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This month’s cover: Public Safety Officer Randy Roddy of the U.S. Tennessee Valley Authority talks with headquarters on federal frequencies from the Norris Dam site at Norris, Tenn. The dam is the first in the TVA sites built in 1933-1935. Photo by Larry Mulvehill, WP2ZP1

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THOUGHTWAVES
AN EDITORIAL

We’ve Been Quite Busy

POP’COMM’s writers and editors have been quite busy over the past few months. Working on a few projects we think you’d be interested in. It’s all in our quest to bring you all the information you need to stay in touch with the radio hobby.

In a few speaking engagements I’ve had since becoming the editor of POP’COMM, the one thing I have been able to stress to my audiences is that POP’COMM is such a well-rounded magazine; that is, we cover just about every aspect of the radio hobby. There’s scanning and shortwave, perhaps our top two facets, as well as CB, ham, pirate broadcasting, AM-FM listening, satellite tuning, radio nostalgia, cellular and personal communications, and so much more. In fact, if you look close enough, you’ll even find things like lowowers (below 500 kHz). We’ve got quite the mix.

We don’t have room in the monthly magazine to include all the information we’d like to share with our readers. However, one thing that we have been able to do successfully over the past years is put together an annual guide that is check full of information to help the radio hobbyist even more. The annual guide helps us present information that you can use at your listening post or shack for the coming year.

The 1996 Popular Communications Communications Guide will hit the newsstands on Nov. 21. My friend and associate, Harold Ort, N2RL, once again has assembled an impressive lineup for the annual guide. I’d love to tell you all the articles we have planned for this great guide, but the final touches still are being put on the project as I write this column. But from what Harold tells me, you’ll really like what he and the rest of our writers have been working on this past summer and fall. As usual, there will be plenty of articles on shortwave and scanning, with some articles on other topics as well.

Harold also has assembled a very inclusive listing of products that our readers can peruse. These listings hopefully allow our readers to get a good fix on the features of various radios while you are considering purchases. In fact, if you are considering buying a new shortwave receiver or scanner, or other types of gear for your shack, you should check out the 1996 Popular Communications Communications Guide first and compare the specs on all the rigs in the category you are considering.

CB First, Though

While the annual guide has been in production, Harold also has been assembling something new for POP’COMM: our first-ever Popular Communications CB Buyer’s Guide. Yes, we know many of our readers also are CBers and there has been a surging interest in CB radios in the past year or two. For those of us who were CBers back in the 1970s, it’s almost deja vu. When CB became ultra-popular back in the mid-1970s, it seemed everyone had a CB rig under the dash. Even Betty Ford (wife of Gerald Ford) was on the air with a CB call sign from the FCC! And I know Tom Knetel has quite the file of photos of Hollywood celebrities all posing with CB microphones and chatting with the common “good buddies” on the old CB.

But that was then and this is now. Articles declaring the newfound popularity of CB have been appearing in newspapers and general-interest magazines. It’s a little more low-key now, but there are a lot of CB radios on the nation’s highways once again. And these aren’t folks finding the old 23-channel rigs on the garage shelves and plugging them in. These are folks buying new 40-channel models with all the great bells and whistles available today; things like built-in weather channels and scan- nable channels.

I cut my teeth on radio with shortwave and CB. I still claim both as hobbies to this day. I don’t get on the CB rig as such as I did when I was in junior and senior high school, or even college, but there’s still a CB rig in my shack to this day and most of the time it sits on Channel 9, the emergency frequency. There’s no one monitoring Channel 9 in my locale, so I have taken it upon myself to monitor the channel for emergency calls. I got my start on Channel 9 when I was a junior member of the now-defunct ALERT organization back in the early 70s. As a member of an ALERT team that served the Philadelphia area, I handled scads of calls for help on Channel 9. And I’ve used Channel 9 myself to get help in various situations. One such incident led to the arrest of some car burglars a block from my home after I spotted unusual activity, placed the call on Channel 9 and had police officers pulling over the suspects (who subsequently were charged and arrested) within a minute or two miles away. I’ve never doubted the effectiveness of CB and Channel 9.

In any event, Harold’s put together one bang-up CB Buyer’s Guide that will hit the newsstands on Nov. 2. If you’re already a CBer, or you are thinking about buying a new rig, whether or not it’s the first you’ve ever bought, we think you’ll want to check out this new guide. POP’COMM’s own CB Scene columnist, Jock Elliott, kept busy writing some of the articles for the guide, and we know you’ll want to see what Jock has in store. Our articles not only will tell you how to go out and buy what you need and how to get it on the air, but we also have extensive listings of CB gear to help you make your selection. It doesn’t matter whether you’re looking for a base, mobile or handheld CB rig; the information is inside the POP’COMM CB Buyer’s Guide.

Antennas and microphones get equal treatment, too, in our product listings. And for those who have ventured onto the original CB service, the General Mobile Radio Service on FM UHF frequencies, the buyer’s guide also offers information to help you learn about this valuable radio service that’s hand-in-hand with CB.

Let us know what you think about our two guides hitting the newsstands this month. If you can’t find the POP’COMM Communications Guide or the CB Buyer’s Guide on your favorite newsstand, check out the ads in this issue, or give us a call toll-free at (800) 853-9797 and your order will be sent by mail. And if you feel so inclined, circle all those goodies you’d like in the product listings of either guide and leave them on the coffee table for your spouse, parents or friends to see what you wouldn’t mind receiving gift-wrapped for the holidays next month!

New Writer

One of the most difficult decisions I had to make as POP’COMM’s new editor was whether or not to continue writing the scanner column that I have penned since 1983. It was so hard coming to terms with whether or not I wanted to give up the column. However, my decision has made it a little easier when J.T. Ward expressed an interest in writing the column; you know, in case I wanted to give it up! Like myself, J.T. is a long-time journalist and also ran around in ambulances like I did. When finally came to grips with making a decision, I decided that I needed to concentrate my efforts on learning the ropes of this magazine from my predecessor, Tom Knetel, and then perhaps make a few mistakes of my own along the way. I also decided I needed the time to run the editorial operations of the magazine and wanted to have the time to work on some feature articles myself. With J.T. volunteering to take over the scanner column, I felt comfortable surrendering

(Continued on page 83)

BY CHUCK GYSI, N2DUP

THE MONITORING MAGAZINE

November 1995 / POPULAR COMMUNICATIONS / 5
MAILBAG

LETTERS TO THE EDITOR

Each month we select representative reader letters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons. All letters submitted must be signed and show a return address. Upon request, we will withhold sender’s name should the letter be used in Mailbag. Address letters to Chuck Gysl, N2DUP, Editor, Popular Communications Magazine, 76 North Broadway, Hicksville, NY 11801-2953, or send e-mail via the Internet to POPCOMM@aol.com.

Alice Fan Club

A letter to the editor from a German reader in the May issue objects to the amount of space given to Alice Brannigan’s feature on radio history each month. This is one of the features I like best in Popular Communications and I would certainly object if it were cut back. I’d like to see more, not less, on the history of radio.

Wes Leatherock
Oklahoma City, OK
(via the Internet)

I am a devoted reader of Alice Brannigan’s “Ye Olde Tyme Radio.” Several years ago, you occasionally published photos of Alice in the column. I am sure that if you did that again, Leif Dehio (Mailbag, May) would find at least that part of the column worth reading.

Jack Althouse
Escondido, CA

Not to worry about Alice, readers. We’re not going to apply the scissors to her writing. I’m not too sure you’d want to “read” her photo, though. It might be worth looking at. In fact, we had to convince Alice a few years ago of not going into the business of selling photos of her in her shack to our readers. We were convinced that if she spent all her time stuffing photos into envelopes for our readers and answering their mail that she wouldn’t have the time to research and write her column. We think you’d rather “read” Alice’s stuff. — Editor

They Love Us

In your Telephones Enroute column (May), you were very generous in your mention of our Cellular Surveillance Interface and our newly released RFM. Once again, we became aware of the impact of your magazine when we began to receive an unusual number of telephone calls from all over the world. Your magazine has a wide-based audience and readers who take your words as gospel. Some callers even went so far as to purchase units without any further information other than that in your article. Amazing!

Thank you very much for your efforts.

W.J. Fischer
Electronic Countermeasures Inc.
Calgary, Alberta, Canada

I have been a subscriber since 1983 and have every issue since May 1983. I wanted to tell you that POP’COMM helped me with my hobby to the point that I now have my extra class ham ticket. Thanks for all the years of enjoyable reading.

Thomas Whatley, KO4BM
Blynton Beach, FL
(via America Online)

I’m just dropping a line to say that I think your magazine is excellent. I’ve learned a lot about scanners and shortwave from reading it. I’ve been into the shortwave hobby for 10 years. Reading about other shortwave stories makes this hobby even more interesting. Keep up the good work.

Dan Neprily
St. Catharines, Ontario, Canada

An Idea to Get Blood Boiling

In the July issue, the You Should Know column offered “an idea to get your blood boiling.” The author was correct when he wrote that there are many frequencies available for public broadcasting. CB radio is one such medium. This is why we formed a group called the Quality of Life Support Programs of New York City Inc./CB Communications Network.

The group was formed in 1991 to develop a CB network wherein public issues could be discussed. Also, we serve as a crisis network, with operators available for emergency situations. Our goal is to provide freedom of expression and quality information in an organized manner.

The CB service is ideal for our purposes. We are applying for funding for our project and seeking additional members in order to help achieve our goals. Any help you could provide in letting readers know about us would be appreciated.

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Nailing Down IDs of Those Mystery Stations on Your Scanner

BY TOM KNEITEL, K2AES, SENIOR EDITOR

Ever notice how few VHF and UHF stations you hear on your scanners use call signs? A TV news crew dispatcher I monitor IDs with only the three digits in the station's call sign, but omits all three letters. A private security agency has a base station that IDs as "370," though those digits aren't part of its actual call sign. Many stations use no identification at all. These problems exist in all FCC-licensed land mobile (public safety, business, industrial, land transportation and some other) services, and also in many federal agency and military stations.

FCC regulations require that call signs be announced. Federal stations aren't licensed by the FCC, so they aren't bound by those rules. Maybe some federal stations don't use call letters for security purposes, but when FCC licensees don't use them, it's either because of ignorance or indifference. No matter. Stations failing to identify often are not readily identifiable to scanner users, and that gets vexing.

Here are some ideas to help. Alone, or in combination with one another, they can point you in the right direction, or completely zero you in on the identities of unknown stations. Possibly you already have tried one or more, but still had no luck. Keep on going, and think of it as collecting bits and scraps of information that you need to complete a jigsaw puzzle. Write down every "find" in a journal.

Let's Get to Business

On the most basic level, it's a fact that FCC-licensed and federal stations normally communicate in frequency bands that are almost exclusively their own. American stations monitored in the following bands are most likely federal activities (including military): 30 to 30.56, 32 to 33, 34 to 35, 36 to 37, 38 to 39, 40 to 42, 138 to 144, 148 to 150.75, 162 to 174, and 225 to 420 MHz. With the exception of the bands just listed, most American land mobile communications systems operating in the following frequency ranges are privately owned and subject to FCC regulations: 30 to 50, 150.775 to 162, 450 to 512 and 806 to 940 MHz.

Under the present FCC system, individual land mobile frequency allocations between 30 and 512 MHz are designated for use by specific radio services such as police, fire, business, taxi, etc. Hence, by checking FCC frequency allocation information, you can determine which of these categories an FCC licensee is utilizing.

Federal stations, not being licensed by the FCC, obviously don't appear on FCC lists. You often can check out many of these in commercially available federal frequency guides. If you tune in an active unknown federal station, tune a few megahertz above and below its frequency and attempt to locate additional communications from the same agency. Sometimes federal agencies group several frequencies near one another, and one of those could be one you already have information about.

The Ears Have It

Based on the foregoing, listen to determine whether the frequency is being referred to by a certain name or number. Obviously, if it's called "Channel 3," then there must be at least two more frequencies in the system. That's not the most important point, however. What you are hoping for is the use of a special or distinctive channel designator that could make it easier to tie it to a specific operating agency or licensee. Hearing references to "Channel Bravo 3," "Channel Tango," or "Channel Tac 3" adds good information to your database.

What can be learned about the station from the traffic it is passing? You can get a feeling about whether it is a police, fire, broadcast news crew, security guard, business, military operation, or whatever. If it is a law enforcement agency and they are "running" license plates or drivers' licenses, note if they are coming back from your community or a neighboring town. If it's a business, are they mentioning street or company names that you can look up?

Keep reference maps and telephone directories near your scanner. If you have
a CD-ROM drive on your computer, consider getting Select Phone. This set of five CD-ROMs lets you search every telephone directory in the United States according to any field: name, address, city, state, telephone number or ZIP code. Select Phone allows you to access more than 80 million residential and business listings, but doesn't include cellphone or beeper numbers, nor the nation's 14 million non-published numbers. A Canadian version is available, too.

You also may find Street Atlas U.S.A. to be useful. This CD-ROM provides a complete and highly detailed street map of the entire nation, down to the smallest back roads. Select Phone and Street Atlas U.S.A. are available from most computer software dealers.

Listen Up!

Pay close monitoring attention to any unusual words, jargon, lingo and codes. You can use that information as you try matching your mystery station to known networks using those same words or operating procedures. The manner of station identification itself can help you. For example, some branches of the U.S. Treasury Department identify base stations by a city location, while portable units are summoned by using the agents' last names. The U.S. Secret Service has a preference for coded tactical identifiers.

FBI offices often use code words plus digits or four-digit identifiers for contacting portables, though their base stations sometimes transmit standard call signs in CW a few times each hour.

The Tone of Their Voices

Commercial, federal agency and amateur repeater networks often utilize Continuous Tone Coded Squelch Systems (CTCSS). This is commonly referred to as "PL tones," which relates to Motorola's trade name, Private Line. In addition to the voice messages, all transmissions going out over a CTCSS-equipped system are continuously accompanied by one of 42 standard CTCSS audio tones. Lying between 67.0 and 254.1 Hz, the CTCSS tones are subaudible. Though you can't hear any of them, they are nevertheless detected by communications equipment.

CTCSS has numerous uses. Here are a few examples. Differing tones may be employed by one network on a single frequency to permit portable stations to access specific repeaters. Or, it can restrict repeater use to only those certain control and portable stations exhibiting one particular required CTCSS tone. CTCSS tones also control the squelch circuits of portable units, maintaining silence except when transmissions containing the proper tone are received. These attributes allow several unrelated networks to share a single frequency without accessing one another's repeaters or portable units. There are other uses, too.

To scanner enthusiasts, the best thing about CTCSS tones is that they can be useful for sorting out stations sharing a frequency, and even identifying mystery stations (especially federal). An FCC-licensed station may select any CTCSS tone. Naturally, the licensee will pick one not already used locally on their system's frequency.

Tracking the CTCSS tones of an FCC licensee on one frequency, then matching it up against the same tones noted on another local frequency, might provide a useful clue. Also, note that a number of federal agencies prefer to stick with certain particular CTCSS tones nationally. When you grasp that information, you may have a handle on a major piece to the puzzle.

There's good news and bad news here. First, the bad: Not all stations use CTCSS tones. Moreover, scrambled transmissions are useless for determining the CTCSS tones. Now, the good news: Decoders for reading out CTCSS tones are readily available. Next, a chart with the commonly used federal agency CTCSS tones accompanies this POP'COMM feature. Place this chart near your scanner.

Reasonably priced effective CTCSS decoders are made by several popular communications advertisers, including Optoelectronics Inc., Universal Radio Inc. and MoTron Electronics. CTCSS readings sometimes can be obtained with no more effort than plugging into the scanner's external speaker jack. Other installations, however, may require a simple internal connection for best results.

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THE MONITORING MAGAZINE
November 1995 / POPULAR COMMUNICATIONS / 9
Get the Big Picture

Should you suspect that your mystery station is not an isolated loner, try to see whether its operations, unit numbers and activity level fit in with other stations being monitored, including other unidentified stations. Are they mentioning any identical location names?

When you begin to pay very close attention, you will realize that your target station operates on a particular schedule, such as full time, or only during business hours, or weekdays only, or maybe it is silent for weeks at a time. Write this down, for surely this is relevant to completing the puzzle.

In the event you hear names or places mentioned, enter them in your journal. Then, watch the news media for possible coverage of events in which those names or places strangely appear. Weeks or months may pass, and it could be an investigation or an arrest. When the media provides the report, you will find out which agency conducted the operation, and there you are with valuable information!

Getting the big picture always means having a serviceable reference shelf, providing reliable information about frequency allocations and stations. You already knew that.

These ideas have worked well over the years. Sure, some stations still resist being identified, but the challenge has only served to add an interesting dimension to the monitoring. Patience is a must-have, even when it wears thin. Keep trying. Possibly you have one or many great thoughts that didn’t get included here. If so, jot them down and send them to me so we can be share them with others in a future report.

---

**Common Federal Agency CTCSS Tones**

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>Agency/Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>82.5</td>
<td>U.S. Postal Service</td>
</tr>
<tr>
<td>91.5</td>
<td>U.S. Postal Service</td>
</tr>
<tr>
<td>97.4</td>
<td>U.S. Postal Service</td>
</tr>
<tr>
<td>100.0</td>
<td>U.S. Customs Service</td>
</tr>
<tr>
<td>103.5</td>
<td>U.S. Secret Service</td>
</tr>
<tr>
<td>110.9</td>
<td>National Highway Traffic Safety Admin.</td>
</tr>
<tr>
<td>114.8</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>123.0</td>
<td>Internal Revenue Service</td>
</tr>
<tr>
<td>127.3</td>
<td>Veterans Affairs</td>
</tr>
<tr>
<td>136.5</td>
<td>General Services Administration</td>
</tr>
<tr>
<td>141.3</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>151.4</td>
<td>Coast Guard Intelligence</td>
</tr>
<tr>
<td>156.7</td>
<td>Immigration &amp; Naturalization Service</td>
</tr>
<tr>
<td>167.9</td>
<td>Drug Enforcement Agency</td>
</tr>
<tr>
<td>173.8</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>206.6</td>
<td>Border Patrol</td>
</tr>
</tbody>
</table>

Table 1. Here are the CTCSS tones most commonly used by specific federal agencies. Save this chart.

---

**Radio Scanning**

Add S/H

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5 + 5 STAR

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The new AR 2700 from AOR is another break-through for general coverage scanners at an affordable price. It combines wide freq. coverage with many advanced features & options, including computer interface and voice recorder. With this small marvel, you will never miss important calls and conversations through the use of the optional digital voice recorder.

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Great flexibility in programming, for Scan and Search mode. Delay, Pause and Priority intervals can be set to a specific value. Program search, Manual search, Bank link, Delay, Pause, Pass, Scan, Bank delete. Priority are provided.
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Computer control port may be connected via an optional adaptor to a computer for remote control of the AR 2700.

AR 8000 shocks the market. AOR made every effort to incorporate the latest technology into this new scanner.

- SPECIFICATIONS -

- Range: .5 - 1900MHz usable to 100kHz
- Modes: AM/NFM/WFM/USB/LSB/CW
- Stepsize: 50Mz to 999.995kHz
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  SSB .2 AM 1.0 NFM .35 WFM 1.0
- Filters: (kHz) SSB 4 AM/NFM 12 WFM 180
- Memories: 50 ch. x 20 banks=1000 total
- Size/Wt.: 6.1 x 2.8 x 1.6 inch. 20 oz. batt. incl.
  * Cell blocked for all, but Approved agencies.
- Covers .5-1900MHz
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- Only portable scanner on U.S. market to have true SSB, both LSB & USB.
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- 4 level alpha numeric LCD read out frequency, mode, signal strength, band scope spectral display, battery low, remote and more
- Computer control up/down load data, will add a new dimension to the world of scanning.
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Incredibly wide continuous coverage from 100kHz all the way up to 2036MHz* • Receives all modes • FM, AM, FMW, LSB, USB, and CW - so you'll hear everything! • Superb R.F. performance thru the use of 15 switched discreet band-pass filters with GaAs FET R.F. amplifier, delivers high sensitivity, wide dynamic range and excellent intermodulation rejection • Tuning rates are continuously selectable from 50Hz to 1MHz steps • True professional's choice!

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Computer Interface for the AR8000 & AR2700

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CIRCLE 131 ON READER SERVICE CARD
The NSA Cryptologic Museum

Crypto Machines, Computers and Other Historical Cryptography Items and Individuals

BY DON SCHIMMEL

If you are traveling in the Washington-Baltimore area, allow some time for a visit to the National Security Agency Cryptologic Museum located just off Maryland Route 32. Enter Route 32 by leaving the Baltimore-Washington Parkway at the 32 East exit. The museum is found directly behind the Shell service station. (See map.)

Museum hours are 9 a.m. to 3 p.m. Monday through Friday and 10 a.m. to 2 p.m. on Saturday. The museum is not open on holidays.

Upon entering the museum lobby, there is a guest book you may sign, and displayed are various free booklets and pamphlets. One booklet will help you in taking a self-guided tour of the museum. In addition to a diagram showing the location of the various exhibits, the booklet offers explanatory statements for each exhibit.

Another booklet presents a capsule review of "The Origins of NSA." The chronology of events is outlined that led to the formation of NSA in 1952.

Yet another brochure will appeal to those who like to dig into mathematics. This one is called, The Cryptographic Mathematics of Enigma. When you open up this booklet, you will be treated to terrific photos of an Enigma machine, including close-ups of the plug boards, rotors and other features of the cipher machine.

Amateur cryptanalysts will enjoy the National Cryptologic Museum Activities Book. Here are examples of codes, ciphers and puzzles you can try to solve.

As you take a self-guided tour, exhibits will take you through various developments in signal intelligence (SIGINT). These include the Civil War, World War I and the "Black Chamber" headed by Herbert Yardley and closed by Secretary of State Henry Stimson (who reportedly made the statement, "Gentlemen don't read each other's mail."). This is followed by exhibits highlighting individuals such as William F. Friedman, Laurance Safford and others.

This map shows how to find the NSA museum.

External view of the NSA Cryptologic Museum. Note the security fence surrounding the museum. It's hard to believe this was once a motel.
The Drake R8A World Band Communications Receiver. Turn it on, tune it in, and as easy as that, you’re hearing world events as they happen... uncensored and complete. And with the R8A’s astounding clarity, it’s almost as if you’re there. In fact, no other communications receiver puts you closer to the action in even the most distant parts of the world.

If you’re a hobbyist, you’ll marvel at the R8A’s simplicity of operation. If you’re an expert, you’ll admire the high-powered features. The Drake R8A offers superior performance in a complete package that includes built-in filters and other unique features that have made Drake the foremost name in world band communications. The R8A from Drake... you’ve got to hear it to believe it.

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This map shows you how you can find the Historical Electronics Museum.

You are given a look at various foreign crypto machines, including the famous "Purple" and "Enigma" machines. You can even use an Enigma machine to encipher and decipher your own message.

Some of the computers utilized by NSA in the past.

The infamous Great Seal.

Here is the Great Seal opened showing the hidden microphone/transmitter.
The Peak Performer

AOR AR8000
All Mode Wide-Band Radio Receiver

Option A

You're ready to use the DX world's most versatile receiver, the AR8000! This receiver is powerful and flexible, allowing you to enter descriptive information along with the frequency, and store it all in the 1000 memory channels provided. If you're new to scanning, this receiver can be set to New User Mode, easier-to-use than ever, while Expert Mode can be used when you're ready for it. A computer-control option is available for those interested in computer controlled scanner operation. If you want the hottest hand-held scanner around, this is the one for you!

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Get Both The AOR AR8000 and The Optoelectronics Scout 40 For Only $999!

Optoelectronics Scout 40
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The Scout 40 can record and store into memory 400 unique frequencies within a 10 MHz to 1.4 GHz range, while being able to record up to 255 hits on each channel in memory! Digital Filter/Auto Capture allows the Scout to record frequencies automatically! This unit will even automatically Reaction Tune or Memory Tune many receivers (call for more information). Features include: 16 digit LCD, EL backlight, and 16 segment signal strength bargraph. NiCad batteries, AC adapter/charger and PC utility disk are included.

Reaction Tune the AR-8000 AUTOMATICALLY with the Scout 40!

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Discover the AOR AR8000's Full Potential With Scancat Gold And The Optoelectronics CX12AR... All Three For Only $799!

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If you've recently bought one of our communications receivers, such as the AOR AR8000, Icom R71A or R7100, this computer program will make your listening a breeze! Features include: Create frequency databases, Scan between ANY frequencies, Unlimited frequencies per file, Multiple scanning bands, Scan by any increment and delay, Share any radio's file, Faster performance, QUICKTERM built in TNC command program with programmable macros. Dual radio simultaneous scanning with Icom radios, Requirements: 640 k, MS-DOS computer w/85-256C serial port, hard disk, and manufacturer's interface. Order #002AR

Now includes cloning feature to unlock the full potential of the AR8000!

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CIRCLE 160 ON READER SERVICE CARD
The Soviets are not overlooked. A Russian crypto machine is displayed as well as the carved wooden seal of the United States that was in the ambassador’s office in the U.S. Embassy in Moscow. Years later, it was discovered the seal had a microphone hidden inside it. The seal can be opened and you will see the concealed microphone and transmitter.

A visit to the NSA museum will certainly give you an appreciation for the efforts in the SIGINT field whose contributions have assisted the U.S. government in peace and war.

While you are in the area, why not pay a visit to another free museum? The Historical Electronics Museum also is accessible from the Baltimore-Washington Parkway, located next to the BWI Marriott on West Nursery and Elkridge Landing roads, Linticium, Md. (See map).

The museum hours are the same as the NSA museum—also not open on holidays.

One of the attractions at this museum is the SCR-270 radar. This type of radar detected Japanese planes when they approached Pearl Harbor on Dec. 7, 1941.

Other exhibits at the museum include various receivers and transmitters, test equipment and a collection of airborne radar devices.

Also open to the general public during the museum’s regular hours is a collection of electronics-related reading material.
Protect Spikes On Video Coaxial Cables

If you’ve got a satellite dish in the back yard, this is something you may want to take a look at. While most of us with radio towers and antennas mounted on our roofs use techniques to ground the antennas and make an effort to eliminate problems should lightning strike, how about satellite dishes? Sure, even that dish on the ground could be susceptible, plus it could cause other problems.

Enter Tripp Lite, the folks who call themselves The Power People. They make the Isobar Audio-Video surge suppressor that features not only protection for what you plug into the AC outlet on the wall, but also your video or satellite coax cables.

The Isobar Audio-Video features gold-plated F connectors to protect large-screen TVs, satellite receivers and cable TV converters from surges and spikes carried on coaxial cables. The unit also has multicolor indicator lights that detect and display wiring faults, loss of power and integrity of the surge protection circuitry. This allows the unit to alert the user of problems before equipment is turned on.

The Isobar Audio-Video comes with a lifetime insurance guarantee. This means that your unit takes a surge—including direct lightning strikes—it’s guaranteed for life for up to $25,000 should damage result to the equipment it is designed to protect. The manufacturer says that if surge damage occurs while plugged into the Isobar Audio-Video, it will repair or replace the damaged equipment free.

The Isobar Audio-Video has 1,200 joules of surge energy absorption at up to 96,000 amp-spikes, six AC outlets with three isolated filter banks to prevent interference between connected components and multiple filtering components all in a rugged all-metal case.

Keep Yourself On Time Anywhere in the World

When POP’COMM editor Chuck Gysi saw this item, he knew he had to have one.

Being one who likes to travel, he finds himself in various time zones at different times of the year. While Indiana is confusing enough when daylight-saving time is observed, this little device helps you stay on time just about anywhere else. That is if you aren’t in the Mountain Time Zone.

If you are a shortwave listener, chances are you have more than one clock at your listening post. Perhaps one clock is set to your local time, while the other is set for Coordinated Universal Time so you can be sure when certain SW stations and programs come on the air. This little pocket-size World Star travel clock will help you get rid of those old kitchen clocks or alarm clocks cluttering up your shack. This one simple clock allows you to monitor the time just about anywhere in the world. Except perhaps the Mountain Time Zone. Did we mention that?

You set the clock to your local time zone.

With the push of a button, you can tell the time in half the world’s time zones on this clock.

And the clock can be used to check the time in any of 12 other world time zones with the simple push of a button. Time zones represented on the buttons are indicated as such: TYO (Tokyo), HKG (Hong Kong), BKK (Bangkok), LHR (London), PAR (Paris), CAI (Cairo), HNL (Honolulu), LAX (Los Angeles), CHI (Chicago), SYD (Sydney), MOW (Moscow) and NYC (New York City). There’s no DEN for Denver in the Mountain Time Zone, in case we didn’t mention that.

But we do like this clock’s handy size of 3.25 inches by 2.6 inches by 0.6 inches. It fits easily in your pocket and has a 24-time-zone map below the clock display.

But, wait! That’s not all. This handy clock also can be used as a travel alarm to awake you in the proper time zone. It also has a built-in calculator and canes can be displayed in 12- or 24-hour time formats, which is handy for radio hobbyists.

The World Star travel clock-calculator is finished in matte black thermoplastic. The clock’s retail price is $25 postpaid and it’s available from Executive Travelware, P.O. Box 59387, Chicago, IL 60659, (800) 397-7477. And while you’re at it, ask them where the button is for Denver’s time. Just in case we forget.
That Wireless Wanderlust
Some Early Broadcasters Wouldn’t Stay Put

BY ALICE BRANNIGAN

A POP'COMM staff member received an e-mail inquiry that was passed along here for reply. It had been sent in from an unspecified location in cyberspace by radio researcher Barry Mishkind. Barry writes that during the 1920s, Chicago’s C.L. Carrell, owner of the Carrell Theatre Company, was the licensee of several "portable" broadcast stations. Barry is curious about why broadcast stations might have been portable, because broadcasters usually are licensed for use at specific sites.

Broadcasting was embraced by the public soon after it began in earnest in 1922. Stations started popping up all over the place, except nobody knew just what could be done with radio. Most stations were located in stores, newspapers, hotels, churches, schools, homes, factories or their own studios. Still, some imaginative souls were intent on exploring broadcasting’s less obvious potentials. Unrestrained by today’s strict federal prohibitions and industry taboos, broadcasters of the 1920s and 1930s felt challenged to pursue innovative concepts in their fledgling radio service. Their imaginations ran wild.

C.L. Carrell owned no less than five portable broadcast stations in the mid to late 1920s, including WBBZ, WHBM, WIBJ, WIBM and WKEG, all of Chicago. He started out in 1925 with two stations, one running 10 watts and the other 50 watts. By 1928, his five portable stations were running 100 watts.

Carrell didn’t have the only portable broadcast stations during the 1920s. The concept was popular. For instance, Charles Messter’s WCBR, Providence, R.I., ran 30 watts (eventually 100 watts), the New Jersey National Guard operated WIBS with 20 watts from Elizabeth, N.J. There was Harl Smith’s WOBK with 100 watts in Shelby, Ohio, and the Brant Radio Power Co.’s 1,000-watt KGFO in Los Angeles, Calif. There were many others, too.

These portables operated on regular broadcast frequencies. They could be used for various purposes, especially for being hired out for on-site broadcasts from rallies, fairs, openings, speeches and other special events. Alternately, a radio dealer could hire a portable station. The dealer could set it up in front of his store for a couple of weeks to boost receiver sales to area residents. Many transmitter manufacturers would bring a portable station to a small town as a way of generating local interest in establishing a permanent station there.

The A.H. Grebe Co. of Richmond Hill, N.Y., was a broadcaster (WBOQ/WABC) and equipment manufacturer. WGMU, Grebe’s 100-watt Atlantic Broadcasting Co. portable station on 1490 kHz, was used for making field-strength measurements at proposed broadcasting sites. WGMU would be set up at the site, then a vehicle with signal-measuring equipment would circle WGMU at various distances in order to prepare signal contour maps for new broadcasters.

Broadcasting Afloat

Imaginative broadcasters of the early days certainly didn’t end at portables, they only began there. Broadcasters went to sea, too. In the late 1920s, Atlantic Broadcasting Co. held a broadcasting license for WRMU, a 100-watt on 1490 kHz. WRMU was licensed for being aboard A.H. Grebe’s yacht, the MU-1.

In 1933, floating broadcaster RXKR, The Voice of Panama, aboard the ship City of Panama, serenaded Los Angeles with its 5-kW signal from offshore. This was a lavish pleasure vessel offering illegal gambling and alcohol to Americans. U.S. and Mexican broadcasters near RXKR’s 815 kHz frequency complained of interference, calling RXKR a “pirate,” even though it had a valid Panamanian license. It took the U.S. State Department months to convince Panama to revoke RXKR’s license. The full RXKR story was in our August 1983 issue.

From 1936 to the 1940s, the Australian liner M/V Kanimbla ran a daily shortwave broadcast sked with its 50-watt station. VK9MI, on 6053 and 11710 kHz. The Kanimbla was 494 feet long and carried 400 passengers between Australia and New Zealand. VK9MI had its own disc jockey and sent out QSL cards, claiming to be the world’s first ship broadcaster.

Starting about 1937 and lasting into the early 1940s, DXers reported hearing broadcaster ZMBJ, located aboard the T.S.S. Awatea, a 520-foot Union Steam Ship passenger liner sailing from New Zealand. ZMBJ ran 300 to 400 watts on 8840, 13200, and 13600 kHz, and sent out QSL cards.

DXers reported special musical and other broadcasts often coming from well-known luxury liners, such as the S.S. Normandie and S.S. Leviathan.

Hitting the Heights

In 1928, the Federal Radio Commission licensed an unusual broadcast station in an
New Scanner Products Available

Now it’s easy to purchase communications, emergency management supplies, weather forecasting equipment and more directly from Communications Electronics Inc. Your free fax-on-demand catalog including unadvertised specials is instantly available by calling 313-663-8888 from your fax machine.

**Bearcat Scanners**

Monitor police, fire, marine, aircraft, emergency medical transmissions and more with a Bearcat scanner. Bearcat 9000XLTU base/mobile $569.95
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Bearcat 860XLITU base/mobile $154.95
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Bearcat 560XLU base/mobile $76.95
Bearcat 220XLU handheld/SPECIAL $207.95
Bearcat 178XLITU base with weather alert $124.95
Spartan 150XLU handheld with 800 MHz $158.95
Bearcat 148XLITU base with weather alert $83.95
Bearcat 80XLITU base/mobile $158.95
Bearcat 80XLU handheld with 800 MHz $144.95
Bearcat B7CU information module $168.95

**Weather Stations**

Now you can be your own weather reporter with the Davis Weather Monitor II. Our top-of-the-line weather station combines the most advanced weather monitoring equipment available in a compact, incredible package. Glance at the display, and see wind direction and wind speed on the compass rose. Check the barometric trend arrow to see if the pressure is rising or falling. Push a button, and read indoor and outdoor temperature, wind chill, humidity and barometric pressure. The package deal includes the new ultra high resolution 1/100th inch rain collector part # 7852-U, and the external temperature/humidity sensor part #7859-U. The package deal is only $479.95 plus $15.00 shipping. If you have a personal computer, when you order the optional Weatherlink computer software for $139.95, you’ll have a powerful computerized weather station at an incredible price. For the IBM PC or equivalent order part #7862-U. Apple Mac Plus or higher including PowerBook, order part number 7866-U.

**Bearcat 9000XLITU Radio Scanner**

Mfg. suggested list price $769.95. CR Special $639.95. 500 channels - 80 hours - Alpha numeric display - Turbo Scan - VFO Control - 10 Priority channels Auto Store - Auto Recording - Reception counter Frequency step resolution 5, 12.5 & 25 KHz.

The Bearcat 9000XLITU gives you pure scanning satisfaction with amazing features like TurboScan to search VHF channels at 300 steps per second. This base and mobile scanner is ideal for surveillance or for use with the optional Weatherlink computer software to help eliminate annoying intermodulation from adjacent frequency channels in highly populated areas and selectable AM, Wide FM and Narrow FM modes that allow you to change the default channel on the VHF UHF band. Other features include Auto Store - Automatically stores all active frequencies within the specified band(s). Auto Recording - This feature lets you record channel information as you select similar to a tape recorder. Hi Cut filter to help eliminate unwanted static noise. You can even get an optional CTCSS Tone Board (Continuum Tone Control Squelch System) which allows CB, FRS or VHF to be heard during scanning only when a correct CTSS tone is received. For maximum scanning enjoyment, order the following optional accessories: P800099 Gigabit high power card for temporary operation from your vehicle’s cigarette lighter $16.95. P800097 DC Power cord enables permanent operation of your vehicle’s cigarette lighter with 9 volt battery charger, part # 800097 $39.95; Extra NiMH pack, $59.95; Weatherlink Software $39.95; Weatherlink Modem Adaptor 25-U in 7/12 Deep x 3-5/8" High Frequency Coverage: 25.000-549.995 MHz., 760.000-823.995 MHz., 894.015-868.995 MHz. 894.015-1.000.000 MHz.

**VHF Transceiver**

**RELML WWH150-U Transceiver/SPECIAL**

Mfg. list price $481.67, CR Discount $299.95. For direct two-way communications with their police, fire department, civic service, or ham radio operator. The WWH150 is our most popular programmable 2-way, 16 channel handheld transceiver that has built in TSQL, which will protect your investment. All channels are programmable, and you have full control of your radio. It features 1250 channels in 32 banks, 10 watts power output, VFO digital tuning, and allows you to scan up to 20 channels. For AM and FM transmissions, the intercom and monitoring features are for law enforcement and emergency operations. The WWH150 is made from high quality materials and is designed for maximum life and durability. It features a high-gain, 5 inch speaker, and a built-in microphone. It is programmable for both AM and FM, and allows you to set up your radio according to your needs. It is also waterproof to 10 feet, and has a built-in greeting greeting and a built-in battery charger. The WWH150 is designed for professional use, and is ideal for police, fire, and other emergency services. It also features a built-in VFO, and a built-in speaker/microphone. The WWH150 is available in a variety of colors, and is designed for indoor and outdoor use. It is lightweight, and is designed for easy operation. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use.

**Weatherlink Software**

Mfg. list price $769.95 for weather monitoring. This software allows you to connect your weather station to your computer and track weather data in real-time. It also includes a data logger to save data for later analysis, and a weather report feature to generate weather reports for your area. Other features include a weather map, a data graph, and a weather alert system. The client software also includes a weather alerts feature to notify you of severe weather conditions. The software is compatible with most Windows computers, and is available for download from the manufacturer’s website. For more information, visit the manufacturer’s website.

**VHF Transceiver**

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Mfg. list price $481.67, CR Discount $299.95. For direct two-way communications with their police, fire department, civic service, or ham radio operator. The WWH150 is our most popular programmable 2-way, 16 channel handheld transceiver that has built in TSQL, which will protect your investment. All channels are programmable, and you have full control of your radio. It features 1250 channels in 32 banks, 10 watts power output, VFO digital tuning, and allows you to scan up to 20 channels. For AM and FM transmissions, the intercom and monitoring features are for law enforcement and emergency operations. The WWH150 is made from high quality materials and is designed for maximum life and durability. It features a high-gain, 5 inch speaker, and a built-in microphone. It is programmable for both AM and FM, and allows you to set up your radio according to your needs. It is also waterproof to 10 feet, and has a built-in greeting greeting and a built-in battery charger. The WWH150 is designed for professional use, and is ideal for police, fire, and other emergency services. It also features a built-in VFO, and a built-in speaker/microphone. The WWH150 is available in a variety of colors, and is designed for indoor and outdoor use. It is lightweight, and is designed for easy operation. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use. It is also designed for use in extreme conditions, and it is designed for professional use.
16. XANDI's famous E-Z approach makes assembly a snap. Kit includes pre-assembled and tested surface mount modules, microphone, antenna wire, and battery.

**XWB1000 E-Z $49.95**

**LONG RANGE CRYSTAL CONTROLLED FM TRANSMITTER!**
With a single push of the E-Z knob, the new XTL1000 E-Z transmitter punches out a signal up to 1/2 mile away. Including the battery, this is absolutely the smallest FM transmitter available. Miniature battery and holder included on circuit board. Amazing audio sensitivity. Pick up sounds at the level of a whisper. Use with any FM receiver (at least 1/4 W RF output) for up to 1/2 mile. XANDI's famous E-Z approach makes assembly a snap. Kit includes pre-assembled and tested surface mount module, microphone, antenna wire, and battery.

**XTL1000 E-Z $69.95**

**LONGER RANGE CRYSTAL CONTROLLED FM TRANSMITTER!**
With a range up to 1 1/2 miles, the new XTL3000 E-Z transmitter E-Z KIT out performs any other unit available. Miniature battery and holder included on circuit board. Amazing audio sensitivity. Pick up sounds at the level of a whisper. Works with any FM receiver (at least 1/4 W RF output) for up to 1 1/2 miles. XANDI's famous E-Z approach makes assembly a snap. Kit includes pre-assembled and tested surface mount module, microphone, antenna wire, and battery.

**XTL3000 E-Z $89.95**

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**CIRCLE 80 ON READER SERVICE CARD**

---

**Worlds Smallest FM Transmitters**

**Portable broadcaster WHBM of Chicago always attracted a crowd. It was good for stimulating radio receiver sales by local merchants who could hire it to park in front of their stores.**

---

**Portable broadcaster WGMU (with its call letter sign in the rear window) shown performing field-strength tests about 1931.**

---

**airplane. This was Los Angeles station KFBL, with 50 watts on 1470 kHz, owned by Flying Broadcasters Inc. Apparently, however, the first known radio broadcast from an inflight aircraft took place on Feb. 2, 1929, when NBC placed a 100-watt 1604 kHz transmitter (W2XCO) aboard a U.S. Army aircraft and spoke to amazed radio owners in New York City.**

**DXers of 1935 were thrilled to hear 8-watt NBC station W10XFF on 13050 kHz. It was located aboard the Explorer II, a manned high-altitude National Geographic Society balloon that ascended to 72,395 feet over South Dakota. While the crew's broadcasts and two-way conversations with ground stations and the China Clipper airliner over the Pacific were carried live on the NBC Network, shortwave listeners throughout the nation heard it all via direct reception from the stratosphere.**

**What a station!**

**Eccentric millionaire Howard Hughes was granted a license for a shortwave broadcasting station aboard his aircraft NR18973 during its 1938 transcontinental flight. Station KHRE operated with 100 watts on six shortwave frequencies, and was nationally reported by DXers.**

**Steamed Up, Too**

W2XDY was a 50-watt broadcasting station they tried on a moving Baltimore and Ohio train in March 1932. The train traveled between Washington, D.C., and Baltimore, Md. Operating at 1542 kHz (just a shade above the end of the broadcast band's edge at 1500 kHz), this was a complete self-contained station installed in Dining Car No. 1055. The antenna was on the car's roof.

Two-way receiving stations picked up the W2XDY signals and led them to the CBS Network, also over worldwide shortwave. From the W2XDY studio, came the sounds of a 12-piece orchestra, singer Belle Baker and the Ever-Ready Radio Gaites.

When the Warner Brothers' film 42nd Street was opening in 1933, the studio chartered a train to travel from coast-to-coast on a promotional tour. A license had been secured for use on the train, allowing its station, KIED, to be used with 250 watts on 1518 kHz.

The train would show up in every large city where the film was opening. Part of its function was to play all the songs from the movie as well as broadcast interviews and other publicity. Listeners could tune to KIED directly, although the station was freely rebroadcast over one or more higher-powered local stations.

In 1939, 50-watt station WOEG was installed aboard the Union Pacific's transcontinental exhibition train. This broadcaster operated on 2000 kHz and was specially constructed and installed by GE engineers from WGY, Schenectady, N.Y. WOEG's location was a soundproofed room in a baggage car that followed the two locomotives (a diesel-electric and an antique wood-burner). WOEG's antenna stretched out for 200 feet across three cars, providing an average range of up to 20 miles. Its transmissions while the train was moving were...
picked up by the NBC Network.

Tracking back to Australia, we find another innovative broadcaster who had a new idea. In 1937, someone realized that many remote communities would like to hear radio but couldn’t support a full-time radio station. At that point, he equipped a railroad car with a self-contained broadcasting station. This was licensed to the Mobile Broadcasting Service of Melbourne, receiving the call letters 3YB for 1060 kHz with 50 watts. Station 3YB then was towed along a regular touring circuit and dropped off for stays in a succession of small communities. It would remain for a week at a time in each location, broadcasting four hours daily. Then it would then be taken to the next town down the line. While 3YB was in one town,

The Australian vessel M/V Kanimbla was an early shipborne broadcaster that had a daily sked.
Veri from VK9MI, the broadcast station aboard the Kanimbla.

New Zealand's T.S.S. Awatea was a widely reported broadcasting ship of the 1930s.

ZMBJ's veri from the broadcasting ship "Awatea." (Courtesy Howard Kemp, N.H.)

Capt. Orvil Anderson, U.S. Army, shows the W10XFH broadcast transmitter aboard the Explorer II stratosphere balloon (1935).

The first broadcast from an in-flight aircraft was made by NBC on Feb. 2, 1929.

its representatives would work two and three towns ahead on the circuit to publicize the station's forthcoming stopover, and line up sponsors. In this manner, 3YB may well have visited every small town in Victoria where there was a convenient railroad siding for it to park for a week.

New Zealand broadcaster 5ZB was a similar railroad car broadcaster that was towed around to different rural areas for brief stays. The concept was to bring radio to remote areas beyond the normal coverage of New Zealand's nine other stations. Station 5ZB operated from 1940 to 1942.

Broadcasters had no shortage of ideas for how to attract attention and audiences by being different. That's half the battle anyway, isn't it? As new laws and technologies
The B&O dining car was outfitted into a rolling broadcast station. Notice the antenna on the roof with the two lead-in wires coming through the window.

New Zealand broadcaster 5ZB was in a railroad car that was towed from one rural town to another for short stints.

Station WOEG was a 50-watt station on a special transcontinental Union Pacific train back in 1939.

came along, they either ended or replaced the need for the odd approaches of the early years. Maybe a couple were ahead of their time.

Your help and continuing letters to this column are always appreciated. We can use old QSL cards and letters (originals or good copies), picture postcards or photos of old radio or wireless stations, pre-1960 station listings, as well as your questions, comments, anecdotes and suggestions. Happy Thanksgiving.

W10XFH, the NBC broadcast station in a manned stratosphere balloon, sent out these QSLs in 1935. Nice addition to any wall!

Australian station 3YB was in a railroad car. That's the antenna system strung on masts across the roof.

UNDERSTANDING ACARS
Aircraft Communications Addressing and Reporting System

This new 92 page book by Ed Flynn is the definitive ACARS book for serious VHF aeronautical DX'ers worldwide. Third Edition. Only...

$9.95 (+$2)

ACARS stands for Aircraft Communications Addressing and Reporting System. This VHF teletype mode is used to transmit data and messages between commercial aircraft and airport ground stations. These transmissions at 131.55 MHz can be heard on any scanner with the VHF aircraft band. With the proper decoder and this book you can intercept and understand this interesting traffic. If you enjoy VHF aeronautical listening you will want to learn about this fascinating development.

Universal Radio
6630 Americana Pkwy.
Reynoldsburg, OH 43068
Phone: 800 431-3939
Fax: 614 866-2339
There are hundreds of English language broadcasts aired every day on shortwave. This is a representative listing; it is not intended to be a complete guide. While every attempt is made to make the list as up-to-date as possible, stations often make changes in their broadcast hours and/or frequencies with little or no advance notice. Some broadcasters air only part of a transmission in English or may run the English segment into the next hour or more. Some stations have altered schedules on weekends. Numbers in parentheses indicate an English start time that many minutes past the hour. All times are in UTC.

<table>
<thead>
<tr>
<th>Time</th>
<th>Country</th>
<th>Frequency</th>
<th>Time</th>
<th>Country</th>
<th>Frequency</th>
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<td>Radio China Int'l</td>
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<td>(50) RAI, Italy</td>
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<td>(30) Radio Thailand</td>
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<td>0100:</td>
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<td>(30) Voice of Greece</td>
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<td>Kol Israel</td>
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<td>(30) Radio Romania Int'l</td>
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<td>Switzerland Radio, USA</td>
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<td>0200:</td>
<td>(30) Radio Austria Int'l</td>
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<td>0500:</td>
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<td>RAE, Argentina</td>
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<td>Radio Havana Cuba</td>
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<td>Radio Romania Int'l</td>
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<td>Radio Netherlands</td>
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<td>(30) Radio Budapest, Hungary</td>
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<td>6185, 9515, 11705</td>
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<td>(30) Radio Sweden</td>
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<td>Deutsche Welle, Germany</td>
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<td>(50) Vatican Radio</td>
<td>6095, 7305</td>
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<td>Voice of Nigeria</td>
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<td>REE, Spain</td>
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<td>Radio New Zealand</td>
<td>9570</td>
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</table>
The SCOUT™ Has Taken Tuning Your Receiver To a New Dimension

Featuring Automatic Tuning of your AR8000 and AR2700 with the Optoelectronics Exclusive, Reaction Tune (Pat.Pend). Any frequency captured by the Scout will instantly tune the receiver. Imagine the possibilities! End the frustration of seeing two-way communications without being able to pick up the frequency on your portable scanner. Attach the Scout and AR8000/2700 to your belt and capture up to 400 frequencies and 255 hits per frequency. Or mount the Scout and AR8000/2700 in your car and cruise your way into the future of scanning. A simple interface cable will connect you to a whole new dimension of scanning.

The Scout’s unique Memory Tune (Pat.Pend.) feature allows you to capture frequencies, log into memory and tune your AR8000/2700 at a later time. A distinctive double beep will inform you when the Scout has captured a new frequency, while a single beep indicates a frequency that has already been recorded. For discreet monitoring, a pager style vibrator will inform you of any hits the Scout captures.

The Scout will also Reaction Tune and Memory Tune Icom CI-V receivers: (R7000, R7100, and R9000) and (Pro 2005/2006 equipped with OS456, Pro 2035 equipped with OS535). Download the Scout frequencies to a PC with the Scout Utility Disk and CX-12AR (optional), then compare them to the Spectrum CD-ROM/PerCon FCC Database (optional).

Act Now!! Let the Scout Reaction Tune you into The World of Scanning

**SCOUT™ $449**

**CLI PMATE™ $25.00**
<table>
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<tr>
<th>Time</th>
<th>Country</th>
<th>Frequency</th>
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</thead>
<tbody>
<tr>
<td>0600:</td>
<td>(30) Radio Austria Int'l, Voice of Russia</td>
<td>6015</td>
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<td></td>
<td>HCJB, Ecuador</td>
<td>9745</td>
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<td>ELWA, Liberia</td>
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<td></td>
<td>Voice of Mediterranean, Malta</td>
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<td>Voice of America</td>
<td>3980, 5995, 6040, 6060, 6140</td>
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<td>Vatican Radio</td>
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<td>GBC, Ghana</td>
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<td>Radio Kiribati</td>
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<td>(40) TWR, Monaco</td>
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<tr>
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<td>Radio Vlaanderen Int'l, Belg.</td>
<td>9925</td>
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| 0700: | R. For Peace Int'l, Costa Rica | 7384, 9400 USB |
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| | (30) Croatian Radio | 5920, 7370, 9830, 13830 |
| | Voice of Free China, Taiwan | 5950 |
| | Wings of Hope, Lebanon | 11530 |
| | KNLS, Alaska | 6150, 9615 |

| 0800: | KTWR, Guam | 15200 |
| | Radio Korea, S. Korea | 7550, 13670 |
| | Radio Australia | 5995, 6020, 6080, 9580, 9860 |
| | HCJB, Ecuador | 6135, 6205 |
| | KNLS, Alaska | 9615 |
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| | CFRX, Canada | 6600 |

| 0900: | Swiss Radio Int'l | 9885, 13685, 17515 |
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| 1000: | Kol Israel | 15640, 15650, 15755 |
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| | (30) Radio Korea, South Korea | 11715 |
| | FEBK, Philippines | 9800, 11685 |

| 1100: | (30) Radio Austria Int'l, Radio Australia | 13730 |
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| | Voice of Vietnam | 7285, 9730v |
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| 1200: | Radio Australia | 5995, 9560, 11800, 15530 |
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| 1300: | Polish Radio Warsaw | 7145, 7270, 9525, 11815 |
| | Radio Canada Int'l (Sun) | 15315, 17820, 17895 |
| | Radio Vlaanderen Int'l, Belg. | 9590, 11850 |
| | Radio Poncyng, N. Korea | 13670 |
| | KNLS, Alaska | 9345, 9640, 11740, 13760, 15230 |
| | (30) Voice of Vietnam | 7365 |
| | (30) Croatian Radio | 9840, 12020 or 15010 |
| | (30) R. Tashkent, Uzbekistan | 9520, 9830, 13640, 13830 |
| | Radio Finland Int'l | 7285, 9715, 15295 |
| | 11900, 15400 |

| 1400: | China Radio Int'l | 7405, 9535, 9785 |
| | Voice of the Mediterranean | 11925 |
| | Radio France Int'l | 12030, 15405, 17560 |
| | Radio Jordan | 9560 |
| | All India Radio | 7412, 9950 |
| | Radio Copan Int'l, Honduras | 15675 |
| | Radio Japan | 9835, 9750, 11705, 11895, 11915 |

| 1500: | HCJB, Ecuador | 15115 |
| | Radio Poncyng, N. Korea | 9325, 9640, 9977, 13785 |
| | FEBK, Seychelles | 9810 |
| | Polish Radio Warsaw | 7285, 9525, 11840 |
| | Radio Ethiopia | 9560 |
| | (30) R. Finland Int'l | 11900, 15400 |
| | VOIRI, Iran | 9575, 11790 |

| 1600: | Radio Pakistan | 11570, 15555, 17660 |
| | (Sun) Radio Norway | 11850 |
| | Radio Prague, Czech Republic | 5930, 17485 |
| | UAE: Radio | 13675, 15320, 15395 |
| | Radio France Int'l | 11700, 11975, 12015, 15530, 17795 |

| 1700: | Radio For Peace Int'l | 6200, 15050 |
| | All India Radio | 7412, 9950, 11620 |
| | HCJB, Ecuador | 15490 |
| | BBC, England | 9410, 9515, 11775, 15400, 17830 |
| | (30) Republic Sweden | 13605, 15600 |

| 1800: | Radiobras, Brazil | 15265 |
| | Radio Algiers, Algeria | 11715 |
| | Radio Kuwait | 11990 |
| | RAE, Argentina | 15345 |
| | Voice of America | 9760, 9770, 15410, 15580 |

| 1900: | HCJB, Ecuador | 15490 |
| | RAE, Argentina | 15345 |
| | AWR, Costa Rica | 13750, 15460 |
| | WRML USA | 9955 |
| | (30) VOIRI, Iran | 9022 |
| | (30) Radio Austria Int'l | 13730 |

| 2000: | Radio Canada Int'l | 13650, 13670, 15150, |
| | | 15325, 17820 |
| | Radio Kuwait | 11990 |
| | (05) Radio Damascus, Syria | 12085, 15095 |
| | (30) Radio Finland | 6120, 9730, 11755 |
| | Monitor Radio, USA | 13770 |

| 2100: | Radio Havana Cuba | 11720 |
| | All India Radio | 7412, 9950, 11620 |
| | (30) R. Dniepr Int'l, Modavia | 9620 |
| | (10) Radio Damascus, Syria | 12085, 15095 |
| | BBC | 5975, 9410, 11750, 11835 |
| | Radio Yugoslavia | 13740, 15305 |
| | Radio Canada Int'l | 17750, 21720 |
| | VOFC, Taiwan | 9650, 9665, 11845 |

| 2300: | AWR, Costa Rica | 5030, 6150, 7375, 9725, 13750 |
| | Radio Canada Int'l | 5960, 9755 |
| | (30) Radio Netherlands | 6020, 6155, 9840 USB |
| | (30) R. Vlaanderen Int'l, Belg. | 9925, 13800 |
| | Radio Poncyng, N. Korea | 11700, 13650 |
| | Voice of Turkey | 9445 |
| | Radio Bulgaria | 9700, 11720 |
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CIRCLE 124 ON READER SERVICE CARD
If you own either a communications receiver or a portable shortwave receiver, you know the antenna is a very important part of your listening station. Although the telescoping rod antennas supplied with portables and random wire antennas work well on many signals, there is no substitute for an antenna preferably located outside and mounted as high as possible for serious DXing on the broadcast or shortwave bands. Alpha Delta Communications Inc., a manufacturer of wire antennas and accessories for the SWL and amateur radio markets, recently introduced their latest wire antenna design—the Model DX-ULTRA.

Overview
The DX-ULTRA antenna is an inductively loaded multielement wire dipole with an overall length of 80 feet with specified operation from 500 kHz through 30 MHz. The antenna can be fed with 50-ohm coax through Alpha Delta's exclusive DELTA-C center insulator (included) or with open wire line, and can be installed in a dipole, inverted-V, or sloping dipole configuration. (Note: The DELTA-C center insulator contains a replaceable Model SEP ARC-PLUG that discharges potentially destructive static charges present on the antenna.) The DX-ULTRA is comprised of three 12-gauge solid copper wire elements with gray PVC protective insulation: the top-most and longest element utilizes inductive end-loading with Alpha Delta's exclusive ISO-RES inductors; the middle element is 48 feet in length; and the bottom element is 32 feet in length. Each element is separated by gray PVC rod spacers strategically placed to provide proper separation and overall strength. The package also includes the two end insulators.

Assembly
Although the DX-ULTRA antenna comes essentially fully assembled, some minor preinstallation work on the antenna is necessary. A well-written instruction and installation sheet is included. Carefully unwind the antenna so not to "kink" the wire. Simultaneously route each of the two shorter wire elements on each side of the DELTA-C center insulator through the PVC rod spacers. Everything is included for installation, even a small-diameter rope for securing the end insulators to an attachment point. All you need to supply is a sufficient length of coax or open-wire feedline to reach your receiver.

Performance
For this review, the DX-ULTRA antenna system was installed in an inverted V configuration at a height of 30 feet at the apex of the V. Because of the multiple wire elements, the DX-ULTRA exhibits resonance on several shortwave bands, including the 41-meter and 90-meter (tropical) bands, 31-meter and 25-meter bands. Plus, the antenna offers good broadband performance because of being electrical 1/2- and 3/4-wavelength multiples long at various other frequency bands. This broadbanded performance is enhanced by the use of Alpha Delta's exclusive low-Q ISO-RES inductors.

In addition to its broadbanded nature, another noticeable feature of this antenna is its low noise. Most dipoles exhibit some form of static or precipitation noise. This antenna does not seem to suffer from this malady. This may be because of the Model SEP ARC-PLUG static electricity protector that is integral to the DELTA-C center connector of the DX-ULTRA.

Compared to a random wire antenna and a 40-meter dipole at the same elevation, the DX-ULTRA provided consistently stronger signal strengths to the receiver on all bands under test. This is one very good all-around wire antenna. Additionally, the antenna can be used as a transmitting antenna with an antenna tuner. Thus, if you are an avid SWL and ham, this may be just the ticket for your "all-band" antenna!

Summary
If you want a full-spectrum broadbanded wire antenna, the DX-ULTRA is one to seriously consider. Its low noise, broadbanded nature and signal-capture ability is excellent. The price of the DX-ULTRA is $119.95, plus $5 for shipping. For more information, please contact your favorite dealer or Alpha Delta Communications Inc., P.O. Box 620, Manchester, KY 40962; or (606) 598-2029.

Reviewed by POP'COMM Staff
BOOKS YOU’LL LIKE

BY R.L. SLATTERY

The Inside Story

The world of technology is moving forward at an ever-increasing speed. Our lives, financial dealings, communications, businesses, privacy, and every aspect of our society continue to become more and more dependent upon that amazing invention, the computer.

“The computer says...,” is too common of a response when something goes wrong. This is invariably followed up by, “The computer is never wrong.” In our haste to find the easy life, we tend to minimize or overlook the risks involved with expecting that a computer or other technology will be risk-free.

A computer does have occasion to suffer from its own internal or networking problems. All too often, though, problems result because a computer is a tantalizingly locked door that invites entry by the technologically elite. Hackers, whether they are considered the technologically elite or cyberspace criminals, have been a fact of life for several years.

Hacking: Frequently Asked Questions, was written by "Voyager," sysop of the Hacker's Haven BBS. Here's a 100-page book brimming over with information. You just knew that someday a hacker was going to step forward and write this book. Don't expect to find this one on sale at your local computer store.

Voyager's enlightening book is divided into five sections covering computers in general, telephony, resources, 2600 and miscellaneous. Within these sections, Voyager provides experiences, perspectives and insight on more than 120 different topics, questions, pieces of hardware, software and hacking techniques. This information is drawn from Voyager's own extensive knowledge, backed by additional material supplied by no less than 19 others who have stepped forward to add something to this blunt and candid look at the many aspects of hacking, as seen from the inside.

There are plenty of BBS and other phone numbers provided, as well as ways to computer-access security and other relevant groups (includes WWW). You'll learn about how hackers crack all types of passwords, how they modify data, about viruses and copy protection. What are the default accounts for XXX, and what's an Internet Outlaw? What are the ethics of hacking? How does someone get on hackers' mailing lists? These and many, many more things are revealed by Voyager and his associates.

Hacking: Frequently Asked Questions, the book someone was bound to write, is $19.95, plus $5 shipping and handling ($6 to Canada). N.Y. state residents add $2.12 tax. Order from CRB Research Books Inc., P.O. Box 56, Commmack, NY 11725-0056. MC/VISA phone orders: 1(800) 656-0056, Canada/AK/HI orders: (516) 543-9169.

CopyCATS, V.3

ACARS is an acronym meaning Aircraft Communications Addressing and Reporting System. This is a digital two-way communications method used in the VHF aeronautical band by ground stations of all major airlines and their inflight airlines.

Using ACARS, airlines exchange text between ground and air relating to schedules, weather, fuel usage, emergency conditions, equipment performance, as well as private and company traffic. The ACARS message texts are transmitted in a format consisting of a type of shorthand that is both quickly and easily understood by airline personnel. To the eyes of an outsider, these texts look to be little more than random and meaningless groupings of letters and digits.

Using a standard scanner tuned to the VHF aeron band (an exterior antenna helps), you can pick up the ACARS signals. They sound like ping noises. When you connect particular decoders to the speaker output of a scanner, the pings can be read out as ACARS texts. These decoders are relatively inexpensive, and include the Universal M-400, M-1200 and ACT-1.

Understanding ACARS, written by Ed Flynn, has been updated into its third edition. Ed's 92-page illustrated book is the guide to understanding and appreciating the various categories of ACARS messages that might be encountered. This new edition includes the latest codes, abbreviations, formats and other necessary information for interpreting ACARS traffic on hobby-level hardware.


In Addition ...

Most of us who use and enjoy hobby
communications come to regard it as the center of the electronics solar system. Time for your annual reality check, as contained in the 125-page publication, The U.S. Consumer Electronics Industry In Review, 1995 Edition, published by the Electronic Industries Association (EIA). The detailed sales analysis of various segments of the industry discusses home computers, TVs, satellite TV, VCRs, camcorders, stereos, radar detectors, faxes, beepers, cellular phones and much more. It even stretches out to include things such as electronic watches, calculators, organizers, security, blank tape and home copiers.

Yet, the book fails to mention that any ham radios, VHF-UHF scanners and communications receivers are sold or in use. Yes, the EIA does mention that CB radios exist. Curiously, the EIA states that people buy CBs as a low-cost alternative to cellular phones. They observe that “many of the new customers are chatty teen-agers.” The electronics market in the United States this year will top out at $60 billion. It seems communications hobbyists can’t be detected, even on the EIA’s most sensitive instruments. This curious and informative book is worth a look.

While supplies last, copies will be available at no cost, however, it is important to note that to get one it will be necessary for you to furnish a self-addressed 6-inch-by-9-inch stamped ($1.70 in U.S. postage) return envelope for them to mail it to you. Get a copy by contacting EIA/CEG’s Communications Department, 2500 Wilson Blvd., Arlington, VA 22201-3834. Phone (703) 907-7674.

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- The DX-ULTRA is designed specifically for full spectrum shortwave performance, not just for the narrow amateur or international shortwave bands.

Alpha Delta Model DX-ULTRA, 80 ft. in length . . . . $119.95

If your space does not permit the full 80 ft. length of the DX-ULTRA, we suggest our Model DX-SWL 1/4 wave sloper (60 ft.) or our DX-SWL-S 1/4 wave sloper (40 ft.). These antennas have similar design philosophies.

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current solutions to current problems
Amateur radio contests test your ability to work the most stations in different geographical areas on the most bands during the contest periods. These contests give you a chance to evaluate your equipment and antennas, and to compare your results with others.

Here's a whole world of operating that's open to every amateur with a technician or higher license. In most VHF/UHF contests, each contact is worth a certain number of points. Multiply your point total by the total number of different grid squares (multipliers) to calculate your final score.

The only restrictions in these contests are that contacts through repeaters (and satellites) don't count, and the national 2-meter FM calling frequency, 146.52 MHz, is off-limits for ARRL contest QSOs. SSB and CW are the most popular contest modes, but you can have a lot of fun with FM, too. During the first hour or two of a VHF contest, contacts may come fast and furious. Then the pace slows, as operators prowl the bands looking for new stations.

VHF/UHF contests are open to any licensed amateur. VHF/UHF contest features a variety of categories from which you can choose. For some operators, entry classes include all-band, single-band, QRP portable and "rovers" (those who operate mobile, moving to more than one grid square during a contest).

The ARRL and QG magazine sponsor major VHF/UHF contests (see box), and specific rules, descriptions of the categories and entry forms are available free. You don't have to be a CQ subscriber or an ARRL member to participate, nor are you required to officially "enter" afterward (by submitting your log), although doing so helps the contest sponsors verify QSOs that others claim.

When to Be Where

VHF contests are held throughout the year, with emphasis on the warmer months to encourage hilltop operation during favorable weather. Outside of that, VHF/UHF contests are designed to take advantage of propagation enhancements that usually occur at certain times of the year. For instance, the ARRL June VHF QSO Party almost always occurs during periods of excellent sporadic-E propagation, giving you an opportunity to enjoy long-distance contacts on 6 and 2 meters. The first documented sporadic-E contact on the 222-MHz band was made during a June VHF QSO Party. As shown in Table 1, the major VHF contests are the ARRL January Sweepstakes (SS), ARRL June and September VHF QSO Parties, the CQ WPX VHF contest, ARRL August UHF Contest, and the ARRL VHF/UHF Spring Sprints. Except for the sprints, these events each encompass many bands. The January sweeps and June and September QSO parties are popular, and each permits activity on SSB, CW and FM on all amateur frequencies above 50 MHz. The UHF contest is slightly different — only contacts on 222-MHz and higher bands are allowed for contest credit. The Spring Sprints are single-band, four-hour contests held over a period of several weeks. These short contests provide opportunities to test new locations or equipment.

You'll find lots of 6- and 2-meter activity during VHF contests. On SSB, most stations stay near the calling frequencies of 50.125, 50.20, 144.20, 222.10 and 432.10 MHz. On CW, look from 80 to 100 kHz above 50.144, 222 and 432 MHz. There's plenty of fun contesting with FM, and not nearly enough FM operators participate — go for it!

Contest Operating

As in all amateur radio contests, there's a standard exchange of information between stations. In many cases, the exchange consists of your grid-square location and a signal report. You can hunt for stations to call or find a clear frequency and call QSY yourself.

Here's an example:

WS1O calls CQ to initiate contest contacts:

CQ CONTEST, CQ CONTEST FROM WS1O, WHISKEY SIERRA ONE OSCAR, WS1O

AA2Z responds, using phonetics so there's no confusion about his call sign:

WHISKEY SIERRA ONE FROM ALFA ALFA TWO ZULU.

WS1O responds, giving a signal report and his grid square:

AA2Z, YOU'RE 59 IN FN31 FROM WS1O

AA2Z confirms receipt of WS1O's information and sends his own:

WS10 FROM AA2Z, ROGER. YOU'RE 57 IN FN20, OVER

WS1O confirms AA2Z's report:

ROGER. THANKS FOR THE CONTACT

With the exchange made and confirmed, WS1O resumes calling CQ for the next contact.

CQ CONTEST, CQ CONTEST FROM WS1O, WHISKEY SIERRA ONE OSCAR, WS1O, QRZ?

What's Your Excuse?

Where were you during the last VHF contest? The ARRL UHF Contest in August? The September VHF QSO Party? The CQ WPX-VHF Contest in July? Will you be ready for the VHF Sweepstakes? The standard answers are, "I'm not a contestant," "I don't have an all-mode rig for those bands" or "I don't have time to stay on the air all those hours." None of these answers are valid reasons to ignore the events. You may say, "The only ham radio activities I like are handling traffic and chatting with friends on the local repeater." It's funny how that's not much different from operating in a VHF contest.

"I'm Not a Contestor"

Who is? Only a person who elects to participate in a contest. And even then, you aren't really "in the contest" unless you submit an entry log. If your main interest is rag-chewing, helping with public service activities, organizing emergency communication or handling traffic on the local repeater, you can have fun by trying your hand at a VHF contest. Making a contact is easy. Simply exchange your call sign and grid square. Unlike the big HF contests, an FM contest QSO can be more leisurely. There's...
rarly any QRM to fight, and because there are fewer stations in range, there isn't the frantic pace HF contestants must maintain. By the way, some of the best contestants come from the ranks of traffic handlers, which makes sense because contest operation requires the ability to copy the other station accurately and efficiently.

“I Don't Have an SSB or CW Rig”

You don't need one. Most VHF/UHF contests let participants use FM. You just can't use repeaters. There aren't any special multipliers for working DX stations or having a 1,000-watt amplifier feeding a stacked array of yagis. Each FM simplex contact with a neighbor is worth just as many points as a CW contact with a station 1,000 miles away. That handheld 2-meter FM transceiver can net you enough points to make a strong showing in your ARRL section—if you go to the trouble of using it. How much trouble? Pick a simplex frequency (see below) and listen for—oh, “CQ contest.”

“I Don't Have Time”

If you plan to be on the air at all over a contest weekend, you have time to join the fun. Simply exchange the necessary information and write it in a log. There's no minimum number of operating hours or contacts you have to make, no bonus points for staying awake all night, no special awards or certificates for climbing Pike's Peak or Mount McKinley, operating from a submarine or autogyro, or standing on your head. You can take a stab at the contest while sitting comfortably in your shack, living room or car for an hour or two.

Grab a snack, a mug of coffee, a couple of pencils and a log sheet. If you don't have a blanket contest log, use a plain piece of paper. You can always copy the info onto a standard contest log afterward, if you decide to “officially” enter. Or boot up a contest logging program on your computer and let the silicon do the thinking. You can get software by mail order, download from local telephone BBSs, national online services or Internet sites, or ask for a copy from almost any contestant you know.

“I Never Hear Anyone Using FM During Contests!”

Guess what: If you didn't hear them, perhaps it's because they didn't hear you! If no one else is calling “CQ Contest,” you may as well do it. You'd be surprised at how many others might pop out of the woodwork to make a QSO. Recruit your friends and members of your club to join you to give each other contacts. This can lead to hundreds of “easy” points and “eneter.” Or boot up your handheld transceiver, too—and perhaps you can form the nucleus of your own team. (Here's a thought: If you get 25 people you know to get on the air during the ARRL September VHF Sweepstakes and each of you works everyone else, you'll be eligible for participation pins!) If you want to convince friends or club members to participate, ask them to call or listen on a particular frequency at the top of each hour from, say, 1 a.m. to 6 a.m. That way, they'll be more likely to find someone and make a contact or two, rather than randomly turning on the rig, hearing nothing and giving up. Try the following well-known frequencies: 52.525; 144.9-145.0; 146.49, 146.55, 146.58, 147.42, 147.45, 147.48, 147.51, 147.54, 147.57, 223.5; and 446.0 MHz. (Don't use the 2-meter national simplex frequency, 146.52 MHz, for calling or soliciting contacts.)

“What's In it for Me?”

Contests put a lot of hams on the air. The FM simplex frequencies that normally may be quiet most of the time will be fairly busy. You'll get a better idea of how effectively your station functions, what kind of range it's capable of spanning, how propagation and seasonal conditions affect it, and station you can hear. You might get your call sign or your club's name into the contest results write-up in QST or CQ. In some areas with a smaller active ham population, your modest effort even could earn a certificate or plaque! You can make friends on the air who probably don't live too far away. You might discover a propagation opening and experience the thrill of working someone hundreds of miles away with your handheld transceiver. You'll hand out QSOs for points to other contest operators. (As a newcomer, you'll quickly learn how welcome you are, because your call sign will be very noticeable to regular local VHF contestants who may be frustrated by always hearing nothing but the same bunched of stations during every contest.) Most important, it's almost certain that you will have fun.

Now enter the contest to tell me the most interesting experience you've had in amateur radio; prize winners get to have their words immortalized in this column! Send your mail to Brian Battles, Department PC, ARRL HQ, 225 Main St., Newington, CT 06111; e-mail bbattles@arrl.org.

1 I've been astonished by the possibilities of long-distance communication on 2-meter FM. For example, there was a band opening one evening a couple of years ago when I made simplex contacts from Connecticut with stations in Cape Hatteras and Maine, and I even was called by a station in Panama City, Florida, although I couldn't complete a two-way QSO with that station. I wasn't using an exotic rig, antenna, power amplifier or preamp; my trusty handheld transceiver (about 8 watts output) was leaning a 5/8-wavelength whip antenna on top of the chimney of a two-story house.—WS1O.
LISTENING POST

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

If your shortwave antenna has never been tickled by signals from Malawi Broadcasting Corp., don’t despair. The government there has decided to upgrade the national broadcasting facility, a move that will include more powerful transmitters, even though they have been using (or listed for) 100 kilowatts. No word on when the power increase will happen, but perhaps before this year’s close. In the meantime, you can continue checking for the MBC, which signs on at 0255 on 3380 kHz.

Still in Africa, there’s a previously undiscovered station on the air from Sierra Leone. Radio Al-Koran is a Muslim station using 250 kilowatts on 9630, broadcasting in Arabic, French, English and several local languages. The schedule, unfortunately, runs from 1500 to 1900, times which aren’t very helpful for reception in North America.

Radio Africa, broadcast via the national radio in Equatorial Guinea, isn’t reported often, but it’s being heard lately during the weekends on 15180 at 0815 and 1115, and until closing at 2255. This is a commercial religious operation, programmed through Pan American Broadcasting, a California concern located at 20410 Town Center Lane, Suite 200, Cupertino, CA 95014.

Denmark continues to make more shortwave news of a positive nature. A couple of months back, DXers were given a real challenge when the European DX Council marked its annual meeting by operating its own SWBC station from the conference in Denmark.

Radio station EDXC-95 operated a low-power transmitter over the period of the conference and provided the first shortwave transmissions from Denmark in a number of years. The word we get is that the broadcasts brought in about 70 reception reports. Apparently, the signals were inaudible in North America and were even quite weak in the United Kingdom.

Radio Denmark now is issuing QSLs for reception of the station’s transmissions over Radio Norway’s facilities. Enclose either one international reply coupon or a $1 bill with your report to: Radio Denmark, Rosenorns Alle 22, DK-1999 Frederiksberg C, Denmark.

The Voice of Vietnam to North America in English via Russia is now aired at 0100 to 0230 on 7250, as part of an expansion of Russian transmitter usage. Other English broadcasts are aired at 0400-0600 on 5940, plus 1000, 1100, 1230, 1330, 1600, 1800, 1900, 2030 and 2330 on 7250, 9840 and 15010—the latter two probably are direct from Vietnam.

Philippines

A shortwave oddity from this country is medium-wave station DZMN (630 kHz), which reportedly is relayed on shortwave by “utility” station Bulan Coastal Radio. A segment of DZMN’s Tagalog programming is being carried from 2330-2337 on 13170 upper sideband. It could be that this was or is a very temporary thing, used more as a frequency “marker” than an actual relay, but it won’t hurt to check for this now and then. Sometimes these things come and go.

Uruguay

Uruguayan shortwave stations are rather difficult to hear and often aren’t reported to the Listening Post. Here’s a new one that may be active on shortwave before long: Emisora Ciudad de Montevideo, which has received permission to broadcast using 9650 and 15230.

IDing BBC Sites

Often as not the signals you hear from major shortwave broadcasters such as the BBC actually are transmitted from somewhere other than the home country. The BBC operates transmitters in, or has relay arrangements with, several countries and often we just can’t be sure what’s coming from where. In this case, though, you can get some help from a complete BBC World Service transmitter site frequency list. Write to: BBC World Service Transmitter Site Guide, P.O. Box 76, Bush House, Strand, London WC2B 4PH, England.

Information, Please

Your log reports are always welcome! We only ask that you list each station individually, by country, and include your last name and state abbreviation after each log. We also welcome station information, station and shack photos, copies of spare QSLs for illustrations, information about station QSL policies, requirements and so on. Your interest and input are appreciated! Here are this month’s logs. All times are in UTC, which is five hours ahead of EST (0000 UTC equals 7 p.m. EST, 6 p.m. CST, etc.). Broadcast language is assumed to be English unless specified otherwise (SS = Spanish, FF = French, GG = German, etc.).

ALASKA—KLS, 6150 at 1134 in Russian and a bit in EE. (Williams, TX) 7365 at 1244 in CC, into EE at 1300 with IS and ID. (Pappas, SD) 9615 at 1000 with IS, ID, pops and talk. (Maywood DX Team, KY)

ANTIGUA—BBC Relay, 5975 at 2244 and 6110 at 2248. (Williams, TX) 9460 at 0741 with “Jazz For the Asking.”

Deutsche Welle relay, 11810 in SS at 0227, 15105 in SS at 0031, 15275 in GG at 1255 and 15410 at 0040. (Wms, TX)

ARGENTINA—RAE, 15345 in EE with J.D. news and music at 1900. (Maywoods, KY) 0038 in SS. (Wms, TX)

ARMENIA—Armenian Radio, 11920 at 0500 in Armenian with frequent mentions of Yerevan. (May-

Radio station EDXC-95 and its antenna, mounted on a smokestack. EDXC-95 operated with 40 and 200 watts from the heating plant at Rebild Bakker, Denmark, in June during the annual conference of the European DX Council. Many thanks to "The Kentucky Colonel," R.C. Watts of Louisville, Ky., for sending the pics!
Adventist World Radio sent this special card for correct reports on a series of tests it ran for broadcasts to North Africa from a medium-wave transmitter on Gibraltar.
Radio Korea via Seoulville, 17115 at 1046 with letters, ID, sign-off at 1059. (Pappas, ND)
Radio Austria Intl., via Canada, 6015 at 0530 with "Report From Austria." (Pappas, SD)
Radio Japan relay, 11705 at 1437 with "Media Roundup." (Pappas, SD)
Radio Canada Intl, 5960 at 2241, 6120 at 0158 with IS, ID in EE/FF, 11845 at 0229 with IS and into RR; 13670 at 0027 with ID, news. (Wms, TX)
CHU time station, 7335 at 1148. (Wms, TX) (This station also uses 3330—Ed.)
CHINA—China Radio Intl. 7820 at 1144 in RR with vocals. (Bartoz, AZ)
CPBS, Xi'an, 1153 on 7504 in CC. (Wms, TX)
COLOMBIA—Caracol, 5075 at 0101 and 1110 in SS. (Wms, TX)
La Voz del Rio Arauca, presumed, 4985 at 1101 with two men in SS. (Wms, TX)
Armonias del Caquet\241, 4915 at 1103 with music and talk in SS. (Wms, TX)
Radio Nacional de Colombia. 11785 in SS at 0006. (Wms, TX)
Radio Melodia, 6047 at 1130 in SS, two women with talk show. (Wms, TX)
COSTA RICA—Faro del Caribe, 5055 at 0059 and 1109 in SS. 9645 at 2316. (Wms, TX) 1303 in SS with religious talk. (Maywoods, KY)
Adventist World Radio, 5030 at 1107 with religious talk in SS. 9725 at 1212 with children's stories in EE. (Wms, TX)
Radio For Peace Intl', 7380 at 0330 with ID. (Wms, TX)
Radio Exterior Espana relay, 11815 in SS at 0140. (Wms, TX) 17870 in SS at 1750. (Bartoz, AZ)
Radio Radio, 4832 at 0923 in SS. (Foss, AK)
CROATIA—Croatian Radio, 5895 at 0148 in presumed Croatian. (Wms, TX) 0206 with news bulletin in EE. (Jeffery, NY) 7370 at 2357 in Croatian, EE ID at 0001 and five minutes of news in EE. (Pappas, SD)
ECUADOR—La Voz de Upano, 5040 at 1108 in SS, 6000 at 1124. (Wms, TX)
HCJB, 12005 at 1349/15115, 15540 USB at 1430. (Pappas, SD) 15140 at 0334 in SS. (Wms, TX)
EGYPT—Radio Cairo, 9700 at 1809 in AA. (Foss, AK)
ENGLAND—BBC, 9915 at 2346. Also at 0302. (Wms, TX)
FINLAND—Radio Finland. 15400 at 1303 in Finnish. (Wms, TX)
FRANCE—Radio France Intl'. 9740 at 2332, 11670 at 1233. (Wms, TX) 11790 at 0553 in FF. (Foss, AK)
GUATEMALA—Radio Tezulutan. 4835 at 0132 in Indian language. (Wms, TX) 0302 with marimbas. (Maywoods, KY)
Radio Cultural, 3300 with religious in EE. (Wms, TX) Radio Mayade Barillas, 3325 at 0129 in SS. (Wms, TX)
Radio K'ekchi, 4945 at 0154 in SS. (Wms, TX)
HAWAII—KWHR, 9930 with religious program at 0819. (Pappas, SD) 17510 at 0325 with religious program, ID. (Jeffery, NY)
HONDURAS—Radio Luz y Vida, 3250 at 0351 with religious programs in SS. Honduran national anthem and off at 0359. (Wms, TX)
Radio Evangegica, 4820 at 0050 with religion in SS. (Wms, TX)
Radio Internacional, 4930 at 0345 with ID, SS broadcasts. (Wms, TX)
Radio HRT, 4960 at 0137 in SS. (Wms, TX)
HUNGARY—Radio Budapest, 9835 at 2359 in HH. Also on 11910 at 0015. (Wms, TX)
ICELAND—Reykjavik on 13680 USB with man and woman announcers at 2300. (Maywoods, KY)

Guatemala—Radio Tezalutan. 4835 at 0132 in Indian language. (Wms, TX) 0302 with marimbas. (Maywoods, KY)
Radio Cultural, 3300 with religion in EE. (Wms, TX) Radio Mayade Barillas, 3325 at 0129 in SS. (Wms, TX)
Radio K'ekchi, 4945 at 0154 in SS. (Wms, TX)
Hawaii—KWHR, 9930 with religious program at 0819. (Pappas, SD) 17510 at 0325 with religious program, ID. (Jeffery, NY)
Honduras—Radio Luz y Vida, 3250 at 0351 with religious programs in SS. Honduran national anthem and off at 0359. (Wms, TX)
Radio Evangegica, 4820 at 0050 with religion in SS. (Wms, TX)
Radio Internacional, 4930 at 0345 with ID, SS broadcasts. (Wms, TX)
Radio HRT, 4960 at 0137 in SS. (Wms, TX)
Hungary—Radio Budapest, 9835 at 2359 in HH. Also on 11910 at 0015. (Wms, TX)
Iceland—Reykjavik on 13680 USB with man and woman announcers at 2300. (Maywoods, KY)

INDIA—All India Radio. Bangalore, 9910 at 1543 with talks in presumed Hindi. (Maywoods, KY) 13750 at 1900 with "Press Review." (Foss, AK)
INDONESIA—Radio Republik Indonesia, Jakarta, presumed, 9680 at 1207 with talks in II. mentions of Australia, Singapore and Jakarta. (Wms, TX)
RRI Jambi. 4926, tentative, presumed II at 1050. IS on the hour. (Maywoods, KY)
RRI Irian Jaya. 4874.6 at 1030 in II. (Maywoods, KY)
RRI Ujung Pandang. 4753.5 at 1112 with news in II. (Maywoods, KY)
IRAN—VOIRI, 15084 at 2031 in AA. (Maywoods, KY)
ISRAEL—Reshet Bet home service, 17545 at 1310 in Hebrew with news discussion, IS. (Wms, TX)
ITALY—RAI on 9725 at 0313 with discussion on family. 11800 at 0007. Also 0227 with opera. (Wms, TX)
JAPAN—Radio Tampa, presumed, 3925 at 1058 in JJ. (Bartoz, AZ) 6055 at 1131 in JJ. (Wms, TX) 9596 at 0945 in JJ. (Maywoods, KY)

Here's a view of the completely automated studios of WHRI. The three computers on the left control on-air programming for WHRI transmitters one and two, and KWKR (Hawaii) transmitter three. Those on the left control the "audio vault."
Radio Japan, 6190 at 1140 in CC, 9680 at 0407 in JJ, 9040 in JZ at 0009. Wms, TX 15185 at 0552 with "Teleco Poo In." (Foss, AK)

JORDAN—Radio Jordan, 11940 at 0237 in AA under Radio Romania. (Wms, TX) 15170 at 1101 and 15220 at 1504 both in EE. (Jaffery, NY)

KUWAIT—Radio Kuwait, 15495 at 0257 in AA.

(Wms, TX)

LIBYA—Radio Jamahiriya, 15235 at 2140 in AA with man/woman back and forth in "pingpong" style. (Maywoods, KY) 0036, perhaps /15415 at 0041 in AA. And the same at 0121 and 0124. (Wms, TX)

MADAGASCAR—Radio Netherlands relay, 7310 at 0355 in DD. (Wms, TX)

MALAYSIA—Radio Malaysia, 4960 at 1105 in Chinese dialect. (Maywoods, KY)

MAUG—China Radio Int’l relay, 11715 at 0233 in CC. (Wms, TX)

MEXICO—Radio Universidad, 6960 at 2310 in SS with symphonic music. (Wms, TX)

Radio Mexico Int’l, 9705 at 2322 with news in SS. (Wms, TX)

Radio Mil, 6010 at 0155 in SS. (Wms, TX)

Radio Educacion, 6185 at 1159, guitar trio, ballads in SS. (Wms, TX)

MOLDOVA—Voice of Russia relay. 11730 at 2237 with "Timelines." (Wms, TX)

MOROCCO—RTV Marocaine, 11920 in AA at 0234, 0347. (Foss, AK)

Radio Medi Uni, 9575 at 0205 in AA with QRM. (Maywoods, KY)

VOA relay, 6010 at 0400 with news. (Jaffery, NY)

NETHERLANDS—Radio Netherlands, 9876 in Dutch at 0305, 9890/11715 at 2344, 2537 in SS to Central and South America. (Wms, TX)

NETHERLANDS ANTILLES—Radio Netherlands Antilles, 9700 at 0735 with sports, news, "Media Network." (Pappas, SD) 15135 at 0037 in SS. (Wms, TX)

NEW ZEALAND—Radio New Zealand, 6100 at 0952. (Maywoods, KY) 0956 with 16000. (Pappas, SD) 15115 at 0306 with "Afternoon Showcase" from National Radio. (Jaffery, NY) 0032 with news, easy listening music. (Wms, TX)

NOW KOREA—Radio Pyongyang, 7200 at 1049 with anthem and sign-off. (Barton, AZ) 7580 in JJ at 1155. 9977 at 1220 in SS, perhaps parallel with 11335 at 1222. (Wms, TX)

PAKISTAN—Radio Pakistan, 11570 at 1702. (Maywoods, KY)

PAPUA NEW GUINEA—NBC Port Moresby, 4890 at 0844. (Foss, AK) 1026 in Popul. (Maywoods, KY)

PARAGUAY—Radio Nacional, 9735 at 1017 with vocals, concertino music. SS. (Maywoods, KY) 2328. (Wms, TX)

PERU—Radio Cora, 4914.5 at 0145 in SS. (Wms, TX)

PHILIPPINES—VOA relay, 9760 at 1214, 9770 at 2336, 11760 at 0002, 17820/17375 at 0044. (Wms, TX) 12040 at 15125 in CC. (Barton, AD)

AWR — Adventist World Radio
Special Edition QSL

This one was issued by AWR for test broadcasts to Australia/Papua New Guinea from its transmitter site on Guam.

NORTH KOREA—Radio Pyongyang, 7200 at 1049 with anthem and sign-off. (Barton, AZ) 7580 in JJ at 1155. 9977 at 1220 in SS, perhaps parallel with 11335 at 1222. (Wms, TX)

PAKISTAN—Radio Pakistan, 11570 at 1702. (Maywoods, KY)

PAPUA NEW GUINEA—NBC Port Moresby, 4890 at 0844. (Foss, AK) 1026 in Popul. (Maywoods, KY)

PARAGUAY—Radio Nacional, 9735 at 1017 with vocals, concertino music. SS. (Maywoods, KY) 2328. (Wms, TX)

PERU—Radio Cora, 4914.5 at 0145 in SS. (Wms, TX)

PHILIPPINES—VOA relay, 9760 at 1214, 9770 at 2336, 11760 at 0002, 17820/17375 at 0044. (Wms, TX) 12040 at 15125 in CC. (Barton, AD)

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Radio Veritas Asia, 9560 at 2127 in RR. (Jeffery, NY)
PORTUGAL—Deutsche Welle relay, 9535 at 0325 in EE, 13780 at 0116 in GG. (Wms, TX)
Radio Portugal, 9570 in PP at 2304//9635. 15200 at 1251 in PP. (Wms, TX)
JIFF/RRI, relay, 71445 at 0055 in unidentified language. 11935 at 0017 in unidentified language. (Wms, TX)
ROMANIA—Radio Romania Intl. 11940 at 1900 with frequency info, news, ID. (Jeffery, NY) 0235. (Wms, TX)
RUSSIA—Radio Vedio and Vologograd, 13710 at 0030, bell/chime IS and ID. news. (Mays, KY)
Magadan Radio, 9530 at 1119 in RR with talk, rock. (Pappas, SD)
Voice of Russia, 5475 at 0255 to North America, 11730 at 2359 with IS, frequencies for SS broadcasts. (Wms, TX)
WMSR, 1480 at 0131, 9665 at 0400. 11750 at 2230, all EE. (Jeffery, NY) 15425 at 0441. (Foss, AK)
RUANDA—Deutsche Welle relay, 21695 at 1317, presumed, in unidentified language. (Wms, TX)
SAUDI ARABIA—BSKSA, 9720 at 0316 in AA. (Wms, TX)
SINGAPORE—BBC relay, 9605 at 1204, 9740 at 2332 in CC or similar. 11750 at 1226 in EE. 15360 in CC at 1302. (Wms, TX)
SLOVAKIA—Radio Slovakia. 5930 at 0150 in presumed Slovak. (Wms, TX)
SPAIN—Radio Exterior Española, 9540 at 2302, two men in FF, 9620 at 2312 in SS. 11945 at 0018 in SS. (Wms, TX)
SWEDEN—Radio Sweden. 9850 at 0306 in Swedish, 15250 at 1253. (Wms, TX)
SWITZERLAND—Swiss Radio Intl., 9905 at 0303 and 9885 at 2338. (Wms, TX) 13635 at 1748 in GG. (Foss, AK)
SYRIA—Radio Damascus, 12050 at 0224 in SS to South America. (Wms, TX) 15095 at 2012 with local music. (Mays, TX)
TAHITI—Radio Tahiti. 15170 at FF at 0602. (Mays, TX)
TAIWAN—Voice of Free China. 9680 via WYFR at 0247. (Jeffery, NY) 11745 at 1225 in CC and 15270 in CC at 1255. (Wms, TX)
Voice of Asia, 9280 at CC at 0905. (Barton, AZ)
WYFR, via Taiwan, 5275 in CC/EE at 1112. (Wms, TX)
Broadcasting Corp. of China, 15125 in CC at 1249. (Wms, TX)
THAILAND—VOA relay, 11785 at 1229 with news in CC. (Wms, TX)
TUNISIA—RTV Tunisienne. 15449 at 1630 in AA. (Mays, KY)
TURKEY—Voice of Turkey. 9445 at 2254, Turkish music. (Wms, TX)
UKRAINE—Radio Ukraine Intl. 11780/11950 at 2032 in GG with talk, many IDs. Into EE at 2100 (Pappas, SD) 11950 at 0029 and 15180 at 0019. (Wms, TX)
UNITED ARAB EMIRATES—UAE Radio. Abu Dhabi. 7215 in AA at 0208. 11885 at 0136. 13605 in AA at 0026. (Wms, TX)
UAE Radio, Dubai. 13605 at 1747. (Mays, KY) 13675 at 0243 and 15400 at 0254 in AA. (Wms, TX)
VATICAN—Vatican Radio. 7305 at 0336 and 9605 at 0323, both in SS. (Wms, TX)
VENEZUELA—Ecos del Torres. 4980 at 0139 in SS. (Wms, TX)
Radio Occidente, 9750 at 1025 in SS. (Mays, KY)
YUGOSLAVIA—Radio Yugoslavia. 9580 at 0431 with news, music features. (Jeffery, NY) 11870 at 0012. (Wms, TX)

That's everything for this month. A rousing cheer to the following who came through for you this time:

Steve Williams, Corpus Christi, TX; Marty Foss, Wasilla, AK; Rick Barton, Phoenix, AZ; Dave Jeffery, Niagara Falls, NY; Marina Pappas, Huron, SD; the Maywood DX Team (Ed Shaw, Loy Lee, Jim Johnston, Chuck Everman, Dr. Joel Rosinman and Jim McClure, all of Kentucky). Thanks to each of you. Until next month, good listening!
The transmission began cult 0509, Providence, quest land tem ton, the Beatles and phone done. Roberts number as Skip was this the el with Jolly. Also public done. The were censed station and They also be to sic, 6956 and began reading them their tation." Slate" comedy sis" 6957,2 for Tim to pick speaks. Dick heard Up against the Wall Radio on 6957.5 with host Owsley playing Clapton, the Beatles and Moody Blues, as well as a spoof of an Emergency Broadcast System test. Harwood had this one from Cleveland on 6957.2 USB with rock and a request for comments to P.O. Box 284317, Providence, RI 02908.

WRV was noted by Bowing on 6955 at 0509, but a local thunderstorm and its accompanying static crashes made it difficult for Tim to pick out very much. There was a mention of "Radio Violence" or "Radio Virus" and heavy metal numbers. The transmission began in upper sideband but later switched to AM, with the host saying, "my radio likes the AM." The announcer gave the Wellsville address for reports and signed off at 0530.

Radio Fusion was heard by Harwood twice, once at 2302 on 6957 with rap music, giving the Providence, R.I., mail drop. Skip monitored this on Interstate 80 between Toledo and Cleveland.

The station was picked up again while Skip was between Hagerstown, Md., and Martinsburg, W. Va., at 0115-0200 on 6957, again with rap and a very strong signal. Don Sebasky in North Carolina also reports this one, at 2315 with various rock-type vocals and a mention of Rhode Island.

Radio Pirana on 13590 was heard by Pearce at 2010, reading listener mail, including signal reports received on an earlier broadcast from the U.S.A., Mexico and South America. They also played "More Than a Woman" and some Spanish tunes. Dick notes that he hopes this was a direct broadcast and not a relay. I believe it was, Dick. I understand this station plans to relocate to somewhere in South America (from their current location in Germany). They'll take reports via the Wellsville address.

Another Pearce log was Down East Radio, heard at 2310 on 6954, but Dick says the signal was too weak to make out anything more than the station name.

I got one report this month for reception of Radio New York International. I think this ex-pirate is now on the air via one of the U.S. commercial/religious stations. Reporter Mike Thompson Sr. of Staten Island, N.Y., heard this on 7435 at 0445 with host "Johnny Lightning" claiming to be broadcasting from "out at sea." They gave a phone number of (718) 633-3010.

A few quick unidentifies: 6955 LSB at 0112 with calliope-like sounds playing religious music (Pearce); 6955 USB at 2140-2145 with rock oldies, heard near Chicago (Harwood); 6955 at 0100-0145 with hard rock music, heard near Chicago (Harwood).

That'll do it for this time. Keep sending in your pirate station loggings, along with any pirate radio news you run across, as well as QSL info, copies of or sample QSLs—even station photos—it's all very, very welcome here in the "Den.' See you next month!
One of the most exciting and interesting things you can have is a handheld scanner with a 41,000-foot rubber duckie antenna! This is not quite as far-fetched as you might think.

Until just a few years ago, the commercial airlines had strict rules against the use of "portable electronic devices" on board planes. The extensive use of laptop computers by high-dollar business fliers has opened doors for computer users, and in doing so, drastically changed the prohibitive rules relating to the use of electronic devices on board commercial airliners.

The prohibition of electronic devices on board commercial airliners was brought about mainly by the midair collision between a DC-8 and a Constellation over New York City many years ago. Both airliners were in holding patterns awaiting further clearance by air traffic control. They were not in the same holding pattern, but they were flying at the same altitude. During the flight, something interfered with the VOR navigation receiver being used to keep one of planes in the assigned holding area. The false reading caused that plane to stray off course, and in doing so, it crossed the path of the other plane. A midair collision resulted, and one plane crashed, killing many of the passengers. The other, although damaged, made a successful landing.

The investigation revealed a young boy seated in the back of the plane was listening to a new portable FM transistor radio. The boy survived the crash and so did his radio. As the investigation progressed, it was discovered that the FM radio had enough superfluous emissions to cause the VOR navigation receiver to give a false position indication. This discovery caused immediate actions by both the FCC and the FAA.

The FAA made a hard-and-fast rule that "no portable electronic device" could be operated on board a commercial airliner in flight. The FCC response was to make new rules relating to superfluous emissions by electronic devices, therefore greatly expand the well-known type-acceptance specifications and related regulations.

Several decades have passed since this accident took place. The FAA has revised the regulations regarding portable electronic devices several times. The FCC also has changed the emissions rule to more tightly control the type-acceptance specifications. Electronic devices also have changed for the better over the years.

I remember boarding a Pan Am flight 10 years ago with a portable ham transceiver. As I passed the captain, I jokingly asked whether he would mind if I operated the walkie-talkie during the flight. His response was a stern: "No! You do know that operating that transmitter inside this 747 would cause all the oxygen masks to deploy, don’t you?" I had to wonder about his logic and knowledge of electronics. As we talked briefly, I noticed a maintenance worker transmitting on his handheld radio. When I asked why the maintenance handheld didn’t deploy the oxygen masks, the captain had no reasonable answer, and just said it was "policy," end of subject.

Things have changed, as I mentioned. And so have the Federal Air Regulations that deal with the problem of portable electronic devices on board commercial airliners. Here is the current Federal Air Regulation, as it now appears:

FAR 91.21 Portable Electronic Devices
(a.) Expect as provided in paragraph (b.) of this section, no person may operate, nor may any operator or pilot in command of an aircraft allow the operation of, any portable electronic device on any of the following U.S. registered civil aircraft:

1. Aircraft operated by a holder of an air carrier operating certificate or an operating certificate, or
2. Any other aircraft while it is operated under IFR (Instrument Flight Rules).
(b.) Paragraph (a.) of this section does not apply to:
1. Portable voice recorders;
2. Hearing aids;
3. Heart pacemakers;
4. Electric shavers; or
5. Any other portable electronic device that the operator of the aircraft has determined will not cause interference with the navigation or communication system of the aircraft on which it is to be used.
(c.) In the case of an aircraft operated by a holder of an air carrier operating certificate or an operating certificate, the determination required by paragraph (b.) of this section shall be made by that operator of the aircraft on which the particular device is to be used. In the case of other aircraft, the determination may be made by the pilot in command or the operator of the aircraft.

The major change in the FAA regulation comes in the legal wording of (b.)(5).
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**POP’COMM’s World Band Tuning Tips**

**November 1995**

This POP’COMM feature is designed to help you hear more shortwave stations. Each month this handy, pullout guide shows you when and where to tune to hear a wide variety of local and international broadcasters on the shortwave bands.

The list includes broadcasts in languages other than English. Most of the transmissions are not beamed to North America. Keep in mind that stations make frequent changes in their broadcasting times and frequencies.

Changes in propagation conditions may make some stations difficult or impossible to receive. Your equipment and receiving location also will have a bearing on what you are able to hear.

Note: EE, FF, SS, etc., are abbreviations for English, French, Spanish and so on. Some frequencies may vary slightly. All times are in UTC, which is five hours ahead of Eastern Standard Time (i.e., 0000 UTC equals 7 p.m. EST).

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<td>0330 SS</td>
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<td>4785</td>
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<td>6260</td>
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<td>4800</td>
<td>R. Lesotho</td>
<td>0300</td>
<td>6305</td>
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<td>7105</td>
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<td>R. Cairo, Egypt</td>
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<td>5075</td>
<td>Caracol Colombia</td>
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<td>9500</td>
<td>Trans World Radio, Swaziland</td>
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<td>R. Australia</td>
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<td>9535</td>
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<td>0230</td>
<td>9540</td>
<td>R. España Exterior, Spain</td>
<td>0100</td>
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<td>9560</td>
<td>Voice of Peace/R. Amaharo, Ethiopia</td>
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This change, although slow in coming, allows each airline to test whatever electronic devices they desire. If, as a result of the interference test, the carrier finds there is no interference, then they can allow the operation of the selected device or devices on board their planes. Some airlines are quite restrictive in the electronics devices they allow. Others have taken the time to run extensive tests, and as a result, they allow the extensive use of electronics on board their flights.

Although editorial limitations do not allow me to mention the airlines by name, I can tell you the results of my personal research. One major carrier I checked, flying mostly 737s and DC-9 airplanes nationwide will not allow the operation of any electronic devices other than the ones mentioned above, spelled out in the FAR.

In checking another airline, a major international and domestic carrier based in the south, I found this interesting list in their on-board magazine:

"The following devices can be operated at anytime during taxi, take-off, in flight, and during landing: hearing aids, nerve simulators, electric shavers, permanent life-support devices, pacemakers, electric watches and pagers."

These devices can be operated during the cruise portion of the flight: computers, VHF scanners, CD and tape players, electronic games, video cameras and video players, and electronic calculators. These devices cannot be operated at any time during any phase of the flight: cellular phones (must be turned completely off at all times); peripheral computer devices such as printers; any device that can radiate RF on a specific frequency (in other words, a crystal-controlled repeater); commercial two-way radios; portable television sets; AM/FM portable radios, 49 MHz, ham or CB transceivers; and remote-control toys."

As you can see, there is a wide difference between airlines regarding your electronic device use. However, if you pick the right airline, you can use your VHF portable scanner in flight while at cruise! Listening to a scanner at 41,000 feet can be one of the most interesting monitoring sessions you can ever experience, believe me! You can monitor hundreds of police and fire calls from as far away as 400 miles. You also can follow the frequency selection being used by your flight, and follow the progress of your plane on VHF.

The poor cellular phone user seems to be restricted by all the airlines I checked. I suspect this is for three reasons. First, the airline probably would lose money if you used your phone in flight and not the on-board phones. Second, from high altitude, the cellular user would bring up many different cellular sites and service providers. And, third, the airline does not want you disturbing the other passengers with your incoming calls, hence the requirement that all cellular phones be turned completely off.

As you will note, the FM radio has remained on the totally restricted list. This is certainly a hold-over from the crash many years ago, and the legal risks if such operation were allowed even today.

In buying your next airline ticket, if you are a portables scanner user, I would suggest that you check around and perhaps travel with the southern-based carrier that has no objections to your portable scanner enjoyment in flight. I also would suggest a window seat somewhere other than over the wing, and of course, bring an earphone! Others around you might not enjoy 5,000 police calls during a one-hour flight at 41,000 feet! Oh, and never mind the movie headset! This is much more fun!
HOW I GOT STARTED

Popular Communications invites readers to submit, in about 150 words, how they got started in the communications hobby. They preferably should be typewritten, or otherwise easily readable. If possible, your photo should be included.

Each month we will select one entry and publish it here. You need submit your entry only once; we'll keep it on file. All submissions become the property of Popular Communications, and none can be acknowledged or returned. Entries will be selected for use taking into consideration if the story they relate is especially interesting, unusual, or even humorous. We reserve the right to edit all material for length and grammar, and to improve 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, 76 N. Broadway, Hicksville, NY 11801, or e-mail to POPCOMM@aol.com.

Our November Winner

This month, Sharon Cenna, KB8VXL, from West Lake, Ohio, visits us with her tale of how she began shortwave listening:

"World War II movies always fascinated me as radiomen would send CW for help, or flash light signals on board the vessel's deck at night to other ships.

"This fascination with ham radio soon became a reality in my own family. It seems, previously unknown to me, I had a cousin who lived in Florida about 35 years ago who used to do clandestine work for the government from his shack at home.

"My interest in the hobby became stronger about 25 years ago when my husband gave a Yaesu receiver to his dad to enhance his ham radio hobby. Well, Al got hooked, and through the years I have followed his progress to amateur extra!

"About two years ago, I made up my mind to look into the hobby as well. Now I have my technician plus code ticket and I am studying for my general class license. The possibilities are endless!"

Sharon Cenna, KB8VXL, with her mentor/father-in-law, Al Cenna, NF3K. The two are busy in Al's ham shack as he "Elmers" Sharon with her first contacts on Christmas Day 1994.
More Long Wires...Including a Beam or Two

In the first installment of this three-part series, we looked at the basic resonant long-wire antenna. That type of antenna consists of a wire radiator element that is at least two wavelengths long, and optimally is five to seven wavelengths. This antenna exhibits gain over a dipole and can have considerable gain if the physical length is very, very long relative to the wavelength of the frequency being received. I can recall accidentally using an 80-meter ham radio dipole on 2 meters (144-148 MHz) with startling results. At 2 meters, the dipole was acting as a pair of very long wire antennas back-to-back.

A disadvantage of the standard resonant long wire looked at last month is that it is resonant, i.e., it works best at a fundamental frequency (determined by length) and its harmonics. Figure 1 shows a wideband, non-resonant long-wire antenna that solves this problem with little effect on the gain. The far end of the antenna radiator element is terminated in a resistor (R1) that has a value equal to the impedance of the antenna (typically 400 to 800 ohms), which can be found using an impedance bridge.

V-Beam Antennas

The V-beam antenna is a bidirectional radiator composed of two multiwavelength longwires installed at an angle with respect to each other. Figure 2 shows a V-beam viewed from above. Along each long wire, you would find the standard long wire radiation pattern in the direction of the wire. But when two antennas are radiating simultaneously into the same space, their patterns converge to form a new pattern because of the interference of the waves from each antenna. Figure 2 also shows the approximate bidirectional pattern to expect from two long wires arranged into the V-beam configuration. The pattern becomes more bidirectional and narrower along an axis that bisects an angle between the two radiators as the antenna elements get longer.

The V-beam is fed from parallel transmission line and an antenna tuner. The 450-ohm twin-lead and 600-ohm parallel line are good matches to the V-beam, but it also is possible to feed the antenna through a 4:1 balun transformer to match with coaxial cable. This practice, however, limits the bands on which the device can operate. When fed with parallel line and an antenna tuner, the V-beam can accommodate a wide range of frequencies, similar to the single long wire discussed last time.

The same rules apply for the length of the V-beam as apply to the long wire: the longer the better (if gain and low angle of radiation are sought). In general, however, it has become standard practice in amateur...
radio circles to use a V-beam length on the order of 330 to 450 feet for general coverage of the HF bands (excluding 160 meters). Gains vary from 11.5 dB at the upper end of 10 meters to little better than a dipole at 80 meters. The same lengths would apply to the shortwave bands, especially if the long-wire elements are the terminated forms shown earlier in Figure 1.

Inverted V-Beam Long-Wire Antenna

An antenna that bears some of the properties of the inverted-V and some of the properties of the long wire (especially directivity) is found in Figure 3. This antenna is a current-fed long wire that is supported at a convenient point from a wooden or other insulated mast. The main radiator is an odd integer (1, 3, 5, 7...) of quarter-wavelength. The secondary radiator is a quarter-wave-length long. The feedpoint between the two radiators is a good match to 300- or 450-ohm parallel line or twin-lead, so most constructors install a 4:1 impedance ratio broadbanded transformer such as a balun at the feedpoint. This transformer allows the antenna to be fed from a piece of standard 75-ohm coaxial cable.

The ends of the radiator elements are terminated in 270-ohm resistors (R1 and R2). For SWL purposes, ordinary 2-watt carbon composition or metal film resistors are used. The important attribute of the resistors is that they are non-inductive, hence the need to use carbon composition or metal film resistors rather than wire-wound resistors. For amateur radio transmitting use, high-power non-inductive resistors are required, but for receiver operators ordinary 2-watt resistors will do.

The resistors can be installed as in Figure 4. In this method, use glass, ceramic or synthetic (nylon) end insulators, although the longer types are not suitable. The antenna radiator element wire is connected to one end hole of the end insulator, while the ground wire (which should be kept very short) is connected to the other end hole. The resistor is bridged between the two wires and soldered in place.

The ground connection could be made to ordinary ground rods. The 8-foot varieties are considered best, however, even the small 3-foot and 4-foot types will suffice, especially in good conductive earth. The wire from the ground end of the insulator to the ground rod should be as short as possible (only a few inches), especially at higher frequencies.

Next Time

In the final installment of this three-part series, we will take a look at the rhombic antenna. That antenna has been called the most heavenly of all wire antennas, but that's only part of the story. You can write to me here at Popular Communications or via the Internet at CarrJj@aol.com.
This is the first of what I hope will be many monthly Scanning VHF/UHF columns I’ll be writing for Popular Communications. After 12 years of writing this column, Chuck Gysi has been appointed POP COMM’s editor, replacing Tom Kneitel, and I’ve been fortunate enough to be asked to take over Scanning VHF/UHF.

To start, let me introduce myself and tell you a bit about my scanning background. My first VHF receiver was a General Electric analog-tuned multiband portable radio that I used to monitor local police and fire calls. My “job” was to keep the stations tuned in while my best friend, Steve Arthur, drove as we sped from call to call in his parents’ 1971 Pontiac Grandville.

Those were simpler days; we were teenagers in a small Ohio town, and we actually became friends with many of the local police officers and firefighters by chasing their calls. That’s not something that’s likely to happen today.

When I was 16, I parlayed my first-aid training as a Civil Air Patrol cadet into a volunteer position with a local ambulance squad. Now, instead of chasing calls, I was running them.

The ambulance squad gave me my first real experiences with two-way radio operations. We had a hodgepodge of VHF low band equipment and our base station frequently picked up skip from a veterinarian somewhere out west. At least I think he was out west, because he used to be called out frequently to treat coyotes that had been hit by cars!

For the next 15 years, scanners became tools of the trade as I earned my EMT and paramedic ratings and worked full time for several EMS services in Ohio and Florida. With the scanners, I listened for calls both on duty and off. During that time I earned a private pilot’s license, so aviation monitoring also became a pleasant pastime.

About 10 years ago I traded my paramedic’s badge for a journalist’s pen, and once again I found myself listening to a scanner, this time for news tips about house fires, car wrecks and all sorts of murder and mayhem.

Which leads me to this column.

I’m lucky enough to be able to combine my favorite hobby of monitoring with my current career as a free-lance writer.

Although it will be my name appearing at the top of the page, this column really belongs to you, POP COMM’s readers. Like Chuck, I’ll depend on you to share your favorite frequencies and scanning tips with your fellow readers. And hopefully, I’ll be able to contribute an idea of my own now and then.

Scanners and Recorders

One question that pops up regularly is how to tape record the transmissions heard on scanners. Let me suggest a simple, relatively inexpensive way to link the two machines.

First, you’ll need a voice-activated tape recorder with a remote microphone jack. I use the Micro-51 recorder from Radio Shack ($59.99) because of its small size, but others will work just as well.

If your scanner has a tape output jack like my Pro-2006, then all you need is an attenuating patch cord. These are available from Radio Shack with either eighth-inch phone plugs on each end, or with a phone plug on one end and an RCA phono plug on the other. The attenuating cord prevents the low hum or hiss present in some scanners from activating the VOX circuit in the recorder.

Connect one end of the patch cord to the tape output jack on your scanner and the other to the mic input on the recorder.
and presto, you’re done. Each time your scanner stops on an active frequency, the VOX circuit in the recorder will automatically start the recorder running. A few seconds after the transmission stops, the recording will stop—thus saving tape.

If your scanner doesn’t have a tape jack, then you’ll need a Y adapter with an eight-inch phone plug on one end and two eight-inch phone jacks on the other. This also is available at Radio Shack. Plug the adapter into the external speaker or earphone jack on your scanner, then run the attenuating patch cord from one side of the adapter to the recorder.

Because using the external speaker or earphone jack disables the internal speaker on most scanners, you’ll need to plug an external speaker into the remaining jack on the adapter so you can continue to monitor with the recorder attached. You may need additional adapters, depending upon the size of the speaker jack or earphone jack on your particular scanner. Once connected, it will work just as described.

**Tampa Area Frequencies**

Finally, to round out this month’s column, let me offer a selection of my favorite frequencies in the Tampa, Fla., area.

Hillsborough County: 154.130, Fire Department east; 154.175, Fire Department west; 154.250, Fire Department tactical; 153.830, Fire Department tactical; 153.920, medivac to ground; 155.220, Emergency Medical Service primary; 155.325, Emergency Medical Service Tac 2; 155.340, Emergency Medical Service Aeromed helicopter dispatch; 155.010, sheriff east patrol operations; 155.130, sheriff west patrol operations; 154.950, sheriff car-to-car simplex; 460.350, sheriff vice and narcotics.

Tampa: 154.430, Fire Department main dispatch; 154.220, Fire Department secondary dispatch; 154.280, Fire Department tactical; 453.700, police east dispatch; 453.550, police west dispatch; 453.850, police emergency; 453.800, police teltype; 453.875, police tactical east; 453.750, police tactical west; 458.850, police tactical Channel 8.

Military buffs will want to monitor MacDill Air Force Base: 123.700, tower; 294.700, tower; 173.5625, fire/crash rescue; 173.5625, medical; and 163.4875, base police.

Civilian aviation fans can listen to arrivals at Tampa International Airport: 119.500, tower; 118.500, approach; 118.800, approach; 119.900, approach; and 120.650, approach.

Temple Terrace uses 154.385 for fire and 154.830 for police dispatching, the Florida Highway Patrol uses 154.680 for dispatch and 154.920 for car-to-car in Hillsborough County.

For action on the water, monitor 156.800 for marine emergency Channel 16; 157.050 and 157.100 for Coast Guard Group St. Petersburg; and 381.800 for Coast Guard Air Station Clearwater. Also try listening for the Florida Marine Patrol on 45.00 and the Florida Game and Freshwater Fish Commission on 151.160 and 151.385.

**Write In**

Next month, we’ll get back to featuring your favorite frequencies and scanning tips. And, if you have any scanning questions, be sure to ask and I’ll do my best to find an answer.

Send your letters to J.T. Ward, Scanning VHF/UHF, Popular Communications, 76 N. Broadway, Hicksville, NY 11801. GEnie online subscribers may contact me directly by addressing e-mail to JTWard, or you can write via the Internet at JTWard@genie.com.
The August issue's "Beaming In" editorial commented on the public's skewed perception of scanner hobbyists, based upon the way the mass media has been known to incorrectly report on the misuse of electronics by non-hobbyists.

An example of this appeared in an Allentown, Pa., Morning Call front-page story in June. It was sent to us by Norwood Wagner of Bethlehem, Pa. Beneath the headline, "Thieves find ways to duplicate cellular phone numbers," a lengthy story unfolded. It included statements such as, "Bandits using scanner equipment available at most electronics stores can capture the phone's mobile identification number and the electronic serial number needed to complete the call as they are simultaneously beamed across the airwaves." Most electronics stores? Did this imply hobby-type police scanners to readers?

It doesn't have to be this way. In another, more competently prepared story, readers got the straight facts. Last June, the Salem Police Department in Massachusetts raided a cellphone cloning factory, arresting a man and a woman. When the story ran in The Salem Evening News in June, it was explained, "Confiscated in the raid were $20,000 worth of laptop computers, a full-size computer, cloning software, the machine allegedly used to steal the numbers... Further charges of stealing trade secrets and cloning of telecommunications devices are pending against the couple."

Thanks for this clipping go to reader Officer Nelson Dionne of the Salem Police Department; he's AA10M on the ham bands.

Still, the general perception is that hobbyists are stealing the numbers. So reports Allan G. Dunn, K1UCY, of Holbrook, Mass., in a note. Allan tells us that he has a cellphone and recently called his service supplier's customer service line to ask why they were advising subscribers that PINs were necessary. His ear melted while they babbled on endlessly about cellular fraud, and how numbers are stolen and being sold to the public in illegally cloned phones. Sure, numbers are cloned. No argument there. What aroused Allan's ire—big time—was their punch line. Possibly it never occurred to them that cellular fraud results from the basic security inadequacies of all analog cellphone networks. No, they wouldn't know about that. Allan reported they pointed the bony finger of blame for cellular fraud away from themselves, and directly at people using "simple scanners."

Allan asks whether scanner hobbyists have the equipment necessary to intercept and clone the digital cellphone data links. No. But criminals do! He asks whether scanner owners have the equipment to burn PROMs with the stolen codes. No, he says, but criminals do. He asks whether scanner hobbyists have access to hundreds of used cellphones capable of being modified and resold. Again, Allan points out that criminals do. He asks whether scanner owners knowingly pay $150 to $200 for stolen cellphones to make a month's worth of free unlimited long-distance phone calls. He hopes they don't, but is certain that criminals do.

Readers wishing to contact Allan can write to him on the Internet at dunnworld.std.com if you want to exchange
ideas on this. He's brought up many valid points worthy of discussion.

**From Digi-Tall to Digi-Small**

Digital cellphones have been hyped as the future of cellular, but don't get too carried away with this digital thing. Trevor Fletcher of Edmonton, Alberta, lets us in on an instance when digital cellphone service turned out to be as useful as a screen door on a submarine. That's how functional it is to all cellphone subscribers of AGT Mobility across Alberta, except those directly in the cities of Edmonton and Calgary.

AGT decided to discontinue its digital cellphone service, preferring to continue serving its subscribers via analog, except for the two large dual-mode digital/analog cities. John Batuik, AGT's digital marketing manager said, "The performance of digital itself and call quality that has been experienced by our customers has been disappointing."

Rogers Cantel, the largest national cellular service supplier, also seemed less than enthusiastic about digital's future in Canada. Rogers Cantel is prepared to continue offering digital service in major population centers, but a company spokesman said that digital service may not be available in rural areas.

In a Canadian Press report, a Canadian equipment dealer complained that because digital phones cost "twice as much" as standard (analog) phones, customers have not shown interest in the units. The unidentified dealer said, "The consumer does not want to pay the extra money to buy a phone that they use just like analog, except for people that really want security, or people that like new technologies or those who buy it as a toy."

This continues to prove what's been said here right along, that communications privacy is not the big hoo-hah equipment or service selling point the cellular industry has always considered it to be. How unfortunate that the illusory "privacy" sales factor managed to spawn the anti-hobbyist ECPA law, followed by the loss of cellular band coverage on currently manufactured hobby scanners.

Again we ask: Isn't it now time to end these misdirected, unnecessary and unfair restrictions against communications hobbyists? If not now, then when? If never, why not? Your valued opinions are always invited here at "Telephones Enroute."

**Here's a Good Idea!**

An innovative universal car kit called CellBase turns a handheld portable cellphone into a more versatile hands-free, safe mobile phone. The device uses a patented universal interface that enables a common base to be used with most common cellphones employing phone-specific CellBase Adapter Pockets.

CellBase consists of a common base unit and connector. An adapter pocket fits between the handheld phone and the connector. The result is a mobile phone that may be used while driving with both hands on the wheel. The result makes in-car cellphone use safer, easier and more secure.

Adapter pockets are available for all major brands of cellphones, including the Motorola Flip Phone series, Motorola Ultra Classic series, Audiovox MiniVox Lite, Toshiba 9300, Nokia 121, AT&T 3810 and Technophone 415 models. They soon will be available for the Nokia 2120, AT&T 6650, Nokia 232, Ericsson DH338 and DH343, and NEC-100 series.

CellBase's capabilities include a hands-free speaker mode, a handheld privacy mode and an optional headset mode with a noise-cancelling mic. There's an external antenna connection in all three modes. While in use, the cellphone is powered from the vehicle's battery, which also trickle-charges the cellphone's internal battery.

The list price of CellBase is $249, including an adapter pocket, power cable and visor mic. The unit may be powered through the cigarette lighter or via hard-wired connection to the vehicle. This may be used for digital as well as analog communications. The product is available through many cellular service carriers and accessory dealers, and from its manufacturer, Hello Direct Inc., 5884 Eden Park Place, San Jose, CA 95138-1859.

For a Hello Direct catalog, phone (800) 444-3556. Mention you read about it in *Popular Communications.*

**It's Always Something**

Just when we were settling down and getting comfortable with things, they went and changed. So it was with digital paging. Dominant protocols have long included POC-SAG, with data transmitted at 512 bits per second, also 1200 bps and 2400 bps. Now Motorola is showing off its new FLEX digital paging technology.

Literature sent to us by Motorola states that FLEX is a protocol capable of operating at 1600, 3200 and 6400 bps. They wrote that recent tests indicated it's compatible with existing POC-SAG-2400 protocol. That is, they tested FLEX in Wichita, Kan., finding it "mixes well with 2400 speed POC-SAG, and provided solid 6400 bps paging operations out to 35 miles from the Motorola transmitter."

New FLEX numeric Encore pages have been designed to work with this high-speed protocol. The advantages are battery life up to five times longer than other pages, 16 numeric message slots, message time-stamping, readout of time of day and date, silent alerting, five selectable alerts, saves messages while changing battery, stores up to eight messages, built-in alarm clock, option to delete individual or all stored messages, and FLEX pages operate from one AAA battery.

Motorola points out that FLEX offers four to five times the capacity of POC-SAG, eliminating excessive transmission delays. Paging companies can handle 600,000 beepers on a single frequency. FLEX means improved reliability, thus reducing signal fading and missed messages. POC-SAG has a limit of two million addresses, while FLEX supports one billion.

FLEX comes from Motorola's Pan American Subscriber Paging Division, 1500 Gateway Blvd., Boynton Beach, FL 33426-8229.

"Telephones Enroute" is always pleased to hear from readers, service suppliers and product manufacturers relating to cellphones, pages and all other personal communications services. Send along news releases, clippings, comments, insights, and just about anything other than Thanksgiving turkey leftovers. Be sure to indicate "Telephones Enroute Column" when addressing correspondence to this column.
Building and Using Baluns and Ununs
Written by world-renowned expert Jerry Sevick, W2FMI, this volume is the definitive source for his latest practical information and designs on transmission line transformer theory. W2FMI has unraveled the technological mysteries with designs that are simple and work. Discover new applications for dipoles, yagis, log periodic, beverages, antenna tuners, and countless other examples.

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The most comprehensive source of information on HF propagation is available from CQ! We've built an award-winning team, gathering information from individuals and organizations around the world. Collectively, co-authors George Jacobs, W3ASK, Ted Cohen, N4XX, and Robert Rose, K6GKU, have devoted much of their professional and amateur careers to advancing ionospheric science. Propagation principles, sunspots, ionospheric predictions, photography, charts and tables galore—it's all in this unique reference volume!

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<td>$24</td>
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No Trick: New Rig Is A Treat

Recently, the folks from Midland Communications in Kansas City, Mo., sent me a thick packet of data sheets describing their various radios. Among other things, I found out that they have some really interesting radios under development—I’ll be sure to let you know about those when they get closer to reality.

As I paged through these data sheets I found one radio that really intrigued me, and Midland sent me one for evaluation. In production right now, the Model 77-285 Power Max II is a medium-sized mobile rig—about 8 inches deep, 6.5 inches wide and 2 inches thick. There is a bottom-firing speaker, and the microphone plugs into the front panel.

Several things, however, set this radio apart. To begin, its appearance: a jet black cabinet, jet-black knobs and even push buttons. “Midland CB Transceiver” is boldly printed in black on the top of the rig, and the front panel lettering is gold. (On the back of the transceiver are connectors for an antenna, an external speaker and the power cord.)

In the center of the 77-285 is an orange LCD that shows channel number and an unusual bar-graph type signal strength meter. This meter is so big and bold that it is fairly easy to get a signal strength reading at a glance while driving. By contrast, most mobile rigs have such tiny meters that attempting to read them while motoring is not an activity conducive with continued good health!

In addition, the sheer number of controls on this radio is unusual. There are the usual knobs for channel selection, squelch and volume, but then there is a series of 11 buttons that run along the face of the CB under the display. Each of these buttons, as well as the knobs, is encircled by a band of clear plastic that glows orange when the rig is turned on.

While a fundamental color scheme of black and orange sounds like this rig might have been designed by the Great Pumpkin, in practice it works quite well. The display is easy to read but not so bright that it interferes with vision when driving at night, and it is much easier to locate those black controls when they are set off by a glowing circle of orange! However, none of the control labels actually light up, so the operator must remember which button does what.

One button, labeled LOC, allows the operator to kick in an attenuator for local operation. There is a button each for instant selection of Channel 9 and Channel 19. Another labeled NB activates the noise blanker. But then there are buttons with names like SC, LCR and DW, plus buttons 1, 2, 3 and 4. Curious about what exactly they do, I plunged into the operator’s manual to find out.

Buttons 1 through 4 are user-selectable memory channels, just like the ones on your car radio. So, if a CBer’s favorite local channels happen to be Channel 7 and Channel 35, instead of spinning back and forth between the two, the operator can simply assign Channel 7 to button 1 and Channel 35 to button 2. Then presto! Either channel is instantly available at the press of a button. Ditto with buttons 3 and 4.

The manual further told me that the button labeled SC essentially functioned as another user-selectable memory. In regard to the LCR button, the manual said: “Last Channel Recall—If the unit is scanning and stops for a call but resumes scanning before you see what channel was on... simply depress the LCR button. It will show you the last channel the call came in on.”

Whoa! What’s this—scanning in a CB radio? I gave Midland a call. “Does this radio scan?” I asked. Eventually, I spoke with Keith Rickey of Midland, who said, “Originally the 77-285 was designed to scan, but at the last minute there was a problem, and that feature was deleted. Too bad. Many CBERs know think scanning would be a really useful capability to have, particularly when traveling through unfamiliar territory and there is a need to locate an active CB channel. Because scanning was deleted from this radio, that also means the LCR button doesn’t really do anything.

Behind the DW button, however, lurks one of the most interesting functions I’ve seen on a CB in a long time. DW stands for Dual Watch, and quite simply it means that the 77-285 has the ability to listen to any two channels in the 40-channel range at once.

Here’s how it works: first, turn the rig on and shut the squelch completely off. Very important: make sure the squelch is OFF. Next, select the channel you want to be your main channel... Channel 9, for example. Now, press the DW button (the DW symbol will appear in the display). This allows about five or six seconds to use the tuning knob to select the second channel you want to monitor... Channel 35 perhaps.

Next, turn the squelch knob until the...
squelch activates, and the 77-285 will rapidly alternate between Channel 9 and Channel 35 until a signal breaks the squelch on either of the channels. The CB then will stay on the active channel until the signal drops, and the squelch reactivates. At that point, the 77-285 will resume alternating between the Dual Watch channels.

In all, this is a slick system that works very well for the CBer who wants to keep an ear on two channels at once.

A warning, however. The manual that arrived with the 77-285 I reviewed was wrong on setting the Dual Watch. It took several phone calls to the patient and helpful Keith Rickey to sort out the confusion. If you activate the squelch before pushing the DW button—as the manual suggests—you’re going to have a terrible time trying to set the second channel for Dual Watch! Midland assures me, however, that revised operating manuals for the 77-285 are on the way.

Features are nice, but what really makes the difference is how a radio performs on the air. I hooked up the 77-285 to a power supply and performed A-B comparisons with a Cobra 2000. On receive, the audio from the 77-285 sounded good for a mobile rig. On transmit, both rigs showed about the same signal strength at my test partner’s base station. No surprise there; both the Cobra 2000 and the 77-285 are putting out about 4 watts, the legal limit.

In addition, our on-air tests revealed that the element in the Midland microphone is such that it really pays to put the mike close to your mouth to get full modulation. In a mobile rig, this can be an advantage because this operating technique tends to pick up less background noise. CBers who want to use the 77-285 at a base station, and who don’t want to “swallow the mike,” might want to consider a power mike.

The bottom line: the Midland Model 77-285 Power Max II is a neat mobile rig that does its job well. If you want the ability to listen to two channels at once, there’s no other rig I’m aware of that fills the bill. Suggested retail price of the 77-285 is $249.95. For additional information, contact Midland at (800) 669-4567, and tell ’em POP/COMM sent you.

Bleeping Beeps

Finally, there’s something on my mind that I’ve been dying to ask the most important people in the world, the folks who read this column! Does anybody out there know of any legitimate uses for echo boxes and roger beeps? If you do, please let me know.

The reason for asking is that the other day I heard CBers who sounded something like this: “He-he-hel-hel-lo-lo-lo-th-the-ther-er-er-ere. Wh-wha-wha-wha-what-s-s-s-y-y-your-tw-twen-twen-teny-teny-teny? TWEEDLE BRAP ZEET TWEET BOING!”

I couldn’t help but observe that not only was this operator totally unintelligible—
even though he had an otherwise good signal—but then he had a roger beep that went on a lot longer than a lot of songs I know. Now, granted, once in a while I hear someone whose voice is improved by just the slightest touch of reverb, but most people sound just fine, being their own, natural selves. And I have never heard a situation in which I couldn’t tell if the other operator had stopped talking. So, unless you’re on a NASA space mission, why do you need a roger beep? If you’ve got any thoughts on this, I’d be glad to hear them.

Until the next time, I look forward to your cards and letters. Please write to me here at Popular Communications.
Close Calls on Marine Channels

If you tune into the aeronautical channels, aircraft controllers in a tower keep the incoming and outgoing flow of aircraft in a safe and orderly manner. The same thing is now happening on marine VHF channels, and all major ports of the United States are covered by VTS, the vessel traffic system.

If you live anywhere near a major port or navigable river, Table 1 shows the frequencies to tune in.

Similar to aviation corridors near busy airports, large commercial marine vessels going into or coming out of ports and harbors will stay within traffic separation zones one and two miles wide within a vessel traffic information service area. The TSS (traffic separation scheme) is printed on all NOAA charts, and a quick glance at any marine chart clearly illustrates the specific inbound and outbound routes of big commercial ships. Like roadways, the big commercial ships will hug the right side of the traffic separation zone in order to give ample room for traffic steaming in the opposite direction.

A vessel traffic information system perched on a hill or building high above the port of entry or exit oversees the movements of these large ships. The movement of both commercial vessels and pleasure boats within 20 miles of the local breakwater are watched carefully through binoculars, computers, radars, and GPS systems.

"Our vessel traffic information system differs from air traffic control because we never take control away from the master of the vessel," comments Capt. M.H. Aschemeyer, executive director of the Los Angeles-Long Beach Vessel Traffic Information Service. "We track all ships on sophisticated radar/computer systems, capable of showing a vessel’s course and speed, her latitude and longitude, bearings and distances to other ships in her vicinity, and other vital data. We continually remind the captains to make passing arrangements with other ships in their vicinity, and we routinely broadcast incoming and outgoing ship position advisories on marine VHF."

Recreational boaters do not fall under the jurisdiction of the VTIS, and are asked to "passively" make use of the system by monitoring the local VHF-FM vessel traffic system channel. This way private vessels hear all the traffic activity within the shipping lanes, including broadcasts from a vessel traffic information service base station to all commercial traffic in the area.

Small boats transiting a designated sea lane are permitted to call the vessel traffic information service to seek specific information on the large commercial vessels that may be nearby. This also
As changing world events bring us all closer, it's exciting to get the news direct from a foreign station. So tune in and listen - even when you're 12 time zones away. The drama of survival efforts. Crisis monitoring when conventional communications break down. The uncertainty of economic trends. And colorful cultural activities.

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This map can be used as a guide for the range of the VTIS system.
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applies to situations where a small private boat may find a large commercial ship bearing down on them, and needs the VTIS to resolve a close-quarters meeting into a safe passing.

The typical range of a base station VTIS system on marine VHF is a 20-mile arc surrounding the port of entry. However, those with an outside gain antenna can many times pick up VTIS hourly broadcasts up to 80 miles away when atmospheric conditions are just right.

“We encourage emergency communicators to listen to our broadcasts to stay current on the amount of traffic that may be entering or leaving a specific port during the day or night,” comments a U.S. Coast Guard communicator at a Gulf of Mexico VTIS station.

“Emergency response personnel on land and at sea also might overhear the drama that sometimes occurs when two supertankers are getting confused about each other’s intentions,” comments a harbormaster near Miami, Fla. A Russian skipper attempting to speak English to a Chinese captain usually will require the interpretation of the VTIS in order to sort out the situation.”

Without an active VTIS system, ecological tragedies like the Exxon Valdez catastrophe in Alaska could repeat itself. Many large oil-carrying supertankers also are sending GPS position data via digital selective calling (DSC) on marine VHF Channel 70, 156.525 MHz, where they are constantly tracked by the VTIS system.

If you respond to harbor emergencies, scan VTIS for all the action.

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### Table 1

<table>
<thead>
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<th>Marine Channel</th>
<th>Frequency (MHz)</th>
<th>Channel Usage</th>
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<tbody>
<tr>
<td>1</td>
<td>156.050</td>
<td>Port operations ship-to-ship and ship-to-coast channels in vessel traffic service (VTS) areas of New Orleans, lower Mississippi River and Houston</td>
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<tr>
<td>3</td>
<td>156.150</td>
<td>(same)</td>
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<tr>
<td>63</td>
<td>156.175</td>
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</tr>
<tr>
<td>5</td>
<td>156.250</td>
<td>(same)</td>
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<tr>
<td>6</td>
<td>156.300</td>
<td>Intership safety</td>
</tr>
<tr>
<td>12</td>
<td>156.600</td>
<td>Port operations ship-to-ship and ship-to-coast, available to all vessels in or near ports, locks or waterways</td>
</tr>
<tr>
<td>13</td>
<td>156.650</td>
<td>Navigational intership channel, 1-watt maximum power output, monitored by all incoming and outgoing commercial vessels for listening to determine the intention of other vessels</td>
</tr>
<tr>
<td>14</td>
<td>156.700</td>
<td>Port operations, vessel traffic information service, Los Angeles/Long Beach harbors</td>
</tr>
<tr>
<td>16</td>
<td>156.800</td>
<td>International distress and calling channel. This channel to be used in case of ship collisions.</td>
</tr>
<tr>
<td>22A</td>
<td>157.100</td>
<td>U.S. Coast Guard working channel</td>
</tr>
<tr>
<td>73</td>
<td>156.675</td>
<td>Port operations channels, ship-to-tugs</td>
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<tr>
<td>74</td>
<td>156.725</td>
<td>(same)</td>
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CIRCLE 89 ON READER SERVICE CARD 62 / POPULAR COMMUNICATIONS / November 1995
The U.S. government’s Radio Marti service to Cuba is being aired now over private station WHRI. The feds, having closed down the VOA’s Bethany, Ohio, transmitter site, which carried much if not all of the Radio Marti service, is now buying air time for Radio Marti between 0200-0500 on 9495 (except Sundays and Mondays). The Cubans are jamming WHRI’s Marti broadcasts, as well as those of the Cuban-American National Foundation-La Voz de Fundacion, which has had its schedule revised since the arrival of Marti. “Fundacion” is aired now at 0000-0200.

The Voice of Iraqi Kurdistan is tough to pick up in this hemisphere. The station, which is the voice of the Kurdistan Democratic Party, operates on variable 4183, carrying Kurdish from 0245-0330, followed by an hour of Arabic. Another Kurdish broadcast is aired from 0930-1100. A third daily broadcast begins with Arabic at 1445, followed by Kurdish from 1530-1700. The KDP opposes the Iraqi government. The radio station has been active since about 1980 and transmits from Salah al-Din. The 0245-0430 transmission is occasionally heard by DXers in the east and southeast U.S., but unless you get very lucky, you can plan on putting some real time and DX skills into logging this one.

There are any number of other Kurdish clandestines on the air, speaking on behalf of several different political parties and against Iraq, Iran and/or Turkey. Most operate with time/frequency combinations unfavorable for North American DXers.

The Voice of Rebellious Iraq says it is operating in the frequency range of 6360-6600 between 0230-0500 and 1500-1730, though this may not really be the case. European monitors have noted it between 6030-6070 from 1200-1430. The station is located in Iran and speaks for the Supreme Assembly of the Islamic Revolution in Iraq. It announces three addresses:

P.O. Box 36802, Damascus, Syria; P.O. Box 11365/738, Tehran, Iran; and P.O. Box 37155/146, Qom, Iran.

Another station connected with the Supreme Assembly is the Voice of the Islamic Revolution in Iraq. The “Information Unit” of the Supreme Assembly is said to produce the programming heard on this station. It was reported to be on the air from 1330-1530 in Arabic on 7215 and 9670, although we have not seen this one reported in some time. The station is believed to be located in Iran. These operations are just two of the many players in the Iran-Iraq propaganda game.

The Angolan opposition station operated by UNITA, A Voz do Galo Negro, recently was using 5890 between 0500 and 0600. This station apparently is on its way to becoming a fully legitimate broadcaster, in accordance with agreements UNITA has signed with the Angolan government.

The Democratic Voice of Burma aired over Radio Norway’s facilities, is now on from 0000-0100 on 7315, and 1400-1500 on 13800. Reception reports are confirmed with an attractive QSL card. The address is P.O. Box 6720, St. Olavs Plass, N-0130 Oslo, Norway.

Guatemalan clandestine Voz Popular has been noted tentatively on 6986 around 0040, before an abrupt sign-off at 0047. This station claims to operate from 0000-0045 Tuesdays and Fridays on 7 MHz. Unfortunately, they don’t maintain a specific frequency and their signal is generally quite weak so they are hard to spot. If you go after this one you should sift through the range from 6950 to 7050, at a minimum.

The Voice of the Mojahedin also uses the name “Voice of the Crusader” in its radio war against the Iranian government. It calls itself the “Voice of National Liberation Army of Iran” and broadcasts on behalf of the Mojahedin-e-Khalq (People’s Mojahedin Organization of Iran). Programming is in Farsi (Persian) and Kurdish and generally airs between 0200-0800 and 1400-1900. The station uses a long list of frequencies at various hours within the above time frames: 3557, 3780, 4670, 4700, 5090, 5740, 5870, 6005, 6270, 6520, 6560, 6780, 7000, 7180, 7470, 8840, 9060, 9240, 9640. The station is thought to broadcast from Iraq.

That covers things for this time. Here’s the usual reminder that we always welcome your input. Clandestine hunting is one of the most challenging and intriguing aspects of shortwave listening and your logs of clandestine stations or programs are valued, as is information about station operating schedules, addresses, locations, who’s behind them and so on. Whatever you can manage will be very welcome. Thanks!

Until next time, good hunting!
Shortwave Comes to Mediumwave:

New listening opportunities could open up for both the residents of Veracruz state in east-central Mexico and AM DXers in the Americas if one radio station gets its wish. After 30 years of continuous service, shortwave Radio Huayacocotla—XEJN—was shut down March 24 during an inspection by officials from Mexico's Secretariat for Communications and Transport in what a station news release describes as an "arbitrary action." The closure prompted a festival a few days later, where over 800 people gathered to demand that Radio Huaya be returned to the air, this time in the mediumwave band.

The station, licensed to Iberoamerican University, had broadcast on 2390 kHz with 800 watts, according to the 1995 World Radio TV Handbook, but for the past 10 years has petitioned the government for a slot in the AM band.

Speaking at the festival, the municipal president of Texcatapec, Eucario Guzman Gomez, said, "We cannot hear our own radio as clearly as we can stations from foreign countries...[We] urge the government to make available the necessary licenses so that we can hear the transmissions again in our own communities.

Supporters agree that not only would the change allow people to listen to "the only means of communication in the northern Sierra of Veracruz" on "an ordinary radio," but that it would be "a gesture to demonstrate that freedom of expression and right to information are things that are respected in Mexico." No word yet on what frequency they seek or how much power they might run, but if they keep us posted, we’ll keep you posted.

If Radio Huaya does move to mediumwave, it would join several other shortwave broadcasters who made a similar switch earlier this year—in a manner of speaking. May 1 marked the start-up of a new overnight service from the Canadian Broadcasting Corp., and at press time rebroadcasts of Radio Netherlands, the BBC, ABC Australia, Radio Sweden and Deutsche Welle were under way on network stations. The programming, from 0500 to 1000 UTC, comes via World Radio Network Ltd., a London-based 24-hour satellite ser-

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**Pending AM Call Letter Changes**

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<td>WOPA</td>
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<td>WSCM</td>
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**Changed AM Call Letters**

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**Pending FM Call Letter Changes**

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<td>WPVL-FM</td>
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<td>WSSU</td>
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**Changed FM Call letters**

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<td>KGHO-FM</td>
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<td>KJoe</td>
<td>KLOH-FM</td>
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<td>KNAQ</td>
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Boulder, Colo.'s KBCO-FM also can be heard on 1190 kHz, where earlier this year they began 24-hour service with 110 watts at night. KBCO-AM runs 5 kW during the day. (Courtesy Patrick Griffith, Denver, Colo.)
vice that distributes programming from 20 international broadcasters for rebroadcast by affiliates in North America. Why add AM and FM when the U.S. and Canada already are the target of numerous international shortwave broadcasts? According to publicity sent to prospective client stations, WRN maintains that international broadcasters want to go beyond a small segment of the audience—hobbyists—to gain a foothold in the mainstream audience. If so, the CBC network would seem to be a major step toward that end.

Irreconcilable Differences? The ability of people in the U.S. and Canada to listen to AM and FM broadcasts from each other's country may be in jeopardy. In spite of the splash that USA Digital Radio made at the National Association of Broadcasters' April convention, a majority of Canadian broadcasters remain unmoved—so much so, in fact, that they may choose a competing, incompatible digital audio broadcast (DAB) system as their standard.

Their preference for the European-developed Eureka-147 system, along with the inclination of U.S. broadcasters toward the in-band, on-channel (IBOC) USA Digital system, could well mean that in the near future listeners along the common border would need separate radios to listen to broadcasts from each country. And the Canadian commitment to Eureka is strong, according to a June 14 article in Radio World. One engineer told the industry newspaper that although "there is room for both" Eureka and IBOC, "Eureka is a done deal for Canada. I mean, it is here. It already has become a standard. There are too many groups working toward that one common goal." They aren't alone either—nearly a year ago, the International Telecommunication Union endorsed Eureka for DAB, and the system has won strong support in much of Europe and Australia.

Canadian broadcasters aren't as impressed with USA Digital's IBOC system as their U.S. counterparts. "I was kind of disappointed with what I heard," said Steve Edwards, a vice president at Rogers Broadcasting, of USA Digital's demonstrations at NAB '95. He and other Canadian broadcasters cited signal dropouts on both AM and FM during a bus ride in which listeners could compare analog to digital. They also were skeptical of the use of 1660 kHz as opposed to a channel in the standard AM band, since, in the words of Canadian Association of Broadcasters President Michel Tremblay, conducting the test in the expanded band "avoided any possibility for skywave and adjacent channel interference. So these are almost lab conditions to do a test, not real-life conditions." Edwards also said that in spite of a significant improvement, AM audio quality still was not equal to CD.

But the debate involves more than just the beauty in the ear of the beholder. Eureka's hardware is designed for operation in the L-band (1500 MHz), and the Canadian broadcast industry is as adamant about

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| AZ | Yuma | 91.9 MHz | 25 kW |
| CA | Redding | 91.1 MHz | 700 watts |
| CA | Stockton | 91.9 MHz | 700 watts |
| CO | Estes Park | 102.1 MHz | 6 kW |
| CO | Pueblo | 88.1 MHz | 42 kW |
| FL | Naples | 99.5 MHz |
| FL | Flagler Beach | 91.1 MHz | 200 watts |
| FL | Lacrosse | 89.5 MHz |
| FL | Coal | 91.5 MHz | 3 kW |
| GA | Dahlonega | 89.5 MHz |
| IA | Forest City | 91.9 MHz | 100 watts |
| IA | Ottumwa | 89.1 MHz | 1 kW |
| ID | Coeur Dalene | 102.3 MHz | 720 watts |
| IL | Albion | 91.7 MHz | 6 kW |
| IL | Farmington | 96.5 MHz |
| IL | Mount Vernon | 90.5 MHz | 25 kW |
| IN | Charlestown | 104.3 MHz | 3 kW |
| MI | Baraga | 104.3 MHz | 100 kW |
| MN | Pequot Lakes | 100.1 MHz | 3.9 kW |
| MO | Campbell | 107.5 MHz | 18.4 kW |
| MO | Portageville | 91.5 MHz | 9 kW |
| MS | Kosciusko | 103.3 MHz | 20.1 kW |
| NC | Beaufort | 88.1 MHz | 100 kW |
| NC | New Bern | 91.9 MHz | 1 kW |
| NC | Sunset Beach | 88.9 MHz | 1 kW |
| NM | Kirkland | 102.9 MHz | 100 kW |
| OH | Bryan | 90.9 MHz | 750 watts |
| OK | Norman | 89.3 MHz | 1 kW |
| PA | Hawley | 99.5 MHz | 4.2 kW |
| PA | McConnellsburg | 103.7 MHz | 500 watts |
| SC | Murrell Inlet | 85.3 MHz | 500 watts |
| UT | Park City (KRBN booster) | 97.9 MHz | 500 watts |
| VA | Erickson | 93.1 MHz | 6 kW |
| VA | Fredericksburg | 103.7 MHz | 8 kW |
| WA | Friday Harbor | 90.9 MHz | 1.7 kW |
| WA | Dickeyville | 101.1 MHz | 6 kW |

Changed FM Facilities

KTXL-AM Mount Home, AR 98.3 MHz Moved to 97.9 MHz, 50 kW
KXCV-AM Gregory, SD 101.5 MHz Became non-commercial
WDXTL-AM Cleveland, MS 92.9 MHz Moved to 93.1 MHz, 50 kW

Canceled

| KAKJ | Marion, AR | 105.3 MHz | 6 kW |
| KXLY | Wrightsville, AR | 107.7 MHz | 3 kW |
| WAOJ | Vero Beach, FL | 90.5 MHz |
| WRHF | Farmington, NH | 106.5 MHz | 376 watts |

Seeking to Modify AM Facilities

| KKCM | Shakopee, MN | 1530 kHz Moved to 1020 kHz |
| KXLO | Rifle, CO | 970 kHz Moved to 970 kHz |
| WCER | Canton, OH | 900 kHz Moved to 900 kHz |
| WJAG | Elmhurst, IL | 1530 kHz Moved to 970 kHz |
| WOCC | Corydon, IN | 1550 kHz Moved to 970 kHz |
| WTCM | Traverse City, MI | 580 kHz Moved to 970 kHz |

Modified AM Facilities

| KDOL | Henderson, NV | 1280 kHz Moved to 1280 kHz |
| KKXX | Paradise, CA | 930 kHz Moved to 930 kHz |
| KMRF | Marshfield, MO | 1510 kHz Moved to 1510 kHz |
| KNNZ | Grand Junction, CO | 1100 kHz Moved to 1100 kHz |
| KOTD | Portsmouth, NE | 1000 kHz Moved to 1000 kHz |
| KZTU | Junction City, OR | 650 kHz Moved to 650 kHz |
| WAOC | St. Augustine, FL | 1420 kHz Moved to 1420 kHz |
| WOTS | Kissimmee, FL | 1220 kHz Moved to 1220 kHz |

Using DAB in the L-band as the U.S. is about IBOC and the present AM and FM bands. As a mid-May Radio World editorial reasoned, USA Digital’s IBOC system would least disrupt the current United States station allocation structure. Although the battle isn’t over, and a handful of competing systems to both Eureka and USA Digital are in the final stages of development, the signs still point to a day in the future when the U.S. and Canada would have a dichotomy in broadcasting as deep-seated as standard and metric.

New FM Call Letters

KALG | Chadron, NE |
KAMF | Cannon Beach, OR |
KAXK | Mendocino, CA |
KAXZ | Juneau, CA |
KHUL | Elko, CA |
KRGB | Fallon, NV |
WAEF | L’Anse, MI |
WABP | Hobokan, OH |
WANF | Monroe, TN |
WBAB | Sterling, IL |
WPPR | Falmouth, MA |
WJGH | Lexington, TN |
WJQR | St. Augustine Beach, FL |
WJUC | Swanton, OH |
WJDB-FM | Ormond-by-the-Sea, FL |

 desktop broadcasting: The first “radio” station to program full time exclusively for the Internet has seen its audience skyrocket after incorporating new software, says the station’s founder. Norman Hajjar, president of the company that developed Radio HK, said in a news release that the software allows users to download audio without the usual lengthy wait. Hajjar estimates that more than 20,000 listeners worldwide have accessed Radio HK in the three weeks following the adoption of RealAudio. The software allows users to download audio without the usual lengthy wait. Hajjar was bullish about what the

 using DAB in the L-band as the U.S. is about IBOC and the present AM and FM bands. As a mid-May Radio World editorial reasoned, USA Digital’s IBOC system would least disrupt the current United States station allocation structure. Although the battle isn’t over, and a handful of competing systems to both Eureka and USA Digital are in the final stages of development, the signs still point to a day in the future when the U.S. and Canada would have a dichotomy in broadcasting as deep-seated as standard and metric.

 Pricey Potty Mouths: Four thousand dollars is what is licensee of a Buffalo, N.Y., station will have to pay for an allegedly indecent broadcast. The FCC in early May issued a Notice of Apparent Liability for a Forfeiture to Rich Communications Corp. after a Sept. 1, 1993, broadcast of the “Norton and Stony Show” on WQRF-FM. At issue was a series of exchanges prompted by the hosts’ inviting female listeners to call in with “the wildest...intimate story a girlfriend has confessed to you,” in particular an account involving a man, a woman and a plunger, that was both unsanitary and unsavory. The commission charged that the programming contained portions that were “indecent in that they contain language that describes sexual activities in patent offensive terms.” Worse, since the program in question aired beginning at 9 a.m., “there was a reasonable risk that children may have been in the audience” at the time.

Desktop Broadcasting: The first “radio” station to program full time exclusively for the Internet has seen its audience skyrocket after incorporating new software, says the station’s founder. Norman Hajjar, president of the company that developed Radio HK, said in a news release that the use of RealAudio, “overnight, Radio HK has gone from an experiment to a viable and entirely new mass medium.” Hajjar estimates that more than 20,000 listeners worldwide have accessed Radio HK in the three weeks following the adoption of RealAudio. The software allows users to download audio without the usual lengthy wait. Hajjar was bullish about what the
advance portended: “We are at the dawn of desktop broadcasting. FCC licenses, three-ton transmitters and 200-foot antennas just aren’t a requirement anymore. Broadcasting is about to become a ‘Volksmedium’...[and] in the next few years, any organization or person with a computer and a connection to the Internet can transmit their programming throughout the world.” Only time will tell whether this is the future of radio, but desktop broadcasting does overcome issues of adjacent and co-channel interference, signal coverage and the prohibitively high cost of starting a station. Radio HK can be heard at http://www.hkweb.com/radio.

Happy Anniversary: Gainesville, Fla.’s WRUF-AM marked 70 years of continuous service this past March. The station first took to the air in 1925 as WHBN in St. Petersburg, making it “Florida’s fourth oldest continuously licensed AM broadcast station,” says POP COMM reader and WRUF staffer Tony Simon. Following its purchase by the state of Florida, the station was moved to Gainesville and in 1928 became WRUF. The 5-kW station is operated by the University of Florida and features a news-talk format, along with Gator football, basketball and baseball.

In spite of their being state-owned and university-operated, both WRUF and its sister station, WRUF-FM (Rock 104), are self-supporting commercial stations that receive no public funds. Except for its directors, the station is entirely student-run, and Tony points out that many of the WRUF alumni have gone on to become big names in radio and TV, among them Red Barber. Another WRUF alumnus, Bob Leach, spent his entire radio career there, from a student in the 1940s to general manager, until his death in 1986. Tony, a board operator and producer at WRUF-AM, would like to hear from former WRUF staffers, as well as those who have logged the station. You can reach him at 1085 W. 33 Place, Hialeah, FL 33012-4925.

Also celebrating a milestone is the National Radio Club’s DX Audio Service. Begun just over 10 years ago as a books-for-the-blind publication, the service has gone from essentially a spoken version of the NRC’s DX News magazine to a production similar to that of a news-talk radio station, with features including book reviews, members’ loggings and other medium-wave-related news and information. It’s issued monthly on cassette tape on a subscription basis. For more information, send an SASE to Kenneth Chatterton, NRC Publications Manager, P.O. Box 164, Mannsville, NY 13661-0164.

In Brief: New York City’s WNYC-AM/FM is expected to change hands in the near future, but how and to whom may be up to the courts. As we reported previously, the city had announced it would sell the city-owned non-commercial stations to the not-for-profit WNYC Foundation for $20 mil-
lion, to be paid out over six years. But that sale is now on hold following a lawsuit by a group of investors who want the city to offer WNYC on the open market, where industry brokers estimate the stations could fetch between $35 and $40 million.

Last month we told you about WTKC, a travelers information station that had set up shop in the FM band. Just after we went to press, Craig Adams of Portland, Ore., and KKSN-FM, checked in to report three similar stations, all operated by the Greater Vancouver (Wash.) Chamber of Commerce in conjunction with the Washington State Department of Transportation, Clark County, the Clark County Fair Association and FM Marketing. Information about local lodging can be heard on 91.1 MHz, restaurants on 92.9 MHz, and fast food on 95.1 MHz. All three are in mono and operate 24 hours, with transmitters located at the Clark County Fairgrounds in Kozy Kamp, eight miles north of Vancouver, Wash. Craig advises that “since it’s nearly impossible to hear all three in their half-mile radius at 55 mph, pull over after” the 179th Street overpass on Interstate 5.

TV DXers may find IDing stations more difficult in the future if NBC has its way. The network announced at a mid-May affiliate meeting that beginning this fall its six network-owned stations would drop their call letters altogether and instead ID with “NBC,” their channel number and the peacock logo, reports Broadcast & Cable. Affiliates were urged to do the same, as well as increase the frequency that they display the peacock logo. The changes come after network research showed that the peacock is both the most recognized and most liked of the four major networks’ logos.

Elsewhere in this column you’ll find a bumper sticker for San Mateo, Calif.’s “Wild 107,” sent to us by Mike Mistor, KD6FTE, of Soquel. Calif. Mike reports that the urban contemporary/dance station enjoys signal coverage from as far as 50 miles north of San Francisco to Sacramento in the east and Monterey Bay to the south. Their secret weapon is that they’re actually two stations—KYLD, on 107.7 MHz in San Mateo, and KYZL, on 99.1 MHz in Santa Cruz. KYLD runs 8.9 kW into an antenna on what Mike describes as “a small hill” in the Bay Area, while KYZL simulcasts KYLD with 1.1 kW from atop a 3,000-foot mountain.

Thanks: News clippings about AM and FM stations, even your questions and comments, are always welcome. Send them to the column in care of POP’COMM. Until next month, 73.

The flip side of KBPI’s bumper sticker advertises the station’s Listening Centers at Denver area Blockbuster Music stores. (Courtesy Patrick Griffith)
COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Doug Evans, at an unidentified location, provides some interesting USAF MARS information. "I have noticed in the column loggings numerous listings for phone patch traffic on 6996 kHz. This frequency is the home of the USAF MARS Pacific Phone Patch Net. The net starts at 1000 UTC on Saturday and Sundays with net control being AFC6RI. The main participants are AGA8OS (Osan Air Base, ROK) and AGA8KU (Kunsan Air Base, ROK) and affiliates from Kadena and Missawa Air Bases in Japan make frequent appearances on the net.

AFC6RI is located in the employee recreation area of the Rockwell International plant in Anaheim, Calif., and they have graciously donated their equipment and 800 line for the morale of troops overseas. Al and Dave are the principal operators there. For years, they have donated their spare time to run phone patches for troops and they do a top-rate job.

AGA8OS is a Class A USAF MARS station, meaning that it has USAF radio operators on duty to pass traffic, MARSgrams and phone patches.

AGA8KU is a Class B USAF MARS station—all operators there are volunteers operating under the installation's MARS director. Having been an operator there at "The Kun," I know the operators are highly motivated and love their job. Most are hams and those that are not usually leave the ROK with a ham license. Phone patches there are transmitted using Harris Pacer Bounce transceivers through an 18-element heavy-weight long period antenna at 1 kW. MARSgrams pass through the same equipment via HF packet, RTTY, AMTOR or voice. The volunteers at AGA8KU generally log 200 volunteer hours each during their tours of duty while "Keeping Wolf Pack Talking to the World."

AGA8KU also is the home of HL9KU, the Kunsan Amateur Radio Club. Membership is open to any American stationed at Kunsan. The KARC provides study materials and cram sessions needed to pass the exam. In 1994, the KARC had a 100 percent pass rate on license exams. (The volunteer examiners were provided by HL9OS, the Osan Amateur Radio Club.)

HL9KU members have a close relationship with the HL4s (local Korean hams) and often sponsor picnics, bowling parties and various get-togethers.

Tom Sevart, KS, writes that he noted one of the Russian MFA broadcasts (possibly the one to JMS) signing down with "TTTT." Because that was one of the KGB procedures, he wondered what the connection was with the MFA broadcasts.

I have observed some operator mistakes that I believe indicated the MFA and agent broadcasts for the Western Hemisphere are relayed from the same Russian communications site in Cuba. It is likely that the wrong sign-down was used for the MFA broadcast.

Tom mentions the KGB is now called something else and wondered what it was. The Russian External Intelligence Service is now "Sluzhba Vneshnoi Razvedki" (SVR). It contains most of the former KGB spy staff and retains the classic espionage functions.

Stephen M. Haney, NY, asks about the Coast Guard Radio book written by Jim Pogue. As far as I know, the book is out of print. If you have not already done so, I suggest you get in touch with the publisher. Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147.

Vince, N2JRS, wants information on the source of all-inclusive "Q" signal listing. I regret I do not know of one that is commercially available. Many countries have their own special meaning "Q" signals. The "QSF" you mentioned is used by the Russian MFA and seems to be concerned with communications schedules.

David Sabo, MD, advises: "I'm struggling with apartment listening and computer-generated RFI. There are nights when I'm pleasantly surprised with my catches. I had stuff pouring in one wet, rainy night a few weeks back. I was logging African aero stations I hadn't heard in ages."

Allan Dunn, MA, informs us: "I am a first-time submitter, but a long-time subscriber. I normally cannot hear many beacons from my home in Massachusetts because of a neighbor with a defective light dimmer."

"My loggings were made from either Surf City, N.C., (25 miles northeast of Atlantic City), using a DX-440 with the built-in loop antenna, or from Newport, R.I., (daytime) using the DX-440 and an AOR loop antenna."

"How much power does the beacon HL in Delaware on 298 kHz run? I get them from New Jersey, Rhode Island and Connecticut (the latter two daytimes)." Allan, according to the Aero/marine Beacon Guide by Ken Stryker, the power output of beacon HL is 500 watts.

Barry Rowan, PA, uses a Sony SW-7600 with its internal antenna. He has been a POPCOMM subscriber for about eight years.

Al Hemmain, RI, reports unusual reception of FIS on 332 kHz. The beacon was heard for the first time in June and he usually has no difficulty with Florida or Cuban beacons. It seems this beacon has been off for a year or so and just came back on. It has to be a long-time beacon as it is in the original listings in Stryker's Beacon Guide.

Tim Bowling, WV, asks about the KAWN messages he copied on 7786 kHz RTTY at 75/425. These were USAF weather transmissions.

Tim also questions the NAWS callsign he observed on 5097 kHz when he copied a list of frequencies transmitted by CHF,

These two photos are views of Otis Air National Guard base. Kevin Tubbs, VT, took these pictures.
Canadian Navy, Halifax. NAWs is the collective callsign for "Notice to all Allied War Ships."

Here is a humorous item from Tim's letter. Although it properly belongs in POP's "Scanning VHF/UHF" column, rather than delay it any further I am including it here.

A Virginia State Police trooper on 159.165 MHz reported at 10:40 p.m. (local time) that, "A white male on roller skates was pushing a shopping cart on the interstate." The trooper added: "Believe it or not." The subject pulled over and it was determined that he was a resident alien from Romania. He was advised to "get off the interstate or face being arrested.

I was unable to identify the signal on a tape submitted by Tim Bowling. It sounded like a conversation between two men in USB but not tuned in exactly correct. I wonder if this could have been USAF/NASA "Cape Radio" on 6937 kHz?

Eugene Lish, FL, forwarded an article from the St. Petersburg (Fla.) Times that outlines the communications activity at MacDill Air Force Base. Earlier this year, according to the article, a survey revealed that MacDill was one of the busiest Global High Frequency System (GHFS) sites, with contacts running in excess of 3,000 per month.

In addition to MacDill, there are GHFS stations at other air bases in the U.S. as well as at several overseas locations.

MacDill also is a member of the MYS-TIC STAR net, which is used by the president and vice president when they are on Air Force I and 2. Other VIPs also may use the MISTIC STAR facilities.

The article concluded by pointing out that monitoring the described systems can be accomplished with inexpensive short-wave radios and that the conversations often are in the clear and very interesting.

From Sue Wilden, IN, we hear that she has installed the PC Telex and weather fax program on her computer, and has been having fairly good luck with it. "I am in search of ways to improve my signal. I will appreciate any suggestions from anyone with the same problem."

A letter from Rick Barton, AZ, states: "A couple of years ago, I ran across something very curious concerning the YL/SS 4F broadcasts reported in the column. The daily transmission on 6840 kHz at 0230 uses the same voice as other 4F and 3/2F YL/SS scheduled but not the same format. There is no call-up internal and the YL does not announce 'Fin' at the end. There is no group count. The broadcast repeats a small number of groups over and over for exactly 10 minutes and then abruptly stops. The 6840 transmissions are simulate on 9958 kHz."

"In addition, there are two related broadcasts on 7725 kHz daily at 1030 and on 16310 kHz daily at 1830. I have not been able to find any parallel frequencies for these schedules."

"Here's what I heard during one 24-hour period earlier this year: 0230-6813 3380 7516 5106, 1030-7516, 5106, 3017; 1830-7516, 5106, 3017; 0230-5106, 3017."

The late Dave White, who was a regular contributor to this column, and I copied a 0030 schedule of MCW cut number messages commencing in early 1990. About August 1990, there was a change in frequency and the broadcasters then were on 5264/6792 kHz. These messages were short three to five groups of cut numbers in the AUV4E689NT-1-0 system. Group length was four figures.

Sometime after hearing the above activity, we observed YL/SS 4F voice broadcasts that displayed many of the characteristics of the previously heard MCW transmissions. The messages were short, two to five groups generally, and they were repeated with the complete transmissions lasting exactly 10 minutes. Schedule time was 0230 UTC daily.

The voice broadcasts were in AM and started on the half-hour with 10 dashes followed by the YL/SS announcing the short messages (generally of two to four groups) with 4F per group. The only frequency heard at that time was 6940 kHz.

Former POP COMM RTTY columnist Bob Margolis has a monthly publication of digital signals. For details, write him at 136 W. Woodland Road, Lake Forest, IL 60045.

UTE Loggings: SSB/CW/RTTY/SITOR/etc. All Times in UTC

147.3 DDH47, Hamburg Metro at 1155 in RTTY 50 baud w/RY's. (AB)
153. P.L. Lowder, Tonica Lake, CA at 2250. (DT)
204. Beacon Y6Y, Iquitos, P.E., Canada at 0813. 1537 miles. (AH) Beacon MD, Harrisburg Int'l Airport, Middletown, PA at 2030. (BR)
212. Beacon DCY, Washington, IN at 0527. (PC)
246. Beacon Y7A, Ft. Albany, Ont., Canada at 0940. 884m. (AH) Beacon BID, Block Island. RI at 1630. (AD)
219. Beacon CX, Capitol City Airport, New Cumberland, PA at 2032. (BR)
220. Beacon IIM, Mansfield, MD at 1632. (AD)
224. Beacon WVD, West Dover, VT at 0630. 125m. (AH)
227. Beacon SJY, San Jacinto, CA at 1915. (DT) Beacon TAN, Tauton, MA at 1633. (AD)
233. Beacon CNH, Claremont, NH at 0607. 135m. (AH)
236. Beacon J3T, Toronto, Ont., Canada at 0545. 450m. Beacon OW, Ottawa, Ont., Canada at 0819 339m. (AH)
234. Beacon F2K, Wausau, WI at 0650. (PC)
235. Beacon AN, North Island NAS, CA at 0745. (DT) Beacon NKT, Cherry Point, NC at 0559. 552m. (AH)
251. Beacon J3Y, Macon, GA at 0710. DSB. (PC)

Here is a PFC used by David Sabo when he was stationed in South Korea.

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Lynn Hanson, Japan, took these photos of the various antennas at Missawa Air Base, Japan, including some on the roof of the Japanese Northern Defense Headquarters.

257. Beacon XKR, Earloft, Ont., Canada at 0827. 596m. (AH)
260. Beacon XCB, Carlisle Barracks, Carlisle, PA at 2034. (BR)
263. Beacon MOQ, Hinesville, GA at 0445, DSB. (PC)
264. Beacon RLS, Westerly, RI at 1638. (AD)
266. Beacon AGO, Magnolia, AR at 0510. (PC)
269. Beacon TOF, Topsfield, MA at 162. (AD)
281. Beacon ZSJ, San Salvador, (Watling Island), Bahamas at 0645, 1223m. (AH)
285. Beacon IUD, York Airport, York, PA at 2036. (BR)
286. Beacon NS, Nantucket Shoals, MA at 1647. (AD)
289. Beacon MR, Marina Del Rey, CA. Back on the air but very weak. (DT)
292. Beacon DP, Dana Point, CA. Back on the air but very weak. (DT)
293. Beacon MP. Montauk Point, NY at 1654. (AD)
296. Beacon UVT, Victoria de las Tunas, Cuba at 0927, 1458m. (AH)
298. Beacon HL, Cape Henlopen, DE at 0106. (AD)
300. Beacon ABL, Ambalama, Columbia at 0626. 2562m. (AH)
302. Beacon L. Point Loma, CA off the air. (DT)
307. Beacon AV, Avalon, CA off the air. (DT)
311. Beacon CH, Chatham L.S. MA at 0637. MCNT. (PC)
326. Beacon BHF, Freeport, Bahamas at 0111. (AD)
327. Beacon BZJ, Fort Indiantown Gap, near Bordnersville, PA at 2038. (BR)
329. Beacon CH. Charleston, SC at 0112. (AD); Beacon D. Carmanah Point, BC, Canada at 0742. (ISF)
332. Beacon FIS, Key West, FL at 0935, 1320m. (AH)
333. Beacon STI, Mountain Home, ID at 0959. (ISF)
338. Beacon HE. Sheboygan, WI at 0847. 851m. (AH)
341. Beacon O. Ottawa. Ont., Canada at 0706. 341m. (AH)
354. Beacon MKS, Moncton Corner, SC at 0616. 750m. (AH)
356. Beacon BXG, Waynesboro, GA at 0837. 838m. Beacon PB, West Palm Beach, FL at 0822. 1145m. (AH)
358. Beacon TRK, Kenpet, MO at 0904. 1070m. (AH)
360. Beacon PN, Port Menier, PQ, Canada at 0117. (AD)
367. Beacon HA. Hao Atoll, French Polynesia at 1210. (DT)
368. Beacon ZP, Moreley Island, BC, Canada at 1030. (DT)
373. Beacon EP, Estevan Point, Vancouver Island, Canada at 1200. (DT)
382. TWEB LQ, Boston (Logan Int’l)—Lyndby, MA at 1711. (AD)
387. Beacon P, Turks and Caicos, BWI, at 0614. 1366m. (AH)
394. Beacon VB, North Bay, Ont., Canada at 0131. (AD); Beacon ENZ, Nogales, AZ at 0740. (DT)
400. Beacon ENSF, Ensenada, BC, Mexico at 0700 using backup xmt. (DT)
406. Beacon FII, Fall River, MA at 1718. (AD)
415. Beacon CBC, Cayman Brac. Cayman Island at 0141. (AD)
417. Beacon EVB, New Smyrna Beach, FL at 0912. 1019m. (AH)
426. Beacon FTP, Ft. Payne, AL at 0831, 923m. Beacon IZC, Montezuma, GA at 0428, 944m. (AH)
430. Beacon LML, Lomalinda, Colombia at 0810. 2164m. Beacon VA, Varadero, Cuba at 0901. 1412m. (AH)
518. ZSC, Capetown, S. Africa in SITOR B at
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THE MONITORING MAGAZINE

1230 w/NVTEX NAVAREA warnings, etc. (RH)
521 Beacon INE, Massena, MT at 1025 (DT)
526 Beacon RWE, Camp Roberts, CA at 1015 (DT)
530 TIS—WPEA856 Intestate 83, Exit 29, Harrisburg, PA at 2040 w/msg reconstruction. (BR)
1500 TIS—Anaheim Highway Advisory Radio WDVD857 Hrd at 2200 (DT)
1610 TIS—WPEA856, near Camp Hill, PA at 2050. Same message reconstruction as carried on 50 khz but not in sync. (BR)
1620 TIS—KLWD, Lakewood, CA at 2230. Hrd part of test message: "Lakewood Community Information Radio KP0527. (DT)
2442.7 DER, MOI Bonn at 2350 in ARQ-E, 72b w/msg to Berlin (AB)
2670 USCG Charleston Group, NMB announces end of marine info bcast, at 0424 calls for any vessels who wish to report wx conditions. Apparently no takers. Signed off a few mins later. USD mode. (DS)
3016 Aeroflot 356 wkq New York radio in USD at 0706. Gave position & at 0701 gave Flight level 330, & estimated position 45N 60W for 0741. (DS)
3038 HELGE, Swedish Navy in 50h RTTY at 2300 w/tfclist. Another day late callsign HANNA (AB)
3151 Mode d in USD, msg to PCD at 2230. (AB)
3194 SLHFIM "R" at 2021 on new freq (AB)
3208 SLHFIM "P" at 2307. At 2312 went into high speed CW, marker silent and then into RTTY. Synchronization sequence at the beginning, then 500 baud PSEUDO bitstream. After RTTY bcast went back to marker (ID)
3264 ROE, w/D DE RMP, Kallingrad at 1720. Sends wdx in Cyrillic & then silent until 1900 when SLHFIM "P" came on the air for three minutes. (AB)
3303 7 UN "Denver Flight" activity at 2056 in USD Hrd RED CROWN w/M. K & J. Strepes from MAGIC and OOR (AB)
3314 HEP, Interpol Zurich, Switzerland at 2115 in CW w/VV DE HEP. (AB)
3517 Irish military strn 0A, 32. 97, 54 & 21 wk each other. Sea area forecasts, routine messages and lots of chatter re bad propagation conditions, etc. STOR-B 100 baud at 2312. (AB)
3807 Same RTTY system as on 3208 khz. First bits inverted. Immediately after RTTY ceased, marker back on up frequency. (IDL)
4003 Army MARS informal traffic net in USD at 0150. (TB)
4125 River Barge "VR3558 Super America" coming from Cincinnati at 1830. USD bcast. (TB)
4134 W519756, R/V Seward Johnson, Harbor

Edward Rausch, NJ, shares his PFC with POP'COMM readers.

Abbreviations Used For Intercepts

AM Amplitude Modulation mode
BC Broadcast
CW Morse Code mode
EE English
GG German
ID Identification/led/location
LSB Lower Sideband mode
OM Male operator
PP Portuguese
SS Spanish
Traffic
USB Upper Sideband mode
w With
wx Weather report/forecast
Y Female operator
4F 4-figure coded groups (i.e. 5739)
5F 5-figure coded groups
5L 5-letter coded groups (i.e. IGRKJ)

Branch Foundation research vessel, wkq ComsStr Boston, NMF, w/B6XXxws 0537. At 0603 WAP8478 S/V Artemis, wkq CAMSLANT Chesapeake, NMM, resistance due damaged steering gear. Sets up comm schd. USD mode. (BR)
4191 U/i in CW at 2245 sends 'K' for 15 mins, then couple of rbs separated by ·. Each repeating 5 minutes. ·5094 ·5454 ·5659 ·6815. After each group "QSA NO QSV" was sent. (AB)
4260 TBA2, Navy Arkansas, Turkey at 2228 in CW w/T13A VVW TBA2 (AB)
4302 SLHFIM "C" in CW at 2153. (AB)
4314 L2W2, Varna, Bulgaria in CW at 2255 w/DE LZW. (AB)
4372 U.S. Navy Flight Control. Conversation between JULET S KILO & GIANTKILLER in USD at 0430. (AB)
4470 YL/E3/2F msg in AM at 2325. (TS) 4X9 Alpha net discussing use of freq now that counting station not using it. NNNVASAG. NNNOAG. NNNOAG & others ck in to net. Also discussed D0 ID cards, regional meeting. USMC MARS net in USD at 2345. (ANON)
4577 USAF MARS traffic net at 0045. USD mode. (TB)
4637.5 Oil rig tfc in USD 0818. Was W7A287/R Bowen Base, Fort Worth, contacting subordinate rgs for daily reports. Rgs contacted incl. The Texas,

Seychelles Airadio

VERIFICATION OF RECEIPTION

TO: EDWARD RAUSCH III
17 VANDERBERG PLACE
CEDAR GROVE, NJ 07009 USA

DATE: 16/05/94 FREQ: 11300khz MODE: USB
XMTR: T166 ANTHA: CNS Spirocone
POWER: 1 WATS LOCATION: St Louis Maho
REMARKS: Antenna Direction Omni-Direcional

(Station Seal)

THE MONITORING MAGAZINE
4617 Three note oddity numbers station in AM at 1900 w/5F grps. (AB)
1724 AF-2 wkg MAINSAIL at 0545 in USB. (ANON)
4742 RAF Ascot 5385 & Ascot 29a in USB at 1933 w/Architect. Ascot 5385 changed freq to 11247 kHz. (AB)
1780 YL w/ KILO FOTXTROSL A 2 from 0203-0220. (ERI)
4960 NMN, Comm Sta Portsmouth, VA in USB at 0328 w/kg MOZ w/shares exercise tlc. At 0400 w/kg MOZ w/wko dr. (TS)
5046 YL/VE w/Architect in (strong sig) at 0190 repeats “334-334-334” from 1-0 counts til 0110 then 10 beeps, “count 128” and into 3/2F. //4470 kHz where it was even stronger. (DS)
5192 Portuguese police msqs at 1955 in SITOR-B, 100 baud. (AB)
5297 YL/VE secure msqs at 0521. Sounded like spread spectrum. SS oprs (PS)
5301 YL/VE in AM at 0417 w/5F w/5F grps. (PS)
5320 NDOTS, USCSC Dauntless (UMEC 524) at 0144 w/kg Group Galveston (TX) w/pp to Flight Surgeons re metric on board. Odd to find a UMEC w/kg a group for this type of tlc. Dauntless commissioned just recently after extended overhaul. At 0627, QZ0, u/, assumed USCSC, qlg USCSC Group Mobile, no joy. Group Corpus Christi answers, QZO relay posn using Group Mobile’s code: 1 USB mode. (RB)
5325 OTH radar at 0411 (TS)
5376.5 QT23, Oostende radio at 2006 in SITOR-B 100 baud w/ftlc list
5533 Scrambled speech in USB at 0314. Also on 5222, 5720, 5790, 6395 & 6662. (TS)
5599 Air traffic comms from New York radio in USB at 2100. (DN)
5680 YL/VE in AM at 0459, NRP, USCSC Group Miami. At 0550, NNN70, USCSC Eastern Shore Group, Chincoteague. VA and NNN80, Group Hampton Roads, VA qlg distressed F/V MB3-3 struck by large wave and lost rudder, QSY from 4125 kHz while attempting maintain comms w/vessel. All in USB mode. (RB)
5696 USAF 2104 in USB at 0545 w/kg CAMSLANT, was told 5280 kHz was primary, 5283 kHz secondary, rtd “Lima Charlie.” A/6 612 w/kg CAMPAC, San Francisco, gives position. Advised to switch to 3122 kHz. Hard on that freq. (ANON)
5748 YL passing 5F grps in Yiddish, each 2x USB mode from 0114 to 0118. Definitely Yiddish veeger. Was using “FINEF” instead of “FUN” for “five.” (DS)
5754: RFFCGFA, French Forces, Exercise Boomrangi. ARQ-L. 72 baud at 1530. (AB)
6200 WS79756, Oceanographic Research vessels Stewart Johnson and WTL-1798, Edinburg, Qld subject CAMSLANT Oceanspeake at 1015 and 1811. (ERI)
6345 WLO, Mobile, AL in USB at 0640 in FEC w/ftlc list & Atlantic seas forecast. (SW)
6492 VAI, Vancouver CG Radio, BC, Canada at 0040 w/kg w/QSX marker. (SW)
6501 High Seas wx Honolulu in USB at 0611 w/automated wx for Pacific ocean. //8764 kHz. (ANON)
6550 Netherlands Coast Guard in USB at 0611 w/Navy 121 & Customs launch Zeewalck (PBWVW). (AB)
6501 High Seas wx Honolulu in USB at 0611 w/automated wx for Pacific ocean. //8764 kHz. (ANON)
6602 New York radio at 0048 w/aviation wx. (SW)
6645 Jean Michel Jarre numbers station. A new number activity w/kg 5F grps in EE. Xran ends with a Jean Michel Jarre tone. USB at 1905. (AB)
6683: SAM 681 (73-1681) USAF Special Air Mission C-9C at 2313 in USB w/kg Andrews WIP pp, Andrews. (DS)
6691 Disjointed musical tones (sounded like brokken woodwinds, very strange). Tones going strong from 0130-0205 USB mode. (ANON)
6672 Scrambled speech, sounded like speech inversion, SSB 0700-0711. (ANON)
6745 YL/VE ops SINSY in phonetics. Weak-medium sigs. USB at 2231. (DS)
6826: YL/SS in AM at 0300 starts out “044-99,” then rpts “Attention 044-99 until 0302. Follows with 129-044 until 0303, then into 5F grps. A repeat of the 2186 kHz (0200 best. Very strong & clean. (DS)
6840 Russian Man numbers station in AM at 2215. Msq to 507 w/935F grps. (AB)
6857 Cut hrs in USB at 0505. Sci test w/E-E-E-C MGAD TIIID UTAIN "NDRW K TNDWN etc. Stopped at 0523 w/SK SK SK EIT. (TB)
6870 FAA southern region net check-in net participants led by KEV4. USB at 1320. (TB)
6873 VOA lead in USB at 0443. (TS)
6955: OTH radar bursts at 0500. (TS)
7527 SELSCAN tones noted in USB at 0114 on Customs Service “ZB” channel. (DS)
7528 Strong CW station w/words of “IDRWR” in CW from 0302-0304, then into 5L grps. Presumably cut numbers systems /DUR/WRIGHT. (DS)
7553: Norfolk. SE/SEF. NAWFR USS Arthur W. Radford (DD-908) at 1712 w/ HF testing. NAC/ USS San Jacinto (CG-56) at 1812 w/MF xmt tests. PUC Fitzgerald, pre-commissioned naval ship, w/HF rdo cks at 1751. All in USB mode. (RB)
7605: Mosq best, YL/VE rping VL8B at AM at 0146. (TB)
7610: SLHFM “V” in CW at 1820. (AB)
7657: SHARK-09 w/kg 76A and 31C in USB at 2059. At 200, SHARK-09 advised that he had no further testing for 31C. U.S. Customs Service “FOXTROT” channel. (DS)
7668.4 8BY in CW at 0453 w/MK rfo by 306/058/008/929/990. (AB)
7786: KAWIN USF w/kg in RTTY 75/425 w/5F grps coded w/kg. KAWIN was also heard on 12186 kHz but not //w/this freq. (TB)
7855 RCK24, Moscow Metro at 1525 in RTTY. 50 band w/synops. (AB)
7918: YL (weak) in USB at 0432 rpts “YHF” in phonetics. Another day at 0439, YL passing 5L grps. Announced “end of message” at 0441 by “MSG MSG GRP 30 GRP 30 TEXT TEXT.” Started into different mssg w/group count 68 at 0446, then down by 0454. (DS)

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Trevor Fletcher, Alberta, Canada, took these photos of the Canadian Forces communications station located about nine miles north of Edmonton.

13375. Lincolnshire Poacher station. YL w/5F grps in USB at 1630-1645 and 1700-1745. (ER)
13331. MFA Cairo in SITOR A at 1515 w/tfc in AA. (RH)
13440. Air Force 2 w/kgk Andrews AFB w/pp in USB at 0330. WATCHGUARD w/briefing for vice president re armed intruder on White House grounds. "Shots fired on the south lawn, the presidential and his close family are in the residence and are fine. One officer was shot... happened 40 minutes ago... story broke two minutes ago." (S)
13363. SLHFM: "C". Moscow and SLHFM: "S", Arkhangelsk in CW at 1458. (AB)
14000. Msg in 5L grps in USB at 1400 to FRANK YOUNG PETER (AB)
14411. NNN0CEK, USW Laph (LHD-1) at 1934 cly ASSMS w/beaming E, for routine p/p tlc. At 1945, NNN0CYK. USNS Concord (T-AFS-5) attempts wrrk NNN0KQD for 95Y. NNN0CZ, USS Scott (DDG-905) at 2015 cly ASSMS w/beaming of SE. At 2211 NNN0CVP, USS Monterey (CG-61) cly ASSS w/beaming of S. All in USB mode. (RH)
14415. USDF GHFS station Ascension wkg REACH-143 (full hrd) w/pp to Elmendorf Metro. A/c wanted 2330 wxx for Elmedomor. Moved up here from 11175 Hz, where Ascension was much stronger and clearer. A/C was audible down there, too. USB mode fn 2233-2238. (DS)
14651. MFA Bucharest at 1535 in ROU-LEC. 164 baud b/msg to VSG, encrypted tlc. (AB)
14950. Six-tone NALC system for Russian MFA network. Hrd at 1434 (AB)
14975. P62, MA/W Paris in FEC-A, 144/396, at 1517, ul/dng. (RH)
15000. W4YH at 0300. Address and alpha at 0301. (SW)
15175. U/A RTTY stn 75/499 w/5L grps. Powerful, no c/s or signature. (RH) Wunder if this was RR MFA's comm? (AB)
16165.3. RFCA, MOD Paris in ARQ-M2, 200/400 at 1235, idling (RH)
16170. YL/EE in AM at 1705 w/528 0 0 0 0 0 then carrier down. (PS)
16304.2. OMZ, MFA Prague at 0330 in RTTY 100/388 w/n in Czech. (RH)
16528. Seaboard Atlantic KRLZ w/kgk Seaboard Performance KRPW w/computer w/q/related to comms. USB at 1715. (ER)
16912. GYA, Royal Navy, London at 1218 w/FAX 120/576. Fairly good wxx chart. (RH)
17432. Numbers stn in CW at 1400 w/345 34 5 1.01445 119" joll b/msg. Msg ended w/3 short ditches 2x (AB)
17976. USDF GHFS station McCellan in USB at 1025 w/EAM. (DS)
18064.1. SNN299, MFA Warsaw, Poland at 1255 in POLARQ. 100/233. M77000 unable decode. (AB)
18033. YL/EE in USB at 1200 w/58 38" rpd. (RH)
18506.7. DEPLU Jakarta in RTTY 50/328 at 1128 w/tfc in Indonesian for Cairo Embassy. (RH)
19361. USDF Air Weather Service Omaha in FAX 120/576 at 1325 w/good chart. First time seen! (RH)
19115. St. Petersburg, CIS in CW at 1310 w/fast Morse tlc in RR. (RH)

Thanks to this month's contributors:
AB—Any Boender, Netherlands; TB—Tim Bowting, WV; ANON—Anonymous, IL; RB—Richard Baker, OH, NC—Perry Crabill, Jr, VA; AD—Allan Dunn, Rl and NJ—Dee Leff, Leff, Germany; SF—Stan Forsman, CA; AH—Al Hemmalm, RI; RH—Robert Hall, South Africa; SL—Steve Johnson, PA; DP—Dan Nrpil, Ontario, Canada; BR—Barry Rowan, PA; ER—Ed Rausch, NJ; DS—David Sabo, MD; PS—Paul Scalzo, Quebec, Canada; TS—Tom Sevart, KS; DT—Donald Tomchik, CA; SW—Sue Wilden, ID.
Our first letter this month comes from Patrick Griffith of Colorado. Pat is an amateur radio operator, N0NNK, and a member of the ARRL. It seems Pat has done his share of snooping around looking for secret and not-secret government communication installations. And even if you haven’t been, Patrick, the photos you sent of the somewhat remote satellite communications station for the Primestar direct broadcast satellite service are very good. They could pass for a National Security Agency site to the untrained observer. I count at least 12 large dish antennas. Diversity repetition techniques? Pat says the site is just south of Denver. Thanks for the photos, Pat. We hope to hear from you again.

Next we hear from some readers about the series we did on weather satellites and setting up a weather satellite station. We continue to get a good response from many of you with questions and information you want to share about the series. The first two queries come from South Africa. I always enjoy hearing from readers, especially those international readers who write in.

Glenham Duffy of Durban, South Africa, says he appreciated our weather satellites articles and presently is building a station for wfax reception. Glenham ran into a problem when the local book store failed to receive the next-to-last installment in the series. Therefore, he’s short by one issue. Don’t worry, Glenham; we have one in the mail to you and you should have a complete set by now. Good luck with the station and be sure to send us an update or even some weather maps from your locale. Good to hear from you.

A second reader from South Africa, Robert Hall, writes from Capetown. Robert enclosed weather photos from a satellite transmitting in the amateur band on 145.450 MHz. These photos were intercepted with Prosat2 on a Kenwood RZ-1 receiver and an HP-520 printer. Great shots, Robert, and thanks for writing.

Next, Lowell Winans of Heathkit Educational Systems writes saying he enjoys PCOMP and wants to know where he can get a copy of Thomas P. Harrington’s book, Satellite Radio. Write directly to Universal Electronics Inc., Satellite Radio Guide, 4555 Groves Road, Suite 12, Columbus, OH 43232. Or you can phone (614) 866-4605 or fax (614) 866-1201. Tell them PCOMP sent you. Good to hear from you, Lowell. Write again and let me know how that special project of yours is going.

Finally, we hear from Michael Steinberg of Accu-Weather Inc. He is vice president of Accu-Weather, and has a cost-effective alternative to setting up your own satellite receiving station for weather images. You can receive thousands of top-quality weather images from various weather satellites, and also access the NEXRAD doppler radar on your home computer and modem via telephone lines. And he saved the best part for last: Accu-Weather has special non-commercial subscription rates for people like hobbyists. Give them a call at (814) 237-0309 or fax at (814) 238-1339.

Before I leave, you must know that if you don’t have a copy of Anthony Curtis’ book, Weather Radio, then your library is not complete. This Tiare publication covers every aspect of weather, including local NOAA weather radio stations. It has an exhaustive list of frequencies for these services, too, along with great instructions and diagrams on setting up your own station for any of these services. It’s a must! Write Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147. See you next month.

Primestar ground station near Denver. (Courtesy of Patrick Griffith, N0NNK.)

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Commission Adopts Schedule of Regulatory Fees

The FCC adopted a Schedule of Regulatory Fees for Fiscal Year (FY) 1995. Section 9 of the Communications Act requires the commission to assess and collect annual regulatory fees in order to recover the costs specified by Congress for its enforcement, policy, and rulemaking, international activities, and user information services. For FY 1995, Congress determined that the FCC should recover $116.4 million from entities that the FCC regulates. This amount is 93 percent higher than the $60.4 million the commission was required to recover in FY 1994. As a result, fees for many services are significantly higher than in FY 1994. The commission wants to ease the burden of compliance with the new fee requirement by revising its methodologies for assessing fees to better assure that fee payments are reasonably related to the benefits that regulations derive from the commission’s regulation.

Major FY 1995 changes to the regulatory fee schedule are as follows:
- Establishes a separate reduced fee for satellite television stations and for satellite television construction permits.
- Includes a fee for FM translators and boosters.
- Reduces fees for private wireless radio services.
- Changes the basis for mobile services from subscribers to per mobile or cellular unit.
- Establishes a separate reduced fee for one-way pagers.
- Expands the definition of common carriers to include resellers and other service providers.
- Eliminates the fee for receive-only earth stations.

The new fee schedule is now in effect.

Strategy for More Efficient Use of Spectrum Adopted

The commission adopted a regulatory strategy that seeks to promote more efficient use of the existing private land mobile radio (PLMR) spectrum allocations below 800 MHz. It also has asked for comments on how certain market-based incentives such as exclusivity with the right to lease excess capacity, spectrum user fees, and competitive bidding may be introduced into these PLMR bands to promote more efficient use of this spectrum.

The commission began this proceeding in 1992 to explore options to promote more effective and efficient use of the PLMR spectrum band. Although the immediate problem was frequency congestion, the commission’s broader objective was to develop a regulatory strategy to promote more efficient use of the existing spectrum allocations to satisfy future private land mobile telecommunications requirements. In order to achieve its objective of increasing the efficiency of the PLMR frequency bands, the commission has adopted the following changes:

- Established a narrowband (NB) channel plan based on current channel centers. Generally, channels will be listed every 7.5 kHz in the 150-174 MHz VHF band and every 6.25 kHz in the 421-430, 450-470 and 470-512 MHz UHF bands. Users will have the flexibility of aggregating up to the equivalent of 4 NB channels provided that spectrum-efficient technology is employed (e.g. four-TDMA in 25 kHz). This approach will enable users to employ the most spectrally efficient technology available, while causing the least amount of disruption to their own and other existing operations. This channelization framework is flexible and technologynutral.

- Adopted a transition plan in which users will not be required to replace existing systems; rather, the transition to narrowband equipment will be managed by type acceptance only increasing efficiency equipment will be allowed if the type acceptance rules adopted are:
  - Aug. 1, 1996—New type-accepted equipment must be designed to operate on channels of 12.5 kHz or less or on 25 kHz channels if the narrowband efficiency standard is met (multimode equipment that operates on 25 kHz channels will be allowed if it is also capable of operating on 12.5 kHz and/or narrower channels).
  - Jan. 1, 2005—New type-accepted equipment must be designed to operate on channels of 6.25 kHz or less or on channels up to 25 kHz if the narrowband efficiency standard is met (multi-mode equipment that operates on 25 kHz and 12.5 kHz channels will be allowed if it is also capable of operating on 6.25 kHz or narrower channels).

This transition plan will provide users with flexibility to choose the equipment and a transition schedule that best fulfills their technical and financial objectives. It also provides manufacturers with incentives to develop and market narrowband equivalent technology.

- Provided the industry with three months to negotiate and submit a consensus consolidation proposal. Consolidation of the service groups will provide for more efficient allocation of the increased capacity created by the introduction of more efficient technology. The commission indicates that two to four broad categories, including one for public safety users, appears responsible. If no acceptable consensus plan is submitted within the allotted time, the commission will devise and adopt a service consolidation plan based on the record.

- Imposed limits on allowable effective radiated power (ERP)/antenna height combinations of new stations based on the size of each station’s service area. These new limits are based on the “safe harbor” tables submitted in this proceeding by the Land Mobile Communications Council. This action will reduce background noise and provide technical flexibility. Further, these new standards will increase channel re-use thereby increasing spectrum efficiency.

A Further Notice of Proposed Rulemaking explores additional proposed methods to promote more efficient and effective use of the PLMR bands. By introducing market-based incentives into these bands more efficient spectrum use is encouraged while allowing users to make equipment choices that best address their needs by attaching an economic cost to inefficient use of the spectrum. Although the commission does not have statutory authority to implement user fees or competitive bidding in these bands, the commission seeks comment on the following:

- Introducing exclusivity on channels in the PLMR bands, and permitting the leasing of excess capacity on these exclusive channels. The commission stated that offering users the option of exclusivity with the right to lease excess capacity, the licensee agrees to convert to narrowband technology by a specific date to promote the use of more efficient technologies such as trunking and TDMA. In addition, affording users the opportunity to obtain exclusivity will enable them to benefit directly from the increased capacity that results from their conversion to more efficient technologies, thus encouraging more rapid transition to narrowband technology.

- Implementing a system of user fees in all PLMR bands to encourage licensees to make the most efficient and effective use of the spectrum. Under this approach, users would pay a fee based on the estimated value of the spectrum. The spectrum fee would be calculated based on the area and population covered, and the amount of spectrum used. This type of a user fee structure would attach an economic cost to inefficient spectrum use, thereby potentially motivating users to use the spectrum more efficiently. The commission proposes to exempt public safety users from any user fees.

- Introducing competitive bidding into all PLMR bands as an alternative to user fees. Specifically, the commission seeks comment on a proposal to create geographic overlay licenses and use competitive bidding as the assignment mechanism for these overlay licenses. As with the user fee
The FCC announced the next step in its plan to make available to the American public a nationwide satellite Digital Audio Radio Service (DARS).

Satellite DARS will provide multiple channels of high-quality digital audio programming to homes and motor vehicles nationwide. Among other things, it has the potential to target niche audiences by offering foreign language programming, music formats not usually carried by radio stations, and programming geared to children or senior citizens.

The FCC began its efforts to initiate a DARS service in 1992, when it played a prominent role in securing an international allocation of spectrum for DARS use. Earlier this year, the FCC made a domestic allocation of the 2310-2360 MHz band for satellite DARS. The NPRM initiates the last phase before the commission can begin issuing licenses to DARS operators.

The commission requests comments on issues such as how many nationwide licenses should be awarded; how much spectrum each licensee should be assigned; how licensees should be selected if mutually exclusive applications are filed; how the service should be regulated; and whether licensees should be permitted to use some of their spectrum for non-DARS services.

The licensing options include assigning all the spectrum to only the four current applicants for DARS service, licensing some of the spectrum now and holding some in reserve for future applicants, and opening up the spectrum to all interested parties.

The commission also states that DARS will both compete with and complement traditional local AM and FM radio services and requested comment on the impact of the DARS proposals upon those broadcasters and the listening public.

DARS may stimulate significant economic growth by creating jobs in various sectors. It could create jobs in industries related to technological development and manufacturing of spacecraft and receiver components, installation of receivers in vehicles, programming creation and origination, building, and operation of satellite uplink facilities and construction and operation of customer service centers. These activities could require employees with various levels of expertise and training. Moreover, many of these economic opportunities could be available to non-licensees, including small businesses. Because the construction costs for the space station proposed in the pending applications range from $320 million to more

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**FCC Proposes Rules and Policies for Digital Audio Radio Satellite Service**

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**THE MONITORING MAGAZINE**

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**November 1995 / POPULAR COMMUNICATIONS / 81**
The commission adopted a report and order replacing the Emergency Broadcast System (EBS) with the Emergency Alert System (EAS). Part of the phase-out of the EBS included a shortening of the existing EBS two-tone attention signal. The report and order requires that all EBS two-tone decoders certified for use at broadcast stations be modified so that they are activated after receipt of three to four seconds of a two-tone signal. Broadcast stations may transmit from their EBS encoders a two-tone signal as short as eight seconds or as long as 25 seconds.

The commission has received questions about the hundreds of consumer-grade EBS decoders (many of these are not FCC-certified) used in homes, hospitals, etc., that require receipt of more than eight seconds of two-tone signal. Most of these decoders are used in the tornado belt and near nuclear power plants. The FCC encourages broadcast stations to continue to transmit the longer two-tone signal when they know that these consumer-grade decoders are in their coverage area and tuned to their broadcast frequency. As before, the commission encourages all broadcasters to transmit the two-tone signal prior to disseminating all emergency messages.

The commission has released a new EAS operating handbook and operator instruction cards. These documents include procedures for operating the old EBS equipment and the new EAS equipment with appropriate test script examples. For further information, contact the EAS staff in the FCC Compliance and Information Bureau at (202) 418-1220.

WJG Maritel Corp. Files for Waiver of Maritime Rules to Permit Automated Public Coast Station Operations

WJG Maritel Corp. filed a request for waiver of Sections 80.153, 80.207, 80.371(c) and 80.453 of the commission’s rules, 47 C.F.R. 80.153, 80.207, 80.307(c) and 80.453. Rules permit automated operations at 77 public coast stations along the East Coast, Gulf Coast and the Mississippi River. Currently, public coast stations link marine VHF radios and the public switched telephone network via a marine operator. WJG requests that the maritime service rules be waived to permit an automated link, eliminating the need for a live operator, and making the logistics of ship-to-shore phone calls transparent to the end user.
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Magazine
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Thoughtwaves
(from page 5)

what became so much a part of my life for a
does not. I can honestly say that I have
never had a task or job any longer in my
life than the 12 years I wrote the scanner
column for POPCOMM. The closest I’ve
come are the nine years I spent on the staff
of one newspaper in New Jersey. While I
mentioned it briefly in my last scanner col-
umn in October, I’ll reiterate it here: I could
not have written that column for 12 years
without the constant input and letters I
received from our readers. The column was
the readers’ in so much as they practically
wrote the column for me. I basically was
the sculptor—the readers supplied the ma-
terial to make it all happen. J.T. sees the
column remaining the same, as you’ll read
this month. I ask that you support J.T. just
the same as you have kept my mailbox filled
with your letters, frequency lists and pho-
tos. In fact, if you are on the Internet, you
can write to J.T. directly at this e-mail ad-
dress: JTward@genie.com.

How’m I Doing?
As former New York Mayor Ed Koch
liked to ask his constituency, I’m doing like-
wise with our readers. I hope you like what
you are reading in POPCOMM each month.
I’m not planning on making any quickie
changes and just because one person
doesn’t like something means that I will
change it. However, I like to know what
you think of things. If we’re doing a good
job, we like to hear that. But if we’re not
doing a good job, our skin is tough and we
can take it. You can write to me at the ma-
zine or via e-mail at POPCOMM@aol.com.
I’ve got a folder in my file drawer where
I keep letters from readers who have good
ideas. If I think you have a good idea, I’ll
file it away and take a look at it again some-
where down the road. It may help me de-
cide on how to change something in the
future. I read all the mail that comes across
my desk, so don’t be shy. And I’ll warn you
I’m a little better about answering my e-mail
than the letters that come via the post
office. But I’m working on that. We all have
a little weakness somewhere.

We hope you have fun with all three is-
Sues of POPCOMM this month (don’t for-
get our annual guide and CB guide).

73, Chuck

Page 66 on Reader Service Card

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Please take note: As of May 1, 1995, we are no longer accepting free subscriber ads.

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