Radio–Internet Media–Computers & Radio–Family & Hobby Communications

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POPULAR COMMUNICATIONS

JUNE 2001

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Country Music At Your Command! Page 74

Uncovering Hidden Scanner Frequencies–Page 51

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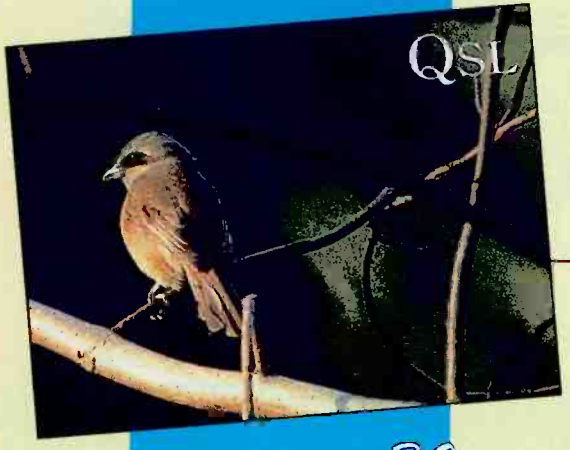

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Departments

On The Cover

Named *Rudolf Egelhofer* when it was part of the East German Navy, this Soviet-built Tarantul I class missile corvette was acquired from the Federal German Navy in 1991. There's plenty of German Navy action on shortwave *if* you know where to listen. Check out this month's Utility Radio Review on page 63 for details. (Photo courtesy DVIC Still Media)

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tuning in

by Harold Ort, N2RLL, SSB-596

an editorial

Three Months Of Your Survey Answers, And A Challenge To You!

A total of 381 *Pop'Comm* readers — mostly subscribers — responded to our survey questions during the months of December, January, and February. So right up front, a hearty "thank-you" to everyone for taking part — please remember that your continued responses to the monthly survey questions are very important, as they shape the future content and direction of *Pop'Comm*.

I've waited this long to report the results in order to have something concrete to pass along about our readers other than how long they've been twisting the dials. So let's take a closer look at what you've told us. We found the answers very interesting and enlightening, as I'm sure you will too.

Instead of pouring tons of numbers and fancy statistics your way, we'll present the results here in a readable format that won't force you to mentally rewind the next page, wondering what it all means. First, it's no secret that our radio hobby is mainly comprised of dedicated enthusiasts, most of whom (nearly three-quarters) are over 50 years old and have been active in the hobby since grade and high school. Very few (less than 1%) of you said you've become active in the hobby *since* retiring, despite the fact that more than a third of our total respondents are indeed retired.

The next largest group of *Pop'Comm* readers falls into the 30–50- year-old bracket; not quite as many as the over 50 crowd, but it's close — the two groups are only separated by about five percent! A small fraction of our readers are students under 20 years old. An interesting group of readers, those in the 20–30-year-old bracket, amount to about 1 percent of our readership, according to the survey results. That being the case, I decided to check the answer to the question we ran in December about the recent Morse Code changes in amateur radio. We asked if you planned on becoming a ham within the next few months, largely because of the recent rule changes requiring only 5 wpm code. An overwhelming majority, 104 respondents or about 72 percent of that month's total indicated they were not, while 23 percent said they were. Nevertheless, even the 23 percent who said they were, could conceivably amount to thousands of potential new hams on the HF bands.

Friends apparently play an important role in getting folks interested in radio; more than 25% of you said a friend or close relative got you involved in radio. And your radio hobby interest is spread over a wide area. I chose January's survey, which had 154 respondents, of course with multiple answers, but you'll get the idea below:

Scanning VHF/UHF — 112
SW Broadcast Listening/DXing — 91
Broadcast Band DXing — 77
Amateur – 67
CB — 58
FRS — 49
Utility Monitoring — 46
Antique Radio — 23

How Long And Where You Listen

A whopping 22 percent of you reported listening to your radios more than 40 hours a week. That's almost like a full-time job! And 52 percent of you do it from the comfort of home using a base scanner, 25 percent reported using a portable scanner at home, 17 percent said they listen on the road with either a portable or mobile scanner, 20 percent reported monitoring the airwaves in conjunction with using their wideband ham transceiver. The two categories that got approximately a half-percent each were those that monitor only on weekends or vacations and are public safety professionals (police officer, EMT, or firefighter).

Twenty-two percent of you reported spending at least 5–10 hours a week behind the dials. The remainder of our "time behind the dial" categories typically netted about 7 percent each, indicating

(Continued on page 62)

POPULAR COMMUNICATIONS

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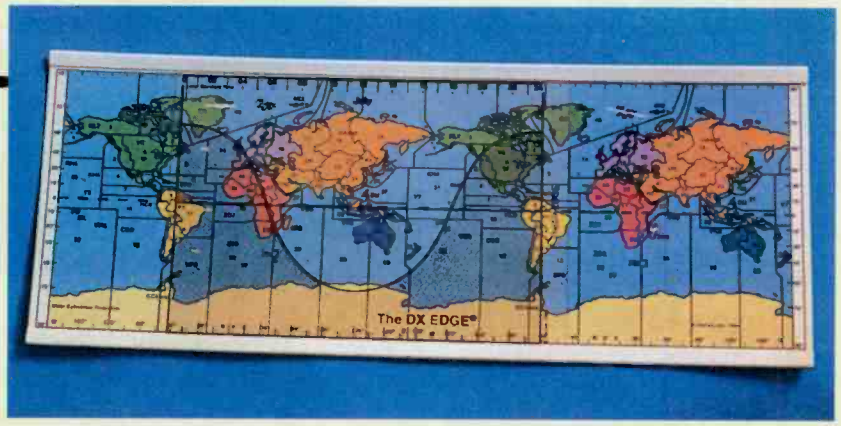
Using The Grey Line

How To Hear Stunning DX Out Of Nowhere!

By Ian Poole, G3YWX



The DX Edge is a super useful tool for grey line DX!

The real art of being a good shortwave listener or successful radio ham is being able to find long distance stations when others can't. There are many tricks that can be picked up, either in setting up the antenna, or knowing the best way to use the receiver. However, knowledge of radio propagation is one of the most useful. Knowing when to listen and what frequencies to use is the most valuable experience to gain.

It's obviously helpful to have a good knowledge of the different modes of propagation and how signals are reflected (or more accurately refracted) back to earth by the ionosphere. The conditions on the bands at any time are dependent on a number of factors including the time of day, the season, the position in the 11-year sunspot cycle, and the general state of the sun.

After some listening on the shortwave bands, you'll soon see that patterns emerge. For example on some of the higher frequency bands in the UK, stations from the States may be heard in the evening, later stations from the Caribbean and later still stations from South America may appear. Naturally this is dependent upon the frequency, and the general state of ionospheric conditions, but this type of "feel" for the bands helps to enable the more experienced operator to know when to listen and how to make the best use of the bands.

However under certain conditions it is possible to hear over great distances and at very good strengths. I have heard ham stations from the West Coast of the USA on the 40 meter amateur band in mid-afternoon in winter, and New Zealanders early in the morning at the same strengths as UK stations on 80 meters. These stations were heard via grey line propagation.

How The Ionosphere Works

To understand how grey line propagation works it is first necessary to take a quick look at the way in which ionospheric propagation takes place. Above the earth at altitudes between about 90 and 400 km there is an area called the ionosphere. In this area, radiation in the forms of ultra violet light, X-rays, and the like from the sun strikes the gas molecules in such a way that electrons are released and positive ions are left. Although the area is called the ionosphere (after the ions), it is actually the electrons that affect the radio waves.

It is found that the concentration of electrons varies with altitude. To simplify matters, the ionosphere can be considered to be a number of layers, although in actual fact these are areas of higher concentrations of electrons. The ionosphere is depicted above the Earth in **Fig. 1**.

The lowest of the layers is called the D layer. It is generally found at an altitude of between 60 and 90 km. It acts on signals in such a way that it reduces their strength or attenuates them. Fortunately it is found that this effect reduces with frequency. In fact it is found that for every doubling in frequency the attenuation falls by a factor of four. For this reason it is found that low frequency signals, like those on the mediumwave band are completely attenuated and do not reach the higher layers of the ionosphere. Higher frequency signals are affected less, but it should also be noted that they still suffer from some D layer ionospheric attenuation.

Because the density of the atmosphere is relatively high at the level of the D layer, the electrons and positive ions recombine relatively quickly. For this reason the D layer only exists when there is radiation from the sun, and it disappears at night. As a result, signals in the mediumwave that are completely attenuated by the D layer during the day, reach the higher layers at night and can be heard over very much greater distances.

Higher Still!

The higher layers in the ionosphere are given the letters E and F. These serve to refract signals back towards the earth. However as the frequency rises so the degree of refraction decreases, and eventually a point is reached where the signal passes through to the next layer. If the frequency is raised far enough a point will be reached where it will pass through all the layers and on into outer space.

The E and F layers vary over the course of the day. During the day when the layers are in direct sunlight, the level of ionization rises. In fact the F layer usually splits into two, named the F1 and F2 layers as shown. (See **Fig. 2**) However at night the level of ionization of both the E and F layer falls. Even though the levels of ionization in the E and F layers are higher than in the D layer, the rate at which the ionization falls is also

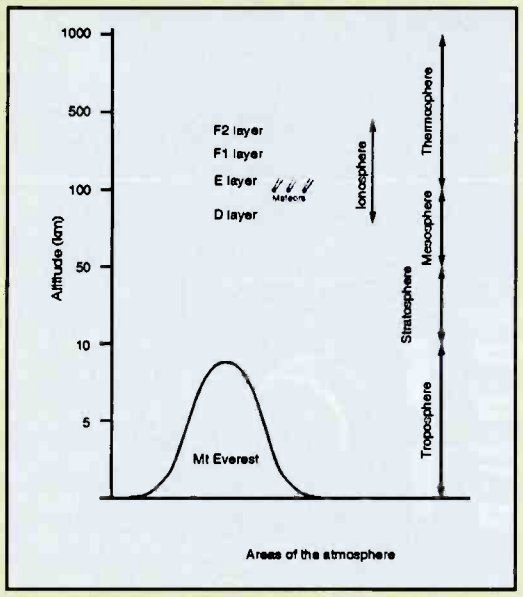


Fig. 1 Areas of the atmosphere, and beyond.

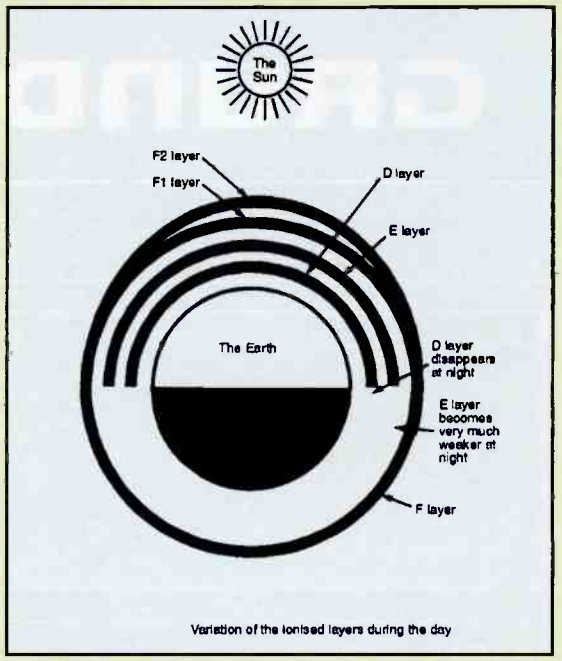


Fig. 2 Changes in the layers in the ionosphere over the course of a day.

less because the atmosphere is less dense at these altitudes. The E layer almost disappears, but the F layer remains. Although the F layer has a lower level of ionization than in the day it is able to refract signals back to earth.

The Grey Line: Be There And WIN!

Grey line propagation is simply when signals travel around the region that is in the twilight zone or grey line. It is found that propagation in this region is very efficient because the losses are much lower. The reason for this is that the level of ionization in the D layer is very much reduced or virtually non-existent. At the same time the ionization in the F layer (by which most propagation occurs) has not decayed very much. This means that the D layer absorption is minimal while the effect of the F layer is hardly reduced.

To utilize this mode of propagation both stations must be on the grey line. However it does not last for long. It only occurs about 30 minutes on either side of sunrise and sunset. This means that it is there for a maximum of an hour in the morning and an hour in the evening, and often less — a maximum total of two hours a day. The way in which signals rise and fall can be observed when listening to stations from the other side of the globe, particularly on the low frequency bands. Stations about a thousand kilometers away may be heard talking to them. Then as the grey line comes in the signals can appear relatively quickly out of nowhere, falling away again shortly afterwards.

How To Use It Successfully

While it's possible to use the grey line simply by being there at either dawn or dusk, it is also useful to know where *other* stations on the grey line might be. The grey line changes with the season. The same change in the inclination of the earth to the sun that causes the seasons to change also causes the grey line to change.

Unfortunately it is not easy at first sight to calculate exactly when areas around the world will be on the grey line at the same time as yourself. To help predict this many computer propagation programs are able to calculate it. Also a company named Xantec, Inc. produces a very convenient non-computer calculator. Named the DX Edge, it is a plastic slide rule map onto which a plot of the grey line path is placed for that particular month. This has been pre-calculated so it's simply a matter of selecting the correct overlay for that month and using the instrument. By setting the sunrise or sunset portion of the slider on your location, the points on the grey line are immediately visible.

Call Universal Radio at 800-431-3939 to order your *DX Edge*. It's $19.95, order No. 0059.

The Bottom Line On The Grey Line

Grey line propagation can produce remarkable signals. For anyone interested in DX and able to make the time to be around for sunrise and sunset it can give them a real edge over others who may not be able to make it at these times. The increase in signal strength provided by this form of propagation often makes it possible for stations to make contact or be heard when there would be no possibility via other means. Knowing how it works and when to listen makes all the difference, and is the mark of an experienced operator or SWL.

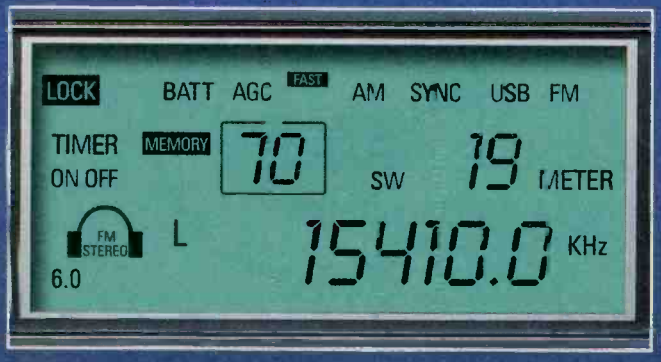
For anyone interested in the topic of radio propagation you're invited to read my book entitled *Your Guide to Propagation*, published by the Radio Society of Great Britain. It's priced at $10 and available from the ARRL or RadioBooks (Radioware).

CQ Communications book, *The NEW Shortwave Propagation Handbook* is a comprehensive source of HF propagation information. Call 800-853-9797 to order the book at $19.95 plus $4.00 shipping and handling.

Editor's Note: Ian has also written several other books including Basic Radio Principles and Technology *also available from the ARRL as well as Amazon, Barnes and Noble and several other Internet book stores. More information about propagation can be found on Ian Poole's Website at http://www.radio-electronics.com.* ■

GRUNDIG

The



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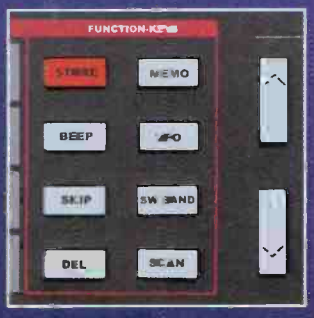

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the wireless connection

a look behind the dials

by Peter J. Bertini, <radioconnection@juno.com>

How To Keep Critters And Chemicals From Ruining Your Day

I confess: I'm way behind schedule on our Night Hawk Receiver project. I've purchased a neat vintage-looking black wrinkle Bud enclosure, and I have amassed many of the parts I suspect will be used in the project. The problem is finding parts suppliers for all of these items; since many were unique to my junk box it wouldn't be fair to use materials not available to everyone in constructing copies of the radio. I also need to have a fully functional model working on the bench before committing to a design in the magazine that may not work as shown. The inexpensive source I found for the power transformers has dried up, so I'm looking for other suppliers.

Many readers have been E-mailing us with suggestions for the set, and I promise you it will be a bit more challenging than the one-tube Boy's First Receiver project. So far I've penciled in a tunable RF amplifier stage, audio amplifier stage for speaker audio, and have some mods in mind for adding an RF gain control and some other features. Stay tuned.

Getting More Than You Bargained For

Spring is here — accompanied by warm weather are the anticipated radio shows, flea markets, and tag sales. This is a great time of year to find new acquisitions for our collections, but first some caveats are in order, lest that newly acquired treasure contain unknown dangers.

I'd like to thank reader Tod Warr for suggesting this topic. Here are a few excerpts from Tod's letter, E-mailed to us in November of 1998: "I wanted to bring up some hazards; I was given Wards-Airline radio that had a slab of asbestos in the bottom of the cabinet. A person contracting Hantavirus is rare, but if you live in a state where Hantavirus is known to exist, take precautions. Spiders and dust . . . I have restored many radios that were home to spiders, one even had a brown recluse living in it, and I've seen wasp and hornet nests in large pieces of equipment as well. You never know what might be in the dust of a radio . . . "

Let's go over some of the important issues raised by Tod. Whether you are interested in vintage consumer radios, or ham radio boat anchors, this column is a must read.

Mice and radios seem to go together; a friend of mine who restores vintage radios has found mouse skeletons and other assorted remembrances left by past denizens. Unfortunately, since the Hantavirus, carried by deer mice, was linked to several HPS (Hantavirus Pulmonary Syndrome) deaths in the American Southwest in the early 1990s, the disease has since been found in most of the lower 48 states and parts of Canada. Even the white-footed mouse, common to the Northeast, is capable of carrying the potentially deadly disease and passing it onto humans.

Here's the rub. Radio trading has fewer boundaries with the advent of on-line auction services such as eBay. A search for a common brand such as Philco will turn up as many as three or four hundred 'hits' on most days! These sets are sold to bidders worldwide. Radios that were recently found abandoned in barns, sheds. and cellars can find their way to your front steps and into your home in a matter of days. The Hantavirus is especially dangerous, since fresh mouse urine or feces transmit it. Collectors are used to occasionally finding traces of mouse droppings in old radios, and usually respond by giving the set a good vacuuming and cleaning. Alas, stirring up mouse droppings, or their nesting materials, fresh urine, or even salvia, causes aerosolation of the infected materials, and inhalation of these tiny infected droplets is the primary means by which the disease is transmitted to humans. Researchers also warn that it may be possible to contract HPS by handling infected materials and then simply touching you nose or face.

Some Precautions

So, what do you do if you suspect your new treasure may have been recently infested by mice (from what I've read, the virus seems to have a fairly short life span)? Here are some tips for cleaning up suspect infected areas, as prescribed by the CDC

This Zenith table radio contained an unwelcome surprise. An asbestos sheet was placed beneath the cabinet top to deflect the large amounts of heat released by the tube circuitry.

The front panel of George Hawkin's version of the Lyonodyne selective crystal set. Note the three dial scales visible through the portholes showing the logging scales for the antenna tuning capacitor, the coupling position of the wave-trap coil, and the wave-trap tuning capacitor.

on their Website: "Put on latex rubber gloves before cleaning up. Don't stir up dust by sweeping up or vacuuming up droppings. Instead, thoroughly wet contaminated areas with detergent or liquid to deactivate the virus. Most general disinfectants and household detergents are effective. However, a hypoclorite solution prepared by mixing 1 and 1/2 cups of household bleach in one gallon of water may be used in place of a commercial disinfectant.

Once everything is wet, take up contaminated materials with a damp towel, then mop or sponge the area with disinfectant . . . double-bag, along with all cleaning material, and bury or burn — throw out in an appropriate waste disposal system.

Finally, disinfect gloves before taking them off with disinfectant or soap and water."

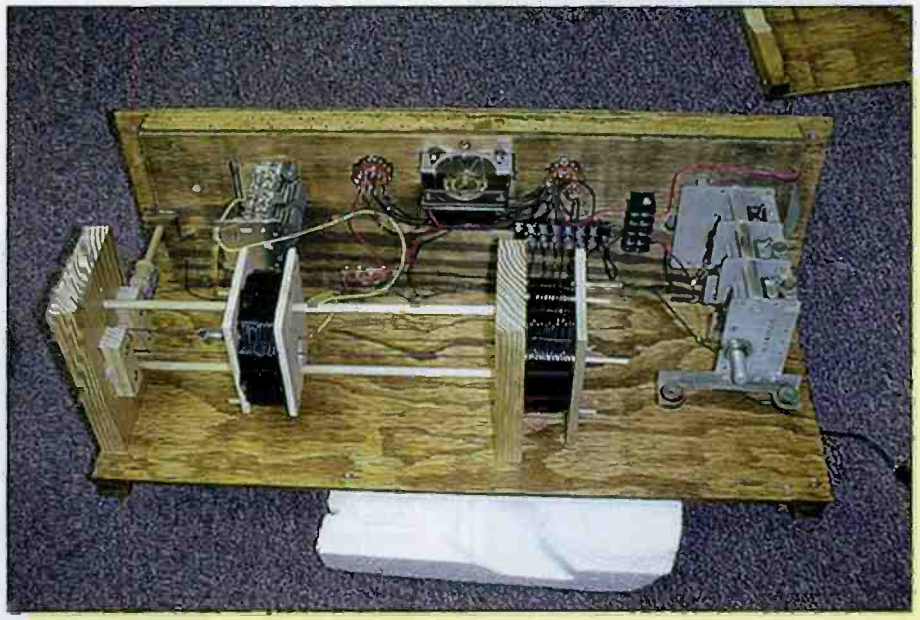
These are very generalized precautions, and I would further suggest leaving a suspect radio away from habitation in isolation for a period of time to allow the virus to die off before beginning any restoration. The CDC Website offers much more practical information for dealing with HPS.

Other Animal Friends

Well, if Mickey's distant relatives don't do us in, there are several other potential dangers lurking in that old console or tabletop found in Aunt Millie's barn! We've dealt with the four-legged vermin, now let's take a look at our eight-legged arachnid friends! For those of you living in our Southern most states (or having radios shipped to you from that area) the brown-recluse spider can be especially troublesome. Here are a few words about the living habits of this little beastie, as noted on the Ohio State University's Website: "During the day, time is spent in quiet, undisturbed places such as bathrooms, bedrooms, closets, basements, and cellars. The spiders sometimes take shelter under furniture, appliances and carpets, behind baseboards and door facings, or in corners and crevices. Some have been found in stored clothing, old shoes, on the undersides of tables and chairs, and in folded bedding and undisturbed towels stored for long periods of time. Outdoors, the spider may be found in sheltered corners among debris, in woodpiles, under loose bark and stones, in old barns, storage sheds and garages. These spiders are very adaptable and may be active in temperatures ranging from 45 to 110 deg F."

Although seldom fatal, their bite can lead to some very serious complications. Unfortunately, these spiders seem to favor habitats common to humans. More information and photos can be found on OSU's Website.

I'll never forget the day an electrician brought a scanner into our communications department for repairs. One of the technicians, trying to be helpful, volunteered his talents. Once the cover was unscrewed and lifted off literally hundreds of dead cockroaches poured all over his immaculate workbench. You can imagine what happened to the scanner and its guests. The moral is simple: you never know what is, or was, inside of any



The rear view of George's set. The main tuning capacitor is at the right; the adjustable wave-trap coil and tuning capacitor is at the left.

radio you purchase from a stranger. Mice, spiders, centipedes, silverfish, fleas, ticks, bees; and their eggs or residue.

Other Dangers

Asbestos is often found in early wood tabletop sets; a sheet of the material was placed between the chassis and the cabinet top to deflect some of the large amounts of heat released by tubes tightly clustered on a small chassis in the confines of a small enclosure. One such example is the small Zenith tabletop shown here. This set was featured in an earlier "Radio Connection" restoration. I personally feel it is best not to disturb asbestos when it is discovered in old radios. Once removed it immediately becomes hazardous waste material, and is subject to local and state statues governing disposal of such items. Unless the asbestos is subjected to abrading when the chassis is removed and installed, causing the release of airborne fibers, it is best to simply seal the material and leave it in place. Along these lines, these suggestions were posted a few month's back on the Rec.Antique.Radio+Phono (RAR+P) newsgroup by Peter Wieck:

While the author used a manually positioned wave coil, George's creative woodworking skills were put to work in his version of the Lyonodyne. A system of wooden dowels, pulleys and dial cord allows the operator to position the wave-trap coil for optimum coupling via a front panel knob.

"Saturate the sheet with a mixture of 50:50 acetone to Duco Cement (or similar material) to trap any friable particles. You will need a material that is first waterproof; then non-flammable when dry, and lastly that will soak into the asbestos mat.

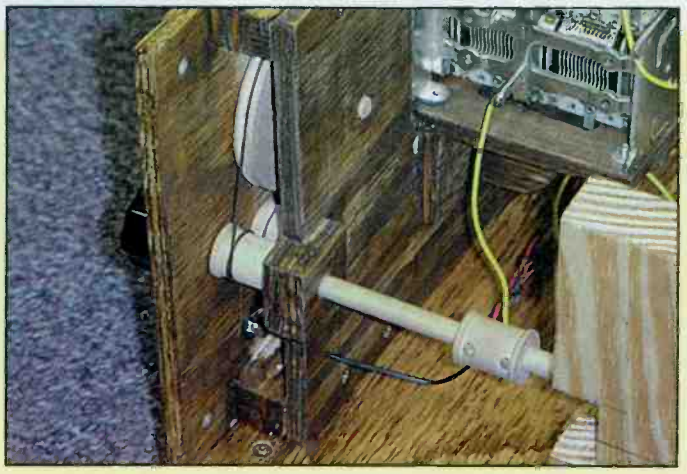
"Asbestos is dangerous, insidious, and persistent. You should, after you remove the chassis, wet-clean the entire cabinet base, and under the chassis to trap and fix any loose particles. Double-bag and dispose of cleaning materials with your township's Hazardous Waste collection. Do not clean the cabinet indoors, most especially if anyone in the household smokes."

Chemical Hazards

Many chemicals may raise concerns among beginning collectors. Leaking early liquid electrolytic capacitors abound, but these compounds are generally harmless for the casual contact we have with them. Here are some of the more insidious and serious items you should be aware of. Common radio and TV solder contains lead, and the fumes released during soldering can be hazardous. Always solder in a well-ventilated area, and always wash your hands after handling soldering, and especially before eating or smoking. I'm sure most of you are already aware of this, and it is basically following common sense.

Cadmium plating was used on some radio chassis'; the plating is reduced to a yellowish oxide in time, and cadmium oxide is poisonous if handled or ingested. If you suspect the powdery residue on a chassis is indeed cadmium oxide, take the following precautions. Use latex gloves and a damp cloth to gently damp wipe away the oxide. Double-bag and dispose of the cleaning materials. Give the chassis a few good coats of clear acrylic spray to seal the cadmium to prevent future oxidation.

Here's another danger. Modern RF power semiconductors use beryllium as an insulator and heat conduit. This material is very toxic if broken and the resultant dust inhaled. Berylium oxide close-



Hidden secrets revealed — a double front-panel hides from view the dial scale drums and the elaborate dial cord systems that drives them. Note the wood pulleys and wood pillow blocks used as bearings for the quarter-inch wood drive shafts.

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ly resembles the white ceramic material used on outer portions of larger RF power transistors. I've been guilty of "opening up" a few ceramic RF power devices to see what makes them tick. Fungicidal coatings were commonly applied to many military radios for use in tropical climates, and many of these climatized sets have appeared on the surplus markets over the past 50 or so years. I've also seen some comments raised on the safety of handling wires or chassis coated with the fungicidal treatment. I'd welcome further input from readers on this subject. What chemicals were used on WWII era sets, and what dangers would they pose today?

A Special Lyonodyne

My apologies to reader George Hawkins for the long delay in presenting his version of the Lyonodyne Selective Crystal Radio project. I had mentioned, and promised to show his set several months ago when he first submitted his letter and photos of the set he constructed. George's set has some very innovative twists, thanks to his mechanical and woodworking talents, and I hope you enjoy viewing and reading about George's efforts as much as I did. This is what George had to say:

"Dear Peter, John Haught's Lyonodyne looks real good. I am surprised that he was able to make the complete radio with such a small footprint. I admire his coil winding and wiring, which is much better than mine. Attached you will find some pictures of my receiver. I hope you can use them.

"As you can see, I followed the basic design. I sized the box off of the photos of your radio, 21-1/2 inches long, by 9-1/2 inches wide, by 7-1/2 inches high. Lacking a plastic or Bakelite panel, I opted to use plywood. I also included dials to record the positions of the wave trap and the wave-trap tuning capacitor. On the left of the front panel you can see the binding posts for the antenna and the ground. Around the meter are three black knobs. Starting from left to right, these knobs control the tap location on the main tuning coil of the antenna, tuning capacitor, and the detector. The knob on the lower left controls the main tuning capacitor and its dial is on the upper left. Above the binding post for the headphones are the wave trap knobs and dials. The one on the left is the wave-trap tuning capacitor, and its dial on the upper left. All dials indicate from 0 to 10.

"While using the radio I noted that the 60-turn coil exhibited the following characteristics: the optimum detector tap was at position 3 or 4, from the bottom of the coil using a six-pole switch. Also, the 60-turn coil wasn't able to tune the entire broadcast band with the capacitor tap at position 6 (top of coil). In order to tune the higher frequencies I needed lower the capacitor tap position. While this tunes the higher frequencies, it also seemed to reduce sensitivity. A recently obtained signal generator determined the lowest frequency the 60-turn coil would tune was about 350 kHz with the tuning capacitor fully meshed. When I made the radio I included terminal strips so I could easily change out components. I wound a new 38-turn coil, and that's coil shown in the photos. While winding the new coil, I tried to keep more spacing between the adjacent coil turns so as to enhance the coil Q. The coil doesn't look very good *(looks fine to us—Ed)*, but this one tunes most of the band with the tuning capacitor across the full coil winding. Again, the optimum detector tap was around position 3, with the optimal antenna tap being around 4 or 6. Changing the tuning capacitor tap doesn't seem to have a big influence on performance."

George went on to ask about using back-to-back filament transformers to power tube sets, including the possibility of using voltage doublers to produce higher B+ levels. I suspect our May column answered most of the questions George and others may have had about power-supply hookup possibilities using these transformers!

See you again next month. Remember, your questions, comments and photos are always welcome. Send them to me at "The Wireless Connection," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801. ■

Ref. 1:
http://www.cdc.gov/ncidod/diseases/hanta/hps/noframes/prevent.htm

Ref. 2:
http://www.ag.ohio-state.edu/~ohioline/hyg-fact 2000/2061.html

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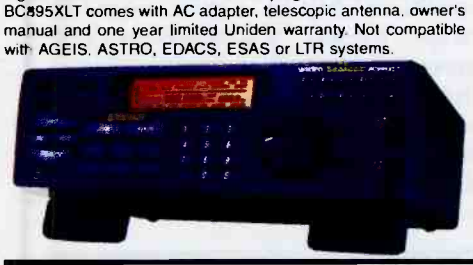

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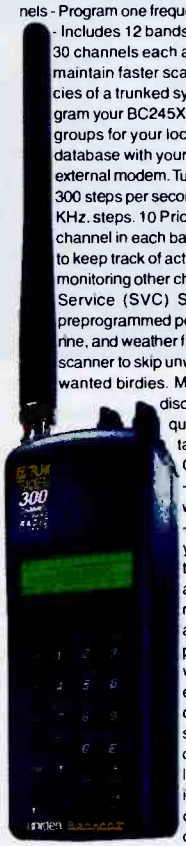

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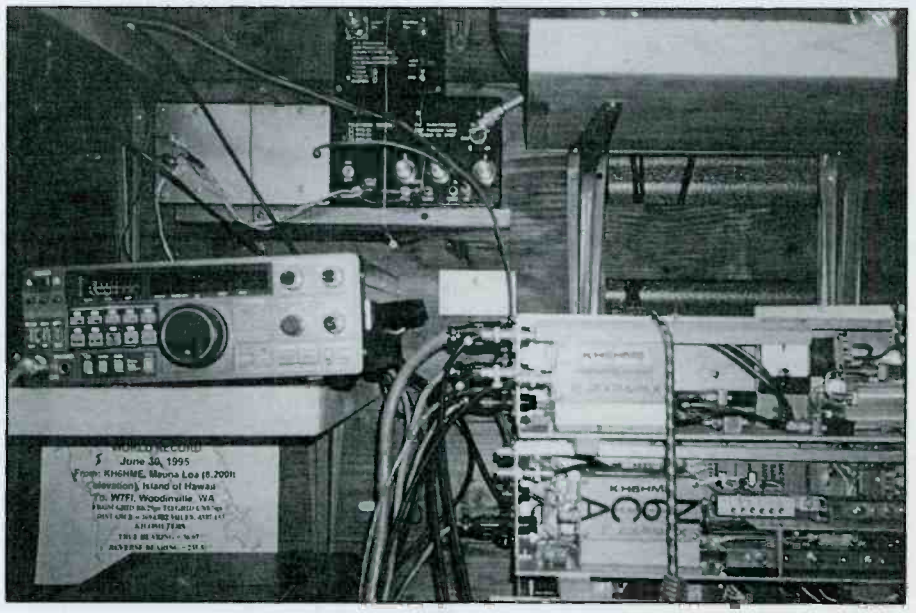
by Gordon West, WB6NOA

The Inside Scoop On VHF/UHF Tropospheric Ducting

During the months of June, July, and August, the VHF and UHF airwaves might mysteriously "open up" and bring you days of extended range reception that will have absolutely nothing to do with ionospheric skip from the E-layer. Your scanner may begin to hear VHF 162 MHz weather stations coming in from a seaport 800 miles away. Ham radio operators may be surprised that their little 2-meter handie-talkie is working through a skyscraper repeater 300 miles out. Southern boaters trying to contact the Coast Guard off of Miami may get a response from Coast Guard station Boston on 156.800 MHz — hardly line of sight! And your grandma, still watching television off rabbit ears, tells you to come in and see a station booming in three states away. And finally, for VHF/UHF record-breakers, hobby radio enthusiasts in Hilo, Hawaii, may be hearing West Coast FM music stations coming across the 2,500-mile ocean in complete stereo, for days on end.



Automatic KH6HME beacon equipment that runs about 50 watts on most VHF/UHF amateur bands 24/7, year round.

Upside Down Mirages

Have you ever watched different liquids stratify into different layers in a glass? Have you ever wondered why a straw looks bent in a glass of water? Have you ever looked down a desert road and saw shimmering water ahead which was really a mirage of the sky above?

Long-range VHF and UHF signal ducting is a result of the stratification of the atmosphere above us. The layer that normally becomes stratified is called the troposphere, and quite often you can see these tropospheric "mirages" as a distinct layer of air seen hanging on the horizon. Here in Southern California, we call it smog. In other parts of the country, it may be classified as smoke, or newscasters might indicate the presence of an inversion layer.

It is within this relatively thin stratified band of air that collects VHF and UHF radio waves — including microwaves — and causes them to refract within the upper and lower walls of this inversion layer, carrying them hundreds and sometimes even thousands of miles to a distant station where they ultimately "fall out" back to earth. The inversion air acts like a wave guide — IN one end, and OUT the other end. And much like a wave guide, the attenuation of the VHF and UHF radio waves might be as little as only a half a dB!

What To Expect

VHF, UHF, and microwave signals normally refract 4/3 over the visual horizon, going approximately 22 percent further than what you would expect to see by calculating YOUR height above ground and the distant station's height above ground. This slight 4/3 phenomena is what land mobile radio and cell phone range predictions are based on.

The 4/3 radio horizon is based on the radio refractive index of air, slightly over 1 — specifically 1.000345 to 1.000300. Pressure decreases with height in a logarithmic manner, about 1 nb for every 10 meters in altitude. Temperature decreases 20 degrees Fahrenheit for every mile of increasing altitude. Water vapor content also decreases as altitude increases in a logarithmic manner.

During the months of June, July, and August, the northern hemisphere develops pools of clockwise circulating air which develop into high-pressure systems aloft. As that high-pressure cell begins to drop (called subsidence), it squeezes air below it into layers that become stratified. Cool air above, cool air below, and a band of stratified warm air in the middle, maybe only 300 feet thick. This is that "smoke layer" that you might see from an airplane or on the ground. A smoke stack sends up smoke that all of a sudden turns horizontal — it is at this level on a relatively windless day that a tropospheric duct may be easily visualized.

Adding to tropospheric ducting radio conditions may be a radio extended-range "trigger," a counter-clockwise movement of warm, moist air coming up from the south — a tropical disturbance, and sometimes even the far reaches of a hurricane. When these conditions merge, the long-range VHF/UHF/microwave radio path begins to form.

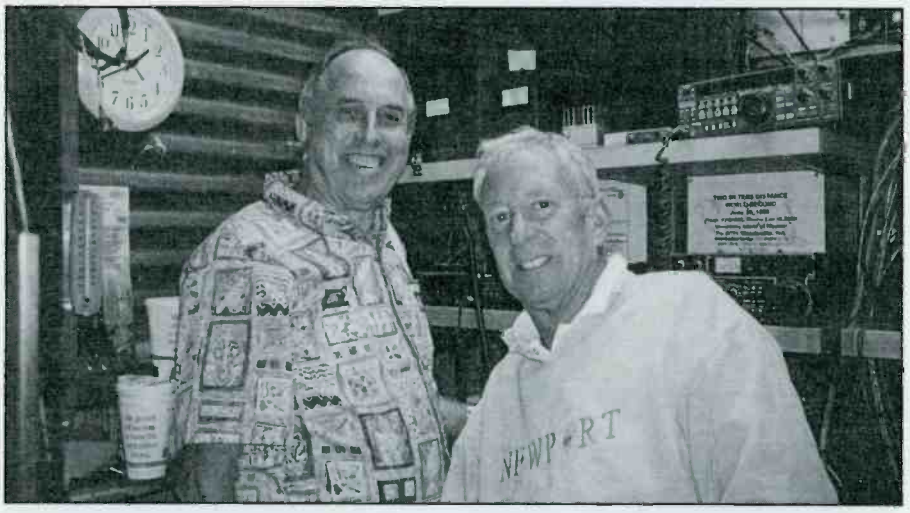
"I can normally measure a temperature increase of 10 degrees Fahrenheit," comments Paul Lieb, KH6HME, the world record holder of most VHF and UHF contacts between his Hawaiian volcano ham shack and the West Coast of the United States. "I can literally feel the temperature increase at our end of the duct, and can certainly see the duct right above the thin cloud layer between here and the West Coast," adds Lieb, noting that the top of the smooth white cloud layer causes an abrupt rise in air temperature during periods of high pressure with little wind movement.

"And you can depend on a hurricane down south contributing to the record-breaking distance opening up for ham calls, television signals, VHF and UHF public safety signals, and in rare cases even cellular reception over the 2,500-mile path," adds Lieb, pointing to an array of VHF and UHF continuously transmitting ham radio beacon antennas that allow West Coast operators to determine when tropo ducting conditions begin to move in for days on end.

Hawaii beacon location at 8,200-ft. at Mauna Loa volcano.

There are also stationary high-pressure systems that will favor tropospheric ducting for long-range VHF/UHF radio reception within the interior of the United States. There are many summertime "openings" that may last for days between Chicago and Texas, Texas to Florida, Florida to Maine, and some recent rare connections between Texas and New York. Many times the VHF and UHF airwaves will stay "open" to a distant station more than 1,000 miles away for days on end, usually lining up along the sharp boundary between an incoming air mass with a difference of temperature by at least 15 degrees.

Most amazing, you don't need any specialized VHF and UHF radio equipment to catch the excitement of long-range "line of sight" reception that is definitely well beyond line of sight. You DO need a good outside antenna system, plus quality low-loss coax between the antenna and your scanner receiver. Or your TV



Gordon interviews world VHF/UHF record holder, Paul Lieb (left), KH6HME at the Mauna Loa beacon site.

set. Or your old cell phone that still shows distant station signal strength. Or even that inexpensive weather monitor where you have figured out how to attach an external antenna to the internal pull-up telescopic whip.

"During periods of a good tropospheric ducting event, the MODE of radio reception is not all that important," adds Paul Lieb, pointing out that this year he is going to be transmitting 2-meter and 70 cm frequency modulation (FM) signals in addition to his normal SSB ham radio emissions.

"Transmitting FM will allow thousands of ham operators on 2 meters along the Pacific Coast to hear my 2,500-mile distant signals," adds Lieb. This frequency will be 144.330 MHz, simplex.

While ham operators have established propagation CW beacons throughout the country, these are not detected by a simple FM handheld or scanner. A better source of beacon reception is any VHF or UHF frequency that may not be active in your specific area. Maybe your local police departments are on VHF high band. If so, try 460.075 MHz for an urban UHF police channel hundreds of miles away. Try the unused weather channels for reception. Try an outside antenna on your television set to those channels that normally give you nothing but snow.

Next, watch the weather map and look for the telltale signs of a widespread, high-pressure system. Or, look for incoming storm fronts. Try to calculate where you might receive a distant station hundreds or maybe even a thousand miles away on VHF or UHF at the perimeter of the different air masses.

Now, turn the squelch off, and listen. When tropospheric ducting conditions begin to settle in, you will hear about a one-hour transition from nothing but white noise to the silencing of an FM carrier and conversations taking place where you have never heard them before. Listen to what they are saying. If you're in the Midwest and they are talking about boats and buoys, maybe you're picking up transmissions from the Gulf. If you are in the Gulf and are hearing about the repair of a ski lift gondola, maybe you're picking up something from the Rockies!

Next try FM music reception. See if you can pick out a station identifier and their location. While the signals may be stronger, many FM music stations don't regularly give their location. Maybe try some of the weather channels, which is a great way to find out easily, about every 15 minutes, where the transmission is coming from.

Above all, keep your eyes peeled on the weather conditions around you. If the wind isn't blowing, and you see nothing but smoke hanging on the horizon, and the weatherman tells you stand by for some upcoming hot and smoggy days, get set for some long-range VHF and UHF distant radio reception. The conditions will stay strong for up to a week, and hopefully you will gain some real excitement when the weather conditions are just right in the summertime. ■

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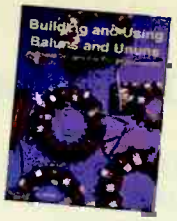

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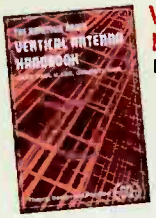

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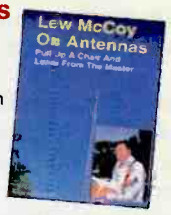

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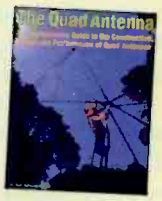

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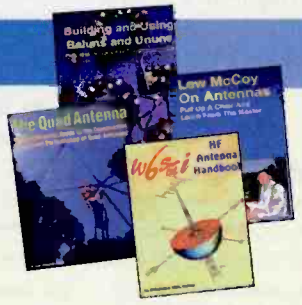

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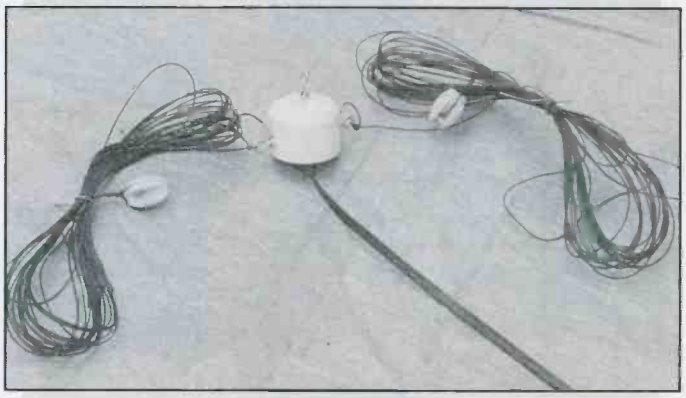
CQ Communications Inc.,
25 Newbridge Rd., Hicksville, NY 11801

by Paul Carr

The Tag-Along Antenna

That time of the year is here again. It is time to think about your next camping or fishing trip. If you are like me, the fun of fishing and camping can be greatly enhanced by taking your radio equipment along on the adventure. I'm sure that you have learned by now that the effectiveness of your radio equipment is dependent on your antenna system. Are you ready to investigate this challenge? Read on.



The antenna ready to go in the air.

Background

There are several questions that must be asked before attempting a project of this type. Is the antenna efficient? Are the parts readily available? Is the antenna easy to build? Is there an easy way to get the antenna into the air? Is the antenna easy to pack for the adventure? As many of these questions as possible should be answered in the affirmative. Now let's look at these questions one at a time.

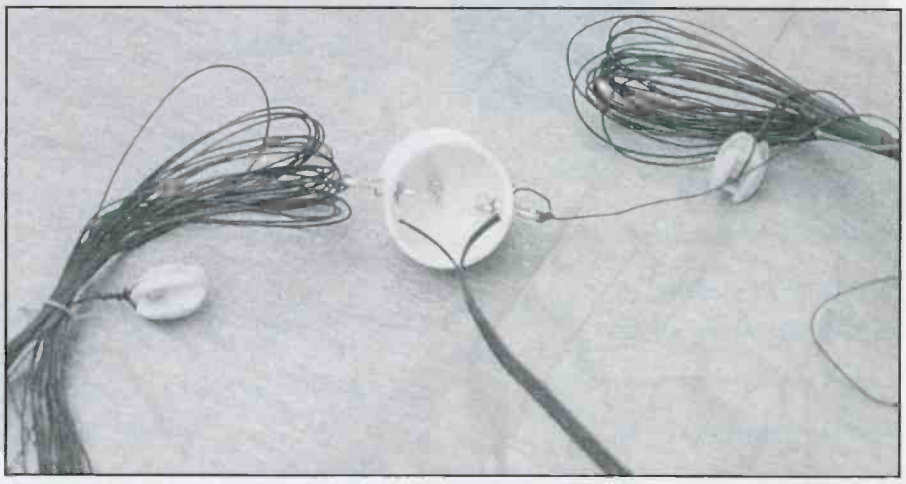
The antenna described here is a modified version of the G5RV antenna that so many hams use, so I think the first answer is yes. The parts come from a local RadioShack and a hardware store, so no problem there. The antenna is easily constructed for those of you who are handy with a drill and a soldering iron. The feed line can be removed and easily reconnected to allow for ease of packing. The only question that we have not addressed is regarding the effort to get the antenna into the air, but I will address this task later. It's easier than you think.

Obtaining Material

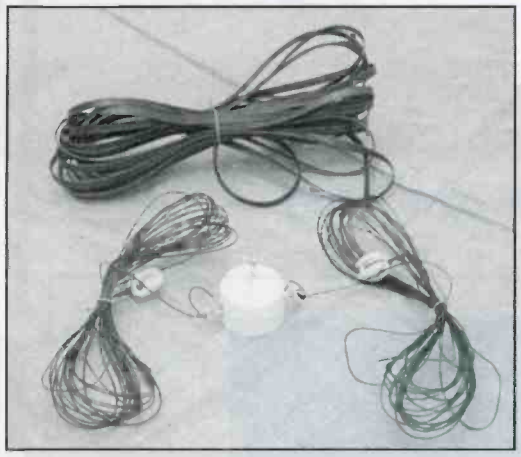
The first order of business is a trip to your local RadioShack or similar provider in your neighborhood. I obtained a 100-foot roll of 22-gauge hook-up wire to use for the antenna element. If your antenna is going to be exposed to high wind conditions, you may want to get a larger diameter wire. The next item is the antenna lead-in wire. You can also obtain suitable end insulators at the same store. In my particular case, I had gathered suitable end insulators in past years at hamfests. The remaining materials were acquired when I stopped at the local hardware store on the way home. I bought a three-inch PVC end cap to use as a center insulator. I also obtained small eyebolts to use as a connection point for the wires and the halyard. The next item was a roll of builder's twine to use as the halyard. Now, it's home to my workbench.

Antenna Construction

The first item for the construction phase is to prepare the center insulator. I drilled three holes in the PVC cap at the proper places. One is needed to attach the halyard and the other two are for conductors and the feed line. Next, cut two pieces of wire



A look at the inside of the center insulator with wing nuts visible.



The Tag-Along antenna ready for packing with the feed line detached and rolled.

50 feet long to use as the antenna conductors. I tied these wires to the eyebolts and soldered the ends to a lug. On the inside of the PVC cap, the feed line fitted with solder lugs is attached with wing nuts. This arrangement allows for easy feed line removal if necessary. The free ends of the antenna are attached to the insulators. The antenna is ready to go into the air.

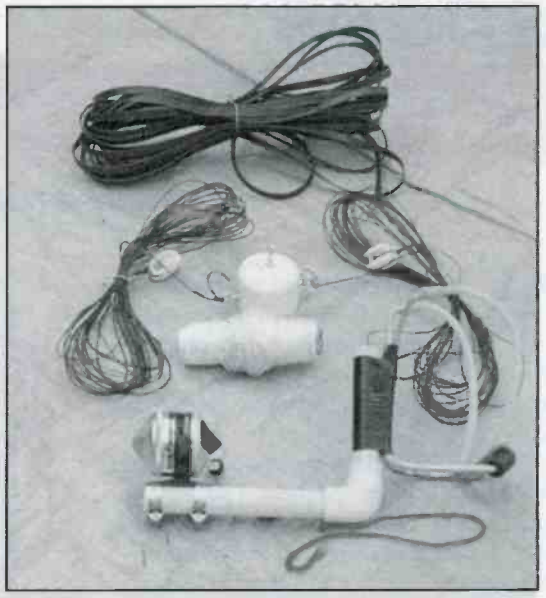
The Launch System

If you were to ask six different people how they get their antennas into the air, you would probably get at least four different answers. Many people prefer to use a fishing reel and a heavy object such as an old spark plug. Others will use a wrench from their toolbox with a string attached. I was never accurate enough with this technique to get the desired results, so I came up with another approach. I remember when I was trying to get a halyard into a tree by tossing an adjustable wrench with a builder's twine attached. The twine became entangled with a branch and there is where my wrench remained. (Murphy's Law is alive and well.) I then decided it was time to use an alternate technique for launching antennas.

I have heard of several radio enthusiasts who claim to have invented this scheme for getting lines into the air. Regardless of the origin, I think the idea is great. There are three main components to the launch system. The propulsion unit consists of what is commonly called a wrist rocket or slingshot. The second part is a small "L" device formed by gluing pieces of PVC together to form a mounting platform for a fishing reel. The last component is a fishing sinker. I also attached a short piece of brightly colored knitting thread to the line and fishing weight. This makes the fishing weight much easier to find during antenna launching. At this point let's pause for a short story: A friend of mine told the story of one of his friends that borrowed his antenna launcher. This friend found a suitable place to string his antenna. He fired the projectile into the air. It went up, up, up and then down, down, down — through the windshield of his car! I am sure that the noise was deafening. I must warn you — BE CAREFUL!

Safety First!

While on the subject of safety, I must caution you about proper placement of the antenna. Although the wire that I used for this antenna was insulated, and the power distribution systems use insulated wire, NEVER cross a power wire with an antenna. Although you may think that the wires are properly insulated, there may be cracks in the insulation. If the antenna and the distribution wires come in contact with each other, the results could be fatal.



The antenna, feed line, launch system, and halyard.

Antenna Placement

When placing the antenna, I try to find a suitable tree with an overhanging branch at a height of about 40 feet. With the antenna launcher, I fire the fishing weight over the chosen branch. I then retract the fishing weight until it is just beyond the branch, and hit the line release and let the weight fall to the ground at the base of the tree. I then attach the builder's twine halyard to the monofilament line and pull the halyard over the limb. This operation is easier to perform than it is to write about.

Before attaching the halyard to the center insulator, I lay the antenna out on the ground. This helps to avoid tangles as the antenna goes into the air. I try to get the center of the antenna up to about 40 feet and the ends at about 30 feet in an inverted-V configuration. With the thin gauge of the wire that I used for this antenna, I leave enough slack at the two ends to compensate for the antenna blowing into the wind. You can be your own judge about this item. Now you are ready to connect the receiver to the feed line.

Evaluation Of The Tag-Along Antenna

I must admit that I've used a version of this antenna for many of the 42 years that I have been a ham, and I am happy to say that it has never disappointed me. I have used it for transmitting on the ham bands and listening on the international shortwave bands. If you are a ham and intend to use this antenna for transmitting antenna, a tuning unit is necessary for proper operation.

I sometimes play a mind game with myself — if I had only one of a device, what would it be? Well in the case of an antenna, I think this would be it. ■

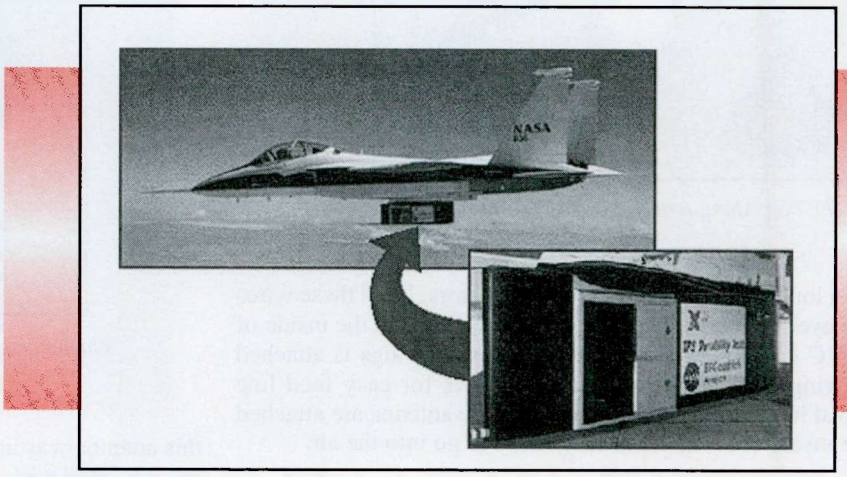
space monitor

how to hear voices from the cosmos

by Keith Stein <kstein@erols.com>

Space Activity In The VHF Low Band

We started off last month with a look at the high frequency (HF) radio spectrum — scoping out the few satellites, aircraft, and space operations still active in that area. Now we'll step into the very high frequency (VHF/30–300 MHz) spectrum. Now, the VHF band is large and there is no way we could cover it all in this one issue. So let's take it piece by piece. Let's start by investigating the busy aircraft band (118 MHz to 136 MHz) and point out a few satellites here and there. Remember the golden rule for this column; anything space related is covered in this corner of *Pop'Comm.*



NASA F-15B based at Edwards Air Force Base, California. (NASA Photo)

NASA Aircraft

NASA has a massive fleet of research aircraft across the United States that perform airborne science, flight research, and advancements in design and capabilities of many civilian and military aircraft. This fleet of mostly second-hand military aircraft pushes the leading edge in aeronautics and more recently, in space technology.

NASA aircraft are housed at the following facilities; Wallops Flight Facility, Va., Edwards Air Force Base, Calif., Ellington Field, Tex., Langley Air Force Base, Va., Cleveland International, OH, Shuttle Landing Facility, Fla., and Huntsville International, Ala. I'm sure there are a few other NASA aircraft tucked away at other military bases (maybe Area 51?), but these are the major facilities.

Hearing, recording, logging, and sharing information with others in the radio monitoring community is a lot of fun in the hobby. But looking at our Monitoring Reports below leaves one question open: what are these aircraft actually doing? Let's take a look at the more interesting, modified ones.

NASA 836 — F-15B

NASA's Dryden Flight Research Center at Edwards AFB, California is using this modified F-15B aircraft as a test bed for a variety of flight research experiments on aerodynamics. Coupled with a Dryden-designed Flight Test Fixture (FTF) mounted underneath the aircraft, the F-15B Aerodynamic Flight Facility (AFF) provides a unique flight test capability.

The FTF is a fin-like structure mounted on the centerline of the aircraft's lower fuselage. With the FTF mounted beneath the fuselage in place of the standard external fuel tank, speeds are limited to Mach 2.0. It has aerial refueling capability for extended-duration research missions.

Thermal protection system (TPS) material samples, which include metallic tiles, soft tiles, sealing materials, and instrumentation, are flown attached to the forward-left side position of the FTF-II. In-flight video from the aircraft's onboard video system and chase aircraft photo and video cameras are used to document the condition of the TPS materials during flights.

NASA426 — P-3B

Based at NASA's Wallops Flight Facility, Va., this four-engine turboprop is capable of long duration flights of 8–12 hours, carrying large payloads up to 15,000 pounds, and climbing to altitudes up to 30,000 feet with a true airspeed for 330 knots.

Some of the airborne geoscience-supporting features of this aircraft include numerous zenith, nadir, and oblique ports to mount experiments. Most of the ports are contained within the pressurized cabin environment.

However, a unique equipment bay has been designed into the former munitions bay. This roomy and unpressurized equipment bay provides large nadir and oblique ports and combines ease of installation with convenient access during ground operation for the largest antennas or sensors.

NASA607 — The DHC-6 Twin Otter

Glenn Research Center, Cleveland, OH, icing research aircraft is a modified DeHavilland DHC-6 Twin Otter. The Twin Otter has a cruise speed of 150 knots and a range of 500 nautical miles with a maximum fuel load. Its relatively large size makes it a versatile test bed for in-flight icing research. The Twin Otter has been modified to carry a full complement of sophisticated instruments that measure and record important properties of icing clouds. A stereoscopic camera system documents ice accretion characteristics of the aircraft in flight.

NASA DHC-6 Twin Otter based at Cleveland International Airport, Ohio. (NASA Photo

Most test flights are conducted below 10,000 ft., but the Twin Otter has an oxygen system on board for flight up to 16,000 ft. Research flights are performed with two pilots and up to three research personnel on board.

The ice protection system on the Otter is a combination of pneumatic boots, electro thermal anti-icing, and electro thermal deicing. NASA has added pneumatic deicing boots to the vertical tail, wing struts, and main gear struts. The high level of ice protection allows safe flight into known icing conditions as well as the ability to selectively deice aircraft surfaces. By selectively deicing, it is possible to evaluate the performance, stability, and control effects of ice on various surfaces.

NASA Decommissions Lear 23

Chief Pilot Bill Colliver bid farewell as he boarded the NASA/Stennis Lear 23 (NASA 933) for its final flight to the Glenn Research Center. The jet, used since 1980 to collect digital imagery for a wide variety of projects in support of the space center's remote sensing mission, was decommissioned in December 2000. Colliver, with the same flight, celebrated his retirement after 36 years of service at Stennis Space Center. Colliver logged more than 14,000 hours as pilot in command. One of the best known voice satellites is the U.S. Applied Technology Satellites (ATS). Several of these birds were launched in the series, but only ATS-3 is still active. It is currently located at 106.5 degrees West in a highly inclined orbit. Look for downlink signals in the satellite's bandpass of **135.550–135.650** MHz. A variety of modes have been reported in use on the ATS birds. In fact, rumors have circulated in the hobby press over the years that the DEA/U.S. Customs Service has used the ATS birds

NASA Aircraft Fleet

Callsign	Aircraft Type	Base	Callsign	Aircraft Type	Base
NASA1	Gulfstream	Ronald Reagan Washington National, Washington D.C.	NASA846	F-18	Edwards AFB, Calif.
			NASA851	F-18	Edwards AFB, Calif.
NASA2	Gulfstream	Ellington Field, Texas	NASA871	???????	Edwards AFB, Calif.
NASA3	Gulfstream	Huntsville International, Ala.	NASA901	T-38N	Ellington Field, Tex.
NASA4	Gulfstream	Shuttle Landing Facility, Fla.	NASA902	T-38N	Ellington Field, Tex.
NASA8	Beech 200	Wallops Flight Facility, No UHF capability	NASA904	T-38N	Ellington Field, Tex.
			NASA907	T-38N	Ellington Field, Tex.
NASA008	B-52	Edwards Air Force Base, Calif.	NASA909	T-38N	Ellington Field, Tex.
NASA417	UH-1H	Shuttle Landing Facility, Fla.	NASA911	Boeing747	Ellington Field, Tex. (Shuttle Carrier Aircraft)
NASA418	UH-1H	Shuttle Landing Facility, Fla.			
NASA419	UH-1H	Shuttle Landing Facility, Fla.	NASA915	T-38N	Ellington Field, Tex.
NASA420	UH-1H	Shuttle Landing Facility, Fla.	NASA916	T-38N	Ellington Field, Tex.
NASA426	P-3B	Wallops Flight Facility, Va.	NASA917	T-38N	Ellington Field, Tex.
NASA427	C-130Q	Wallops Flight Facility, Va.	NASA918	T-38N	Ellington Field, Tex.
NASA432	Fokker-27	Wallops Flight Facility, Va.	NASA919	T-38N	Ellington Field, Tex.
NASA511	T-38A	Langley Research Center, Va.	NASA924	T-38N	Ellington Field, Tex.
NASA524	OV-10A	Langley Research Center, Va.	NASA926	WB-57	Ellington Field, Tex.
NASA529	Beech 200	Langley Research Center, Va.	NASA928	WB-57	Ellington Field, Tex.
NASA557	Boeing 757	Langley Research Center, Va.	NASA931	KC-135A	Ellington Field, Tex. "Vomit Comet"
NASA607	DHC-6	Cleveland International, OH.			
NASA616	Learjet 25	Cleveland International, OH.	NASA944	Gulfstream	Ellington Field, Tex., (Shuttle Training Aircraft)
NASA805	LearJet 24	Edwards AFB, Calif.			
NASA806	ER-2	Edwards AFB, Calif.	NASA948	Gulfstream	Ellington Field, Tex. (Administrative Transport)
NASA809	ER-2	Edwards AFB, Calif.			
NASA817	DC-8	Edwards AFB, Calif.	NASA955	T-38N	Ellington Field, Tex.
NASA831	SR-71B	Edwards AFB, Calif.	NASA956	T-38N	Ellington Field, Tex.
NASA836	F-15B	Edwards AFB, Calif.	NASA961	T-38N	Ellington Field, Tex.
NASA844	SR-71A	Edwards AFB, Calif.	NASA962	T-38N	Ellington Field, Tex.
NASA845	F/A-18	Edwards AFB, Calif.	NASA963	T-38N	Ellington Field, Tex. (First one off production line)
			NASA966	T-38N	Ellington Field, Tex.

for communications. Reports on what you are hearing from ATS-3 are always appreciated.

Other Hard Space Targets To Monitor

Russian Start-1 launch vehicle. — 75.670 MHz

Russian Soyuz TM manned spacecraft voice channel — 121.750 MHz (WBFM Mode)

U.S. Transit 5 Navigation Satellite — 136.650 MHz (NFM mode)

U.S. Interplanetary Monitoring Platform-8 —136.800 MHz

International Ultraviolet Explorer (IUE) — 136.860 MHz

What would you like "Space Monitor" to do for you? What articles and information would be of particular interest to you? Let us know. We look forward to hearing from you and serving you. I'm also the editor of SpaceCluster.Com (http://www.spacecluster.com). You can contact me via E-mail at kstein@spacecluster.com or Kstein@erols.com or by mail at *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801.

Monitoring Reports

All times in UTC. All voice transmissions in English unless otherwise noted.

11175: NASA 931 (KC-135A, based at Ellington Field, TX.) conducting phone patch (Mark Holmes, Marion, IL). NASA948 (Gulfstream based at Ellington Field, TX) radio check with Andrews AFB, Md while over Houston, TX at 1351 (Ron).

128.625: NASA 607 (DHC-6 Twin Otter, based at Cleveland Int'l., OH) and NASA 616 (Learjet 25, based at Cleveland) with "NASA OPS," AM mode.

143.625: International Space Station Alpha. Russians talking in NFM mode (Chuck Rapacki, Detroit, MI).

165.000: Mir telemetry heard (Chris van den Berg).

166.000: Mir telemetry heard (Chris van den Berg).

255.400: NASA 92 requesting weather for Ellington and Houston at 2320, AM mode (Lyn Kennedy, Ovilla, TX).

291.600: NASA 806 heard (ER-2, based at Edwards AFB, Calif), AM mode (D.Stijovich, west of March Field).

307.900: NASA 931 climbing to 29,000 ft, AM mode (Brian).

343.700: NASA 846 heard (F-18 based at Edwards AFB, Calif.), AM mode (D.Stijovich, west of March Field).

352.000: NASA 931 level at 29,000 ft, AM mode (Brian).

637.835: Mir telemetry heard (Chris van den Berg)

638.090: Mir telemetry heard (Chris van den Berg) ■

on-the-go radio

around the block, around the world-personal radio keeps YOU in touch

by Ed Barnat <ed@barnat.com>

A Blast From The Past, And Blasted Interference In Michigan

We received a letter recently from "CB Scene" reader Benjamin R. Nye Jr. of Inwood, New York. Benjamin related a story that happened to him about 18 years ago when he visited the observation deck of the World Trade Center in New York City with his 11-meter hand held. The radio, TRC-205 from RadioShack, was big and bulky by today's standards but then was "cutting edge." It was the Shack's first 40 channel, 5-watt talkie and featured a voice-controlled carrier. Benjamin says that today it is just a keepsake.

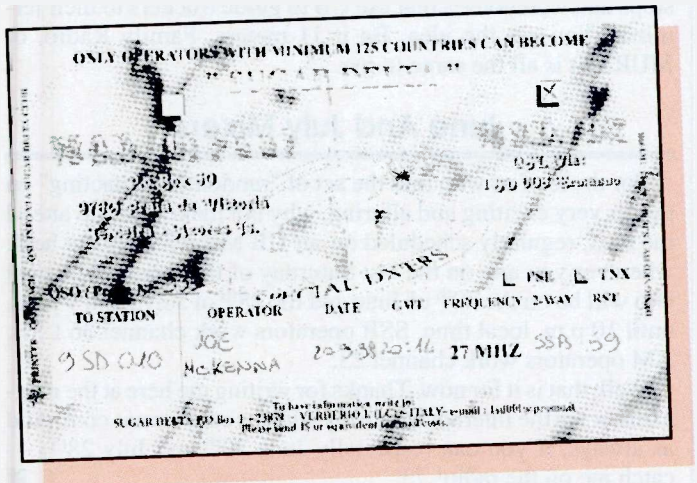
After making his way to the observation deck, high above the city, Benjamin fired up his rig. "The background noise," Benjamin reports, "was so bad that I had to turn the squelch all the way up." A friend of Ben's, a manager of a RadioShack with a roof mounted 'Big Stick,' was listening over 25 miles away. To the amazement of both, they were able to communicate and the signals were loud and clear. Before he knew it, Benjamin was hearing from other stations from all over the tri-state area.

Totally engrossed in the communications frenzy, Benjamin did not notice that he had attracted the attention of a pair of ominous looking characters. Before he knew it, they were standing about five feet behind him and about three feet apart. "They looked like clones," Benjamin explains, " with matching suits, ties, sunglasses, and earphones plugged into their right ears." Fortunately for Benjamin, they soon realized that he was just a CBer and only asked him to finish up and leave. "Oh well," says Benjamin, " at least I had 15 minutes."

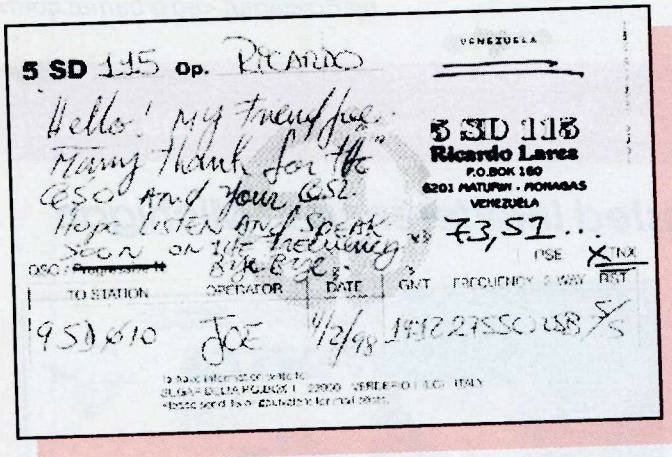
Benjamin says that back at his friend's store a couple of customers were listening and asked what kind of radio Benjamin was using. One of them bought one on the spot — for $180!

The Numbers

Paul, location unknown, has been listening to 27.485 LSB and 27.535 LSB. He has been hearing operators identifying themselves by numbers. Paul says, "when I listen to my radio, I hear people using 3 or 4 digit numbers as a callsign. I know that ham callsigns usually contain letters and numbers. Some examples would be: 122 Gilbert, Hollywood, California; 934 Tennessee; 000 (location unknown); 66 Pennsylvania. As you can see, some people are using just numbers as callsigns and some people add operator name and location. I am curious to know if these are numbers designated by the FCC as call numbers, or just numbers people are using chosen by each individual? If these are FCC designated call numbers, what is the license classification?"



Well Paul, first of all, let me say that you are listening to what is usually called the "Freeband." These frequencies are outside of those CBers are allowed to use and so it is illegal to transmit there. As far as I know, the only numbers the FCC has issued to operators who work those frequencies have been either case or prisoner ID numbers. That said, you're correct in your assumption that the numbers you quote have been made up by the individual operator. They often include their location to attract callers. If you listen more closely, however, you may also hear other callsigns that have been issued by clubs. Two that come to mind are the "Channel Masters" and "Alfa Tango." The Channel Masters often call themselves 'Charlie Mike.' Callsigns, which are issued by clubs such as these, are usually preceded by numbers. The numbers indicate the country they are from. For example, 2 Charlie Mike 680 would indicate that the operator was from the United States. The 680 part was more then likely assigned to them by the club. The club name itself can also tell you something about the operator. Charlie Mike callsigns are easy to get. All you have to do is contact a club official on the radio or the Internet, supply a little information about yourself and you are in. An Alfa Tango callsign, on the other hand, is tougher to get than most ham licenses. To even be considered for one, you have to be able to prove that you have multiple years of experience and a large number of confirmed (in writing) international contacts.



FCC Enforcement

For the past several years I have been watching for evidence of CB and "Freeband" operators getting in trouble with the FCC. Once again it seems that the surest way to connect with the enforcement arm of the Commission is to stray into Amateur radio territory.

On February 6, 2001, Mr. Carl Vincent of Lake Elsinore, California received a warning letter from the FCC for "operating radio transmitting equipment on frequencies in the 10-Meter amateur band and on frequencies near 30 MHz." The letter goes on to caution Mr. Vincent that, "Operation of radio transmitting equipment without a license is a violation of Section 301 of the Communications Act of 1934, as amended, and will subject you to fine or imprisonment, as well as seizure of radio transmitting equipment in cooperation with the U.S. Attorney in your jurisdiction." It concludes by asking Mr. Vincent to call the FCC and "discuss" the charges.

You Think *You* Have Problems?

UFO17, from Adrian, Michigan, writes to say that he and his neighbors have a serious interference problem. They live in a city that has a factory that makes convertible tops for automobiles. One of the machines that they have uses RF as a heat sealer to assemble the tops. Although UFO17 lives over *two miles* away from the factory, he still receives their transmissions at S-10 or better. This really makes it difficult for him to communicate with most operators in his area. He is not alone. Other operators, especially those living closer to the factory, also pick up the offender on FM, UHF, and VHF. That means that police, fire and amateur operators must be experiencing the interference as well. UFO17 has been able to track the noise to the factory, Dura Convertible Systems, 1365 E. Beecher St., Adrian, Michigan. He has also attempted to contact the FCC, without success. He wants to know if there is anything that anyone can do to help.

Well, UFO17, you certainly have a problem. It also seems, that you have done your homework. You have a long term, consistent problem. You have even pinpointed the source. You would think that having done all of the legwork this would be a case that the FCC could jump right on and clean right up. Not sure if I can do anything to help you, but will do what I can. I have forwarded your information to one of my contacts at the FCC. First one to get a response — write.

Wanted: Pictures And Stories

Now for those of you who are reading this while on, or planning your vacation I have a favor to ask. As you make your way around this summer, could you keep and eye (and camera) out for signs of CB in use at work or play? For example, I have pictures that I hope to use in future issues of the Dune Tour vehicles around Provincetown, Massachusetts (Cape Cod), that use CB to communicate. There is also a reader of this column who runs an off-road 4-wheel drive tour service that uses SSB-CB to keep participants in touch with each other. There are still truck stops and warehouses that use CB to guide truckers to their terminal. You get the idea. Be it 11-meters, Family Radio, or MURS, it is all the same to me.

June And July Mixers

For those of us who find the act of "randomly contacting" on the air very exciting and alluring, why not make plans to attend the next, regularly scheduled on-air CB Mixer? They are held, wherever you are, on the last Saturday of the month. The next two will be on the 30th of June and the 28th of July from 9 p.m.. until 10 p.m. local time. SSB operators work channel 36 LSB. AM operators work channel 23.

Well, that is it for now. Thanks for writing me here at the magazine or via the Internet where my address ed@barnat.com. And as always, if you can (especially June 30th and July 28th) — catch me on the radio! 73 ■

vip spotlight

Congratulations To Ronnie Thompson Of Vermont

Popular Communications invites you to submit, in about 150 words, how you got started in the communications hobby. Entries should be typewritten, or otherwise easily readable. If possible, your photo (no Polaroids, please) should be included.

Each month, we'll select one entry and publish it here. Submit your entry only once; we'll keep it on file. All submissions become the property of *Popular Communications*, and none will be acknowledged or returned. Entries will be selected taking into consideration the story they relate, and if it is especially interesting, unusual, or even humorous. We reserve the right to edit all submitted material for length, grammar, and style.

The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to *Popular Communications*. Address all entries to: "How I Got Started," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801 or E-mail your entry to popularcom@aol.com, letting us know if you're sending photos. If you're E-mailing photos, please send them in a separate E-mail with your name in the "subject" line.

Our June winner, Ronnie Thompson, KB1RF of Hardwick, Vermont.

Our June Winner: Ronnie Thompson Of Hardwick, Vermont!

From the North Country, *Pop'Comm* reader Ronnie Thompson, KB1RF says, "In the very early '50s when I was a teenager, I did what most teenagers do: listen to the radio. TV and FM were nearly non-existent — there was none in my area. While listening to standard broadcast AM I became interested in broadcast DXing. I had never heard the phrase "DX," so I thought I was "weird" to want to see how many distant stations I could receive. So I kept the activity to myself.

Over the years I have become active in many areas of radio communications; ham, SWLing, scanning, CB, and even radio and TV repair, along with much reading about radio!

Recently I found a stack of *Pop'Comm* magazines at a lawn sale. The person had received a gift subscription and wasn't interested in them. Some hadn't even been opened (can you imagine THAT?). I had never bought the magazine before so I didn't know the contents, but I was pleased that standard broadcast DXing is real and you don't have to be 'weird' to enjoy it. *Pop'Comm* brought me back to where I started." ■

global information guide

listening to what your world says every day

by Gerry Dexter

New Argentine Station On The Air!

Other than those catch-as-catch-can domestic relays carried in single sideband on oddball ute channels such as 15820, the shortwave picture in Argentina hasn't changed much over the last several years. So, if a new station were to come on the air it would qualify as a rare event. And that's exactly what has happened. **Radio Luz y Mundo** arrived on shortwave during the latter part of last year. The new broadcaster — there are hints it may not be licensed — operates from 1000 to 0500 on **6440** with Spanish language Christian religious programming. But there's a rub. The station is operating with just 50 watts of power, so reception in North America is going to be a big-time challenge. If you do hear Radio Luz y Mundo, the address for reports is Catamarca 2560, 1847 Rafael Calzada (BA), Argentina.

Adventist World Radio has begun using the main transmitting facility of Radio Austria International. AWR is using the Moosbrunn site for 12 hours of daily broadcasts to listeners in Africa, along with additional hours of English and German language programming beamed to Europe. The AWR relays over the Rimavska Sabota site in Slovakia have now been discontinued. AWR continues to be relayed by the Julich, Germany, and Meyerton, South Africa, sites. And, of course, over its own stations — KSDA in Guam and Forli, Italy, which is due to be replaced by a new AWR station in Italy. (Incidentally, Forli was recently being heard on **17820** from sign on at 1230. The power is just a quarter of the listed 10 kW.) At this writing the schedule for the Moosbrunn relays was not yet set. You'll likely find it, though, if you check the usual frequencies used by Austrian Radio. Reception reports are welcome.

Mexico's **XEQM** has been reactivated on **6105** and is using a new name — **RASA Onda Corta**. Sign on seems to be around 1300 UTC but, so far, the evening schedule (which would be more easily heard) is uncertain. The station seems to be relaying local AM and FM stations at various times. The station is located in Merida.

Here's another new and juicy target that, as it stands now, is out of the reach of most of us. **Radio Gardarika**, a local FM station in St. Petersburg, Russia, is now using **6235** from 1900 to 2100. Other IDs they're using are "Radio Studio" and Nevskaja Volna.

The **Voice of the Islamic Republic of Iran** airs programs in English from 1100–1230 on **15185, 15385, 15585, 21470 and 21730.** And 1530–1630 on **7115, 9635, 11775.** Also 1930–2030 on **6110, 7215, 9022**; 2130–2230 on **9780** and **11740** and 0030–0130 on **6065, 6135 and 9022**.

Radio Minsk, in Belarus, now airs English programming Monday, Wednesday, Friday, Saturday, and Sunday from 0300–0330 on **5970** and **7210**. Also on Tuesdays and Thursdays from 2030–2100 and 2130–2200 on **7105** and **7210**.

The current schedule for Rikisutvarpid **(Icelandic State Broadcasting Service)** is from 1215 to 1300 on **13865**, 1410–1440 on **13860**, 1755–1825 on **11402**, 1835–1905 on **13860** and 2300–2330 on **11402**, all in Icelandic and all in upper sideband mode.

Canada's Sackville transmitters are now relaying **Radio Sweden**, with an English broadcast from 0230–0259 on **9560**. Parallel **9495** kHz is still direct from Sweden.

KNLS is offering a free cassette tape of "DX Definitions" which might help unravel some of the often-strange shorthand we DXers use. You can get a copy by writing to KNLS, Box 473, Anchor Point, Alaska 99556, or E-mail them at knls@aol.com.

This month's book winner is Ed Newbury of Kimball, Nebraska. Ed receives a copy of the *Shortwave Listening Guidebook*, courtesy of Universal Radio. If you haven't done so yet, we'd urge you to get a copy of Universal's huge catalog of goodies for the radio enthusiast. Receivers, antennas, books, connectors, clocks, converters — anything and everything you could want to enhance your hobby. Call Universal at 614-866-4267 or E-mail them at dx@universal-radio.com or send your request to Universal Radio, 6830 Americana Parkway, Reynoldsburg, OH 43068.

Here's our reporter Dave Weronka in his North Carolina listening post with a wall of cards and pennants.

Photos, illustrations, copies, pictures, QSLs, photocopies — no matter what you call 'em — we need 'em! Whether the subject is a station transmitter, building, antenna, studio, employee, operating schedule or even (gasp!) a picture of you and your listening post, it's more than welcome here. The more the merrier!

Of course, your reception logs are always wanted, too. We make every effort to use all, of the logs sent in, so don't be shy or feel yours aren't good enough. They are! Just be sure to list your logs by country and leave enough space between them so we can navigate scissors easily. Logs are cut into strips and then sorted by country, so be sure to use only one side of the paper otherwise some of your logs won't survive. Also include your last name and state abbreviation after each logging. As always, thanks so much for your continued interest and participation.

Here are this month's logs. All times are in UTC, which is five hours ahead of

EST, i.e.0000 UTC equals 7 p.m. EST, 6 p.m. CST, 5 p.m. MST and 4 p.m. PST. Double capital letters are language abbreviations (FF = French, AA = Arabic, SS = Spanish, etc.). If no language abbreviation is included the broadcast is assumed to have been in English.

ABKHAZIA — Radio Republic of Abkhazia, **9489.75**, 0332 with talks in RR until RTBF-Belgium fired up on **9490** at 0357. Fair and clear but no ID noted. (D'Angelo, PA)

ALASKA — KNLS, **9615** at 1300 sign on with IS to 1304 when opening ID and announcements: "This is Alaska calling — radio station KNLS, broadcasting from the top of the world." (D'Angelo, PA) 1320 with "Time In a Bottle." (Northrup, MO)

ALBANIA — Radio Tirana, **9540** at 2229 with music, IS, ID, schedule, and news. (Burrow, WA)

ALGERIA — Radio Algiers Int'l, **15160** at 2002 in EE with IDs, news at 2005, U.S. and Euro-pops. SS prior to 2002. Definite audio problems and nothing but an open carrier at times. Not heard at 1600 check and nothing heard on **11750**. (Alexander, PA)

ANGUILLA — University Network, **11775** heard at 1915 with Dr. Gene Scott. (Watts, KY)

ANTIGUA — Deutsche Welle relay, **9700** at 0106 and **17810** in GG at 2039. (Sanchez, NM) BBC relay, **5975** at 0000, 0250, 0400. (Jeffery, NY)

ARGENTINA — Radio Nacional, **15345** in SS at 0202. (Becker, WA)

ARMENIA — National Radio of Armenia, **4810** at 0330 sign on with national anthem, ID and into unid. language. Local Mideast-style music, religious program with choral music at 0400, U.S. pops after 0430. Must use LSB due to RTTY on upper side. //**9965** only from 0400 sign-on to 0430 close. **9965** from 0300 sign on to 0345 close and 0400–0430. On with multilingual IDs and into unid. language. (Alexander, PA) Voice of Armenia, **9965** in SS with ID at 0330. (Brossell, WI) 0336 in Armenian. (MacKenzie, CA) 2040 in EE with IS, anthem, ID, schedule and news. (Burrow, WA) 2050 with 15 minutes of EE. Off at 2104. (Timek, MI)

ASCENSION ISLAND — BBC, **15400** at 1928 and **17830** at 2000. (Jeffery, NY) VOA relay, **11855** with news at 2015. (Brossell, WI)

AUSTRALIA — Radio Australia, **9475** monitored at 1230 and **9580** at 1320. (Northrup, MO) **9580** at 1335, 9710 in Pidgin at 0925 and **13605** at 0910. (Newbury, NE) **21740** at 2111. (Jeffery, NY)

AUSTRIA — Radio Austria Int'l, **7325** at 0243, "Criminal Practices in Pig Farming." (Sanchez, NM) **17865** at 1647 with news, comment, ID, IS. (Burrow, WA)

BELARUS — Radio Minsk, **7210** at 0300 with news, local folk music, ID, //**5970** which was poor. (Alexander, PA)

BELGIUM — Radio Vlaanderen Int'l, **11985** (via Bonaire) at 0413 with Belgian press report, environmental feature, Flemish music, ID as "Brussels Calling" with RVI ID. (Burrow, WA)

Another in the endless variety of QSLs issued by Radio Taipei International. (Thanks to David Weronka, NC)

BENIN – Radio Parakou, **5025** at 2258–2300 close with FF ballads, talk, "au revoir." national anthem. (Paszkiewicz, WI)

BOLIVIA — Radio Mosoj Chaski, **3310** at 2351 with vocals, talk, Andean music. (Paszkiewicz, WI) 0045 with talk, rustic vocals. Heard again at 1010 with good signal. (D'Angelo, PA) Radio Tropico, **4552.3** at 2316. Woman with messages and announcements for listeners, talks and ID. (D'Angelo, PA) Radio Paititi, **4681.5** at 1041 with a mix of nice vocals and man announcer. (D'Angelo, PA) Radio Mallku, **4796.5** at 1023 with group vocals, long talk, commercials, woman with ID and another long talk. (D'Angelo, PA) Radio La Cruz del Sur, **4876.8** at 2325 with long talk, ID, group vocals. (D'Angelo, PA) Radio Santa Cruz, **6134.8** at 0953 with lively vocals hosted by man, ID and time check by woman at 0959. (D'Angelo, PA)

BOTSWANA — VOA relay **7340** with sports at 0320. (Brossell, WI) **9885** at 0350. (MacKenzie, CA)

BRAZIL — Radio Educadora, **3375** at 0946 with PP talk, ballads, frequency, ID, mention of Brazil, duet, time check. (Paszkiewicz, WI) Radio Roraima, **4875** at 1028 with PP vocals, ID, jingle. (Paszkiewicz, WI) Radio Nova Visao, **9529.9** with PP speech at 2338. (Paszkiewicz, WI) Radiodifusora Londrina, **4815** at 0016 with PP announcement, ID, vocals. (Paszkiewicz, WI) Radio Anhanguera, **4905** at 0437 with PP commercials. (Paszkiewicz, WI) Radio Cultura, **3365** at 0035 with pop vocals, ID, group jingle. (D'Angelo, PA) 0211 with PP talks and music. (Paszkiewicz, WI) Emisora Rural, **4944.8** at 0259 just before sign off with announcements and close without anthem at 0302. (D'Angelo, PA) Radio Difusora 6 de Agosto, **3355** at 1016 with Brazil pops, long talks by a man in between. (D'Angelo, PA) Radio Educacao Rural, **3385** at 1004 with news by man and woman with various remote reports, jingle announcements at 1014 and man with ID. (D'Angelo, PA) Radio Verdes Florestas, **4865.1** at 1032 with piano selections, jingle announcements at 1014, man with ID. (D'Angelo, PA)

BULGARIA — Radio Bulgaria, **7400** at 0354 and **9400** at 0352. (Newbury, NE) **7400** at 0320. (Brossell, WI) **9400** at 1714 in GG. (Burrow, WA)

CANADA — Radio Canada Int'l, **6150** at 1255. (Newbury, NE) **9640** at 1315. (Northrup, MO) **9760** at 0528 and **9805** at 2124. (Limbach, PA) **9755** at 0210. (Sanchez, NM) CFRX relay CFRB, **6070** at 1315 with news, traffic, ID. (Northrup, MO)

CHILE — Voz Cristiana, **11690** in SS at 0904 with ID, religious pops. (Newbury, NE) 1112 in SS. (Jeffery, NY)

CHINA — China Radio Int'l, **5990** via Cuba at 2303. (Watts, KY) **9540** at 0120. (Limbach, PA) **9570** via Cuba at 0115. (Sanchez, NM) 1315. (Northrup, MO) **9730** via French Guiana at 0406. (Burrow, WA) 0414. (MacKenzie, CA) 0430. (Jeffery, NY) **9870** from Xi'an at 1248 to 1300. Language service, CC lessons, flute, ID by woman. (Paszkiewicz, WI) **13640** with news at 2000. (Watts, KY) **13685** via Mali in unid. language at 1820. (Brossell, WI) **17720** from Xi'an at 1510. (Weronka, NC) Yunnan PBS, **6937** in unid. language at 1240. Operatic vocals, flutes and talk. (Paszkiewicz, WI) Fujian PBS, **4975** at 1238 in CC with announcements, music bridge, time pips, possible ID at 1300. (Paszkiewicz, WI). Voice of Pujing, Shanghai, **5075** in CC at 1321. //**3280**. (Becker, WA) Nei Menggu PBS, **6195** at 0832 in presumed Mongolian. Some choral music, some martial, man/woman alternating talk. (Becker, WA) CPBS Beijing, **4850** in CC at 1240 with vocals, time pips at 1300. (Paszkiewicz, WI)

COSTA RICA — RFPI, **7450** at 0715. (Becker, WA) **21814 USB** at 1446. (Jeffery, NY) Faro del Caribe, **5054.6** at 0316 with con-

tinuous religious music, occasional SS announcements by a man or woman. Long talk segment at 0417 but no ID noted. (D'Angelo, PA)

CUBA — Radio Havana, **9550** in SS at 1325. (Northrup, MO) **9820** at 0130. (Sanchez, NM) **13660** with DX program at 2100. (Limbach, PA) **13750** at 2029. (Jeffery, NY)

CZECH REPUBLIC — Radio Prague, **5930** at 2101 with news, ID. (Jeffery, NY) **6200** with news at 0200. (Weronka, NC) **7345//7385** at 0403 with end of news, ID, schedule. (Burrow, WA)

CYPRUS — BBC relay, **21470** at 1748. (Jeffery, NY)

DENMARK — Radio Denmark via Norway, **9945** in Danish at 2350 and 0335. (Brossell, WI)

DIEGO GARCIA — Armed Forces Network, **4319 USB** with pop vocals at 1255. (Paszkiewicz, WI) **2145** with rock, AFN ID at 2200, CBS news, more rock and occasional PSAs. AFRTS News Desk feature at 2239 with ID and CBS at 2300. (D'Angelo, PA)

DOMINICAN REPUBLIC — Radio Cristal Int'l, **5009.8** at 1015 with SS announcements, commercials, lively LA music, "la voz de la Republica Dominicana." (Alexander, PA)

ECUADOR — HCJB, **9745** at 0120 with DX Party Line. (Newbury, NE) 0225 with Ham Radio Today. (Sanchez, NM) **9775** at 0407. (MacKenzie, CA) La Voz del Napo, **3279** in SS at 0916 with man announcer, ID. (Dybka, TN) 0952 with mix of talk and rustic vocals. "Good, Bad and Ugly" theme at 1016. (D'Angelo, PA) Radio Centro, **3289.9** at 0933 with long talk, Andean flute music, time check at 0956, and news at 1000, ID 1004. (D'Angelo, PA) Radio Oriental, **4800.8** at 1029 with Andean vocal, man with frequent IDs and talk about Napo music. (D'Angelo, PA)

EGYPT — Radio Cairo, **9700** at 1320 in AA. (Northrup, MO) **9755** at 0410 in AA. **9900** at 0345 in AA. (MacKenzie, CA) **9900** in EE at 2130. (Burrow, WA) 1800 in unid. language on 15210. (Brossell, WI)

ENGLAND — BBC, **6005** (via Ascension) at 0438. **11765** (prob. Via South Africa) at 0353, **15280** (via Thailand) at 0150. (Limbach, PA) **6175** via Canada at 0400, **9515** via Canada at 1455, **9590** via Canada at 2300, **15220** via Canada at 1510, **15390** via USA at 2112 and **17840** via Canada at 1700. (Jeffery, NY) **9515** via Canada at 1655, **11765** via South Africa at 0340, **15485** at 1847, **17840** via Canada at 1655 and 1849. (Newbury, NE) **9515** via Canada at 1424 and **9590** via Canada at 1330. (Northrup, MO) **9410** at 0739. (Becker, WA) **9590** via Canada at 0008 and **17840** via Canada at 1700. (Sanchez, NM) World Beacon, **9675** at 2024 with religious programming. (Jeffery, NY) **15558** at 1900 with religious program. (Watts, KY) United Nations Radio, **15495** at 1730 with UN news and features. (Watts, KY)

Abbreviations Used in Listening Post

AA	Arabic
BC	Broadcasting
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/ious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel Frequencies

EQUATORIAL GUINEA — Radio Nacional, Malabo, **6249.4** at 2135 with SS talks, variety of SS pops and ballads, local folk music, some U.S. pops. QRM on the high side. (Alexander, PA) Radio Africa, **15186** with revivalist-type religious program at 2027. (Brossell, WI)

ETHIOPIA – Radio Fana, **6940** at 0340 with music and announcements in unid. language. (Brossell, WI)

FINLAND — YLE-Radio Finland, **15400** heard at 1350 with David Page Program. (Weronka, NC)

FRANCE — Radio France Int'l, **11995** via Gabon in FF at 2005. (Brossell, WI) **17860** (via French Guiana) in FF at 1315. (Northrup, MO)

GABON — Africa Number One, **9580** in FF at 0528 and **15475** in FF at 1843. (Newbury, NE) **15475** at 1703 with news, ID, music. (Burrow, WA)

GERMANY — Deutsche Welle, **3995** in GG at 0000. **17860** via Rwanda at 2005 in GG. (Watts, KY) 5905 from Petropavlovsk, Russia at 1331 in GG. 6205 from Petropavlovsk at 1051 in CC. **7400** from Irkutsk, Russia in GG at 1150. (Becker, WA) **5960** at 0537, 7225 (via Portugal) at 0606 and **11935** at 0414. (Limbach, PA) **6145** at 0100, 9640 (via Portugal) at 0132 and **13780** at 1658. (Newbury, NE) Hamburger Lokal Radio, 6045 at 1000 sign on with man and opening announcements and numerous IDs followed by jazz music and an interview. (D'Angelo, PA)

GHANA — Ghana Broadcasting Corp., **3366** at 0530 with drums, news, religious song. (Timek, MI) **4915** with news at 2208. (Jeffery, NY) 2350 with religious music, news. (Brossell, WI)

GREECE — Voice of Greece, **7455//7475** at 0300 with ID, news. (Burrow, WA) **17705** via Delano in Greek at 2030. (Sanchez, NM)

Pop'Comm June 2001 Survey

Circle Reader Service #

1. I'm an active amateur operator or CBer and the following (mark all that are appropriate) applies to me:

I attend my local radio club meetings	1
I have never attended a radio club meeting	2
I'm not certain there is a local radio club	3
I attended a couple of meetings and never went back	4
There's no radio club in my area, but I'd go if there were one	5

2. I've got a scanner or two and am planning on purchasing a new TrunkTracker within six months

Yes	6
No	7
Uncertain	8

3. Trunking is too complicated to figure out and too much bother.

Yes	9
No	10

4. During the course of a year, I attend the following number of auto racing events AND bring my scanner to hear the action:

Never	11
One	12
Two - four	13
Four or more	14

One of the new digitally equipped control rooms at Radio Vlaanderen International, Belgium.

GUATEMALA — La Voz de Nahuala, **3360** in SS with music and announcements at 0305. (Brossell, WI)

GUINEA — RTV Guineenne, **7125** at 2335 with high-life music and announcements in FF. (Brossell, WI)

HONDURAS — La Voz Evangelica, **4819** at 1142 in SS with music and man announcer. (Jeffery, NY) Radio Luz y Vida, **3250** with SS talks at 1140. ID at 1204. Over modulated. (Becker, WA)

HUNGARY — Radio Budapest, **9835** at 0345. "Crime Stopper" units operate in Hungary. (Newbury, NE) 0355 with music, comments and quick sign-off in HH. (MacKenzie, CA)

ICELAND — Rikisutvarpid, **13860** heard at 1417 with talk by a man in Icelandic. (Jeffery, NY)

INDIA — All India Radio, Mumbai, **4840** at 0032 with EE news running parallel with Delhi on **4860**. Woman with talk at 0035 and Hindi vocals. (D'Angelo, PA) AIR — Kohima, 0042, woman with vocal, man with vocal, No ID or any talk but familiar program pattern. (D'Angelo, PA) AIR, Delhi, **4860** at 0030 with woman and news in EE, ID, Hindi vocals. (D'Angelo, PA) AIR — Chennai, **4920**, 1220 with man and woman talking, 5 + ! time pips at 1230 and "This is All India Radio. The news, read by " and news by woman. (D'Angelo, PA) 1247 with Hindi talk and sub continental vocals. (Paszkiewicz, WI) AIR — Kurseong, tentative, **4895** at 1237 with Hindi talk, vocals through top of the hour, no time pips, which would seem to indicate India's time zone. *Not* //**4860**. (Paszkiewicz, WI) AIR – **11620** at 0335 in presumed Hindi. **13750** with Indian songs at 1825 to EE ID at 1830. (Brossell, WI) 1812 in EE. (Burrow, WA)

INDONESIA — RRI Makassar, on **4753** at 2233 with man and woman in studio with II talks and another man through a remote feed and some vocals. (D'Angelo, PA) RRI Jambi, **4925** at 2244; female vocals to ID by man at 2245. Song of Coconut Islands at 2259. (D'Angelo, PA)

IRAN — Voice of Islamic Republic of Iran, **7115** at 1544 with commentary, ID 1556. (Burrow, WA) **9022** at 0105 in EE. (Timek, MI) **15082** in Farsi at 1545. (Ziegner, MA) **15084** in Farsi at 1755. (Brossell, WI)

IRAQ — Radio Iraq Int'l, **11787** with Holy Koran at 0330. (Brossell, WI) 2145 in what sounded like German. (Timek, PA)

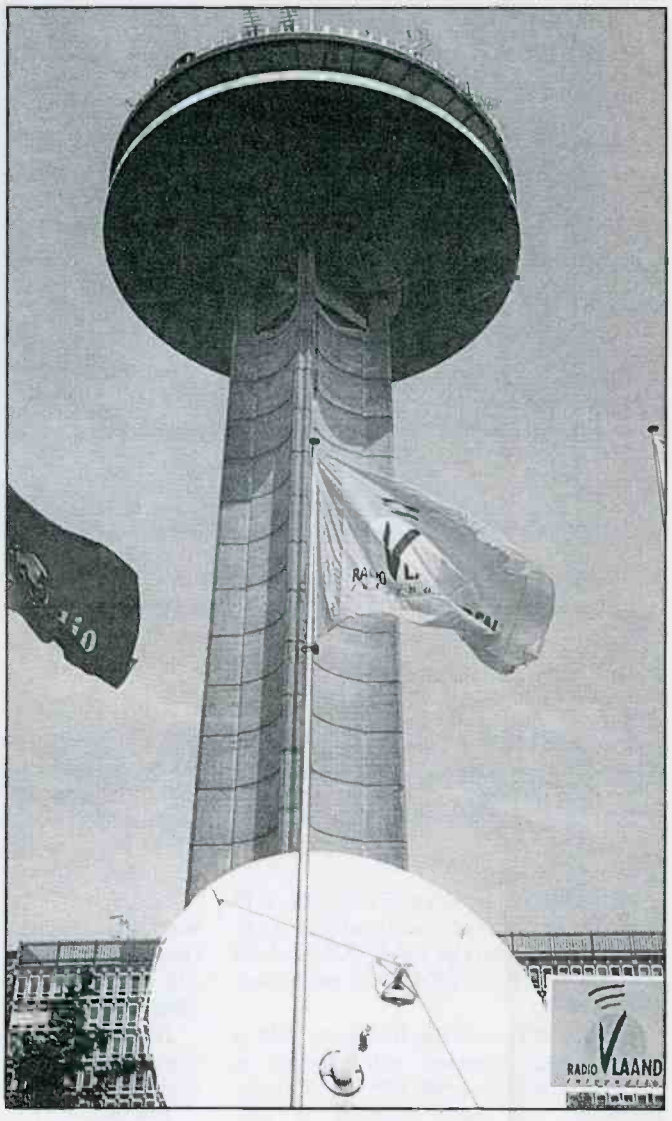
ISRAEL — Kol Israel, **9435** at 0456 in unid. language, into EE at 0500. (Burrow, WA) 2015 with news, Israel weather, IS, off 2025. (Jeffery, NY) **17545** at 1700 with news, into unid. language at 1730. (Limbach, PA)

ITALY — Adventist World Radio, Forli, **17820** at 1245 with religious talk, ID, address. (Paszkiewicz, WI) Italian Radio Relay Service, **7120**, 2300 sign on with opening ID mentioning, "I double R S." (D'Angelo, PA) RAI, **7120** at 0425 with IS, news. (Burrow, WA) **11800** at 0050 with news. (Sanchez, NM)

JAPAN— Radio Japan/NHK, **6110** via Canada at 0510. **7230** (via England) at 0503. (Limbach, PA) **6110** via Canada at 0515. (Newbury, NE) **7230** (England) at 0658. (Weronka, NC) **6145** via Canada at 0010. (Sanchez, NM) 0018. (Jeffery, NY) **9505** at 1435. (Northrup, MO) **17810** and **17835** at 0138. In parallel but **17810** running a few seconds behind **17835**. (Becker, WA)

JORDAN — Radio Jordan, **11690** at 1621 with country/western, ID. (Burrow, WA) 1635 to 1735 close. U.S. and Euro pops, IDs, news. Still announcing **17680**. Lots of strong RTTY QRM. (Alexander, PA)

This 1997 card from Moscow still carried the Radio Moscow name and logo. The photo is of a Moscow monument to Alexander Puskin. (Thanks to Tricia Ziegner, MA)



Headquarters of Radio Vlaanderen International in Brussels.

KUWAIT — Radio Kuwait, **9855** at 2057, AA ID 2100. **15495//15505** in AA at 1810. (Brossell, WI) **11990** in EE with news at 1831. (Burrow, WA)

LAOS — Lao National Radio, **6130** at 1310 with "Born To Be Wild," ID "Lao National Radio" at 1312. (Brossell, WI)

LESOTHO — Radio Lesotho, **4800** at 2152 with lively vocals, talk at 2157, and then another song during which carrier was cut at 2159. (D'Angelo, PA)

LIBERIA—ELWA, **4760** at 0610 with sermons. (Timek, MI)

LIBYA — Voice of Africa, **17725** at 1731 with ID, news, ID and back into AA. (Burrow, WA) EE news heard at 1739–1747, 2034–2044 and 2336–2346. (Alexander, PA)

LITHUANIA — Radio Vilnius, **6120//9875** at 0030 with ID, IS, ID, news. (Burrow, WA) **9875** at 0030 with ID, news, and features. (Jeffery, NY)

MADAGASCAR —Radio Netherlands relay, **9860** heard at 0353 in DD/EE. (MacKenzie, CA)

MALTA — Voice of the Mediterranean, via Italy, **11770** heard at 0900 with letterbox program, Euro-pops. Sundays only. (Alexander, PA)

MALAYSIA — Radio Malaysia, **7295** at 1654 with music, dedications, letters. Mentions of "Radio 4." (Burrow, WA)

MAURITANIA — Radio Mauritanie, **4845** in AA at 2202. Also at 0629. (Jeffery, NY) 2330. (Brossell, WI) 0225. (Watts, KY) 0650 with prayers, ID 0700. (Dybka, TN)

MEXICO — Radio Huayacocotla, **2390.1** at 0040 with mariachi, woman announcer in SS, ID and off at 0103 with children singing. (D'Angelo, PA) 0048–0100 close. (Paszkiewicz, WI) Radio Educacion, **6185** with Mexican music and chorus at 0919. (Newbury, NE)

MOLDOVA — Voice of Russia, **7125** in RR at 0310. Also in EE on **7180** at the same time. (Brossell, WI)

MOROCCO — RTV Marocaine, **15345** at 1835 in AA. (Newbury, NE) VOA relay, **9760** at 1812 and **17895** at 1619. (Jeffery, NY) **15250** at 1805 and 2030. (Brossell, WI)

NEW ZEALAND — Radio New Zealand Int'l, **17675** heard at 0033 with "Cadenza." (Jeffery, NY)

NIGER — La Voix du Sahel, **5020.3** at 2215 with FF talks, high-life music, religious recitations. Off at 2302 with choral anthem. Sign off is at 2200 Monday–Friday and 2300 on weekends. (Alexander, PA)

NIGERIA — Voice of Nigeria, **7255** at 0506 with reports on various Nigerian topics, ID with Lagos address at 0527. (Burrow, WA) 0520, and suddenly off at 0529. (Jeffery, NY)

NETHERLANDS — Radio Netherlands, **6165** via Bonaire at 0037. (Sanchez, NM)

These stickers are being sent by Radio Vlaanderen International in response to listener's letters.

15315 (via Bonaire) at 1829 with sign on in DD, IS and ID. (Newbury, NE)

NORTH KOREA — Radio Pyongyang, **9335//11710** at 1900 with time pips, ID, news. (Burrow, WA) **11734** at 0145 with music, communist talks. (Timek, MI) **11735** at 0120 with patriotic songs. (Newbury, NE)

NORTHERN MARIANAS — VOA, **7235** in Korean at 1351. (Becker, WA)

OMAN — Radio Sultanate of Oman, **15140** in AA at 1755 to abrupt sign off at 1758. (Brossell, WI) **15355** at 0323 with news in EE, ID 0327, music. (Burrow, WA)

PAKISTAN — Radio Pakistan, **11570//15100** at 1600 with IS, ID, time pips, ID again, news. (Burrow, WA) **15485.2** at 0207 in unid. language. ID, frequency announcement. (Paszkiewicz, WI)

PAPUA NEW GUINEA — NBC, Port Moresby, **4890** at 1235 with Hawaiian and traditional music, Kevin Meyer with Late Night Radio. At 1244, news, "90.7 FM from Port Moresby." (Timek, MI)

PERU — Radio Cora, **4914** at 0012 in SS with what seemed to be news. (Jeffery, NY) Radio Comas, **4881** at 1032 with shouted SS announcement. (Paszkiewicz, WI) Radiodifusora Commercial Narvantos, **4300** at 1058 with continuous OA (Peruvian) music. Faded out before ID. (Montgomery, PA) 1055 with rustic OA vocals hosted by man, ID and talks. (D'Angelo, PA) Radio del Pacifico, tentative, **9675** at 1030 with "La Bamba." Heavy het. No copy on //**4975.1.** (Montgomery, PA) Radio Oriental, **4800.8**, 1010 with clear ID at 1034 and again at 1035, then continuous OA music. (Montgomery, PA) Radio San Francisco, tentative, **4750.1** at 1109 with OA tunes. (Montgomery, PA) 2256 with vocals to 2300 ID. Next morning heard around 1100. (D'Angelo, PA) Radio Nor Andina, **4461.2** at 1105 with time check, ID, OA tunes. (D'Angelo, PA) Radio Imperio, **4388.9**, 0940 with man/woman talk before live audience. Brief vocal followed by time check and ID. (D'Angelo, PA) Radio Luz y Sonido, **3234.9** at 1010 with OA vocal, man with ID and time check. (D'Angelo, PA) Radio Tawantinsuyo, **6173.8** at 1040. Man with ID over background vocals, long talk by woman. (D'Angelo, PA) Radio Santa Rosa, **6045.6** at 0957 with talk by man, woman, ID just prior to being wiped out by Hamberger Lokal Radio on **6045** at 1000. (D'Angelo, PA) Radio Chota, **4890.2** at 0050 with long talk by woman, rambling talk and ID by man, segments of flute music and sign off announcements, short segment of instrumental music and off at 0101. (D'Angelo, PA) Radio La Hora, **4855.6** at 1014 with OA vocals with time checks in between and ID at 1019. (D'Angelo, PA) Radio Huanta 2000, **4752.8v** at 2340 with talk by man, ID, rustic music. Poor, with the infamous swisher QRM. (D'Angelo, PA)

PHILIPPINES — Radio Pilipinas, **15190** at 1825 with EE program beginning at 1831 with nice opening announcement "Standby for a broadcast in English. This is the English service of Radio Pilipinas from 1830 to 1930 UTCV, Radio Pilipinas, the overseas service of the Philippine Broadcasting Company. Radio Pilipinas, broadcasting from the Philippines." News and various features. (D'Angelo, PA) 1845 with economic and political news. (Burrow, WA) VOA relay, **11705** at 1130 and **11970** at 1942. (Jeffery, NY) **11805** at 2345. (Brossell, WI)

POLAND — Radio Polonia, **9540** at 2049 with press review and discussion on the state museum. (Timek, MI) **11820** at 1300 with EE classical music and an IS different from the one I remember. (Paszkiewicz, WI)

PORTUGAL — RDP Int'l, **15540** in PP with music and announcements at 1810. (Brossell, WI)

PUERTO RICO — AFN, **6458 USB** at 0140 and 0333. (Newbury, NE) **0342** at 1105 (Jeffery, NY)

QATAR — Qatar Broadcasting Service, **7210** with Holy Koran recitations at 0315. (Brossell, WI)

ROMANIA — Radio Romania Int'l, **11740** at 1700 with IS, ID, schedule, news. (Burrow, WA)

RUSSIA — Radio Tikhey Okean, Kharbarovsk, **7175** at 0806 tuning up, and into RR at 0815. (Becker, WA) Radio Magadan, **5940** with Radio Rossii relay in RR at 0847. **7320** from 0636 to 0803 with eclectic selection of music, from Russian folk to Elvis, Radio Rossii ID on the hour. (Becker, WA) IBRA Radio, **5895** from Petropavlovsk in CC at 1329. Off 1330. (Becker, WA) Radio Yakutsk, **7200** in RR and //**7250 and 7320** at 0809. (Becker, WA) Radio Radonezh, **6245** at 1955 with vocal selections, woman in RR, brief fanfare just before top of the hour and woman with quick ID before carrier was cut. (D'Angelo, PA) Radio Murmansk, **5930** at 0807. QRM from Gene Scott and parallel with Magadan-5940 and Radio Rossi relay. (Becker, WA) Voice of Russia, **9900** from Krasnoyarsk at 1410 in presumed Pashto. **12020** at 0523 with news. **13665** from Petropavlovsk-Kamchatka at 0434, //**12020 and 15595. 15595** from Komsomolsk at 0436, //**15470. 17595** from Petropavlovsk at 0427. (Becker, WA) **12020** at 0330. (Newbury, NE) **15470** at 0200. (Limbach, PA) Radio Rossii, 7250 from Moscow in RR at 0804, //**7320. 9860** in RR at 0521 to Europe and North America. (Becker, WA)

RWANDA — Deutsche Welle relay,

15135 with ID at 1800 and into unid. African language. (Brossell, WI) **15410** at 2058 with IS, ID, DW News. (Jeffery, NY)

SAO TOME — VOA relay, **4960** at 0457 with Yankee Doodle IS, sign on and into listed Hausa. (D'Angelo, PA) **5970** at 0606. (Becker, WA)

SAUDI ARABIA — Broadcasting Service of the Kingdom, **11820** in AA at 2015. (**15230** in AA at 1800. (Brossell, WI) **21505//21705** in AA at 1421. (Jeffery, NY)

SEYCHELLES — BBC relay, **11730** at 0320. (Brossell, WI)

SINGAPORE — Radio Singapore Int'l, **6150** at 1345 with E ID at 1347. (Becker, WA) BBC relay, **9740** at 1122. (Jeffery, NY)

SLOVAKIA — Radio Slovakia Int'l, **5930** at 0102 with domestic and European news. (Newbury, NE) 0120. (Timek, MI) **7230** at 0125. (Limbach, PA)

SOUTH AFRICA — Channel Africa, **17870** at 1802 with news, ID. (Burrow, WA) 1820 with business news. (Brossell, WI) BBC relay, **3255** at 0410. (Montgomery, PA) World Beacon, **11640** at 1945 with Website info and religious program. (Brossell, WI) 2014 with religion. (Jeffery, NY)

SOUTH KOREA — Radio Korea Int'l, **9870** ending EE at 1856 with ID, schedule and IS. (Burrow, WA) **15575** at 0208 with news and comment. (Limbach, PA)

SPAIN — Radio Exterior de Espana, **6055** in EE at 0042. (Jeffery, NY) 0150. (Newbury, NE) 0150. **11815** via Costa Rica in SS at 1640. (Sanchez, NM) **6055** at 0458. (Burrow, WA) 0515. (Limbach, PA) **9540** in SS at 1320. (Northrup, MO) **9960** at 0420 in SS. (MacKenzie, CA) **15110** in SS at 2025 and **15125** via Costa Rica in SS at 1755. (Brossell, WI)

SRI LANKA —Sri Lanka Broadcasting Corp., **9770** at 0205 with modern dance music. Weak, but readable. (Timek, MI)

SWEDEN — Radio Sweden, **9495** at 0340. (Brossell, WI) 0350. (Limbach, PA)

SWITZERLAND — Swiss Radio Int'l, **9905** via French Guiana at 0106. (Newbury, NE) 0236 with sports. (Sanchez, NM) 0342 in GG, **//9885**. (MacKenzie, CA) **11660** via French Guiana at 2340. (Brossell, WI)

SYRIA — Radio Damascus, **12085//13610** at 2021 with narrative music, weak ID at 2035. (Burrow, WA)

TAIWAN — Central Broadcasting System, **3335** in CC at 1303. (Becker, WA) Radio Taipei Int'l, via WYFR, **9680** at 0203. (Sanchez, NM) 0424 in CC. (MacKenzie, CA) WYFR via Taiwan, **15060** at 0158 with religious talk. (Paszkiewicz, WI)

TANZANIA (Zanzibar) — Radio Tanzania Zanzibar, **11734** in presumed Swahili at 1950, ID 2000. (Brossell, WI)

THAILAND — Radio Thailand, **7145** at 1300 with EE ID and into JJ. (Becker, WA) **9535** at 1900 "HSK9, Radio Thailand World Service to Europe." (Burrow, WA) VOA relay, **7140** at 2335. (Brossell, WI)

TOGO — Radio Lome, **5047** in FF at 2215. (Jeffery, NY) 2315. (Brossell, WI)

TUNISIA — RTT Tunisienne, **7110** at 0310 with AA talks. (Brossell, WI) **7275** in AA at 0547. (Becker, WA)

TURKEY — Voice of Turkey, **7300** in TT at 0320. (Brossell, WI) **9525** at 2146 with EE news. (Timek, MI) 2155 in EE. (Burrow, WA)

TURKMENISTAN — Turkmen Radio, tentative, **5015** at 1045 in presumed Turkmen. QRM from a Latin station. (Ziegner, MA)

UGANDA — Radio Uganda, **4976** at 2038. Woman hosting music with brief announcements between songs, ID and sign-off announcements, orchestral national anthem and off 2101. (D'Angelo, PA)

UKRAINE — Radio Ukraine Int'l, **9385** on at 0400 but too weak to copy until closing ID and schedule at 0458. (Burrow, WA) **15520** at 1200. (Ziegner, MA)

UNITED ARAB EMIRATES — UAE Radio, Dubai, **13675** in EE at 1600. (Burrow, WA) **15395** in EE at 1600. (Limbach, PA) **21605** in AA at 1428. (Jeffery, NY) UAE Radio, Abu Dhabi, **13755** in AA at 1830. (Brossell, WI) **21735** in AA at 1439. (Jeffery, NY)

UNITED STATES — AFN, Florida, **12689 USB** at 1523. (Jeffery, NY)

VATICAN — Vatican Radio, **7250** in EE at 0610. (Limbach, PA) **9600** at 2244 with IS, ID, church news. (Burrow, WA)

VENEZUELA — Ecos del Torbes, **4980** in SS at 0017, 0308. (Jeffery, NY) 0329. (Brossell, WI) Radio Tachira, **4830** in SS at 0250. (Jeffery, NY)

VIETNAM — Voice of Vietnam, **9525** at 0250. (Weronka, NC) *(Via Canada? — Ed)* **9795** via Canada. (Burrow, WA) 0339. (Newbury, NE) 0400. (MacKenzie, CA)

YEMEN — Republic of Yemen Radio, **9780**, 1830 in EE with old U.S. pops. "Thank you for listening to Republic of Yemen Radio" and off with anthem at 1900. (Timek, MI) 1856 with news, ID, address, anthem and into AA. (Burrow, WA) 0405 in AA. (MacKenzie, CA)

A truck full of thanks to our intrepid reporters this month: Tricia Ziegner, Westford, MA; Robert Montgomery, Levittown, PA; Richard D'Angelo, Wyomissing, PA; Ed Newbury, Kimball, NE; Mark Northrup, Gladstone, MO; Bruce Burrow, Snoqualmie, WA; Brian Alexander, Mechanicsburg, PA; Pete Becker, Clarkson, WA; Robert Brossell, Pewauakee, WI; David Weronka, Benson, NC; David Jeffery, Niagara Falls, NY; R.C. Watts, Louisville, KY; Marty Sanchez, Rio Rancho, NM; Jill Dybka, Kingston Springs, TN; Robert Timek, Milford, MI; Stewart MacKenzie, Huntington Beach, CA and Sheryl Paszkiewicz, Manitowoc, WI. Thanks to each one of you!

Until next month, good listening! ■

Tap into *secret* Shortwave Signals

Turn mysterious signals into exciting text messages with the MFJ MultiReader™!

Plug this self-contained MFJ *MultiReader*™ into your shortwave receiver's earphone jack.

Then *watch* mysterious chirps, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR (FEC) turn into exciting text messages as they scroll across an easy-to-read LCD display.

You'll *read* interesting commercial, military, diplomatic, weather, aeronautical, maritime and amateur traffic . . .

Eavesdrop on the World

Eavesdrop on the world's press agencies transmitting *unedited* late breaking news in English -- China News in Taiwan, Tanjug Press in Serbia, Iraqui News in Iraq -- all on RTTY.

Copy RTTY weather stations from Antarctica, Mali, Congo and many others. Listen to military RTTY passing traffic from Panama, Cyprus, Peru, Capetown, London and others. Listen to hams, diplomatic, research, commercial and maritime RTTY.

Listen to maritime users, diplomats and amateurs send and receive *error-free* messages using various forms of TOR (Telex-Over-Radio).

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime

-- all over the world -- Australia, Russia, Japan, etc.

MFJ-462B **$179.95**

Printer Monitors 24 Hours a Day

MFJ's exclusive *TelePrinterPort*™ lets you monitor any station 24 hours a day by printing transmissions on an Epson compatible printer.

Printer cable, **MFJ-5412**, $9.95.

MFJ *MessageSaver*™

You can save several pages of text in an 8K of memory for re-reading or later review.

High Performance Modem

MFJ's high performance *PhaseLockLoop*™ modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference -- greatly improves copy on CW and other modes.

Easy to use, tune and read

It's easy to use -- just push a button to select modes and features from a menu.

It's easy to tune -- a precision tuning indicator makes tuning your receiver easy for best copy.

It's easy to read -- the 2 line 16 character LCD display with contrast adjustment is mounted on a brushed aluminum front panel for easy reading.

Copies most standard shifts and speeds. Has MFJ *AutoTrak*™ Morse code speed tracking.

Use 12 VDC or use 110 VAC with MFJ-1312B AC adapter, $14.95. 5¼Wx2½Hx5¼D inches.

No Matter What™ One Year Warranty

You get MFJ's famous one year *No Matter What*™ limited warranty. That means we will repair or replace your MFJ *MultiReader*™ (at our option) *no matter what* for one full year.

Try it for 30 Days

If you're not completely satisfied, simply return it within 30 days for a prompt and courteous refund (less shipping). Customer must retain dated proof-of-purchase direct from MFJ.

Super Active Antenna

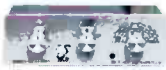
"World Radio TV Handbook" says MFJ-1024 is a *"first-rate easy-to-operate active antenna ...quiet... excellent dynamic range... good gain... low noise... broad frequency coverage."*

Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz-30 MHz.

MFJ-1024 **$139.95**

Receives strong, clear signals from all over the world. 20 dB attenuator, gain control, ON LED. Switch two receivers and auxilary or active antenna. 6x3x5 inches. Remote has 54 inch whip, 50 feet coax. 3x2x4 inches. 12 VDC or 110 VAC with MFJ-1312, $14.95.

Indoor Active Antenna



MFJ-1020B **$79.95**

Rival outside long wires with this *tuned* indoor active antenna. *"World Radio TV Handbook"* says MFJ-1020B is a *"fine value... fair price... best offering to date... performs very well indeed."*

Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as a preselector with external antenna. Covers 0.3-30 MHz. Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip, 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, $14.95.

Compact Active Antenna

MFJ-1022 **$49.95**

Plug this *compact* MFJ all band active antenna into your receiver and you'll hear strong, clear signals from all over the world, 300 KHz-200 MHz including low, medium, shortwave and VHF bands.

Detachable 20 inch telescoping antenna. 9 volt battery or 110 VAC MFJ-1312B, $14.95. 3¼x1¼x4 in.

Eliminate power line noise!

MFJ-1026 **$179.95**

New! ***Completely*** eliminate power line noise, lightning crashes and interference *before they get into your receiver!* Works on all modes -- SSB, AM, CW, FM, data -- and on all shortwave bands. Plugs between main external antenna and receiver. Built-in active antenna picks up power line noise and cancels undesirable noise from main antenna. Also makes excellent active antenna.

MFJ Antenna Matcher

MFJ-959B **$99.95**

Matches your antenna to your receiver so you get maximum signal and minimum loss.

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Select 2 antennas and 2 receivers. 1.6-30 MHz. 9x2x6 in. Use 9-18 VDC or 110 VAC with MFJ-1312, $14.95.

Dual Tunable Audio Filter

MFJ-752C **$99.95**

Two separately tunable filters let you peak desired signals and notch out interference at the same time. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 in.

High-Gain Preselector

MFJ-1045C **$99.95**

High-gain, high-Q receiver preseletor covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Push buttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18 VDC or 110 VAC with MFJ-1312, $14.95.

CW, RTTY, ASCII Interface

MFJ-1214PC **$149.95**

Use your computer and radio to receive and display brilliant full color FAX news photos and incredible WeFAX weather maps. Also RTTY, ASCII and Morse code. Frequency manager lists over 900 FAX stations. Auto picture saver.

Includes interface, easy-to-use menu driven software, cables, power supply, manual and *JumpStart*™ guide. Requires 286 or better computer with VGA monitor.

High-Q Passive Preselector

MFJ-956 **$49.95**

High-Q passive LC preselector boosts your favorite stations while rejecting images, intermod and phantom signals. 1.5-30 MHz. Preselector bypass and receiver grounded positions. Tiny 2x3x4 inches.

Super Passive Preselector

MFJ-1046 **$99.95**

New! **Improves** any receiver! Suppresses strong out-of-band signals that cause intermod, blocking, cross modulation and phantom signals. Unique Hi-Q series tuned circuit adds super sharp front-end selectivity with excellent stopband attenuation and very low passband attenuation and very low passband loss. Air variable capacitor with vernier. 1.6-33 MHz.

Easy-Up Antennas

MFJ-38 **$16.95**

How to build and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before. Antennas from 100 KHz to 1000 MHz.

MFJ Antenna Switches

MFJ-1704 **$64.95**

MFJ-1702C **$24.95**

MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection. Good to 500 MHz. 60 dB isolation at 30 MHz. **MFJ-1702C** for 2 antennas.

World Band Radio Kit

MFJ-8100K **$69.95** *kit*
MFJ-8100W **$89.95** *wired*

Build this regenerative shortwave receiver kit and listen to signals from all over the world with just a 10 foot wire antenna. Has RF stage, vernier reduction drive, smooth regeneration, five bands.

21 Band World Receiver

MFJ-8121 **$39.95**

MFJ's new 21 Band World Receiver lets you travel the world from your armchair! Listen to BBC news from London, live music from Paris, soccer matches from Germany and more! Covers 21 bands including FM, Medium Wave, Long Wave and Shortwave. *Sony*® integrated circuit from Japan, multicolored tuning dial, built-in telescopic antenna, permanent silkscreened world time zone, frequency charts on back panel. Carrying handle. Operates on four "AA"s. Super compact size!

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and Nearest Dealer . . . 800-647-1800

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Tech Help: (662) 323-0549

world band tuning tips

your monthly international radio map

This listing is designed to help you hear more shortwave broadcasting stations. The list includes a variety of stations, including international broadcasters beaming programs to North America, others to other parts of the world, as well as local and regional shortwave stations. Many of the transmissions listed here are not in English. Your ability to receive these stations will depend on time of day, time of year, your geographic location, highly variable propagation conditions, and the receiving equipment used.

AA, FF, SS, GG, etc. are abbreviations for languages (Arabic, French, Spanish, German). Times given are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 4 p.m. PST.

UTC	Freq.	Station/Country	Notes
0000	3280	La Voz del Napo, Ecuador	SS
0000	9780	Republic of Yemen Radio	AA
0000	9795	Voice of Vietnam, via Canada	
0000	13755	UAE Radio, Abu Dhabi, UAE	AA
0020	4980	Ecos del Torbes, Venezuela	SS
0030	5047	Radio Lome, Togo	FF
0030	4830	Radio Tachira, Venezuela	SS
0030	7110	RT Tunisienne, Tunisia	AA
0030	7250	Vatican Radio	
0030	9600	Vatican Radio	
0030	12689	AFN/AFRTS, Florida	SSB
0050	9525	Voice of Turkey	
0100	21605	UAE Radio, Dubai	AA
0100	15395	UAE Radio, Dubai	
0100	9385	Radio Ukraine Int'l	
0100	7300	Voice of Turkey	TT
0100	7145	Radio Thailand	JJ
0100	11734	Radio Tanzania, Zanzibar	Swahili
0130	15060	WYFR, Florida, via Taiwan	
0130	11660	Swiss Radio International, via Fr. Guiana	
0130	15125	Radio Exterior de Espana, via Costa Rica	SS
0130	9495	Radio Sweden	
0200	9770	Sri Lanka Broadcasting Corp.	
0200	6055	Radio Exterior de Espana, Spain	
0200	17870	Channel Africa, South Africa	
0200	9905	Swiss Radio International, via French Guiana	
0200	15520	Radio Ukraine Int'l	
0200	13610	Radio Damascus, Syria	
0200	15575	Radio Korea Int'l, South Korea	
0200	11640	World Beacon, USA, via South Africa	
0200	5930	Radio Slovakia Int'l	
0230	6150	Radio Singapore Int'l	
0230	9740	BBC, via Singapore	
0230	21505	Broad. Service of Kingdom of Saudi Arabia	AA
0230	5970	Voice of America, via Sao Tome	
0230	3255	BBC via South Africa	
0230	15410	Deutsche Welle, Germany, via Rwanda	
0245	7250	Radio Rossii, Russia	RR
0250	15470	Voice of Russia	
0300	11730	BBC, via Seychelles	
0300	7125	Voice of Russia, via Moldova	
0300	4890	NBC, Papua New Guinea	
0300	4881	Radio Comas, Peru	SS
0300	15485	Radio Pakistan	unid
0300	2390	Radio Huayacocotla, Mexico	SS
0300	7230	Radio Japan/NHK	
0300	11620	All India Radio	Hindi
0300	15140	Radio Sultanate of Oman	AA
0300	17735	Radio Pyongyang, North Korea	
0300	7255	Voice of Nigeria	
0300	6165	Radio Netherlands, via Bonaire	
0300	5020	La Voix du Sahel, Niger	FF
0330	15345	RTV Marocaine, Morocco	AA
0330	15315	Radio Netherlands, via Bonaire	DD
0330	6185	Radio Educacion, Mexico	SS
0330	17675	Radio New Zealand Int'l	
0330	15240	Voice of America, via Morocco	
0330	4845	Radio Mauritania	AA
0330	17820	Adventist World Radio, Italy	
0330	13685	China Radio Int'l, via Mali	unid
0330	17725	Voice of Africa, Libya	AA/EE
0330	4760	ELWA, Liberia	
0330	4800	Radio Lesotho	
0330	6130	Lao National Radio, Laos	
0345	9875	Radio Vilnius, Lithuania	
0400	15505	Radio Kuwait	AA
0400	9855	Radio Kuwait	AA
0400	6145	Radio Japan/NHK, via Canada	
0400	7120	RAI Int'l, Italy	
0400	11800	RAI Int'l, Italy	
0400	9505	Radio Japan/NHK	
0400	15084	Voice of Islamic Republic of Iran	Farsi
0430	11787	Radio Iraq Int'l	AA
0430	9435	Kol Israel	
0430	17545	Kol Israel	EE/other
0430	9022	Voice of Islamic Republic of Iran	
0500	13750	All India Radio	
0500	7125	RTV Guineenne, Guinea	FF
0500	7200	Yakutsk Radio, Russia	RR
0500	7320	Magadan Radio, Russia	RR
0500	5895	IBRA Radio, Russia	CC
0530	11690	Radio Jordan	
0530	7175	Radio Tikhy Okean, Russia	RR
0530	11740	Radio Romania Int'l	

UTC	Freq.	Station/Country	Notes
0600	7210	Qatar Broadcasting Service	AA
0600	6458	AFN/AFRTS, Puerto Rico	
0600	15540	RDP Int'l, Portugal	PP
0600	11820	Radio Polonia, Poland	
0600	13640	Radio Telefis Eireann, Ireland, via Canada	
0600	4914	Radio Cora, Peru	SS
0630	11705	Voice of America, via Philippines	
0630	15190	Radio Pilipinas, Philippinesz1030	
0700	4996	Radio Andina, Peru	SS
0730	6045	Radio Santa Rosa, Peru	SS
0730	7235	Voice of America, via Northern Marianas	KK
0800	11770	Voice of the Mediterranean, Malta, via Italy	
0800	9640	Radio Fana, Ethiopia	unid
0800	9860	Radio Netherlands, via Madagascar	DD
0815	7295	Radio Malaysia/Radio 4	
0900	3360	la Voz de Nahuala, Guatemala	SS
0900	9835	Radio Budapest, Hungary	
0900	13860	Rikisutvarpid, Iceland	Icelandic
0900	3250	Radio Luz y Vida, Honduras	SS
0930	4915	Ghana Broadcasting Crop.	
1000	7455	Voice of Greece	Greek/EE
1000	4819	La Voz Evangelica, Honduras	SS
1000	11570	Radio Pakistan	
1000	17705	Voice of Greece, via Delano, CA	Greek
1030	15355	Radio Sultanate of Oman	
1030	3366	Ghana Broadcasting Corp.	
1030	15475	Africa Number One, Gabon	FF
1030	7400	Deutsche Welle, Germany, via Russia	GG
1100	3995	Deutsche Welle, Germany	GG
1100	17860	Deutsche Welle, via Rwanda	GG
1100	11955	Radio France Int'l, via Gabon	FF
1100	15400	YLE/Radio Finland	
1100	15185	Radio Africa, Equatorial Guinea	
1100	0500	Radio Nacional, Equatorial Guinea	SS
1130	17735	World Beacon, USA, via Ascension	
1130	9675	World Beacon, USA, via England	
1200	9410	BBC	
1200	9820	Radio Havana Cuba	
1200	4319	AFN/AFRTS, Diego Garcia	usb
1200	11765	BBC, via South Africa	
1200	15210	Radio Cairo, Egypt	unid
1200	9900	Radio Cairo, Egypt	AA
1200	21470	BBC, via Cyprus	
1200	3290	Radio Centro, Ecuador	SS
1230	4801	Radio Oriental, Ecuador	SS
1230	9745	HCJB, Ecuador	
1230	9945	Radio Denmark, via Norway	DD
1300	5010	Radio Cristal Int'l, Dominican Republic	SS
1300	7345	Radio Prague, Czech Republic	
1300	6200	Radio Prague, Czech Republic	
1300	13750	Radio Havana Cuba	
1300	4850	China People's Bc. Station, China	CC
1300	5055	Faro del Caribe, Costa Rica	SS
1330	17720	China Radio Int'l	
1330	6937	Yunnan PBS, China	CC
1400	5075	Voice of Pujiang, China	CC
1415	6030	Radio Marti, USA	SS
1430	9540	Radio Tirana, Albania	
1430	9885	Voice of America, via Botswana	
1500	9615	KNLS, Alaska	
1500	17830	BBC, via Ascension Is.	
1530	9965	Voice of Armenia	
1600	9730	China Radio Int'l, via French Guiana	
1600	9755	Radio Canada Int'l	
1630	11690	Voz Cristiana, Chile	SS
1630	4815	Radio Difusora Londrina, Brazil	PP
1700	6070	CFRX, relay CFRB, Canada	
1700	4865	Radio Verdes Florestes, Brazil	PP
1700	7400	Radio Bulgaria	
1700	9400	Radio Bulgaria	GG
1700	4905	Radio Anhuanguera, Brazil	PP
1730	3365	Radio Cultura, Brazil	PP
1730	6135	Radio Santa Cruz, Bolivia	SS
1730	9490	Radio Republic of Abkhazia	RR
1800	7210	Radio Minsk, Belarus	
1800	17580	Voice of America, via Ascension	
1800	3310	Radio Mosoj Chaski, Bolivia	SS
1800	5025	Radio Parakou, Benin	FF
1800	11985	Radio Vlaanderen Int'l, Belgium, via Bonaire	
1800	9475	Radio Australia	
1830	13605	Radio Australia	
1830	17865	Radio Austria Int'l	
1830	7325	Radio Austria Int'l	
1830	21740	Radio Australia	
1830	15345	Radio Nacional, Argentina	SS
1900	9635	Radio Nacional, Colombia	SS
1900	9735	Radio Nacional, Paraguay	SS
1900	11775	University Network, Anguilla	
1900	15160	Radio Algiers Int'l, Algeria	
2000	3320	Radio Sonder Grense, South Africa	Afk
2000	3325	Radio Maya, Guatemala	SS
2000	4052	Radio Verdad, Guatemala	SS
2000	4725	Radio Myanmar, Myanmar (Burma)	BB
2000	4755	Radio Educacao Rural, Brazil	PP
2000	4783	RTV Malienne, Mali	FF
2000	4820	Radio Botswana	
2000	4835	Radio Tezulutlan, Guatemala	SS
2000	4898	Radio Barahona, Dominican Republic	SS
2030	4955	Radio Nacional, Angola	PP
2030	4960	Radio Villa, Dominican Republic	SS
2030	5100	Radio Liberia	
2030	5975	Radio Tashkent, Uzbekistan	
2030	6055	Radio Tampa, Japan	JJ
2035	6190	Deutschlandfunk, Germany	GG
2100	6240	Trans World Radio, via Armenia	unid
2100	7160	Radio Tirana, Albania	
2100	9580	Africa Number One, Gabon	FF
2130	9700	Trans World Radio, via South Africa	vern.
2200	9810	Radio Thailand	
2230	11560	RS Makedonias, Greece	Greek
2230	11625	Adventist World Radio, Guam	various
2300	11770	Radio Mexico Int'l	SS
2330	11830	Radio Romania Int'l	
2330	12060	Voice of Hope, via RN-Madagascar	EE/Sudan

power up: radios & high-tech gear

by Harold Ort and R.L. Slattery

review of new, interesting and useful products

AOR Announces Release Of AR8600 Wide Range Desktop Receiver With Collins Filter Option

AOR USA has introduced the new AR8600, terming the new wide-range receiver a new standard for demanding users. "The AR8600 reflects a blend of advanced technology, innovative thinking and some proven techniques in giving the operator a world of listening choices and options," said Taka Nakayama, vice president for AOR. "The AR8600 is so advanced, its design has been awarded U.S Patent 6,002,924. It can accommodate optional cards that allow the user to add extended features and it can accept Collins mechanical filters for amazing selectivity."

The AR8600 has a Temperature Compensated Crystal Oscillator (TCXO) as an extremely stable frequency reference. It can hold up to 1000 memories (20 banks x 50 channels/bank) and can search those memories for signals at a rate up to 37 channels per second. In addition, there are 40 different search banks. Tuning range is 520 KHz–2.040 GHz. By law, cellular frequencies are blocked, but an unblocked version of the AR8600 is available to qualified agencies.

Receive modes include wide FM, narrow FM, super-narrow FM, wide AM, narrow AM, upper sideband, lower sideband, and continuous wave. Received signals are processed through a newly designed front end. There are three operating modes: VFO (featuring two independent VFOs), Memory, and Search.

Innovative features include an area for up to three optional slot cards that perform various functions, including: CTCSS, Tone Eliminator, Voice Inversion, Digital Recording, and External Memory. In addition, optional Collins Mechanical Filters can be added for precise selectivity.

In the wide FM mode, the AR8600 can use its 10.7 MHz IF output in conjunction with the SDU5500 Spectrum Display Unit. The AR8600 can also display spectrum activity on its front-panel display.

Computer management of the AR8600 is done through a rear-panel RS-232C port and free software for controlling the unit is available from the AOR Website, http://www.aorusa.com. Each memory can store frequency and an array of special choices, including alphanumeric channel labeling.

Front panel controls include power switch, a multi-function keypad for direct frequency entry and secondary functions. Additional controls include volume, squelch, operating modes (VFO, Memory, or Search) keyboard lock, and an arrow matrix to aid in menu choices. There is also a front panel connection for headphones.

The AR8600 comes with a movable front support, a BNC antenna port with telescoping antenna and operates on 12 volts DC from a power cube or station power supply.

AOR's new AR8600 desktop receiver.

"The AR8600 is a strong advancement in receiver technology," said Mr. Nakayama. "We believe there will be a strong demand for it by commercial and institutional operators as well as those listening enthusiasts who demand the best."

For more information on the new AR8600, contact AOR USA at 20655 S. Western Avenue, Suite 112, Torrance, CA 90501, phone 310-787-8615 or on the Web at aorusa.com. Be sure to tell AOR you read about it in *Pop'Comm*.

Everhardt Stainless Steel Roof-Mount CB Antenna

It's actually made for fiberglass vehicles, the new SNGP-2RM 32-inch stainless steel mobile antenna is great if you don't wish to drill a hole in your vehicle. It's a roof-mount antenna that doesn't *need* to be mounted on the roof!

We all know that vehicle damage comes soon enough without help, so Everhardt, recognizing that the mounting "hole" always doesn't need to be in the roof, or even require a hole for that matter, offers the new SNGP-2-RM antenna; mount using mirror mounts or anything with a half-inch hole. Many use this antenna with side body mounts or whatever works for the individual user.

For more information, contact Everhardt Antennas at 800-735-0176 or by E-mail at tigerever@aol.com.

A Family Affair — The R.L. Drake Story

This excellent behind-the-scenes book by John Loughmiller, KB9AT, focuses on the glory days when Drake was king in amateur radio. Every ham and SWL knew Drake from the outside,

but now the inside story of this incredibly interesting company is told.

The book also includes a huge section of useful circuits and mods for many Drake radios. This 306-page 8-1/2" x 11" format book is both an interesting read and great technical reference that every ham and SWL should have on their bookshelf! For more information on this book, sold by Universal Radio, Inc. at $29.95, contact the company at 800-431-3939 or 614-866-4267 or visit their Website at www.universal-radio.com.

Scancat Version 7.5.9 Supports New Uniden BC-780

Now you can get full trunking control through software with Scancat and the Uniden BC-780. Computer Aided Technologies announces support for the newest addition to their scanner lineup, the Uniden BC-780 "Triple Trunking" 500 Channel Scanner.

This unique desktop from Uniden has 500 memories that can be programmed for either conventional or trunking channels (including EDACS Motorola and LTR Systems). Scancat can control all the conventional operations of this radio, such as scanning, logging, spectrum analysis, plus it permits you to load the memory banks with all your favorite trunking frequencies.

Of course Scancat can also read the radio's memory contents to files, including trunking info, PL tones, and Alpha Tags. With Scancat's support of over 60 radios from more than 10 manufacturers, there's no need for several programs — one for each radio you own. Chances are good that Computer Aided Technologies already supports all your existing radios; no need to purchase separate "drivers." (And, if you already have the BC245, BC-895 or PRO-2052 Trunktracker radio, Scancat supports them as well!)

For more information, contact Computer Aided Technologies, P.O. Box 18285, Shreveport, LA 71138, phone 318-687-2555, or E-mail them at scancat@scancat.com.

Grundig Satellit — All Models In Word And Picture

The title says it all, but just in case you're not familiar with the famous Grundig Satellit series of radios, this book has TONS of photos, facts and specs for every member of this venerable line covering 1964–2000, including the Satellit 205, 208, 210, 1000, 2000, 2100, 3000, 3400, 1400, 2400, 4000, 600, 650, 300, 400, 500, 700, 900, and 800 models. Over 120 photos show interiors, accessories, manuals, and even boxes.

This 19-chapter, 126-page 5-3/4" x 8" format book by Thomas Baier is $19.95 from Universal Radio, Inc, 6830 Americana Parkway, Reynoldsburg, OH 43068; phone 800-431-3939, 614-866-4267 or on the Web at www.universal-radio.com. The folks at Universal Radio have been around a long, long time with quality, expertise, and service to the customer. Be sure to tell them you read about *Grundig Satellit — All Models In Word And Picture* in *Pop'Comm*.

technology showcase

new product performance analysis

by Harold Ort, N2RLL, Editor

The Universal Pager Keeper attached to an Alinco DJ-G5 ham handheld.

Specialty Hardware's Universal Pager Keeper

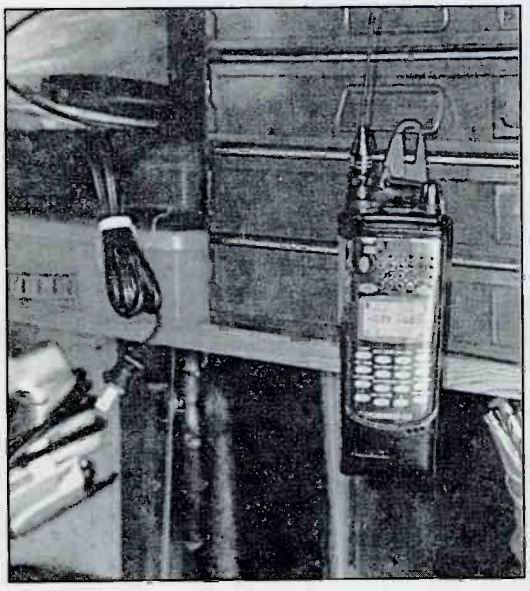
It works for pagers and other electronic gadgets, so we decided to try it out on handheld CBs and ham radios, scanners and even tools. Besides, what self-respecting radio enthusiast can resist yet another make-your-life-easier gadget?

Specialty Hardware, Inc, based in Cleveland, Ohio, designs and manufactures cost-effective solutions to secure everyday wireless devices that link us to family, friends, and business. Their Universal Pager Keeper comes in a variety of designs; belt-clip (black or brass-plated clip), pin-on, and a snap-on version. All are made of high-quality top grain leather, and all work extremely well in various environments, from construction jobsite and always-on-the-go public safety to scanner and radio users who are tired of using scratched and damaged radios. After all, one drop from a garage shelf or brush with a door or desk, and it's curtains for our very expensive and fragile gear.

My handheld Alinco DJ-G5, a superb dualbander with extended receive for scanning, has a very solid metal belt clip, but like all handhelds — CB, ham, or scanners — they cling tightly to your hip, offering tremendous resistance to bumps and bruises. Just walk through a hamfest or through the mall and you'll see what I mean: a couple solid bumps could spell disaster. While the Universal Pager Keeper works perfectly with my Alinco, it doesn't "fit" every radio's metal or plastic belt clip (but then again, what radio guru doesn't have a Dremel™ tool?).

"Sure, if the radio takes a hit it can always be disastrous, but the Universal Pager Keeper lets the handheld move about, lessening the blow and potential damage..."

There are lots of very good reasons to like the Universal Pager Keeper by Specialty Hardware, Inc. — the easy belt (or purse) clip-on, and the added flexibil-



In the garage, using the Pager Keeper to firmly attach the radio to a tool drawer, eliminating the possibility of losing a radio to the concrete floor.

A perfect fit — the Pager Keeper slides over the Alinco belt clip.

ity the radio gets if you accidentally bump into a desk or door, and the versatility of the Universal Pager Keepers. Sure, if the radio takes a hit it can always be disastrous, but the Universal Pager Keeper lets the handheld move about, lessening the blow and potential damage — making the Pager Keeper a good investment that won't break the bank! One or two Universal Pager Keepers are $15 each; three or more cost $8. What could be major surgery turns cut to be a minor cosmetic bruise.

My PRO-43 handheld scanner, that has a fairly wide belt clip, and goes virtually everywhere I go, holds very close to the belt, and is a real pain to secure to my belt in the first place! I removed the plastic clip from the radio and used the Dremel cutting tool to reduce the clip's width, tapering it to fit the Universal Pager Keeper. Now I can also keep the radio attached to my belt and pull the 43 out just far enough to see the display and successfully use the keypad without looking like a contortionist!

"It's a fact that most of us are active in the yard and garage — here's where the Universal Pager Keepers shine. I clipped the handheld ham rig to a tool chest; guaranteed it's not going to fall off the shelf onto a concrete floor."

In The Garage And Outdoors

It's a fact that most of us are active in the yard and garage — here's where the Universal Pager Keepers shine. I clipped the handheld ham rig to a tool chest; guaranteed it's not going to fall off the shelf onto a concrete floor. I'm sure you can come up with a dozen around-the-home or shed uses for the Universal Pager Keeper that will keep you from buying yet another handheld because it got in the way of something that was bigger and stronger than your radio's little plastic case. It works with flashlights, battery packs, and much more.

For more information on the Universal Pager Keeper contact the company at 888-291-1161 or FAX them at 216-291-1168 or write to the company at 23404 Cedar Road, Cleveland, OH 44122 and be sure to tell Jim you read about it in *Popular Communications*.

broadcast technology

terrestrial AM, FM–and satellite radio news

by Bruce Conti <baconti@aol.com>

Win Your Own Radio Station!

Here's a chance to finally own your own radio station. **KAWL York, Nebraska**, on 1370 kHz is the grand prize for a radio trivia contest being conducted by the station owner. Although KAWL continues to be a successful locally owned family business, the owner wants to focus attention on other business ventures including KTMX FM. The contest is viewed as providing a unique opportunity for individual ownership in an industry dominated by corporate broadcast empires. Contestants must answer 30 multiple-choice questions on a test of broadcast knowledge and submit a $1000 entry fee to be eligible. Question topics range from broadcast history to station operations. One question asks, "What would a radio broadcaster do with the 'pot' normally found in his/her station? Cook with it, smoke it, open/close it, or call the cops?" The winner receives a fully operating radio station, including the tower, building, land, transmitter and equipment, and assumes no capital financial debt. A minimum of 1000 entries is required or all entry fees will be returned to participants. If more than one entrant answers all questions correctly, then a timed word-find of broadcast terms will be used as a tie-breaker, followed by a fastest finger contest over the Internet to determine the winner if necessary. The winner must apply for transfer of license with the FCC. If the FCC application is denied, then the prize is forfeited to the second place contestant. Visit www.kawl1370.com to enter or for more information. KAWL has been on the air since 1954, presently operating 24 hours, with a daytime power of 500 watts, and nighttime 176 watts omni directional.

AM QSL Can Be A Challenge

The art of QSLing domestic broadcast stations continues to become more challenging. Most radio stations no longer have their own on-site engineers to answer reception reports, instead hiring contract engineers who may not have the time or interest to reply. The availability of broadcasts on the Internet can make it difficult for non-technical staff to understand the value of static-filled DX reception. Still some DXers send a tape recording to at least serve as proof of over-the-air reception versus the Internet. A traditional "hard copy" mailed reception report can include a souvenir post card and photos of the DXer at work for a personal touch to capture the interest of radio station personnel. Mint stamps should always be included to cover return postage cost. Some DXers have better success by including one dollar with each report.

E-mail reception reports and QSLs are a growing trend. Just type the call letters into your search engine to locate E-mail contact information. Paul Walker was kind enough to share the text of his E-mail report to WHCU Ithaca, New York, and the E-mail verification from the chief engineer.

Hello,

I am 17 year old Paul Walker from Colchester, CT. Colchester is in southeastern Connecticut, in the upper northwest section of New London County.

On Saturday, February 10, 2001 I was able to pick up WHCU AM 870. It started at about 8:10 pm and the signal faded in and out every minute or two, but I was still listening at 8:30 pm. I heard Craig Smith with an ID at about 8:30 pm saying, "This is 870 AM WHCU Ithaca."

What is WHCU's normal coverage area at night? Do you have any WHCU QSL cards, bumper stickers, or coverage maps that you could e-mail me? Also can you provide me with technical details on WHCU? (I'm an avid DXer).

Please reply by E-mail: NLRadio@newlondonradio.com. Thank you!

Paul Walker

Hi Paul,

Sorry for the delay, but I finally had some time to sit and go through the program logs, and I am happy to report that I can confirm your reception of WHCU. WHCU broadcasts on 870 kHz, with 5 kW omni-directional signal during the day and a 1 kW directional signal at night. Because we have to protect clear channel station WWL in New Orleans at night, our nighttime signal is strongest to the east and north. If you would like I can send you an official verification via U.S. mail and enclose the coverage maps and any other information you would like. Just reply to this E-mail and let me know.

I am glad to hear that we are reaching eastern CT. I have been getting a lot of good reception reports from that area. Coincidentally I used to work not far from where you monitored us. In the mid-'90s I did some engineering work at WILI-AM/I-98FM in Willimantic.

Good luck and happy DXing,

Jason M. Gorodetzer
Chief Engineer, WHCU
jmg@radioeagle.com

QSL Information

Here's a resource for international mediumwave DXers: "The QSL Information Pages for BC DXers" at www.listen.to/qip on the Internet. The Website is continuously updated by DXers from around the world, now with information for over 4000 radio stations in 219 countries. A convenient on-line form allows listeners to submit QSL information. (Schoech, Germany)

710 KNUS Denver, Colorado, a really nice full detail red and white QSL card, sticker, and coverage map in 19 days for DX test report, signed Patrick Griffith, QSL Coordinator. Address: 3131 S. Vaughn Way, Ste. 601, Aurora, CO 80014-3510. (Martin, OR)

820 WBAP Fort Worth, Texas, a nice letter of confirmation from WBAP 820 News/Talk Radio, signed Clay Steely, Chief Engineer. Address: 2221 East Lamar Blvd., Suite 400, Arlington, TX 76006. (Gillespie, MI)

880 KRVN Lexington, Nebraska, received their new QSL card and bumper sticker in eight days, signed Jim Killen-DOE.

Pending

New Cal	Location	Freq.	Old Call
KZRD	Pratt, KS	93.1	KDGB
WBQI	Bar Harbor, ME	107.7	WMDI
KLFR	Reedsport, OR	89.1	KAUB
WAYW	New Johnsonville, TN	89.7	WHYQ

Changes

New Call	Location	Freq.	Old Call
WYMR	Bridgeport, AL	1480	WKEA
KRAK	Hesperia, CA	910	KVVQ
KMXN	Ontario, CA	1510	KIKA
KIID	Sacramento, CA	1470	KRAK
KSSC	Thousand Oaks, CA	850	KACD
WRHB	Kendall, FL	1020	WRBF
WHOO	Kissimmee, FL	1080	WFIV
WDYZ	Orlando, FL	990	WHOO
WQTM	Orlando, FL	740	WWNZ
WFLF	Pine Hills, FL	540	WQTM
WIXC	Titusville, FL	1060	WAMT
KHBZ	Honolulu, HI	990	KIKI
WCBW	Highland, IL	880	WINU
WINU	Highland, IL	1510	WCBW
WKHZ	Ocean City, MD	1590	WETT
WWZN	Boston, MA	1510	WNRB
WTBL	Los Ranchos, NM	1050	KHTL
WLFE	Plattsburgh, NY	1070	WGLY
WBCG	Canton, NC	970	WWIT
WOGY	West Hazleton, PA	1300	WILP
WTCV	Lajas, PR	1510	WAVB
KHVL	Huntsville, TX	1490	KSAM
KVRI	Blaine, WA	1600	KBLO
WVLY	Moundsville, WV	1370	WMJT
WYLO	Jackson, WI	540	WZER
KIDVA	Buckeye, AZ	106.9	KMJK
KILX	Hatfield, AR	104.1	KBII
KQOR	Mena, AR	105.3	KBIJ
KSSD	Newport Beach, CA	103.1	KBCD
KSMJ	Shafter, CA	97.7	KRME
KXDZ	Templeton, CA	100.5	New
WHHZ	Newberry, FL	100.5	WRKG
WFXF	Bainbridge, GA	97.3	WMGR-FM
KOSZ	Idaho Falls, ID	107.1	New
KPRI	Rexburg, ID	100.5	KRIC
KRIC	Rexburg, ID	91.5	KWBH
KTWD	Wallace, ID	97.5	KQWK
WERV-FM	Aurora, IL	95.9	WKKD-FM
WIIT	Chicago, IL	88.9	WOUI
WKSC-FM	Chicago, IL	103.5	WUBT
WMHX	Lincoln, IL	93.9	WYXY
WLWJ	Petersburg, IL	88.1	New
WTNX	Zion, IL	96.9	WNIZ-FM
WSHP	Attica, IN	95.7	WGBD
WTLC-FM	Greenwood, IN	106.7	WBKS
WYXB	Indianapolis, IN	105.7	WTLC-FM
WKRY	Versaillles, IN	88.1	New
WFZX	Searsport, ME	101.7	WBYA
WNEF	Newburyport, MA	91.7	New
WPVQ	Greenfield, MA	95.3	WRSI
WRSI	Turners Falls, MA	93.9	WPVQ
KCMF	Fergus Falls, MN	89.7	New
KRJM	Mahnomen, MN	101.5	New
WGRG	Grenada, MS	92.3	New
WKVW	Waynesboro, MS	89.7	New
KMJK	Lexington, MO	107.3	KNRX
WMEX	Farmington, NH	106.5	WZEN
KTZO	Albuquerque, NM	103.3	KTBL
KDSK	Grants, NM	92.7	KAIU
WYSI	Norwood, NY	96.1	WAZV
WUBZ	High Point, NC	100.3	WHSL-FM
WWMY-FM	Raleigh, NC	102.9	WNND
WBHH	Moyock, NC	92.1	WSVV
KESC	Wilburton, OK	103.7	New
KYSJ	Coos Bay, OR	106.5	KYSG
KINK	Portland, OR	101.9	KINK-FM
WAKZ	Sharpsville, PA	95.9	WTNX
WCIT	Trout Run, PA	90.1	New
WMBZ	Germantown, TN	94.1	WOGY-FM
KCTX-FM	Childress, TX	96.1	KSRW
KFLP-FM	Floydada, TX	95.3	KFLL
KTND	Georgetown, TX	107.7	KAHK
KRNX	Port Lavaca, TX	93.3	KVIC
KVIC	Victoria, TX	95.1	KRNX
KACE	Richfield, UT	97.5	KMGR
WRSY	White River Jct, VT	95.3	WWSH
WFHG-FM	Abingdon, VA	92.7	WABN-FM
WMJA	Appomattox, VA	102.7	WLDJ
WMGR-FM	Roanoke, VA	104.9	WRDJ
KBTB	Seattle, WA	95.7	KMBX
KSTE-FM	Vancouver, WA	105.9	KBET-FM
WYMJ	New Martinsville, WV	99.5	WNMF
WAUH	Wautoma, WI	102.3	New

Address: 1007 Plum Creek Parkway, P.O. Box 880, Lexington, NE 68850. (Martin, OR)

990 KRKS Denver, Colorado, full-detail QSL card and sticker in 19 days for DX test report, came in same packet with KNUS and KBJD. (Martin, OR)

1070 KFDI Wichita, Kansas, received my letter back with verification statement written on it, in 20 days after follow-up, signed Norm Mullins-Eng. Address: 4200 North Old Lawrence Road, Wichita, KS 67219. (Martin, OR)

1070 KKHT Houston, Texas, verification letter in 65 days for daytime reception in December, signed Thelma K. Brown, Admin. Assit. Address: 6161 Savoy, Ste, 1200, Houston, TX 77036. Really pleased with this one. (Martin, OR)

1190 KJOI Dallas, Texas, verification letter in five days for taped tentative report, signed Bill Taylor-CE. Address: 4131 North Central Expressway, Suite 700, Dallas, TX 75204. Texas QSL #64. (Martin, OR)

1250 KXTR Kansas City, Kansas, form letter in 255 days signed Ken Wolf-CE, who mentions they are 25 kW days and 3.7 kW nights, four towers U4 (DA2). I am pleased with this as I have the old 1250 WREN Topeka, Kansas QSL'd from years ago. Address: 4935 Belinder Road, Westwood, KS 66205. (Martin, OR)

1450 WILM Wilmington, Deleware, "Quarter Century Anniversary" full-data QSL card, personal letter, coverage map, and souvenirs received in 14 days for DX test report.

(Silvi, OH) Address: Allan R. Loudell, Program Manager, 1450 WILM Newsradio, 1215 French St, Wilmington, DE 19801.

1650 KBJD Denver, Colorado, full-detail QSL card and sticker in 19 days for report on special DX test, came in same packet with KNUS and KRKS. (Martin, OR) A nice QSL card initialed by Patrick Griffith and a bumper sticker in 12 days for DX test report. (Pote, IN) See 710 KNUS for address.

Broadcast Loggings

According to observations of the Sun, the peak of sunspot cycle 23 occurred in February. A change in the hemispherical polarity of the Sun was observed; considered an indication of sunspot maximum. Despite the peak of the sunspot cycle, mid-winter transatlantic reception conditions were outstanding.

Patrick Martin of Seaside, Oregon, reports some very good transpacific conditions as well; "One of the best openings to Japan I can remember for a long time." Patrick logged Japan across the low end of the broadcast band with a Drake R8 receiver and K9AY antenna.

Welcome to new reporter Robert Pote of Greenwood, Indiana, DXing with a Drake R8A and Kiwa loop antenna. Along with his logs, Robert mentions that one of his all-time best catches was last year's WILM Wilmington, Delaware, Y2K Millennium DX test on 1450. Patrick Griffith checks in also using the Drake R8 and Kiwa loop.

Household chores reward Dan Gillespie of Ada, Michigan; "Cleaned out my in-laws basement yesterday and dug out two old radios, one definitely an antique that needs some work. The other was a "Sparton Polo Club" that receives AM only. Does not have a cabinet, but that'll be another project. Powered it up last night and the old tubes started glowing. Spun the dial around and heard KYW News/Talk Radio out of Philadelphia. Here I was in the basement of my house with just a 3-foot wire antenna coming out of the back of the radio and this station sounded like it was local. I listened for about 15 minutes 'til fade. Going to clean it up, find a cabinet and play with this one for a while."

Now, here are this month's selected logs. All times are UTC.

531 JOQG Morioka, Japan, at 1415 good with a man and talk in Japanese on the NHK 1 network. (Martin, OR)

531 RNE Radio 5 synchros, Spain, at 0031 a man with a Spanish teletalk show, fading up over Madeira and Algeria, and 0712 to 0720 dominant and loud with talk in Spanish, no evidence of Faroes sign-on. (Connelly, MA)

549 JOAP Naha, Okinawa, Japan, at 1423 good with the same NHK 1 program as on 531 and 540 kHz. (Martin, OR)

558 JOCR Kobe, Japan, at 1410 very good with a woman announcer in Japanese, Japanese pop music, and what sounded like a series of spots. (Martin, OR)

567 RTE Radio 1, Tullamore, Ireland, at 0226 a smashing S9+25 signal with talk about "golden opportunities for development in western Ireland," and at 1005 noted with het still present at this very late time. (Connelly, MA)

567 JOIK Sapporo, Japan, at 1415 excellent with talk in Japanese parallel 531 kHz. (Martin, OR)

576 JOHG Kagoshima, Japan, at 1412 presumed the NHK 1 here with talk in Japanese parallel 567 kHz. (Martin, OR)

594 JOAK Tokyo, Japan, at 1406 unbelievably strong, almost local-like, parallel 531 kHz. (Martin, OR)

612 JOLK Fukuoka, Japan, at 1417 fair with a man in Japanese parallel 603 kHz. Southern Japan was weaker than northern, which is usual here. (Martin, OR)

612 RTM Sebaa-Aioun, Morocco, at 0015 parallel 207 kHz with female Arabic a cappella vocal; good, dominant at this time, and at 0229 a woman in Arabic, then loud music; monster S9+30 signal, this one is always among the strongest transatlantic signals on the sloper antenna. (Connelly, MA)

620 KBDZ Portland, Oregon, ex-KEWS is now "AM 620, The Buzz," heavy on "macho" talk, Fox Sports during the day. (Martin, OR)

648 JOIG Toyama, Japan, at 1411 good with usual Japanese talk on NHK 1 network parallel 531 kHz. (Martin, OR)

660 KTNN Window Rock, Arizona, at 2239 several KTNN IDs and several local ads, good listening for about 30 minutes. (Pote, IN)

666 JOBK Osaka, Japan, at 1416 very good with a man in Japanese, NHK 1 program. (Martin, OR)

670 KLTT Commerce City, Colorado, at 2240 with a program titled "Church of the Rockies," a fair signal in partial WSCR null. (Pote, IN)

940 XEQ Mexico City, Mexico, at 0415 fair, man in Spanish with many Cadena Q mentions, "Cadena Q, verde y oro" ID, over Radio Reloj-Cuba in CINW null. (Conti, NH)

1080 SER synchros, Spain, heard at 2124 parallel 1044 kHz with a man and woman in Spanish, blasting over WTIC! (Connelly, MA)

1188 Radio Free Europe/Radio Liberty, Marcali, Hungary, at 0025 with news report in Slavic (Serbo-Croatian) language, piano instrumental, seemed to sign-off at 0100. (Conti, NH)

1215 Virgin Radio synchros, United Kingdom, heard at 0457 fair to good with "What I Am" by Edie Brickell and the New Bohemians (1989), then adverts by man in English. (Connelly, MA)

1220 CHSC St. Catherines, Ontario, at 0945 quite strong tonight with adult contemporary oldies and plenty of 1220 CHSC IDs, this is the most common Ontario station received here by far. (Martin, OR)

1260 KWYR Winner, South Dakota, at 1300 "This is Country 1260, KWYR, serving the heartland" into ABC news. (Griffith, CO)

1260 KIMB Kimball, Nebraska, at 1313 with local funeral listings followed by weather report. (Griffith, CO)

1386 LBH Radio, Bolshakovo, Kaliningrad, at 2310 a man in English with LBHradio.com ID, and Donna Summer "On The Radio." (Conti, NH)

1467 TransWorld Radio, Roumoules, France, good at 2340 with the end of a Billy Graham Evangelistic Association program in English, then sign-off with interval signal at 2345. (Conti, NH)

1470 KKTY Douglas, Wyoming, at 0124 good over KEZZ with weather, web address for station, PSA for Future Farmers of America, and oldies music. (Griffith, CO)

1660 KQWB West Fargo, North Dakota, 0230–0305 very good signal with live basketball game between Concordia College and University of St. Thomas. Grayline reception heard quite well over the other 1660 kHz stations usually received here in Ohio. (Silvi, OH)

Thanks to Mark Connelly, Dan Gillespie, Patrick Griffith, Patrick Martin, Robert Pote, Martin Schoech, Lee Silvi, and Paul Walker. 73 and good DX! ■

overheard

strategies and techniques to keep YOU informed

by Ken Reiss, <armadillo1@aol.com>

Searching Techniques: Part II

Picking up where we left off last month, one of the biggest mistakes that we all make getting started is to search too large of an area. It is very tempting to set up a search for the entire military air band, for instance, or the federal portions of the UHF band. You might get lucky and find a few things this way, but the odds are against you.

You must remember that you're trying to find transmissions that don't take place very often, nor do they last long when they're on. Your scanner has to be in the right place (on the frequency) at the same time as the transmission is occurring. In short, you have a moving target being followed by a moving search engine. In a large block of frequencies, your chances of winning the lottery are probably better.

So if reducing the size of the blocks will improve your chances of hitting something in that block, how small do they have to be? Well, that depends on exactly what you're looking for, and how fast your scanner can search. With a fast scanner, and assuming you're not looking for a frequency that's only used once in a blue moon, 2 to 4 MHz of space is probably about right. "Two to four MHz?" I hear you cry. "Do you know how long it's going to take to do the entire military band?" Yes, besides, what else were you using your scanner for during the workday when you're not there?

Sometimes the type of visual display shown on this AR8200 is handy for locating unknown frequencies.

Patience Is A Virtue

The second most important skill for a search operation is patience. Particularly with military operations, but it applies everywhere, some of the frequencies are not used on a daily basis. Perhaps some National Guard frequencies are only active when they are having exercises once a month. Or training frequencies may only be active during training operations, which only take place occasionally. To find these obscure channels, you may have to search the same area of the spectrum over and over for a month and get nothing until the exercise starts. What fun! But it's worth it when you hit something.

Identify targets for your searching. If you glance at almost any frequency guide, or our handy chart, you'll quickly see that there are pre-determined band plans for each area of the spectrum. In other words, there are places or frequencies in your scanner's coverage range where you should expect to find something, and places where you shouldn't. For example, our local police occupy 154.830 and 154.845, which are, as it turns out, adjacent channels. Nobody should be on .835 or .840. By simply mapping the available channels against what you already know, you can find a revealing number of holes in your information. A computer spreadsheet makes short work of this, but it can also be done with paper. Once you've found your missing areas, it may turn out that you have a very narrow range to search in a particular band. This will cut down your time, as well as help with identifying things on the recorder.

My final piece of advice is to develop a tracking system. Computers are great for this too, but you can do it with a notebook or index cards. Make notes of your searching activity. What day of the week was it? Could you be looking for something that is only used on weekends? Or every third Wednesday when they test the tornado sirens? What did you find on your search? Can you identify any of it, just based on what you already know, or can find from frequency directories and other sources? The more information you have, the more useful the system will become in the long run.

Having said all that, maybe this is too much trouble. If you're quite happy scanning the local police and fire frequencies that you already know about, keep scanning. But if you're getting bored, or wonder who else uses some of those other frequencies that your scanner covers, searching, especially while you're away from the equipment anyway, can be a lot of fun.

Trunked Systems And Special Scanning Techniques

The new trunktracker radios pose a new horizon for searching. It is difficult to even use these radios without at least a cursory run through the search mode to find the ID numbers of the trunking system you're interested in. Identifying the dispatch and common use channels should be fairly easy, especially if you're at all familiar with the system that you're monitoring. However, finding some of the more obscure or seldom used talk groups may prove just as difficult if not more troublesome than finding unknown frequencies.

On the surface, it would appear that searching for talkgroups was fairly straightforward. You know where the frequencies

are, and your trunktracker will follow the data channel with no problem. Spending just a few minutes with the radio is likely to turn up 20 or 30 talkgroups without any effort. And these are likely to be the dispatch groups that you're after to begin with anyway. But later, when you start hearing mention of "channels" that you didn't know existed, you may have some more homework to do.

You have to remember with a trunking system, there aren't any hidden frequencies to identify (assuming the department you're listening to doesn't have additional capabilities outside the trunking system). Rather, once you're in the trunked mode, all of the frequencies become meaningless, and it's the ID number of the talkgroup that matters. There can literally be hundreds of them in even a medium-sized system. Talkgroups are the new "channels" in the trunking world; frequencies are incidental once you've found which ones the system uses.

The most efficient search is just to let the radio do the walking. Put it in search mode and watch the screen. In almost no time, you'll have all the common use channels, and that may be enough for you. Great — have a good time. But if you're after the detectives, or other groups who have radios but don't talk much, you're in for quite a hunt. Also, sometimes identifying other users of the system can be quite a challenge.

You can find some channels quickly by just using the search when you know there's going to be activity on a particular channel. For instance, if you hear the dispatcher tell someone to switch to channel 2, you can begin searching until you hear the conversation that you'd expect to find on channel 2. It won't work all the time, because sometimes those conversations are very short, and sometimes other traffic will interfere, but it is a helpful technique to identify just a few more talkgroups as you go forward.

Once you've exhausted this method, the best method of searching for new "infrequent use" channels, and identifying the channels that are part of other systems, is to make good use of the lockout function. As you begin your search, you'll already know some of the channels and their use. Lock those out as they appear. This way, the radio won't be tied up with traffic from routine channels that you already know about while an interesting conversation takes place on a channel that you don't.

Frequency Steps Between 25 MHz And 940 MHz
(Frequencies in MHz)

Lower	Upper	Mode	Step (kHz)	Use/Notes
25.0200	25.3200	NFM	20.000	Petroleum Industry
25.87	26.07	NFM	40.00	Remote Broadcast
26.09	26.47	NFM	20.00	
26.9650	27.4050	AM	10.000	CB Radio
27.4300	27.5300	NFM	20.000	
28.0000	29.7000	Any	None	Amateur Radio 10M
29.7100	29.7900	NFM	20.000	
29.900	29.55	Any	10.00	Federal
30.580	31.980	NFM	20.000	
32.0100	32.9900	Any	10.00	Federal
33.0200	33.980	NFM	20.000	
34.0100	34.9900	Any	10.000	Federal
35.0200	35.980	NFM	20.000	
36.0000	36.9900	Any	10.000	Federal
37.0200	37.98	NFM	20.000	
40.00	41.99	Any	10.00	Federal
42.02	46.600	NFM	20.00	
46.6100	46.9700	NFM	20.00	Part 15 Services (Cordless Phones, etc.), Misc.
47.0200	49.580	NFM	20.000	Part 15 Services, Misc. Business
49.6700	49.9900	NFM	20.00	Part 15, Misc. Federal on other steps
50.0000	54.0000	varies	varies	Amateur Radio 6M
54.0000	72.0000	WFM	6000.00	Television Broadcast
59.750		WFM		Channel 2 Audio
65.750		WFM		Channel 3 Audio
71.750		WFM		Channel 4 Audio
72.0000	76.0000	NFM	20.000	Operational Fixed
76.0000	88.0000	WFM	6000.00	Television Broadcast
81.750		WFM		Channel 5 Audio
87.750		WFM		Channel 6 Audio
88.1000	107.9000	WFM	200.00	FM Broadcast
108.0000	137.000	AM	25.00	Aircraft
138.0000	144.0000	NFM	Varies	Federal (5 kHz Steps to search)
144.0000	148.0000	varies	varies	Amateur Radio 2M
148.0000	150.7000	NFM	Varies	Federal (5 kHz Steps to search)
150.775	150.790	NFM	15.00	
150.8150	151.610	NFM	15.00	
151.6250	151.9550	NFM	30.000	Business Radio Service, Itinerants
151.9850		NFM		Telephone Maintenance Radio Service
152.0075		NFM		Special Emergency Radio Service paging
152.0300	152.840	NFM	30.000	Older Mobile Phone system, paging
152.8700	154.490	NFM	15.000	
154.515	154.625	NFM	varies	5 kHz (Mostly Business services)
154.650	156.255	NFM	15.00	Public Safety, Local Government
156.2750	157.450	NFM	25.000	VHF Maritime
157.4700	157.740	NFM	15.000	
157.7700	158.100	NFM	30.000	Older Mobile Phone system, paging
158.1300	158.460	NFM	15.000	Power/Petroleum/Forest Products
158.4900	158.700	NFM	30.000	Older Mobile Phone system, paging
158.7300	160.200	NFM	15.00	Public Safety, Business (Trucking)
160.215	161.565	NFM	15.000	Railroad AAR Channels
161.6400	161.7600	NFM	30.000	Broadcast Remotes
161.800	162.000	NFM	25.000	Marine Telephone
162.0125	173.200	Any	12.500	Federal
173.2250	173.3750	NFM	25.000	Press, Business
173.3875	173.9875	Any	12.500	Federal
174.0000	216.0000	WFM	6000.00	Television Broadcast chs 7-13
179.750		WFM		Channel 7 Audio
185.750		WFM		Channel 8 Audio
191.750		WFM		Channel 9 Audio
197.750		WFM		Channel 10 Audio
203.750		WFM		Channel 11 Audio
209.750		WFM		Channel 12 Audio
215.750		WFM		Channel 13 Audio
222.0000	225.0000	varies	varies	Amateur Radio (1.25 meters)
225.0000	400.0000	AM	100.000	Military
400.0000	406.0000		None	Space
406.125	420.0000	NFM	12.50	Federal
420.0000	450.0000	ANY	None	Amateur Radio 70CM
450.0500	450.925	NFM	12.50	Broadcast Auxiliary
451.025	457.475	NFM	12.500	Business, Industrial
457.525	467.525	NFM	12.500	Public Safety, Business, Misc

467.5500	467.925	NFM	12.500	GMRS, FRS, Business
467.9500	469.975	NFM	12.500	
470.0000	512.0000	WFM	6000.00	Television Broadcast chs 14-20 (Public safety use in some areas)
475.7500		WFM		Channel 14 Audio
481.750		WFM		Channel 15 Audio
487.750		WFM		Channel 16 Audio
493.750		WFM		Channel 17 Audio
499.750		WFM		Channel 18 Audio
505.750		WFM		Channel 19 Audio
511.750		WFM		Channel 20 Audio
512.0000	806.0000	WFM	6000.00	Television Broadcast Chs 21–69
517.750		WFM		Channel 21 Audio
523.750		WFM		Channel 22 Audio
529.750		WFM		Channel 23 Audio
535.750		WFM		Channel 24 Audio
541.750		WFM		Channel 25 Audio
547.750		WFM		Channel 26 Audio
553.750		WFM		Channel 27 Audio
559.750		WFM		Channel 28 Audio
565.750		WFM		Channel 29 Audio
571.750		WFM		Channel 30 Audio
577.750		WFM		Channel 31 Audio
583.750		WFM		Channel 32 Audio
589.750		WFM		Channel 33 Audio
595.750		WFM		Channel 34 Audio
601.750		WFM		Channel 35 Audio
607.750		WFM		Channel 36 Audio
613.750		WFM		Channel 37 Audio
619.750		WFM		Channel 38 Audio
625.750		WFM		Channel 39 Audio
631.750		WFM		Channel 40 Audio
637.750		WFM		Channel 41 Audio
643.750		WFM		Channel 42 Audio
649.750		WFM		Channel 43 Audio
655.750		WFM		Channel 44 Audio
661.750		WFM		Channel 45 Audio
667.750		WFM		Channel 46 Audio
673.750		WFM		Channel 47 Audio
679.750		WFM		Channel 48 Audio
685.750		WFM		Channel 49 Audio
691.750		WFM		Channel 50 Audio
697.750		WFM		Channel 51 Audio
703.750		WFM		Channel 52 Audio
709.750		WFM		Channel 53 Audio
715.750		WFM		Channel 54 Audio
721.750		WFM		Channel 55 Audio
727.750		WFM		Channel 56 Audio
733.750		WFM		Channel 57 Audio
739.750		WFM		Channel 58 Audio
745.750		WFM		Channel 59 Audio
751.750		WFM		Channel 60 Audio
757.750		WFM		Channel 61 Audio
763.750		WFM		Channel 62 Audio
769.750		WFM		Channel 63 Audio
775.750		WFM		Channel 64 Audio
781.750		WFM		Channel 65 Audio
787.750		WFM		Channel 66 Audio
793.750		WFM		Channel 67 Audio
799.750		WFM		Channel 68 Audio
805.750		WFM		Channel 69 Audio
806.0125	823.9875	NFM	12.500	Mobiles
824.0400	834.9900	NFM	30.000	Cellular — Non-wireline Mobile
835.0200	848.9700	NFM	30.000	Cellular — Wireline Mobile
849.0550	850.9735	AM	6.000	Mobile Telephone — Aircraft ground
851.0125	868.9875	NFM	12.500	Base
869.0400	879.9900	NFM	30.000	Cellular — Non-wireline Base
880.0200	893.9700	NFM	30.000	Cellular — Wireline Base
894.0055	895.9735	AM	6.000	Mobile Telephone – Aircraft airborne
895.0125	901.9875	NFM	12.500	Mobiles
902.0000	928.0000	All	None	Amateur Radio 33CM
928.0000	929.0000			Private Fixed Service
929.0125	931.9875	NFM	25.000	Paging
932.0000	935.0000			Fixed
935.0125	939.9875	NFM	12.500	Base

Another search problem for trunk-tracker users is finding and identifying channels that belong to an unknown system. New systems are being installed all the time, and the FCC records, and therefore the reference guides that are published may not be of much help. It is worth a search of a particular licensee name, or call sign if you can find that information based on the licensed user of the data channel, but even that's not always available immediately. You may have the data channel, because it's relatively easy to find with a conventional scanner, but have no idea where the associated frequencies are. Gone forever are the days of nice one MHz spacing on all the associated channels.

Here's where a wait-and-see attitude may finally have to prevail. Unless you can find license data from one of the reference guides, or have inside information from a user of the system, you're going to have a hard time finding the individual channels. It can be done by traditional searching methods, but is truly a monumental trial and error task. Good luck.

The recently introduced BC-780 from Uniden features a control-channel-only mode which will help you locate frequencies in use on a particular system, once the control channel has been located. I haven't had time to really put this through its paces yet, but keep an eye on the "Technology Showcase" column. We'll have a full review of this exciting new scanner soon.

Frequency/Step Table

Part of the art of searching involves knowing where to look. If you can use the right channel plan, you can cut down the number of possible frequencies that you have to plow through, and increase your results. Below is a table of the allocatable frequencies, and the correct search steps to use. There are a few exceptions to these rules, but by and large if your scanner has the capability to set the step rate, and you start off on the right frequency to begin with, you'll have much better luck using these search/step combinations.

As an example, most scanners default to 5 kHz steps in the VHF high band. And if you search in 5 kHz steps through the entire range, you'll hit every possible channel — and twice as many that are not likely to be used. Your scanner will be doing three times as much work as it has to, and spending fully two-thirds of

its time on frequencies that are not likely to be in use. If you can set the step rate to the correct 15 kHz, you'll get results much faster.

Adding A Tape Recorder To Your System

Before we even get started, let me address the idea of taping in context. There has been some considerable flap over tape-recorded scanner intercepts in recent months. What I am advocating here is taping as a tool for increasing your scanning time, not for use by any other persons, for sale, or even replay for anyone else but yourself. The Communications Act of 1934 is fairly plain on the issue of disclosure: don't. If you're going to do any of these things, find another hobby. Ours has been damaged too much already by improper use of equipment.

Hooking up a tape recorder should be a relatively simple procedure, but it can be a bit confusing if you don't understand what all the connections do.

Essentially, there are only two connections to the recorder that we have to be concerned with, and really only *one* that matters. We need the audio from the scanner to get to an input for the tape recorder so that what comes over the scanner is put on the tape. Many newer scanners have a "Line Out" jack just for this purpose. If your tape recorder has an "Aux" or "Auxiliary" input, that's where the connection should be. The audio level out of a "Line" jack is too high for the microphone input of most recorders.

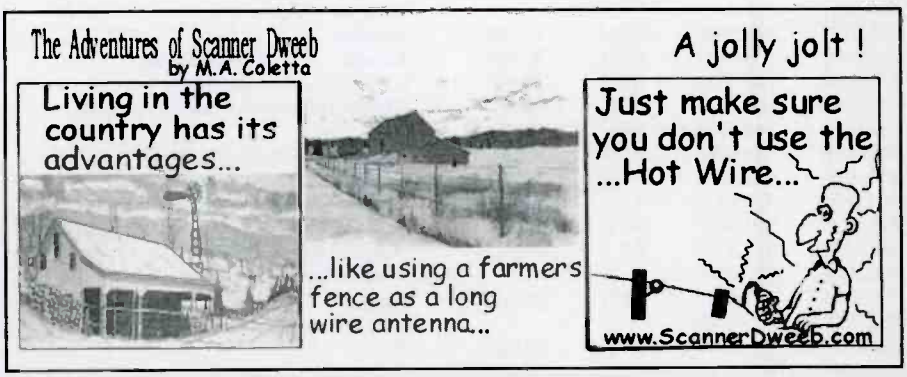
If your scanner has a "Line" output, but your recorder only has a "Mic" input, you can get something called an "Attenuating Patch Cable" from RadioShack. This cable reduces the signal from the higher levels of the line output to a lower level that the microphone input will accept without a problem.

That is all you would have to do. In fact, if you are using a voice-activated recorder, that is it. You turn on the voice-activation feature, and the recorder will stop and start for you when it detects the sound from the scanner.

If you don't have voice activation, your recorder will run continuously, and you'll run out of tape pretty quickly. That's where a scanner, or computer interface with a recorder comes into play. One of the jacks on most recorders is labeled "Remote," and is for the remote control of the record motor. Finding the right cable can sometimes be a chore, but usually, it can be done, at least with adapters. Now, the computer or scanner has to know when to turn the recorder on and off, but that is usually controlled by channel on a scanner, or by a setting in software.

Once you have both stop and start control (using either method) and audio, you're in business. Good hunting! ■

Would you know where to search to find this at an air show? It'll be there in the aviation band for sure, but it could also have frequencies in the business band or in areas associated with broadcast remotes. It pays to be familiar with the range of services. Unfortunately, with new regulations in place it will be more difficult to establish exact search ranges for each service.



pirate & alternative radio

free radio broadcasting

by Edward Teach

Studio Monkeys And Blondes?

Looks like a full page of your reports this month, so let's get started. Have you sent in your pirate loggings?

Voice of Captain Ron SW, 6951 USB from 0142. (Lee Silvi, OH) *(No program details, Lee? — Ed)* **6950 SSB** talking about monkeys jumping around in the studio, talk about a faulty mike, ID. E-mail as captainronswr@yahoo.com. Later he and a guest were on, calling themselves Major Prick and Potpourri Man. "Race Against the Machine" aired at 0039. They signed off at 0104.

Take It Easy Radio, 6955 from 0456 to 0532 sign off. Music and many IDs. (Silvi, OH)

Pirate Radio Central, 6955 from 0532 to 0605 sign off. Hard rock and heavy metal type music. A few IDs that sounded like "Pirate Radio Central." Among other things he said, " . . . this is a blonde and you know how they are . . . " (Silvi, OH)

KIPM, numerous loggings of this including but not necessarily limited to **6946** at 0056. **6949** at 0610, **6950** at 0205 and others I didn't even write down. (Silvi, OH) **6947** at 0145 to 0201. Talk about the Illuminati, talking over background music, ID and QSL address in Elkhorn, Nebraska at 0200. (Fred Albrecht, NY) (Welcome, Fred!) **6950** SSB with a tale about a subterranean world, talk on propagation and how long it takes for a signal to travel around the earth, excerpts from Admiral Byrd, talk of seeing "strangeland," internal earth, there might be secret passages inside the pyramids, Earth-moon communications, then ID by Alan Maxwell, mailing address. Also **6955** USB at 0342–0408. (Tim Taylor, PA)

Psycho Radio, 6950 USB at 0200 to 0221 plus, next day at 0223 to past 0231. (Silvi, OH) 6955 USB at 1410 with Uncle Bob character, parody involving an air hammer. Off at 1451. Also **6955 USB** at 1704 with a mention of "Radio Banquet" in reference to bogus conversations with various pirates. James Brownyard with talks and a parody record called "The Way I Can Change the Weather."(Taylor, PA)

Z-100, 6955 USB from 0100 to 0225 with oldies top 40, jingles, sweepers, etc. Good signal and very professional. (Bill Prather, NC) (Welcome to you, too, Bill!)

Here's another in the collection of full-color, full-size and fully strange QSLs issued by KIPM.

AM-740 (tentative), **6950 USB** at 0120. Heard "AM-740" mentioned at 0120, also a mention of Canada, "Prime Time Radio, AM 740," At 0140 mentioned Psycho Radio and then went off the air. (Taylor, PA)

KRMI, 6950 USB at 0307 with chipmunk sound effects, sketch about a Pokemon commercial, ID and E-mail address at 0320 (krmi6955@hotmail.com) and off at 0323. (Taylor, PA)

Ground Zero Radio, 6955 USB at 1400 sign on with talk and music, mentions of Dave Gunn and address as P.O. Box 109, Blue Ridge Summit, PA 17214. (Taylor, PA)

Barbeque Radio, 6955 from 1522 tune. Could have been Bobby Coon Radio. Country-Western music, negative remarks about Black people, ID mentioned at 1529, parody involving a female character at 1531. Off at 1532. (Taylor, PA)

WMHR, 6955 USB at 1723 with dance music, mentioned that the station was possibly from Cincinnati, Ohio. Also mentioned, "more hits." (Taylor, PA)

WHYP, 6950 at 1406 with "Stranger in My Hometown." James Brownyard mumblings and a song by James Brown, song "How Do You Like It, How Do You Like it Aired, " Brownyard mentioned "Northeast, WHYP in Erie (tentative) and later WHYP FM in Northeast. Off the air heard at 1445. (Taylor, PA)

Radio Free Speech (tentative) 6950 at 1400 with music, 1405 sign on, ID not copied, "Star Spangled Banner." (Taylor, PA)

Blind Faith Radio (tentative) 6950 at 1517 with several songs I'd never heard of until 1531 when he played "Blinded Me With Science." Then "Young Thing, Young Thing." Off the air without an ID at 1538. (Taylor, PA)

Unidentified, 6955 USB at 0510 with Pink Floyd's "The Lunatic." Mention of "Radio . . . Nation" as an ID. Later some new age music. Gave the Providence, Rhode Island address around 0527 and off the air at 0530. (Taylor, PA)

And that does it, Keep those logs headed my way! I can also use copies of pirate QSLs to include as illustrations. And operators — if you dare —how about photos of your equipment?

Thanks for all the input this month. Catch you next month! ■

washington beat

Capitol Hill and FCC actions affecting communications

by Laura Quarantiello <LauraQ@cti.com>

Maine Considers Mobile Handheld Device Restrictions

Two bills that hit the State House floor in Maine have amateur radio operators concerned. The most restrictive piece of legislation, LD 95, seeks to make it illegal to use any handheld electronic device while driving. This would include cellular telephones, computers, CB radios, microphones, dictaphones and other communications-type devices. Hands-free accessories would be allowed and exemptions would be made for police and fire personnel, commercial drivers and public transportation personnel. Violation of the proposed law would provide for a fine of not less than $100 for a first offense, $200 for a second offense, and $250 for a third and any subsequent violations within a year. The Transportation Committee reviewed both bills during a public hearing in February, listening to opposition from both amateur radio operators and cell phone service providers. Though the use of cellular phones in motor vehicles is restricted in some states — California, Massachusetts and Florida — no states have yet instituted a ban, though several are considering it.

Find Frequencies With The Official FCC Database

Though there are several places on the Internet that provide searchable frequency databases, the most authoritative site is at http://gullfoss2.fcc.gov/cgi-bin/ws.exe/genmen/index.hts. Follow this link and you'll find 14 different ways to search the FCC database including searches by Licensee (Service), Licensee/State, State/County, State/County/Frequency, Frequency, Latitude/Longitude (Service), Callsign, and Licensee/Zip. No matter how much (or how little) information you have, one of these searches is bound to give you an answer. This site isn't a "data dump" or straight listing of frequencies, so the results of a query may require you to dig down a few levels to find the information. However, when you're hunting for a particular frequency or licensee, this site is the place to look.

PRB-1 News

The state of Indiana has introduced a bill known as **SB 331** designed to prohibit cities or counties from enacting ordinances, resolutions or orders that do not comply with PRB-1. You remember PRB-1, right? It's the limited federal preemption that helps hams by requiring local regulations to "reasonably accommodate amateur communications." Alaska and Nevada are also moving to get PRB-1 laws on the books in their areas. Alaska's SB 78 (now referred to the Community and Regional Affairs Committee) also seeks to establish a three-tier minimum regulatory height schedule that depends on community population density and lot size of the antenna location. Nevada's AB 6 (now referred to the Committee on Government Affairs) has interesting wording, making (void and unenforceable any provision in a deed, covenant, restriction, or condition that "precludes amateur service communications" or "unreasonably restricts the placement, screening or height of a station antenna structure" that could significantly decrease antenna performance or does not allow for the use of an alternative station antenna "at a comparable cost and with comparable efficiency and performance." Nevada's law wouldn't apply to CC&R's already in place when and if the bill goes into effect.

And in related news, Texas' HB 1148, designed to regulate the construction of antennas, as well as their height, location, and lighting, initially sent shivers down the spines of amateurs throughout the state. Thanks to the ARRL, who stepped in, Texas House of Representatives member Robert Cook agreed to amend the bill to exclude licensed amateur radio operators and their antennas.

Second 700 MHz Guard Band Auction

The FCC's second 700 MHz Guard Band auction ended in late February and raised $20,916,500 after thirty-eight rounds of bidding. In 1997, under Congressional direction, the FCC reallocated thirty-six megahertz of spectrum for commercial use including fixed, mobile, and broadcasting. Six megahertz of this has been identified as Guard Bands to protect public safety users. The Guard Band Manager is a commercial licensee who leases spectrum to third parties on a for-profit basis. Spectrum can be subdivided in any manner and made available to system operators or end users for fixed and mobile communications (excluding cellular services). During the auction, eight unsold licenses from the first auction were offered.

FCC Guide To Avoiding Wireless 800 MHz Interference

The FCC's Wireless Telecommunications Bureau has released a Best Practices Guide to help identify and relieve radio interference between public safety and commercial mobile radio service systems in the 800 MHz band. The Guide was designed by a diverse group of experts from the Association of Public-Safety Communications Officials-International, Inc. (APCO); the Cellular Telecommunications & Internet Association (CTIA); Motorola, Inc., and Nextel Communications, Inc., as well as others who use the 800 MHz band for commercial services. The Guide describes types and causes of interference and ways to minimize it, and offers information for preventing interference in future systems. Tom Sugrue, Chief of the Bureau, calls the Guide a positive step and said that parties involved "have developed a valuable resource for anyone working with telecommunications systems at 800 MHz." You

can find a copy of the Guide at http://www.fcc.gov/fcc-bin/bye?http://www.apcointl.org/.

Internal FCC Reform

New FCC Chairman Michael Powell has designated a special counsel to head up a comprehensive Commission reform project. Mary Beth Richards, currently FCC Deputy Managing Director, was appointed to oversee the investigation. Powell said he is "committed to making the FCC more efficient, more decisive, and more responsive to the fast-moving changes in technology and telecommunications markets. Mary Beth's extensive experience at the FCC and her commitment to excellence in government make her the ideal choice."

False Distress Calls In Hawaii

The FCC has issued an Order of Forfeiture against a Hawaii flight school for broadcasting false distress calls. Oahu Aviation Flight School, Inc., of Honolulu, was fined $8,000 for violating Section 87.193 of the Commission's Rules by repeated activation of an emergency locator transmitter (ELT). In late November of 2000, the U.S. Coast Guard reported to the Honolulu Office of the FCC the activation of a distress signal on 121.5 MHz. A Commission agent tracked the signal to an ELT aboard N3180P, an aircraft belonging to Oahu Aviation. The plane was parked at the time and the ELT signal was found to be false. The next day the FCC contacted Oahu Aviation about the activation and issued an Official Notice of Violation. Despite a promise that maintenance would fix the problem, the Coast Guard received another ELT activation from the same aircraft several days later. In its defense, the business stated that the ELT was tested, found to be functioning properly, and was reinstalled after battery replacement. After the second activation, mechanics replaced the device and the business apologized for the false calls. The FCC has reduced the fine against Oahu Aviation to $2,000.

Pirate Radio Operator–A Ham– Gets License Suspended

Leslie Brewer is a bad boy, a really bad boy. Not only does he like to operate an FM broadcast station without a license, but he markets and sells unauthorized transmitting equipment. He has had FCC forfeitures issued against him totaling **$11,000** and his broadcasting equipment has been seized. But this hasn't stopped him. Brewer, (KC4HAZ and GMRS Station KAW1170) of Tampa, Florida, continues to spit in the face of authority by operating an illegal FM radio station. The FCC met for a license revocation hearing in early March, saying "We find that Mr. Brewer's continuing course of conduct raises questions as to whether he possesses the requisite character qualifications to remain a Commission licensee. . .[his] history of FCC-related transgressions and apparent contempt for the Commission's regulatory authority are patently inconsistent with his responsibilities as a licensee and belie any suggestion that he can be relied upon to comply with the Commission's rules and policies in the future." Brewer's license was suspended and a hearing proceeding scheduled before an Administrative Law Judge to determine if Brewer's licensees should ultimately be revoked. Is there *really* any question? (Dkt No. 01-61, FCC No. 01-74). ■

plane sense

your link to global aviation communications monitoring

By Bill Hoefer <flacap388@prodigy.net>

All About Flight Plans

Hello from warm, balmy, Florida. This month's and next month's columns will be written the same way as I have since I started my column last year, Word Perfect to E-mail to *Pop'Comm*. The August to November columns will be done the "old-fashioned" way — done manually on a typewriter (if you don't know what a typewriter is, ask your parents) and then snail-mailed to *Pop'Comm*. In last month's column I told you of the Sun-'n-Fun Fly-In at Lakeland, Florida, (LAL) that I'll be working at for the first time. Well, somehow I'll need to change my schedule working there because the last day we're supposed to be at Sun-'n-Fun I'll need to be in Fairbanks, Alaska, (FAI). I will be working a seasonal Flight Service Station in Northway, Alaska, (ORT) from May 1 to September 30. This will be a new experience for me, especially since the only Internet access is on the expensive kind, so no computer. Everything will be done manually. I'll keep you informed as to the differences between the automated flight service station here in St. Petersburg (PIE) and the conventional flight service station in Northway. Go ahead and send me your E-mails to flacap388@prodigy.net and my family will print them out and send them to me.

This column will concern flight plans that pilots file. Most flight plans are filed talking to controllers at the flight service stations while on the telephone. Some pilots file them on computer using the DUATs system. A few are filed by pilots talking via radio to ground controllers and clearance delivery controllers at the airport traffic control towers. Most of the remainder are filed over the radio to the Flight Service controllers working In-flight and Flight Watch positions.

There are many types and combination of flight plans, but most of the information is virtually identical regardless of the flight plan. **Figure 1** shows a sample flight plan form, the FAA Form 7233-1. Other companies manufacture similar forms, but the information is still the same.

Form Approved OMB No. 2120-0026

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION **FLIGHT PLAN**	(FAA USE ONLY) ☐ PILOT BRIEFING ☐ VNR ☐ STOPOVER	TIME STARTED	SPECIALIST INITIALS

1. TYPE (VFR / IFR / DVFR)	2. AIRCRAFT IDENTIFICATION	3. AIRCRAFT TYPE/ SPECIAL EQUIPMENT	4. TRUE AIRSPEED KTS	5. DEPARTURE POINT	6. DEPARTURE TIME PROPOSED (Z)	6. DEPARTURE TIME ACTUAL (Z)	7. CRUISING ALTITUDE

8. ROUTE OF FLIGHT

9. DESTINATION (Name of airport and city)	10. EST. TIME ENROUTE HOURS	10. EST. TIME ENROUTE MINUTES	11. REMARKS

12. FUEL ON BOARD HOURS	12. FUEL ON BOARD MINUTES	13. ALTERNATE AIRPORT(S)	14. PILOT'S NAME, ADDRESS & TELEPHONE NUMBER & AIRCRAFT HOME BASE	15. NUMBER ABOARD
			17. DESTINATION CONTACT/TELEPHONE (OPTIONAL)	

16. COLOR OF AIRCRAFT

CIVIL AIRCRAFT PILOTS: FAR Part 91 requires you file an IFR flight plan to operate under instrument flight rules in controlled airspace. Failure to file could result in a civil penalty not to exceed $1,000 for each violation (Section 901 of the Federal Aviation Act of 1958, as amended). Filing of a VFR flight plan is recommended as a good operating practice. See also Part 99 for requirements concerning DVFR flight plans.

FAA Form 7233-1 (8-82) CLOSE VFR FLIGHT PLAN WITH _____ FSS ON ARRIVAL

Here's FAA form 7233-1.

The first information a pilot gives (found in block 1 of the form) is the type of flight plan — VFR (visual flight rules — the pilot flies by usually using a sectional or WAC chart and looking out the window of the airplane) [note 1 – I discussed sectional and WAC charts last year], IFR (instrument flight rules — the pilot uses navigational aids on the ground or GPS satellites and instruments in his airplane), or DVFR (defense visual flight rules – the pilot is flying VFR, but crosses the Aircraft Defense Identification Zone [ADIZ] and the Drug Enforcement Agency [DEA] needs to watch you. So few of these are filed, I won't discuss them.) The second item (obviously block 2) is the aircraft identification or callsign — who the aircraft is. It may be a civilian callsign (N12345), military (A1, VV1E345, R23456, G34567, RCH456), air carrier or air taxi (AAL123, DAL234) or some similar ID. After all, the controllers need to know what we're supposed to call the pilot. Block 3, the aircraft type and special equipment, is sometimes confusing to non-pilots and non-controllers because sometimes what the pilot files is different than what is actually filed. While some aircraft may be known by only numbers, like a Falcon 50 or Boeing 727, some are known more accurately by names such as an Aerostar, a Kingair, a Citation, a Super Cub, but they must be put in the flight plan by a specific alphanumeric that the controllers can understand. For example the Aerostar is known as AEST, the Kingair could be BE9L, BE9T, BE10, BE20, BE30. or B350. The Citation may be a C500, C501, C525, C650, C750, etc. and a Super Cub is a PA18. Periodically a type may change., For example the Piper Cherokee was PA28, but is now a P28A, P28B, P28R, or P28T. All controllers need to stay on top of this type. We're also told the type of navigation equipment on board by the word slant followed by Alpha, Charlie, Foxtrot, India, Romeo, Uniform, etc. This tells the controller what a pilot uses to navigate with. (Note 2 — the pilot may also call his aircraft heavy, or TCAS, or both. I'll explain this in a later column).

Block 4 is the airspeed, in the states it always in nautical miles per hour or knots.

Deleted Frequencies

CA
Mantague/Siskiyou County (SIY)
AWOS-3 124.55

GA
Rome/Richard B. Russell (RMG)
AWOS-3 118.575

IL
Northbrook (OBK)
RCO 122.1

NV
Elko Regional (EKO)
AWOS-3 132.175

OH
Columbus/Rickenbacker International (LCK)
ATIS 132.75

TX
El Paso/Fort Bliss (BIF)
NG Ops 356.9

WY
Crazy Woman (CZI)
VOR Voice 117.3

Changed Frequencies

AL
Fort Rucker Ozark (HEY)
LC was 148.7, now 149.6
GC was 321.5, now 148.7

CA
Camarillo (CMA)
ATIS was 119.2, now 126.025

FL
Pensacola Regional (PNS)
CD was 127.35, now 123.72
Apch was 393.0, now 284.65
was 344.4, now 285.625
was 358.0, now 348.725
was 309.8, now 317.475
was 265.1, now 291.625
was 286.0, now 269.375
was 281.8, now 263.125
was 398.95, now 351.825

HI
Hilo International (ITO)
Apch was 118.9, now 120.25

MT
Helena Regional (HLN)
Apch was 226.3, now 229.4

NV
Las Vegas/McCarran International (LAS)
RCAG was 125.02, not 125.025

NY
Courtland County/Chase Field (N03)
Apch was 398.95, now 269.125
Hamilton Municipal (H30)
Apch was 398.95, now 269.125
Skaneateles Aerodrome (6B9)
Apch was 398.95, now 269.125
Syracuse Hancock International (SYR)
Apch was 398.2, now 257.775
Apch was 398.95, now 269.125

OH
Wilmington/Airborne Airpark (ILN)
ATIS was 133.125, now 124.925

TX
Killeen/Fort Hood/Robert Gray AAF (GRK)
CD was 118.6, now 121.8

VA
Manassas Regional/Harry P. Davis Field (HEF)
Apch was 118.15, now 120.2

WA
Seattle/Tacoma International (SEA)
Apch was 119.5, now 125.6
was 263.1, now 273.45
Wenatchee/Pangborn Memorial (EAT)
ASOS was 135.075, now 119.925

Block 5 is normally an airport, like Miami, Florida, International (MIA), or Jackson, Mississippi, Hawkins (HKS), a navigational aid, like Pecan VORTAC, Georgia, (PZD), or Geiger Lake NDB, Tittusville, Florida, (GGL), or a reporting fix, like AMAPO, Georgia, or KIZER, Florida. This tells the controller where to expect the pilot to get his flight plan activated. The next block, 6, is the time the pilot expects to be airborne. This can be a little tricky. A pilot filing an instrument flight plan can file no more than 22 hours in advance, but a VFR plan can be put in up to one month in advance. Go figure. Flight plans stay in the system until two hours after the estimated time of departure (or proposal time). If the plan is not activated by then it "falls out" of the system and the pilot must refile.

Block 7 is the cruising altitude. VFR flight plans normally are at 1000-foot increments starting at 500 feet — 500, 1500, 2500, etc. up to 12500. They are in the plans as 05, 15 25, etc. IFR flight plans are also at "hard" 1000-foot increments — 1000, 5000, etc. These are 10, 50, etc. Some military flight plans may be "blocked" because of training or refueling such as 20000 to 26000, and are put in the plans as 200B260.

New Frequencies

AL
Mobile Regional (MOB)
ATIS 257.8

CA
Arcata/Eureka (ARV)
ASOS 118.525
Mantague/Siskiyou County (SIY)
ASOS 121.125
Needles (EED)
ASOS 128.325
Paso Robles Municiple (PRB)
ASOS 132.175

GA
Albany/Southwest Georgia Regional (ABY)
ASOS 133.05
Rome/Richard B. Russell (RMG)
ASOS 119.925
Valdosta/Moody AFB (VAD)
VORTAC 113.3
Indianapolis Metropolitan (UMP)
AWOS-3 338kHz

KS
Garden City Regional (GCK)
ATCT/CTAF 118.15
Iola/Allen County (K88)
AWOS-3 128.325

ME
Augusta State (AUG)
ASOS 118.325

MI
Flint/Bishop International (FNT)
ASOS-3 133.15
Grand Haven Memorial Airpark (3GM)
GCO 121.725
Jackson County/Reynolds (JXN)
ASOS-3 127.95

MT
Cut Bank Municipal (CTB)
ASOS 119.025

NV
Elko Regional (EKO)
ASOS 119.275

NY
Montgomery/Orange County (MGJ)
CTAF 122.725

OH
Marysville/Union County (I78)
GCO 119.275

OK
Ada Municipal (ADH)
AWOS-3 118.725

TX
Alice International (ALI)
ASOS 119.225
Cotulla/LaSalle County (COT)
ASOS 118.325
Wink/Winkler County (INK)
ASOS 118.325

VA
Fentress NALF (NFE)
Apch 279.2
Richmond International (RIC)
RTR 126.8/398.2
134.7/307.2
126.4/319.8
Virginia Beach/Apollo Soucek (NTU)
Apch 279.2

WY
Jackson Hole (JAC)
AWOS-3 135.175

Block 8 deals with the route of the flight. It may be simple like Melbourne direct Vero Beach (MLB...VRB) or an elaborate one with airways like Sarasota, Florida, to Sylvester, Georgia, (SRQ...PIE.V97.PZD...SYV). Block 9, of course, is the destination airport. Block 10 is the estimate time enroute in hours and minutes. While not as critical in IFR flight plans, as enroute computers update the time, it is quite critical for VFR flight plans. If the pilot activates his flight plan and does not arrive within 30 minutes of his estimated time of arrival, controllers at the flight service stations may start search and rescue (SAR) procedures.

Block11 is for remarks and is optional, i.e. if the pilot is refueling enroute, approaches he may make, etc.

Block 12 gives the fuel on board, not in gallons but in time. If search and rescue procedures are started the fuel duration can keep the searchers from looking in areas where the pilot would not be. Block 13 allows for up to two alternate airports the pilot may go to if weather prohibits their arrival at the primary destination. It's also good for search and rescue to look at these airports first as many a pilot has been found at alternate airports and thus keeping Civil Air Patrol and the Coast Guard Auxiliary from starting a major search when it is not necessary.

Blocks 14 and 17 go hand-in-hand for pilot information, who the pilot is, where he is based, and a phone number to contact him if the need arises.

Block 15 is obvious, how many people on board, again for search and rescue. And of course block 16 is the color of the aircraft. Search and rescue needs to know the color of a missing aircraft. If the aircraft is yellow, why waste time looking for a red one?

While this sounds relatively boring it is the bread and butter information required for air traffic control.

One Man's Flight Plan, And Change Planes Quickly!

Before I get into the monthly frequency updates let me relay some recent stories I've received concerning control flying.

People do some crazy things, like attaching big rubber bands to their ankles and jumping off of bridges or cliffs hoping the rubber band will keep them from tasting the ground. Some jump out of airplanes hoping the expensive nylon canopy in their backpack will do the same. Well, Rodd Milner of Australia is planning to attempt something no one has ever done before, free-fall from a gondola at 130,000 feet (over 24 miles high) and attempt to free fall faster than Mach 1, the speed of sound. So far the record Para jumping speed is only 714 miles per hour, made 41 years ago made by Joe Kittinger.

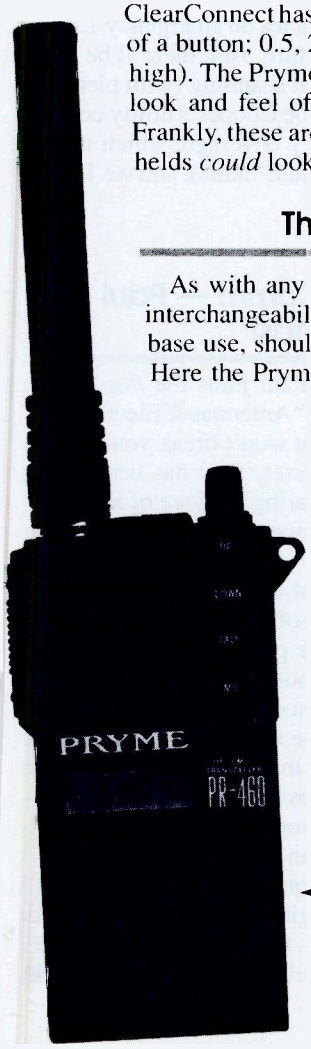
On March 4, a United Airlines 767, a dual-engine jet manufactured by Boeing was enroute from Hawaii to Los Angeles over the Pacific Ocean when the unimaginable happened, both engines failed. The experienced pilots restarted both engines and returned for an emergency landing in Kona, Hawaii. Though no one was injured and safety personnel are checking on the incident the passengers may have wished to change aircraft after seeing the aircraft's registration: N666UA. ■

by Harold Ort, N2RLL. Editor

Pryme's ClearConnect GMRS Handheld

If you're interested in inexpensive personal radio communications, without taking a test, you should check out the General Mobile Radio Service, or GMRS for short. Very simply, GMRS is a licensed (the current FCC five-year fee is $85) personal family communications service. Once licensed you and your immediate family will be able to communicate with each other around town and through local repeaters, greatly extending the range of your small FM transceiver. (FCC licensing information can be obtained at the Commission's Website at www.fcc.gov/wtb/uls or by calling 800-418-FORM to request Form 605, which usually takes a few days to arrive in your mailbox).

Larry, a licensed GMRS user and his family, recently tried out Pryme's ClearConnect handhelds while visiting us, and we were all very impressed with the results. Each ClearConnect handheld fits snugly in the palm of your hand, and it's just the right size for a shirt pocket or vest pocket. Each PR-460 ClearConnect has selectable power output at the push of a button; 0.5, 2.5, and 4 watts (low, medium, and high). The Pryme ClearConnect handhelds have the look and feel of professional from top to bottom. Frankly, these are what many amateur and CB handhelds *could* look like!



Pryme's ClearConnect GMRS handheld transceiver retails for under $199 each. They've got excellent audio and a solid, professional feel.

The Pryme Shines

As with any handheld radio, a main concern is interchangeability between handheld, mobile, and base use, should you decide to use it for all three. Here the Pryme shines. A quick turn of the BNC antenna connector allows you to remove the small-rubber duck antenna and use the radio with a higher gain antenna for better range in thick or urban terrain, or with a mobile or base antenna.

We decided to test the pair with the provided short rubber duck antenna in a suburban environment and heavily wooded park. After snapping the NiMH battery onto the back of each radio (there's no fighting with this battery to attach it to the radio!) a 24-hour charge with the provided wall adapter, we were ready to hit the road. Not being a licensed GMRS user — yet, that is — I brought along my Cobra FRS handheld. A fairly recent amendment of Part 95 of the Commission's rules clarified that "GMRS and FRS units operating on the same frequencies may communicate with each other if the individual operators so choose."

Remember, these GMRS radios aren't toys and have quite an impressive range with crystal clear FM! The Pryme user's manual approximates the range of these UHF transceivers in the clear with no obstructions at 5 miles; three miles with some trees and minor obstructions, two miles in dense areas — and indoors up to 320,000 square feet or about 25 floors in an office building. Using a repeater (which may require a monthly access fee, as they're privately owned and operated) range with the handheld increases to 25 miles. Of course these are only approximate distances; your mileage may vary depending on battery condition, antenna, weather, foliage, and other obstructions, but you get the idea.

In The Wilds Of New Jersey

A quick run-through of the 23, 462 MHz GMRS channels on the Pryme unit revealed no activity in the middle of two successive Saturday afternoons. Our first test was near my home in a typical suburban neighborhood; trees, cars, two-story homes and, downtown, the usual brick-structure stores and banks. Larry set the transceivers with a special tone — CTCSS (Continuous Tone Coded Squelch System) so their conversation was more private as only users with the same CTCSS tone programmed into their radio would be able to communicate with him during the tests, and we'd only hear radios set with the same tone as well. Thirty-two standard tones are available, and there's even a Repeater Access Mode, that, with a couple button pushes, you'll be able to access local repeaters for increased range. In the "Interference Eliminator Mode," which is what we used, you're only able to hear other users with the same programmed code. And since there's 23 channels, you can program different CTCSS codes in each channel, increasing the versatility of your Pryme transceiver. Of course it requires a moment to initially read the well-written manual and some thinking on your part to program the codes, but it's certainly well worth the few minutes of effort!

During the course of a few hours — which also attests to the capability of the Pryme batteries — solid communications was maintained for up to nearly three miles, handheld to handheld. The units were kept on high power, and transmissions were typically under 10 seconds. I was able to hear both Pryme GMRS handhelds on my little FRS transceiver and communicate with one GMRS unit up to 3/4 mile. I'm not a shopping mall person, so we didn't venture to the local mall, but there's no doubt each of these GMRS handhelds could have easily made the short trip from Sears to Macy's with no trouble! We

had no reason to use the Dual Watch mode which allows you to scan back and forth between two channels, Priority Scan, which allows all other channels to be scanned while the radio "watches" the Call channel for activity, or even the basic "Scan" function which allows you to search through programmed channels for activity.

I was particularly impressed when Larry turned the corner downtown and went into the post office; communications was still maintained between two buildings at a distance of 1.5 miles. Not bad for two small handhelds in a fairly dense environment! Audio from the small speaker, rated at 300 mW, was crystal clear, not murky or muffled like other units I've heard. Because my arms aren't long enough, I still needed my reading glasses to see the display clearly, but the LCD display can also be lighted at the push of a button, a great feature as your arms shorten once you're over 30.

Clear Connect Standard Equipment And Options

The ClearConnect GMRS Pryme radios come standard with a wrist strap, belt clip, rubber duck antenna, excellent NiMH battery and wall charger and a one-year warranty, and retail for under $199 each. Pryme offers several nifty options for their handheld GMRS radios including an external speaker microphone, long-life NiMh battery pack (12 volt, 1000 mAH), "AA" battery adapter that uses six "AA"s (not included), mobile charger, drop-in fast charger, protective leather case, lapel mic with earbud, lapel mic with ear hook, mini-boom mic, throat mic, and more. For more information on the Pryme ClearConnect by Premier Communications, call them directly at 800-666-2654 or visit them on the Web at www.pryme.com. Be sure to tell the folks at Pryme you read about their ClearConnect in *Pop'Comm!*

If you'd like more information about GMRS, contact the Personal Radio Steering Group (PRSG) a GMRS advocacy group, at P.O. Box 2851, Ann Arbor, MI 48106 or phone 734-662-4533. They're also on the Web at www.provide.net/~prsg.

REACT International, a large organization of communicators actively monitors the GMRS Emergency Channel, 462.675 MHz. They can be contacted at 301-316-2900 or on the Web at www.reactintl.org. ■

Tuning In *(from page 4)*

an extremely variable time allotted to your radio time; from 10 to 30 hours each week.

When you are involved in the hobby, most of you use a handheld scanner, without trunking, a portable shortwave receiver, mobile or base CB, an all-mode base communications receiver valued under $800, a two-meter amateur handheld (which incidentally ranked very close to a mobile dualband or mobile two-meter transceiver), and interestingly, an FRS transceiver. Few of us are fortunate enough to own a $5,000-plus receiver, as only a half-percent reported.

Sixteen percent of you said you own a receiver valued at more than $1,500, and 23 percent said their receiver was valued at more than $1,000. Interestingly about 50 percent of you said you planned on purchasing a communications receiver from one of our advertisers within the next few months.

So while we're talking about bucks and well-equipped shacks, how many folks do you suppose use a computer and the Internet? It's 88 percent! (You see, that's why we're bringing you Eric Forces' brand new "iWaves" column every month!)

CB And Freebanding

We asked the questions, and here are your answers. Seventy-three percent of you report being active CBers. It's important to note here that, according to our survey results, 70 percent of you report being a licensed ham active on VHF/UHF, and an astounding 86 percent are hams active across the entire spectrum, including HF.

As if that's not interesting enough for a "monitoring" magazine, let's talk about Freebanding. Fifteen percent of you non-hams reported being active on the "freeband." But only about 1 percent of licensed hams in our survey reported being active freebanders.

So, here's what *we're* going to do for *you*. Because exactly 50 percent of you asked for more articles on emergency 12 Vdc power, you'll see that in the near future. And there'll be more product reviews, military and federal scanning (with plenty of frequencies), a heavy emphasis on Joe Cooper's utility column (34 percent of you want more utility coverage, which is also indicated from your cards, letters, and E-mails), and we'll have more antenna construction projects.

New THIS Month in *Pop'Comm* — Paul Carr On Antennas!

How's that for a fast response? Paul joins the *Pop'Comm* team with a new bi-monthly column, "Antennas & Electronics," with a focus on antenna projects that won't break your budget or send you to evening algebra classes. Paul has been doing antennas for decades and will be sharing his love of radio and antennas beginning this month on page xx with his Tag-Along antenna project.

Nearly 80 percent of you reported liking the current length of our articles and photos; a fraction of a percent think our articles and columns should have more photos and less text, but about 30 percent of you asked for more reader-submitted articles about your monitoring experiences, radio shacks, and the like. So how about it? That's the one thing only YOU can do. Need a little incentive? OK, let's do this; you send in an article with at least five useable color photos and we'll send you a 24-exposure one-time use camera (so you can send us more photos and articles if you wish!) You can't lose!

Remember, we seriously value your continued support and input, especially your photos, loggings, and letters. Thanks again for your survey responses — they're invaluable as we shape the future of YOUR magazine! ■

by Joe Cooper <ur-review@provcomm.net>

Monitoring The German Navy

Well, I'm sure the first thing you are thinking is "Joe, you said this month was going to be about monitoring hot spots." Well you're right. That was what was on the agenda — until I received a draft article from Ron Perron (aka Middle Atlantic Milcom) on monitoring the modern German Navy.

Ron has done an excellent job researching and writing about this topic. He outlines what to listen for, where to listen, and even provides a list of callsigns and names of various types of vessels to listen for. Best of all, these are monitoring targets that do not require powerful receiver and antenna array. As Ron points out, someone can monitor land stations and ships with a good portable receiver and a whip antenna.

The Class 123 Frigate FGS Brandenburg of the modern German Navy. Callsign is DRAH. (Photo courtesy Bundeswehr)

German Military Frequencies

The following list is a combination of frequencies taken from a list posted in the WUN Military List to which I have added frequencies that I have isolated. Those proceeded by an * are those that I have actually logged. I have also added several MRY & MRL frequency equations based upon my analysis of their actual communications:

Freq	Call	Station	Mode
2625	DHJ59	GNy Wilhelmshaven	USB
3056	DHJ59	GNy Wilhelmshaven	USB, RTTY 75
3122	DHJ59	GNy Wilhelmshaven	USB, RTTY 75
*4154.5	DHJ59	GNy Wilhelmshaven	USB, RTTY (MRY 59/4)
6727	DHJ59	GNy Wilhelmshaven	USB, RTTY 75
*6730	DHJ59	GNy Wilhelmshaven	USB, RTTY 75 (= ARCN 405)
*6779	DHJ59	GNy Wilhelmshaven	USB, RTTY (MRY 59/6)
*8335.5	DHJ59	GNy Wilhelmshaven	USB, RTTY (MRY 59/8)
*10192.5	DHJ59	GNy Wilhelmshaven	USB, RTTY
*10197	DHJ59	GNy Wilhelmshaven	USB
*10206	DHJ-58	GNy Glucksburg	USB, RTTY (MRY 58/10)
*10722	DHJ59	GNy Wilhelmshaven	USB, RTTY
11256	DHJ59	GNy Wilhelmshaven	USB, RTTY 75
11538	DHJ-58	GNy Glucksburg	RTTY
*12178	DHJ59	GNy Wilhelmshaven	USB, RTTY
*12415.5	DHJ59	GNy Wilhelmshaven	USB
*14722	DHJ-59	GNy Wilhelmshaven	USB, RTTY
*15929	DHJ59	GNy Wilhelmshaven	USB, RTTY
*16127	DHJ-58	GNy Glucksburg	USB, RTTY
*16129	DHJ59	GNy Wilhelmshaven	USB
17544	DHJ59	GNy Wilhelmshaven	USB
17994	DHJ59	GNy Wilhelmshaven	USB, RTTY 75
*22238.5	DHJ59	GNy Wilhelmshaven	USB
23744	DHJ59	GNy Wilhelmshaven	USB

DHJ59 has also reportedly been heard on 3116 and 3939 kHz.

I think what is even more important is that Ron provides a model of good utility monitoring practice. It's not just the signal that one should be looking for from the hobby, but an understanding of the service that you are monitoring too. Look at the research that has been done, and how it has been done, and you can see how Ron has built up a really good picture of the role HF communications plays in the German Navy, as well as its scope and function.

What Ron reminds us of is that there is more to logging than the log itself. To get the most out of the utility monitoring hobby, you must invest some time in looking over your logs and use that information to build a picture of the world you are listening to. Do some research along with your monitoring in order to better understand the people who are behind the microphones and teletype keys, and the roles that they are playing in the services that they belong to.

Communications is something that we tend to take for granted because it is so fundamental to the way we humans behave. Yet at no time in history, and while having such easy access to powerful tools of communications, have so many people continued to have a great deal of trouble understanding each other.

Ron's article is a good bridge into the hotspot information that I will look at next month. Along with providing you with a good list of targets and frequencies to listen in on for that topic, I also want you to have some resources looking at the background reasons for their existence. Just remember that it is as impor-

tant to understand "why" as it is to understand the "how" of radio monitoring.

Anyway, enough philosophy — let's get on to Ron's excellent work. Oh, and we have a great selection of logs this month too thanks to everyone's contributions and letters from readers as well.

The Modern German Navy

The German Navy (Bundesmarine) consists of seven commands: Frigates; Patrol Boat; Mine Countermeasures; Submarine; Support; Naval Aviation; and Communications/Electronics. Their primary mission is forward defense in the Baltic and North Seas in close cooperation with NATO naval forces. However, the German Navy has become more active in the Mediterranean and Persian Gulf areas as new emphasis is placed on protection of sea-lanes of communication and freedom of navigation.

For utility monitors, especially on the U.S. East Coast, the German Navy is one of the easier "catches." Their transmitters are quite powerful and can easily be heard using a stock telescoping whip antenna or small dipole. I listen to them using only a Sangean ATS-909 portable and a 38-ft folded dipole up in my attic. Especially when the ships are on a Mediterranean or Persian Gulf deployment, they will use the higher frequencies making them easier to hear. Here on the East Coast I usually hear them on the higher frequencies during local daylight hours and in the evenings I can hear them on the 4, 6 and 8 MHz frequencies.

They use a mixture of English, albeit accented, and German. Call-ups are usually in English. Most of the time the operators will use only the last two letters of the vessels callsign, dropping the DR (Delta Romeo) common to all the vessel callsigns. After establishing contact and setting up to pass traffic they will pass their traffic in RTTY. After QSL for traffic they will break into English or German, using both "Q" and "Z" signals to service their traffic and to change frequencies (QSY). Their frequency references are usually sent as MRY 59/## or MRL 58/##. It appears that both Wilhelmshaven and Glucksburg have discrete frequency sets.

German Navy Vessel HF Radio Callsigns

The following list of German Navy vessel callsigns has been compiled from my logs; listings in Jane's Fighting Ships; various Websites; and research on international callsign allocations. The German Navy's Website indicates that some of the vessels on this list are not active; however, their callsigns were still carried in the 1999 international ship listing.

Note: Due to limitation of space only DRAB to DRFS can be presented this month. DRFT to DRXU will be presented in the next column.

Call	Vessel Name	Type	Class
DRAB	FGS SCHLESWIG	HOLSTEIN	DESTROYER (OLDCALL)
DRAE	FGS LUETJENS	TYPE 103B	DESTROYER (D 185)
DRAF	FGS MOLDERS	TYPE 103B	DESTROYER (D-186)
DRAG	FGS ROMMEL	TYPE-103B	DESTROYER (D-187)
DRAH	FGS BRANDENBURG	FRIGATE 123	CLASS F-215
DRAI	FGS SCHLESWIG	HOLSTEIN FRIGATE 123	CLASS F-216
DRAJ	FGS BAYERN	FRIGATE 123	CLASS F-217
DRAK	FGS MECKLENBURG-VORP	FRIGATE123	CLASS F-218
DRAN	FGS AUGSBURG	FRIGATE 122	CLASS F-213
DRAO	FGS LUEBECK	FRIGATE 122	CLASS F-214
DRAQ	FGS BREMEN	FRIGATE 122	CLASS F-207
DRAR	FGS NIEDERSACHSEN	FRIGATE 122	CLASS F-208
DRAS	FGS RHEINLAND	PFALZ FRIGATE 122	CLASS F-209
DRAT	FGS EMDEN	FRIGATE 122	CLASS F-210
DRAU	FGS KOELN	FRIGATE 122	CLASS F-211
DRAV	FGS KARLSRUHE	FRIGATE 122	CLASS F-212
DRAX	FGS GORCH FOCK SAIL	TRAINING SHIP A-60	
DRAY	FGS PLANET	NA	SURVEY SHIP A-1450
DRAZ	FGS NORDWIND SAIL	TRAINING SHIP Y-834	
DRBA	FGS S-41	TIGER	MISSILE PATROL BOAT P-6141
DRBC	FGS S-43	LUCHS	MISSILE PATROL BOAT P-6143
DRBE	FGS S-45	LEOPARD	MISSILE PATROL BOAT P-6145
DRBF	FGS S-46	FUCHS	MISSILE PATROL BOAT P-6146
DRBG	FGS S-47	JAGUAR	MISSILE PATROL BOAT P-6147
DRBH	FGS S-48	LOEWE	MISSILE PATROL BOAT P-6148
DRBI	FGS S-49	WOLF	MISSILE PATROL BOAT P-6149
DRBJ	FGS S-50	PANTHER	MISSILE PATROL BOAT P-6150
DRBM	FGS S-53	PELIKAN	MISSILE PATROL BOAT P-6153
DRBN	FGS S-54	ELSTER	MISSILE PATROL BOAT P-6154
DRBO	FGS S-55	ALK	MISSILE PATROL BOAT P-6155
DRBP	FGS S-56	DOMMEL	MISSILE PATROL BOAT P-6156
DRBQ	FGS S-57	WEIHE	MISSILE PATROL BOAT P-6157
DRBR	FGS S-58	PINGUIN	MISSILE PATROL BOAT P-6158
DRBS	FGS S-59	REIHER	MISSILE PATROL BOAT P-6159
DRBT	FGS S-60	KRANICH	MISSILE PATROL BOAT P-6160
DRBU	FGS S-61	ALBATROS	MISSILE PATROL BOAT P-6111
DRBV	FGS S-62	FALKE	MISSILE PATROL BOAT P-6112
DRBW	FGS S-63	GEIER	MISSILE PATROL BOAT P-6113
DRBX	FGS S-64	BUSSARD	MISSILE PATROL BOAT P-6114
DRBY	FGS S-65	SPERBER	MISSILE PATROL BOAT P-6115
DRBZ	FGS S-66	GREIF	MISSILE PATROL BOAT P-6116
DRCA	FGS S-67	KONDOR	MISSILE PATROL BOAT P-6117
DRCB	FGS S-68	RIVERADLER	MISSILE PATROL BOAT P-6118
DRCC	FGS S-69	HABICHT	MISSILE PATROL BOAT P-6119
DRCD	FGS S-70	KORMORAN	MISSILE PATROL BOAT P-6120
DRCE	FGS S-71	GEPARD	MISSILE PATROL BOAT P-6171
DRCF	FGS S-72	PUMA	MISSILE PATROL BOAT P-6172

DRCG	FGS S-73	HERMELIN	MISSILE PATROL BOAT P-6173
DRCH	FGS S-74	NERZ	MISSILE PATROL BOAT P-6174
DRCI	FGS S-75	ZOBEL	MISSILE PATROL BOAT P-6175
DRCJ	FGS S-76	FRETTCHEN	MISSILE PATROL BOAT P-6176
DRCK	FGS S-77	DACHS	MISSILE PATROL BOAT P-6177
DRCL	FGS S-78	OZELOT	MISSILE PATROL BOAT P-6178
DRCM	FGS S-79	WIESEL	MISSILE PATROL BOAT P-6179
DRCN	FGS S-80	HYAENE	MISSILE PATROL BOAT P-6180
DRDE	FGS U-11	NA	SUBMARINE S-190
DRDF	FGS U-12	NA	SUBMARINE S-191
DRDG	FGS U-13	NA	SUBMARINE S-192
DRDH	FGS U-14	NA	SUBMARINE S-193
DRDI	FGS U-15	NA	SUBMARINE S-194
DRDJ	FGS U-16	NA	SUBMARINE S-195
DRDK	FGS U-17	NA	SUBMARINE S-196
DRDL	FGS U-18	NA	SUBMARINE S-197
DRDM	FGS U-19	NA	SUBMARINE S-198
DRDN	FGS U-20	NA	SUBMARINE S-199
DRDO	FGS U-21	NA	SUBMARINE S-170
DRDP	FGS U-22	NA	SUBMARINE S-171
DRDQ	FGS U-23	NA	SUBMARINE S-172
DRDR	FGS U-24	NA	SUBMARINE S-173
DRDS	FGS U-25	NA	SUBMARINE S-174
DRDT	FGS U-26	NA	SUBMARINE S-175
DRDU	FGS U-27	NA	TYPE 206 SSK S-176
DRDV	FGS U-28	NA	SUBMARINE S-177
DRDW	FGS U-29	NA	SUBMARINE S-178
DRDX	FGS U-30	NA	SUBMARINE S-179
DREA	FGS SCHLESWIG	NA	MINE HUNTER M-1073
DREB	FGS PADERBORN	NA	MINE HUNTER M-1076
DREC	FGS DUEREN	NA	MINE HUNTER M-1079
DRED	FGS KONSTAN	NA	MINE HUNTER M-1081
DREE	FGS WOLFSBURG	NA	MINE HUNTER M-1082
DREF	FGS ULM MINE	NA	HUNTER M-1083
DREH	UNIDENTIFIED	NA	PROBABLE MINE HUNTER
DREI	FGS LINDAU	NA	MINE HUNTER M-1072
DREJ	FGS TUEBINGEN	NA	MINE HUNTER M-1074
DREK	FGS MINDEN	NA	MINE HUNTER M-1085
DREL	FGS KOBLENZ	NA	MINE HUNTER M-1071
DREM	FGS WETZLAR	NA	MINE HUNTER M-1075
DREN	FGS GOETTINGEN	NA	MINE HUNTER M-1070
DREO	FGS WEILHEIM	NA	MINE HUNTER, M-1077
DREP	FGS VOELKLINGEN	NA	MINE HUNTER M-1087
DREQ	FGS CUXHAVEN	NA	MINE HUNTER M-1078
DRER	FGS MARBURG	NA	MINE HUNTER M-1080
DRES	FGS WEIDEN	NA	MINE HUNTER M-1060
DRET	FGS ROTTWEIL	NA	MINE HUNTER M-1061
DREU	FGS SULZBACH-ROSENBERG	NA	MINE HUNTER M-1062
DREV	FGS BAD BEVENSEN	NA	MINE HUNTER M-1063
DREW	FGS GROEMITZ	NA	MINE HUNTER M-1064
DREX	FGS DILLINGEN	NA	MINE HUNTER M-1065
DREY	FGS FRANKENTHAL	NA	MINE HUNTER M-1066
DREZ	FGS BAD RAPPENAU	NA	MINE HUNTER M-1067
DRFA	FGS DATTELN	NA	MINE HUNTER M-1068
DRFB	FGS HOMBURG	NA	MINE HUNTER M-1069
DRFC	FGS FULDA	NA	MINE HUNTER M-1058
DRFD	FGS WEILHEIM	NA	MINE HUNTER M-1059
DRFJ	FGS PASSAU	NA	MINE HUNTER M-1096
DRFK	FGS LABOE	NA	MINE HUNTER M-1097
DRFL	FGS SIEGBURG	NA	MINE HUNTER M-1098
DRFN	FGS ENSDORF	NA	MINE HUNTER M-1094
DRFO	FGS HAMELN	NA	MINE HUNTER M-1092
DRFP	FGS HERTEN	NA	MINE HUNTER M-1099
DRFR	FGS AUERBACH/OBERPFALZ	NA	MINE HUNTER M-1093
DRFS	FGS UEBERHERRN	NA	MINE HUNTER M-1095

These vessels have been logged in both USB voice and RTTY traffic with callsigns DHJ-59 (German Navy, Wilhelmshaven) and DHJ-58 (German Navy, Glucksburg) on the frequencies in the above list.

Well, I hope that I have sparked your interest and that this information is useful to those of you who might want to "chase" the German Navy in the utility world. I would suggest checking out the following Websites for information on the German Navy:

http://www.warships1.com/German.htm (German Navy)

http://hometown.aol.com/aibold/logs.htm (European Utility Newsletter)

http://www.wunclub.com/ (World Utility Newsletter)

The German Navy site is an unofficial site but has a link to the official Bundesmarine Website. Check it out. The site, of course, is in German but one can glean enough information about vessel deployments and exercises to make the site quite useful. There are usually quite a few photos of the vessels accompanying the text.

German Navy Shore Station Callsigns

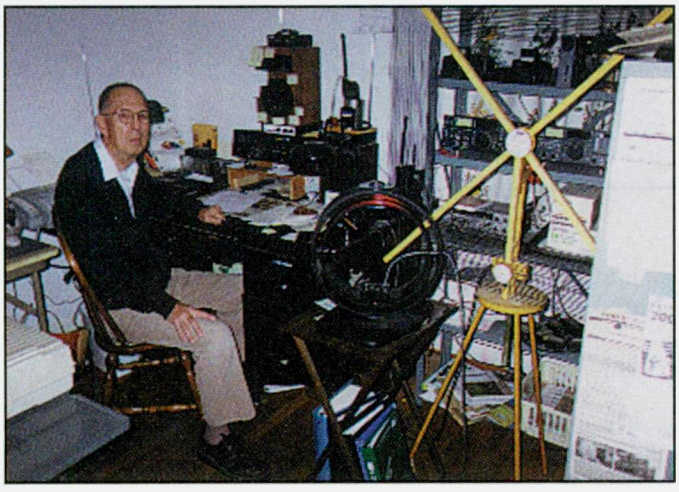
These callsigns are from a list posted on the European Utility Newsletter Webpage.

DHJ53	Ny Warnemunde
DHJ57	Ny Schunhagen
DHJ58	Ny Glucksburg/Saterland-Ramsloh
DHJ59	Ny Wilhelmshaven
DHJ61	Ny Flensburg
DHJ62	Ny Neustadt
DHJ63	Ny Todendorf
DHJ66	Ny Eckernfurde
DHJ70	Ny Wilhelmshaven
DHJ78	Ny Nordholz (MFG3)
DHJ82	Ny Parow
DHJ84	Ny Wangerooge
DHJ97	Ny collective call
DHM21	Ny Staberhuk
DHM22	Ny school Bremerhaven
DHM33	Ny Kiel
DHM35	Ny Wilhelmshaven
DHM36	Ny Wilhelmshaven
DHM41	Ny weaponschool Kappeln
DHM42	Glucksburg Rescue
DHM45	Ny Flensburg
DHM64	Ny Darsser Ort
DHM78	Ny Gluckstadt
DHM82	Research Station Kiel
DHM85	Ny Marlow
DHN33	Ny Command North, Kiel
DHN49	Ny Command West, Wilhelmshaven
DHN53	Ny Wilhelmshaven-Harbour
DHO26	Ny Rostock
DHO35	Ny Tarp/Eggebek (MFG2)
DHO38	Ny Saterland-Ramsloh
DHO46	Ny Olpenitz
DHO66	Operations Command Ny Glucksburg
DHO69	Ny Eckernfurde
DHO71	Ny Kap Arkona
DHO73	Ny Marienleuchte
DHO79	Ny Helgoland
DHO80	Ny Olpenitz-Harbour
DHO81	Ny Borkum-Harbour Ny Kiel-Harbor
DHO95	Ny Cuxhaven

I would be very interested in hearing about any success you might have in hearing the Germans as well as any corrections or additions and any new information that I could add to my listings. Good hunting and good listening.

Ron Perron
aka Middle Atlantic Milcom
Rapbep @aol.com
Maryland, USA

Again Ron, thanks very much for this contribution. I hope that this will inspire a few more people to make contributions like this one for future columns. I don't make any claim for knowing everything there is to know about utility monitoring, particularly when I know that there are many of you out there with a lot more experience and skill. So please share that with the other readers of this column.



Perry F. Crabill, Jr., W3HQX at the controls of his monitoring shack. Perry recently contributed an excellent article on LF non-directional beacons (NDBs). His primary monitoring rig is a Drake R-8.

Like I've said before, I'll be more than happy to help you write it up under your name as long as you give me the basic information to work from.

And speaking of contributions, we've got mail.

Reader's Letters

Before I start I have to say that I've got behind in posting the snail-mail letters here. I've tried to keep up, but transcribing does take time. As a result I'm going to dedicate the reader's letters for next moth to 100% handwritten or typed. This month will be a mix, so bear with me until that time.

If you have sent something in, and have not seen it published here, have patience. I cannot promise that I publish everything that I receive, but I will try to at least acknowledge to you that I have received it. Please remember that I do read everything that comes to me, so don't think you've wasted your time by writing to me, because you haven't.

So, on to the letters;

Hi Joe,

I have just picked up my February issue of *Pop'Comm* from my local book shop, and I must thank you for your article on ''how to guide,' especially short forms used in loggings. I have been using wrong abbreviations and formats for sometime now, mainly because they could not be found anywhere. (I could not find them any way.) Looking forward to next month's mag on NASA as that's one of my interests — astronomy. Just a short note to let you know what I think. 73's

Tony Lowe
Masterton, NZ

Thanks, Tony. I've got some good feedback on the coverage that I have given to some of the basics in ute monitoring. I'll continue to give a balance between what I call "good practice" information and target frequencies and services.

If you remember a few issues back, Frank Crabill, Jr. provided us with a very good article on monitoring NDB in the longwave frequencies. He dropped us a letter telling us about his monitoring set-up, and provides a picture of himself at the controls.

Dear OM:

This forwards several pictures of my LW, BCB, and SW listening post for your use as you see fit. I'm afraid that it shows a rather cluttered shack, but it has gradually filled up in the 18 years that I have been living here.

The Drake R-8 is in the center of the desk, with the Timewave DSP-59+ sitting its right comer. Stacked above it are an external speaker and the JPS-ANC4. On the left side of the desk are a 13.8-volt power supply and a Kenwood TW-4000A dualband FM transceiver. On top of the speaker to the right of the Drake is a Uniden Bearcat BC-780 Scanner used for monitoring fire and rescue services; a Realistic PRO-2006 not in the picture covers law enforcement agencies.

My Kiwa Electronics MW loop antenna sits on a TV tray stand, and behind it to the right is the RSM-Communications Model 10542 three-foot longwave loop. On the left of the top shelf on the metal shelving is an ARComm AP4 active antenna and preselector; next to it is a Lowe PR-150 preselector. The next shelf has a BayGen FreePlay windup radio, and the one below that has charging equipment for handheld 2-meter rigs on the left, and a Sony ICF-2010 seen endwise on the right. The shelf below that one has the ICOM twins; the R-71A is on the left and the R-7000 is to its right. The next shelf has the Kenwood R-5000.

This small den also has two Compaq computers, along with two printers: a Hewlett-Packard DeskJet 500 and a Panasonic KXP-1124 dot matrix unit. In addition, there are two bookcases and a file cabinet. The clock on the wall is one of those kept accurate by WWV.

Yours truly,
F. Crabill, Jr. Amateur Radio
W3HQX

Thanks again Frank for your good work. I also have someone here who unfortunately got over-looked during the past few months.

Hi Joe,

This is the second set of logs I've sent to you for your column. The first ones did not appear in your column; maybe they did not have the correct format. The logs I'm now sending follow as close as possible. "Utility Radio Review" is the most important part of the magazine as this is my hobby. I've enclosed a picture of my shack, which consists of Radio Shack DX392 and a DX394, ICOM R75, and a Grundig 800 (not shown). All of my antennas are in the attic, with the assistance from MFJ 959B, 1024 and 1020B. Keep up the good work.

Ron Parr,
Brockville Ontario

Well Ron, I'm sorry to have missed the first logs. I've included them in this month's logs. If anyone else out there is in the same boat, hang on, I'll get this under control. Whatever you do, don't give up on sending me your logs!

Reader's Logs

I have to say that I am really impressed with the logs this month. I've had 12 people make some very impressive contributions here. Thank you all very much for what you have done. Please keep them coming.

Please make note of the activity logged on 14396.5 by Christian Bryant. He was able to capture some interesting FEMA activity around the earthquake region in Seattle, Washington.

Lots of good Coast Guard, aircraft, and military activity captured as well. One thing that I might mention is that there is nothing wrong to write in about a particular log. You might have some background information about an event captured in a log that may make it "come alive." Please feel free to share your insights and information about these logs.

Note: All frequencies in Kilohertz. The format for reporting a log is as follows:
0000: STATION ID, Any town USA, summary of traffic heard in MODE at 0000 Z (UTC), personal comments here (JC)

2598: Canadian Coastal Station — St. Johns, in USB 0855 Z w/EE WX. (RP)
2749: Canadian Coastal Station — St. Johns in 0145 USB 0145 Z w/EE WX forecasts. (RP)
3307: FOXTROT WHISKEY, FOXTROT ROMEO, DELTA, JULIET, GOLF in net at 1300Z. Exchanging confirmations and queries about tracks and line numbers. Must have been receiving this data on another circuit. Would exchange number groups preceded by "in the green," "in the red," or "in the blue." Tran L/C at this loc. (DS2)
4125: UNID, Several ships at sea w/chat in USB at 0132Z. Very weak could not get callsigns. (CS)
4585: Civil Air Patrol, Net 2345Z (LH)
4675: Northwest 56 with SEACAL check (EHDP) via Gander Radio USB 0420 Z (CR)
5190: Cape Radio reporting 30 seconds to lift off at 2313Z (LH)
5320: UNID calling Coast Guard Cutter *Marlin* 1115 Z (LH)
5320: UNID calling CG Cutter *Key West* 1028 Z (LH)
5320: UNID calling Coast Guard Cutter *Marlin* 1115 Z (LH)
5320: UNID calling CG Cutter *Key West* 1028 Z (LH)
5529: LDOC Santa Domingo 0000Z (LH)
5541: Stockholm Sweden LDOC 2328 Z (LH)
5547: American 35 (San Jose to Honolulu) requesting primary freq. and SELCAL check via San Francisco Radio USB 0049 Z. (CR)
5550: Continental 745 with clearance to San Juan via New York radio USB 0219Z. (CR)
5550: Speedbird 4520 with position report to New York Radio and advised to switch to 6.577 USB 0446Z. (CR)
5598: United 924 to Gander reporting medical emergency ñ requesting direct flight to YYT at level 310 (RP3)

The monitoring shack of contributor Ron Parr of Brockville, Ontario, Canada. Ron uses a RadioShack DX-392 and DX-394 along with several other sets and accessories.

our readers speak out

What's The Big Deal?

Dear Editor: (original to Alan Dixon)

I thought I'd put in my two-cents worth regarding the "Big Trouble In Michigan" in October 2000's *Popular Communications* "Washington Beat" column. Please feel free to publish any or all of the following: Several years ago, I went to the Communications Division of the Michigan State Police Headquarters in East Lansing inquiring about a permit to have a scanner in my vehicle(s). I was given an application and was told I would not have any problems getting a permit, providing I did not have a criminal record. So I completed the application, mailed it back to the MSP HQ, and received a few weeks later the "PERMIT FOR USE OF SHORTWAVE RECEIVER IN VEHICLE." Within a few minutes of receiving the permit, a scanner went into my Silhouette van.

Since then, I have traded the Silhouette in for an Astro van and have bought a Geo Tracker. Both vehicles now have a scanner mounted on the dash, right in plain sight. To this day, I have never been pulled over for possession of a scanner in a vehicle. I live in Jackson County, work in Washtenaw County (have worked in Wayne County in metro Detroit), and have vacationed all over the state of Michigan without incident. A few times, I have been pulled over by various police departments for moving violations (usually for lead foot disease) where only once I have ever been asked to produce the permit.

I don't understand what the big deal is about. I have mentioned to police officers I have a scanner in my vehicle and their response usually is "that's illegal in Michigan." When I tell them I have a permit, then nothing more is said about it.

I have used the scanner to assist the police with "Be On Lookouts" (BOLs) for intoxicated and reckless drivers if I happen to be in the area. I'm not a vigilante out playing policeman.

My final comment is to quote from my current permit:

"CD-4 (7-96) MICHIGAN STATE POLICE PERMIT FOR USE OF SHORTWAVE RECEIVER IN VEHICLE

According to Section 750.508, MCL of 1970, as amended, this authorizes_____of

_____

to operate a vehicle with a shortwave radio receiver on radio frequencies licensed for police use, except those frequencies licensed for police radar. Expires _____Director"

Sincerely,
Paul Crane

Dear Paul:

The big deal is the requirement for a permit in the first place. How about a show of hands: Who thinks a permit will stop a ***criminal*** *from putting a scanner in their vehicle (or home when the day comes where we need a permit for base scanner operation!) and using it to either avoid police detection or commit other crimes?*

5598: Multiple aircraft traffic working Gander, Santa Maria and Shadwick (RP3)
5643: United 62 (N214UA) working San Francisco radio with check-in and position report (this is a Honolulu to San Francisco flight) USB 1352Z (CR)
5643: Korean Air 824 with position report to Brisbane Radio USB 1455Z. (CR)
5643: KIWI 586 with position report to Brisbane Radio and Brisbane advises that next "ops normal" call to be at 1600Z USB (CR)
5649: NAC, mutiple aircraft working Gander. Jordanian 264, Egypt Air 898, Scandinavian 902 (RP3)
5696: CAMSLANT/Rescue 6031 SAR and rescue mission 0015Z (LH)
5696: Rescue 1790 (HC-130H7) informs CAMSPAC Pt. Reyes that they had launched two flares then received release from search at Cedros Island via District 11 0439Z. (CR)
5696: Coast Guard 1708 (HC130H7 out of CGAS Kodiak) with "Ops. normal" to COMSTA Kodiak USB 0432Z (CR)
5717: Rescue 007/Trenton Military with SELCAL 2351 Z (LH)
5717: Rescue 007/Trenton Military with SELCAL 2351 Z (LH)
6240.5: Juliet/Charlie 2334 Z (LH)
6449.7: PWX33 BN Rio de Janeiro 0640 RTTY75/850 WX and Chart grid nos (RH2)
6604: New York radio VOLMET with forecast for eastern U.S. USB 0215Z. (CR)
6604: New York Radio (VOLMET) with aviation WX USB 0345Z (CR)
6676: Bangkok Volmet WX including Bankok QNH 1017(PP)
6679: Kvm70 Volmet Hawaii 0432 Z (LH)
6855: V2a, Cuban Intelligence, Attencion! AM, 0300 (NK)
6865: E17, "English Lady" presumed Russian/CIS, strong signal, AM, 0430 (NK)
6959: Lincolnshire Poacher Numbers YL with music 2217 Z (LH)
6959: Lincolnshire Poacher Numbers YL with music 2217 Z (LH)
7508: ZSJ: SAN Silvermine 0815 fax 120/576 Excellent WX charts! // 13538 and 18238 kHz (RH2)
8085: E5, Counting Station, presumed CIA, USB, call-up: 225, 0400 (NK)
8191.7: 9MR: Malay Navrad 1750 RTTY 50/850 Johore Bahru — Testing (RH2)
8191.7: 9MR: Malay Navrad 1811 RTTY50/850 4LG to unk (RH2)
8191.7: UNID FAPSI 1803 Crowd36 40 (RH2)
8240: UNID Rescue (?) calling NMN 2119 Z (LH)
8294.7: Harbor Operations to TWR823 regarding need for divers to inspect damage to vessel. Told TWR842 to stay on station per TR1 to assist USB 0309Z (CR)
8298: VTP13/14: IN Vishakhapatnam 1546RTTY50/850 RY/ID/SG etc (RH2)
8303: LOR PNR Buenos Aires? 0540RTTY 75/170 5LG — this freq normally used by AN Puerto Belgrano but PNR prefix suggests BA? (RH2)
8303: LOR PNR Puerto Belgrano 0524 RTTY 75/170 5LG after GEN010 (RH2)
8387.5: UBHZ TH Sibirskij-2118 1058 ARQ TFC and log off to Nakhodka (ML)
8397: UFHZ TH Mekhanik Kraskovskij 1326 ARQ msg to unkwn (ML)
8424: UDK2 Murmansk rdo 1300 FEC ships' TFC, same @ 1300 (ML)
8499.7: VTH1/5/7: IN Bombay 1550 RTTY 50/850 RY/ID etc (RH2)
8828: Tokyo VOLMET with weather forecast for 1000–2300Z USB 1340Z (CR)
8843: San Francisco wrk Delta 17 Voice USB 2130 (EN)
8843: Korean Air 207 with position report and advised by San Francisco Radio to contact Los Angeles Center on 132.150 upon reaching position EDSEL USB 0100Z (CR)
8855: Cayenne Radio w/Iberia 6650 position. (PP)
8855: Piarco Radio w/Speedbird 209 (PP)
8855: BÈlËm Radio w/CGCDS reporting FL410 SELCAL AGFP mentioned various points such as "akita" and "matra" and "CRJ" also mentioned "switch to VHF 125.2 at matra" (PP)
8922: AIR VAC 9413: Wkg. Andrews for phone patch to metro for WX. Wind warnings and crosswind advisory (RP3)
8942: Singapore Radio w/FedEx 19A (PP)
8971: Flying Tiger 755/Golden Hawk Report unable to go green 2315 Z (LH)
8980: Miami OPs report of a Mayday received at 2131 Z (LH)
8980: Rescue 1719/Miami Ops. Copy of Survivors have been in the water for 20 minutes Qsy 5696 2239 Z (LH)
8980: Camslant/Rescue 1719/Miami Ops at 2310 Z Rescue 1719 report needs refueling and ask for a replacement aircraft 2305 Z (LH)
8980: Miami Ops/Rescue 2141 Miami to 2141 to RTB 0055 Z (LH)
8980: Miami Ops/Rescue 2141 Miami to 2141 to RTB 0055 Z (LH)
8983: CG Rescue 1720 (HC-130, CGAS Clearwater): 1140 w/Camslant Chesapeake reporting airborne for SAR in Gulf of Mexico off of St Petersburg FL w/7 POB. The SAR was apparently cancelled since at 1242 CG 1720 was on final approach to homeplate. (RP)
8983: Gantsec/2120 2255 Z (LH)
8983: Rescue 2141 Report negative success in search 0017 Z (LH)
8983: CG 2122 (HU-25, ATC Mobile): 1521 w/Camslant reporting on SAR location at 2904N/8806W w/1.5 hours on-scene time. CG 2122 has direct comms w/sailing vessel WCC 6994. Camslant will relay info to CG Group Mobile. (RP)
8992: HICKAM to REACH 6037 with wx reports for Travis and McCord (RP3)
8992: Gopher 02 (C-130E 109th AS, MN ANG Minn-St Paul, MN): 0228 w/Offutt in pp w/Gopher Ops reporting they have departed St Johns, Newfoundland and there are two other Gophers one hour ahead of them. They expect to land at Minneapolis about 1:30 after they depart Duluth MN. (RP)
9025: Andrews AFB with Phonetics 2220 Z (LH)
9130: E10, Israeli Mossad, USB, 0100 (NK)
9247.2: FJY2: DTRE Kerguelen I. 0546 ARQ3 200/400 Idling (RH2)
10033: Miami LDOC 2249 Z (LH)
10057: N401NK with position report to San Francisco radio 0101Z (CR)
10057: Philippine 102 answering SELCAL and cleared to flight level 390 from 370 USB 0045Z. (CR)
10096: Recife ATC (MWARA SAM-2): 0324 USB w/Springbok 209 in position report. (RP)
10168: UNID North Korea? 0617 RTTY (?) 50/994 Wide shift suggests Korea (RH2)
10375: RPTMB: PP Navrad Porto Santo 0533RTTY75/850 Crypto (RH2)
10493: UNID CIS Mil/Rail 1800 81-81 81/190 (RH2)
10536: CFH: CF Halifax 0555 RTTY 75/800 WX data (RH2)
10643: Counting Station, presumed CIA, USB, call-up: 225, 0400 (NK)
10722: DHJ-59 (German Navy, Wilhelmshaven): 0822 w/DRAJ (FGS BAYERN, FRIGATE 123 CLASS F-217) in voice and RTTY checks. (RP)
10780: Dragnet Xray (E-3B AWACS, Tinker AFB): 1854 w/Cape Radio in pp w/Radar Maintenance (in progress) concerning radar problems. (RP)
11122: 9MR: Malay Navrad 1535RTTY50/850 5LG begins — "MRB/502 ZFH1 KD HANG TUAH" then 5LG (RH2)
11175: Andrews wkg aircraft? Voice USB 2132 EAM message practice (EN)
11175: Hickam with all frequency request for PETRO25 USB 0153Z. (CR)
11175: TORCH77 (Air Guard C-130) with p/p via Hickam to Pt. Mugu Navy Base Ops requesting permission to land due to emergency with No. 3 engine out (comms were stepped on by Andrews with 20+ char mess and Hickam with Skyking bcst.) USB 0156Z (CR)
11175: Hickam working AUSSIE037 with offer to relay position information to their base ops USB 0208Z (CR)
11175: KANTO87 with p/p via Hickam to CP with ETA and request for fuel then p/p to Hickam metro USB 0106Z (CR)

11175: WOODEN91 (KC-10) with p/p to AMCC advised arrival time of 0315Z at Hickam USB 0122Z (CR)
11175: STRAY77 (C-130) with p/p via McClellan to (?)CP regarding then advised by CP to call COYOTE on 349.450 and park at Bravo 5 or 6 USB 2042Z (CR)
11175: KING70 (HC-130 tail# 50970) with p/p via Offutt to CONUS 497-xxxx — GUNRUNNER and adv departed KLSV (Las Vegas) at 2110Z and will arrive KPDX (Portland) at 0030Z then p/p to 638-xxxx for ACCLIMATE adv enroute to ACCLIMATE USB 2127Z (CR)
11175: REACH295T (C-141 tail #70028) with p/p via Andrews Radio to Andrews CP advising of 0220Z arrival, status A2 due to stuck anti-ice valve in #2, cargo of three vehicles and four passengers to offload USB 2322Z (CR)
11175: REACH30075 with HF radio check via REACH0451 (C-5) while REACH30075 was on the ground at Travis and REACH0451 was enroute Travis USB 2359Z (CR)
11175: ICER40 with p/p via Ascension to RAYMOND12 advising return to Minot due to generator failure while in pattern at Edwards USB 0156Z (CR)
11175: REACH101 with p/p via Ascension to unknown metro for WX at Dakar (GOOY) USB 0207Z (CR)
11175: TIGER 31 (flight of two B-1s of the 37th Bomb Squadron-Ellsworth) with p/p's via Andrews/ Hickam to Fairchild requesting that they contact EXPO 31 to confirm refueling to take place at 0430 as they "need the gas to get home." 0157Z USB (CR)
11175: RUDY 51 (C-130 Cal. ANG) with p/p via Hickam to CONUS DSN 893-xxxx — Channel Islands Guard (adjacent to Pt. Mugu) advising of 0515Z arrival USB 0334Z (CR)
11175: OTIS 10 (KC-130) with p/p via McClellan to OTIS Control requesting to leave message for Mrs. Hall regarding 0100 local arrival of aircraft at MCAS Cherry Point USB 2128Z (CR)
11175: OPEC 76 with p/p via Elmendorf to Hickam AMCC advising of arrival at 0155Z then interrupted by Elmendorf advising of high priority traffic followed by booming Andrews EAM USB 2147Z (CR)
11175: TOTEM 85 (flight of 2 C-130s) with p/p via Elmendorf to McChord with ETA for TOTEM 85 and 76 to McChord, then p/p to Elmendorf Metro for arrival wx at McChord USB 2304Z (CR)
11175: SAM 204 with request to Elmendorf to switch to a discrete freq. or 11.181 HF USB 0353Z (CR)
11175: A/C TANGO 18 at 0101Z in USB w/ unk ground station ref WX conditions for St. Johns, NF, Canada. (CS)
11175: BEAK 31 calling MAINSAIL at 0207Z in USB, YL from another station answered very quickly. BEAK 31 req p/p to Diess AFB. YL possibly IDed herself as Santos. Unsure? (CS)
11175: Retro 11 flight (B-52Hs on Global Power mission): 0156 w/Ascension in pp w/USAFE CP (Ramstein) reporting they are entering EUCOM AOR as of 0200Z. Retro 11 will be landing at Minot AFB and Retro 12 will be landing at Barksdale AFB. (RP)
11175: Navy (1)50511 (VP-3A, CincNavForEur): 0455 w/Incirlik in pp w/DSN 370-8966 (Germany) regarding UC-35 crew. Then in pp w/DSN 781-5345 (Turkey) reporting that they have fixed the aircraft and arranging transportation for CinC upon arrival at 0930 local and briefing for CinC while driving to undisclosed location. (RP)
11175: Offutt wkg King 70 Voice USB 2123 Z (no reply) (EN)
11175: Main Sail wkg Offutt Voice USB 2128 Z (no reply) (EN)
11175: Offutt wkg Gunrunner Voice USB 2129 Z report (EN)
11175: Q70 wkg Offutt Voice USB 2134 Z Giving detail number (EN)
11175: Vader 02 wkg Offutt Voice USB 2138 Z Vader is C-130. Seeking phone patch (EN)
11175: Vader 02 wkg McCord Voice USB 2140 Z Phone patch to Fairchild re WX (EN)
11175: Vader wkg Ellsworth Voice USB 2143 Z needs gas (EN)
11175: Main Sail wkg Navy PJ Voice USB 2145 Z (no reply) (EN)
11175: Vader wkg Offutt Voice USB 2149 Z Phone to McCord re ETA. (EN)
11175: Offutt Voice USB 2202 Z EAM info (EN)
11175: REACH9019: wkg. MAINSAIL for radio check. "Andrews has you loud and clear." (RP3)
11181: 0354Z USB: SAM 204 with p/p via Elmendorf to Travis Metro for 0630Z arrival wx, then asks Elmendorf to guard 11.181 for duration of their flight. (CR)
11181: 0412Z USB: SAM 204 with p/p via Elmendorf to Travis CP advising of 0630Z arrival and Travis advises SAM flight to contact them on Uniform when 30 minutes out. (CR)
11202: 9MR RM Nvy Johor Baharu 2150 RTTY50/850 w/ID tape, 5LG msgs and area wx (ML)
11205: Architect: 2230 w/airfield color states. (RP)
11214: Sentry 42 (E-3B AWACS, Tinker AFB): 2133 w/Trenton Military in pp w/Tinker AFB Metro w/wx for 2345Z arrival. (RP)
11214: Thumper (E-3, 970th AWACS): 1924 w/Trenton Military in pp (in progress) w/Radar maintenance regarding unspecified software problems. (RP)
11220: Navy 49676: 1859 calling Andrews w/no response. (RP)
11232: CG 151: wkg. Trenton Military we are terminating guard and landing Goose Bay Approx 10 Min. (RP3)
11232: Halifax Military 1753 Z (LH)
11232: Trenton Military 2212 Z (LH)
11232: Trenton Military advising BENGAL 419 that they are on primary, secondary of 13.257 USB 1524Z (CR)
11232: (?) 2140 advises Trenton Military of 1730Z arrival at Trenton and SELCAL check (FEMC) USB 1524Z (CR)
11282: OPEC 76 requesting flight level 370 via San Francisco Radio USB 2201Z (CR)
11282: San Francisco Radio advising FEUD 75 to remain in formation with PETRO 13 until radar contact USB 2319Z (CR)
11282: RANGER 71 advising San Francisco Radio that they are in contact with Honolulu USB 2322Z (CR)
11244: McClellan with 28 character EAM message USB 2112Z (CR)
11247: Architect: 0139 w/VOLMET. (RP)
11263: UNID 2 OMs in EE with discussion about fishing, water temps divers and weather with much swearing (commercial fishing vessels?) LSB 0150Z (CR)
11282: WOODEN91 (KC-10) with position report to San Francisco radio USB 0132Z (CR)
11282: Northwest 945 requesting clearance to flight level 390 via San Francisco Radio USB 0052 (CR)
11396: UNID: wkg aircraft in USB 2137 Frequency advice (EN)
11396: Multiple commercial aircraft working New York (RP3)
12489: UGSL TH Gorno-Altajsk 2201 ARQ tfc to Vladivostok (ML)
12491: UCCZ TH Krasnopol'e 0913 ARQ crew msgs and log off to Kholmsk (ML)
12510: UBJY RTMS Novokazalinsk 0919 ARQ tfc to Nakhodka (ML)
12514: UIKR TBS Neftegaz-70 2213 ARQ msgs to unkwn, UIKR log on/off (ML)
12526: UNID: BATM Borodino 0650 ARQ Greetings TG's to Vladivostock (RH2)
12570: UHAI TR Nevelskiy 1031 ARQ part msg and UHAI log off to unkwn (ML)
12690.7: RFVIE: FN Le Port 0544RTTY 75/850 "ZUI TESTING FUX" etc (RH2)
12730: NMC: USCG San Francisco1545 fax 120/576 Splendid clear chart! Could read the small print! (RH2)
12799.5: UFZ Vladivostok rdo 0030 FEC w/RY C C DE UFZ then to ships' tfc (ML)
12832: UNID: CIS Navy 1755 36-50 50/240 (RH2)
13200: Hawk 92 (B-1B, 9th/29th BS, Dyess AFB, TX): 1637 w/Offutt in pp w/Dyess Metro DSN 461-4164 asking for wx at 1645–1845Z. Hawk 92 coming back w/IFE. (RP)
13244: Reach JK7 (ID as C-141 # 50229, March ARB): 0259 w/Ascension in pp to DSN 947-4665 March ARB CP reporting they are enroute from Colombia to Biggs AAF. Need March CP to contact Biggs AAF to let them know they are coming in. Will be back at March ARB at 0000 local time. (RP)
13257: Trenton Military 1756 Z (LH)
13257: Razor wkg Eatmon 19 Voice USB 1635 11Jan01 No traffic also phone patch (EN)

13264: Shannon: 1306 USB w/VOLMET (RP)
13339: Dispatch (FF): 2148 w/flight 547 (FF) w/WX for Toronto and flight routing. Probably Air Transat LDOC. FF was Canadian accent. (RP)
13354: TWA 1 with position report to San Francisco radio USB 0140Z (CR)
13354: San Francisco Radio with clearance for TWA 3 to climb to 380 USB 0035Z (CR)
13443: UNID Ale (?) The sound is continuous here for much of the day (RH2)
13444.2: RFQP?: FF Djibouti? 1624 ARQ-E3 100/400 Odd 5LG — each group rpt once, twice or three times! (RH2)
13552: UNID: FAPSI 1540 Crowd36 (RH2)
13846.7: RFVI: FF Le Port 1629 ARQ-E3 100/400 Idling (RH2)
13977: UNID: Swiss Diplo? 1700 ARQ pulsing away forever! (RH2)
14396.5: FEMA Unit WGY9900 receiving reports from various units concerning Earthquake in Seattle USB 1950Z Advising that people are stuck at the top of the Space Needle (CB)
14396.5: FEMA Unit communicating to WGY9900 advising no reports from Tacoma, UnIDed airport closed and evacuated, USB 1955 Z 17,000 people without power, and telephone communications appear to be overloaded and are down. (CB)
14411: UNID: CIS Navy 1759 36-50 50/240 (RH2)
14470: NNN0AAR (unk Navy MARS) w/ NNN0CAA (unk) w/several p/p to mainland USA at 0120Z in USB. Exchanged Thank You's and placed one last call. Valentine's Day morale booster!!(CS) (EX-RM3 USN)
14481.5: RFFIC: Marine Dipermil Paris 1555 ARQ-E3 48/400 Admin Msg\FF to AIG2133 and RFFICU/640942 MNAVFCO Paris on TJF cid (RH2)
14686: Atlas (DEA contract facility, Iowa): 1604 USB w/Flint 111 (DEA aircraft) passing wx for an undisclosed location; Alexandria, Louisiana; and Flint Base. Atlas says that the closest location to Flint Base for wx was Dallas-Fort Worth Airport. (RP)
14731.7: FN Brest 1605 ARQ-E3 192/400 FN Brest with Naval Nx\FF via RFVI relay (RH2)
14867.7: UNID: MFA Cairo 1627 ARQ Msg\AA to unk (RH2)
14926.7: RFTJ: FF Dakar 0653 ARQ-E3 192/400 CdeV on TJD cid oo RFTJD (FF Libreville) (RH2)
14982.7: RBV76: Tashkent Meteo 1554 fax 90/352 Good chart! Note unusual drum speed and IOC! (RH2)
14983: RBV76: Tashkent Meteo 1535 fax 60/576 Nice chart — very clear! (RH2)
15016: Navy LU 010 (P-3C, VP-64 NRB Willow Grove): 2148 w/Offutt in pp w/55th Ops regarding arrangements for their arrival at NRB Ft Worth at 0200Z. LU 010 will RON and depart Ft Worth at 1900Z tomorrow. (RP)
15016: Andrews with 28 character EAM message USB 2131Z (CR)
15016: Elmendorf with 28 character EAM message USB 2241Z (CR)
15016: Offutt with 28 character EAM message USB 2302Z (CR)
16023: UNID: CIS Mil 1535 81–81 81/400 (RH2)
16027: BAF: Beijing Meteo 0818 FAX 120/576 Wx chart just readable! BAF8 Tx on 14367.4 kHz unreadable! (RH2)
16141.7: UNID: FAPSI 1628 RTTY75/500 5LG — no Link seen (RH2)
16152: UNID: FAPSI 1623RTTY75/500 5LG on Link 60069 (RH2)
16152: UNID: FAPSI 1547RTTY75/500 5LG on Link 60069 (RH2)
16200: UNID: CIS Navy 1800 36-50 36/250 Idling (RH2)
16223.7: UNID: MFA Cairo 1744 ARQ Tfc\AA to unk (RH2)
16223.7: UNID: MFA Cairo 1614 ARQ Msg\AA to 8 Embassies (RH2)
16223.7: kdakrfr: MFA Cairo 1609 ARQ Msg\AA to Embassies (RH2)
16232: UNID: FAPSI 1614 Crowd36 (RH2)
16286.4: UNID: FAPSI 1806 Crowd36 (RH2)
16316: UNID: Polemb Kinshasa 0905 Pol-ARQ 100/240 ID and Idling. Not heard this one for a long time! (RH2)
16386.7: UNID: Paki Diplo?Loc 1620 ARQ 5LG to unk (RH2)
16386.7: UNID: MFA Islamabad 1740 ARQ Callsign KMEU repeated many times! (RH2)
16606: UNID: UK Mil Cyprus 0541 MFSK 195.3/300 (RH2)

Here's a look at our certificate of appreciation. Note that a URR logo will be embossed in the gold seal to make it official.

16689.5: UGDR M/V Lazurit 0912 ARQ ship tfc to unkwn (ML)
16713: UGWZ TK Ust'-Kan 2300 ARQ w/UGWZ log on and msg to Vladivostok (ML)
16718: UEHP RTMKS Feniks 2329 ARQ crew msgs to Vladivostok (ML)
16778: UGPX M/V Kapitan Sosenkov 2250 ARQ w/PAQE string as selcal and tfc to Khabarovsk, UGPX log on/off (ML)
16906: KHF Globe Wireless Guam 0100 CW ID and ARQ tuning (ML)

16914.7: RFVIE: FN Le Port 1121RTTY 75/850 Test Tape (RH2)
16951.3: RFTJE: FN Dakar 1119 RTTY 75/850 Test tape (RH2)
16976: LSD836: Globe Wireless Buenos Aires 1545 ARQ ID Marker (RH2)
16976: UNID: CIS Mil/Rail? 0529 81-81 81/180 Bang on top of LSD836!!! (RH2)
16987: UNID: FAPSI 0916 Crowd36 40 (RH2)
17146.5: CBV: Valparaiso R 1130 fax 120/576 Poor chart — only just readable! (RH2)
17215.7: LOR: PNR Buenos Aires 1710 RTTY 75/170 5LG after GEN010 (RH2)
17224: UNID: UK Mil Cyprus? 0648 MFSK 195.3/300 (RH2)
17314: CAMSPAC Pt. Reyes with automated voice maritime safety broadcast (WX) USB 2231Z (CR)
17422.7: RFFVAEA: FF Dhahran 1540 ARQ-E3 200/400 Pages of 5LG (RH2)
17423.7: kdakrfr: MFA Cairo 1541 ARQ clg QQTQ (Belgrade) (RH2)
17430: 9VF209: Kyodo Singapore 1530 fax 120/576 JJNewspaper (RH2)
17460: UNID: CIS Navy 1752 36-50 50/240 (RH2)
18018: Architect (RAF Flight Watch Center): 1300 w/airfield status report. (RP)
18018: Architect (RAF Flight Watch Center): 1601 USB w/airfield status report. (RP)
18183.4: 7RQ20: MAE Algiers 1556 Coq8 26.67 Nx\FF to "All Stations!" (RH2)
18308.5: RFGW: MFA Paris 1705 FEC-A 192/400 Pages of 5LG and the usual FF Diplo waffle code! (RH2)
18356.7: MFA Cairo 1340 ARQ 5LG msg to Algiers (ML)
18552: V5G: MAE Bucharest 1300 Rou-Fec 164.5/400 Crypto - followed by Radiograma\RUM en clair (RH2)
18552: V5G: MAE Mucharest 1200 Rou-Fec 164.5/400 Nice clear Circularas — for a change! (RH2)
18553.7: RFTJ: FF Dakar 1044 ARQ-E3 192/400 Idling (RH2)
18789: UNID: UK Mil Cyprus? 1800 MFSK 195.3/300 Duplex on 13565 kHz but much weaker sigs! (RH2)
19032: UNID: CIS Mil/Rail? 1624 81-81 81/500 (RH2)
19036.5: UNID: Ambalg Dakar 1600 Coq8 26.67Msg\FF to MAE Algiers (RH2)
19036.5: UNID: Ambalg Niamey 1545 Coq8 26.67 Msg\FF to MAE Algiers (RH2)
19052 8WB7 Indian HICOM Victoria SEY 0940RTTY50/400 clg 8WD3 New Delhi, no tfc, QSX was 19055 (ML)
19056.7: Egyptian Emb Jakarta (JG QKWFHK) ATU-80 tfc for Cairo (ML)
19076.5: UNID: FAPSI 1620 Crowd36 40 Unable decode (RH2)
19242: UNID: Unid 1635 Pactor 200/200 V long technical Tfc\FF and GG re "Burkitts Lymphona" and AIDS. Prob an African location. Could be Medecins Sans Frontieres or WHO (RH2)
20035.5: HGX21: MFA Budapest 1600Dup-ARQ 125/170 V Strong pulses but unable decode with M7000; other decoders down with PC! (RH2)
20086.7: EGY Emb, Kinshasa 0920 ARQ 5LG to Cairo (RH2)
21865: UNID: MFA Warsaw 1225 Pol-ARQ 100/240 Claris/Consular Tfc\Pol — prob to Brasilia Emb! (RH2)
21925: Northwest 11 with SELCAL check via San Francisco Radio USB 0108Z (CR)
22315.5: UIBM TH Gregorij Aleksandrov 0944 ARQ log on and msg to unkwn (ML)
22380.5: UIW: Kaliningrad R 1618 ARQ T'gram to ship UROR MarsX (RH2)
22407.5: UAT: Moscow R. 1050 ARQ Msg\RR for Ship c/s UFLA (RH2)
22582.7: RFVIE: FN Le Port 1056RTTY75/850 "ZUI TESTING FUX" etc (RH2)
22596.3: UNID: Unid 1101RTTY100/850 Crypto — genuine Baudot! Close to UFN/Novorossissk! (RH2)
22864: UNID: CIS Navy 1757 36-50 50/240 (RH2)
22912.7: RFHIJCR: FN Ship *Jacques Cartier* 0931 ARQ-E3 100/400 Admin Msg\FF to RFVILGD (FN Ship La Grandiere) info RFB — PLN/Champlain cc RFHJDMT/Dumont (DTRE Antarctic Base at Dumont D'Urville?) All on HII cid (RH2)
23190: RFGW: MFA Paris 0745 fec-a 192/400 5-6LG mixed with all that CIE/CGT/CIC stuff — a real mess! (RH2)
23190: P6Z: MFA Paris 1210 FEC-A 192/400 "Synopsis ciu Point de Presse" followed by more waffle but no synopsis! (RH2)
23365.5: HGX21: MFA Budapest 1623 Dup-ARQ 125/170 Looked like Nx\HNG en clair (RH2)
24370: P6Z: MFA Paris 1616 FEC-A 192/400 clg L9€/Buenos Aires (RH2)
24370: P6Z: MFA Paris 0855 FEC-A 192/400 5-6LG to N2G (San'a Emb) (RH2)
26241.7: RFVI: FF Le Port 0755 ARQ-E3 100/400 Idling (RH2)
26441.7: RFGW: MFA Paris 1704 ARQ-E3 100/400 Pages of 5LG (RH2)
26441.7: RFFMVB: CENV Toulon 0803 ARQ-E3 100/400 Msg\FF to RFFVIC/Comar La Reunion info RFVIT/Comsup/St Denis (RH2)
26441.7: RFFAAC: Distransit Paris Vincennes 1604 ARQ-E3 100/400 Msg\FF to Zen/Dircomis Lyon rr RFVIT and RFVITX (RH2)

This month's contributors are:

CB — Christian Bryant Northwest Georgia
CR — Craig Rose
CS — Chris Steele
DS2 — Dwight Simpson, Wisconsin
NK — Nathan Kelderman, Charleston SC
EN — Ed Newberry
LH — Lenroy Hogan Bronx, NY
ML — Murray Lehman Australia
NK — Nathan Kelderman, Charleston, SC
PP — Patrice Private France
RH2 — Robert Hall Cape Town, South Africa
RP — Ron (Middle Atlantic Milcom) Maryland
RP3 — Ron Parr Brockville, Ontario, Canada

Thank you all very much. Don't forget the new "suitable for framing" certificate of appreciation for any logs that you send in. Even one log will get you one. If you are still waiting for yours, be patient. These things are very labor intensive to put together because they are quality items. It's my way of saying "thank you" to each of you who helps to make the column a success.

Some of the first "Certificates of Appreciation" have gone out to those contributors who have provided an address. Remember if you submit an address it will not be used for anything else other than the certificate, so don't worry — no salespeople will call.

Next month I will get back on schedule and bring you two things. First, the information on monitoring hotspots around the world, and the techniques used to keep on top of fast-breaking events. Second, the first of many reviews of software packages that you can use to make your monitoring tasks easier. And logs — lots of them, as people really are starting to send them in now in a good flow.

By the way, this month marks the one-year point for this new column. Thank you all for helping to make this project a success. I could not have done it without the help, assistance, and encouragement of you — the readers. I look forward to my second year of scrambling to meet deadlines, praying for logs, and scratching my head for new topics. (Don't get me wrong, I love every minute of it.)

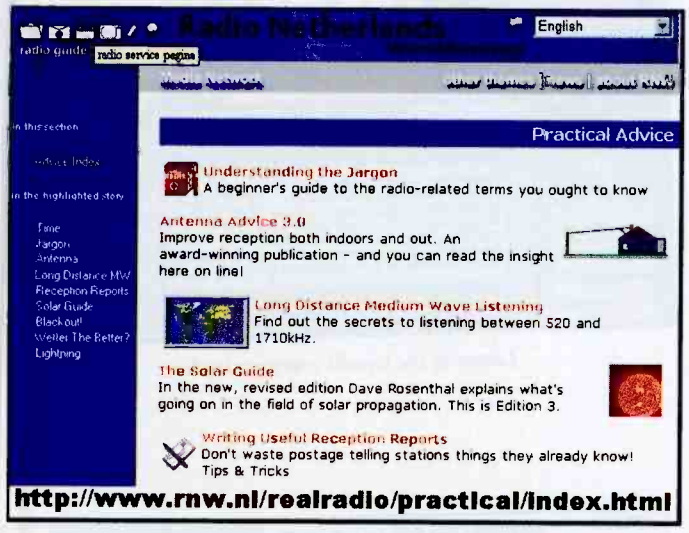
So until next time, may all of your monitoring be rewarding, enjoyable, and most importantly — fun! ■

radio & the internet

by Eric Force, <eric@dobe.com>

our cyber sleuth checks out online resources and keeps you interactive!

Resource Of The Month: Radio Netherland's Practical Advice Page



Radio Netherland's Practical Advice page is one of those resources you'll want to bookmark and consult often! Frequently updated, you'll find a wealth of information and tips from the experts. Current subjects include: Time issues, Radio-related terms, Mediumwave DXing, Solar propagation, Writing useful Reception Reports, Lightening, Reception blackouts and Weather. Visit

http://www.rnw. nl/realradio/practical/index.html.

A tip of the old Sleuth's hat to Radio Netherlands for this outstanding resource. Be sure to bookmark the page since the location of this resource is not readily apparent when visiting the main page of their site. ■

Other Outstanding Resources:

Remember: ALL online resources and contacts appearing monthly in Pop'Comm are available at the Quick Links site: http://www.dobe.com/ql/

HF-FAX & SSTV

HF-FAX & SSTV
by Marius Rensen

http://www.hffax.de/index.html

All about Facsimile, Wefax and Slow Scan TV (SSTV)

RADIO MODIFICATIONS

www.mods.dk
by Erik Hansen, OZ2AEP

http://www.mods.dk/

Large site covering modifications for ham radios and it's FREE!

SCANNING General

Scanner/Radar Detector Laws
by Todd L. Sherman/KB4MHH

http://www.afn.org/~afn09444/scanlaws/

Excellent guide to MOBILE scanner and Radar Detector Laws in the U.S.

HOMEBREW

Alex's Electronic Test Bench
by Alex X

http://www.iserv.net/~alexx/

An Online Guide to Useful Electrical and Electronic Information

EARLY RADIO

United States Early Radio History
by Thomas H. White

http://www.ipass.net/~whitetho/

Articles and extracts concentrating on the years 1897 to 1927

CRYSTAL RADIO

Crystal Radio Resources
by Owen Pool, WB4LFH

http://www.thebest.net/wuggy/

The world's most comprehensive Crystal Radio Resource!

AMATEUR RADIO

The AM Window
by WB3HUZ Radio

http://www.thebizlink.com/am/

The AMers Hangout on the Web - A resource for AMers Worldwide

TRUNKED RADIO

The Trunked Radio Information Homepage by Lindsay C. Blanton III

http://www.trunkedradio.net/

Everything you wanted to know about Trunked Radio - and more!

BCL CONTEST 2001

3200 kHz to 25820 kHz in AM
by Frank Parisot

http://www.chez.com/swlcontest/

Open to SWL, BCL Worldwide — 1 June thru 30 September 2001

iWAVES

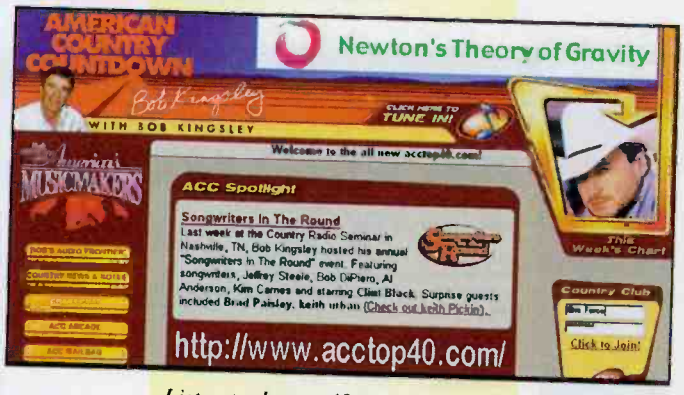
your guide to global internet media

BY ERIC FORCE <eric@dobe.com>

Country Music At Your Command!

Welcome to the second "iWaves" column. Last month we talked about Media Players, how they work, and where to get them. This month let's get right down to the nitty-gritty of what's on the Internet for your listening and viewing pleasure!

When the subject of country radio comes up, the name Bob Kingsley invariably gets mentioned as being the most "listened-to" personality in America. His vision for the show and the outstanding staff he put together has paid off with unprecedented success and longevity in a field noted for its transience. In fact, there aren't very many places left on Earth where you can't hear Kingsley's voice counting down the top-40 country hits of the week. American Country Countdown with Bob Kingsley now reaches millions of listeners on over 1,000 radio stations worldwide, and is the number one national music show in any format. Now you can enjoy American Country Countdown online and on demand. The current countdown plus the previous week's show are available. If you like Country this is the site for you! Visit http://www.acctop40.com/.



Listen to the top-40 country singles.

International Broadcasting — The BBC

Since it was first formed as a company in 1922, five years before it received its first Royal Charter and became the British Broadcasting Corporation, the BBC has been a world leader in program production. It has pioneered communications in radio, television, and online technologies. As the UK's most popular website, BBC Online reveals some of the BBC's rich heritage including the great programs of the past, the big themes of the present, and the innovating spirit in which we enter the future. Extremely rich in both video and audio content, you'll get lost in time as you explore BBC's quality online offerings — including the same broadcasts you routinely listen to via shortwave. Don't miss it! Visit http://www.bbc.co.uk/.

The UK's most popular website — it's awesome!

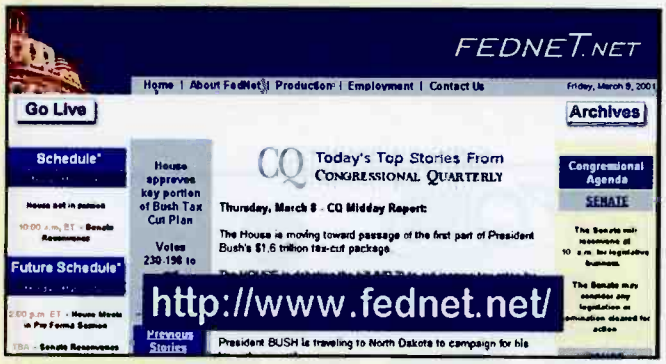
Channel Africa!

Sporting access via Shortwave, satellite, and Internet radio, CHANNEL AFRICA is a unique, all-African news and information radio broadcasting service. Gathering news and information from the entire African continent and the world beyond, this resource is dedicated to the promotion of African development through the transfer of knowledge. Channel Africa's journalists and network of African correspondents set it apart from other international broadcasters. From my perspective, Channel Africa appears to be an excellent source of reliable and interesting information about Africa. Well worth a visit to http://www.channelafrica.org/english/.

Movie Trailers — NetFlix.Com

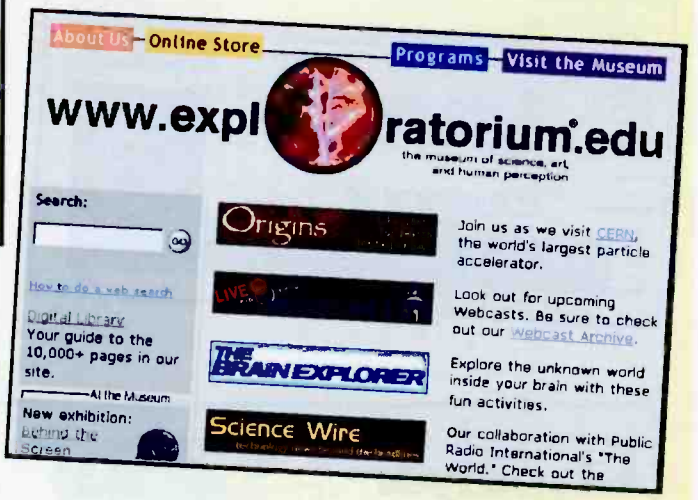
NetFlix is the online rental service I use to obtain my DVDs. I'm highlighting it here, not because of their service (which I

Movie trailers from a database of over ten thousand titles!



You'll spend hours at this outstanding resource!

See and hear our government in action.



think is the best deal out there for DVD rentals) but because they have such a comprehensive database of movie trailers and user reviews. While they don't have a trailer for ALL movies, I don't know of an online resource that has more. Given an inventory of over ten thousand DVDs, you'll stand an excellent chance of finding a trailer for most movies of interest. Check 'em out at http://www.netflix.com/.

Uncle Sam's Audio And Video

If you have an interest in U.S. government, FedNet is for you. FedNet provides new and emerging industries with audio and video programming and data services focusing on government issues of national, state, and local interests. Base programming includes live coverage of the floor of the United States Senate

All about Africa from those on the scene.

From NASA's Ames Research Center, it's an educational goldmine.

Get your player(s) at this URL..

and House of Representatives along with gavel-to-gavel coverage of key Congressional Hearings. Coverage provided is unedited and without commentary, providing a non-filtered view of our government at work. In addition to current issues, archives dating back to January 2000 are also available. This is an outstanding resource! Visit http://www.fednet.net/.

Science And Art

Housed within the walls of San Francisco's Palace of Fine Arts, the Exploratorium is a collage of over 650 science, art, and human perception exhibits. Exploratorium is a leader in the movement to promote the museum as an educational center. Noted physicist and educator Dr. Frank Oppenheimer founded this unique museum in1969. The Exploratorium's mission is to create a culture of learning through innovative environments, programs, and tools that help people to nurture their curiosity about the world around them. To that end, the "online" museum hosts over 10,000 pages in its impressive digital library and web cast archives. Another don't miss resource! Visit http://www.exploratorium.edu/.

NASA Quest Streaming Audio And Video

Located at NASA's Ames Research Center in Mt. View, California, NASA Quest produces live streaming video programs with open Chat Rooms for live interaction with scientists and experts participating in the programs. Live events are delivered via streaming media to the Web. Live interaction with the Scientists and other participants during the events is made possible through an open posting room where your questions are answered in real time during the broadcast. Many events contain science and content intended for K-12 audiences while other events are of interest to the viewing public. All events are live and intended to enrich and inspire the viewer. All programs are archived for those who have not had the opportunity to attend the live event. An excellent resource — be sure to visit http://quest.arc.nasa.gov/ltc/schedule.html.

Need Media Players?

To see and hear stations around the world is easy, but you need to download a media player — if your computer doesn't already have one. Here's the list once again. For more details, check out last month's "iWaves" column.

REALPLAYER 8 BASIC® — http://www.real.com

WINDOWS MEDIA PLAYER® — http://www.microsoft.com/downloads/

APPLE'S QUICK TIME PLAYER — http://www.apple.com/quicktime/download/

WINAMP® — http://www.winamp.com/

We've run out of space for this month so we'll head back to the barn. If you have a favorite streaming media resource be sure to let me know about it. Chances are that other *Pop'Comm* readers will be interested too. Also, remember that all online resources appearing in the pages of *Pop'Comm* are available for easy access at the Quick Links site: http://www.dobe.com/ql/. Until next month, happy listening and viewing. ■

readers' market

Advertising Rates: Non-commercial ads are 30 cents per word, including abbreviations and addresses; minimum charge $6.00 per issue. Ads from firms offering commercial products or services are $1.00 per word; minimum charge $20.00 per issue. Boldface words are $1.20 each (specify which words). Leading key words set in all caps at no additional charge. All ads *must be prepaid in full* at time of insertion; a 5% discount is offered for prepaid 6 time insertions. All ads must be typewritten double spaced.

Approval: All ad copy is subject to Publisher's approval and may be modified to eliminate references to equipment and practices which are either illegal or otherwise not within the spirit or coverage scope of the magazine.

Closing Date: The 10th day in the third month preceding date of publication. Because the advertisers and equipment contained in Readers' Market have not been investigated, the Publisher of *Popular Communications* cannot vouch for the merchandise listed therein. Direct all correspondence and ad copy to: Attention: Alycia Nicholsen, PC Readers' Market, 25 Newbridge Rd., Hicksville, NY 11801.

CB MODIFICATION SECRETS, big new 200-page guide by **Kevin Ross, author of "CB Radio Hacker's Guide."** More great easy-to-do AM/SSB CB equipment upgrades and enhancements applicable to Cobra, Realistic, Uniden, President, etc. Freq. expansion, VFO, clarifier unlock, VOX, Roger Beep, anti-theft device, receive signal preamp, much more. Only $21.95, plus $5 s/h ($6 to Canada) from CRB Research Books, P.O. Box 56, Commack, NY 11725. NY residents add $2.22 tax. VISA/MC orders call: (631) 543-9169.

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clandestine communiqué

tuning in to anti-government radio

by Gerry L. Dexter

Listening For New Anti-Iraq Clandestine

The National Radio of the Sahara Arab Democratic Republic is currently scheduled from 0600 to 0700 and 2000–0000 in the area around **7450 to 7460**. They're looking for reception reports, addressed to Assocciation de Soutien a Un Referendum Libre et Regulier au Sahara Occidentai, CP 2229, CH-2800 Delemont 2, Switzerland. This one is fairly well heard at times throughout the east and midwest, with programming in Arabic and Spanish.

Robert Brossel in Wisconsin heard this one at 2140 to past 2205 on **7357**, some 100 kHz lower than their intended operating frequency. The program was all Arabic talk and singing.

The Falun Dafa group sect, religion, political party however you see it, is more and more in the news, thanks to Beijing's ever-increasing hostility to the group's continuing growth within China and without. **Falun Dafa Radio**, which may or may not be the official voice of the movement is being fairly well heard during its 2200 (actually a few minutes prior) transmission, which runs to 2300. Thanks to Chinese jamming efforts you'll probably have to sample several frequencies in order to find it, as they tend to use **6300, 6305, 6310, 6315, 6320, or 6325** without any pattern. The broadcast is partly in Chinese and partly in English. If you have E-mail you can send a report to editor@faluninfo.net. Or you can write to them at the Falun Dafa Information Center, 331 West 57th St., Suite 409, New York, NY 10019.

The station of the Revolutionary Armed Forces of Colombia (FARC) is being noted again. **La Voz de la Resistencia** has been appearing on **6234** or slightly under, at around 1100.and also around 2130 for Spanish language broadcasts which last an hour or so. Actually the sign-on and sign-off times vary by a fair amount, so the length may depend on how much they have to say at the time!

The endlessly fascinating and rarely noted **New Star Broadcasting Station** was recently noted on **8300** around 1430 with an announcement in Chinese, music and then groups of numbers. **15288** has also been noted recently, though at a much earlier hour. Though technically New Star might be counted as a "numbers" station and therefore a utility rather than a broadcaster, most enthusiasts include it in either group, thanks to the inclusion of music in the transmission. Convincing arguments have been made over the years that this station is on the mainland and broadcasts to Taiwan. Equally persuasive arguments have been made supporting the opposite.

The Voice of Ethiopian Medhin is one of several clandestines beaming to Ethiopia.

A new Kurdish clandestine aimed at Iraq is **Radio Bopeshawa**, which speaks on behalf of the Worker-Communist Party of Iraq. The schedule is Mondays, Wednesdays, and Fridays in Arabic, Thursdays in Kurdish from 1500–1600 on **9450**. Previously, this was the Voice of the Workers Communist Party of Iraq, which has been off the air since last July.

The Voice of Iranian Kurdistan is scheduled in Farsi on **3985** from 0225 to 0503 and 1425 to 1532. Any chance for North American listeners will be during the 0225 broadcast.

The Voice of Iraqi Kurdistan operates in Arabic and Kurdish from 0200–0600 on **4085** and 7375 and 1500 to 2000 on **4085** and **5860**. Sign-on and sign-off times are variable.

Voice of the People of Kurdistan in Kurdish and Arabic, is on the air from 0310 to 0717 and 1240 to 2110 using **4061** and **6995**. The latter has been heard by a number of North American-based monitors over the past few months. Richard D'Angelo in Pennsylvania had this one from 0327 with and ID at 0330 and mention of a Website address, talks, and many mentions of Kurdistan.

Radio Iran of Tomorrow is on from 1800–1830 on **5830** (via Dushanbe) and 1830–1900 on **7120** via Moldova. **Radio Voice of Iran**, via Moldova, broadcasts from 1630–1830 on **7480**. **Radio Internacional**, also via Moldova, is active on **7520** from 1730 to 1815. The broadcasts of all three of these are all or mostly in Farsi.

Pete Becker in Washington state has heard **Radio Free Chechnya** on a number of frequencies: **7330** from Kharbarovsk at 1258 (though listed as Radio Tikhy Okean), **7335** under CHR at 0545, **9470** at 0755 and **15605** at 0748, all in RR. The Russian government runs the station.

The Democratic Voice of Burma noted on **5945** via Petropavlovsk at 1332 and 1306 via Vladivostok, both in presumed Burmese, both with strong signals, says Pete Becker.

Becker has also heard **Echo of Hope**, beamed to North Korea from the South at 1602, heavily jammed.

North Korea's Voice of National Salvation, beamed to South Korea, noted on **4120** at 1246 by Mike Miller in Washington state. Becker heard it there at 1119 and also on **3480** with heavy jamming at 1305.

Of **Radio Free Asia's** many frequencies Becker has found them in presumed Tibetan at 1308 on **7470**. Stewart MacKenzie in California has them on **11535**, via Russia, in an unidentified language at 0107. Brossell found them in Chinese on **11945** at 1635 announcing their Website as www.rfa.org.

That does it for this time. Please keep us advised of any clandestine station logs you manage to take, as well as any QSLs you receive. We also need schedules and background information on the stations and organizations which support and run them. Many thanks for your continued interest and support!

Until next month, good hunting! ■

advertisers' index

loose connection

radio communications humor

by Bill Price, N3AVY

Why You Don't Hear Bill On The Bands Much Anymore

I once thought that when I left the Coast Guard, I'd have to get a job at a coastal radio station, operating ship-to-shore CW so that I could continue using Morse code in my daily life. When I did leave, sending phrases like "Jackass," and "'J'ever hear of TURN SIGNALS?" with my car horn couldn't quench my Morse code habit. I'd had four years of dits and dahs, then poof! I walked away from it all dragging my seabag behind me. I had CW withdrawal. My car didn't even have a brass key on the dash!

A trip to the LaughinYet store on Philadelphia's Roosevelt Blvd. took care of that. An "imported" bug-semi-automatic "speed-key" cost $13.95. It had a heavy base and sat nicely on my console, between the bucket seats. I wired a small oscillator near it, and a toggle switch to allow me to send code on my car-horn when the mood struck.

"You'll burn out your horn relay in a week," my dad told me. Hah! Wrong again! It only took two days.

I soon realized that people who heard me sending 15 wpm on a car horn only thought I was a horn-happy moron — no one knew *what I* was sending, and I replaced three horn relays. A ham license might help get it out of my system.

To cut to the chase — it never did. After handling search and rescue traffic, and working the "big tonnage" ships (even the Queen Mary, before she became a hotel) I couldn't adjust to roaming aimlessly around a half-dozen bands on any frequency that was handy. For four years, I had monitored 500Kc, answered calls and shifted to 466, while the merchant ships used 468. A merchie would send my call sign one time (usually 4YB, 4YC, 4YD, or 4YE, depending on location) and I'd answer with "DE," ("this is"). He'd send his call sign once and I'd send "UP." He sent one dit, then I sent one, and we shifted to our respective working frequencies. I sent "QRV" and he sent his message. I acknowledged with "R TU SU*" and dit dididit dit, to which he responded "dit-dit." And we both moved back to the calling frequency.

The ham bands were nothing at all like this — particularly the novice band, where I entered as WN3SKM and became so disillusioned I let that license expire. A couple years later, still missing my daily ration of dits and dahs, I got yet another novice ticket — this time KA3BRH. I tried diligently to become a ham. I chatted about antennas, about the weather, and about rigs. It just wasn't the same. I had no traffic list. I had no messages to relay to the AMVER center — no weather observations for NMH. There had to be more.

I signed onto a traffic handling net. Nice tight procedure, skillful operators, and the chance of having actual messages to send, receive, or relay. I checked in faithfully, every weeknight. Zip. Nada. Finally after four weeks of QRU, there was a message for me to handle. I copied it eagerly, verified all the numerals like I'd done with the merchies, and there I had it: a real message.

The content was no less exciting than the message Ralphie decoded with his secret decoder ring, when Little Orphan Annie told the kids, "Be sure to drink your Ovaltine™." And the only way I had to relay it was by calling the person on the telephone and reading it to him. Thanks, but no thanks.

There's no fun for me in working states or countries, using amplifiers, beams, satellite setups, packet, repeaters — nothing. I miss operating to this very day, yet I can find no joy in Hamville. Best I can do is show up every few years at the Hazleton (PA) club's field day site and work some CW. Banging out as many contacts as I can for an hour or so is almost like working the 0000Z (midnight in England) OBS schedule and being the object of a commercial "pile-up." There is good food and camaraderie, though.

I hated working RTTY (radio teletype), so when this Internet came into being, I figured I'd have no interest in it because it was nothing but typing. But wait, I could find specific people with specific interests, and not have to chat about what kind of computer I'm using, or how fast my modem is. It didn't matter that they weren't "online" at the time — the message would wait for them. No, I still haven't found a way to use my trusty Vibroplex "bug" with the Internet, but I'm thinking about a way.

My most loyal friend among friends, Norm, (who you've read about on these pages) kept me active when I lived near him. He's always got a new rig, or a new state or country he's worked, or some new antenna design to try out. Thinking back, it took Norm to get me out in the fresh air, lugging tower sections, directing a volunteer "tower crew" while wielding a chainsaw and wearing a hardhat. Lugging his (really!) 735 pound "Eisenhower" transmitter from his pulpy Chevy wagon to his tiny apartment, and sneaking into the apartment's "attic" to install the world's first indoor mounted Cushcraft R-5 antenna while on a lunch-break from said factory. I think that working with Norm was my "ham experience." Without him, I'd have never become involved with every whacked-out idea — from restoring an old diesel bus to operating "AM" with the "Eisenhower" transmitter for the benefit of all his neighbors. For two years, Norm and I ate lunch together, alternating between "cheap Chinese" and Ramen Soup with PB&J at his apartment, where we'd walk his faithful spaniel, Chump (and slip him half a sandwich now and then).

Norm lives far away now, but still manages to surprise me (and the Mrs.) every so often, dropping by with Chump. Norm is doing ok, but Chump is winding down. It's his heart, Norm tells me — even as big as it is, responsible for all those years of tail wagging — it's just wearing out. At least he's had a chance to be "immortalized" in *Pop'Comm* before he becomes a silent paw. Woof, old buddy. ■

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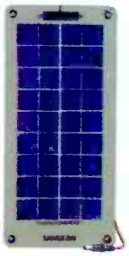

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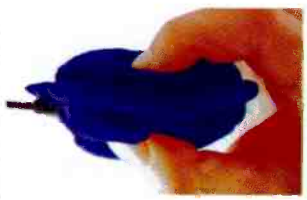

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