the place to begin. We always emphasize to our Handiham members that they need to be part of a local radio club. While there is a worldwide Handiham Radio Club that is affiliated with the Handiham System, it cannot take the place of a club that meets right where a Handiham member lives. There is just something about getting together with other amateur radio operators face to face for those monthly meetings and local operating events that builds a sense of community and service. At your club meeting make it a point to be part of the club's educational team. I hope your club offers regular licensing classes, but education should not end with licensing classes alone. Offer to mentor a study group in Morse code. Studying in a group setting can offer valuable reinforcement to club members who might already be trying to learn code on their own. Plan a slow-speed net. Learn ahead of time what code resources are available so that you can help other members of your local radio club locate and use these learning tools.

You don't have to limit yourself to working with Handiham members, either. Your local club probably has members who don't even know that they want to learn code. Get people thinking about code. One way you can start your sales pitch would be to mention how nice it would be to be able to simply understand repeater identifiers. You have to get your foot in the door somewhere. Start with these resources:

The ARRL website lists code study materials in the products

section. Your Introduction to Morse Code on compact disc in audio format is a good place to start, but also take a look at the W1AW code practice schedule and MP3 archives. You can find the archives in both audio and text at: <http://www.arrl.org/w1aw/morse.html>.

The International Morse Preservation Society (FISTS) lists a variety of news and resources. You probably already know about FISTS, but in case you don't, you will find a description of their activities and resources at: <http://www.fists.org>.

The Handiham CW Net meets weekly each Friday on 7.112 MHz CW, 09:00 - 12:00 ET, plus whatever time is needed to wrap up the last contact. This is the Handiham Informal slow speed CW Net. Look for Paul, W8IRT. You may e-mail Paul at w8irt@aol.com with your ideas and signal reports, or to find out about schedule changes for the CW net.

Finally, be creative. Don't be afraid to use new technology to teach Morse code, since portable devices like MP3 players are everywhere these days. At Handiham we teach our blind members using online audio as they work their way through the licensing process. Do you think it would be possible to teach an online Morse code course? I do, but right now there is no such thing, at least that I know of. Maybe there should be. Your ideas are welcome. Contact me at wa0tda@arrl.net.

If you know someone with a disability who would like to learn about amateur radio, point them in our direction:

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Election 2010 - Call for Nominations

By Gerald F. Gross, WA6POZ

10-10 International holds an election every two years. In the year 2010 we will be electing the President, Vice President, Secretary, and four Directors, whose terms will commence January 2011. No organization can run itself, so if you have ever thought about participating in the running of the 10-10 organization, this is a great opportunity to do so! Nominations must be sent to the Nomination Committee prior to 1 May 2010. Officers and Directors are asked to participate in local and national hamfests and are offered partial reimbursement to cover expenses.

The Nominating Committee develops a slate of eligible candidates by June 1, 2010. The chairman of the committee will provide each potential nominee with information regarding eligibility and specifying the information required by the committee. The chairman of the committee will notify members selected by the Nominating Committee in writing. Members not selected by the committee may petition for candidacy by having a petition signed by 50 full members and present it to the Secretary by July 1, 2010. A nomination information form is required and is available from the Nominations Committee Chairperson. Further questions concerning the election/nomination process may be addressed to Rob Ireland – VE9KM - Nominations Committee Chair, 31 St. James Street, Sackville, NB, E4L 4L7, Canada; or via e-mail to rireland@mta.ca.

Qualification for Nomination to be an Officer or Director of 10-10

In accord with the bylaws, no member of 10-10 may qualify for nomination to be an Officer or Director of 10-10 unless he/she has been a full member for more than four years immediately preceding his/her nomination, and that he/she can show that their membership will remain current during the period of the office they are seeking. The Nominating Committee or Petition for Candidacy are the only methods to be used by members who wish to be nominated.

Selection by the Nominating Committee

The Nominating Committee is charged with the task of selecting from those who indicate a desire or willingness to serve as an Officer or Director and to form a slate of candidates who the committee believes represent the best qualified candidates from information submitted to the Committee.

Biographical Sketch

All candidates, whether selected by the Nominating Committee or by petition, must submit a biographical information form and biographical sketch. The Nominating Committee will use this information in the process of selecting a slate of candidates. Those who petition for nomination must submit a biographical information form to be provided by and returned to the Secretary. This biographical outline, not to exceed 200 words of narrative, shall be printed in the July 2010 issue of the *10-10 News*.

10-10 Future Events

Ten-Ten will again be at HamCation in Orlando, Florida from 12th through 14th of February. If you are in the area, stop by and say hello to Leslie, WA4EEZ, #15675 or to me. We are in the Commercial 1 area booth number 26.

The 10-10 Winter Phone QSO Party will be held on 0001Z February 6, 2010 through 2359Z February 7, 2010. It is open to all; however, logs can only be submitted by paid up 10-10 members as of the date of the party. 10-10 members should exchange call, 10-10 number, name and QTH (state, province or country). Stations without a 10-10 number should use 00000. For non-10-10 members this is a good time to make those initial 10 contacts needed to get a 10-10 number. QSO Party logs must be returned to the QSO Party Manager and be postmarked no later than February 22, 2010.

Each year 10-10 holds the Anniversary QSO Party. This event runs from January 1 through December 31. Entrants work members that have the 10-10 anniversary year contained in their 10-10 number. For example: 2010 is 10-10's 48th Anniversary; therefore, one must contact members who have 48 in their 10-10 number, i.e., 48xxx, x48xx, xx48x or xxx48.

A second year-long operating event is "Meet the 10-10 Volunteers." The idea is to work as many of the 10-10 members who volunteer, as defined by the 10-10 Organization Chart, beginning on January 1, 2010 of each year.

For complete details on all 10-10 QSO Parties, refer to the *10-10 News*, *10-10 Information Manual* or to 10-10 Party page on the 10-10 web site, www.ten-ten.org.

Other 10-10 Party dates for 2010 are: Mobile-20 March; Spring CW-24-25 April; Spring Digital -1-2 May; Spirit of 76-28 June through 4 July; Summer Phone-7-8 August; Sprint-10 October; Fall CW-23-24 October; and Fall Digital-30-31 October.

Information About 10-10

The easiest way to obtain information about 10-10 is to visit the web site at www.ten-ten.org. Everything you want to know about the organization is on the web, including a downloadable membership application form. You can make inquiries into the 10-10 Database or download the 10-10 Information Manual. If you do not have computer capabilities, you can receive a copy of the *10-10 News* by writing to: 10-10 International Net, PMB 142, 643 N. 98th Street, Omaha, NE 68114-2342. Please enclose \$3.00 to cover the cost of shipping.

If you have been issued a 10-10 number and have forgotten your number, send me an e-mail and I will find your number. A 10-10 number is issued to you as an individual for life, regardless of the call(s) you may hold.

I would also appreciate any comments or suggestions. Please send to: Gerry Gross, WA6POZ, #21274, 10-10 President, 16046 Orchard Cir, Omaha NE 68135-1068 or e-mail at: wa6poz@ten-ten.org



The Annual AMSAT Meeting

Terry Douds, N8KI

Hi again, everyone! I hope you had a wonderful 2009 and that 2010 brings many fruitful endeavors. It's been a busy two months since my last column, so let's get started.

New Officers Installed

October brought another AMSAT-NA annual meeting, this time in Baltimore, Maryland. As always, it was well attended, and many excellent presentations were given during the event. AMSAT will be offering a DVD of the presentations in the near future.

New officers were installed. They are:

President: Barry Baines, WD4ASW
VP of Engineering: Tony Monteiro, AA2TX
VP of Operations: Drew Glassbrenner, KO4MA
VP of User Services: Gould Smith, WA4SXM
Secretary: Alan Biddle, WA4SCA
Treasurer: Gunther Meisse, W8GSM
Manager: Martha Saragovitz

Congratulations to everyone, and thanks for your service to AMSAT.

SpaceX

You may not be aware of a commercial space company that is doing some interesting work here in the US. Space Exploration Technologies Corporation, or SpaceX, is developing spacecraft that NASA is planning on using for cargo resupply missions to the ISS following the end of the Shuttle program. The craft NASA is interested in, known as the Dragon, is being modified to create a new vehicle known as DragonLab, which will be a free-flying reusable spacecraft capable of hosting pressurized and non-pressurized payloads to and from orbit. They are projected to be much more cost-effective than current methods for delivery of small payloads into orbit – in other words, a new way to get satellites into space economically. To learn more, go to <http://www.spacex.com>.

Senate Bill 1755

A new Senate bill, a companion to the Amateur Radio Emergency Communications Enhancement Act of 2009, was introduced on October 6 by Senators Joe Lieberman of Connecticut and Susan Collins of Maine. Known as Senate Bill 1755, if passed it would direct Homeland Security to undertake a study on emergency communications with an emphasis on the role that ham radio operators play. It reads in part, "There is a strong Federal interest in the effective performance of Amateur Radio Service stations, and that performance must be given support at all levels of government; and protection against unreasonable regulation and impediments to the provision of the valuable communications provided by such stations."

This is something that is long overdue, even with today's modern communications services that are available to nearly everyone. When an emergency occurs, and everyday communication modes become unreliable or unusable, this is when hams with their experience in emergency communications become a very valuable resource for the country. From 9-11 to Katrina, hams have been there ready, willing and able to help their first responders do their jobs more efficiently.

NextGen CubeSat

The AMSAT Board of Directors has agreed and adopted the AMSAT-NA Engineering Task Force recommendation that new low-cost launch options be immediately pursued. The engineering team is developing a new CubeSat design that should help get new amateur satellites up into space sooner rather than later. These CubeSats will use the popular low-earth orbit FM transponder that allows hams to continue using handheld transceivers with portable antenna systems. It also allows an easy entry path for new satellite operators. The existing FM satellites are beginning to show their age, so establishing some new birds would be welcome. It is hoped that this new modular design will allow integration of the various equipment with new power systems allowing higher power transmission with a smaller chassis and newer technology solar cells.

Being called the NextGen CubeSat, information concerning the development was presented at the Baltimore symposium. Program Manager Alex Harvilchuck, N3NP, revealed that AMSAT volunteer mentors would be working with IBM Global Services Systems Engineering Division, and 34 SUNY-Binghamton senior level engineering students to create the new design. Stay tuned to see how this develops!

Student Membership

During a November 3, 2009 Board meeting, a motion to add a student membership category to AMSAT-NA was unanimously approved. The student membership cost will be one half of the current membership. It will apply to all primary and secondary school students, and for those post-secondary students enrolled in at least half time status, they will be eligible for student membership for a maximum of six years. The student membership application should indicate:

- 1) school attending.
- 2) course of study.
- 3) expected graduation date.

If you fit into this category and are interested, give Martha a call at the AMSAT office at 888-322-6728.

DQ11APOLLO

For QSL collectors, DARC, the Deutsche Amateur-Radio-Club in Germany has announced a special-event station celebrating the 40th anniversary of the first manned landing on the moon by NASA.

July 20, 2009 marked the 40th anniversary of the first manned

landing on the moon by the Apollo-11 mission. To celebrate this brilliant technical achievement of NASA, a group of space-flight enthusiast radio amateurs of the DARC applied for the special-event callsign, DQ11APOLLO. It was issued on July 15, 2009 and is valid 365 days. The station will be activated on the mission-dates of the past Apollo flights on all HF, VHF & UHF-bands using SSB, CW, FM and PSK.

The call was activated during 2009 and will be activated during several occasions in 2010:

Apollo 12	November 14-24, 2009
Apollo 17	December 07-19, 2009
Apollo 8	December 21-27, 2009
Apollo 14	January 31-Feb 9, 2010
Apollo 9	March 03-13, 2010
Apollo 13	April 11-17, 2010
Apollo 16	April 16-27, 2010
Apollo 10	May 18-26, 2010.

Bureau-cards via DF3JO, c/o Deutscher Amateur-Radio Club-DARC, Germany

Direct-cards via DF3JO, Thomas Stinder, Braukkamp 11, 48249 Dülmen, Germany

Preference will be given to cards sent direct with return postage and will be answered directly. The QSL cards DQ11APOLLO were to be printed in late autumn with the first deliveries expected in December 2009.

Many details are available at the DQ11APOLLO web page: <http://tinyurl.com/ylenq3k>

SO-67

In other non-symposium based news, AMSAT's OSCAR Number Coordinator Bill Tynan, W3XO, announced that he assigned the South African satellite known as SumbandilaSat Oscar 67 or SO-67. When you're looking at new Keplerian element tables, you may see SO-67 listings begin to appear.

New 2m/70cm ARISS Antenna

A new dual band 2m/70cm antenna was installed recently on the outside of ESA's Columbus module on the ISS. The new ARISS antenna is very similar to the one already on the Russian service module. ARISS US Hardware Manager Lou McFadin, W5DID, congratulated the ARISS team, saying, "This is an example of what can be achieved by volunteer hams working closely with a space agency. This antenna project was funded entirely by AMSAT-NA and volunteers who built the antennas for both an ESA experiment and for ARISS. I am very proud of all the teamwork and effort that has gone into this project."

Now that the antennas are in place, the ARISS team will be working to bring amateur radio to the Columbus module. There are two Ericsson radios (2 meters and 70 centimeters) on the ISS, but they are seldom used. They will be moved and installed in Columbus.

As I try to do every month, I want you to realize how important the ARISS project is to our entire world. Contacts for the past two months have been made between the International Space Station and school students in Belgium, Malaysia, Mali, Senegal, Australia, Portugal, Italy, Poland and the Canadian provinces of British Columbia, Alberta, Ontario, Quebec, Nova Scotia and the Northwest Territories. This is not just a project for students in the US – if you have time, look up ARISS contact data on the AMSAT-NA website (www.amsat.org) and listen in on an Echolink server feed – you will be amazed!

That's it for another column – I hope to see you all very soon on the birds!



Celebrates its 65th Anniversary!



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Here's a peek at CQ's February issue:

- CQ Market Survey: VHF/UHF FM Mobile Rigs
- Results: 2009 CQ World-Wide VHF Contest
- Building a High-Performance Regenerative Receiver
- EME: Do it NOW!



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CALIFORNIA

Fresno Amateur Radio Club - Meets 2nd Friday/monthly, 7 PM at Cedar Lanes bowling alley, Cedar and Shields in Fresno. Net Sunday at 7 PM on W6TO/R, 146.94 (-) PL 141.3Hz. Tech net Wed 7 PM on W6TO/R
www.W6TO.com; W6TO@ARRL.net. Contact Ken, WA6OIB @559-323-6753 12/10

El Dorado County Amateur Radio Club, Meets 4th Thursday/monthly, 7:15 p.m., Federated Church, Thompson Way, Placerville, CA. Net 8p.m. Tuesday 147.825-PL82.5Hz, POB 451, Placerville, CA 95667, www.edcarc.net. 3/10

COLORADO

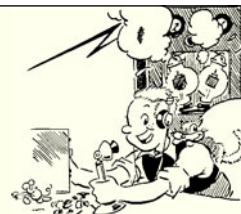
Denver Radio Club (DRC) meets 3rd Wed, 7:30 p.m., St. Joseph Episcopal Church, 11202 West Jewell, Lakewood, CO. Learning/Tech sessions 6:30 p.m. Oldest club in Colorado (1917). Net Sun 8:30 p.m. 145.490 rpt.; w0tx@arrrl.net; www.w0tx.org 4/10

HAWAII

Honolulu ARC meeting 0900 for breakfast in Jan, Mar, May, Jul, Sep and Nov at the Sizzler Restaurant at Pearl Ridge. Contact John, K1ER, 808/484-9748. 4/10

ILLINOIS

North Shore RC, www.ns9rc.org., is one of Chicago's largest and most active radio clubs. Monthly meetings feature a wide variety of topics relating to amateur radio and are normally held on the second Tuesday of each month at 7:30 PM, the Heller Nature Center, 2821 Ridge Rd., Highland Park, IL. Regular weekly net is held on Thursday night at 8:00 PM on the 147.345+ (107.2) and 442.725+ (114.8) repeaters. Club's other repeaters include: 224.32- (110.9), D-Star 442.09375+ and 1292.20- voice and 1242.20 data. Club also provides licensing classes, exams and help to new hams. 11/10



Click here for information on having your club listed here!

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VHF/UHF Handbook

Edited by Andy Barter, G8ATD
2nd Ed., 320 pages.
Guides you through the theory and practice of VHF/UHF operating and transmission lines. Includes info on getting started, antennas, constructing your own equipment, satellite ops, local nets and specialized modes.

Order: RXVUH **\$29.50**



Practical Wire Antennas 2

By Ian Poole, G3YWX
2005, 176 pages.
Significantly expanded and fully revised includes designs for a wide range of practical antennas. Complete and easy to understand designs

Order: RSPWA2 **\$23.50**



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By Ian Poole, G3YWX
2000 Edition 112 pages
Everything you will need to help you enjoy VHF/UHF to the fullest. Choosing the right transmitter, receiver, antenna, utilizing the correct part of each band and more!

Order No. RSGVUAR **\$16.00**



Packet Radio Primer

By Dave Coomber, G8UYZ & Martin Croft, G8NZU
2nd Ed., 1995, 266 pages

Detailed practical advice for beginners. Completely revised and greatly expanded to cover developments in this field and beyond basic into advanced areas such as satellite operations.

Order: RSPPR **\$16.00**



HF Antenna Collection

2nd Ed., 2002. 252 pages.
A collection of outstanding articles and short pieces which were published in *Radio Communication* magazine. Includes single- and multi-element, horizontal and vertical antennas, extremely small transceiving and receiving antennas, feeders, tuners and more!

Order: RSHFAC **\$33.00**



HF Amateur Radio

By Ian Poole, G3YWX
2007 Ed.
HF or short wave bands are one of the most interesting areas of amateur radio. Fully revised and expanded 2nd edition discusses setting up an efficient station, equipment to choose, installation, and the best antenna and more.

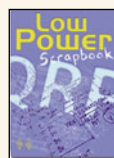
Order: RSHFAR **\$23.00**



Antenna Topics

by Pat Hawker, G3VA
2002 Ed. 384 pages.
A chronological collection of selections of G3VA's words over the years. Hundreds of areas and subjects are covered.

Order: RSSAT **\$33.00**

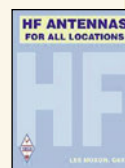


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2001, 320 pages.
Dozens of simple transmitter and receiver projects for the HF bands and 6m, including the tiny Oner transmitter and the White Rose Receiver.

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VE EXAMS

As a service to our readers, WorldRadio Online presents a feature listing of those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is two months in advance. For example, if your group is scheduling an exam for December, please have the information to us by October 1st. *World Radio Online*, VE Exams, 25 Newbridge Road, Hicksville, NY 11801. List the location (city and state), any information examinees should have (advance registration, etc.) and the name of the person to contact for further information. Examinees should bring their original license (along with a photo copy), two forms of identification (at least one should be a photo), and required fee.

p/r pref. = pre-register preferred but w/i OK

w/i = walk-in only

p/r = pre-registration only-no w/i

w/i pref. = w/i preferred to p/r

CITY	DATE	CONTACT	NOTES	CITY	DATE	CONTACT	NOTES
ARIZONA				NEVADA			
Mesa	3rd Mon	Steve KY7W, 480-804-1469, kj7wk@cox.net	w/i	Stagecoach	2nd Sat	Jack, AC6FU, 775-577-2637 ac6fu@arri.net	
Phoenix	4th Sat	Gary Hamman, 602-996-8148, K7GH@arri.net		NEW JERSEY			
ARKANSAS				Bellmawr	3rd Thurs	Diane, N2LCQ, 609-227-6281	p/r
Harrison	2nd Sat	Bob, AJ5C, 870-365-3871, aj5c@cox.net	Roselle	4th Sat	Gerry, AA2ZJ, 732-283-2795, aa2zj@arri.net		
Sherwood	1st Sat	Daryl Stout, AE5WX, 501-227-9183, ae5wx@arri.net		NEW YORK			
CALIFORNIA				Bethpage	2nd Tues	Bob, 631-499-2214, w2ilp@optonline.net	p/r
Highland	2/20	Ed, WU6I, 909-864-0155, wu6i@arri.net	p/rw/I ok	Canandaigua	1st Wed	Squaw Island ARC, David A. Foster, 585-398-0216, D1161F@aol.com	w/i
LaVerne	Last Sat	Frank, K6FW, 909-628-8661, k6fw@arri.net	p/r	Canandaigua	1st Wed	David Foster, 585-398-0216, www.siarc.us	w/i
Long Beach	3rd Sat	Louise, N6ELK, 562-429-1355	p/r	Yonkers	Call	Paul, AC2T, 914-237-5589, w2yrc@hotmail.com, www.yarc.org	w/i ok
Manteca/Tracy	4th Sat	David, N5FDL, 209-835-6893, n5dfi@arri.net	p/r	OHIO			
Redwood City	Call	Al, WB6IMX@arri.net, www.amateur-radio.org	w/i	Cincinnati	1st Sat	Dale, KC8HJL, 513-769-0789	p/r pref
Sacramento	Hotline!	916-492-6115, n6na@arri.org		Sandusky	Call	Luther, N8HC, 419-684-7864, n8hc@arri.net	p/r
Santa Rosa	Hotline!	Hotline-Recording 707-579-9608	w/i ok	OREGON			
Sebastopol	Hotline!	Recording 707-579-9608		Astoria	Call	AA7OA, 503-338-3333	p/r
Sunnyvale	Visit Site	Gordon, W6NW, Sv@amateur-radio.org, www.amateur-radio.org	w/i	Bend	Weds	Joe, K7SQ, 541-385-3152	p/r
FLORIDA				Lincoln City	1st Sat	Carl, w7ii@arri.net, 503-965-7575	w/i ok
Longwood	4th Sat	James, N4ZKT, 407-333-4245, N4zkt@bellsouth.net		McMinnville	Call	Mark, AC7ZQ, 503-843-3580	w/i only
Melbourne	1st Sat	John, AA8IS@earthlink.net, 321-412-2779	w/i ok	Sisters	Call	Dave, N7TYO, 541-549-7831	p/r
North Port	Call	Bill Norris, KC7TSG, 941-426-0214	w/ipref.	Tigard	Call	John, KS0F, 503-626-7399	p/r
St. Pete	Call	Mark, NP3R, 727-528-0071	w/i pref.	PENNSYLVANIA			
HAWAII				Erie	3rd Sat	Ron, KB3QBB, 814-833-6829, kb3qbb@arri.com, www.wattsburg-wireless.us	p/r
Oahu Is.	Call	Lee, KH6BZF, 808-247-0587	p/r	Pittsburgh	2/13	Bob, N3LWP, 412-366-0488, n3lwp@verizon.net	w/i ok
IOWA				PUERTO RICO			
Benton Cty	2/25	Kenneth, N0EGV, 319-223-5739, n0egv@southslope.net	w/i ok	San Juan	Last Sat	Hotline: 787-789-4998, prarl@prarl.org	w/i
ILLINOIS				SOUTH CAROLINA			
Bolingbrook	3rd Sat	Dale, W9KHX, 815-723-3332	w/i ok	Charleston	3rd Wed	Robert Johnson, ae4rj@amsat.org; www.qsl.net/wa4usn/	w/i
Burr Ridge	Any Day	Argonne ARC, W9DS, 630-986-0061	p/r	Charleston	2nd Sat	Riley Stone, 843-832-9105, k4hyy@sc.rr.com	w/i
Lake in the Hills	4th Sat	Jeffrey Dubin, N9MXT, 847-815-9407		VIRGINIA			
Roselle	2nd Tues	Sam, W9SFB, 630-894-0708, w9sfb@aol.com	p/r	Alexandria	2nd Sat	John, WZ4A, 703-971-3905, wz4a@arri.net	w/i
INDIANA				Stafford	Sat	Bart, N3GQ, 540-373-4506, n3gq@arri.net, www.qsl.net/semcomm	p/r
Richmond	2/6	Mike, 765-439-4230, w1idx@arri.net	w/i	WASHINGTON			
South Bend	3rd Mon	Alan, NY9A, 574-232-6883	p/r	Tacoma	2nd Tues	Radio Club of Tacoma, 253-759-2040, www.w7dk.org	
MICHIGAN				Vancouver	Hotline!	CCARC, 360-896-8909	p/r
Garden City	Call	Ken Wardell, AB8ZD, 734-421-7730, gsnapshot@att.net	w/i ok	Vancouver	Call	Vancouver ARC-Clark County, 360-892-5580 C. Wayne Schuler, AI9Q ai9q@arri.net	w/i ok
Hazel Park	1st Tues	D. Flint, 248-981-8145		WEST VIRGINIA			
MINNESOTA				Parkersburg	2nd Mon	Dana Pickens, WV8G, 304-422-6101	w/i, p/r
Apple Valley	2nd Thur	Jim, N0OA, 612-384-7709, N0OA@arri.net	p/r pref.	WISCONSIN			
MISSISSIPPI				Racine	1st Sat	Robert, W0WLN, 262-886-8551	w/i pref.
Harrison Cty	1st Sat	Don, W5DJW, 228-868-5670, donw5djw@bellsouth.net	w/i ok				

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CONTEST CORNER

CONTEST: Minnesota QSO Party
DATE & TIME: 1400-2359Z 6 Feb.
BANDS/MODE: All Bands, SSB/CW/PSK
POINTS: 1 Pt. SSB; 2 Pts. CW/Digital
MULTIPLIERS: MN Counties (87); States/Provinces/CA Territories
EXCHANGE: First name + State/Province; DX gives first name; MN sta's give first name + MN County
ENTRY CATEGORIES: Single Op, High (>100W), Low (<100W), QRP (<5W); Multi-Single
ENTRIES: 15 Mar. Cabrillo (preferred) to: mnqp@isd.net;
 Paper logs to: MNQP, 4745 170th Lane NE, Ham Lake, MN 55304-5233 Rules at: www.w0aa.org/mnqp_rules.htm

CONTEST: Vermont QSO Party
DATE & TIME: 0000Z 6 Feb. – 2359Z Feb 7
BANDS/MODE: 40-10M SSB/CW/Digital
POINTS: 1 Pt. SSB per band; 2 Pts. CW/Digital per band
MULTIPLIERS: VT Counties (14); VT sta's use States/Provinces/DXCC
EXCHANGE: RS(T) + State/Province/Country; VT sta's will give RS(T) + County
ENTRY CATEGORIES: Single Op, High (>100W), Low (<100W), QRP (<5W); Multi Op, Mobile; School
ENTRIES: 7 Mar. Cabrillo files to: vtqso party@westriverradio.org;
 All others (paper or disk) to: Vermont QSO Party, c/o Darrel Daley, K1KU, P.O. Box 445, Putney, VT 05346-0445.
 Rules at: <http://vtqso party.westriverradio.org/>

CONTEST: Delaware QSO Party
DATE & TIME: 1700Z 6 Feb – 2359Z 7 Feb.
BANDS/MODE: 160-6M SSB/CW/Digital
POINTS: 1 Pt. per QSO SSB; 2 Pts. per QSO CW/Digital
MULTIPLIERS: DE Counties (3); DE sta's count States/Provinces/DXCC Countries
EXCHANGE: RS(T) + State/Province/Country (DE sta's will give RS(T) + County)
ENTRY CATEGORIES: Single Op, single XMTR, High (>150W), Low (<100W), QRP (<5W); Multi Op, single XMTR, High, Low, QRP
ENTRIES: 30 days – Cabrillo (preferred) to: qso party@gmail.com;
 Paper logs (less than 50 QWO's) to: DE QSO Party P.O. Box 1050, Newark, DE 19715-1050
 Rules at: www.fsarc.org/DEQSO.html

CONTEST: Mexico International RTTY
DATE & TIME: 1800Z 6 Feb - 1759Z 7 Feb
BANDS/MODE: 80-10M RTTY
POINTS: 2 Pts. own country; 3 Pts. other country; 4 Pts. XE QSO's
MULTIPLIERS: XE states & Districts (32 possible) + DXCC countries
EXCHANGE: XE sta's give RS + State; All others give RS + serial #
ENTRY CATEGORIES: Single Op - single rig; Single Op - 2 rigs
ENTRIES: 30 Days Daniel Baraggia, XE3RR, Concursos FMRE, Calle Meteoro 5 Mza. 4 Lote 5 S.M. 47, Residencial La Herradura, Cancún, Q.Roo 77505 México
 Rules and online forms at: www.fmre.org.mx Mexico
 E-mail: xe1rr@prodigy.net.mx

CONTEST: 10-10 International Winter Phone
DATE & TIME: 0001Z 6 Feb - 2359Z 7 Feb
BANDS/MODE: 10M SSB
POINTS: 2 Pts. 10-10 member; 1 Pt. non-member
MULTIPLIERS: Prefixes
EXCHANGE: Name + State/Country + 10-10 #
ENTRY CATEGORIES: Single Op; QRP (<10W), Club
ENTRIES: 22 Feb Dan Morris, KZ3T, 131 Valencia Ln., Statesville, NC 28625
 Rules at: www.ten-ten.org/Forms/QSOPartyRules_05312009.pdf

CONTEST: North American Sprint
DATE & TIME: 0000-0400Z 7 Feb
BANDS/MODE: 80/40/20M CW
POINTS: 1 Pt.
MULTIPLIERS: States/CA Provinces/NA Countries (Countries outside NA count QSO points only!)
EXCHANGE: Both calls + serial # + name + state/province/country
ENTRY CATEGORIES: Single Op - High; Single Op - Low (<100W); QRP (<5W)
ENTRIES: 7 Days Boring ARC 15125 Bartel Rd., Boring, OR 97009
 Submit Cabrillo files online at: www.ncjweb.com/sprintlogsubmit.php
 E-mail: cwsprint@ncjweb.com Rules at: www.ncjweb.com/sprintrules.php

CONTEST: School Club Roundup
DATE & TIME: 1300Z 8 Feb - 0100Z 12 Feb
BANDS/MODE: 160-2M All Modes
POINTS: 2 Pts. CW; 1 Pt. SSB
MULTIPLIERS: # of States + # of "C" sta QSO's + S Qso's x 5
EXCHANGE: RS(T) + Category + State/Province/Country
ENTRY CATEGORIES: I = Individual or Single Op; C = Club or Multi Op; S = School club or group
ENTRIES: 12 Mar. Lew Malchick, N2RQ Brooklyn Technical HS 29 Fort Greene Pl., Brooklyn, NY 11217
 Special logging program available at: <http://home.earthlink.net/~scr-log/>
 Rules at: www.arrl.org/SCR/rules/

CONTEST: NAQCC Sprint
DATE & TIME: 0130-0330Z 10 Feb
BANDS/MODE: 80-20M CW
POINTS: 1 Pt. non-member QSO; 2 Pts. member QSO
MULTIPLIERS: States/Provinces/Countries
EXCHANGE: RST + State/Province/Country + Member # (non-members give power)
ENTRY CATEGORIES: SWA (simple wire antennas); GAIN (all other antennas)
ENTRIES: 4 Days John Shannon, K3WWP, 478 E. High Street, Kittanning, PA 16201.
 Free logging program at: <http://mysite.verizon.net/dmascaro1>
 Online submission using the free program at: <http://naqcc.n4led.com/sprintlog.html>
 E-mail logs to: naqcc33@windstream.net
 Rules at: http://home.windstream.net/yoel/sprint_rules.html

CONTEST: CQ WW RTTY
DATE & TIME: 0000Z 13 Feb - 2359 14 Feb
BANDS/MODE: 80/40/20/15/10M RTTY
POINTS: 6 Pts. Different continent, 80 & 40M; 3 Pts. Different continent, 20/15/10M; 4 Pts. Same continent, different country, 80/40M; 2 Pts. Same continent, different country, 20/15/10M; 1 Pt. Same country regardless of band
MULTIPLIERS: Prefixes
EXCHANGE: RS(T) + Serial #
ENTRY CATEGORIES: Single Op - single band, High; Single Op - single band, Low (<150W); Multi Op - single XMTR; Multi Op - two XMTR's; Multi Op - multi XMTR's; SWL
ENTRIES: 13 Mar. CQ Magazine, WPX RTTY Contest 25 Newbridge Road Hicksville, NY 11801 Cabrillo format preferred to: rtty@cqwpx.com Rules at: http://www.cq-amateur-radio.com/RTTY_WPX_Rules_2010.pdf

CONTEST: Asia/Pacific Spring Sprint
DATE & TIME: 1100Z-1300Z 13 Feb
BANDS/MODE: 40/20M CW
POINTS: 1 Pt. per QSO
MULTIPLIERS: Following prefixes: 3D2, 4W, 1S/9MO, 9M2, 9M6/8, 9V, BV, BV9, BY, BS, C2, DU, FK, FW, H4, HL, HS, JA, JD1, KH2, KH9, KH0, P29, T2, T30, T33, T8, UA0 V6, V7, V85, VK1-9, VR, XU, XV/3W, XX9, YB, YJ, ZL
EXCHANGE: RST + Serial #
ENTRY CATEGORIES: Single Op only! (<150W)
ENTRIES: 7 Days Cabrillo to: apsprint@kkn.net
 Rules at: www.jsfc.org/apsprint/aprule.txt

CONTEST: FISTS Winter Sprint
DATE & TIME: 1700-2100Z 13 Feb
BANDS/MODE: 80-10M CW
POINTS: 2 Pts. per QSO (non-member); 5 Pts. QSO (member)
MULTIPLIERS: States/Provinces/DXCC
EXCHANGE: RST + State/Province + Name + FISTS # (non-members give power)
ENTRY CATEGORIES: QRP (<5W); QRO (Limit of 100W maximum)
ENTRIES: 30 Days Gil Woodside, WA1LAD, 20 Hilltop Ave., West Warwick, RI 02893-2825 Cabrillo to: wa1lad@cox.net Rules at: www.fists.org/sprints.html

CONTEST: North American Sprint
DATE & TIME: 0000-0400Z 14 Feb
BANDS/MODE: 80/40/20M SSB
POINTS: 1 Pt.
MULTIPLIERS: States/CA Provinces/NA Countries (Countries outside NA count QSO points only!)
EXCHANGE: Both calls + serial # + name + state/province/country
ENTRY CATEGORIES: Single Op - High; Single Op - Low (<100W); QRP (<5W)
ENTRIES: 7 Days Jim Stevens, K4MA, 6609 Vardon Ct., Fuquay-Varina, NC 27526
 Submit Cabrillo files online at: www.ncjweb.com/sprintlogsubmit.php
 E-mail: ssbsprint@ncjweb.com Rules at: www.ncjweb.com/sprintrules.php

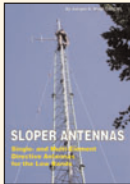
CONTEST: ARRL International DX
DATE & TIME: 0000Z 20 Feb - 2359Z 21 Feb
BANDS/MODE: 160-10M CW
POINTS: 3 Pts. W/VE QSO with DX sta's; 3 Pts. DX QSO with W/VE sta's
MULTIPLIERS: W/VE stations = Sum of DXCC entities per band DX = Sum of US states (except KH6/KL7), District of Columbia (DC), and Canadian provinces/territories: NB (VE1, 9), NS (VE1), QC (VE2), ON (VE3), MB (VE4), SK (VE5), AB (VE6), BC (VE7), NWT (VE8), NF (VO1), LB (VO2), NU (VY0), YT (VY1), PEI (VY2) worked per band (maximum of 63 per band)
EXCHANGE: W/VE sta's give RST + State/Province/Territory; DX gives RST + power
ENTRY CATEGORIES: Single Op - single band; Single Op - QRP, Low, High; Multi Op - single XMTR; Multi Op - two XMTRs; Multi Op - multi XMTRs
ENTRIES: 22 Mar. ARRL 225 Main St., Newington, CT 06111
 Cabrillo (preferred) to: dxcw@arrl.org
 Rules at: www.arrl.org/contests/rules/2010/intldx.html

CONTEST: CQ WW 160M
DATE & TIME: 2200Z 26 Feb - 2200Z 28 Feb
BANDS/MODE: 160M SSB
POINTS: 10 Pts. other continent; 5 Pts. other countries, same continent; 5 Pts. Maritime mobile (no mult's); 2 Pts. same country

(Continued on page 50)

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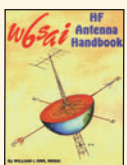
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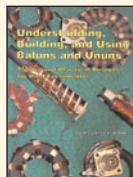
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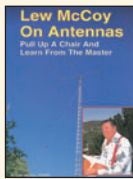
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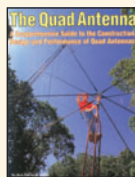
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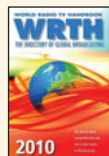
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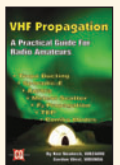
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Why a Balun?

Kurt N. Sterba

While listening to a conversation on 75 meters, Kurt heard more incorrect information on baluns than he thought existed. Such a simple thing should not be made so complicated. It just adds to the hot air already on that band. Here is Krusty Olde Kurt's simplification.

The most popular, simple and effective antenna is the horizontal dipole. It is a balanced antenna, that is, the wires on both sides of the center insulator are of equal length. In the early days of radio it was fed with ladder-line, two wires in parallel spaced by insulators. It, too, is balanced. Feeding a balanced antenna with a balanced feeder works well. Many amateurs still use this method because of the very low loss of ladder-line.

But back around the time of World War II, coaxial cable was introduced. It has certain advantages over ladder-line. It is self-shielded and does not radiate. It can be routed next to metal objects or even buried in the ground with no effect on its operation. But it has a major defect in that it is unbalanced.

The coaxial cable has a center conductor and a surrounding metal shield. The center conductor connects to one side of the dipole and the shield to the other. There are equal currents in the center con-

ductor and in the shield, so we expect equal currents in the two sides of the dipole. This looks simple and straightforward, but there is a problem.

The problem is caused by something called "skin effect." This tells us that, at radio frequencies, the current in a conductor flows just in the "skin" of the conductor and does not penetrate further into the conductor. This means that the current in the shield of the coaxial cable is confined to the inside of the shield. No current reaches the outside of the shield. Therefore, the outside of the shield is just like a third conductor. But this third conductor is connected to one side of the antenna, the same side the inner surface of the shield is connected to.

Now it is possible that not all of the current from the inside of the shield goes into one side of the dipole. Some may go down the outside of the shield. This can cause problems. With less current in the antenna, its radiated signal will be less. The radiation from the outside of the shield brings radiation closer to the house and may cause TVI. When the antenna is used for reception, there will be pickup from the dipole and from the coax shield. Most man-made noise is vertically polarized, so the horizontal dipole discriminates against it. The vertical shield, on the other


W2FMI, Silent Key

Jerry Seveck, W2FMI, died November 29th, 2009. He was a major contributor to the art of amateur radio. He brought short vertical antennas from technical obscurity to real life usefulness. His six-foot 40-meter vertical performed like a conventional 1/4-wave antenna.

To work this well it needed a good ground system, so he studied ground radial systems in great detail and in a 1978 article gave us detailed information on ground radials, allowing design of backyard short verticals of excellent performance. This did more to advance the state of the art than anything since Brown's study 40 years before.

Of course, short verticals have very low impedance. He worked on efficient impedance changing transformers. This led to his classic book *Transmission Line Transformers* that markedly advanced RF transformer design. We now have 98% efficient transformers from 50 ohms down to 3 ohms and up to 600 ohms with full design criteria.

This amateur radio great died at age 90. But his work lives on.



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hand, readily picks up the noise, so your antenna becomes noisier and reception is poorer.

Balun To The Rescue

The current flow down the outside of the shield can be eliminated by use of a balun, a balanced to unbalanced device. There are several ways to make a balun, but all of them place high impedance between the antenna and the outer shield. This prevents any current flow down the shield.

To make a very simple balun, you wind the top portion of the cable into a coil. This does not affect the currents flowing inside the cable but now the outside of the shield is a coil and just like any coil it has inductive reactance that presents an impedance to any flow of RF. At low frequencies it is difficult to get enough inductance to be effective and the coil tends to whip in the wind and is physically unwieldy. But it works.

The "transmission-line" balun is much better. This is a short section of two-conductor transmission line wrapped around a ferrite toroid and connected between the coax and the antenna. The ferrite gives the coil high impedance so no current will flow through it to the coax shield and the antenna sees a balanced line.

Then there is the ferrite bead balun. Enough ferrite beads are placed over the coax to provide a high impedance to RF. This prevents any current flowing down the shield. This is a simple and effective balun and is in widespread use today following its initial introduction to radio amateurs in an article by Walt Maxwell, W2DU, published in 1982.

Matching Transformers

The baluns described above are 1:1 baluns, that is, their input

and output impedances are the same. They are useful for connecting 50-ohm coaxial cable to dipoles or other antennas that have impedances close to 50 ohms. But some antennas have higher or lower impedances where an impedance change in the balun can provide a better match.

The transmission line balun adapts itself easily to 4:1, 9:1, 16:1 ratio step-up and step-down transformers. Other ratios are also available. Thus the impedance matching function can be built right into the balun.

At The Transmitter

We have been talking about the use of baluns at the antenna feedpoint. Another common use of baluns is at or near the transmitter. Quite often, ladder-line is used to feed the antenna. But it is difficult to run the ladder-line into the radio shack. So, a short length of coaxial cable is run from the transmitter or antenna tuner out to the ladder-line. At this connection, we have the same problem as before - connecting unbalanced coax to a balanced feedline. Again, a balun is required.

The ladder-line usually has 450-ohm impedance. Since we are connecting a 50-ohm coax to 450-ohm line, it would seem that we need a balun with a 9:1 step-up to get a good match. No, no, no! Remember that the 450-ohm line is connected to a 75-ohm antenna. If the line is a half-wave long we'll see 75 ohms at the bottom, not 450. At other cable lengths we'll see impedances from less than 75 ohms, up to much higher than 450 ohms. So we are not at all likely to get a match. It is helpful, however, to have a step-up transformer and a 4:1 step-up is a good compromise value to use.



CONTEST CORNER

(from page 46)

MULTIPLIERS: States/Provinces/Territories/KL7/KH6 +DXCC + WAE
EXCHANGE: RS + State/Province/CQ Zone
ENTRY CATEGORIES: Single Op - High (>150W); Single Op - Low (<150W); Single Op - QRP (<5W); Multi Op
ENTRIES: 31 Mar. CQ 160M Contest 25 Newbridge Road Hicksville, NY 11801
Cabrillo to: 160ssb@kkn.net
Rules at: http://www.cq-amateur-radio.com/160_Rules_2010EmsNov09.pdf

CONTEST: North American QSO Party
DATE & TIME: 1800Z 27 Feb - 0600Z 28 Feb
BANDS/MODE: 80-10M RTTY
POINTS: 1 Pt. per QSO
MULTIPLIERS: NA States/Provinces/Territories/Countries each band
EXCHANGE: NA sta's give Name + State/Province/Country; DX give name only
ENTRY CATEGORIES: Single Op; Multi Op, two XMTRs, (No high power allowed)
ENTRIES: 30 Days Shelby Summerville, K4WW, 6506 Lantana Ct., Louisville, KY 40229-1544
Cabrillo (preferred) online submission: www.ncjweb.com/naqplgsubmit.php
E-mail logs to: rttynaqp@ncjweb.com
Paper log forms at: www.ncjweb.com/naqpforms.pdf
Rules at: www.ncjweb.com/naqprules.php

CONTEST: High Speed Club CW Contest
DATE & TIME: 0900-1100Z & 1500-1700Z 28 Feb.
BANDS/MODE: 80-10M CW
POINTS: 5 Pts. per QSO HSC member; 1 Pt. per QSO non-member
MULTIPLIERS: None
EXCHANGE: RST + HSC # (Non-members give "NM" in lieu of HSC #)
ENTRY CATEGORIES: 1 - HSC members; 2 - non-members (Note: Power limit of 150W max); 3 - QRP; 4 - SWL's
ENTRIES: 45 Days Lutz Schroer, DL3BZZ Am Niederfeld 6, D-35066 Frankenberg, Germany Logs on disks or via e-mail (ASCII text file or usual contest log form like LM, CT, QW, PCProfile) are welcome, STF file preferred.
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