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Tips for Successful DX'ing

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COVER STORY

Tips for Successful DX'ing

By Jon Van Allen KF7YN



ATS 909



ICON R75

The art of being able to successfully receive distant signals (DX'ing) depends on several factors including your location, your receiver & antenna and local environmental conditions. While a good quality receiver and decent antenna certainly helps, technique and basic knowledge are also important. Becoming skilled at DX'ing takes time and effort but learning is half the fun! One of my favorite sayings is "Nothing worthwhile comes easy".

A basic principle of scientific investigation is cause and effect. Many moons ago when I first moved into my current house, received noise was very low across the entire radio spectrum, hardly moving the S-meter. Over the years that noise has steadily increased from S-1 to around S-7. The cause for this increased RF noise is all the convenient gadgets and technology all of us have around the house and take for granted. Everything from poorly designed consumer electronics, TVs, telephones, switching power supplies, CFL bulbs, touch lamps, light dimmers, leaky Cable TV coax, computers, broadband internet; DSL, the list goes on and on. The effect is that weak signals are getting harder to hear due to all the gadgets around the house generating so much noise and interference. So what can a person do to reduce the noise? There are a number of things we can do, let's investigate!

First of all, we need to identify the source(s) of the noise which can be caused inside and/or outside your house.

This can easily be done by turning off circuit breakers one by one until the noise stops. Then turn on that circuit breaker again and unplug or turn off devices on that circuit one at a time until the offending culprit is identified. Finding induced power line noise can also be done using a small portable AM receiver tuned to a blank spot on the dial and walking around until the noise increases. I found a faulty patio flood light motion sensor using this method. If you have turned off all circuits without success, the noise source is external to your house and often turns out to be a faulty power transformer or insulators, in which case the power company should be notified.

You can also move your receiver as far away from those sources as possible and see if the noise decreases at your SW receiver. Repeat this step and identify each source until the noise is as low as you can make it. Depending on whether the noise is induced or conductive, you can also use ferrite transformers on power leads. While this is a bit outside the scope of our topic, do an internet search on ferrite transformers for more info.

If noise is coming in via your antenna, there are remedies which can reduce noise by fighting technology with technology. DSP to the rescue!

A variety of DSP products are available to the DX'er; DSP Speakers, DSP power strips, DSP audio processing and of course receivers with built-in DSP. The MFJ-1164 power strip uses DSP to isolate RFI noise on your internal house wiring. I use the 1164 and I can attest it works as advertised and it offers excellent over-voltage protection.

DSP speakers are also a good way to improve audio and decrease noise on any receiver, scanner, ham rig, or CB. They are a little pricey but do the job lesser devices cannot. I personally use the Hear It DSP speaker made



Wire Antenna



by Bhi Ltd in the UK. This speaker does wonders on noisy signals. Bhi has other models including the new desk top Noise Away DSP speaker which is a much larger speaker than the Hear It.

Another problem for some of us is interference from local AM radio stations. My local nemesis is a 5000 watt AM station about 3 miles from my shack. This station causes harmonic images in my receivers in the lower end of the shortwave spectrum. I cured this problem by inserting a MW (AM Band) rejection filter inline with my antenna lead. While MW band signals below 2 MHz are snuffed out, shortwave reception is greatly improved. I can easily bypass the filter when I want to do some MW DX'ing.

Antennas should also be away from the noise source, preferably outside and as high as safely possible. If zoning restrictions or HOA rules keep you from putting up an outside antenna, alternatives include installing an antenna in the attic, running a wire around the eaves of the house or camouflaged antennas such as a modified flag pole. If you can't reduce noise to a satisfactory level, you can always take your receiver to a quiet location; camp site, the beach, the desert, anywhere away from noisy metropolis.

Now that you have hopefully tamed any noise issues, let's talk about DX'ing techniques. Identify what kind of DX'ing you want to do. Broadcast? Utilities? Ham radio? Military? Knowing what frequencies your DX targets are using is half the battle. If your target is strong world band broadcasts, a portable receiver and built-in whip will usually do the trick. If not, simply clip on a few feet of wire to your antenna. For the much weaker utility and ham signals, you'll need more antenna and narrow bandwidth filters found in more expensive receivers. Tune slowly and don't venture too far frequency-wise. For example, I like to tune the HF Aero bands. If I'm monitoring the 5 MHz band at night, I tune between 5500 and 5700 kHz. Above that is the 40 meter broadcast band, a different DX target entirely. You get the idea, stick with your target and be patient

Time of day, time of year and your location vs. your target's location requires a basic understanding of radio propagation. Do some research; Google 'shortwave radio propagation' and you'll get a ton of info. There are simple ways to spot check propagation, WWV in Colorado and WWVH in Hawaii will tell you if the bands are open. Check 2.5, 5, 10, 15 and 20 MHz for activity.

WWV solar flux and space weather forecasts are another way to gauge propagation. The higher the solar flux number, the better... provided the A and K indices are not too high. A and K indices are indicators of magnetic field disturbances. For the A index, 1-15 indicates nil to low disturbance, over 15 is minor disturbance and all the way up to 100, major storm. For the planetary K index, 0 to 5 is good, over 5 is not. To recap, high solar flux, A index under 15 and K index under 5 is good for DX'ing. High A and K indices can cause blackout conditions, so if you can't hear WWV at the usual time and frequency, your equipment

Continued on page 6

Tips for Successful DX'ing

All photos (except Icom R8500) courtesy Universal Radio
MFJ-1164 and MFJ-784B photos courtesy MFJ Enterprises



ATS 909X



KA 1103



4000A

is most likely working properly so you may need to go online to check propagation conditions.

The new solar cycle 24 has begun and is not expected by many experts to be more than a moderately-strong cycle compared to the last several. Although not everyone agrees, the official forecast is for the peak of this cycle to occur between 2013 and 2014. We should expect the return of world-wide shortwave propagation and on ever-higher frequencies. Now is the time to make sure your receivers and antennas up to the task.

Ham radio is another way to see how band conditions are for any given time or frequency. 10 meter beacons are an excellent way to see if the higher frequencies are open. Tune between 28.100 and 28.300 for beacon activity. If you can copy Morse code, you will get an idea where the beacon is by the call sign or you can look it up online.

Beacons can also be found on other ham radio bands up through VHF but most are on 10M.

Ever heard of a reverse beacon? For those who haven't heard about reverse beacons (also known as CW skimmers) the basic premise is this: A SDR receiver is set up to receive a segment of several HF bands and watch for stations calling CQ. This info is sent to a Reverse Beacon Network spot website showing call signs, frequency, words per minute (WPM), signal to noise ratio at the receiving station and UTC time stamp. If equipped with suitable contesting software such as N1MM software, the user can click on any call sign and automatically tune their rig to the spotted station's frequency. The software calculates possible multiplier points if that station has not already been worked. The real beauty for the DX'er is it is an easy way to check which bands are open and how much activity there is. The CW skimmer software is like having a 2nd person in the shack 24/7. Contesters using this system fall into the "assisted" category.

My good friend WA7LNW has an excellent CW Skimmer setup using a Quicksilver QS1R SDR receiver which simultaneously monitors 97 kHz on each of the following 7 bands: 80, 40, 30, 20, 17, 15 and 10 meters with help from a HP 3.8 GHz quad core Intel processor. The receiving antenna setup is a R-7 vertical & preamp combo and by the time this goes to print, the addition of a 500 foot beverage wire antenna atop Hurricane Mesa in Southern Utah, a very electrically quiet (and gorgeous!) receiving location. One photo shows the WA7LNW/B 10 meter beacon antenna on the edge of the mesa.

Check out the links to some CW Skimmer and reverse beacon websites at the end of the article.

Day and night frequency characteristics. Generally speaking, frequencies below 10 MHz work better at night and above 10 MHz during the day. There are exceptions to this rule; hams reliably communicate several hundred miles on 7 MHz (40M) during the day, for example. At night the 7 MHz band opens up to much further distances. Winter is much better for the lower frequencies because the short daylight hours mean less ionosphere ionization which supports DX propagation. That isn't necessarily a bad thing though, winter also means less thunderstorm electrical noise and greatly improved LW and MW DX'ing.

Be smart with your money! In today's economic meltdown with the government shoveling trillions of our dollars into a runaway economic dumpster fire (they call it stimulus) we're all on a tighter budget and of course that means less money for our hobbies. When it comes to consumer spending, consider this: a new vehicle loses up to 40 percent of it's value within a few years, ditto

Continued on page 8

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Tips for Successful DX'ing



MFJ-1164



R8500

for electronics. Don't pay more than you need to.

Another way you can stretch limited hobby dollars is to make your own antennas, there are many how-to books out there and the beauty of this hobby is that you can have bragging rights to things you build yourself! Most of us DX with simple home-made wire antennas. The only 'store bought' HF antenna I own is a LF Engineering H-900 active receiving antenna. It works great but as with any amplified antenna, it also amplifies ambient noise thereby limiting it's usefulness to lower noise locations. My wire antennas do what I ask of them and they are fun to build!

If I could recommend a single great performing antenna that works well for hams and SWL's alike, it would be the horizontal wire loop. They can be made to fit almost any size lot and work very well on all HF frequencies above the fundamental frequency (and fairly well below). Loops are quieter than dipoles or verticals and just plain old work better. The formula for the horizontal loop is 1005/f (lowest frequency in MHz). If 3.5 MHz is the lowest frequency you intend to work, the full length is 287 feet or 72 feet per side. It doesn't have to be a perfect circle, 4 roughly equal sides works well as long as it isn't too rectangular.

If you don't have that much room, any length works fine. The 41M SWL band requires 35 feet per side, 20M ham band requires 18 feet per side. You do the calculations to determine what will fit in your area, even in your attic if necessary. Anywhere between 15 to 50 feet above ground is fine. Of course you'll need an antenna tuner at either the shack or at the feed point of the antenna. Auto-tuners work best when connected at the antenna.

Feed the loop with RG6 or RG8 at any convenient point. For you purists, who think I've lost my mind, remember RG6 is 100% shielded and since it is 75 ohms rather than 50 ohms, ohms law tells us we'll have 1.5 to 1 SWR (max) which is perfectly acceptable. Sometimes the shielding outweighs the small mismatch. At any rate, for even better results feed it with balanced open wire.

Receiver considerations: I strongly recommend avoiding those low-end Chinese portables that are all over eBay, most are not intended for the US market and warranty support is a fantasy. When buying a portable receiver, stick with well-known names such as Eton, Grundig, Sangean, CC Radio, Sony and Kaito. Check www.dxing.com and look at their list of past and present receivers for specifics and ratings.

Here's a good example of getting the most for your money: Universal Radio (a regular Nat Com advertiser) offers a killer deal for $99.99. You get a Grundig 4000A (normally $129.95) and Universal will throw in a $59.95 Eton FR350 emergency radio and a $29.95 Grundig AN200 AM loop antenna for free! The 4000A has great audio and is a fun little radio to DX with while camping, on vacation, travel, at the beach or sipping on a cold one on your patio.

My all time favorite portable is the Eton E1. Passport to World band Radio experts say it's the best portable of all time. The late well known DX'er John Bryant chose the E1 for his 2007 MW DXpedition to Easter Island. His E1 pulled in hundreds of MW stations from every corner of the world. Sadly, Eton/Grundig discontinued the E1 and replaced it with the Satellit 750. The $299 Sat 750 is a fairly decent performing porta-top (part portable, part table top). With prices for an E1 reconditioned by Drake now above the original $499 mark, I say your money is better spent on the Sat 750 or Icom R75.



Hear It DPS



MFJ-7848 DPS

My Icom R8500 is an excellent DX'ing machine but does not have built-in DSP so I use an outboard DSP tunable filter to dig out those weak signals. The R8500 is now well over $1600 which is way overpriced in my opinion. I paid much less for mine a few short years ago. Fortunately for us in 2011 there are more and more cost effective alternatives to expensive traditional desktop receivers. You can pay anywhere from $600 to over $12,000 for a good desktop receiver. I don't know about you but I can't justify twelve large for ANY radio!

Once you get the basics down, you'll soon realize you need more features to dig out those elusive signals. I often use pass-band tuning (also known as I.F. shift) to shift interference away from the signal I want to hear. This works particularly well if you are trying to hear weaker MW stations outside N America that are spaced 9 kHz apart. Since our MW stations are spaced 10 kHz apart, you can see there will be instances of interference, trying to hear a weak signal with strong local signals nearby. I can hear 1160 KSL on my Eton E1 most of the way to Japan despite strong Asian stations on 1161 causing interference. I use LSB Synch and shift the pass-band tuning a couple more kHz down. Works like magic! This isn't possible on lesser receivers. This morning at 5 AM local time I logged an Australian MW station on 630 kHz from my location near Hawaii. The E1 continues to amaze!

The most dramatic advances in receiver technology have come by way of Software Defined Radio (SDR) which has made it possible to get the performance of multi-kilobuck class desktop receivers for a fraction of the price. A SDR receiver is basically a 'black-box' radio that uses the processing power of your computer to do the heavy lifting that was previously done by discreet components in a traditional receiver. This marriage of hardware and software works remarkably well and is fast becoming the standard for serious DX'ing. Wow, a single DC to daylight black box! How cool is that? The learning curve is not too steep for the average Joe like you and myself.

The SDR advantage is the amazing amount of DSP filtering, dozens of bandwidths, memory storage (limited only by hard drive capacity), built in frequency analysis, logging, user database, spectrum scope and recording. I agree with the growing crowd that says SDR offers the best performance for the money.

There is a way to get into SDR without spending a small fortune.

Ten-Tec also offers a very capable SDR, the RX-320D ($369) which has had a near-cult following since it was first introduced about 10 years ago. The amazing part of SDR is that they never become obsolete, down-loadable software upgrades insure your radio is the latest version available. No more buying new radios! I bought the original Drake R8 when it came out in 1990. That was close to $1000. Then of course I had to have the R8B a few years later to the tune of $1300. With SDR, you buy once and upgrade via software as often as updates become available.

RFSpace makes several SDR radios ranging in price from $499 to over

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Tips for Successful DX'ing

$3000. The $499 RFSpace SDR-IQ is a tiny receiver that runs off your laptop's USB port which makes it perfect for portable operations and travel. Several performance comparisons between this receiver and the highly regarded Drake R8B which sold new for $1300. In some instances, the IQ pulled out signals the Drake could not. A used R8B will still set you back $1000 so do yourself a favor and try the IQ which performs at least as well, for a fraction of the price and size. Well known East Coast DX'er Bruce Conti uses the IQ with impressive results.

If you prefer to twist a real tuning knob, I like the Icom R75 which is a very capable receiver in the $600 price range and comes with DSP. This is one of the more popular DX'ing receivers and offers good table top receiver performance for under $1000.

If you want to try DX'ing the world of DRM (Digital Radio Mondiale) there are affordable options: The Ten-Tec RX320D is DRM-ready, you only have to download the Dream software and you are ready to go. The UniWave Di-Wave 100 DRM Radio is a $300 LW/AM/SW/FM stand-alone DRM portable, no computer needed but does not receive SSB signals. I don't know how well it performs overall but you will need an external antenna to get any DRM reception in N America. The only N American station transmitting DRM is Radio Canada Int'l from Sackville, NB. China Radio Int'l also transmits DRM programming to N. America via Sackville. DRM is more common in Europe, Down Under and gaining a foothold in Asia but the distances to those places makes for challenging reception.

Resource info:
www.universal-radio.com
www.mfjenterprises.com
www.gapantenna.com
http://www.dxing.com/rx/rxindex.htm
Reverse Beacon Network spots (check out the list of Skimmers)
www.reversebeacon.net/main.php
Afreet Software (CW Skimmer and Server Software info)
www.dxatlas.com/CwSkimmer/
WA7LNW Reverse Beacon website
www.reversebeacon.net/dxsd1.php?f=0&c=WA7LNW&t=de

I hope this info helps you explore the radio world around you. As always, I appreciate your comments and questions. Feel free to contact me via email: kf7yn@yahoo.com. Until next time, Happy DX'ing!

Blasts From The Past

Do you remember these old CB rigs? They're classics!

By Chuck Gysi, N2DUP

If you've been around in radio for sometime, chances are you were a CBer once upon a time, and perhaps you still are. I know a lot of our readers are long-time radio operators based on the e-mails I receive.

This issue I thought I would take a look back in time at some classic CB radios that still excite operators today. It's always fun to get your hands on an older classic rig that you may have envied at the time and perhaps can afford to get your hands on today! Many of the classic CB rigs are sitting out there, in garages and in flea markets, waiting for the right buyer. I often have purchased some of these classics for pennies on the dollar at hamfests and other events over the years. Let's look at some of the rigs that were fun to operate and hear on the air.

Browning Golden Eagle – This was a classic rig and top of the line. Originally selling in the $400 range, as I recall, top-notch operators loved to have this rig at home with an Astatic D104 lollipop desk microphone. There even was a special-feature D104 mic made just to go with this radio.

This rig was an old tube type and even came with separate receivers and transmitter boxes, much like amateur radio gear at the time. Originally on the market in the 1960s, the Browning Golden Eagle remained in production until the 1970s. The latest units featured all 40 channels and most Golden Eagles were AM and SSB.

Different models of the Golden Eagle over the time of its production were the Mark I, II, III and IV. Browning Laboratories in Laconia, N.H., made this classic CB radio.

Lafayette Comstat Series – Once upon a time, RadioShack stores had a competitor called Lafayette Electronics and they carried their own line of CB radio, scanners and more, much like RadioShack stores. The Lafayette Comstat and Telsat series of CB radios were popular in their time, especially the solid feel of the tube-type Comstat 19, 23, 25, 25A and 25B. *Cont. on page 12*



Here's an ad for the classic and pricey Browning Golden Eagle Mark IV that once appeared in a CB magazine. This was the absolute top of the line in CB radios at one time and it always was great to hear one on the air, even if you couldn't own one yourself.

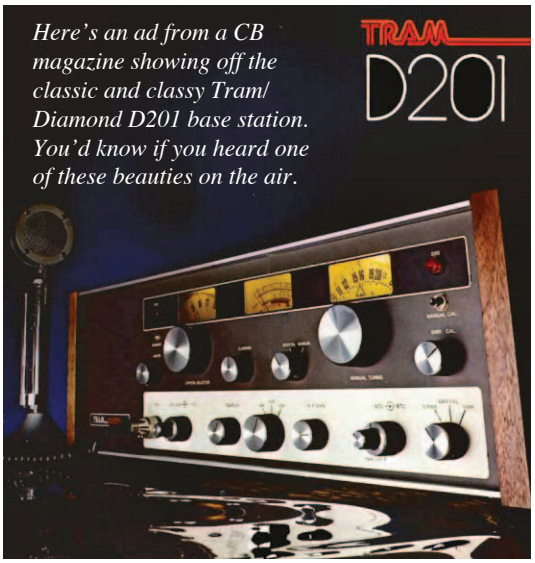


The Comstat line of Lafayette CB base stations were solid tube-type performers and performed well. If you see one for sale sometime, pick it up for a taste of CB nostalgia. Lafayette's Telsat series was top-of-the-line for the electronics store chain.



Lafayette's Telsat 1240 base station rig was sleek and sounded great on the air.

Blasts From The Past continued



Here's an ad from a CB magazine showing off the classic and classy Tram/ Diamond D201 base station. You'd know if you heard one of these beauties on the air.



Robyn's SB-520D rig was a great CB base station rig at the time. At the time, Robyn manufactured not only CB rigs, but also popular scanners.

The Comstat 19 I owned when I was in junior high school had a VFO receiver for all CB channels, allowing me to tune up and down to monitor any channel – if you could guess its whereabouts on the dial, and crystals were used for transmit. You could plug in receive crystals, too, so you didn't have to worry about tuning in your receive channel exactly. I upgraded from the Comstat 19 to the Comstat 25 rig, which offered all CB channels, and even included some CB channels in between by sliding the dial exactly into position between Channels 22 and 23. This was a popular radio for many people and was a good entry-level rig.

The Telsat series was top of the line for Lafayette and many offered both AM and SSB capability. There were the Telsat SSB-100, 1040, 1240, SSB-80 mobile, 924 and 925 radios.

Tram D201 – The Tram/Diamond D201 and D201A base station CB rigs were radios that generated excitement, especially when you heard them on the air. This was a great radio that many top operators coveted or used. Both the D201 and D201A base stations covered only 23 channels because of when they were manufactured, but they were easily modified for additional channels.

These Tram radios offered loud AM modulation without distorting the audio. If you heard one on the air, you'd know it because of how loud it sounded. If you're looking to pick up one of these gems, expect to pay a lot because they are very rare today. It was an excellent rig that always sounded great.

Robyn SB-520D – This radio was made by Robyn, which was popular during CB's heydays not only in making CB rigs, but scanners, too. The SB-520D was a top-of-the-line AM/SSB base station that was sold from the late 1970s into the 1980s and had an option of either a black face plate or a wood-grain style front.

While this was a popular radio, not as many of this rig were made as were other types of radios at the time, so it's hard to find used ones on the market today. On the air, the SB-520D sounded loud and clean. Many CBers hooked up the popular Astatic D104 base mic to their Robyns for great modulation.

President Washington – This rig was a direct competitor to the Robyn SB-520D rig above, and sold more radios, but was liked equally by CBers at the time. The original President line of CB radios was purchased by Uniden, and the President Washington was then made by Uniden, however, purists prefer to have the original model.

The President Washington probably was one of the most popular base stations made and was available from the early 1980s until Uniden stopped making it in the 1990s. The only real difference between the President and Uniden versions of this radio was a chip change, but both the older and newer chips reportedly were easy to modify.

Realistic Navajo TRC-431 – RadioShack for years had popular

Continued on page 14

Uniden

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Blasts From The Past

continued



RadioShack's Realistic TRC-431 Navajo base station was popular among CBers and allowed many to set up base stations easily. It was one of the first 40-channel rigs to hit the market in 1977 when CB was increased from 23 channels.



The President Washington base rig was very popular, especially after Uniden bought the President line of CB radios.

CB radios time after time. Their Navajo base station, the TRC-431, offered all 40 channels and replaced the earlier 23-channel TRC-30A in 1977. It's a basic starter base rig and was extremely popular.

While it was an entry-level base station, the radio's performance was pretty decent. While the receiver on this base was sensitive, the earlier 23-channel version of this rig had problems with adjacent channel bleed over, but that was corrected in the 40-channel version.

For those who liked to modify this radio, the chip allowed the radio to go up only to 27.575 MHz, but could be dipped as low as 25 MHz on the low end. However, the PLL kept power limits mainly in the CB range, so there wasn't much good reason to take this radio too far out of band.

Write in

What are some of your favorite CB rigs from yesteryear? What classic CB radios did you own? Feel free to drop me a line via e-mail to this address: cb-natcom@scanning1.com. Make sure you put Nat-Com in the subject line so if your message gets spiked to my spam bucket, I can easily spot the "Nat-Com" in the subject line and move your message right to the "in" basket. Tell me your handle, too. The e-mail address is used to reach the author of this column only.

In the meantime, keep the sunny side up and the dirty side down. 3s ●

Enhanced Scanning With Google Goodies

By T.J. "Skip" Arey, N2EI

I have been involved in the scanner monitoring hobby since the "BC" days. That would be the days "Before Computers". Yes, not all that long ago, the sum total of a scannist's skills was the ability to go to his or her local electronics store to pick up half a dozen crystals to fill some of the slots in a Bearcat IV (most folks didn't even need all 8 frequency positions). Throw a few switches and you were good to go for all your area listening needs.

Needless to say, we've come a long way since those simple days. Radio systems have grown in the number of frequencies utilized and the way they are deployed. Modern scanning receivers allow monitoring and management of hundreds of frequencies in a myriad of ways. Fully programming a modern scanner by hand would probably result in repetitive stress injury to all but the most hearty with strong and calloused fingers.

Thankfully, now we can program and manage our scanners using personal computers. Online and CDROM databases give us the all information we need about frequencies of interest. Building up a useful grouping of active frequencies may no longer be as easy as plugging in a few crystals, but a little bit of thought and a few minutes at your PC gets you where you need to go to enjoy listening to all the action in your region.

The personal computer is now a ubiquitous tool, not just for scanner management, but for many other activities of daily living. We communicate with friends, learn about the world around us, and entertain ourselves at our keyboards and screens. The growth in the use of diminutive netbooks and even smaller smartphones allow us to carry on these activities in just about any environment we can imagine.

As radio hobbyists, we tend to look at the world around us with slightly different eyes than most folks. As scannists, we want to know the nature of our immediate environment in real time. How can we make use of computer based tools to enhance our scanner monitoring activities? I'd like to put forward a few scenarios that might give rise to ideas about how you can use your computer and the Internet to take your scanning to the next level.

(Note: The examples given below are hypothetical and do not represent actual monitoring events. The locations used in these examples are only used to demonstrate the versatility of the applications discussed.)

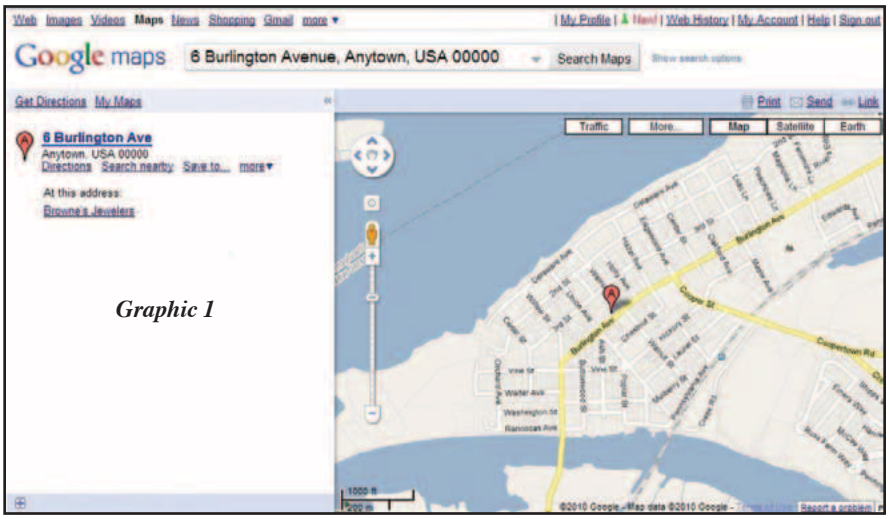
Let's say, for example, my scanner locks on to a channel in a nearby town announcing the following:

"All available units respond to a strong arm robbery of Browne's Jewelers, 6 Burlington Avenue. Two males fleeing the scene on foot, running down Walnut Street."

Now in the Good Old Days I would need to unfold a map or pull my County Atlas down from my bookshelf to make sense of that communication. Traditional hard copy tools still have their value but the personal computer gives us many more options to consider when following the events we hear over the air.

Google Maps <http://maps.google.com/> is just a quick click away on your favorite Internet Browser Tool.

Continued on page 17



Graphic 1

The HomePatrol-1 is a great scanner, but *Don't* be limited by its on-board database.



The HomePatrol-1 Receiving CB Channels

With HomePatrol-1's database you can't:

- Add a frequency that is not already in the database
- Add talk group IDs
- Rename frequencies
- Rename talkgroup IDs
- Change or add PL tones
- Receive a trunking system that has no IDs
- Can't receive all frequencies in you area, even if they are in the database, including CB

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you are able to do all of the above and more. Set up your scanner the way you want it and not the way you are forced to do with the on-board database. If you want to have control of your scanner, then the product to remember is the ***Scancat Combo CD*** for the ultimate answer. You can modify the HomePatrol database, use our data files or your create own. Your choices are unlimited. ***Price for software only $50.00 plus $5.00 shipping***

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If you want to be able to program your radio on your own, then we can help you with that as well. We have the largest amount of frequency resources on the internet. Yes, the ***LARGEST***. More than any other web-site, ***ANYWHERE***. We have frequencies, talk group ID's, radio codes & signals Scancat .RSD files and much more. There are literally millions of frequencies from across the USA, Canada, UK, Australia and many more.

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Enhanced Scanning With Google Goodies continued

Knowing the town based upon my scanner programming, entering the full address into the Google Maps "Search" field is easy. If things were not clearly stated in the police call, I might resort to a general Google Search on "Browne's Jeweler's, Anytown, USA" to get better address information. It is more than likely that the business will have a full Google entry with a quick click link back into the Google Maps screen (see graphic 1 on previous page)

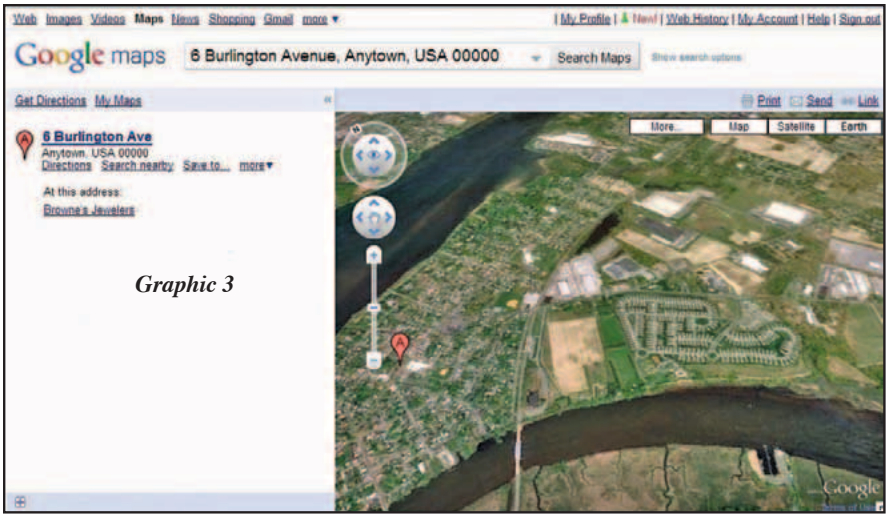
Glancing at the map as presented, I get a sense that, if the Police Units are relatively nearby, this situation might be wrapped up in short order. With only a few main routes away from Walnut street, an area with bodies of water on two sides, the Police have these two suspects cornered in a limited area of movement (unless they are ready to take a swim to elude capture). Or do these folks have something else in mind? There are railroad tracks and an icon indicating a train station. Hmmm. (see graphic 2)

Let's switch over to "SATELLITE" mode and see if we can get a better idea of what is going on.

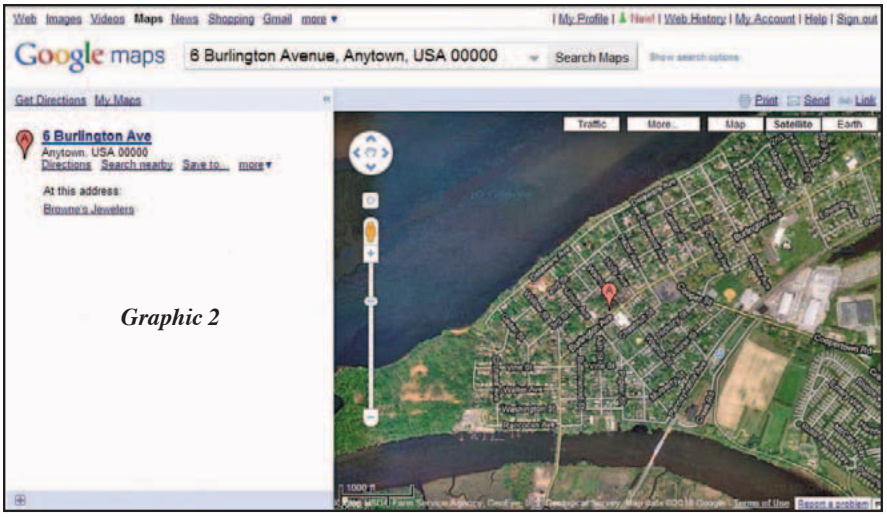
The satellite map fills in quite a bit of detail to the area. Maybe the suspects aren't trying to make their way to the train station after all. (I'd keep an ear on the Transit Police frequencies just in case they are brought into the pursuit.) There appears to be a farmer's field beyond the railroad tracks. If they can get across the field without being observed, they would be able to move around in what appears to be a small planned community and give the law enforcement folks some additional difficulty. Let's dig a little bit deeper.

Now I switch Google Maps into "EARTH" mode. This gives me a three dimensional look at the area and allows me to turn the view around to get a closer look in any direction I choose. (see graphic 3)

At this screen I can see that the community area I just mentioned is fairly limited in size with only a few access roads. If the suspects head into that area, it is likely that it won't be too long until they have a close encounter with local law enforcement. This particular example covers an area of essentially flat terrain. If the area you were observing had more pronounced topographic features, this might also tell you were the action is. Suspects do not intentionally run off of cliffs as a rule. This view also gives you the notion of the value of helicopter pursuit. A lot of information can be fed down to the road units from



Graphic 3



Graphic 2

Continued on page 18

Enhanced Scanning With Google Goodies continued

this high point of observation. If the town or region has aircraft capabilities, make sure you have those operational frequencies loaded in your scanning receiver in the event they are brought into play.

See what I am getting at? You may well have been using Google Maps on a regular basis to get driving directions or to do vacation route planning. Did you ever think of using it to enhance your scanner monitoring?

Google offers a couple of other tools that have a great deal of potential for scanning over wider areas, especially if you are traveling.

Google Earth <http://www.google.com/earth/index.html> (now in its 5th iteration) is an application that requires a small download to your personal computer. Once installed and coupled with your existing Internet connection, you have the ability to zoom down on nearly any place on earth and gain information about an area, all the way down to local street information. It is sort of like Google Maps on steroids. It is extremely versatile and can be configured in dozens of ways to assist your scanning efforts.

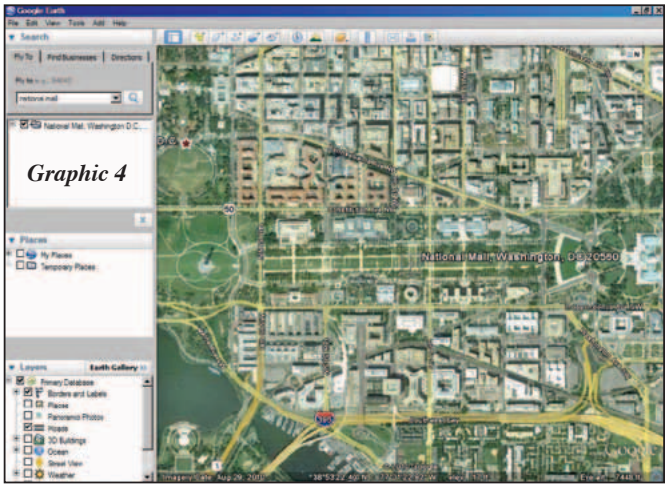
Let's say, for example, you are planning a family trip to the Washington, D.C. Mall area to visit the various monuments and museums there. Washington, D.C. is a frequency rich environment to say the least. But, since you are a stranger in town, you might want to get the lay of the land to help you understand what is coming across your scanning receiver. It could also help you narrow you monitoring choices from the, literally, hundreds of active frequencies you are likely to encounter. (see graphic 4)

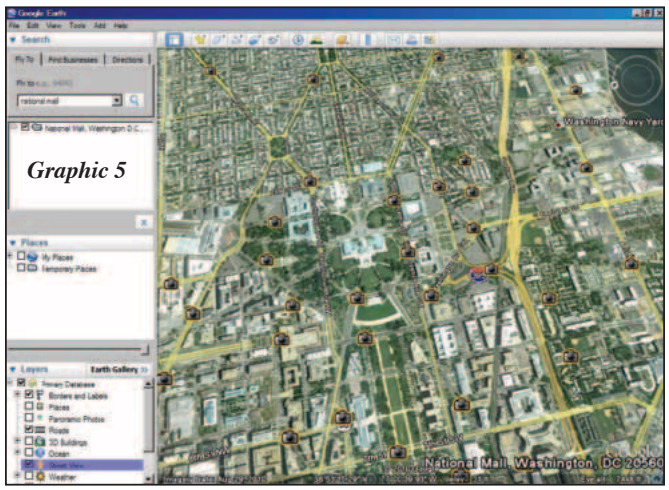
In the configuration presented, Google Earth gives me a view of the National Mall with street names. I can zoom, move, and make a 360 degree survey of any area in question. It is as close to owning you own personal spy satellite as you can get without becoming staff of one of the various Lettered top secret agencies.

As those TV announcers always say: "But wait, there's more!"

If I click on the box in the Google Earth Sidebar that says "Street View" my display adds a number of camera icons. (see graphic 5)

Clicking on one of these (in this example 7th Street Northwest) brings me right down to the street level for a close look at the environment. Again, I can pan 360 degrees and zoom to my heart's content. (see graphic 6)



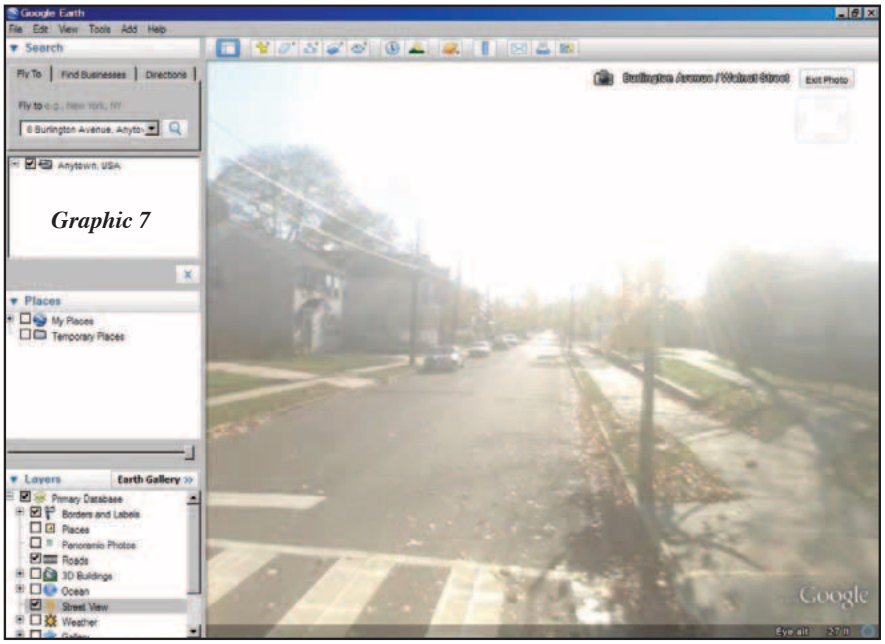




Enhanced Scanning With Google Goodies continued

The Street View function is not yet available in every neighborhood so, at this time, it may have limited use for your local area scanning. However, if you live near a major metropolitan area, you could go well beyond my initial Google Maps example in following the activity you hear on your scanner. What happens if I apply Google Earth/ Street View to my original example? Let's take a glance down Walnut Street in Anytown, USA. You can almost see the footprints of the suspects going off in the distance. (see graphic 7)

Scanner hobbyists are always looking for tools to enhance their ability to monitor active situations. Some of those tools are no further away than your favorite Internet Browser.



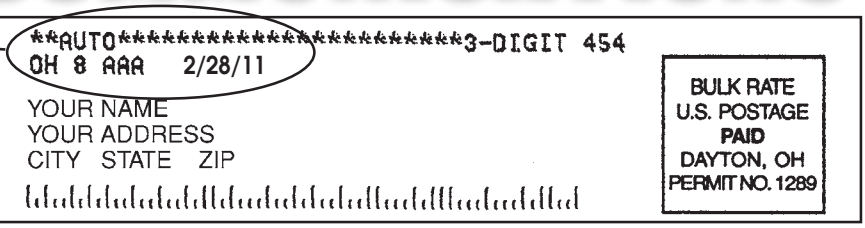
Graphic 7

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Oklahoma's Tinker Air Force Base

By Mark Meece

When the Oklahoma Territory and Indian Territory were officially combined on November 16, 1907 Oklahoma became the 46th state in the union. In the southeastern section of its capital Oklahoma City sits the largest Air Logistics Center in the Air Force Material Command (AFMC). Tinker Air Force Base is the Headquarters to the Air Force Material Command's Oklahoma City Air Logistics Center (OC-ALC). Other Department of Defense missions are also based here including the United States Navy.

The 72nd Airbase Wing is the host unit at Tinker lead by Colonel Allen Jamerson, the Wing and Installation Commander of Tinker Air Force Base. The 72nd Airbase Wing sees are charged with providing services and support for the Oklahoma City Air Logistics Center and other tenant groups based at Tinker.

Perhaps a feature unique among Air Force facilities for Tinker Air Force Base is the ability for future growth and a community that shows its support. The expanse of open area around Tinker equal to several square miles is owned by The City of Oklahoma City and Oklahoma County. In fact in 2008, a local measure approved by voters allowed the county to purchase the former General Motors Oklahoma City Assembly Plant located next to the base and lease it to Tinker for future use. The base relocated several of its shops from its maintenance building on base to the old GM Plant which is now known as Building 9001.

Flying units based at Tinker include the 552nd Air Control Wing and its subordinate squadrons (see TABLE 1), the 507th Air Refueling Wing of the Air Force Reserve Command and the 137th Air Refueling Wing of the Oklahoma Air National Guard. The 137th ARW having recently converted from an Airlift Wing flying the C-130H and formerly based at Will Rogers World Airport. The 137th ARW is an associated unit with the 507th ARW and share maintenance and flying duties of the twelve KC-135R "Stratotankers" aircraft assigned to the base. The 507th also operate Federal Aviation Administration's British Aerospace Hawker 125-800 aircraft which was designated a C-29A in the United States Air Force.

The 552nd ACW squadrons fly the Boeing E-3 Sentry Airborne Warning And Control System (AWACS) aircraft frequently heard on a variety of frequencies including HF using call sign SENTRY + ##. The E-3 Sentry is easily identifiable by its trademark black with white stripe rotating radar dome near the top rear of the aircraft.

The E-3 is based on the Boeing 707 airframe and provides command, communications, control and surveillance for all weather conditions. In addition to the United States the E-3 is also utilized by the United Kingdom, France, Saudi Arabia, and NATO air defense forces.

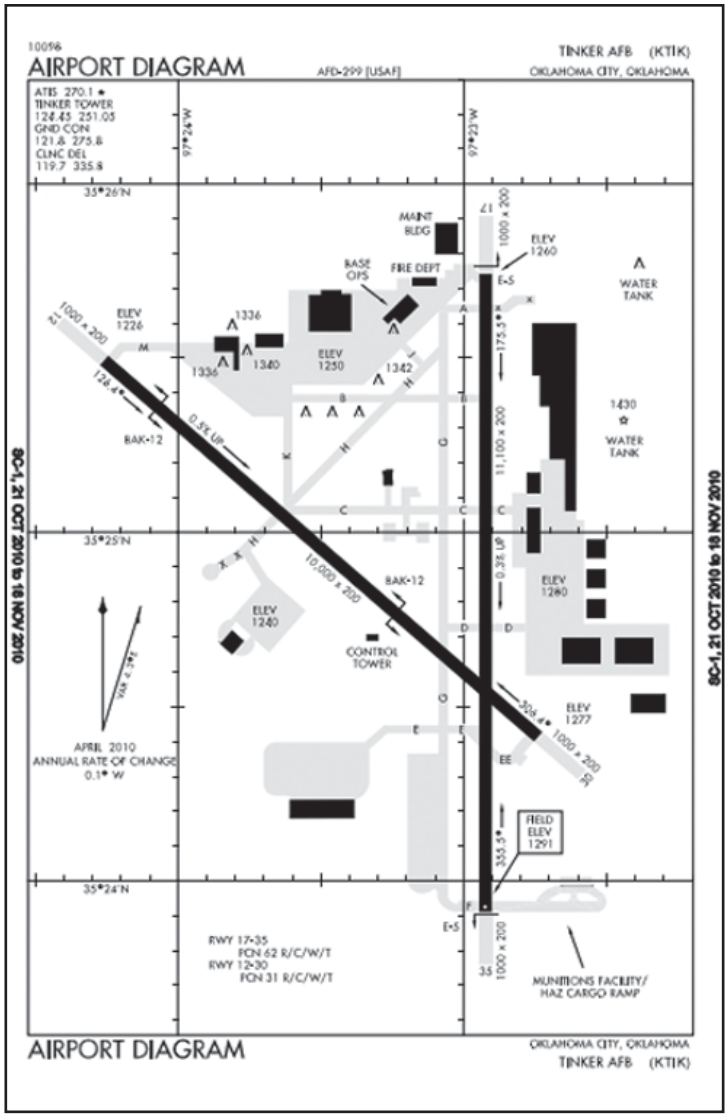
continued



TABLE 1

552nd Operations Group

* 960th Airborne Air Control Squadron "Vikings" (E-3)
* 963rd Airborne Air Control Squadron "Blue Knights" (E-3)
* 964th Airborne Air Control Squadron "Phoenix" (E-3)
* 965th Airborne Air Control Squadron "Golden Eagles"(E-3)
* 966th Airborne Air Control Squadron (E-3, Boeing 707)
* 970th Airborne Air Control Squadron (Reserve)
* 552d Training Squadron



Interestingly, the E-3 AWACS program began as a proposal in 1965 to replace the then airborne early radar surveillance aircraft the Lockheed EC-121 Warning Star. The Warning Star system was introduced in 1954 and stay in service until 1978, with a single aircraft used by the Navy until 1982. The first testing of two prototype aircraft began and ended in 1972. It was in March of 1977 that the E-3 Sentry AWACS program went into active service. Production finally came to an end in 1992 with a fleet of 68 E-3s in total, with 32 of these based at Tinker.

The United States Navy's Strategic Communications Wing One (STRATCOM) is a unique unit of the (TACAMO) mission based at Tinker. TACAMO, which stands for "Take Charge and Move Out", is a survivable airborne communications system designed to provide communications between national command and the triad of strategic nuclear weapon delivery systems. The Emergency Activation Messages (EAMs) heard on a variety of High frequency (HF) channels involve TACAMO air and ground assets.

The Navy Air Wing operates all phases of the E-6B Mercury aircraft fleet, including training and support. These aircraft allow for direct contact between submarines, bombers and missile launch facilities and the President of the United States and Secretary of Defense.

Just like its USAF counterpart, the E-6B Mercury is based on the Boeing 707-320 airframe; it entered into service with the United States Navy in July 1989 as the E-6A. The upgraded E-6B model was placed into service in October 1998. Sixteen of these aircraft were produced for the Navy in which they took final delivery in December of 2006.

STRATCOM Wing One operates two E-6B subordinate squadrons, and one TC-18F training squadron located at Travis Air Force Base in California, and Naval Air Station Pawtuxet River (PAX RIVER) in Maryland. See TABLE 2 for a listing of these squadrons. The TC-18F is a Boeing 707-331 modified for E-6 pilot training.

Another unique unit based at Tinker for the OC-ALC and actually a detachment of the 413th Flight Test Group at Warner-Robbins Air Force Base in Georgia is the 10th Flight Test Squadron (10th FLTS). The 10th FLTS is unique in that it flies four different types of aircraft that have undergone depot maintenance or combat-damage repair to ensure the flight worthiness of the aircraft systems. The airmen are assigned to a specific aircraft

Continued on page 22

Oklahoma's Tinker Air Force Base *continued*





TABLE 2

USN STRATCOM WING ONE

* Fleet Air Reconnaissance Squadron THREE (VQ-3) (E-6B)	Travis AFB, CA
* Fleet Air Reconnaissance Squadron FOUR (VQ-4) (E-6B)	NAS Pawtuxet River, MD
* Fleet Air Reconnaissance Squadron SEVEN (VQ-7) (EC-18F)	Tinker AFB, OK

for testing from the E-3 Sentry, B-1B Lancer, B-52 Stratofortress or KC-135 Stratotanker. After a two to three hour pre-flight check, test flights typically last about three hours.

The history of Tinker Air Force Base had its beginnings a few years before World War II. The United States War Department was looking to the central United States as a location for a supply and maintenance depot. When Oklahoma City leaders received word of this they offered 480 acres southeast of the city. The War Department accepted the offer and also an option for an additional 960 acres. Officials signed the order on April 8, 1941 awarding the depot to Oklahoma City and construction began shortly thereafter. The base is named in honor of the first Major General of American Indian descent in U.S. Army history, Clarence L. Tinker. Major General Tinker was leading a long range strike of B-24 Liberators against Japanese forces on Wake Island during World War II when his plane presumably crashed into the ocean and he was killed. The official renaming ceremony occurred on January 13, 1948.

The industrial center at Tinker repaired B-24 and B-17 bombers and fitted B-29s for combat through the duration of World War II. Douglas Aircraft located in Building 3001 produced half of the C-47 Skytrains used in World War II.

Today Tinker Air Force Base operates two runways 17/35 and 12/30 on 5,033 acres and 760 buildings. The base is actually a city within itself with a workforce of nearly 30,000 active duty air force and navy personnel, civilian employees and retired military. It is the largest single site employer in the state of Oklahoma and is located within 200 miles of the geographical center of the United States.

In TABLE 3 we list all known frequencies in use at Tinker.

Midwest Regional EMS is operated by Midwest Regional Medical Center in Midwest City and serves Tinker Air Force Base. They are dispatched on the State of Oklahoma DPS TRS.

KTIK Command Post uses the RAYMOND 24 call sign. KTIK Security Police and Law Enforcement are separate agencies that share a common dispatch.

To say that Tinker Air Force Base sits smack dab in the middle of Tornado Alley would be a vast understatement. Tinker has had several brushes with violent storms. In March of 1948 two tornadoes struck Tinker five days apart, damaging many aircraft. After the second one hit on March 25, 1948 damage totaled $16 million in 1948 dollars. Tinker made history when it issued the first successful Tornado forecast three hours before the tornado struck on March 25, 1948.

Most recently, the northeast corner of the base receive extensive damage from an F5 tornado on May 3, 1999. Tinker personnel helped lead the search and rescue and clean-up effort for days after the storm passed.

If you find yourself in the area, try and visit the Heritage Air Park located at the north end of the base just off Interstate 40, bring your scanner and plug these frequencies in and let us know what you hear.

continued





TABLE 3
TINKER AIR FORCE BASE (KTIK)

AERONAUTICAL FREQUENCIES

119.1500	Air Terminal Operations Center (Cargo)
119.7000	Clearance Delivery
120.4500	OKC Approach/Departure
121.8000	Ground
124.2000	OKC Approach/Departure
124.4500	Tower
124.6000	OKC Approach/Departure
126.6500	OKC Approach Departure
134.1000	Pilot to Dispatch
139.9500	ACC Command Post
141.6500	ACC Command Post
225.3000	966th AACS “RAVENS”
225.8000	966th AACS “RAVENS”
225.8750	963rd AACS “BLUE KNIGHTS”
228.4500	507th ARW OKIE OPS
237.1500	966th AACS “RAVENS”
238.8000	10th FLTS Depot Maintenance
251.0500	Tower
254.2500	966th AACS “RAVENS”
254.4750	965th AACS “FALCONS”
261.0250	METRO
266.5500	966th AACS “RAVENS”
270.1000	ATIS
275.8000	Ground
281.4000	966th AACS “RAVENS”
287.4500	ACC Command Post
288.2000	966th AACS “RAVENS”
289.0500	966th AACS “RAVENS”
303.1000	966th AACS “RAVENS”
303.9500	966th AACS “RAVENS”
305.6000	552nd Command Post and SOF “RAMROD”
316.4500	966th AACS “RAVENS”
317.9500	966th AACS “RAVENS”
320.6000	960th AACS “VIKINGS”
324.3500	966th AACS “RAVENS”
328.0000	966th AACS “RAVENS”
335.8000	Clearance Delivery
335.9500	965th AACS “FALCONS”
	966th AACS “RAVENS”
338.7500	966th AACS “RAVENS”
338.9500	966th AACS “RAVENS”
339.7500	966th AACS “RAVENS”
343.4000	966th AACS “RAVENS”
354.1250	KTIK Single Frequency Approach (SFA)
355.2000	ACC Command Post
364.2000	Air Intercept Command and Control (AICC)
372.2000	Pilot to Dispatcher
381.4000	966th AACS “RAVENS”
382.6000	10th FLTS Test Flights

SUPPORT FREQUENCIES

406.1625/415.1625	P25	Security Police
406.3625/415.3625	P25	Command Post Ch. 1
406.5625/413.2250	FM	Ground Operations
406.7625/415.7625	P25	Fire Dispatch
406.9625/415.9625	P25	Fire TAC 2
407.1625/416.1625	P25	Law Enforcement
407.3500	FM	76th Aircraft Maintenance Wing Ch. 1
407.3750	FM	552nd ACW Aircraft Maintenance - Mission
407.5500	FM	552nd ACW Aircraft Maintenance WHITE
407.7625/416.7625	P25	Fire TAC 3
407.9625	FM	552nd ACW Aircraft Maintenance BLUE
408.0250/413.1750	FM	76th Aircraft Maintenance Wing Dock Ops
408.1750	FM	552nd ACW Aircraft Maintenance RED
408.3625	P25	Transient Alert
408.7625/417.7625	P25	Transportation Shuttles “MUSTANG”
408.9625/417.9625	P25	AFB Crash Net
408.9625	P25	Command Post Ch. 2
409.1625/418.1625	P25	Medical Control
409.3625/418.3625	P25	Command Post Ch. 3
409.7625	P25	507th ARW Aircraft Maintenance
409.9625	P25	Refueling Operations
413.0000	FM	76th Aircraft Maintenance Wing Ch. 3
413.0750	FM	Parts Supply and Delivery
413.1500	FM	76th Aircraft Maintenance Wing Ch. 2

Be sure to check for the latest frequencies on the Nat-Com web page www.nat-com.org



A Look at The Dakota Alert M538-HT MURS

By Jon Van Allen KF7YN

Those who have been reading this column know I have been on the lookout for affordable two-way radios with good performance and useful features. I have tried many FRS/GMRS combos but never really found any I liked well enough to use on a regular basis. One problem with FRS is the inherent congestion, it seems like everyone and their brother is using FRS and the range is nowhere near the ridiculous claims of 20 miles or more. So that leaves us with the dilemma of finding an easy-to-use, two-way radio with decent range and not too many bells & whistles. I am a firm believer in "simpler is better!"

Several years ago I reviewed an inexpensive MURS radio made by Columbia. I still have that pair of radios and use them regularly. Keeping in mind the Columbia radios were priced at under $40 a pair, I wanted to find something closer to professional grade. I recently discovered a considerably better quality MURS radio made by Dakota Alert, the M538-HT which is a handheld model. These are available from eBay, SmithGear.com and Amazon.com for $70 to $90 each. There is also a base version, Dakota Alert M538-BS for the same price.

MURS is an acronym for Multi-Use Radio Service, a low power, short range VHF Citizens Band service in the 150 MHz band. The FCC created MURS in late 2000 but it has never caught on like FRS. Perhaps this is due to the fact MURS never received wide publicity. MURS has the potential to become very popular but it won't happen without more awareness.

Although there are limitations on transmitter power output and antenna height, the use of external antennas is allowed. You can use mobile or base station antennas up to 60 feet above ground or 20 feet above the highest point on the structure it is mounted on. For mobile operation this means that the range for vehicle-to-vehicle communications with MURS can much greater than that for FRS which does not allow external antennas. As a VHF Citizens Band service, you do not need an FCC license to operate a MURS station! There are very few restrictions; you can use MURS for just about anything you want, personal or business.

As Gordon West pointed out in the Sept/Oct issue, multi-band radios that have VHF Marine and MURS channels will soon be banned, if not already. This gives many of us good reason to consider what our communications needs are. Are you more interested in versatility or functional practicality? For me the answer is definitely practicality. Having a radio with better range and far fewer users is right up my alley. On the down side, MURS was never designed to be used as an emergency platform such as ham, CB and GMRS. Most of us have access to one or more of those services anyway so the benefit to me is the practical aspect of day to day comms. For this MURS is ideal.

Lets have a look. Much to my surprise, the Dakota Alert M538-HT comes in a box rather than a cheap plastic display pack. And batteries are included! Inside the box you will find the radio, 6 rechargeable NiMH batteries, a wall charger and manual. One of the first things that you will notice is the hefty construction and the top mounted volume knob. The Dakota Alert sits squarely on a flat surface, a nice touch not seen much since FRS radios came out with those annoying and useless round bottoms. You can use alkaline or rechargeable cells. The supplied NiMH cells provide about 40 hours of normal use. Alkaline cells will give you even more hours.



continued

You can see in the photos there are not too many controls. The on/off and volume knob is on top. On the left side is a PTT button and monitor button. On the face a call button, up/down buttons and a menu button. That's it! There is a top mounted jack to accommodate external speaker microphone or an ear/mic. It is super easy to change channels and select CTCSS privacy tones using the menu. CTCSS tones are numbered 1-38 rather than by tone frequency. I always use Ch 3 and Tone 8, for example. It couldn't be easier! My pair of Dakota Alert radios are 100% compatible with my older Columbia MURS radios.

During my annual expedition to Yellowstone and Grand Teton, I used the Dakota Alert radios around camp, between vehicles, hiking, and sightseeing and around town in Jackson, WY and West Yellowstone, MT. At no point did we lose comms, even when separated by a couple of miles. To say these easily outperform any FRS radio I've ever used is an understatement, even on low power. On high power, I talked to my brother across 10 miles of open lake with no problem.

Features of the Dakota Alert M538-HT:

- **Removable antenna**
- **Full 2 watts out**
- **38 CTCSS privacy tones**
- **Call alert**
- **Alkaline or NiMH batteries**

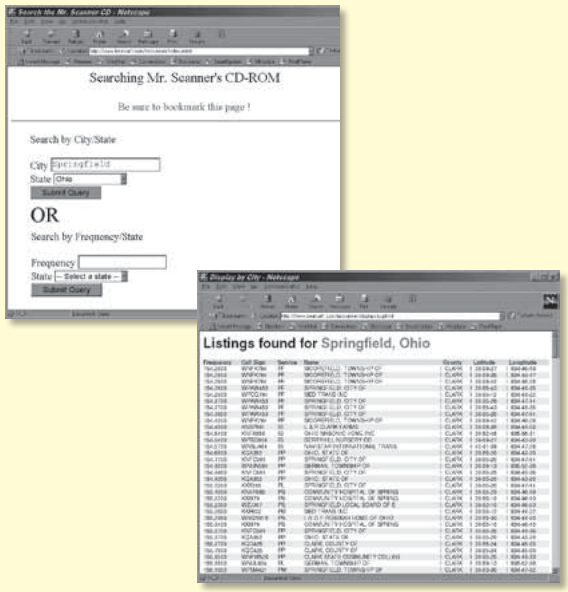
Dakota Alert also makes a base station model and accessories for both, a metal vehicle detector and a driveway/trail sensor. It doesn't take a rocket scientist to realize the usefulness of these accessories, hunting, security, surveillance, etc.

Base station and mobile antennas for MURS are available from Firestik http://www.firestik.com/CatalogFrame.htm You can use most any VHF mobile antenna cut for 153 MHz, an 18" whip works nicely.

Those who are thinking about shelling out for GMRS equipment (and FCC license) should consider MURS as an alternative before making a decision. While GMRS does have the advantage of repeater operation, in my experience GMRS is much more crowded. I have found very little radio traffic on MURS frequencies. And GMRS requires a FCC license, MURS does not. You decide which is better for your needs. Either way, give MURS a try, you'll be pleasantly surprised!

As always, I welcome your comments and questions via email kf7yn@yahoo.com. Be sure to put Nat Com in the subject line. Have a great Christmas and Happy New Year everyone!

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All you need is a computer and internet access. Just follow these simple steps.

- Log on to www.bearcat1.com/free.htm
- Scroll down to the picture of either the Mr.Scanner Public Safety or Mr. Scanner CD Roms
- Click on the "Search the CD Rom" link next to the photo
- On the next screen (first time) pick register for CD, (subsequent times) pick search
- When the form comes up fill it out with the exception of the credit card information. Be sure to include an e-mail address so we can send your user name and password back to you
- Pick Option #4 and insert your member number (which can be found on your mailing label) e.g. OH 8 AAA

Generally within the next 24 hours your user name and password will be e-mailed back to you and you will be ready to search for frequencies.

Hobby Radio Stop

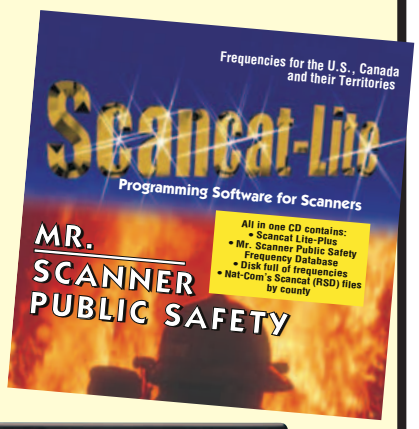


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By Gordon West, WB6NOA





GET AN FCC SHORE LICENSE

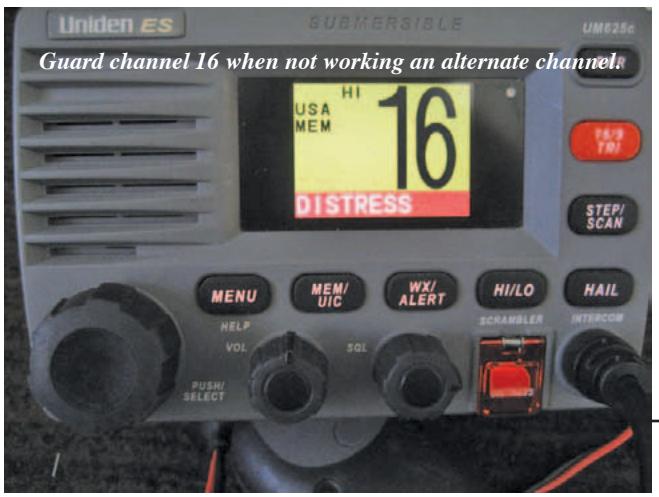
Imagine the excitement of talking on long range marine single sideband channels to ships at sea! No Ham radio license is needed for the long range marine single sideband service. Consider the possibilities of operating a VHF shore station, with the capability to talk with local boaters on the popular marine VHF band. Now add the ability to operate on marine VHF channels to talk back with your base station.

The Federal Communications Commission Part 80 Rules subpart K, 80.501 permits individuals and organizations in the marine industry to obtain a Private Coast Station license, as well as a Marine Utility Station license. This allows shore to ship communications as well as handheld-to-handheld and handheld to base station communications in the vicinity of the base station's fixed transmitter.

You can file electronically for this license, and, if you get it right the first time, you could obtain FCC call letters in less than 7 days!

But this is not a hobby radio license – the license is intended for those who work within the marine industry to communicate shore to ship with their clients and their own boats; or to run a shore side facility that may offer a service to local lake, river, and ocean boaters.

"There are several eligibility opportunities available to an individual or organization wishing to obtain this shore station license," states M. E. Foster, a communications licensing specialist.



Guard channel 16 when not working an alternate channel.

"This 10 year shore station license is not inexpensive. The FCC currently charging $570.00, and if you need the license immediately, a license service would require an additional processing fee," adds Foster. "We can usually score the FCC license within 72 hours of filing all the minutely correct information."

OK, so it's not a hobby license just to chitchat with boats in the harbor, or ships at sea – who actually can qualify? Here is a partial list:

- **Yacht Clubs and Fishing Clubs**
- **Harbor Cruise and Charter boat shore side facilities**
- **Marine Rescue squads and other boating safety groups**
- **Shipyards and Haul-out operators**
- **Harbor Masters and Port Police,**
- **Marine Electronics and Marine engine shore side dealers**
- **Yacht Anchorages and slip rental agencies**
- **Shore boat and water taxi shore stations**
- **Marine weather Service operations**
- **Marine hardware stores, bait shops, and fishing supplies**
- **Commercial fishing base stations**
- **Boat rental base stations**
- **Marine surveyors and hull cleaning shop**
- **Private lifeguard shore stations**

"Part 80.501(b) requires a detailed eligibility statement to show the applicant's or the organization's qualification for this license," adds Foster, indicating the FCC still examines electronically filed applications with their Rule book in hand!

Recent Rule clarifications could expand the usefulness of this license to an individual or organization that travels MOBILE and PORTABLE without a specific base station location.

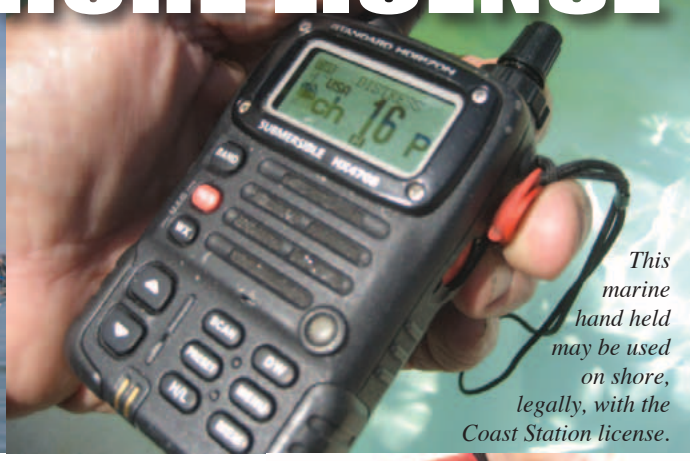
Continued on page 28

GET AN FCC SHORE LICENSE

continued



Tugs can talk from ship to shore.



This marine hand held may be used on shore, legally, with the Coast Station license.

"We recently assisted with licensing a boat test organization that required a mobile/portable authorization to communicate from a land vehicle to a nearby test vessel in the ocean, on rivers, and in lakes. The organization qualified under Part 80.507(c) as a Marine Utility Station at temporary, unspecified locations," adds Foster.

The Marine Coast Station license grant will usually include three or four VHF marine band frequency assignments, for shore to ship and ship to shore communications. This would include Distress Channel 16, and Digital Selective Calling Channel 70, as part of the granted frequencies. Additional channels may be requested if the operation of the station will take place in heavily congested harbors, where a clear channel is necessary.

Digital Selective Calling capability on marine VHF channels allows data exchanges between shore and ship for Automatic Position Poling, automatic switch and answer to a specific channel, and "call waiting" if the ship operator misses the digital selective call to their station.

In the Pacific Northwest and in Southern California, frequency coordination is necessary to insure your base station doesn't end up on the same channel as your competition! All the more need for the professional licensing service to get your application through electronically on the first or second try!

"It is not uncommon that an initial application filing is met with the 'DISMISSED' correspondence from the FCC – it just means that they want additional details about the intent and purpose of this license," adds Foster.

On medium frequency and high frequency marine single sideband channels, the Private Coast Station could qualify for one or two channels in the following marine bands:

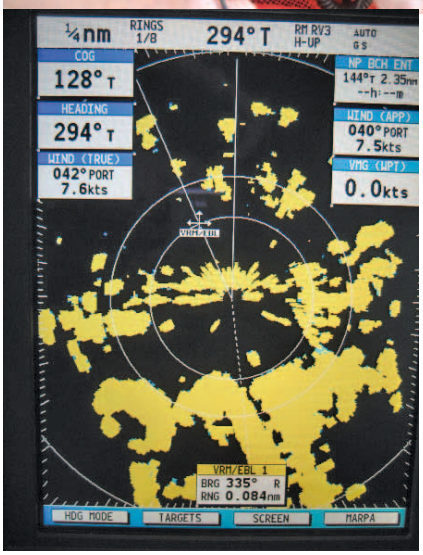
- **2 MHz Coastal**
- **4 MHz Coastal/Tropical**
- **6 MHz Moderate range**
- **8 MHz Medium range**
- **12 MHz Long range, day and night**
- **16 MHz Long range, day**
- **22 and 26 MHz Sky wave dependent, day**

Long range frequencies would include 2182.0 kHz, upper sideband, for voice distress, and 2187.5 kHz, digital selective calling distress.

"More VHF and SSB shore stations monitoring the distress channels, plus guarding digital selective calling emergency frequencies, will add SAFETY to our listening watches," comments Joe Heresy, USCG Telecommunications.

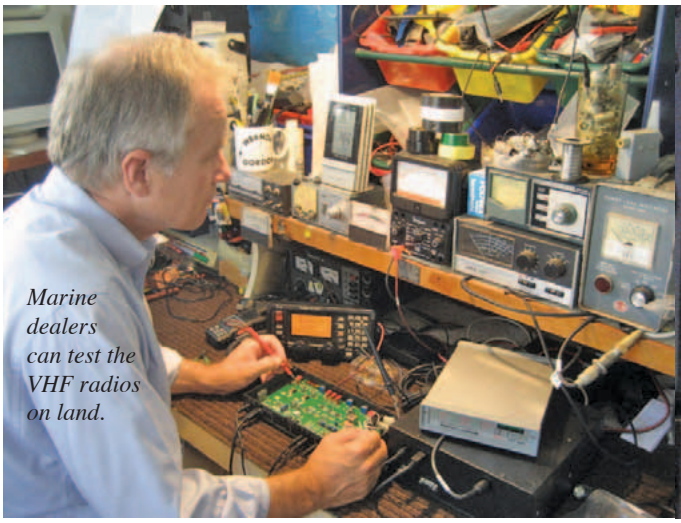


Emergency dock workers can carry a marine hand held legally.



There is even capabilities to license marine radar on shore, too!

Local marine electronics and marine engine repair facilities may be located in a remote area of the country, and only their station guarding the distress channels has a clear shot at local boaters in the area. When properly configured, shore station marine radio equipment might also re-send (relay) digital distress calls.



Marine dealers can test the VHF radios on land.



Run your marine radios from shore with the FCC license.

VHF shore station power output may be as much as 50 watts, twice that of a normal marine VHF radio aboard a boat. Marine Utility stations and mobile/portable may be limited to no more than 10 watts output – and that shore station, using a 10 dB gain collinear array antenna, could have an effective radiated power output of 100 watts!

On long range marine single sideband, peak envelope power could be up to 1,000 watts on high frequency channels. Most marine SSB transceivers only put out 100 watts, but the Rules do permit more.

But do you qualify? The FCC application reviewers, who home in on eligibility, are quick to spot an individual attempting to license up under the marine radio service just as a hobby to chitchat with friends at sea. However, a properly executed application for a licensed marine surveyor requiring portable shore to ship communications throughout the country would likely go through on the first try.

"It all hinges on the amount of showing that our clients provide. Applications may get bounced if the Commission determines the individual has nothing to do with the marine industry and boats and ships at sea," adds Foster, one of the few marine licensing specialists in the country.

You can try it yourself, online, on the following forms:

- **FCC form 601, Application for Wireless Telecommunications Bureau Radio Service Authorization**
- **FCC form 601, Schedule D, Information and Instructions**
- **FCC form 601, Schedule D, Station locations and Antenna Structures**
- **FCC form 601, Schedule G, Technical Data for Marine and Aviation Services**
- **FCC form 159, Payment type and amount**

All applications are handled by the FCC Licensing Bureau in Gettysburg, PA.

"Universal Licensing System for Maritime Coast is the interactive licensing database developed by the Wireless Telecommunications Bureau, to consolidate eleven existing licensing systems used to process application and grant licenses in the wireless services," comments a Gettysburg FCC representative.

"The ULS provides numerous benefits, including fast and easy electronic filing, improved data accuracy through automated checking of application entries, and enhanced electronic access to licensing information," adds the FCC.

The Universal Licensing System homepage is http://www.FCC/gov/wtb/ULS.

The Federal Communications Commission licensing HELP staff in Gettysburg, PA, ARE THE BEST EVER!

1(888) CALL FCC. With only a few button pushes, you reach a LIVE, courteous, helpful person! These patient, pleasant, and personable operators will take a sincere interest in your application, and help you to better understand the electronic filing procedure.

When the marine Coast Station is licensed you are ready to go on the air, talking to ships, boats, kayaks, and day sailors equipped with marine VHF radios out there on the water. Do not misuse the license by communicating from shore to mobile units ON LAND just to skirt the crowded land mobile frequencies. This license is mainly intended for shore to ship. The Rules do permit "in the vicinity" handhelds to be used in connection with your shore station license, but keep in mind; this is the marine radio service, not intended for REGULAR land mobile/portable service away from the bay.

Are you eligible? I am happy to answer your questions, and help you find the professional license processing agent for your area by calling me at 714 549 5000, daytime, Monday through Friday.

If you are in the marine industry, you will probably qualify for a shore station license. ●

You Gotta be Kidding Me...

What the heck is an app?

By Ed Muro, K2EPM



We all have our own ways of doing things be it from frying an egg, to hitting a golf ball, to playing radio. Generally, there are usually prescribed methods of performing these functions. Some folks will adhere to the prescribed methods and others will modify methods to better suit their individual needs.

If you are reading this magazine you are probably more than just a casual radio hobbyist. One of the things that I always thought was great about the radio hobby is that there are so many facets to the hobby that you can usually find something of interest for just about anyone be it scanning, CB radio, short wave listening, medium wave DXing or ham radio. Even within those categories of the radio hobby there are different subdivisions that offer a flavor all of their own.

What generally bonds us all together is the fascination that sound is coming out of that box. Be it the sounds of a fire dispatcher across town, a trucker rolling down the interstate, an airplane at 30,000 feet communicating with an air traffic controller, a ham in Tulsa rag chewing with another ham in Bermuda, or a kid on Long Island (New York) sitting on his porch listening to the Cleveland Cavaliers basketball game on 1100-AM with his portable AM radio. Some folks specialize in just one aspect of the hobby and others dabble in various aspects. I tend to fall in to the second category.

I am currently approaching my 46th birthday and I have been playing this game a very long time. I started playing with shortwave radios and CBs when I was in grade school, probably around 10 or 11 years old. Then when I was 13 my parents bought me my first scanner and then I waited until 1997 to become a licensed ham radio operator...since then I served three terms as Vice President of the Long Island Mobile Amateur Radio Club, one of the largest ham radio clubs in the country. While I enjoy all aspects of the radio hobby, by my own admission I only dabble in Short Wave Listening, Medium Wave DXing, HF Hamming, and I haven't been active on CB in decades. But at one time they all played a big role in how I spent my free time.

My main interest in the radio hobby has always been public safety and civilian aviation scanning and in more recent years conversing with my friends on local ham radio repeaters. While my love of the hobby has never changed over the years the amount of free time I have to participate in various aspects of the hobby change as frequently as the "seasons" of life change. That said, there has rarely been a trip I have gone on in the last 20-years that I didn't take a scanner with me.

I am about to go down a different road now but in a few paragraphs you will see how these roads meet. In the not too distant past some folks in the Ham Radio hobby started talking about VoIP protocol and two aspects of the hobby that use the Internet as a tool to communicate: Echolink and IRLP.

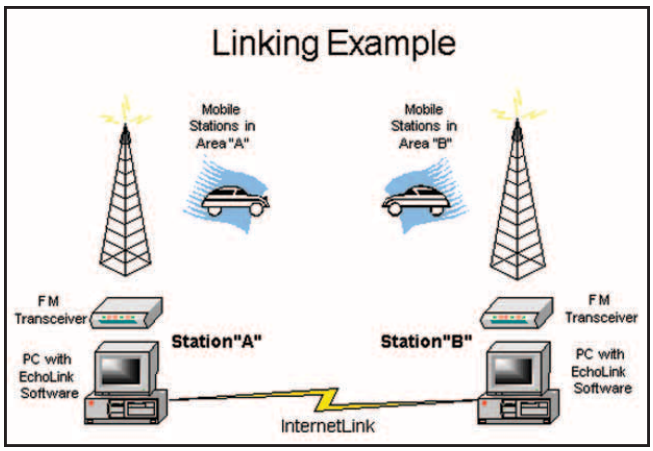
As described by the Echolink website: EchoLink® software allows licensed Amateur Radio stations to communicate with one another over the Internet, using streaming-audio technology. The program allows worldwide connections to be made between stations or from computer to station, greatly enhancing Amateur Radio's communications capabilities. There are more than 200,000 validated users worldwide — in 162 of the world's 193 nations — with about 5,000 online at any given time.

The Internet Radio Linking Project, also called IRLP, is a project that links amateur radio stations around the world by using Voice over IP (VoIP). Each gateway consists of a dedicated computer running custom software that is connected to both a radio and the Internet. This arrangement forms what is known as an IRLP Node. Since all end users communicate using a radio as opposed to using a computer directly, IRLP has adopted the motto "Keeping the Radio in Amateur Radio". Amateur radio operators within radio range of a local node are able to use DTMF to initiate a node-to-node connection with any other available node in the world. Each node has a unique 4 digit node number in the range of 1000-8999. A real-time searchable list of all nodes worldwide (including their current status) is available anytime by viewing the IRLP Network at a Glance. As of June 2009, there are over 3,180 nodes across 7 continents.

Some folks will argue that Echolink and IRLP are NOT "real" radio. I am usually at the cutting edge of technology changes but I too was a skeptic... at first. However, it didn't take long to convince me that these new "tools" of the trade were a great way for me to enhance my enjoyment of the hobby. In the summer of 2003 my fiancée (now my wife) and I went on a cruise to Bermuda. Because the trip was to be romantic in nature, it wasn't practical for me to pack a bunch of radio gear. But, I was able to slip my VX-5 in my bag... and sure enough one day I found that I had a half hour to myself on the boat and I scurried to a corner where I was able to communicate with folks back in the states via a local 2-meter repeater in Bermuda that was connected to the IRLP network.

One thing I learned after we had a baby is that when you

continued



have a little one there is a whole host of items that need to be packed when you travel. There is the car seat, the diapers, the disposable wipes, extra clothes, toys, bottles, and some other assorted items. Seems to me I end up being the mule half the time so instead of taking my radio go bag on trips half the time I find I am lugging around all of junior's crap. (Can I say crap?) So, a few years ago on a trip to Daytona Beach I found myself sitting on the balcony of our hotel watching the sun rise at 0-dark-hundred and there I was with my net book having a QSO with the guys back home on the LIMARC 2-meter repeater via echo link.

So, to reiterate...I was a quick convert when it came to embracing new technologies.

Moving back to my favorite past time...scanning...I was what I would call a "scanning purest" and in my misguided youth I always thought that you weren't a serious scanner hobbyist if you didn't have the latest and greatest scanner.... over the years I had some classics: The Regency ACT-16K, an Electra Bearcat 250, Electra Bearcat 300, Radio Shack Pro-2005, Bearcat 780 XLT, Bearcat 785 XLT, Pro-43, and a Bearcat 3000 XLT. There have been some other models I had along the way but you get the picture.

The only time I wavered from this theory was if someone had a specific use for an inexpensive radio. For instance, in the mid-90's I was a big summertime beach goer so I purchased a factory refurbished Bearcat 60 hand held for 60-bucks. With 10 channels it was just enough for me to listen to the action on the local public safety channels and marine channel 16. For 60-bucks I didn't care if sand got in it and it served me well for a good 6 years or so.

In the same time period I had a circle of active radio friends in the area and a couple of guys in the group would always spend a lot of time talking about the "service search" feature of their radios. One particular guy even went as far as owning multiple Uniden BC350A's. I thought to myself: what's wrong with this guy...how in the world do you buy a scanner with out a direct entry keypad? A real scannist doesn't use gimmicks such as service search...they look frequencies up the hard way in "Police Call" or on the Mr. Scanner CD and then write out lists and enter the frequencies by hand. That was 1997. By 2002 or 2003 I upgraded my theory to included using a computer to create and upload files to my radio.





Fast forward to the current life that I live: Father of a young child, husband, home owner, active in local community organizations, and employed 50-60 hours per week. That doesn't leave a whole heck of a lot of time to play radio. Under those time constraints one has three choices: either give up the hobby, give up taking car of life's priorities, or modify the way we do things so that we can fit it all in.

My current shack configuration consists of a Uniden BC785D which I use for aviation and marine band monitoring while my public safety monitoring is done is done with a Uniden UBC996T. For scanning on the go I am equipped with a Radio Shack Pro-96, Uniden UBC396T, and a GRE PSR-500; with the Pro-96 being the "go to" scanner the majority of the time. Using WIN-96 I have multiple profiles set up not only for local scanning but for scanning various places that we frequently travel to.

In speaking with many retailers and people in the hobby, one area where Radio Shack and Uniden has lost a lot of customers is the casual scanner monitor who may have in the old days only wanted to monitor 3 to 5 frequencies and then their municipality went to a trunked system. For some of these folks learning how to use a PSR-500 or UBC996XT became a source of frustration. In that vain, a while back Radio Shack announced a new product in their line manufactured by GRE, the Pro-107 hand held. According to the Radio Reference Wiki, the Radio Shack PRO-107 iScan is a Multi-Trunking scanner which boasts the ability to track Motorola type I/II systems, LTR and EDACS trunking systems using the Radio reference database on an included 2GB Secure Digital card. The entire database is stored on the SD card and a menu system is used to program the agencies that you want to monitor. Using your computer with an Internet connection and an SD card reader you can update your database

Continued on page 32

You Gotta be Kidding Me... continued



as they become available. When I first read about this radio, once again I rolled my eyes. However, this past summer we were planning a quick trip out to Lancaster and I thought to myself that it would be nice if I had the ability to program a scanner without having to find a motel that offers Wi-Fi. Then I noticed that the Pro-107 was on sale at The Shack, so I ran out and picked one up. Sure enough, it works as advertised. While it will probably never replace any of my high-end scanners it supplements my arsenal. It has also wet my appetite to consider acquiring the new Uniden Home Patrol.

Changing gears once again I will now enter an area that was the inspiration for this article, the "App." App is short for Application Software. which is computer software designed to help the user to perform singular or multiple related specific tasks. It helps to solve problems in the real world. Examples include enterprise software, accounting software, office suites, graphics software, and media players.

Application software is contrasted with system software and middleware, which manage and integrate a computer's capabilities, but typically do not directly apply them in the performance of tasks that benefit the user. A simple, if imperfect, analogy in the world of hardware would be the relationship of an electric light bulb (an application) to an electric power generation plant (a system). The power plant merely generates electricity, not itself of any real use until harnessed to an application like the electric light that performs a service that benefits the user. There are Apps for all sorts of devices such as the Droid Cell Phones, the SONY Dash Internet appliance, Blackberry and Palm PDAs but the most widely known device to uses apps is the Apple I-phone.

I had heard through the grapevine that there were several "scanner apps" available for the I-phone which basically allowed I-phone users to have a means to listen to scanners in remote places that were streaming their audio over the Internet. I have listened to streaming audio over the net quite a few times in the last decade and there is a place for it but once again I rolled my eyes and thought to myself that listening to streaming audio over your cell phone was a good way to use up your power and run you battery dead real quick. Yes, in a perfect world you might be better served by having both a phone and separate dedicated scanner but what if it is just not practical…or what if you scanner goes dead? Enter the world of scanner apps. I had been wanting to hop on the I-phone band wagon but it was just not possible as my cell phone provider didn't offer I-phone service…so a couple of months ago I did the next best thing…picked up a Droid 2 which uses Google's Android operating system. I quickly started looking for Apps that might hold my interest from Accuweather to Weatherbug to Facebook. In my search I found quite a number of streaming scanner apps…some free and some offered at a nominal charge between $1.99 and $3.99. I downloaded most of the free ones and one or two of the ones you have to purchase. They basically all do the same thing, monitor streaming audio, but where they differ is how they look on your phone's display. Some are simplistic, such as one that streams Lancaster County (PA) Fire…it is a very basic picture of a Fireman's head in a helmet with "LANCASTER COUNTY FIRE" written on the graphic. Then there is "Scanner Buddy" whose interface more realistically resembles a radio's display. In addition to the two I mentioned I have also downloaded "Scanner Radio" on my Droid. There are a number of these apps available for both the I-phone and Droid; you are just going to have to search around until you find the one that suits you. Why would someone want to use a scanner app as opposed to a portable scanner? That is a question that even I can't find many answers to but two that come to mind are:

1. They are trying to justify buying a fancy and expensive phone by trying to find additional uses for it.

Or

2. Mere convenience. Let's face it, not everyone always carries a scanner with them but most people always carry their phone with them.

Again, keep in mind when you use any app on a smart phone you generally will run your battery power down more rapidly. What I have done is purchased additional power supplies for my phone. Some OWM power cords are starting to appear on EBay relatively inexpensively. I have the AC cord that came with my phone which I use at home, then I bought an extra one to keep at work and an extra one that I take with me on trips. I also have mobile power cords in each one of my cars.

On a recent 10-day road trip that I took with my family I was spending some late evening hours trying to monitor the local public safety agencies using my scanner and it just didn't seem very active. I couldn't decide if I had programmed my radio wrong of just if crime was low. So, I took out my I-phone, opened the "Scanner Radio" app and sure enough there was a streaming link for Forest City, North Carolina. I was then able to spend an hour enjoying some good ole southern scanner listening. Maybe be not how I normally would choose to listen to the local cops, but it worked.

The moral of the story is before you poo-poo the next greatest advancement in the radio hobby as not being "real radio" just because it is not what you think is "traditional" take a second look at it, you might be surprised that you find some instances where these new technologies will fit in with what you already do.

The Uniden HomePatrol

Scanning at its (almost) simplest

By Tom Swisher, WA8 PYR

Does your grandma like to listen to the local police in order to stay abreast of what's going on in the neighborhood? Has she been, like so many others, thoroughly puzzled by the complexity of modern radio systems?

If so, the Uniden HomePatrol is just what she is looking for. This gadget is definitely not Grandma's old scanner, though.

Back in the day, if you wanted to listen to your local police or fire departments, all you had to do was stroll into your local consumer electronics emporium and talk to the friendly, knowledgeable salesfolk. Whether it was Radio Shack, Olson, Heathkit or Lafayette, they had what you needed. Heck, even places like Sears, Swallen's and Gold Circle carried crystal scanners, along with the crystals necessary to receive the local activity. All you had to do was stroll in, tell the friendly, knowledgable sales clerk who you wanted to listen to, and the clerk then selected the proper crystals, plugged them into the receiver for you, and you were off and running.

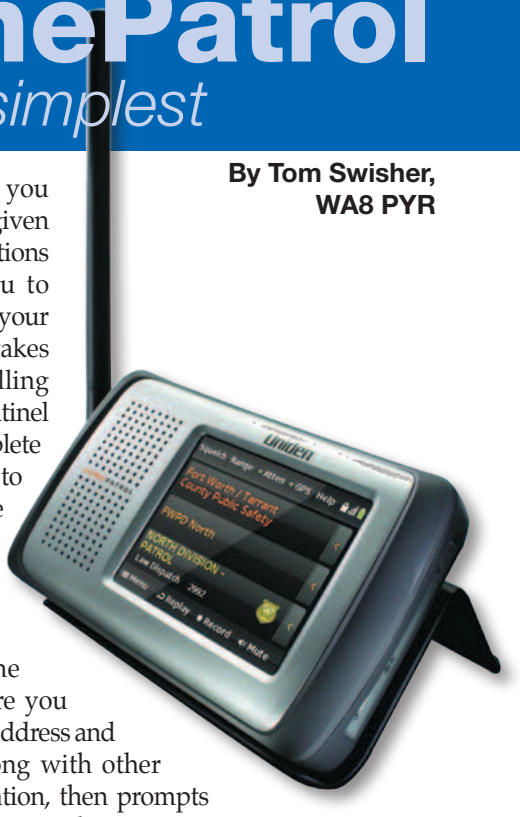
When I was a budding young radio geek in the early 1970s these stores were the places to go if you were a radio hobbyist. Big box stores like Best Buy or HH Gregg just didn't exist, and the local electronics emporium actually had someone behind the counter who not only knew what "megahertz" means, but also knew how to apply that word to what the customer wanted.

Today it's all different. Between frequencies, squelch codes, trunking formats, talkgroups, radio IDs and all the rest, radio systems have become so complex that the average Joe has trouble comprending all of the different settings necessary to make the scanner work.

Enter the HomePatrol. A totally new concept in scanning, the HomePatrol has a complete copy of the RadioReference database for the United States and Canada already installed on the included Secure Digital memory card, which makes monitoring the neighborhood almost as easy as it was "back in the day." All you need to know is where you are (City/State or Zip Code or GPS coordinates), enter that information into the radio, and you're monitoring. It's that easy.

Measuring about 3-3/8" x 5-7/8" x 1-3/8" (hwd), and weighing in just over a pound with the batteries inserted, the radio comes complete with nickel-metal-hydride batteries, a desk stand, angled SMA-mount antenna, the 2-gigabyte Secure Digital memory card, wall-wart style charger and an auto adapter. Also included on the SD card with the database is a copy of the HomePatrol Sentinel software, which allows you to keep the radio firmware and internal database up-to-date.

Setup and installation couldn't be easier. Simply take it from the box, install the batteries, attach the antenna and plug in the charger. When you turn it on you'll be given a series of six questions which prompt you to connect the radio to your computer. It then takes you through installing the HomePatrol Sentinel software; once complete you'll be prompted to update the firmware and database. When that's done, the radio prompts you to enter information for the home screen (where you can list your name, address and phone number along with other identifying information, then prompts you to enter the local time. Then you're asked for your location by either zip code or city/state. The radio also looks for a connected GPS receiver and if it finds one will ask if you wish to use the current location.



Once the location you enter has been accepted, the radio will read the appropriate internal database files, set up a scan list and begin scanning. Unlike other scanners which require lots of input from the user regarding system types and frequencies and take quite awhile to get started, the HomePatrol is very fast; the time from power up to start of scanning if you skip the software installation and database update steps was about 1 minute, 57 seconds. Updating the firmware and database adds about 5 or 6 minutes, but this step is only occasionally necessary.

Once you begin scanning, you'll see on the the Listen screen three button bars showing the System, Department and Channels being scanned, with the top line indicating the System being scanned. When an active channel is found the center line shows the Department, and the lower line shows the channel in use. If you wish to hold on one particular system, department or channel, simply tap the button bar on the screen while the desired monitoring target is displayed; the radio will show the name with a padlock on that bar to indicate it's locked on that particular system, department or channel. While the lock is displayed you can also tap the far right side of the bar, at which you'll see a menu that allows

Continued on page 34

you to step through the systems, departments or channels to select a different one. This is basically the same as the "Manual" function found in other scanners.

From almost the beginning of scanner time, these radios have given the user a way to lock out or skip specific channels so they didn't have to listen to the nonsensical babble often heard on certain channels. In the good old days with crystal scanners, it was as easy as pressing a button or flipping a switch to skip that particular channel. With programmable scanners you had to select the channel you wanted to skip and press Lockout. With the HomePatrol, however, we don't lock out channels; we Avoid them. The avoid feature allows you to temporarily skip certain channels until the next time the radio is shut off and powered back on again; this allows you to skip the nonsense in favor of the good stuff. It's pretty simple; when the HomePatrol is stopped on a channel you want to avoid, simply tap the right end of the channel bar and select Avoid; a menu with pop up asking you to select temporary or permanent avoid. Temporary is the nonsensical babble avoidance mode; permanent allows you to skip a channel comprised of nothing but nonsensical babble, or just simply noise (there often isn't a lot of difference between the two).

The System, Department and Channel button bar also have sub-menus, accessible by pressing the far right end of the bar. Each menu allows you to scroll through the systems; select sites in a multi-site system to monitor or avoid; retrieve information on that system, department or channel; or avoid it altogether.

Also found on the Listen screen at the top and bottom of the display are various menu selections. On top you'll find Squelch (which allows you to adjust the squelch); Range (to increase or decrease the monitoring radius); Atten (the attenuated, which allows you to reduce interference in high-noise environments); GPS (for changing GPS settings when GPS is in use); and Help, which activates descriptive help screens. The upper right corner also shows a signal strength meter and a battery meter, and when pressed locks the screen against an accidental keypress. On the lower part of the display are selections for Menu; Replay; Record; and Mute.

The Menu selection is where you can change most of the detailed settings of the radio. These settings include Location, where you can change your location manually if you're not using GPS; Audio Options (the audio AGC and screen tap click settings); Weather mode (monitoring the local weather channel and entering SAME codes); Display options (contrast, backlight and so on); Owner Information; Favorites lists; and Advanced. Also found in the menu is the Service Types setting, with the Law Dispatch, Fire Dispatch and EMS Dispatch service types enabled by default; you can also choose from a variety of other services including Aircraft; Emergency Ops;



EMS, Fire and Law Tactical and Talk channels; Ham Radio; Railroads and various other common services.

The Audio AGC (Automatic Gain Control) setting works very nicely; it's a particularly useful feature to have when you're in an area heavily populated with whisperers and SHOUTERS. These individuals are particularly annoying when you turn up the volume to hear a whisperer and are shortly thereafter blown through the opposite wall by the blast of noise from a SHOUTER. The Audio AGC works automatically to smooth out these wild differences in volume, thus preventing you (or grandma) from being blown through the opposite wall.

Selecting the Advanced menu allows you to check the radio's current firmware version information; here you can also change the auto shutoff settings, clock settings, and battery charge time; in addition, there are settings for Channel Avoid options (which set the minimum time a channel will be skipped during scan), audio mute options and replay options. You can also manually enter frequencies of interest to monitor for activity. Most of these settings won't need to be changed as the defaults are generally suitable; however, it's sometimes useful to be able to change the mute settings. The audio mute can be changed to mute the audio in varying levels for time intervals ranging from 5 seconds to 2 minutes, or until the mute button is pressed again (permanent). I found it useful to set the mute to Permanent with a level of 3, which enabled me to mute the audio to take phone calls in the office yet still be able to hear what was going on without it being obtrusive.

One of the really slick new features found on the HomePatrol is the replay feature. We've all experienced that frustrating

moment where were weren't quite paying attention and sort of heard something really cool; then you wished for the replay feature so you could go back and hear what you missed (to make sure you didn't imaging it). The HomePatrol replay feature allows you to replay received audio it records; the total amount of time it will record what it hears is selectable in 30 second intervals from 30 seconds up to 240 seconds. Once set, HomePatrol will record the transmissions it hears up to that length of time; as available space on the internal SD card is used up, the radio will start to replace the oldest recordings. The recording itself works great and is very easy to use; after a transmission ends simply press "Review" and use the arrow keys to scroll through the recordings until you hear the one you want. You can also press "Record" on the display during an active transmission and the radio will record all transmissions from that channel up to the limit of the memory card or until you stop recording. This is an excellent feature!

You can also create your own favorites lists with the HomePatrol, either when scanning or using the software. When scanning, you can select the channel bar and scroll through the channels, hitting the Fave button to add that channel to your favorites list. In the software, you can create a favorites list, then select systems, departments and channels to add to your favorites list. This useful feature could be used to create function-specific favorites lists; for example, you could scan all channels normally, and switch to your "Tactical" favorites list when there is a working fire in order to monitor only the fire department tactical channels. The radio will allow you to add multiple Favorites lists, so you can create lists for several purposes.

One very handy feature is the GPS location interface, which uses information from an external GPS unit to determine location and thus what is scanned. Available as an optional extra from Uniden is a small GPS device which plugs into the radio; however, you can also use your existing GPS unit as long as it has a serial interface which outputs the NMEA standard 4800 baud data format. To test this feature I used my Garmin eTrex Legend handheld GPS unit, which isn't the latest and greatest but still works fine; I simply used by BCD396T programming cable and a null modem adapter to connect to the cable from the HomePatrol. Once connected, I turned on the GPS unit and as soon as it got a position fix, turned on the radio. It almost instantly recognized the GPS connection and asked if I wanted to use the GPS location. I selected yes, the radio loaded the appropriate systems and counties, and started to scan.

I tested the GPS capability during drive through some rather sparsely settled areas of Southeastern Ohio on rather twisty roads, so not having to manually change scan files every 20 miles (thus diverting attention from the road ahead) was a definite plus. As I traveled down the road, the radio periodically received position updates from the Garmin, and automatically changed what was being scanned as I traveled, without any effort on my part; when I was within 4 or 5 miles of a county line, the new county I was about to enter started to be scanned, and a few miles later the county I had just left stopped being scanned. Once I arrived at my destination (with West Virginia just on the other side of the Ohio River), the HomePatrol even started scanning the adjacent areas in West Virginia, and remembered my last known location after I disconnected the GPS unit. This is a very cool feature!

During my testing, reception on the HomePatrol was very good. While the included antenna isn't perfect, it performs well enough for the vast majority of uses. The HP-1 seems to be quite immune to interference and other unpleasantness, and works quote well. With excellent display illumination and audio quality (both being more than sufficient for home or office use, the radio is suitable for use nearly anywhere. The digital audio quality is even quite good with no fiddling required, which is something I've not had much luck with on previous Uniden digital scanners (I've always had to tweak the settings to get it right for my area). Don't forget the amplified external speaker if you're going to use the HomePatrol for mobile purposes, however; the audio output just won't cut it in the car without one.

While the feature set of the HomePatrol is excellent and well suited for the vast majority of users, there are some serious scanner types out there for whom it just won't cut it; such folks need to control every aspect of their scanner, right down to the spelling of the channel names and descriptions. For those advanced users, Uniden has promised that additional advanced capabilities will be coming, once the HomePatrol has hit store shelves and it's capabilities become apparent. Accessories will also be available, such as a reasonably-priced external GPS unit, and mobile mounting bracket suitable for attaching to suction cup windshield mounts, or bracket post mounts attached to the dashboard or seat rail (for those really serious users).

Also coming from third-party software providers will be more feature-rich software that allows the user to create systems and favorites lists locally; this will permit serious customization of what you scan, as well as variable settings based on the profile in use. I'm already working with one of these, and so far its a champ.

With an excellent feature set for both the novice user or advanced scanner technophile alike, the HomePatrol is a giant leap forward which will open up the hobby to many people who have been scared away until now, or make scanning more enjoyable for advanced hobbyists. ●

TALK SHOWS, THE VOICES OF AMERICA

By Dorothy Rieke

Radio talk shows, whether relaying on political discussions and analysis or employing content for entertainment, have become extremely popular during recent years. These shows inform, challenge, interest, entertain, and, at times, encourage listeners to act.

One reason for the popularity of these shows is listener participation. Hosts contact listeners and relay their phone comments to radio audiences. Varying opinions and questions concerning certain topics inform and build interest.

Radio talk hosts often develop personal relationships with their audiences. Because of this connection, audiences are more likely to trust what they say and respond to their messages.

Of course, program content is all important on these talk shows. Content often dictates the type and numbers of listeners. Content may include social issues such as crime, pollution, poverty, racism or sexism. Political content may be an election or government policies or Washington news. These talk shows, divided according to content, include conservative talk, sports talk, hot talk, and progressive talk. This variety is what draws listeners with different interests and concerns. Hot talk, FM talks or shock talk, is of special interest to men ages 18-49. These broadcasts consist of subject matter pertaining to pop culture rather than political talk. As early as 1920, Aimee Semple McPherson, after purchasing radio station KFSG, began broadcasting expressing and debating political opinions. Later, the priest Father Charles Coughlin reached millions through airwaves with a talk show. These individuals expressed their opinions on many subjects. It seemed that listeners were drawn to these programs whether or not they agreed with what was being said.

America's Town Meeting of the Air became popular in 1935 with its weekly panel discussions involving audience members. On this show, part of the attraction was the questioning or even hassling audience members for their opinions. Of course, listener participation continued to enliven radio talk shows and brought instant approval to certain shows. In 1945, Barry Gray, on radio station WMCA, put his telephone receiver up to the microphone to talk to the popular band leader, Woody Herman. This incident was the beginning of Gray's interaction with listeners by phone. Gray, because of his innovative idea, earned the name, 'The Hot Mama of Talk Radio.' Other radio personalities soon followed his lead.

During the late 30s or early 40s, the first station to invite listeners to argue politics over call-in radio was Station KLUF in Galveston, Texas. This unique practice brought certain political views into listeners' homes. In fact, even more important was that the itinerary was often dictated by listeners who wanted to express their opinions and gain information. Another early talk show was began by a disc jockey at station WGBS in Miami, Florida, in 1948. 'The Alan Courtney Show,' with coverage over the Southwestern United States and Cuba, presented a conservative and anti-communist political forum on Miami's WQAM, WINZ, and WCKR.

This popular concept was adopted by numerous radio stations such as Radio Station WMEX in Boston, KMOX in St. Louis Missouri, KABC in Los Angeles, California, and KTKK or KSXX in Salt Lake City. In their attempts to draw and retain listeners, these stations all turned to full time talk shows.

These political opinion and analysis talk shows continued to flourish during the 70s and 80s, especially in larger cities. People were leaving the AM behind for the high fidelity of the FM radio dial. At this time, the talk show formats, interesting, challenging, and informing rose to fame. These shows played important roles in keeping people informed, especially important in a democracy where citizens must be acknowledge able about current happenings in order to vote intelligently.

During the 90s when the FCC repealed the fairness doctrine requiring stations to give free time for responses of controversial opinions, radio stations began the now popular partisan programming. One pioneer in the talk show business is Russ Limbaugh, who continues on the air today. He delivers a conservative commentary especially on the political scene as well as other news events and social trends. Others who have followed this trend are Hugh Hewitt, Sean Hannity, Mark Levin, Laura Ingraham and Glenn Beck. These radio personalities promise to deliver behind the scenes, up-to-date inside information from our nation's capital. At certain times, these conservative talk show hosts have turned public opinion by banding together to create a certain political outcome and have influenced election results and candidates chosen for office by working toward a certain political outcome. Politically liberal talk radio is also on radio airwaves. Air America presented the Al Franken Show which was to be a 'progressive alternative' to the conservative views. Liberal opinion radio has continued on the Pacifica network, present in a few major cities. Formats are generally a sort of volunteer-run community forum. Amy Goodman has become popular with her 'Democracy Now!' journalism and interview program.

Clear Channel, which added liberal talk shows, is now dropping liberal formats for the Fox Sports Radio Network.

Beginning in 2001, a new development in this area emerged. The highly targeted internet talk radio shows were produced over the internet. Several examples are The World Syndicated Radio and the VoiceAmerica Radio. The World Syndicated Radio, starting with five shows, now airs 120 shows or more. Local World Syndicated Radio stations are being created across the country to meet the needs of listeners. VoiceAmerica is perhaps the largest producer of Internet Talk radio programming. Their hosts present topics including civil rights, personal development, and inspirational material. This station advertises, 'Where the World comes to Talk.' Some programs from these internet stations find their way to traditional radio by way of satellite.

This way of gaining information on demand means listeners can listen by way of their computers, iTunes podcasts, or on cell phones. This is accessible information at its best online.

Radio from its earliest days of broadcasting through the Golden Age, into the Twentieth Century, to present day has brought a host of benefits through widespread communication. It has improved, influenced, and changed through what is transmitted. Since its conception, it has grown with current technology to meet every need. It has created wonderful memories and continues to meet the demands of today's society. It is, indeed, the 'Voice of America.'

CLOSING COMMENTS



By: Norm Schrein, KA8PGJ

Here we are at the beginning of a new year. The thing about starting out a new year is, it gives all of us an opportunity to reflect on things that happened during the past year and to look forward to what may be happening in the next. However, with today's times, our look forward may be a bit stunted, depending of what we think may be happening. So many people in the past year have faced the loss of a job, or a loved one and others will be facing the same fate for 2011. On the other hand, a lot of positive things have happened in 2010 that tend to be overlooked and of course there will also be positive things occurring in 2011 as well.

For myself, my company will be celebrating its 24th birthday in January and National Communications magazine will turn 21 years old in July. I plan on turning another year older in 2011 as well, but we won't get into numbers there. Then there are all the other things we celebrate individually and as a nation as well. I have always tried to look to the positive, even though the negative gets in the way from time to time.

So, let's extrapolate this to our hobby of radio in general. We can look at the changes that have taken place over the past years and look forward to what will be happening in our hobby over the next year. One major change that has taken place (and is still going on) is the change from analog radio transmissions to digital. Whether we feel that it is good or bad, it is here to stay and now we are using the first generation of scanners designed to deal with this new form of radio transmission. Both GRE and Uniden have come out with some pretty innovative ideas in digital scanners, and I would expect that trend to continue. I hope that both of these companies can eventually come up with a scanner that has recovered digital audio similar to what can be heard on the radio's our public safety personnel use. While our digital scanners are able to receive the digital transmissions now, something they could not do a few years ago, there is still some improvement that can be done with the digital audio.

Of course we all wish that the price would drop on digital radios. While I think there might be some small price reductions over the next year, I think that in the end we will be paying pretty much the same price for a digital radio; which is double the cost of an analog unit.

Radios like the HomePatrol from Uniden have provided some innovative concepts in programming a radio. However there is no substitute for being able to program your own radio with all the frequencies, alpha tags and so forth. I have found that no two people will program a scanner exactly the same. Also, the more frequency or channel information that is available, the better off we are. Unfortunately, no one database is 100 per-cent complete (our own included). So, just as the radio manufacturers will continue to work on improving their scanners, I am sure that those who work on maintaining databases for scanner enthusiasts will work to keep updating and adding material to their own files.



Accessories are another item that we use. One handy item to have would be an inexpensive and uncluttered amplified speaker. When in a high noise environment, a small compact amplified speaker will provide the additional audio needed. Then there are other things, such as antennas, cases, mobile mounting configurations and more. All have an opportunity to come out with something new in 2011 and hopefully they will.

So, now all we have to do is look forward to what new products will be coming out this year and look back with appreciation to the innovative products that came to us in years past.

LAST PAGE OUT



Babbling brook along the Blue Ridge Parkway in Virginia.

photo by Norm Schrein

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