

# POPULAR COMMUNICATIONS

JULY 1999

## Dive Into Fantastic Summer Scanning On Long Island!

- Alice Explores Powerhouse WCCO's Humble Beginning
- Europe In Crisis: Broadcasts YOU Can Hear!
- Spotlight: Computer Automation Technology's WX-1000 Digital Weather Receiver, And Computer Aided Technologies ScanCat Gold For Windows "SE"

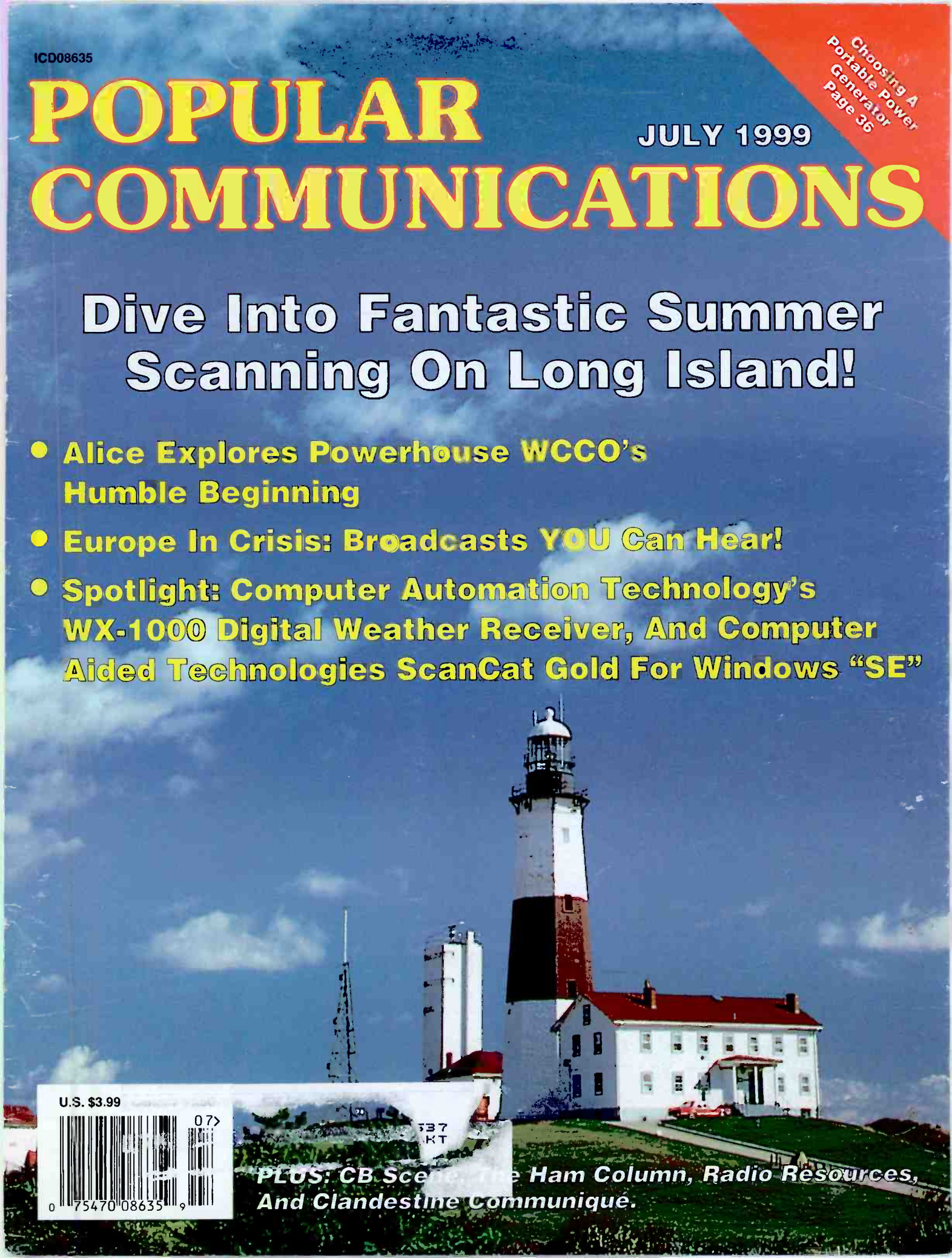
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# POPULAR COMMUNICATIONS

JULY 1999

VOLUME 17, NUMBER 11

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By Ed Decker, Jr.

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By Alice Brannigan



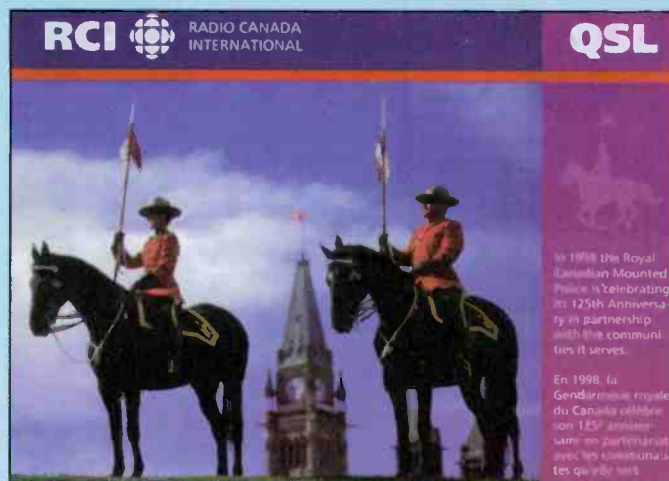
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**ON THE COVER:** *The Montauk Light House, at the tip of New York's Long Island, is a must-see if you're visiting the Big Apple this summer. Bring your camera and plenty of film, but most important — bring your scanner and Ed Decker's "Monitoring Long Island" article, beginning on page 8. (Photo by Larry Mulvehill)*

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The **Freeplay FPR-2SM** is gray, AM & FM with solar cell. #2413 \$79.95 (+\$6)  
The **Freeplay FPR-2SC** is clear, AM & FM with solar cell. #1441 \$79.95 (+\$6)

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# Tuning In

AN EDITORIAL

BY HAROLD ORT, N2RLL, SSB-596

## A Special Thanks To Art Bell

For four hours one early March morning, beginning at 2 a.m. (in the middle of putting the last issue of *Pop'Comm* together!), I had the opportunity to enter a marathon. Folks who know me, know that it didn't involve stop-watches or buying a new pair of running shoes. Radio guru and the host of the Coast-To-Coast program, Art Bell (who is heard on a whopping 442 radio stations and on the Internet), and I talked "radio" for those four hours. For me, it was a lot like chatting on 2-meters without worrying about timing-out the repeater! The difference is, of course, most of Art's listeners know all about AM and FM radio, have a basic understanding of other things "radio" — scanning, shortwave, ham, and CB — although many had never heard about *Pop'Comm*. All that changed on March 16<sup>th</sup>!

When you've got your own syndicated radio program, you can pretty much do your own thing — and Art certainly does it well, indeed! From UFOs to the paranormal, Art's on-air guests have covered those topics from A to Z. But if you've ever listened to Art (guaranteed he's on a station within earshot of you) weeknights 10 p.m. to 3 a.m. PST, you know there's more to Art than his nightly radio program; he's a ham (W60BB), scanner and shortwave nut like you and me, and has more radio gear than the CIA.

In the past few years, I've been on lots of talkshows — at all hours of the day and night — talking about our great hobby, but none have been as much fun as this one. There were several callers from all over North America with some excellent questions and comments (darned if they didn't sound more awake than me!). From professional drivers doing the long-haul through Indiana to the cop in Manitoba, Canada, Art's "following" was truly impressive and insightful. And the dozens of E-mails, calls, and letters we received over the following weeks were equally enlightening.

A special tip of the hat to Art Bell for a really great four hours! By the way, be sure to check out Art's Website at <<http://www.artbell.com>> — with your computer and RealAudio on your machine, you'll be able to hear our March 16<sup>th</sup> interview. Check it out!

www.artbell.com> — with your computer and RealAudio on your machine, you'll be able to hear our March 16<sup>th</sup> interview. Check it out!

## ANARC Awards Announced

The Association of North American Radio Clubs (ANARC) recently announced the recipients of its 1999 awards. This year the DX'er of the Year award was re-named to recognize the accomplishments of ANARC's first Executive Secretary, Don Jensen. The award will be presented annually to the hobbyist that has exhibited the characteristics of leadership, dedication, and all-around outstanding contributions to the listening hobby. In addition, ANARC recognized a number of hobbyists with Certificates of Recognition to honor their superior contributions to the listening hobby over the years. The awards were presented at the annual Winter SWL Festival held in Kulpsville, Pennsylvania during the banquet.

The first Don Jensen Distinguished Service Award was presented to John McColman for his many years of dedication to the listening hobby. While best known for his research in scanner monitoring, John has been a monitor of all portions of the spectrum for many years. McColman is the author of numerous books on radio monitoring, and is well-known for his work with the former Northeast Scanning News (NESN) and currently with the All Ohio Scanner Club. His most recent accomplishments have been dedicated to working within the association's structure to help the listening hobby grow. To commemorate this occasion, a handsome plaque was presented to John.

This year ANARC recognized the accomplishments of four individuals for their unselfish dedication to the listening hobby. In recognition of over 20 years of service as publisher and business manager for the North American Shortwave

(Continued on page 74)

## POPULAR COMMUNICATIONS

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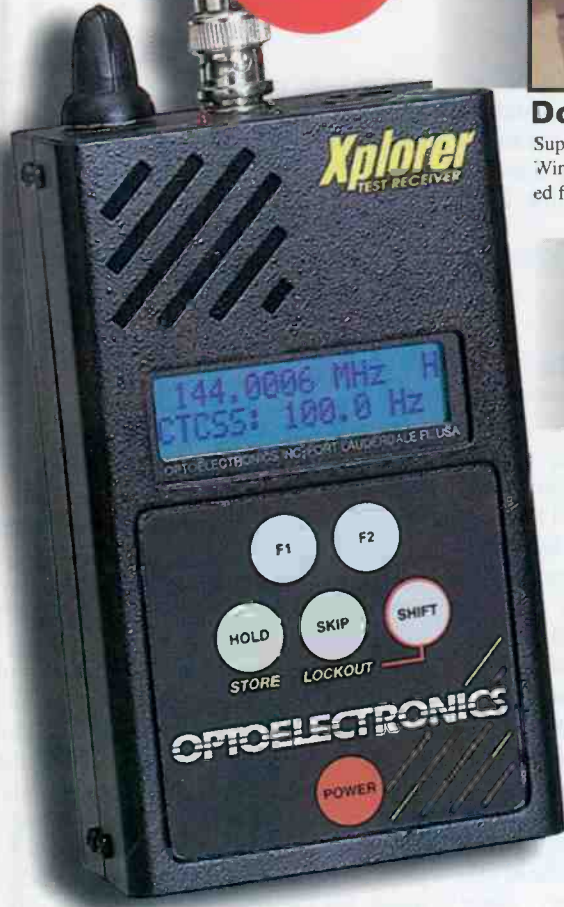
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



### Radio Checks

The Xplorer is ideal for radio quick checks. Just key the radio and the Xplorer instantly displays the frequency, and either CTCSS, DCS, LTR, DTMF, Signal Strength, or Deviation.



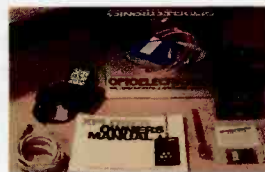
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# Pop'Comm P.O.

LETTERS TO THE EDITOR

Each month, we select representative reader letters for our "Pop'Comm P.O." column. We reserve the right to condense lengthy letters for space reasons and to edit to conform to style. All letters submitted must be signed and show a return mailing address or valid E-mail address. Upon request, we will withhold a sender's name if the letter is used in "Pop'Comm P.O." Address letters to: Harold Ort, N2RLL, SSB-596, Editor, *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801-2909, or send E-mail via the Internet to <popularcom@aol.com>.

## Sid Makes A Good Point

Dear Editor,

This is in response to the letter from Vern A. Weiss, which you printed in the March '99 issue. In his letter, Mr. Weiss writes that he is tired of the "lazy and incapable whining" about code requirements. I'm not sure, but I believe that his entire letter was whining! Who is he to *assume* that just because someone chooses not to learn CW, they must be complete idiots, and lack even the slightest bit of brainpower? Don't the "code nuts" realize that some of us are just too *busy* to sit down for an hour each day to try and learn code? We're not looking for "easy ways out." When I'm not working, I'm usually at the airport, building up hours toward my pilots license. Does that mean I'm "weak or unmotivated?" Or does that not qualify as "stretching, even a little, to learn or better myself?"

Ham radio is a hobby, not a job or a requirement. The "codeless" technician class was a very large reason I got my ham license in the first place. It's definitely very comforting to know that because I have my ham license, I'll be able to talk to my friends and family, or even provide communications for my local law enforcement agencies (on FM) should we have a major disaster tomorrow. Is that not "showing a little initiative?"

And as far as "fault-finding," I only find fault in people who feel that they must deride other people to make a point. Stereotyping hams who don't learn Morse code as being unstable and weak,

could be likened to saying that people who write letters to magazines, which do nothing more than complain about something that's already been complained to death, have no life. Oops, I think I just made a point.

Sid Hubbs, KE6UKE

## Mike Checks In From Our Website

Dear Editor:

I have just finished looking at your Webpage for the first time, and find it very informative. I also like all the nice links you have connected to the page. I'm a faithful *Pop'Comm* reader now for 12 years, and always enjoy reading every issue. I'm married and live on Long Island, New York (western Suffolk County). My radio equipment is a Uniden Washington CB, RadioShack DX-392 for SWLing, RadioShack PRO-2021, and a PRO-2045, for base scanning, and a Uniden Bearcat 60XLT for handheld scanning. I'm starting to shop around for either a base or handheld 800 MHz trunktracking scanner, since Suffolk County now has a lot of activity on those frequencies.

Well, I guess that's it for now. Maybe next time I'll send in a photo of my shack.

73s,  
Mike

## Uncle Sam: The Great Protector?

Dear Editor:

In reading the "Congress Strikes Again" article in the May '99 issue, I was struck by the extent to which the legislation is intentionally vague. I don't think it properly fits the characterization of "purposefully broad," but more correctly "all encompassing." Couldn't "... being equipped with devices that otherwise decode encrypted radio transmissions for the purposes of unauthorized interception" be used to deny ANY radio's acceptance? We're already seeing radios that have non-protected frequencies deleted in an effort to get acceptance. The end game could be totally "potted"

radios with no access even to speaker leads! Do we really need that kind of protection from ourselves?

Chuck Scott, N8DNX

## Not Scared By Code

Dear Editor:

I am a scanner buff, but I am thinking about getting a radio license and don't know code, but I am definitely not afraid of it. Like you said, a person should be able to "upgrade his license" when they want to put forth the effort.

Tracy Downs  
Pensacola, Florida

## A Plug For Perry

Dear Editor:

I really must give a plug to Perry of DataFiles. I run Probe software on an old laptop with a PRO-2006 and an Opto board and recently it crashed while trying to index some files. It left me with a message saying "DBFCX/1012 Corruption detected." More that I can handle. I E-mailed Perry for some suggestions and as usual, his response was almost immediate. We soon found out that it was a problem with my computer's memory. Rather than abandon me, he looked at, and made changes to, my bootup files to free up some memory. After a few E-mails back and forth to fix a few other things, I was back up and running. This only took a few days. I probably would have lost my frequency file had I done this on my own. Gold Star service, I must say. Thanks again, Perry!

Fred Coulter  
Sechelt B.C.  
Canada

Dear Fred:

*We wholeheartedly agree. Let's give a big round of applause for Perry, who like the countless fine business folks in our radio hobby, help us after the sale or with problems like you've discussed.*

## Jeff Calling Vincent

Dear Editor:

I just finished reading a letter to the edi-  
(Continued on page 76)



# Your concept of the word "scanner" is obsolete.

AOR introduces Advanced Technology Receivers™

## AR 8200B Wide Range Receiver

The AR 8200B is an all-new receiver, not an update of a previous model.

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- Wide choice of accessories

These are but a *few* of the features of the new **AR 8200B**. Visit your dealer or the AOR web site for more information!

\*Cellular frequencies blocked in compliance with USA regulations. Continuous coverage model available for authorized users/agencies, documentation required. AOR engages in ongoing efforts to improve its products. As such, design and performance parameters may change without notice or obligation on the part of the manufacturer and/or distributor(s).

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# Monitoring Long Island

**Coming To The Big Apple?**

**Bring Your Scanner And Visit Long Island . . .**

By Ed Decker, Jr.

Locals generally understand that when you mention the term Long Island, we are talking about Nassau and Suffolk County, as Brooklyn and Queens are considered part of "the City." The various neighborhoods are as diverse as the nearly three million inhabitants. From the rocky coastline of the north shore to the sandy beaches of the south shore, Long Island has it all, including, museums, galleries, lighthouses, superb boating and fishing industries, world-class horse racing at Belmont Park, unique shopping, professional hockey, and a history of deep American family values.

The western part of Nassau County is a bedroom community of New York City. Many of the residents commute daily to the city. Nassau County is comprised of three townships and there are two cities within the county (Long Beach and Glen Cove). What was once mostly farmland and marsh is now a sprawling suburban metropolis with many employment, educational, and entertainment opportunities.

With Montauk to the east and Manhattan to the west, Nassau County has become one of the fastest growing regions in the country. Located just east of Kennedy and Laguardia Airports, Nassau County offers a unique system of transportation, which includes the Long Island Railroad and the many highways that, within minutes, will bring you to such attractions as Broadway plays, the Museum of Natural History, and the Empire State Building.

While the north shore of Nassau County provides wonderful views across the tranquil Long Island Sound to the shore of Connecticut, the south shore adjoins the vast and exhilarating Atlantic Ocean. A day on Jones Beach, Long Beach, Lido Beach, or Atlantic Beach will bring hours of memorable fun for the whole family and



*Suffolk County Sheriff's vehicle.*

some of the most unforgettable sunsets at day's end.

The North Shore of Nassau County and Long Island is known as the Gold Coast for good historical reason. Millionaires, such as the Goulds and the Vanderbilts, constructed magnificent mansions here in the early 1900s, where they spent summers entertaining the upper crust. Many of these digs provide a taste of the world's most lavish lifestyles through daily public tours.

Long Island has been the backdrop of many movies like "The Godfather," "Married to the Mob," "Wolf," and many others. In fact, several scenes from the movie "Wolf," starring Jack Nicholson and Michelle Pfeiffer, were filmed at Westbury Gardens.

Oyster Bay was the home of two notable and vastly different celebrities — Teddy Roosevelt and singer/songwriter Billy Joel. The home of President Roosevelt, Sagamore Hill, is now one of the island's most visited tourist attractions, while Mr. Joel now makes his home in Amagansett in Suffolk County.

Long Island has a history rich in our national defense. At one time, the island was the cradle of the aerospace industry, housing such companies as Sperry, Grumman, Fairchild, and Republic.

So, what is there to monitor on your

## Nassau Fire Frequencies

Note: Unless otherwise noted, all departments are dispatched on 46.100.

Dispatch	46.100
Elmont	484.9625
Freeport	155.100
Garden City	154.040
Hempstead	154.980
Hicksville	151.385
Jericho	460.600
Massapequa	470.5125
Wantagh	471.3125
Rockville Centre	33.900

Battalions 1, 6, & 7	46.320
Battalions 2, 3, & 4	46.200
Battalions 5, 8, & 9	46.120
Fireground	46.220/46.30
Intercounty Mutual Aid	45.880
MedCom	462.975

Several volunteer ambulance corps use 154.115 MHz for dispatch.

scanner? Plenty! Let's take a look at some of the agencies that will keep you scanning for hours.

## Nassau County Fire Commission

The Nassau County Fire Commission is charged with coordinating and overseeing fire and rescue operations within the county. Included in its functions are overseeing dispatch operations through its Fire Com Division. While some departments dispatch for themselves, Fire Com provides dispatch for a majority of the departments in the county. Other

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Frequencies**

- 866.0625
- 866.1625
- 866.3625
- 866.4125
- 866.6875
- 866.2875
- 867.4000
- 867.4250
- 867.6750
- 867.7375
- 867.8500
- 867.9250
- 868.1125
- 868.2250
- 868.2500
- 868.3750
- 868.5250
- 868.6750
- 868.8000
- 868.8250

responsibilities of the Commission include operation of the Fire Academy, the Fire-Police/EMS Academy, and the Fire Marshall's/HazMat office.

Generally, all departments are toned out and dispatched on their dispatch frequency. Once the units are enroute, communications are switched over to the corresponding battalion frequency. Individual firefighters at the scene will communicate on fireground frequencies, usually using low power. Many of the departments have their own fire ground frequencies (usually UHF). Listing them all would be too numerous for the scope of this article, so refer to one of the popular frequency directories, such as *Police Call* or *Scanner Master*, for this information. Many departments have cross-band repeaters installed in their vehicles that will simulcast fireground communications on the battalion frequency.

**Nassau County Police  
Department**

In 1925, the Nassau County Police Department set up shop in the basement of the north wing of the Old Courthouse in Mineola. From this area, the original 55 members were assigned to respond to calls in the more than 175-square-mile area of the county police district. By July, one captain, three sergeants, and 28 patrolmen were assigned to the newly created First Precinct with its seven booths, five signal boxes, and 11 posts. The county was growing in leaps and bounds, creating the need for more



*A look inside the Nassau County PD comm center.*

precincts. The Second and Third Precincts were established in January, 1926; the Fourth in December, 1928; the Fifth in 1929. The Police Headquarters opened in August, 1930, at its present site on 15th Street in Mineola. By June of 1932, the Sixth Precinct came into the fold of a 408-member force. By 1950, the Department's strength was over 1,000. Ever-increasing demands of a growing county were met with the hiring of additional uniform personnel and in establishing the Seventh Precinct in 1955 and the Eighth Precinct in 1960.

Over the years, many specialized units were also formed, including the Aviation Bureau, the Highway Patrol Bureau, the K-9 Unit, the Mounted Unit, the Emergency Services Bureau, and the Marine Unit. One of the earliest divisions formed was the Detective Division, with its roots dating back to 1925. The Nassau County

Police Department maintains the reputation as one of the finest law enforcement agencies in the nation.

**Nassau County PD Radio Frequencies**

Channel	Frequency	Use
1	478.9125	3 <sup>rd</sup> & 6 <sup>th</sup> Pct
2	478.5625	Spare
3	477.3875	2 <sup>nd</sup> & 8 <sup>th</sup> Pct
5	478.5375	1 <sup>st</sup> & 7 <sup>th</sup> Pct
6	477.2125	4 <sup>th</sup> & 5 <sup>th</sup> Pct
7	478.7125	Detective
8	477.2625	Hwy. Patrol/K-9
9	478.9375	Detective
10	478.7375	Tactical
13	477.2875	NewAir/ Marine
14	480.2875	Local Tactical
	478.5125	Radio Techs
	153.740	Air/Marine

Last year, Nassau County installed a new computer-aided dispatch system that also incorporated the MDTs used in the



*Inside a Suffolk PD emergency vehicle.*

## Long Island Railroad

160.395	Road Channel 1
161.445	Road Channel 2
161.265	Road Channel 3
161.535	Road Channel 4
161.385	Signals
160.395	Maintenance of Way
160.725	Maintenance of Way

vehicles. The transition has been anything but smooth. While monitoring communications, you can often hear the dreaded words "The computers are down." There are plans being formulated for the building of a new state-of-the-art communications center in Westbury.

Many local municipalities provide their own police services, including:

Village of Hempstead PD	154.710
Town of Hempstead Dept. of Public Safety	155.010 (PL - 107.2)
Town of Hempstead Bay Constable	151.400
Freeport	460.2875*
Floral Park	155.775
Garden City	155.430
Glen Cove	153.860
Lynbrook	155.640 (PL - 82.5)
Long Beach	154.740 (PL - 118.8)
Malverne	155.130 (PL - 131.8)
Old Brookville	155.190 (PL- 203.5)
Rockville Centre Dispatch	154.770 (PL - 131.8)
Tactical	155.475

\*New frequency

There are numerous police departments, predominantly on the North Shore, that utilize the county's 800-MHz trunked system, including Lake Success, Old Westbury, and Port Washington.

## New York State Police

The New York State Police provide two primary functions on Long Island. In Nassau and Suffolk Counties, they provide patrol service for state parkways. These operations can be monitored on 155.460 MHz. Additionally, in Suffolk County's east end, they provide primary police protection to unincorporated areas of the county. You can monitor these operations on 155.505 (base) and 154.935 (mobiles).

Other State Police frequencies include Ch. 2, 154.665 Car-to-Car; Ch. 3, 154.695; 155.565, Bureau of Criminal Investigation (BCI). The New York State Park Police operate on 159.420 and

## Fleet Codes

Note: Blank spaces indicate code has been in use, but is not identified. (Courtesy of Keith Knipschild)

16 - County Wide 1 (Village Police (ie. Head of the Harbor, Nissequoque)  
 48 - County Wide 2 (Marine/ES/Parks)  
 80 ->  
 112 ->  
 144 ->  
 176 ->  
 208 ->  
 240 - County Transit-Dispatchers (Base-to-Base)  
 272 - County Transit-Suffolk Transportation (Western Townships)  
 304 - County Transit-Babylon area buses  
 336 - County Transit-CBS (Babylon, Coram, Brookhaven)  
 368 - County Transit-Sunrise Coach/Hampton Jitney buses (East End)  
 400 - County Transit-Intercounty Coach (Western Townships)  
 432 - Stony Brook Hospital Public Safety  
 464 ->  
 496 ->  
 528 - Consumer Affairs-Weights & Measures / Licensing  
 560 ->  
 592 ->  
 624 - Marine Tactical  
 656 ->  
 688 - Health Department (Div. of Environmental Health Svcs.) Inspectors  
 720 - Medical Examiner  
 752 - Health Dept. (Div. Environmental Health Svcs.) Inspectors  
 784 - DA (Paul units )  
 816 - Amityville Village PD  
 848 - Suffolk Sheriff 1  
 880 - Suffolk Sheriff 2  
 912 ->  
 944 - Ocean Beach PD  
 976 - Suffolk County Park PD  
 1008 - NY State Park PD  
 1040 - Probation Dept  
 1072 ->  
 1104 ->  
 1136 - District Attorney  
 1168 ->  
 1200 ->  
 1232 ->  
 1264 - Surveillance  
 1280 - EMS  
 1296 - Surveillance  
 1328 ->  
 1360 - Suffolk Fire/EMS Rescue  
  
 22016 - \*Digital (radio techs)

22096 - \*Digital 22032  
 22128 - \*Digital 22064  
 22160 - \*Digital 22192  
 22224 - \*Digital 22256  
 22416 - \*Digital 22288  
 (\* = Heard Digital Transmissions)

48016 - Countywide South (1/3/5 Pct)  
 48048 - Special 1 - Surveillance  
 48080 - Special 2 - Surveillance  
 48112 - Special 3 - Surveillance  
 48144 - Special 4 - Surveillance  
 48176 - Special 5 - Surveillance  
 48208 - Special 6 - Negotiators (Arrest Team)  
 48240 - Countywide North (2/4/6 Pct)  
 48272 - Radio Monitor School  
  
 49776 - 1st Pct Dispatch  
 49783 - LOCAL NOTIFICATIONS by Dispatcher  
 51376 - 2nd Pct Dispatch  
 51383 - LOCAL NOTIFICATIONS by Dispatcher  
 52976 - 3rd Pct Dispatch  
 52983 - LOCAL NOTIFICATIONS by Dispatcher  
 54576 - 4th Pct Dispatch  
 54583 - LOCAL NOTIFICATIONS by Dispatcher  
 56176 - 5th Pct Dispatch  
 56183 - LOCAL NOTIFICATIONS by Dispatcher  
 57776 - 6th Pct Dispatch  
 57783 - LOCAL NOTIFICATIONS by Dispatcher  
 59376 - 7th Pct Dispatch  
 59383 - LOCAL NOTIFICATIONS by Dispatcher  
 60848 - Command Band  
 62448 - DATA Information  
 62480 - DATA Information  
 62512 - Detective Squad  
 62544 ->  
 62576 ->  
 62608 - Robbery Squad  
 62640 - Detective "Criminal Intelligence Bureau" (Nora Units)  
  
 62672 - Homicide Squad / Surveillance (Frank Units)  
 62704 - Internal Affairs / Surveillance  
 62736 ->  
 62768 ->  
 62800 ->  
 62832 ->  
 62864 ->  
 62896 ->  
 62928 - Whiskey Unit  
 62960 - Whiskey Unit  
 62992 ->  
 63024 ->  
 63056 - Whiskey Unit  
 63088 ->  
 65456 - Radio Tech Services ( Ch. 1 )  
 65488 - Radio Tech Services Main Channel

159.255 MHz. New York State Department of Environmental Conservation uses 159.225 & 172.275, and the Long Island Railroad Police use 160.455 MHz.

## Suffolk County

While the western end of Suffolk County continues to see rapid expansion similar to Nassau's, the eastern end maintains a lot of its old charm and flavor. The eastern end is the home of many world-class wineries and other farms. Quaint villages, such as South Hampton and Sag Harbor, offer unique shopping and dining experiences, while the Atlantic Coast offers some of the finest beaches in the country.

If you like to live in the fast lane, Riverhead is the home of Riverhead Speedway. People drive from as far as Pennsylvania to shop at the Tanger Outlet Center. A drive on the north fork will bring you to the old whaling town of Greenport; drive even further east and you can catch a ferry to Connecticut. On the south fork, you can drive to the island's most eastern point and climb the stairs of the Montauk Point Lighthouse.

## Suffolk County Fire & Rescue Services

The Commissioner of F.R.E.S. oversees the Suffolk County Department of Fire, Rescue, and Emergency Services.

All of the dispatch supervisors and dispatchers are civil service employees. They dispatch for many of the fire districts and monitor all of the district's communications. Their dispatchers also dispatch and monitor the volunteer ambulance corps on 155.280 and operations on 154.415. Also monitored are ambulance-to-hospital communications on 155.325 MHz.

Some volunteer ambulance corps also utilize 155.175 and 155.295.

FireCom and all departments having their own dispatchers tone-out calls on 46.460 MHz (in the town of Babylon, calls are dispatched on 46.46 also, but by Babylon Central Fire Alarm). Operations are then conducted on the following sector frequencies:

Babylon Township	46.34
Huntington Township	46.42
Islip/Smithtown Township	46.44
Brentwood FD Ops	45.74
Brookhaven	46.40
Riverhead/Southampton	46.48
Southold, East Hampton and Shelter Island	36.34
(Same as Babylon)	

Remember, with the active boating community, the marine band is hopping, especially during the warmer months. Unfortunately, personal watercraft has become an increasing problem for rescue authorities. Also, with the proximity of JFK and Laganardia Airports, as well as Long Island's Republic and MacArthur Airport, the aviation band offers fine monitoring opportunities.

### Additional Scanning Resources

There are many active scanning enthusiasts on Long Island who are more than willing to exchange information. One such group is the informal clan that has tagged themselves The Long Island Monitoring Association. Every Tuesday night at 8 p.m., Charlie-KB2UVV, Ed-KC2AYC, Joe-KC2BZB, Frank-N2VRA, and Curtis-N2WWM host a weekly gathering on the WB2WAK amateur radio repeater, 146.805 MHz. They also hold monthly gatherings at local eateries, where they exchange information and share each other's company. The participants who check in to the net have a wide variety of monitoring interests from railroading, to public safety, to military aviation, and shortwave listening. The group's Webpage can be found at <<http://www.voiceoftheweb.com>>.



*Suffolk County PD's bomb disposal vehicle.*

Additionally, the group has an E-mail notification list where people can ask questions and post information. There are currently 115 people subscribed to the ScanCom list. If you are interested in the list, feel free to subscribe at <<http://www.onelist.com/subscribe/ScanCom>>.

There are several excellent Websites that will offer you a wealth of local scanner information. The first is Keith Knipschild's homepage. Keith has a wide variety of interests, including amateur radio, TV and satellites, weather reporting, and scanning. Keith is one of the premier reporters on the new Suffolk County Trunked Radio system. Keith's Webpage can be found at <<http://www.knip.com>>.

The other Webpage worth mentioning

is Jim Fordyce's Long Island Scanning resources. It's a great starting point for researching frequencies. The URL is: <<http://www.li.net/~j4dice/scanli.html>>.

While the scope of this article did not cover New York City scanning, it is worth mentioning the following Websites. Bob-WA2SQQ has current updates of NYPD frequencies on his Webpage at <<http://www.hili.com/~4runner/>>. And accurate information on the FDNY can be found at <<http://members.aol.com/emshighway/index.htm>>.

I hope you have found this article informative, as well as enjoyable. The next time you are looking for some fun, grab your camera and scanner and head on over to Long Island! ■



*A Suffolk PD dispatch display, circa the '60s and '70s at the Suffolk County PD Museum.*



# NEW IC-R75 HF RECEIVER

**Cutting edge technology for today's serious DX'er, yet easy & affordable for a casual listener.**

*A large display and well spaced keys, knobs & dials helps make it easy to work the compact 'R75.*

fading in AM broadcasts. Optional **Digital Signal Processing (DSP)** noise reduction in the AF stage converts analog SSB, AM and FM signals to crisp, clear audio output (you'll hear the difference on the 'R75's **large front mounted speaker**). Further tailor the 'R75 to meet your listening needs by installing **up to two optional filters**.

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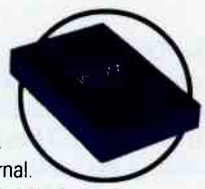


*Computer not included.*

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**IC-R10 (left) Advanced performance and features.** 0.5 – 1300 MHz\*; all mode; alphanumeric backlit display; attenuator; 7 different scan modes; beginner mode; 1000 memory channels; band scope; includes AA Ni-Cds and charger.

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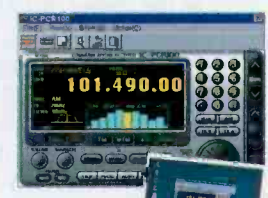
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# WCCO: A Humble Start

***Built From The Remains Of A Failed Predecessor, WCCO Became A Classic***

By Alice Brannigan

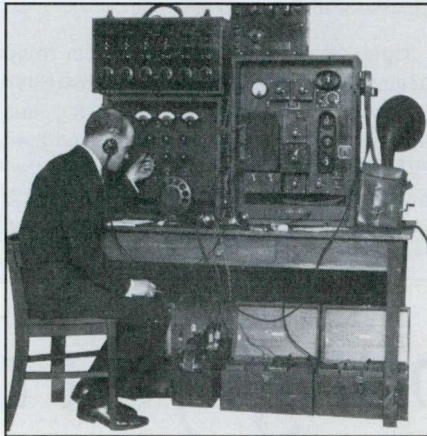
On August 31, 1922, broadcasting license WLAG was issued to Cutting and Washington. C&W was a radio receiver manufacturer and dealer in Minneapolis, Minnesota. A 500-watt transmitter had been authorized for operation on 833 kHz, and it first went on the air Labor Day, September 4, 1922. WLAG's Managing Director was Mrs. Eleanor Poehler, a temperamental but talented soprano and voice teacher.

WLAG's studios were on the sixth floor of the seven-floor brown brick Oak Grove Hotel, 230 Oak Grove Avenue. Its ornate lobby with high, white ceiling and lush carpets and high-backed wicker chairs overlooked Loring Park in Minneapolis. The transmitter was on the roof of the hotel, feeding into an antenna system suspended between two 75-foot towers that rose 150 feet above street level. An additional remote studio was at the St. Paul Athletic Club Building.

Within two weeks, the station was authorized to shift to less congested 750 kHz, where it became known as "The Call of the North," and claimed to have made Minneapolis "the radio center of North America . . . heard in every state of the Union, Canada, Alaska, Cuba, Mexico, and on ships plying both oceans." The station once said it had received nearly 43,000 letters and telegrams from listeners during one 12-month period.

In the spring of 1923, WLAG was told to move to 720 kHz, and soon utilized a more formidable slogan, "The Twin City Station in the Land of Ten Thousand Lakes." Within a few months, 500-watt WLAG was sharing its hours on 720 kHz with WBAH, a 1-kW local station owned by the Dayton Company. WBAH didn't especially like WLAG, and had borne a grudge ever since fiercely competitive Eleanor Poehler tried to prevent WBAH from buying transmitting tubes.

As of early 1924, station WLAG was broadcasting alternately from both of its



*WLAG's Chief Engineer, Ray Sweet, tunes up the rig. Today's mighty WCCO sprang from the shambles of this failed station.*

Twin City studios. WLAG was actually a rather cockamamie operation. WLAG didn't even own phonograph records. It had to borrow them from stores. They broadcast music by holding the carbon

microphone up to the horn of the Victrola. Refusing to play popular music (referred to by WLAG's Eleanor Poehler as, "the curse of the country fiddle"), WLAG played only what would be described today as elevator music. Each musical selection ended with a 15-second silent period to separate the dreamy music from the harshness of an announcer's voice. The studios were once described as "burlap-lined caskets."

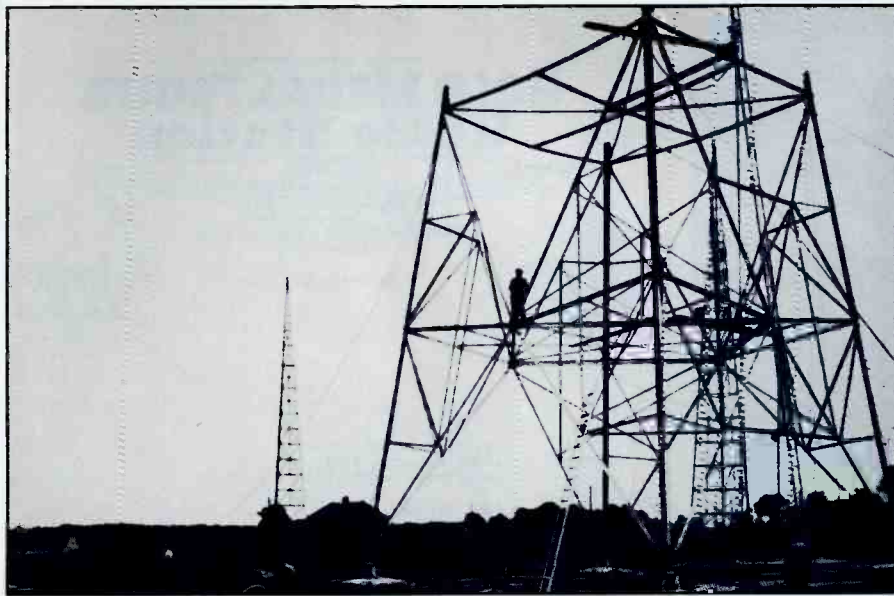
## The Sound Of Silence

Little wonder that on July 31, 1924, WLAG abruptly went dark. Supposedly, it was "due to bad reception problems." In truth, despite the hype, WLAG had become a failed experiment in low-fidelity boredom which had basically run out of advertisers, listeners, and, most importantly, money. It was therefore no minor coincidence that by September, C&W, WLAG's owner, had been placed in the hands of a bankruptcy receiver.



*The (new) Nicollet Hotel, Minneapolis, was home to WCCO from 1925 to 1938. This undated postcard notes that it's the home of WCCO and describes itself as "The Northwest's finest hotel, costing \$3,500,000, with 600 rooms with bath or connecting."*





WCCO's two new 300-foot towers under construction, near Anoka, in 1932.

Company, Minneapolis, millers of Gold Medal brand flour. The revived WLAG went back on the air September 12, 1924, as "The Gold Medal Station." On October 1, the new owners announced that they had applied to change the call letters to WCCO, signifying the initials of the Washburn-Crosby Company. The following day, WCCO became the station's assigned call letters, replacing WLAG.

### A New Lease On Life

On March 1, 1925, WCCO's transmitting site was moved 18 miles from the Twin Cities to a site on an old chicken farm near Anoka, Minnesota. A new 5-kW transmitter was installed, along with two steel lattice towers and a four-wire "T"-type antenna. WCCO was initially permitted to operate with 1.5 kW, but, by mid-1925, the full 5 kW had been authorized. On March 4, 1925, WCCO began broadcasting from its new executive offices and studios on the 12<sup>th</sup> and 13<sup>th</sup> floors of the swank Nicollet Hotel, in downtown Minneapolis. That evening, the station broadcast President Coolidge's

Remember, 1922-24 were the earliest days of broadcasting, so it was anyone's guess what audiences might like. Like many others, WLAG had guessed incorrectly. WLAG's failure opened the way for

the next batter to step up to the plate to hit a home run with Twin Cities listeners.

WLAG's dormant studio facilities, plant, and equipment were leased to (and later purchased by) the Washburn-Crosby

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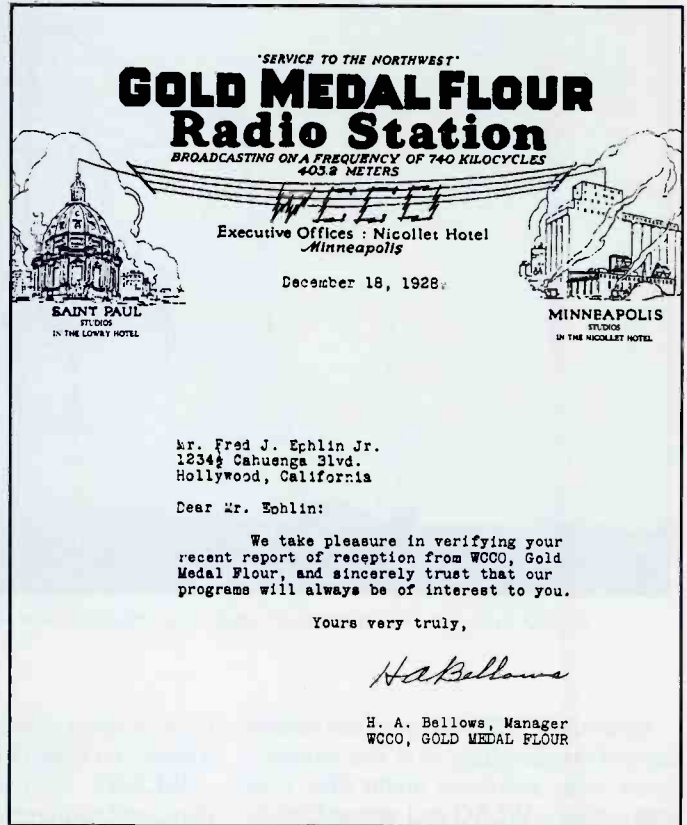
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CIRCLE 75 ON READER SERVICE CARD



Dizzying view from the top of WCCO's 654-foot tower during its construction in 1939.



An ornate WCCO letterhead, noting the station owner's brand of flour, graces this 1928 veri letter.

inaugural address. The St. Paul offices remained at the Athletic Club, plus an associate studio at the railroad station.

WCCO became a charter affiliate of NBC, when the network began in November, 1926. As of early 1927, day-time power was increased to 7.5 kW and the station called itself "Service to the Northwest." Also in 1927, WCCO's owner, Washburn-Crosby (Milling) Company, undertook the operation of a second local station in Minneapolis, WGMS "The Gold Medal Station." WGMS was a separate operation from WCCO. Actually, WGMS was authorized as a call sign-only phantom station that operated solely via the 1220-kHz (and later 1230-kHz) frequency, studios, and other facilities of the University of Minnesota's station, WLB (which owned the old WCCO 5-kW transmitter, as donated to WLB by Washburn-Crosby). WCCO soon moved to 740 kHz.

January of 1928 saw WCCO's St. Paul studios moved from the Union Depot to the Hotel Lowry, and by November there was yet another forced move in frequency. This time to clear channel 810 kHz. Now, the night power was upped and WCCO could run 7.5 kW full-time. Within

a month, WCCO dropped its NBC affiliation and joined CBS. Though popular with listeners and advertisers, in its first five years WCCO had still not proven a viable commercial venture. But 1929 saw it turn a profit for the first time. After that, the profits increased every year.

### Changes Galore

As the 1930s opened, so did a new WCCO studio at 200 Chamber of Commerce Building, followed in September by the Washburn-Crosby Company being purchased by General Mills, Inc. During the reorganization, CBS became one-third owner of WCCO. The station's power was reduced to 5 kW early in 1931, and later that year CBS purchased the remaining two-thirds of the station for \$300,000. WGMS was discontinued and merged into WLB. In early 1932, the FRC authorized WCCO for 50-kW full-time operation. The station constructed two new 300-foot antenna towers near Anoka and began operating with high power on September 15, 1932.

The primary studios remained in the Nicollet Hotel as of 1935. However, by October, 1937, CBS had purchased the

former Elks Club Building, 625 Second Avenue South, Minneapolis, as the location for new studios. The building was remodeled and WCCO took occupancy of the second floor in April, 1938. Here, WCCO called itself the "Northwest's Most Powerful Radio Station."

The year 1939 saw a new 654-foot steel vertical radiating antenna (base altitude 870 feet) installed at Coon Rapids, Minnesota. At the time, the WCCO tower was the tallest structure in Minnesota. Major frequency reallocations affecting most North American broadcasters required WCCO to change from 810 kHz to clear channel 830 kHz in March 1941.

### Fancy Footwork

WTCN-TV was the CBS-TV affiliate in the Twin Cities. Because CBS already owned five TV stations, FCC rules didn't permit CBS to own a TV station in the Twin Cities. CBS could, however, own a minority interest in one. CBS therefore agreed to merge WCCO radio with Mid-Continent Radio and Television, Inc.'s WTCN-TV. The new company, Midwest Radio-Television, owned WCCO radio and the former WTCN-TV, whose call

letters became changed to WCCO-TV. The two station operations had separate staffs and management, occupied different buildings, and even competed against one another.

The entire complex transaction that had merged ownership of the two media outlets into a single corporation had been accomplished without the exchange of a single penny. The former owners of old WTCN-TV (Ridder Publications and the Minnesota Tribune Company) received a 53-percent majority interest in the new corporation, with CBS getting 47 percent. Two years later, because of FCC rule changes requiring the counting of minority interests, CBS sold its 47 percent to Ridder's *Minneapolis Star and Tribune* for \$4 million.

The old 4,000-seat Radio City Theatre, LaSalle and South Ninth Streets, was purchased by WCCO in October, 1958. This was torn down to make room for additional space for WCCO's studios and offices, plus a new parking lot. In late 1960, the newly remodeled facilities were inaugurated as the "WCCO Radio Building." Full studio facilities remained in St. Paul.

In 1973, WCCO was known as "The Station That Serves the Nation." Its transmitter was located in a one-story brick building near Anoka on Coon Rapids Boulevard, Coon Rapids, adjacent to its landmark 654-foot antenna. At that time, the station announced it was going to move the transmitting plant farther to the west. Later, the station applied to the FCC for a permit to relocate it to a site near the intersection of Minnesota's State Route 10 and County Route 10, about two miles southeast of Corcoran.

Several corporate name changes have ensued during recent years, though the station essentially remains owned by Midwest. It continues on 830 kHz full-time with 50 kW (non-directional) from studios at 625 Second Avenue South, Minneapolis. WCCO is a CBS affiliate that runs a news/talk format. The station's night-time signal reaches throughout the Americas, and elsewhere, making WCCO one of America's most widely heard and best-known broadcasters. It is Minnesota's third oldest continuously licensed AM broadcast station.

Thanks go to reader John Ebeling of Minnesota for providing much valuable information about WCCO.

Thanks to Broadcast Pro-File, 28243 Royal Road, Castaic, CA 91384, for permitting us to extract parts of their lengthy report on WCCO. BP-F is a commercial

Minneapolis, Minn.

December 16, 1948

Dear Sir:

We take pleasure in verifying your recent report of reception from WCCO, and hope that our programs will always be of interest to you.

Very truly yours,

WCCO  
COLUMBIA BROADCASTING SYSTEM, INC.

*Mary A. Sullivan*

*In 1948, this blah-looking hand-typed postcard served as WCCO's veri. Not quite as elegant as the letter they sent out in 1928.*

service that, for a responsible fee, can provide a detailed historic profile for every station, past or present. A complete catalog of their services is available for \$1.00.

### Hometown Broadcasting

One of our readers is Art Sutton, owner of station WBCU (1460 kHz, 1 kW) in Union, South Carolina. Union is a typical America "Mayberry, U.S.A." small town and, for 50 years, WBCU has not merely covered Union's good times and hard times, it has been uniquely part of them. WBCU has published an illustrated 160-page history of its first 50 years. It's the story of the station and how it has related to local economic ups/downs, politics, crime and the town's wonderful cit-

izens. The book's called, *A Perfect Union*, by Bob Doll. It is informative, funny, insightful, and serves as a testament to small town broadcasters everywhere. If you love broadcasting, you should enjoy this. *A Perfect Union* is \$20 from the BOAR Partnership, 210 East Main Street, Union, SC 29379.

We invite readers to send us old-time radio and wireless QSLs (good photocopies OK), station photos, picture postcards of facilities, station directories, news clippings, memories, anecdotes, and column suggestions. Our snail mail address is Alice Brannigan, *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801. Our direct E-mail address is <Radioville@juno.com>. Hope you'll join us next month! ■

MINNEAPOLIS - ST. PAUL, MINNESOTA, U.S.A.

**WCCO**  
**RADIO**

Class 1-A Clear Channel Service at 830 kHz "The Station that Serves the Nation"

*By the early 1970s, WCCO had gotten back on track with these attractive QSL cards.*

# Radio Resources

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

## Tracking The Birdies

Your new scanner and shortwave antenna installation is finally completed after four agonizing hours up in the hot attic. With local restrictions preventing any outside antenna for scanning and shortwave listening, your new stealth longwire for shortwave and discone for scanning should work well. The roof is fire-retardant asphalt shingles, and at RF frequencies they are virtually invisible to incoming radio frequencies for receiving and transmitting.

The shortwave antenna is a dipole, center-fed with a small balun, and self-resonant around 7.5 MHz, right in the middle of the shortwave "tropical" band.

**Q. What is the formula for calculating the length of a halfwave dipole?**

- A.  $234/f$  MHz
- B.  $468/f$  MHz
- C.  $300/f$  MHz
- D.  $468/f$  kHz

A. You can easily calculate the resonant frequency of a halfwave center-fed dipole by the formula 468 divided by the desired frequency in MHz. This will give you the end-to-end length, in feet and fractions of a foot, for the dipole to be resonant on the frequency you select. A small balun is placed midway down the plastic-covered wire in the attic, cutting the dipole into two quarter-wavelength sections, and attaching each one to the balun electrical pick-up terminals. Don't mistake the big silver eyelets as terminals; usually on a balun they are strain release for the wire, and not the actual connection point.

The balun will help isolate the coaxial cable from the dipole. I have found that the balun may also improve wideband reception when this fixed-length dipole is operated from 250 kHz all the way up to 30 MHz. Even though the dipole is cut to a specific mid-frequency, that amount of wire will certainly pull in low-frequency, medium-frequency, and all high-frequency signals to your shortwave receiver, without needing to be cut to a specific length. You feed your dipole with a fresh hunk of RG8 coax cable. Although the very large coax cable is really overkill for shortwave reception, you want to squeeze



Scanning the airband frequencies is best done outside the terminal — here JFK — to minimize TV monitor birdies.

every microvolt of signal coming down the line to your new shortwave set. You carefully solder on the PL-259 connector, and you also have that little adapter that can take a PL-250 connection and convert it down to a BNC to work that new AOR and ICOM handheld.

**Q. What is the adapter's official part number?**

- A. UG-255
- B. SO-239
- C. BNC male to UHF female
- D. PL to BNC

A. That handy little adapter, available at all RadioShack stores, is technically called a BNC male to UHF female. As a shortwave listener or scanner enthusiast, you should always carry a handful, but with one precaution — large diameter coax coming straight off of a handheld transceiver or scanner BNC jack may ultimately over-stress the inside circuit board connection point. On small coax cable, you will probably be OK.

The discone for scanner reception from 30 MHz to 1500 MHz is also up in the attic, and it will pull in scanner frequencies quite well. If you don't have much

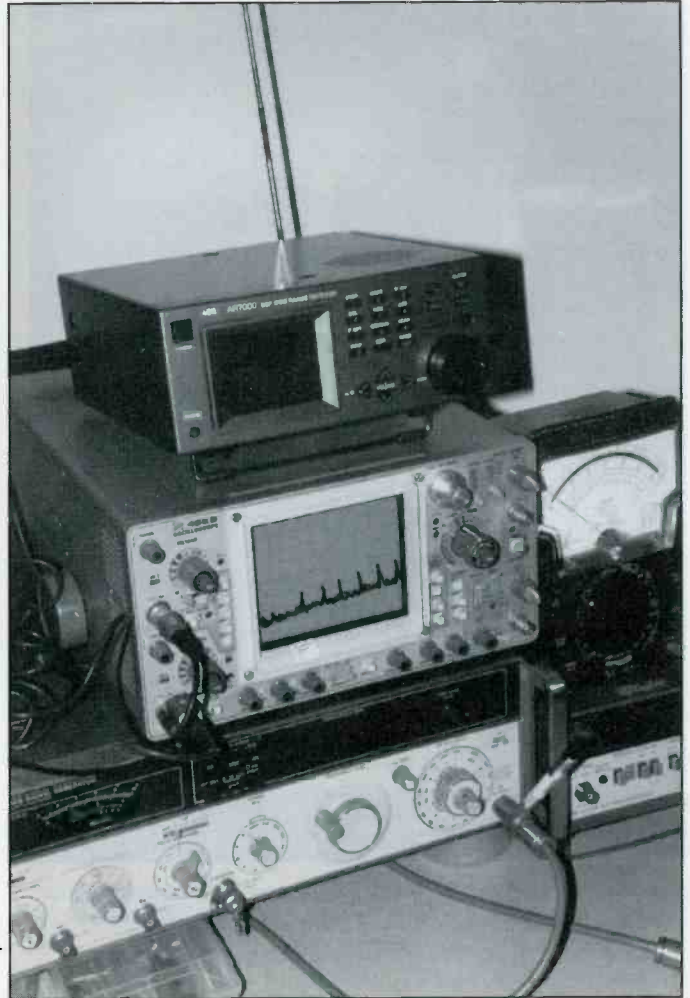
crawl space in the attic, you may need to unscrew the vertical whip part of the discone and lose a little bit of reception capabilities below 50 MHz. You will still get adequate reception below 50 MHz, but,



Searching for birdies with a scanner



Gordo finds birdies by London pay phones, and even beside the Greenwich Mean Time giant clock, using an AOR-8200 receiver with spectrum scope.



A spectrum scope shows birdies every 100 kHz from a computer that's 30 feet away. →

if you can keep the whip screwed into the top of the discone, it will dramatically pull in those distant "low-band" signals. I have seen attic installations where the whip is bent over to conform with the peak of the roof, which is much better than trying to run it without the whip at all for low-band reception.

**Q. What is the typical gain of a discone antenna over a resonant quarter-wave ground plane antenna?**

- A. Dramatically less gain than a ground plane
- B. About the same
- C. 3 dB gain over a quarter wavelength ground plane
- D. 6 dB gain over a quarter wavelength ground plane

A. The discone is a broad-band, omnidirectional, vertically polarized receiving and low-power transmitting antenna with *no additional gain over a cut-to-frequency ground plane*. But the beauty of the VHF/UHF discone is its broad-band capabilities, relatively compact size, and direct feed to coax cable. Since we're receiving on VHF and UHF, it's best to use professional land mobile coax cable

running to your Optoelectronics or AOR wide-band receiver. LMR 400 or Belden 9913 will carry extremely weak signals from the antenna down to your scanning equipment with almost no loss. If you hook your discone up to a hunk of RG-58U CB-type mobile coax, you will be lucky if you get halfway decent reception of your nearby weather channels. If you are going through all the trouble to put up a professional scanning antenna system, go with the big coax!

**Q. What's the typical dB loss at 460-MHz with 100 feet RG58U?**

- A. 10 dB loss, minimum
- B. 6 dB loss
- C. 3 dB loss
- D. 1 dB loss

A. Cable attenuation figures for RG-58U small coax cable at the popular 460-MHz police band are actually off the scale, but listed as greater than 10 dB loss in the *ARRL Handbook for Radio Amateurs*. Ten-dB loss means that any signal coming down the small coax will be reduced 10 times! If you're trying to pick up a distant public safety signal at 460.025 MHz, and that distant signal is

coming in with a lot of noise on your small coax, switching over to big thumb-sized coax to your discone antenna will bring in the signal with full quieting!

### Good Antenna, Good Coax, So What's With All The Strange Signals?

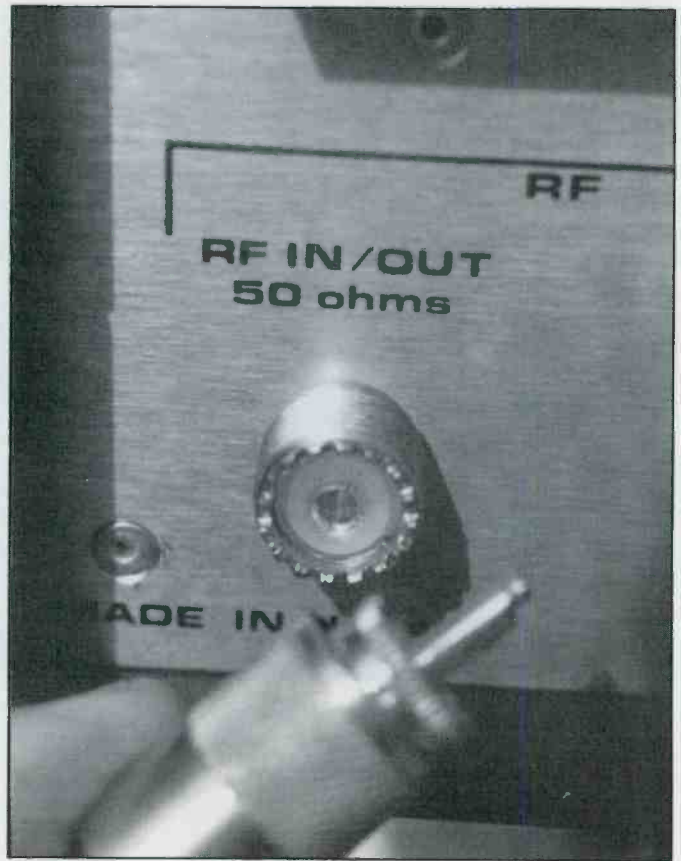
So you hook everything up, turn on your equipment, and start tuning around both on shortwave as well as VHF and UHF. You look over at the pan scope displays and you see plenty of strong signals, plus a myriad of weaker signals that uniformly come through about every 100 kHz on the shortwave dial. And up on VHF and UHF, your computer screen fills with literally hundreds of signals spread throughout the bands, some of them showing up in areas around 300 MHz that you know has little activity in your area.

**Q. What are all of these signals?**

- A. Harmonics
- B. Intermodulation
- C. Real signals that you have never heard before
- D. Phantom clock emissions



*Birdies from the engine computer were so strong that low-band scanning was impossible. The problem was solved by shielding the fiberglass engine cover.*



*External birdies (signals not generated within your receiver) go away when you pull the antenna cable off.*

A. When you begin tuning around, you come across these regular dead carriers. On the high-frequency band, they seem to appear at regular intervals. Up on VHF and UHF, these unmodulated carriers appear randomly throughout the dial. Their signal strength never varies, they never ID, and they don't have the typical sound of a nearby or distant data transmission.

You are tuned into the running clocks of home electronics with built-in microprocessors. Spurious radiation. Birdies. This RF garbage is discarded throughout our bands.

And where are these signals coming from? Here is a list to get you started:

- Home computers
- FAX machines
- Telephone answering devices
- Digital signal processor add-on boxes
- Pest repellents
- Microwave oven clocks
- Thermostat timers
- Home entertainment consoles
- Cordless telephones
- Laser printers
- Security alarm systems
- All of these items are what the Federal

Communications Commission call "Subpart B — Unintentional Radiators," FCC Part 15.101 through 15.121. Equipment like TV, CB, and scanning receivers require Part 15 certification. Computers require declaration of conformity, or certification. Some home electronics require verification, and certain digital external switching power supplies require verification.

But the FCC allows many inexpensive digital home devices to be sold as "exempted devices," Part 15.103. This could include the electronics in your vehicle, microwave ovens, all those low-power ultrasonic pest eradicators, joystick controllers (and your computer mouse), and additional "passive add-on devices" that may not necessarily generate these spurs, but rather serve as an antenna to re-radiate them.

There is no magic filter to put on your scanner or shortwave set to take out spurs from your home electronics. Grounding your scanning equipment probably won't make any difference, either. The signal is coming directly off of the unintentional radiator and going up through

the ceiling to your attic-mounted antennas. Or, in my case, up through the ceiling, up through the roof, and to my tower-mounted antennas.

Shielding the ceiling with copper screen is out of the question, but if your attic is lined with aluminum-backed insulation, you can enjoy a natural barrier between your antenna and the noise generators down below.

You can easily identify what device in the household is creating the phantom signals with a handheld scanner or portable transceiver. Tune to the phantom unmodulated signal, and then walk around "sniffing" where the signal is coming from. When you get within six inches of the noise source, you should notice your signal strength go off scale. If there is a collection of equipment on the desk, such as a FAX machine, telephone, and computer, you might try removing your portable scanner antenna, and then zeroing in on which device is radiating the phantom signal. I have an Optoelectronics R11 wide-band receiver that does a fabulous job of tracking down noise sources when held within a couple

**"There is no magic filter to put on your scanner or shortwave set to take out spurs from your home electronics."**

of feet of the offending appliance. When I get in real close, I remove the antenna, and then watch the light-emitting diodes go to full when I place them on top of the plastic enclosure of the device that's putting out the garbage. Once you get into the vicinity of the equipment radiating the noise, pull the plug on that equipment and see if the noise instantly disappears. When you get the right noise maker, the noise will drop off about a second after the plug gets pulled. When you plug it back in, you must wait a few minutes until the oscillator settles in, and chances are it will be almost spot-on the frequency where you originally picked up the unmodulated carrier.

Sometimes aluminum foil may help shield the noise-producing equipment. Sometimes putting ferrite beads on any cables coming from the noisy equipment will help. Computer keyboards can also use a few extra ferrite beads to minimize the re-radiation of the oscillator garbage coming out of the computer and into the long keyboard cord. Unplug the keyboard and see if that is the problem.

In severe cases where the phantom signal is spot-on a favorite frequency, such as a specific FM paramedic frequency, you can sometimes take apart the noise generation device, look around for the quartz metal-can crystal, and gently touch around the crystal and components, observing if this moves the oscillation off your favorite frequency. On FM, you probably won't hear any change, but if you are trying to receive a weak signal on single sideband, sometimes pulling and tugging on some of the circuit board's discrete components will alter the frequency by 1 or 2 kHz, putting the offending tone out of the band pass of your receiver on SSB.

If all else fails, you may need to turn off the device while actively shortwave listening or scanning. If it's a brand new piece of equipment, see if they will give you a replacement that may have the oscillator on a slightly different frequency. I did that once with a FAX machine, and it cleared up my reception problems on a local 856-MHz public safety frequency.

So take out your portable equipment and track down the noise source. Then, see what it takes to get it off the air. ■



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# The Radio Connection

BY PETER J. BERTINI  
<RadioConnection@juno.com>

A LOOK BEHIND THE DIALS

## "A Boy's First Radio"

We've been planning a simple one-tube regenerative receiver for our first project. Receivers like these were very popular during the '20s, '30s, and '40s. They were easily constructed and almost foolproof to get running! This is going to be our "shopping list" issue. I will supply a parts list and talk about the various parts we'll be using. Don't worry if everything isn't quite clear to you at this point; it will be when we show how it's all put together. You will have to determine what tube to use because there are several different tubes that will work in the circuit.

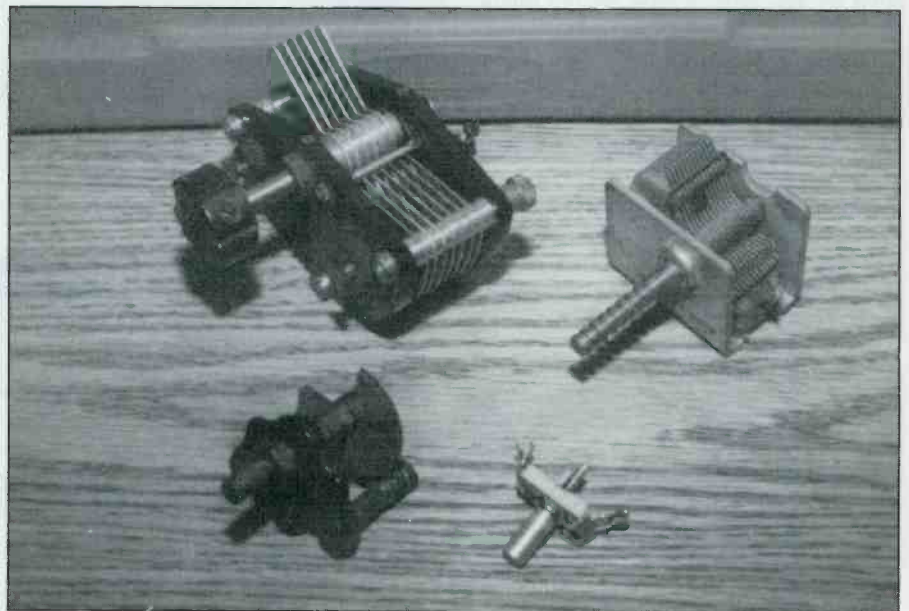
Finding parts is a big problem for any home construction project, so to make things easier, I'm including a list of vendors who carry every item, either in "vintage" or modern form, needed for this regenerative receiver. Whether you go "modern" or "vintage" is up to you; it will probably depend on your budget and what's in your junkbox. A list of suppliers is given at the end of the column. Unless you're an old timer with a prolific junkbox, I strongly urge you to write for the catalogs from these vendors. In particular, the "Playthings of Past" catalog is an *absolute* must if you wish to use any vintage parts; a small \$6 fee is charged for the catalog. If you're not very comfortable working from schematics or don't have much experience building from "scratch," wait for the next issues to arrive before ordering parts or beginning construction. Some needed schematics and important tube and coil base connections will be given next month, along with some pictorial diagrams to assist you in laying out the component placements on the breadboard.

### Choice Of Tubes

Seventy-five years ago, one would save for months to afford a single tube for a project like this. I've heard many horror stories from old timers who inadvertently swapped the B and A supplies when firing up a new receiver for the first time, instantly vaporizing the delicate filament!



The three tubular tubes at far left are '99 types in sockets. The taller standing pair in the rear is UX based, the shorter '99 is a UV base. Note the difference between the UX and UV pin style by comparing the two '99 tubes laying on their side. Front and center is a UX201, with a metal twist-lock base. Continuing to the right is a type '30, a 1H4 in an octal relay socket, and last, a 1H4 laying on its side. The three octal sockets are shown in the center, a modern relay socket, a chassis mount, and a vintage breadboard mount. Two four-pin sockets are shown at far right. Tubes at left are "tubular" shape, tubes at right are "ST" shape.



At left, an example of an early variable capacitor and small panel-mount air-variable trimmer. To the right, a more modern 365-pF tuning capacitor and compression mica trimmer.



There are several tubes that will work equally well in this project. I prefer either the '30 or 1H4, since both tubes are relatively cheap and available. The type '30 requires a four-pin tube socket, while the 1H4 uses an octal socket. Also, the 1H4 may be directly replaced by a 1G4. The type '30 is electrically the same as the 1H4 — both have 2-volt 40-mA filaments.

During the 1920s, homebrew sets were very common. Hundreds of radio stores offered plans, parts, and kits for the home builder. The sockets and other components were designed for mounting on wood boards. Vintage four-pin tube sockets are very common, but octal sockets designed for breadboard mounting are a tad scarcer. I have only one or two examples of vintage octal breadboard sockets in my parts bins, and dozens of early four-pin styles. If you want the "vintage" look of a breadboard style socket, you can substitute a modern octal-base relay socket. These have screw terminals for connections, just like the very early tube sockets. One caveat here: some early four-pin sockets were designed for '01 tubes with guide pins on the sockets — sort of a "twist-and-lock" holding scheme. You cannot use one of these sockets for the '30 tube; it will simply flop about in the socket without making electrical connection.

If you opt for the '30 tube, it opens several other possibilities, such as using a UX-based 199 type tube. Both the UX-199 and '30 type tubes use four-pin sockets. The '99 tube was made in two styles, using different pin structures and base wiring! An UV based '99 (remember a '99 is the same as a 199 or 299) tube has shorter pins — almost stubs — and requires a special twist-lock socket made for that tube. The original '30 was a tubular, and usually had the three digit marking code (230, etc.). The style was later changed to the ST shape; expect to pay a premium for the earlier styles of any vacuum tube.

In all fairness, I have to mention the '01 tube. It is perhaps the most common tube used in early battery sets. Despite their abundance and relative low cost, I advise against using one for several reasons. The 1H4, '99, and '30 are battery set tubes designed for use with dry cells for the "A," or filament supply and can be powered from inexpensive alkaline "D" cells. The '01 (201, 301, etc.) have 5-volt filaments with very high current requirements — they were intended to be used with 6-volt lead-acid car batteries, using a rheostat to set each tube filament to 5-volts. The early '01 also came in UX and

UV styles — again the socket must match the tube. Early '01 tubes were globe styled, and were eventually replaced by the ST style '01A. The '01A used a newer filament design that required less current (still a whopping 250 mA!). The only good thing I can say about using a '01A is that its filament glows brightly, befitting a vintage radio. The filaments in the 1H4 and '30 do not show visible light when powered which is typical of most low-current battery filaments.

The 1H4 and '30 filaments require 2-volts, but work quite well with a single 1.5-volt alkaline "D" cell for filament voltage. The '99 needs 3 volts at about 60 mA. This is conveniently supplied by two "D" cells in series. Two series "D" cells can also be used for the 1H4 or '30, if a small dropping resistor is used to reduce the filament voltage. I will discuss this in greater detail in the next column.

## The Tuning Capacitor And Dial Vernier

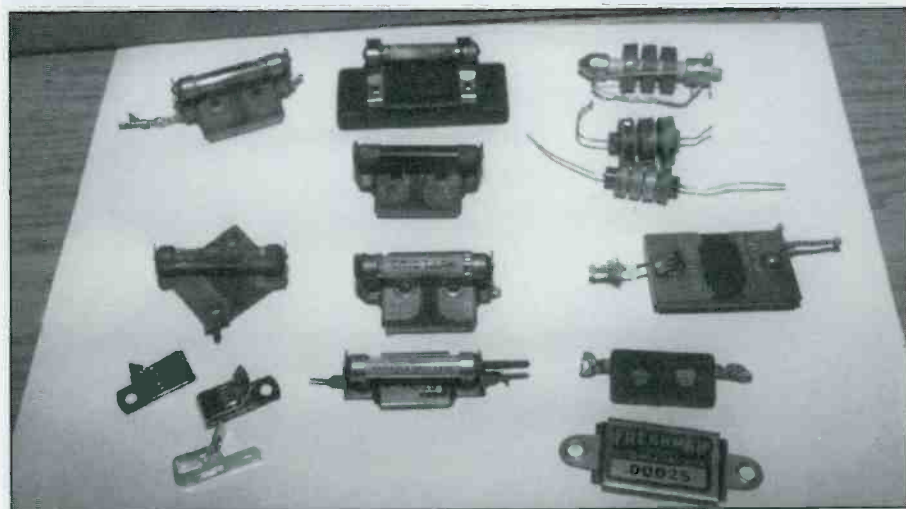
Fortunately, there are many sources for both vintage and modern style tuning capacitors. Where Morgan used a 140-pF tuning capacitor in his receiver, a once popular value. I'm using a more commonly available 365-pF variable. There are advantages and drawbacks. The 140-pF value offered greater "bandspread," or ease of tuning, but had a limited tuning range. The 365-pF capacitor will cover more of the radio spectrum before you need to change to a different coil, but lacks the fine tuning rate using the 140-



1920s-style vintage dial verniers. Note that all styles have 0-100 logging scales; two styles also offer "write-in" areas to pencil in station call letters.

pF capacitor. Note that many vintage tuning caps may be larger than 365 pF, a variable up to 500 pF will do fine.

Simply placing a large knob on the tuning capacitor shaft won't work because the tuning rate will be way too fast, making it difficult to fine-tune stations. A vernier dial drive provides you with a slow tuning rate and calibrated scale. The shocker is that a good used or NOS vintage dial vernier costs less than a modern import, and they work a lot better. Besides, vintage vernier dials are classy looking, and will really dress-up your receiver. If you're on a tight budget. I have an idea to save you a few dollars. Find a cheap five-tube "All American



Fahnestock clips are shown bottom left. Above and to right are several examples of vintage grid leak assemblies. Note the grid leak resistor in the front center is continuously adjustable using a small slider! Examples of pie-wound radio frequency chokes can be seen at upper right. Three styles of early mica capacitors are shown bottom right.

### Parts List

- 1 — tuning capacitor, 365 pF variable
- 1 — vernier dial drive for 365-pF tuning capacitor
- 1 — 1H4 or 30 vacuum tube
- 1 — 4-pin or octal socket for tube (see text)
- 1 — set of 4-prong plug-in coils (1 1/4-inch diameter)
- 1 — 4-pin socket for coil
- 1 — 50K ohm volume control with off/on switch
- 2 — 250 pF capacitors, use mica or silver mica
- 1 — 2.2 megohm resistor (1/4 or  $\frac{1}{2}$  watt, not critical)
- 1 — 2.5 mH (2500 uH) radio-frequency choke
- 1 — 30 pF trimmer capacitor (air-variable or compression mica)
- 8 — binding posts or Fahnestock clips
- 1 — pair 2000-ohm headphones
- 1 — 1-1/2 volt "A" battery, use a "D" alkaline battery and holder
- 1 — 45 volt "B" battery, use six 9-volt transistor batteries in series
- Misc. screws, hookup wire, solder, wood for base and panel

Five" set from the '50s; something junky with a broken cabinet and no collector value. Strip the chassis, and leave the tuning capacitor, dial, and tuning system in place. You can just as easily build this set on an old radio chassis as a wood board, and take full advantage of the set's tuning system. If the set happened to use octal tubes, you're all set for the 1H4 tube — leave a socket in place, and carefully remove all of the solder and old component leads from the terminals.

### The "Grid Leak" And Vintage Caps

The grid leak is nothing more than a 250-pF capacitor in parallel with a 2.2 megohm resistor. Early battery sets used fancy grid leak assemblies. The early resistors resembled glass fuses and the grid leak capacitor had clips for mounting the resistor. Although vintage grid leak assemblies are plentiful, I suggest you use a modern silver mica cap and carbon or film resistor. For this application, neither the voltage nor wattage are critical. I have quite a few of these in my parts bins, and out of 10 grid leak resistors I just checked, eight have failed open, and the remaining two have increased to unusable resistance

values. A few of the early mica caps I've tested have enough leakage resistance to work as a grid leak without the resistor. If you wish the vintage appearance, make sure the dealer supplies tested units, or hide the newer components using older style parts for show. If you're really careful, you can stuff a new resistor inside the old glass shell of a grid leak resistor, otherwise use a small terminal strip to mount the resistor and capacitor.

The antenna coupling capacitor may be either a 35-pF compression mica trimmer, or if available, a small variable. You may substitute a slightly higher value, say up to 45 pF, without problem.

### Fahnestock Clips Or Binding Posts

Early binding posts sported fancy nickel plating. Rather than buying vintage binding posts, you can "roll your own." Brass knurled nuts, brass screws, and brass washers — all found at the local hardware store — make classy-looking substitutes. Run the screw through the panel and secure with a nut. Place two washers over the screw shaft, and then the knurled nut. The wires to be attached (headphones, antenna wire, battery leads, etc.) go between the washers, and the knurled nut is finger tightened to hold them in place. Behind the panel, a solder lug should be used under the screw head to accommodate internal connections. I didn't bother using a front panel on my version of the receiver, so instead I used Fahnestock clips just as Morgan did in his receiver.

### The Radio Frequency Choke

The "proper" 2500 uH (2.5 mH) Radio Frequency Choke (RFC) for this receiver used pie-wound sections on a ceramic-like (Isolantite) form with cast lead wire terminals. (Pie winding means the coil was wound in three to five individual sections on the form). Ocean State Electronics carries these under part number RFC25. Later versions were wound on phenolic forms; and the newest generation is often completely encapsulated. Whatever style you can find will work just fine.

### Plug-in Coil Forms

When I was a kid, you could find 1 1/4-inch diameter four-pin coil forms at almost any ham store. They were made of clear polystyrene plastic, and easily



*Plug-coil forms. At left are some examples of commercially-made and homebrew coil forms. The four 4-pin forms in the center were purchased from Ocean State Electronics. At far right are two examples of 5-pin forms. Front left shows a flush mounting 4-pin breadboard socket. The socket at far right is made from low-loss Isolantite material.*



Front view of the author's prototype receiver. Design at present is more functional than esthetic until the bugs are worked out.

Rear view of the receiver makes a good guide for parts placement.

destroyed by using too much heat when soldering the coils leads to the base. I learned that the hard way. These forms use the same socket as four-pin tubes, such as the 30 or UX199. Alas, four-pin coil forms are an extinct breed. Yes, you can still find five and six-pin forms, but I wanted four-pin forms come heck or high water. I've finally located a source for four-pin phenolic forms. Again, Ocean State Electronics has them. Unfortunately, the forms are a tad pricey (I am cheap), so here are some ideas to keep your budget in line. If your only interest is the broadcast band, you won't be swapping coils to hear different bands. There is no reason you can't wind a broadcast band coil and hardwire it into

the circuit. Ocean State carries 1-1/4-inch phenolic tubing for winding fixed coils. Lucite or strong cardboard tubing could also work. The coil's diameter should be 1-1/4 inches.

Some folks make their own forms and save a bit of money doing so. Here's how. Wrap a defective four-pin based tube in several layers of cloth, and carefully smash the glass envelope. Carefully remove the broken glass, and clean out the solder from the base pins using a hot soldering iron. A length of plastic or phenolic tubing is then slid over the tube base and epoxied in place. Many early four-pin tubes, such as '01s, have value even if the filaments are open. They are used for display purposes in many battery sets. Do not destroy a dud tube until you are sure it has no value; a good example of a zero-value dud is a defective ST or tubular shaped 80 rectifier.

As the photos show, I have completed my receiver using a commercial broadcast band coil I found in my junkbox. The

set works, but I'm not happy with the tuning range or regeneration action at this point. I will have the bugs worked out and the coil data ready for you next month.

I powered the set using a single "D" battery for the filament, and four 9-volt transistor batteries (36 volts) for the high-voltage "B" supply. One gentleman suggested that I design a simple AC supply to run the receiver — a reasonable request, and I will do so. I used a wood board for my receiver chassis in keeping with tradition. As you can see, my receiver is more functional than a work of art. That's not to say I didn't try to follow good construction practices or do a neat job. One last item: you will need a set of good high impedance headphones for the receiver. Low impedance stereo or communications headsets will not work. Vintage 2000-ohm earphones, such as Brandes or Baldwins, regularly show at radio meets, or in the advertisements in ARC. Most of the vendors I've listed carry suitable 2000-ohm impedance headsets. ■

#### List of Suppliers

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# Antennas & Things

BY JOE CARR, K4IPV  
<carrjj@aol.com>

SIMPLE ANTENNAS AND ACCESSORIES FOR SIGNAL IMPROVEMENT

## Using Filters To Improve Your Receiver — Part 1

There is a hill not too far from me where radios are surely tested. I first experienced this hill when a friend of mine got his ham license and lived only a block from the site. This hilltop (actually, "bump top" is more like it) has a 2,000-watt AM BCB station, two 50-kW FM BCB stations, and a microwave relay tower with scads of antennas on it. Not helping things much are the scores upon scores of two-way landmobile radio antennas. It seems that landmobile and cellular operators rent space on radio station towers to gain the height they need.

So what? Doesn't that just give you a signal-rich environment? Absolutely NOT! The problem is that your receiver can only handle a certain amount of radio frequency energy in its front-end. That area of the receiver is not a very narrow band, so signals wander through that might not otherwise make it. Indeed, even if your front-end is tuned (usually with an "antenna tune" or "preselector" control), the bandpass is quite broad. Receivers with an untuned front-end may use a bandpass filter, which is still a bit of a problem.

The offending signal need not be in the same band as the signal being sought. The offending signal may be out of band and not even heard on the receiver. If it gets to the RF amplifier or mixer, then it may take up enough of the receiver's dynamic range to make your receiver less sensitive.

Another manifestation is that the offending signal may cause harmonics of itself to be generated. Those harmonics are valid signals, so the receiver will tune them in as if they arrived on the antenna. The problem is that the *undesired signal* drives the receiver front-end into a nonlinear operating region, which has the effect of increasing harmonic distortion.

Still another problem caused by letting strong out of band signals reach the receiver is the creation of intermodulation products. When two signals are present, and are able to drive the front-end circuitry of the receiver into nonlinearity, then a batch of new frequencies is generated. After all, the front-end contains a mixer, and if it hits the radio frequency amplifier first, it can make that stage pretend it's a mixer. The frequencies gener-

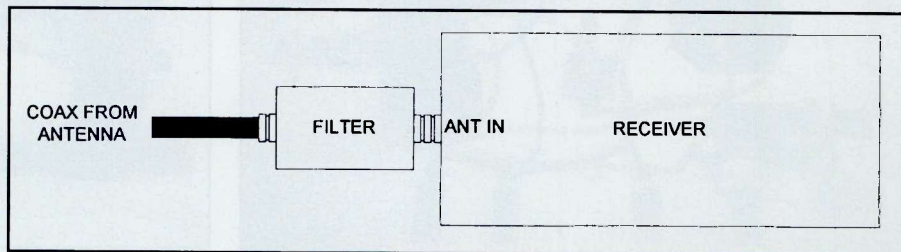


Figure 1. Mounting the filter to a receiver.

ated are defined by  $mF1 \pm nF2$ , where  $m$  and  $n$  are integers (0, 1, 2, 3, ... N). These frequencies are:

$F1 + 2F2$  Third order products  
 $F1 - 2F2$   
 $2F1 + F2$   
 $2F1 - F2$   
 $2F1 + 3F2$  Fifth order products  
 $2F1 - 3F2$   
 $3F1 + 2F2$   
 $3F1 - 2F2$

So what does this mean? Suppose you live near an AM broadcast band station that is operating on 1500 kHz. Suppose a reasonable local ham operator starts broadcasting on a frequency of 7200 kHz. These frequencies will provide third and fifth order intermod products of 4200 kHz, 9900 kHz, 10200 kHz, 12900 kHz, 15900 kHz, 18600 kHz, 18900 kHz, and 24600 kHz. Note where those intermodulation products fall? Right in the middle of some of your listening territory. And when you count the fact that the ham operator can operate over a 300-kHz portion of the band from 7000 to 7300 kHz, there is actually a wide area 200 kHz below and 100 kHz above those spot frequencies that are vulnerable.

Now calculate what happens when the ham changes bands! Can it still get worse?

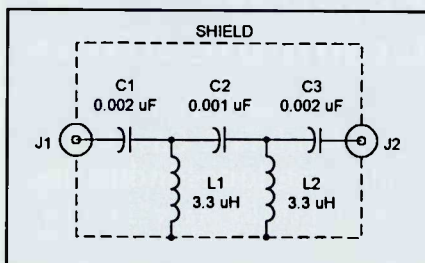


Figure 2. Simple filter to rid an SW receiver of AM BCB QRM.

Yep, it sure can. Keep in mind that AM BCB stations tend to have two endearing qualities that help them mess up your shortwave reception: 1) they are local, so their strength is very high at your location, and 2) they are high powered (250 watts to 50 kilowatts). As a result, there is a huge signal from that AM BCB station.

### The Solution

So what's the solution? In all of the cases mentioned above, there is one solution that works best of all: *prevent the offending signal from entering the receiver*. Whether the problem is desensitization from front-end overload, harmonic generation, or intermodulation, the solution is to get rid of the bad signal. In the case of intermodulation products, getting rid of just one of the two signals is all that's needed. A filter in the antenna line ahead of the receiver will work nicely for this purpose.

### Installing The Filter

Figure 1 shows the installation of the filter. The filter is built inside a shielded box (any other construction for an external filter is basically a waste of time) with coaxial connectors on either end. Simple filters are bidirectional, so it doesn't matter which coax connector is used for the receiver and which is used for the antenna. Next time, we will look at a more complex "killer" filter that is not bidirectional, so it matters a lot which coax port goes to which part.

The input side of the filter is connected to the coaxial cable from the antenna using a PL-259/SO-239 connector pair (or some other type of connectors if your receiver

is different from most). The female coax output of the filter and the female coaxial antenna input (ANT IN) on the receiver are connected to each other with a double-male PL-259 UHF connector.

If you can't spare the room on the back of the receiver for a big clunky box, then use a short piece of coaxial cable between the filter output and the antenna input. However, this is second best and, if done, the cable should be as short as possible. The problem is pick-up of the filtered signal in the line. If coax were perfect, then that wouldn't happen. But guess what?

### A Simple Filter

Figure 2 shows a simple AM BCB filter I've been using for many years. I first saw this design in a 1960s vintage Bill Orr (W6SAI) *Radio Handbook*, and it's been repeated in a number of ham magazines (often without attribution to Bill). This filter is a simple pi-section (so-named because of its resemblance to the Greek lower case letter  $\pi$ ) filter, designed for 50 ohms input and output impedances. The cut-off frequency is about 2000 kHz, just at the lower end of the shortwave bands.

The nice thing about this little filter is that it uses some easily obtained components. The capacitors, for example, are

standard values. The best capacitors to use are polyethylene types. You will find these rated in picofarads, so keep in mind that 0.002 (F) is 2,000 pF, and 0.001 (F) is 1,000 pF. If you can't get the polyethylene capacitors, then silvered micas will do almost as well. The highest easily obtained value is 1,000 pF, so connect two in parallel for each 0.002 (F) capacitor.

The inductors are also easily obtained. If you look in catalogs, such as Digi-Key's and other mail order suppliers, then you will find several 3.3 (H) offerings. If push comes to shove, then you can also wind some toroid core coils. Use the T-50-15 (RED/WHITE) core, and use 16 turns of enameled insulation wire (#26 AWG to #30 AWG).

If your problem is not too severe, then this filter works fine (build it inside a shielded box)! In fact, it may work spectacularly well if you have a moderately severe problem.

### Next Time

In the concluding part of this two-part series of "Antennas & Things," we will take a look at a few more filter designs, including one that will protect your AM BCB receiver from the dirty, smelly, bad guys in other bands.



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## Conventional Scanning Vs. Trunking

Robert Rich via E-mail writes, "I just read your piece in *Popular Communications*' August issue on the PRO-64. Very nice! I am locating one now. Boy, you were correct — it is hard to find."

I'll bet they're even harder to find now. Actually, that has nothing to do with this month's article, but I wanted to put it in so Harold (you know, the editor dude) would see that there are at least a few folks who appreciate this column!

Rich continues "Anyway, what is the difference between the PRO-64 and a 'trunk track' scanner. The RadioShack guys said that the PRO-64 will not receive the police here in Dallas because they have converted to trunk system."

Now there's a good start for a "ScanTech" column. And by the way, by the time you read this, a PRO-64 will be virtually impossible to find, except on the used market.

Actually, Rich's question is very typical of both E-mail and regular letters that I get. Apparently, there is still a fair amount of confusion over this issue, so let's take a few minutes and highlight the main differences.

### Conventional Scanning

If you've been scanning for any length of time, or if you've ever watched television, you'll have a pretty good idea of what conventional scanning is about. "What's television got to do with this?" I hear you say. Television uses channels, just like conventional scanning.

If you want to find the evening news, you turn on channel 5 or 14 or whatever number it is in your city. When you're finished watching the news, there will no doubt be some mindless program to catch your attention. This is a good time to turn on your scanner and cut your losses. However, tomorrow night, when it's time for the news, or the mindless program that you want to watch (hey, there's nothing wrong with entertainment), it will be on that same TV channel number. They don't change.

Conventional scanning operates the



*These almost-twin handhelds changed the world of scanning. For the first time, it became possible to follow the popular Motorola Type II trunking used by so many public safety agencies. Shown are the RadioShack PRO-90 and the Uniden BC-235. They are functionally identical.*

same way. The agency (local police, for instance) applies to the FCC (I know, they have to go through frequency coordinators and a whole raft of other paperwork, but let's keep it simple) for a "channel." The FCC assigns, in due time, a frequency to that agency for their use, and except for certain shared channels or the business band where the rules are a bit different, the agency can expect that the frequency will be for their exclusive use. In fact, it's the job of the regional frequency coordinator to make sure that the same frequency does not get reassigned to another agency which is close enough that they would interfere with each other. That's not a small job with today's crowded bands.

So when we want to listen to that agency, all we need is the magic frequency and punch that into our radio, just like selecting a TV channel, and presto, there they are. The only difference, of course, is that TV channels broadcast on a continuous basis, whereas our public safety agency will only transmit when there's a need.

That's why we have a scanner in the first place. You fill up a bunch of channels in your scanner with frequencies of various agencies around you and you're scanning. The radio steps from channel-to-channel waiting for something to happen. When a transmission stops, the scan resumes where it left off. We can even get sophisticated and have our scanner check certain frequencies more often than others (priority scan) or using computer software, develop all sorts of routines the scanner might do based on what frequencies are active at any given time. Of course, this requires a computer-controlled scanner and software to make it work, but it's all conventional scanning. One channel per customer, so to speak,

### Communications Officer's Nightmare

Play the role of a communications officer for a few minutes. You've applied for your conventional channel above, and



If a base unit is more your style, you might like the RadioShack PRO-2050. This radio has all the features of the handheld units in a base package.

gotten a VHF-High band frequency. You've gotten all the equipment installed in several hundred mobile units and everything's working fine. Well, almost fine. You've had your channel for some time, and you notice that the traffic is getting heavier. There's a lot of waiting for open air time to dispatch calls. Officers are keying up on top of each other trying to get through. And there's way too much car-to-car chatter.

Wouldn't it be nice if we could maybe get a car-to-car channel, and possibly a second dispatch channel? That would work—and we'll divide the city in half—North and South (or East and West for you purists) and have two channels. Initially, we were smart and installed radios in the mobile units that have extra channel positions in them, so all we'll need is an extra dispatch console, and a couple of frequencies.

So we write to the FCC and say "We'd like a couple more frequencies." (Of course, we can't just write to the FCC and say that, we have to put it on official "we'd like another frequency" forms, and dot the i's and cross the t's, but you get the drift).

The FCC writes back in a few weeks and says "Gee, we're terribly sorry, dude, but we've only got frequencies available in your area on UHF." Well, of course, they don't really say "terribly sorry, dude," but they put it in an official government form letter that says, "no such luck" in FCCese, so to speak.

Now what? Put UHF radios in all the mobiles to accommodate the new channels? That's an expensive proposition—you'll have to buy new radios for every mobile. How about moving the new "North" sector to UHF and leaving the "South" (you can substitute "East" and "West" if you like) on VHF? What if they

need to talk to each other? Move everything to UHF? Can you get a third frequency on UHF? Have to buy new radios again. Bummer. Maybe we could wait until someone else moves off VHF and grab their frequencies. Perhaps. Could be a long wait.

## Trunking

While installing a trunking system will mean that the public safety user will have to buy new radios too, it gives them some long-term options that they can't get with a conventional communication system. Part of the rapid move to trunking has been because there weren't any VHF or UHF frequencies available in certain areas, and the 800 MHz trunking frequencies opened up a lot of new channels. Even 800 MHz without trunking was the only way some agencies could get new conventional frequencies, so you will find some conventional channels on this band, but they are not common.

With a trunking system, a communications officer applies to the FCC for a block of frequencies, usually five at a time, although busy systems may need 10, 15, or even up to 30 frequencies. These are frequencies just like you were applying for before, but with a difference.

Now hold it, Dudley. You just said that getting even two more channels was going to be a problem. Now they're supposed to ask for five to 30? What's the chance of that getting approved? I'll bet the FCC has official "Gee, that was funny, now get serious" forms to send out for these requests.

Well, not exactly. The 800-MHz band was sectioned off to allow trunking systems exclusively in a certain portion of the band. And 800-MHz signals do not

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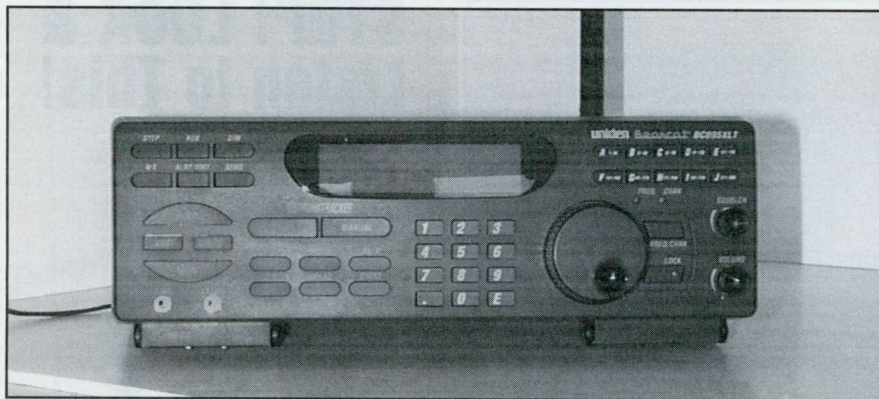
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*The Uniden base trunktracker makes a great conventional scanner too. It includes CTCSS tone squelch, a weather alert system for use when the scanner is off, and the first S-meter on a Uniden scanner, which many people have been requesting, and a computer interface.*

typically travel as far as VHF and UHF signals, and so the frequencies can be reused much closer together. And, the 800-MHz band is much newer than the others, so there are fewer agencies able to finance the equipment necessary for this kind of operation, therefore the competition isn't as fierce. Combine this with the FCC's drive toward more efficient spectrum usage, and you'll more than likely get a "Great, here you go" form. The band is filling up, so someday, we may see the same problems here as on the lower bands, but it will take some time.

So now the agency has frequencies, what happens next? They need trunking equipment. These are special radios that take advantage of the trunking system to allow for increased efficiency in frequency usage. Remember that the agency applied for a block of frequencies, just like before. They are assigned for that agency's exclusive use, just like before, but after that, you need to forget all you know about frequencies. They are now almost irrelevant.

## Channels!

The conventional radio system locks each function on a specific frequency. But listen to your scanner and what do you hear most of the time? Silence. Most public safety nets do not transmit a large portion of the time. So the frequency is sitting there unused until someone decides it's necessary to talk. That's why we listen to these channels with a scanning receiver. All the cars assigned to channel 3 stay on channel 3 and hear a lot of nothing, while our scanner skips over that frequency because it's not in use until someone transmits.

A trunking system creates "virtual

channels;" that is, a channel that looks and acts like a channel — everyone listens to channel 3 and hears nothing most of the time, but without a designated frequency.

At this point, it's probably important to note that we'll be talking specifically about the Motorola type II trunking system, which is used by most public safety agencies throughout the country that are trunked, and that the Uniden Trunk-Tracker™ radios will follow this system. type I and type III systems operate exactly the same way. From what I understand, the EDACS system used by some public safety agencies operates in a very similar manner, except with a different set of codes (protocol) for the control channel and radios.

The block of frequencies the agency applied for gets used more like "conference rooms" in a sense. One of the frequencies is dedicated to the trunking control system. This is a computer controller that manages the scheduling of these virtual channels.

Suppose we're listening to channel 3 and nothing is happening — we're listening to silence, so why bother with being on a frequency. We can just monitor the control channel waiting for a command to meet in a "conference room." When someone transmits (either the dispatcher or a car), the controller looks for an unused conference room (in this case, it is an actual frequency, again, that isn't busy). Once it locates one, it sends out a command to all radios monitoring channel 3 to meet in that "conference room." And the radio switches to that frequency and we hear the transmission, just like a regular conventional channel.

But the next time you want to talk on channel 3, that conference room might be busy. No problem, we'll take any avail-

able room. So the next transmission might take place on an entirely different frequency — any of the block of 30 that we could have. The officers in the car and the dispatcher can't tell the difference. It sounds just like good ol' channel 3.

All this technology for normal operations sounds like a lot of trouble and expense to me. Ah, but remember our communications officer got in trouble when he wanted to expand the number of channels in his system. Here's where the trunking system shines. The block of frequencies is already assigned, so we don't have to bother the folks at the FCC, or exchange any fancy forms with them. All we do is create another virtual channel and assign some radios to use it. The controller can wait for that one to become active, just like it did channel 3.

## You Ever Listen To One Of These Systems?

The trouble for us scanner folks comes when we try to listen to a trunking system with a radio that's not aware of the coding system or the commands taking place on the control channel. Our conventional scanner just goes plodding along from frequency to frequency catching whatever conversations might be happening in the various "conference rooms" as we go. So, you might hear channel 3 officers with an exciting pursuit, and then the next "conference room" could be the dog catcher or some other equally interesting city service. The channel 3 guys might have had several conversations in various "conference rooms" by the time you catch up with them again.

Here's where Uniden's Trunk-Tracker™ radios come into play, along with several other methods for following trunking systems. The point is, that in order to follow the conversations, you need to have a radio that knows how the system works. The Uniden radios do just that, and are available in both handheld and base configurations. RadioShack also sells versions of these radios that will work if you have a Motorola system in your area. If your local agency uses EDACS or some other trunking system, you're not going to be able to use these radios.

## Blocks

Trunking systems were designed so that not only public safety agencies, but business users could take advantage of all this high tech. In fact, many business two-way radio systems are being migrated to



trunking-based systems because it helps the owners of the systems increase capacity. One of the things that's advantageous about trunking is its ability to have many different types of users sharing the same system, because they don't know each other is there.

One of the ways that the trunking controller handles this problem is to divide the available channel groups into "blocks." There can be as many as eight blocks (numbered from 0 to 7) in the system, although some configurations might limit this number, or not all blocks may be in use. Within each block, it must be decided if the controller and radios are going to use the type I or type II format of communications.

Type II is the newer one, and therefore more versatile. Most systems installed in the last several years have been type II, and many systems that started out as type I have been upgraded (particularly for public safety use). But, many cities also have type I radios floating around from the "early days," and you might like to use those. They're referred to as a type II system. Certain blocks are designated as type I blocks, and others are designated as type II blocks. Of course, the controller has to keep up with who's on first, so to speak, but it's a computer with nothing better to do — a piece of cake.

## Fleets And Subfleets

These terms get bantered about quite a bit, and a lot of confusion exists regarding their use. Technically, fleets and subfleets are the terminology used to describe a type I system's blocks and channels. The fleet would normally be a cohesive group (water department, police department, fire department, particular company, etc.) and the subfleets would be the individual channels that were available to those radios. Often, the radios would designate the channels by letter, and the users would be totally unaware that there were other fleets sharing their same system.

## Talkgroups

In type II terminology, a "talkgroup" is used to describe a channel. Each talkgroup belongs to a block (you can divide the Uniden decimal number by 8192 to figure out what block a given talkgroup is in, if you care). Each talkgroup represents a channel to the users of the radio. In fact, the user of the radio probably doesn't have any idea if he or she is using

a type I or type II system. It turns out that the type II system is more efficient and flexible, so that's what we'd prefer, but a lot of type I traffic is still out there and going strong.

No matter which system is used, (or the combination of the two) the net result is the same, if everything is working correctly. The user has a channel to use for a particular type of traffic (dispatch, records check, car-to-car, etc.) and they can talk to each other. The communica-

tions coordinator can create new channels at any time, assuming the maximum capacity of the system has not been exceeded, without exchanging memos with the FCC. And everybody's happy.

## Fleet Maps

One of the reasons that I mentioned we'd like to have a type II system (from a purely scanner point of view) is that the



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Subject: Comparative Gain Testing of Citizen's Band Antennas  
Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below:

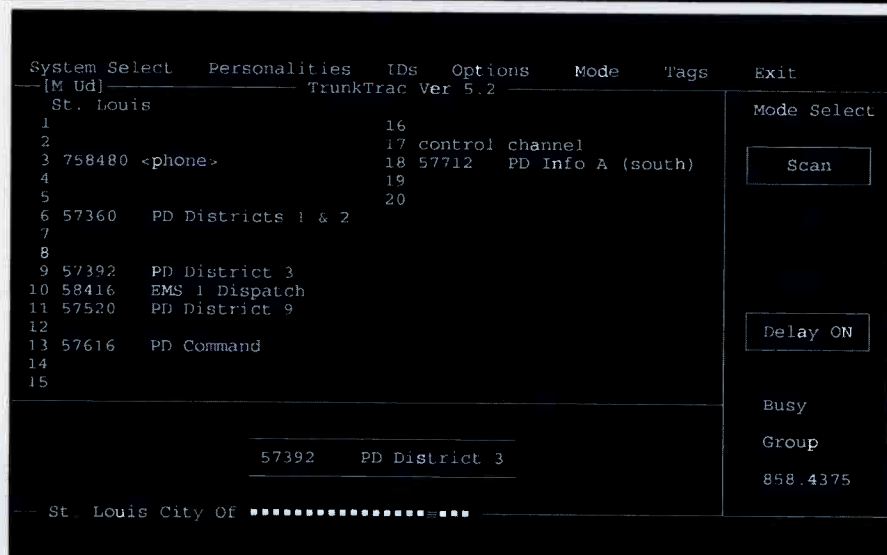
FREQUENCY (MHZ)	RELATIVE GAIN (dB)	RELATIVE POWER GAIN (%)
26.965	1.30	35
27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
27.215	1.60	45
27.265	1.75	50
27.315	1.95	57
27.365	2.00	68
27.405	2.00	68

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If computer control is up your alley, the popular TrunkTracker™ system might be of interest. It will interface with many radios that have a computer port, including the Optoscan units, most radios from ICOM, the BC-895, and others.

software that runs the radio is set up to default to type II operation. If the system runs entirely type II, then you can start trunking right away.

Unfortunately, if the system runs type I, or a type Iii, then we need a little more information in order to follow the type I traffic, or to lock it out if you don't want to hear it in the search mode. What we need is information about how each of the blocks we mentioned earlier is configured (type I or II) and if it's a type I, how the subfleets are arranged.

It turns out there are only certain ways that they can be arranged, called *block sizes*, and stored in your scanner as a size code. Put these codes all together and you have a "fleet map" for how your system uses the various blocks, fleets and subfleets, if appropriate, and talkgroups. Other systems, besides Uniden, deal with this information in completely different ways, but the Uniden system is easy to understand and simple to program.

And there you have it. Trunking provides great benefits to the communications industry by making better use of the limited frequency space available. You'll be seeing more and more of it, and on other bands besides 800 MHz as time goes on. There are other trunking systems besides Motorola's, but as of now, that's the only one we can follow. Stay tuned — that could change any time.

## Scanning The Web

A fantastic wealth of information is available at <<http://www.strongsignals.com>>.

net>. This is the site maintained by Rich Wells, and it contains all sorts of scanner-related information, including reviews of many scanners.

If you own a PRO-2006, or it's older brother, the PRO-2005, you should visit <<http://home.ptd.net/~pro2006/>>. This is the PRO-2006 home page maintained by Steve Hancock. This site contains almost everything you could ever want to know about the 2006, and a lot of great information about related topics, including the Optoscan interfaces for these radios. Check it out!

## Scanning The Mail

Tom Sollo of Kanakee, Illinois, writes in with a very typical question. "I have a 10-year-old AR1000 that I have been listening to because my main scanner is in the shop. The problem being KanKakee City is trunked on at least two or three of the trunked frequencies. The majority, if not all of the communications, I receive are cellular communications. In your opinion, is this overload, an image, or do you think the scanner is faulty?"

Well, it could be either overload or images (see if the frequency you're receiving is 21.7 MHz below or above a cellular frequency). What I suspect is more likely is that your system has a number of channels set aside for "telephone interconnect" or phone patch service as it is sometimes called. It works pretty much like a phone for the officer, except that instead of using the cellular network, it uses one of the systems trunked frequen-

cies. Most systems seem to dedicate frequencies to this function rather than allowing them to move around like normal trunked communications.

Tom also asks "What would be the legal difficulties if a call was overheard on a legal frequency?"

Well, I'm not an attorney, nor do I play one on television, so I'm not sure how qualified I am to answer that completely. I can tell you that all of the communications you hear are covered by section 705 of the Communications Act of 1934, and one of its provisions is that you not divulge anything you hear to anyone, nor use the information for financial gain. If you follow that law, you probably won't have trouble with any of the others, although I'm not at all sure if there could be a problem with them or not. Any attorneys wish to comment?

Don Roy from Lansing, Michigan, writes "Lansing went to an 800.MHz frequency. I think they're using DPL but I'm not sure. Could you help me out? Are they using tones? The Lansing Police are also moving to the 800 frequencies. Help! I use a RELM HS200 scanner."

Well, Don, you're in luck — sort of. I haven't got a clue as to what frequency they're moving to, but perhaps one of our readers can help. But I can tell you that DPL is another name for DCS, which your RELM scanner can decode. You don't have to have the correct tone or digital code in order to listen to them, but rather DCS acts like a squelch mechanism to keep interference to a minimum. But you can put a DCS code in your scanner and see if it receives when they transmit. (If you want to be sure, you can program that same frequency into another channel of your scanner and then you'll be able to tell when they are transmitting.) If not, try another code. I don't think the HS200 has a tone scan function, but you can step through them one at a time. Check it out. You'll probably have the information yourself before we can get it back to you. But if anyone can help Don out, and give us the exact information he needs, please don't hesitate to write!

## Speaking Of Writing!

Your input is always welcome. Send your comments, suggestions, photos, and anything else you think might be of interest to your fellow scanner listeners to: Ken Reiss, 9051 Watson Rd. #309, St. Louis, MO 63126, or E-mail to <[armadillo1@aol.com](mailto:armadillo1@aol.com)>. Until next month, good listening! ■

# How I Got Started

## Congratulations To Joseph LaFauci Of Indiana!

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

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

The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to *Popular Communications*. Address all entries to: "How I Got Started," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801 or E-mail your entry to <popularcom@aol.com>, letting us know if you're sending photos.

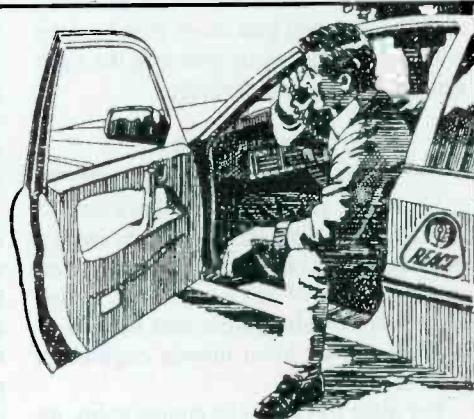
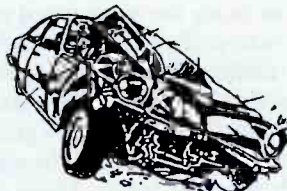
### Our July Winner

Joseph A. LaFauci of Columbus, Indiana, writes, "I read the braille edition of *Pop'Comm*. I was about seven years old when my Uncle Tony gave me my first broadcast band portable radio for Christmas. Before long, I discovered that at night, I could hear distant stations. My interest in radio grew, and I built my first crystal radio a couple of years later. During my high school years, I became a Novice ham radio operator. I built my first CW transmitter and experienced the thrill of making several contacts with it. Now, I am a General class operator (KA9OPL) and enjoy ham radio, as well as shortwave listening and scanning the VHF/UHF bands.

My equipment includes a Century/21

CW rig, an ICOM R-1 scanner, RadioShack DX-390 worldband receiver, RadioShack 2-meter HT, and my newest addition, an MFJ-9420X 20-

meter "travel radio." I enjoy many facets of the communications hobby and *Pop'Comm* helps keep me enthused and informed." ■



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# The Ham Column

BY KIRK KLEINSCHMIDT, NTØZ

GETTING STARTED AS A RADIO AMATEUR

## Portable Power, Portable Fun

Summer sun gives us a great opportunity to take ham radio to the woods, the beach, or a nearby mountaintop. But what about electrical power? If you're operating "off the grid," the most versatile solution, a portable power generator (which we'll abbreviate as PPG), may be just what you need. Here's some practical advice about choosing the right generator and using it safely.

### The Basics

Basically, generators are "backwards" motors. They convert mechanical energy (shaft rotation) into electrical energy. You can also think of PPGs as 120-V "automobile-style" alternators that happen to be powered by lawn mower engines (a perfect analogy).

For most PPGs, as the engine spins, an AC generator (alternator), the voltage, and frequency of the AC output vary based on the rotational speed of the engine. If the engine is running too fast or too slow, the PPG's voltage and frequency will be high or low, accordingly. If the engine speed is correct, voltage and frequency will approximate that of the power supplied by the AC mains — a 120-V sine wave with a frequency of 60 Hz.

There are several electronic and mechanical methods used to keep voltage and frequency values stable, as engine speeds vary because of current loads. Many PPGs have engines that use mechanical "governors" to keep the shaft turning at the right speed. If the shaft slows down (because of increasing generator demand), the governor "hits the gas" to bring the shaft speed up to par (and vice versa). Sophisticated PPGs also have electronic regulators to help keep things steady near 120 V/60 Hz.

The most basic units have preset throttle/engine speeds that can be adjusted to match required loads. These are most useful for powering incandescent lights and small power tools, which can safely tolerate "cruddy power." Use them to power solid-state devices at your own risk! As a rule, PPGs with better regulation and greater output power cost more money, while units that have little or no automatic regulation and less capacity are more affordable.

### Choosing A Portable Power Generator

To be useful, your generator must be able to safely power all of the devices that

will be attached to it. For most ham radio stuff, simply add up the power requirements of all powered devices, add a reasonable safety margin (25 percent), and choose a suitably powerful generator that meets your other requirements.

If you're powering motors, however, they'll need a lot more power to start up than they do to keep running. (See Table 1) For example, a motor that takes 1000 W to run may take 2000 to 3000 W to start. Light bulbs, soldering irons, space heaters, and most radios don't require extra start-up power, but be sure to plan your purchase accordingly.

PPG size and weight usually vary according to power output; low-power units are lightweight and physically small, while beefier models are larger and weigh more. Tiny camper models (800 to 1000 W output) are amazingly small and lightweight, but some units lack sufficient regulation and may not be recommended for powering solid-state devices. On the other hand, some teeny gens can put out a whopping 90 amps of 12-Vdc for charging batteries. If your gear is battery-powered, you may still be in luck.

Most portable generators are driven by small gasoline engines ("lawn mower engines"). Basic models are powered by



These PPGs illustrate two approaches to generator design. The beefy Coleman Vantage 3500 has everything, including the kitchen sink. The compact Honda EZ2500A is lean and mean. Both do a great job with solid-state devices.

### Power Requirements for Typical Devices

Equipment/Device	Rated Watts	Starting or Surge Watts
100-W Light Bulb	100	100
500-W Quartz Worklight	500	500
AM/FM Clock Radio	10-50	10-50
AM/FM Stereo	50-200	50-200
CB Radio	20-40	20-40
Box Fan	200	600
Small TV	100	100
Medium to Large TV	200-500	200-500
Microwave Oven	700	1000
Air Conditioner (12k BTU)	3400	5000
1/3-hp Motor	600	2100
Circular Saw	900-2400	2200-4500
Portable Drill	1000	1300
Space Heater	1500	1500
12-Vdc Battery Charger	120	120

Table 1

standard side-valve engines. These are usually noisy and short-lived. More expensive models have overhead-valve (OHV) engines, pressure lubrication, low-oil shutdown, cast-iron cylinder sleeves, oil filters, and electronic ignition systems. As a rule, smaller PPGs have smaller gas tanks (and vice versa), but that doesn't necessarily mean that they need more frequent refueling. Some small engines are more efficient than their larger counterparts and may run for half-a-day while powering small loads. Remember, PPG run times are shown for 50 percent loads. If you're running closer to max capacity, your run times may be seriously degraded. The opposite is also true. "Extended Run" models usually have more efficient engines and larger gas tanks.

***"Typical PPGs run from three to nine hours on a full tank of gas at a 50 percent load."***

Typical PPGs run from three to nine hours on a full tank of gas at a 50 percent load. And as previously mentioned, voltage and frequency regulation — or lack thereof — may significantly influence your buying decision. The bottom line is that *any* PPG can safely power light bulbs, heating elements, and power saws, but when it comes to computers, TVs, and expensive ham radios, units with mechanical or electronic regulation may be required, if only for peace of mind! I test PPGs for "solid-state compatibility"

with a small TV set I purchased for \$5 at a garage sale.

Unloaded generators typically put out 130 V at 62-63 Hz. As loads increase, frequency and voltage decrease. Under full load, output values may fall as low as 105 V at 58-59 Hz. Normal operating conditions are somewhere in between. If "electronic voltage regulation" isn't mentioned on the box, consider calling the manufacturer before you buy. And although you might get lucky, don't expect expert help from the salesperson at your local hardware store — they're used to helping contractors who want to power lights and saws.

### Generator Safety

Before starting the engine, read the user's manual — at least twice, cover to cover. Carefully follow the instructions regarding engine oil, throttle, and choke settings (if any). Be sure you understand how the unit operates and how to use the receptacles, circuit breakers, and connectors. Make sure the area is clean, dry, and unobstructed. PPGs should be set up outdoors. Do *not* operate gas-powered engines in closed spaces, inside passenger vans, or inside covered pickup beds. If rain is a possibility, set up a canopy or other outdoor protective structure. Keep the generator and any attached cords dry!

Exhaust systems can get hot enough to ignite certain materials. Keep the unit several feet away from buildings, and keep the gas can (and other flammable stuff) at a safe distance. And don't touch hot engines or mufflers!



Popular with RV owners, PowerWatch Technologies' Good Governor visually indicates AC wiring faults and accurately displays the voltage and frequency of the AC line source it's plugged into. If you can't find one at your local RV dealership, contact the manufacturer at P.O. Box 22988, Denver, CO 80222.

When refueling, shut down the generator and let things cool off for a few minutes. Don't smoke, and don't spill gasoline onto hot engine parts. A flash fire or explosion may result. Keep a small fire extinguisher nearby.

If you refuel at night, use a light source that can't ignite the gasoline. Your extension cords must have intact, waterproof insulation, three "prongs" and three wires, and must be sized according to loads and cable runs. Use 14-16 gauge, three-wire extension cords for low-wattage runs of 100 feet or less. For high-wattage loads, use heavier 10-12 gauge, three-wire cords designed for RV service feeds. If you use long extension cords to power heavy loads, you may damage your generator and/or your radio gear. Try to position extension cords so they won't be tripped over or run over by vehicles. And don't run electrical cords through standing water or over wet, sloppy terrain.

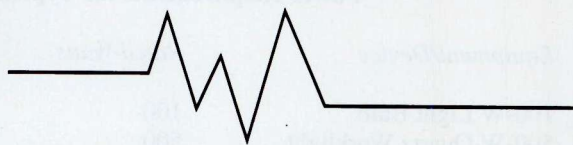
Modern PPGs will provide years of reliable service if you choose the right unit up front, use it correctly, and store and maintain in properly. I hope this brief introduction helps you sort through the potentially bewildering variety of features, sizes, and prices. Now you have the power!

That's it for this month. Keep your photos, letters, and column suggestions coming to "The Ham Column," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801. ■

# The Pirate's Den

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING



## A Pirate Station That Doesn't Approve Of Pirates?

Time to take another look at what has been happening on 6955 and elsewhere in pirateland!

**Blind Rage Radio, 6955 SSB** at 1626 with ID, rock, and sign-off at 1632, giving the Merlin, Ontario address. (Dave Jeffery, NY)

**Radio Metallica World Wide, 6955** at 2146 to 2159, with several IDs and announcements that it was a test broadcast. They played "Pusher Man," "Take the Power Back," and "Monster Hash." (Lee Silvi, OH) 0222-0230 with Dr. Tornado and friend talking about WBCQ and WRNY. The talk got pretty "bad." (Don McClarren, MI) (*Welcome, Don! — Ed.*) 2310 with Dr. Tornado and without Senor El Nino. Played rock music, including "Stairway to Heaven." Closed with the "Secret Agent" theme. (John Jenkins, WV) (*Welcome, John! — Ed.*) 0142-0201 close with talk about Clinton, "Secret Agent Man." Also at 0240 to past 0305 with low-key voice ID and phone operator saying 911 is an unlisted number. Also at 0149 to 0312 with electronic instrumental dance music, reverb ID, and talk about the Pope. (Randy Ruger, State?) (*And welcome Randy! — Ed.*)

**WYHP, 6955.2 USB** at 0017 to 0030 sign-off. Gave the weather report for Ohio and area. (Jerry Coatsworth, Ontario)

**WPN — World Parody Network, 6955 USB** at 0258-0305 with announcer "Dr. Squirtlong" and listener's letters. (Coatsworth, ON)

**KIRK, 6955** at 1455 to closing at 1502. (Coatsworth, ON)

**Free Dylan Experience** (tentative) **6955** at 1510 to 1520 with music by Bob Dylan and interval signal featuring Donald Duck. (Coatsworth, ON) (*Donald Duck or a sound-alike? — Ed.*)

**Free Radio America, 6957.3 USB.** Broadcast was in USB, but over an open AM carrier. Songs by Smashing Pumpkins. (Coatsworth, ON)

**WMPG, 6955** at 0149 to 0231, man and woman with music and station ID. (Don McClarren, MI)

**Mark Radio, 6955** at 0139 to 0149

**I'M A PIRATE**  
**RADIO Listener**  
**WACK Radio 6.955 MHz USB**

with music and fake commercials for California Hot Tubs. Gave the name and state of several listeners. (McClarren, MI)

**Radio Doomsday, 6955** at 1430 featuring a song with dirty lyrics. (*That doesn't narrow it down much! — Ed.*) They invited listeners to contact them and gave the Providence, Rhode Island address. (John Jenkins, WV)

**Free Hope Experience, 6955** at 1525 saying they do not approve of radio pirates! Announced the Blue Ridge Summit address. (Jenkins, WV)

**KMUD, 6953** at 0146 to 0226 sign-off. Had audio problems. (*Surely not muddy audio! — Ed.*) Mentioned "The mighty sounds of K-Mud." Also 0212 to 0235 on **6954** with U2, Morse code IDs that ran for about a minute between songs. Audio was better than the previous occasion. Another date at 0130 to 0305 announcing as KMUD — Black Rock Radio. "From the high desert" and wonderful repetitive reading at the end over "Bolero" and other repetitive music. Also at 0022 to 0114 sign-off with dedication to "our friend Ricky" and mention of "the terror of the northern high desert, from the Kingdom of the Inyo (County)." Then some Hendrix and off in the middle of "Symphony of the Devil." Another time at 0136 sign-on in the middle of "Symphony of the Devil" with mentions of "high-fidelity amplitude modulation, not squeaky, squawky sideband." Also barking seal and engine sound effects repeated around the IDs. Music included an Irish Jig, "Wolly Bully," Marvin Gaye's "United We Stand," and the Doors "Horse With No Name." Still another

time at 0119 to 0201 close but no mentions of Black Rock heard. Code IDs "on shortwave and FM" and "KMUD, the muddy sounds of K-Mud and KPOP-FM." Also "Shortwave and FM stereo for the sophisticated dial spinner." U2 and reggae. Some technical problems. Announcer was interrupted at sign-off with a few seconds of code and off in the middle of that. And once more, presumed, at 0005 to 0134 close. Mostly instrumental electronic dance music. Off in mid-song. Sent me a QSL via P.O. Box 928, Lone Pine, CA 93545. (Ruger)

**Desert Vibrations Radio, 9655 USB** at 0338 to 0358 with music and mention of the Providence mail drop. Another day at 0133 to 0150 with slogan "The Voice of the Desert," hip-hop, and the song from an old Slinky toy commercial. (Ruger)

**Indira Calling (or Partial India Radio? — Ed.), 6955 USB** at 2348 to past 0008. (Silvi, OH)

**WWRX** — or what may have been them on **6955 USB** at 2341. (Silvi, OH)

OK. That will do it for this time. There seems to be a little slowdown in pirate activity lately, possibly thanks to the FCC raids a while back. Still, there's plenty of activity going on, so keep those receivers tuned to 6955 and let me know what you hear. I'm still in short supply of pirate QSLs and similar material for use as illustrations. I'd appreciate it if you could send me any copies of recent QSLs you may have. As usual, thanks for all your support for this column. Even if you're just a regular reader, you are appreciated!

See you again next month! ■

# Tap into secret Shortwave Signals

Turn mysterious signals into exciting text messages with this new MFJ MultiReader™



MFJ-462B **Plug this self-contained MFJ MultiReader™ into your shortwave receiver's earphone jack.**  
**\$179<sup>95</sup>**

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

You'll read interesting commercial, military, diplomatic, weather, aeronautical, maritime and amateur traffic... traffic your friends can't read -- unless they have a decoder.

## Eavesdrop on the World

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

## Super Active Antenna

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

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

Receives strong, clear signals from all over the world. 20dB attenuator, gain control, ON LED. Switch two receivers and aux. or active antenna.

6x3x5 in. remote has 44 inch whip, 50 ft. coax. 3x2x4 in. 12 VDC or 110 VAC with MFJ-1024 MFJ-1312, \$12.95.

## Indoor Active Antenna

MFJ-1020B **\$79<sup>95</sup>**

## Rival

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

Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as preselector with external antenna. Covers 0.3-30 MHz. Has Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, \$12.95.

## Compact Active Antenna

MFJ-1022 **\$39<sup>95</sup>**

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

Also improves scanner radio reception on VHF high and low bands.

Detachable 20 in. telescoping antenna. 9 volt battery or 110 VAC with MFJ-1312B, \$12.95. 3 1/4x1 1/4x4 in.

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

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

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime -- from all over the world -- Australia, Russia, Hong Kong, Japan, Egypt, Norway, Israel, Africa.

## Printer Monitors 24 Hours a Day

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

Printer cable, MFJ-5412, \$9.95.

## MFJ MessageSaver™

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

## High Performance Modem

MFJ's high performance *phaseslock loop* modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference -- greatly

## Eliminate power line noise!



MFJ-1026 **\$169<sup>95</sup>**

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

## MFJ Antenna Matcher

MFJ-959B **\$99<sup>95</sup>**

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

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Pushbuttons let you select 2 antennas and 2 receivers. Cover 1.6-30 MHz. 9x2x6 inches. Use 9-18 VDC or 110 VAC with MFJ-1312, \$12.95.

## Dual Tunable Audio Filter

MFJ-752C **\$99<sup>95</sup>**

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

## High-Gain Preselector

MFJ-1045C **\$69<sup>95</sup>**

High-gain, high-Q receiver preselector covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Pushbuttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18VDC or 110 VAC with MFJ-1312, \$12.95.

## Receive CW, RTTY, ASCII, Weather Maps, News Photos

MFJ-1214PC **\$149<sup>95</sup>**

Use your computer and radio to receive and display *brilliant full color* FAX news photos and incredible WeFAX weather maps. Also RTTY, ASCII and Morse code.

Animate weather maps. Display 10 global pictures simultaneously. Zoom any part of picture or map. Frequency manager lists over 900 FAX stations. Automatic picture saver.

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

## High-Q Passive Preselector

MFJ-956 **\$39<sup>95</sup>**

The MFJ-956 is a *high-Q* passive LC preselector that lets you boost your favorite stations while rejecting images, intermod and other phantom signals. Covers 1.5-30 MHz. Has preselector bypass and receiver grounded pos. 2x3x4 inches.

## Super Passive Preselector

MFJ-1046 **\$99<sup>95</sup>**

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

## Easy-Up Antennas Book

How to build and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before. Antennas from 100 KHz to 1000 MHz. MFJ-38 **\$16<sup>95</sup>**

improves copy on CW and other modes.

## Easy to use, tune and read

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

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

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

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

Use 12 VDC or use 110 VAC with MFJ-1312B AC adapter, \$12.95. 5 1/4x2 1/2x5 1/4 inches.

## No Matter What Warranty

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

## Try it for 30 Days

Order an MFJ-462B MultiReader™ from MFJ and try it in your own setup -- compare it to any other product on the market regardless of price.

Then if you're not completely satisfied, simply return it within 30 days for a prompt and courteous refund (less shipping).

Order today and try it -- you'll be glad you did.

## MFJ 12/24 Hour LCD Clocks

MFJ-107B **\$9<sup>95</sup>**

MFJ-108B **\$19<sup>95</sup>**

MFJ-108B, dual clock displays 24 UTC and 12 hour local time *simultaneously*. MFJ-107B, single clock shows you 24 hour UTC time. *3 star rated by Passport to World Band Radio!*

MFJ-105C, accurate 24 hour UTC quartz wall clock with large 10 inch face.

## MFJ Antenna Switches

MFJ-1704 **\$59<sup>95</sup>**

MFJ-1702C **\$21<sup>95</sup>**

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

## World Band Radio Kit

MFJ-8100K **\$59<sup>95</sup> kit**

MFJ-8100W **\$79<sup>95</sup> wired**

Build this *regenerative* shortwave receiver *kit* and listen to shortwave signals from all over the world with just a 10 foot wire antenna.

Has RF stage, vernier reduction drive, smooth regeneration, five bands.

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# Pop'Comm's World Band Tuning Tips

July 1999

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

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

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0000	11705	Radio Japan		0230	9945	Radio Denmark via Norway	DD
0000	11935	Radio Jordan	AA	0230	15485	Radio Pakistan	
0000	7365	Radio Marti, USA	SS	0230	4985	Radio Brazil Central, Brazil	PP
0000	7375	Radio Bulgaria		0245	7305	Vatican Radio	FF
0000	5960	Radio Canada Int'l		0245	15555	FEBA, Seychelles	unid lang.
0030	7495	Reshet Bet, Israel		0250	6165	ZNBC, Zambia	
0030	4815	Radiofusora Londrina, Brazil	PP	0300	21660	BBC via Thailand	
0030	11745	Voz Cristiana, Chile	SS	0300	4830	Radio Tachira, Venezuela	SS
0030	6120	Radio Vilnius, Lithuania via Germany		0300	17700	China Radio Int'l	CC
0030	13695	Radio Thailand		0300	5025	Radio Rebelde, Cuba	SS
0030	11900	WWBS, Georgia		0300	7250	Voice of Russia	
0050	11800	RAI, Italy		0300	5975	BBC World Service via Antigua	
0100	6010	Radio Ukraine Int'l		0300	5900	Radio Minurca, Cent. Af. Rep.	
0100	7300	Radio Slovakia Int'l		0300	9765	Channel Africa, South Africa	EE/Swahili
0100	4850	Radio Luz y Vida, Ecuador	SS	0300	15310	BBC via Oman	
0100	9560	Radio Budapest, Hungary		0300	9475	Radio Cairo, Egypt	
0100	5012	Radio Cristal, Dominican Republic	SS	0300	7285	Sudwestfunk, Germany	GG
0100	7300	Voice of Turkey	TT	0300	4820	Radio Botswana	
0100	17510	KWHR, Hawaii		0300	5012	ZBC, Radio 4, Zimbabwe	
0100	17685	Radio Japan		0300	7345	Radio Prague, Czech Rep.	
0130	17815	Radio Cultura, Brazil	PP	0300	4980	Ecos del Torbes, Venezuela	SS
0130	6725	Radio Satelite, Peru	SS	0330	3330	Ondas del Hualaga, Peru	SS
0130	3280	La Voz del Napo, Ecuador	SS	0330	12689	USBAFRTS, Florida	
0130	4755	Radio Educacao Rural, Brazil	PP	0330	6458	USBAFRTS, Puerto Rico	
0130	17675	Radio New Zealand		0330	9820	Radio Havana Cuba	
0200	9885	Swiss Radio Int'l	SS/FF	0330	6035	Voice of America via Botswana	
0200	7475	Voice of Greece	Greek/EE	0400	7125	Voice of Russia	
0200	9735	Radio Nacional, Paraguay	SS	0400	6940	Radio Fana, Ethiopia	unid lang.
0200	6000	Radio Havana Cuba		0400	9705	Radio Mexico Int'l	SS
0200	4920	Radio Quito, Ecuador	SS	0400	6165	Radio Netherlands via Bonaire	
0200	9680	Radio Taiwan Int'l via WYFR		0400	9420	Voice of Greece	Greek
0200	15400	UAE Radio, Dubai		0400	4775	Trans World Radio, Swaziland	various
0200	9570	Radio Romania Int'l		0400	11204	Radio Mogadishu, Somalia	various
0200	9650	Voice of Islamic Rep. of Iran	SS	0500	5047	Radio Lome, Togo	FF
0200	15425	Voice of Russia	RR	0500	6025	Radio Nigeria, Enugu	
0200	9440	Radio Slovakia Int'l		0500	4800	Radio Lesotho	
0200	9835	Radio Budapest, Hungary		0500	7255	Voice of Nigeria	
0230	7250	Voice of Vietnam via Russia		0500	15285	Channel Africa, South Africa	
0230	3270	Namibia Broadcasting Corp.		0500	5004	Radio Nacional, Eq. Guinea	SS
0230	9455	Radio Sweden		0500	4770	Radio Nigeria	
0230	4955	Radio Nacional, Colombia	SS	0500	15325	Radio Gazeta, Brazil	PP



UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0500	6055	Radio Exterior de Espana		1300	9615	KNLS, Alaska	
0600	5077	Caracol Colombia	SS	1300	9355	Monitor Radio, No. Marianas	
0600	11955	Radio Nacional, Angola	PP	1300	21605	UAE Radio, Dubai, UAE	AA
0600	6185	Radio Educacion, Mexico	SS	1300	11657	China Radio Int'l	
0600	5100	Radio Liberia Int'l		1330	17815	Voice of Turkey	
0600	3366	GBC, Ghana		1330	17660	YLE/Radio Finland	
0600	4915	GBC, Ghana		1400	9600	Radio UNAM, Mexico	SS
0600	4870	ORTB, Benin	FF	1400	15500	Vatican Radio	
0600	5850	Sunrise Radio, United Kingdom via Germany		1400	12010	Swiss Radio Int'l	
0630	6070	CFRX, Canada relay CFRB		1400	7170	Radio Singapore	
0630	4845	Radio Mauritania	AA	1400	11530	Voice of Hope, Lebanon	
0630	6015	Radio Austria Int'l via Canada		1400	5995	Radio Australia	
0700	9700	Radio New Zealand		1400	6195	BBC via Singapore	
0700	7124	RTV Guinienne, Guinea	FF	1400	11810	Radio Romania Int'l	various unid lang.
0700	5055	RFO, Cayenne, Fr. Guiana	FF	1430	9430	Trans World Radio, Guam	unid lang.
0700	3000	TGNA/Radio Cultural, Guatemala	SS	1430	9165	Radio Dada Gorgud, Azerbaijan	
0705	7305	Croatian Radio		1430	21810	Radio Sweden	
0800	11805	Radio Globo, Brazil	PP	1430	11620	All India Radio	
0800	17740	RDP Int'l, Portugal	PP	1430	9465	KFBS, Saipan, No. Marianas	RR
0830	4960	Radio Vanuatu	FF	1430	9405	FEBC, Philippines	Tagalog
0830	0640	HCJB, Ecuador		1445	9505	Radio Japan	
0830	9925	Radio Vlaanderen Int'l, Belgium		1500	9580	Radio Australia	
0830	9870	Trans World Radio, Monaco		1500	15084	Voice of Islamic Rep. of Iran	TT
0900	4940	Radio Amazonas, Venezuela	SS	1500	17630	Merlin Network One, England	
0900	5950	Voice of Guyana		1500	9660	Radio Veritas Asia, Philippines	EE, others
0900	11770	Voice of the Mediterranean via Italy		1530	11800	Radio Malaysia	
0930	4800	XERTA, Mexico	SS	1530	17680	Voz Cristiana, Chile	SS
0930	6115	Radio Union, Peru	SS	1600	11615	Radio France Int'l	
0930	6025	Radio Illimani, Bolivia	SS	1600	11715	Radio Algiers, Algeria	
0930	7230	Adventist World Radio, Italy		1600	17505	Radio Bulgaria	BB
0930	5035	Radio Educacao Rural, Brazil	PP	1600	13660	UAE Radio, Dubai, UAE	
1000	7120	Italian Radio Relay Service		1700	17860	Channel Africa, S. Africa	
1000	6010	Radio Mil, Mexico	SS	1700	9200	Radio Omdurman, Sudan	AA
1000	5760	Radio Sorochuco, Peru	SS	1700	18950	Radio Norway Int'l	NN
1000	5678	Radio Illucan, Peru	SS	1800	15475	Africa No. One, Gabon	FF
1000	3395	Radio East Highlands, Papua/NG	Pidgin	1800	13780	All India Radio	
1000	9710	Radio Australia	EE/Pidgin	1800	9500	Trans World Radio, Swaziland	
1000	5025	Adventist World Radio, Costa Rica	SS	1800	9990v	Radio Cairo, Egypt	AA, others
1030	4450	Radio Frontera, Bolivia	SS	1830	21590	Radio Netherlands via Bonaire	
1030	4975	Radio del Pacifico, Peru	SS	1830	11990	Radio Kuwait	
1100	7280	Voice of the Strait, China	CC	1830	11745	FEBC, Seychelles	unid lang.
1100	3324	Radio Maya de Barillas, Guatemala	vern.	1900	15120	Voice of Nigeria	
1100	4781	Radio Oriental, Ecuador	SS	1900	11810	Deutsche Welle via Antigua	
1100	4820	La Voz Evangelica, Honduras	SS	1900	13685	China Radio Int'l	
1100	4835	Radio Tezulutlan, Guatemala	Quechua	1930	15115	HCJB, Ecuador	
1100	3245	Radio Gulf, Papua New Guinea	Pidgin	1930	9510	Trans World Radio, South Africa	unid lang.
1100	4845	Radio K'ekchi, Guatemala	vern.	2000	15150	Voice of Indonesia	
1130	9850	Radio Pyongyang, N. Korea		2100	9555	BSKSA, Saudi Arabia	AA
1130	4890	NBC, Papua New Guinea	Pidgin	2130	15345	RTV Marocaine, Morocco	AA
1130	15640	Kol Israel		2130	15555	RDP Int'l, Portugal	PP
1130	4754	RRI Ujung Pandang, Indonesia	II	2130	15315	Radio Netherlands via Bonaire	DD,
1200	15700	Radio Bulgaria		2130	15415	Radio Jamahiriya, Libya	AA
1200	17825	Kazakh Radio		2130	9965	Voice of Armenia	
1200	21510	Radio Ukraine Int'l		2130	15485	Voice of Greece	Greek
1200	9900	Deutsche Welle, Germany	GG	2200	13690	Radio Canada Int'l	
1200	9760	Voice of America, Philippines		2200	9855	Radio Kuwait	AA
1200	15445	Radio Nacional, Brazil		2215	9760	Cyprus BC Corp.	Greek/ weekends
1215	11940	National Voice of Cambodia		2230	13670	Radio Vlaanderen Int'l, Belgium via Bonaire	
1230	15590	VOIRI, Iran	various	2300	21740	Radio Australia	
1230	12085	Voice of Mongolia		2300	11765	Radio Universo, Brazil	PP
1230	3925	Radio Tampa, Japan	JJ	2300	7520	Radio Moldova Int'l	
1230	7265	Radio Korea Int'l, S. Korea	KK				
1230	9810	Radio Thailand					
1300	15775	INBS, Iceland	Icelandic				

# Product Parade

BY HAROLD ORT  
AND R.L. SLATTERY

REVIEW OF NEW, INTERESTING AND USEFUL PRODUCTS

## New MFJ 10 Meter SSB Transceiver

The MFJ-9410X is a new 20 watt PEP USB transceiver especially designed for fixed or portable radio communications in the 10-meter amateur band. Energy-efficient analog circuitry and syllabic speech processing deliver superior on-air performance while conserving valuable power.

The 9410X uses a single-conversion mixing format and a low-noise heterodyne VFO for enhanced weak-signal performance. The transmitter features a built-in seven element lowpass filter to reduce interference at TV and FM broadcast entertainment frequencies. Other features include a sharp HF communication grade crystal, IF bandpass filter, built-in heavy duty speaker, fully analog mechanical S-meter, optional semi-break-in CW module, and intuitive easy-to-operate controls. There's no microprocessor mumbo-jumbo, just turn on and tune in!

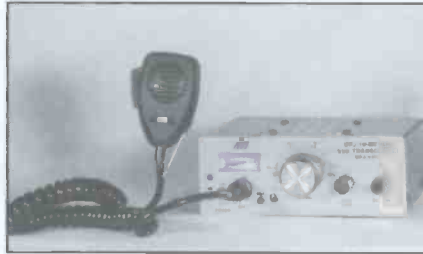
MFJ's news release says "Potent signals come from 20 watts PEP, plus ConstantCurrent™ syllabic speech processing adds 4 to 6dB advantage to cut through noise, fading, and QRM. Low drain lets you operate from a 3 amp AC power supply of 12-volt battery."

The receiver uses a low-noise preamp and active DBM front end to capture weak signals. Selectivity comes from a sharp 2.3 kHz SSB ladder filter. The reduction drive analog VFO lets you scan the band quickly, then zero in smoothly.

The 3 1/2-inch speaker is top-mounted, and a 1/4-inch phone jack accepts standard stereo headphones, cutting off the speaker automatically. Attenuated output protects phones and ears, and making gain adjustment easy. A solid state FET switch keys external amplifiers.

The sturdy rig has a conservative design and is premium-quality plate through PC board, quality components, brushed aluminum panel, and tough vinyl-clad case designed for years of service. A dynamic SSB microphone is included.

To order the new MFJ-9410X for \$259.95, or for your nearest MFJ dealer, call 800-647-1800 or FAX 601-323-6551. MFJ can also be E-mailed at <mfj@mfj



The new MFJ 10 meter SSB transceiver.

enterprises.com>. Visit their Website at <<http://www.mfjenterprises.com>>.

## 12-Volt Home Power: Cheap & PowerSafe

The PowerPort PowerSafe by Cutting Edge Enterprises, has everything you need for a 75 to 200 amp uninterrupted power supply — except for that old car battery sitting in your garage. The company offers three DC models designed for light, medium, or heavy use. All models come with a heavy duty, vented battery enclosure suitable for use in the home, triple-port automotive cigarette outlets

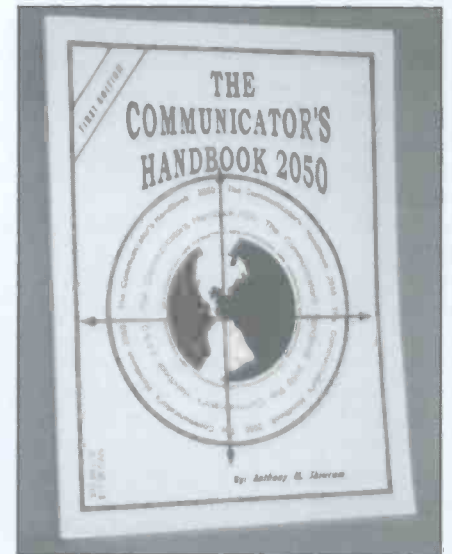


Cutting Edge Enterprise's new PowerPort PowerSafe ranges in price from \$66 to \$168; the Deluxe AC/DC model is \$230.

for DC use, and fully automatic chargers. The Deluxe model also provides 500 watts peak AC power (300 watts continuous). Its dimensions are 1.8" x 9.5" x 10.5", making it big enough to fit a 125 amp hour battery, but small enough to fit under a desk or transport easily in a car.

This clean, portable unit, says Cutting Edge Enterprises will keep "... your station fully powered with ample capacity." DC models range in price from \$66 to \$168. The Deluxe AC/DC model is \$230. For extended operations in the field, Cutting Edge has a full line of accessories including solar cells, lights, and DC extension cords.

For more information, contact Roger Hall at Cutting Edge Enterprises at 1803 Mission St., Suite 546, Santa Cruz, CA 95060 or phone 800-206-0115 or E-mail the company at <[CEE@cruzio.com](mailto:CEE@cruzio.com)>. Tell them you read about it in *Pop'Comm!*



Anthony M. Shiwram's *The Communicator's Handbook 2050* is a comprehensive guide of everything you need to find in a hurry. No longer will you be fumbling through files and piles to find what you want.

## Lots Of Data

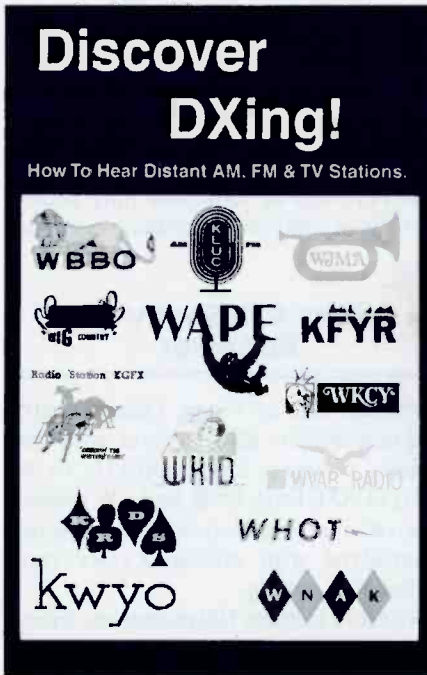
You know how frustrating it is when you want to lay your hands on just that one certain important piece of information, but you just don't know where to look? Or perhaps you know where, but can't conve-

niently locate what you want. That little problem is readily solved in *The Communicator's Handbook 2050*, by Anthony M. Shiwram. Anthony has assembled an amazing amount of useful information and packed it all in one convenient spot, his handbook. Some of what you'll find there includes lists of radio clubs, dealers in new and used communications gear, selected U.S./Canadian AM/FM stations, easy-to-monitor shortwave stations, computer manufacturers, linear amp sources, manufacturers (of radio, audio, and video equipment), catalogs (for books, antennas, and parts), military surplus sources, and more. Addresses and phone numbers are provided.

We found this to be a useful source of information, making for quick access to needed info without having to dig through a lot of papers. Anthony advises that his book is available from CRB Research Books, Inc., in Commack, NY and Universal Radio in Reynoldsburg, OH.

## Intro To SWL'ing

Often, in our enthusiasm to tell newbies about our favorite hobbies, we end up overloading their circuits and scaring



*John Zondlo's Discover DXing book is chock full of easy-to-understand information on tuning distant AM, FM, and TV stations.*

they undoubtedly regard as both unfamiliar and intimidating.

John Zondlo's book, *Discover DXing, 2nd Edition*, is a completely non-tech introduction to the basics of getting started in and enjoying monitoring distant AM, FM, TV, and shortwave stations. He explains things like selecting equipment, propagation, keeping logs, QSL cards, simple antennas, and more. There's plenty of frequency information provided on easy-to-tune DX stations in each of the various categories. Many photos and illustrations are included.

There's definitely enough here to stimulate interest and be of genuine use, and the author has done it while managing to be neither inane nor confounding. It's written in a pleasant, conversational style. You should be able to give this to any non-tech person and use it to solidify any possible potential they have for being a DXer. Remember, DXing is a great hobby for retired folks and youngsters, so think about its possibilities as a practical gift.

*Discover DXing* is \$5.95 from Universal Radio Research, 6830 Americana Parkway, Reynoldsburg, OH 43068-4113. Phone Universal at 800-431-3939.

them away. To be sure, there's much to recommend when it comes to introducing newcomers very gently to technologies

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- By Signal Strength plotted in individual dots.
- By Number of hits per frequency in a "histograph".
- IF THAT ISN'T ENOUGH, try this... Multicolored, 3-D "Spatial Landscape" (Depicted at left).

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- LINK up to 100 Disk files or ranges.
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- INCLUDES several large shortwave and VHF/UHF databases

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- DIRECT scanning of most DBASE, FOXPRO, ACCESS, BTRIEVE files WITHOUT "importing".
- UNIQUE database management system with moveable columns. Even SPLIT columns into doubles or triples for easy viewing of ALL important data on one screen.
- Exclusive SLIDE RULE tuner. Click or "skate" your mouse over your Slide-Tuner to change frequencies effortlessly! OR use our graphical tuning knob.

FREE DEMOS ON THE WEB

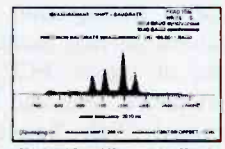
\*\$5 U.S. \$7.50 FOREIGN

### HOKA CODE-3 USA Version

"The Standard Against Which All Future Decoders Will Be Compared"

Many radio amateurs and SWLs are puzzled! Just what are all those strange signals you can hear but not identify on the Short Wave Bands? A few of them such as CW, RTTY, Packet and Amtor you'll know - but what about the many other signals?

There are some well known CW/RTTY Decoders but then there is CODE-3. It's up to you to make the choice, but it will be easy once you see CODE-3. CODE 3 has an exclusive auto-classification module that tells YOU what you're listening to AND automatically sets you up to start decoding. No other decoder can do this on ALL the modes listed below - and most more expensive decoders have no means of identifying ANY received signals! Why spend more money for other decoders with FEWER features? CODE-3 works on any IBM compatible computer with MS-DOS with at least 640kb of RAM, and a CGA monitor. CODE-3 includes software, a complete audio to digital FSX converter with built-in 115V ac power supply, and a RS 232 cable, ready to use.



CODE-3 is the most sophisticated decoder available for ANY amount of money.

26 Modes included in STANDARD package include:

- |   |                               |  |                              |
|---|-------------------------------|--|------------------------------|
| • Morse *   | • SI-ARQ ARQ-S                | • FEC A  | REG. PRICE                   |
| • RTTY/Baudot/Murray *  | • SWED-ARQ                    | • FEC 103A/FEC101                              |                              |
| • SITOR CGIR 625/476-4  | • ARQ-SWE                     | • FEC S • FEC1000                              | Ploccolo ..... \$35.00       |
| • ARQ Navtex *  | • ARQ-E ARQ1000               | • Simplex                                      | Coquelet ..... \$85.00       |
| • AX25 Packet *   | • ARQ N-ARQ1000               | • Sports info 300 baud                         | 4 special ARQ & FEC systems: |
| • Facsimile all RPM (up to 16 gray shades at 1024 x 768 pixels) * | • Duplex Variant              | • ASCII  | TOHG 10/11                   |
| • POL-ARQ 100 Baud  | • ARQ E3-CGIR519 Variant      | • Hellscriber-Synch/Asynch *                   | ROJ-FEC RUM-FEC              |
| • DUP-ARQ Attract   | • POL-ARQ 100 Baud Duplex ARQ | • Sitor • RAW (Normal Sitor but without Synch) | HC ARO (CRC) and             |
| • Twinplex  | • TDM242 ARQ                  | • AROG-70                                      | HNG-FEC \$115.00             |
| • ASCII *   | • M24-242                     | • Baudot F788N                                 | SYNOPSIS decoder \$85.00     |
| • AROG-90/98  | • TDM342/ARQ-M24              | • Pactor *                                     |                              |
|   |                               | • WEFAX *                                      |                              |

All modes in typical baud rates with possibility of changing to any desired value of speed and shift. User can save incoming data to disk in either ASCII or raw bit form.

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with ALL EXTRA OPTIONS \$795.00 + S & H

#### ALSO AVAILABLE CODE-30 COMM & CODE-300 GOVT. DSP-BASED Decoders \$2 CALL \$2

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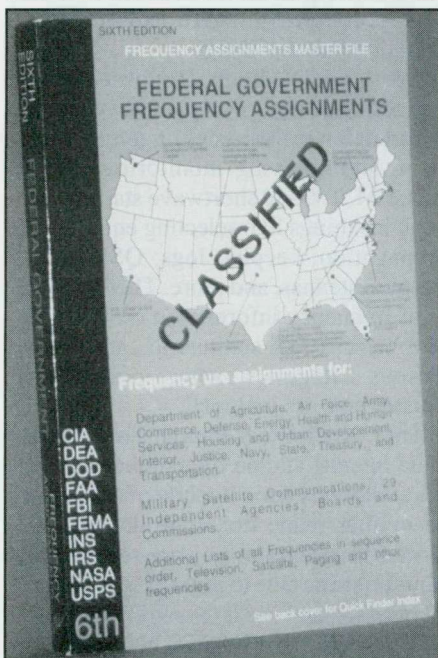
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The new 6<sup>th</sup> Edition of Federal Government Frequency Assignments covers military and government assignments from A to Z. This \$ 24.95 308-page book is a must for every radio monitor!

## Federal Frequency Festival

*Federal Government Frequency Assignments, 6<sup>th</sup> Edition*, is a humongous 308-page insider's guide. It's where you'll find the HF/VHF/UHF frequency assignments for all U.S. military services (Including UHF aero), the FBI, DEA, Treasury, Department of State, Secret Service, IRS, CIA, ATF, FAA, NSA, FEMA, Immigration, U.S. Marshals, Customs Service, Border Patrol, Department of Labor, FCC, Department of Agriculture, Fish and Wildlife Service, National Park Service, EPA, Postal inspectors, and so much more.

There are special WHCA callsigns, military aircraft IDs, and satellite frequencies. The book is arranged by agency, then cross-indexed according to frequency. Plus, there's a giant list of all assignable federal frequencies between 29-420 MHz, including four groups used for trunked comms. Plenty of other information is also provided, such as cable TV channel frequencies, standard CTCSS tone frequencies, code names, and more.

In all, it's a handy, comprehensive, updated guide for monitoring Uncle Sam on the airwaves. For sure, our old Unk is the biggest and most advanced eavesdropper in the whole wide world. We figure if they're listening to you, why not listen back?

This worthy directory is \$24.95 plus \$5 s/h (\$7 to Canada). Residents of New York State please include \$2.47 tax. You can order it from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. VISA/MC welcomed. Phone CRB at 516-543-9169 or visit their fully secure Website at <<http://www.crbbooks.com>>.

## Palstar R30 Shortwave Receiver

Palstar, Inc. of Piqua, Ohio recently introduced their R30 receiver with frequency coverage from 100 kHz to 30 MHz in AM, LSB, USB, and CW modes. The receiver is a dual conversion super heterodyne with microprocessor controlled PLL tuning.

The R30 features 100 memories, selected via the front panel tuning knob or up/down buttons. The radio includes two user-selectable IF filters in all modes — either 2.5 or 7 kHz. The ceramic filter is standard; Palstar offers an optional Collins mechanical filter at 455 kHz. Also included is a four-pole crystal at 45 MHz.

The frequency display is a six-digit backlit LCD. There are additional indicators showing ATT, AGC, LSB, USB, and BW. The analog S-meter is calibrated S1 to S9, +20dB, +40dB, and +60dB.

A standard 1/4 inch headphone jack is located near the volume control. Audio specifications are 3 watts into 8Ω. Other published specs are sensitivity 100 kHz to 2 MHz, AM 4μv; SSB 2μv. From 2 MHz to 30 MHz AM 3μv, SSB 1μv.

The new Palstar R30 receiver's suggested list price is \$495.95 (with Collins filter R30C, \$595.95). For more information, contact Palstar, Inc., 9676 N. Looney Road, P.O. Box 1136, Piqua, OH 45356 or visit their Website at <[Palstarinc.com](http://Palstarinc.com)>.

## Scancat-Gold For Windows Now Supports AR-16

Computer Aided Technologies now supports the AOR AR-16 "Shirt Pocket" handheld. This tiny radio, which is about the size of a deck of playing cards, has 500 memories and 25 search ranges that can be programmed through software in just a few minutes.

While this little radio is missing the numeric keypad, frequency entry with Scancat is a breeze. Fact is — it's the only "real" way to do it. Unless you have software, you cannot change or reprogram the 25 search bank ranges. With Scancat, it's as easy as clicking your mouse.

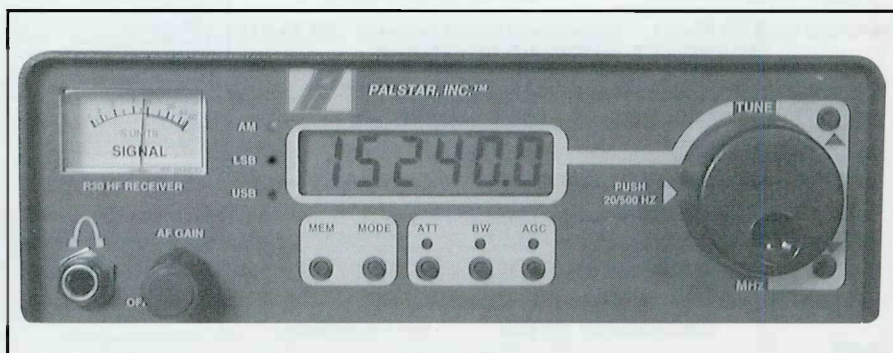
Scancat will help you to load the memory banks of the radio with all your favorite frequencies. Scancat can also read the radio's memory contents to files, permitting you to save your old setups and change your radio for trips.

One recent *Pop'Comm* reviewer stated "we support almost every radio on the planet." Well, almost. Scancat supports over 85 radios, from 10 manufacturers. The chances are very high that Computer Aided Technologies already supports all of your existing scanner and receiver equipment, and the best part is . . . all the equipment is supported in one program, so there's no need to purchase separate "drivers."

In addition, they can supply the serial interface/cable that is necessary to connect the AR-16 to a computer. Buy the software and interface/cable as a package, and save even more.

The Scancat-Gold for Windows "SE" is \$159.95; Scancat-Gold for Windows, \$99.95, and ScanCat's "CAT-232C," \$99.95 (plus s/h).

For more information, contact Computer Aided Technologies, P.O. Box 18285, Shreveport, LA 71139, Phone 318-687-4444, FAX 318-686-0449.



With coverage from 100 kHz to 30 MHz, the new Palstar R30 shortwave receiver is loaded with features.

BY GERRY L. DEXTER

# Clandestine Communiqué

TUNING IN TO ANTI-GOVERNMENT RADIO

## Frequencies And Schedule For The Seldom-Heard Voice Of Rebellious Iraq

At this writing, we are in the thick of the war in the Balkans, but just in case you were wondering, to our knowledge, there are no clandestine broadcasts being beamed to or from the area.

Colombian clandestine **La Voz de la Resistencia** has shown up on a new frequency (not counting the many fluctuations it's made in the area around its former 6240).

The station of the **Revolutionary Armed Forces of Colombia (FARC)** now uses **6183** (also variable) and is noted around 1130, signing off at 1200. There is also a transmission starting at 2130. This move to within the standard 49 meter shortwave broadcasting band may be an attempt to capture a wider audience, or it may be another case of transmitter wanderlust. We can only wait and see. Another potentially workable address to try for FARC is **Comision Internacional, Apartado Postal 27552, C.P. 06761, Mexico, D.F., Mexico.**

**The Voice of Rebellious Iraq** has been around since early this decade, but it's not often reported in North America, perhaps because of its frequency/schedule paring. It operates from 1300 to 1530 and may show up anywhere **between 6300 and 6600** or even higher. The Arabic-language programs carry the views of the Supreme Council of the Islamic Revolution in Iraq, a Shiite Moslem group.

The anti-Beijing **Voice of Tibet** program is now on the air from 1225 to 1255 on **7455 and 11580**, via the facilities of **Radio Norway**. These broadcasts are sponsored by the Voice of Tibet Foundation and can be QSL'd by writing **Wellhavensgat 1, 0166 Oslo, Norway.**

Another one aired via the facilities of **Radio Norway** is the **Democratic Voice of Burma**, which is usually heard well in North America and currently on the air from 1245 to 1345 on **5945, 13820, and 15330** and at 1430 to 1455 on **5945, 11850, and 15635**. The address is **P.O. Box 6720, Skt. Olavs Plass, N-0130 Oslo, Norway.**

**The Voice of Peace and Democracy of Eritrea** operates on **5500 and 6315** from 1430 to 1500. On Mondays,

Wednesdays, and Fridays, the broadcast is in the Tigrigna language; on Tuesdays, Thursdays, and Saturdays, it's in Kunamigna (and surely we can all tell the difference!).

**The Voice of Justice** broadcasts are an attempt to smooth the tensions between the Nagorno-Karabakh area and the former Soviet Republic of Azerbaijan, of which Nagorno-Karabakh is a part, although it calls itself the Republic of Mountainous Karabakh. Programs are broadcast in Russian and Azeri and are on the air for half an hour at 0600 on **9677.5 variable**. An address which may work is **Voice of Justice, Tigran Meds-Str. 23A, Stepanakert, Republic of Mountainous Karabakh.** They add "via Armenia" after the country name.

A new entry in the long (but seldom long-lasting) list of anti-Castro broadcasters is **Conversando Entre Cubanos**, sponsored by the **Asociacion de Ex-Presos Politicos Cubanos** and **carried over WRMI, Miami on 9955**. It's on the air in Spanish Saturdays at 0000 to 0030 and Sundays from 0130 to 0200. The address is **Ex-Club, 8500 SW 8th St., Miami, Florida 33144.**

**The Voice of the Communist Party of Iran**, operated by **KOMALA** — the Kurdish Organization of the Communist Party of Iran, broadcasts in Farsi from 1700 to 1800 on **variable 3880 and 4360**. **Radio Congo**, in Bunia, Congo, is in the hands of rebel forces and is also identifying at times as **Radio de la Liberte**. The station operates on **5066**, nominally with 1 kilowatt. We don't know if it is adhering to its normal schedule or not. If so, the best opportunity to hear them would be at its 0400 "morning" sign-on. Programming is in French and local African languages.

Once again, a reminder that we always appreciate your informational input. Your notes on your reception of clandestine broadcasters, address information, schedules, copies of QSLs or material from sponsoring groups, general news and information, or clues as to transmitter locations and the like are always welcome! Until next month, good hunting!

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Fit truck bed stake-holes on early and late model trucks. Compatible with shells, ton covers and bed liners.



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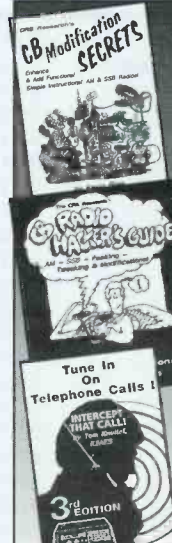
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CIRCLE 11 ON READER SERVICE CARD

# Broadcast DXing

BY BRUCE CONTI  
<BAConti@aol.com>

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

## The FCC Protects Amateurs From Broadcast Interference

**W**INV 1560 kHz, Inverness, Florida, was fined \$7,000 by the FCC for failure to correct a spur at 1909 kHz in the 160-meter amateur radio band. WINV was also cited for EAS deficiencies and for not having its public file available. According to a report in *The ARRL Letter*, ham radio operator Tom Rauch, W8JI, had noticed the spurious signal on 1909 kHz and contacted the station. After four unsuccessful attempts to get them to correct the problem, their switchboard operator said, "If we are bothering you way up in Georgia, why don't you just call the FCC and quit calling us?" Rauch did exactly that. It took the FCC just a week to visit

the station following his complaint. (The ARRL Letter, V18 #15, April 9, 1999)

### Microbroadcasting On Hold

The FCC has granted an extension of the period for comments on proposed low-power FM microbroadcasting until July 1, 1999. This was in response to petitions filed by Lucent Digital Radio, the NAB, and other broadcast organizations. Concerns have been raised about interference, and about ownership regulations. FCC Chairman Michael Powell was one of the keynote speakers at the National Association of Broadcasters (NAB) convention in Las Vegas, where the status of

microbroadcasting and digital radio were on the minds of many in attendance.

### Broadcast DX Convention Season

For most AM radio DXers, summer is off-season for DXing. Summer is also the traditional convention season. Many radio clubs and organizations officially convene to give DXers the opportunity to meet and share "fish" stories — the best catch of the year, the one that got away, etc. The International Radio Club of America (IRCA) and DecalcoMania have teamed up for a convention June 25–27 at the Holiday Inn-Boardwalk Hotel in

#### Applied For Permits To Construct New FM Stations

AR	Marked Tree	90.1 MHz
AZ	Grand Canyon Village	90.3 MHz
CA	Greenville	89.3 MHz
CO	Montrose	90.5 MHz
FL	Beverly Beach	91.1 MHz
FL	Favoretta	91.1 MHz
FL	Flagler Beach	91.1 MHz
FL	Palm Coast	91.1 MHz
IA	Adel	88.9 MHz
IA	Des Moines	90.7 MHz
IA	Ft. Dodge	88.9 MHz
IA	Marshalltown	91.5 MHz
IA	Newton	88.9 MHz
IA	Spirit Lake	88.9 MHz
IA	State Center	91.9 MHz
IA	Waverly	89.9 MHz
IA	Morris	90.7 MHz
IN	Hope	89.9 MHz
IN	Tipton	88.3 MHz
KS	Junction City	91.3 MHz
KY	Corbin	88.5 MHz
KY	Franklin	88.1 MHz
ME	Camden	90.5 MHz
MI	Cass City	88.5 MHz
MI	Elkton	88.5 MHz
MI	Marlette	89.7 MHz
MI	Jackson	89.3 MHz
MI	Sault Ste. Marie	102.3 MHz
MO	Lake Looatawana	91.9 MHz
MS	Lake	91.7 MHz
MT	Hamilton	90.3 MHz
NE	Alda	90.7 MHz
NV	Jackpot	91.3 MHz
OR	Astoria	90.5 MHz
OR	Baker	90.7 MHz

OR	Newport	88.9 MHz
SD	Spearfish	90.9 MHz
TN	Alcoa	89.1 MHz
TN	Spencer	90.1 MHz
WA	Kelso	91.1 MHz
WI	Janesville	91.9 MHz
WY	Jackson	89.1 MHz

#### Granted Permits To Construct New FM Stations

CO	Rocky Ford	95.5 MHz
OR	Florence	91.7 MHz

#### Reinstated

KAKJ	Ephraim, UT	89.5 MHz
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#### Cancelled

KKAN-FM	Phillipsburg, KS	95.3 MHz
KOHB	St. Paul, AK	540 kHz 2.5 kW

#### Seeking AM Facility Change

WLLH	Lowell, MA	1400 kHz	Seeks power change
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#### Changed AM Facilities

KAFY	Bakersfield, CA	970 kHz	Changed night power
KARI	Blaine, WA	550 kHz	Increased days to 2.5 kW
KTBK	Denison-Sherman, TX	1700 kHz	Changed city of license & power
WXVX	Monroeville, PA	1510 kHz	Changed power during critical hours

### Seeking FM Facility Changes

KAXF	Huntsville, TX	88.3 MHz	Seeks changed city of license
WQST-FM	Forest, MS	92.5 MHz	Seeks changed city of license

### Previously Approved Changes Now Cancelled

KLYF	Thousand Oaks, CA	850 kHz	Proposed increase to 25/1 kW
WSUR	Milledgeville, GA	88.9 MHz	Proposed change to 91.1 MHz

### Pending AM Call Letter Change

New	Old	
KCWJ	KOWW	Blue Spings, MO

### Changed AM Call Letters

New	Old	
KCMX	KTMT	Phoenix, OR
KDDZ	KADZ	Arvada, CO
KOME	KBCM	Fort Worth, TX
KRAK	KOME	Sacramento, CA
KSRB	KEZX	Seattle, WA
KTMT	KCMX	Ashland, OR
KVBL	KFSO	Visalia, CA
KXTN	KPOZ	San Antonio, TX
WAGG	WEZN	Birmingham, AL
WANG	WCPQ	Havelock, NC
WBUB	WPAL	Charleston, SC
WCHO	WBUB	Washington CH, OH
WGSY	WGMV	South Haven, MI
WEZN	WAGG	Birmingham, AL
WMVB	WREY	Millville, NJ
WMXG	WBAW	Barnwell, SC
WSAA	WSUN	St. Petersburg, FL
WTBL	WLVU	Dunedin, FL
WXNI	WERI	Westerly, RI

### New FM Call Letters Issues

KAIQ	Randolph, UT
KBHG	Alexandria, MN
KBIK	Thermopolis, WY
WBKN	Lamesa, TX
KBKZ	Raton, NM
KBLB	Saipan, MP
KBLC	Flagstaff, AZ

KKYT	Holyoke, CO
WAES	Lincolnshire, IL
WBIY	LaBelle, FL
WBJA	Albion, NY
WCKP	Woodstock, VT
WCUR	West Chester, PA
WJPH	Woodbine, NJ
WSPE	Lerose, KY

### Pending FM Call Letter Change

New	Old	
WYFU	WLWJ	Masontown, PA

### Changed FM Call Letters

New	Old	
KBBC-FM	KANG	Lake Havasu City, AZ
KDRS-FM	KLQZ	Paragould, AR
KHZZ	KQBR	Davis, CA
KMED	KNKI	Flower Mound, TX
KMQX	KTPW	Springtown, TX
KSSA	KBIE	Ingalls, KS
KTPW	KBJV	Sanger, TX
KTJM	KHYS	Port Arthur, TX
KWAW	KPXH	Saipan, MP
KWLP	KSIZ	Maumelle, AR
KXOA	KRAK	Roseville, CA
KZSL	KLFA	King City, CA
KZSR	KOLK	Onawa, IA
WAIR	WIAR	Honor, MI
WANG-FM	WANG	Havelock, NC
WANJ	WKJA	Belhaven, NC
WBDN-FM	WGUL-FM	Dade City, FL
WBTF	WAHY	Midway, KY
WBYC	WAIR	Atlanta, MI
WCDA	WJMM-FM	Versailles, KY
WCNF	WYKL	Benton Harbor, MI
WCOO	WNST	Moncks Corner, NC
WDWG	WYOK	Moss Point, MS
WEEG	WIXC	Essexville, MI
WGUL-FM	WXOF	Beverly Hills, FL
WHHY-FM	WJCC	Montgomery, AL
WJMM-FM	WBHN-FM	Harrodsburg, KY
WKIE	WCBR-FM	Arlington Hts., IL
WKIF	WBRO	Kankakee, IL
WLRD	WHHA	Willard, OH
WNCL	WIKN	Port Matilda, PA
WRIP	WAXK	Jewett, NY
WXOP	WBKX	Yankeetown, FL
WYOX	WDWG	Atmore, AL
WZSN	WMTY-FM	Greenwood, SC

Las Vegas, Nevada. The IRCA is devoted to mediumwave DXing, while DecalcoMania is dedicated to radio collectibles. Send an SASE to IRCA, P.O. Box 1831, Perris, CA 92572 for details.

The World TV-FM DX Association (WTFDA) convention will be held July 16-18 in New Jersey. The WTFDA is dedicated to the observation and study of long distance television and FM broadcast signals. Write to WTFDA at P.O. Box 501, Somersville, CT 06072 for details.

The National Radio Club (NRC) Convention will take place Labor Day weekend, September 3-6 at the Holiday Inn in Bridgeport, West Virginia.

Activities include radio station tours, cultural events, technical talks, a banquet, an auction of radio and broadcasting paraphernalia, and DXing. Visit the NRC Web site at <<http://www.nrcdxas.org>> for details. The NRC has been faithfully serving the mediumwave DX community since 1933.

For many, DXing is a solitary sport, spending the wee hours of the morning alone at the dials, and sharing the results of our labor through E-mails and DX publications. Many lasting friendships are created and renewed through these club-sponsored events. It's highly recommended that you make at least one radio

convention a part of your summer vacation plans.

If you can't make one of the conventions, then try a local club gathering. Check your community newspaper for listings of events, such as ham or antique radio swap and sell meets, or regular radio club meetings.

The Boston Area DXers (BADX) is one of many premier local clubs across the nation. BADX meets on the third Friday of every month at the Lexington Club on Routes 4 & 225 in Lexington, Massachusetts. Meetings begin at 7:30 p.m. and discussion covers a wide range of topics from DC to daylight. It's a great

way to meet others who enjoy the radio hobby and to rejuvenate your interest for the coming DX season.

## East And West Coast Ratings News

Although a reconfiguration of the Boston radio market benefited some stations in the ratings race, longtime leader WBZ Newsradio 1030 remains the one to beat. The Boston market was expanded to include Worcester, Massachusetts and western Hillsborough County, New Hampshire, making it the eighth largest in the nation. Urban contemporary WJMN Jamn' 94.5 leads FM in second place overall, followed by adult contemporary WMJX Magic 106.7 FM.

From Beantown to Balboa Park, Jacor continues to change the face of radio in San Diego. They hope to add some spice to business talk radio KSDO 1130 through the Internet. On-air personalities are now connected to listeners via E-mail at <KSDO.com>, jockeying between E-mail questions and traditional telephone talk. While it's quite possible that <KSDO.com> could be receiving questions from listeners around the world, the aim of the expanded service is toward those in the San Diego area that experience difficulty with AM reception. According to San Diego DXer, Doug Meyer, "We have an awful lot of AM stations here that really don't cover the whole town. It's much different from growing up in New York City with regional powerhouse stations." KSDO's sister station, KOGO 600, brings syndicated talk, such as Rush and Dr. Laura, to the net. News/talk competitor and San Diego Padres flagship KFMB 760 is also on the net. KSDO actually has one of the more powerful nighttime signals in San Diego with 10 kW, but beams most of that over the Pacific Ocean to protect KWKH Shreveport, Louisiana, also on 1130. KOGO and KFMB reduce their power to 5000 watts directional at night.

In the San Diego ratings race, country western KSON-FM 97.3 is number one. Meanwhile, the new Spanish-language stations KLNK "La Nueva" 106.5 and KLQV "K-Love" 102.9 have taken the lead from well-established Mexican stations XEHKY "Radio Mexicana" 99.3 and XELTN "Radio Latina" 104.5 FM. This is considered a significant milestone for stations "north of the border."

Here's an item of interest to aircheck collectors. Remember "136-KGB" in San

Diego, or "Boss Radio" KHJ-AM and "The Real Don Steele" on KTNQ-AM in Los Angeles? These vintage AM rockers from the '60s and '70s live on at California Aircheck, in addition to classics from CKLW, WABC, and WLS among others. The company provides audio and video airchecks of radio personalities. Visit their Website at <http://www.californiaaircheck.com>, or write to them at P.O. Box 4408, San Diego, CA 92164 for more information.

## QSL Information

Who says stations don't verify anymore? Welcome to Ed Lindley of Biddeford, Maine, who has apparently been hard at work verifying receptions. Ed uses a GE Superadio III and broadcast band loop built from plans recently published in *Popular Communications*. Once in awhile, he also uses a Sangean 818 or Hallicrafters S120 and S120A receivers. Between Ed's report and those from regular QSL contributor Patrick Martin in Oregon, it seems that the art of QSLing broadcast stations is alive and well. Rather than complain about the summer thunderstorm static, now might be a good time to fill any holes in your QSL collection. Why not write some reports to your clear channel regulars? Then report your QSL successes here!

**730 WJTO Bath, Maine**, QSL card, letter, and stickers in nine days for a reception report. Signed Bob Bittner, Owner. Address: Box 308, Bath, ME 04530. (Lindley, ME)

**770 WABC New York, New York**, QSL card, letter, and stickers in seven days for a report, signed Bill Krause. Address: 2 Penn Plaza, New York, NY 10121. (Lindley, ME)

**810 WGY Schenectady, New York**, letter, stickers, and QSL card in 14 days for a report and mint stamps, signed Bob Blanchard, Chief Engineer. Address: 1 Washington Square, Albany, NY 12205. (Lindley, ME)

**840 WHAS Louisville, Kentucky**, QSL card in 17 days for a reception report and postcard of Maine, signed Charles Strickland. Address: 520 W. Chestnut, Louisville, KY 40202. (Lindley, ME)

**880 WCBS New York, New York**, QSL card in 15 days for a report and postcard of Maine. Address: 51 W. 52nd, New York, NY 10010. (Lindley, ME)

**1010 CFRB Toronto, Ontario**, QSL card and letter received in 34 days for a report, signed Steve Canney. Address: 2

St. Clair Ave., Toronto, ON M4V 1L6. (Lindley, ME)

**1080 WTIC Hartford, Connecticut**, large wall certificate in 58 days for a report, signed Garnet Drakiotis, Chief Engineer. Address: 1 Financial Place, Hartford, CT 06103. (Lindley, ME)

**1080 KNDK Langdon, North Dakota**, letter and sales flyer in 102 days for report and stamp, signed Jen Taylor, Program Director. Address: Route 5, Box 9, Langdon, ND 58249. (Conti, NH)

**1090 WBAL Baltimore, Maryland**, letter and stickers in 61 days for a report, signed Mary Ellen Pann. Address: 3800 Hooper Ave., Baltimore, MD 21211. (Lindley, ME)

**1420 KSTN Stockton, California**, full detailed letter along with the transmitter tube used during the January 1, 1999 DX test, the winner of the annual New Year's DX contest. The filament used 6.3 volts at 72 amps! What a neat gift, received in 63 days (on my 50<sup>th</sup> birthday!) for a taped report. Address: 2141 Ralph Avenue, Stockton, CA 95206. (Martin, OR) Congratulations!

**1500 WTOP Washington, DC**, QSL card in 10 days for a report and postcard, signed Dan White. Address: 3400 Idaho Ave. NE, Washington, D.C. 20016. (Lindley, ME)

**1650 KCNZ Cedar Falls, Iowa**, E-mail QSL form letter after follow-up in one-half hour, signed by Greg Alan-PD. E-mail address: <kcncz@cedarnet.org> or <galan@cedarnet.org>. (Martin, OR)

**1670 WRNC Warner Robins, Georgia**, form letter in 16 days for taped report, signed Richard W. Hamilton, TX Eng. and James K. Gay II, Studio Eng. Address: 7080 Industrial Hwy, Macon, GA 31216. (Martin, OR)

**1690 KDDZ Arvada, Colorado**, letter, "AM 1690 and AM 1550" refrigerator magnet and sticker in 20 days for report and stamp, signed Shannon Blakely, Administrative Assistant. Address: 730 West Hampden Avenue, Suite 300, Englewood, CO 80110. (Conti, NH)

**1700 WRNU Miami Springs, Florida**, According to a letter from Ralph Chambers, Director of Engineering for the Spanish Broadcasting System, "Regarding the overwhelming response of DX reports we have received over the past year and a half for our new expanded band AM station on 1700 kHz, please be advised that Spanish Broadcasting System has sold AM-1700 to WNMA, Radio Unica. SBS is no longer operating the station. Any reception reports should be forwarded to the new owners at the fol-



lowing address: 8400 NW 52nd Street, Suite 101, Miami, FL 33166." (Jackson, CA)

**97.5 WOKQ Dover, New Hampshire,** letter, keychains, magnets, and a T-shirt, all for only a reception report, signed Stan Edwards, Promotions. Address: Box 576, Dover, NH 03820. (Lindley, ME)

**103.3 WCMC Rockland, Maine,** letter, card, and stickers in 10 days for a report and mint stamps, signed David John McCoy, Program Director. Address: 415 Main Street, Rockland, ME 04841. (Lindley, ME)

## Broadcast Loggings

For Mark Connelly, DXing from various coastal Massachusetts locations, the DX season never ends. Mark says, "The DX season ends on the same day it begins — on the longest day of the year." Mark sends this report from a recent "DX-cel- lent" trip to Rockport, Massachusetts. "DX highlights included **Israel — 1206; Greece — 981, 1179, and 1512; Egypt — 774, 819, and 864; tentative Iran — 1503;** plus the usual blasters from Kuwait and Saudi Arabia during a "power burst"

of Levant/Middle East reception. Some signals came close to pinning the S-meter. Many Europeans were strong (**Croatia — 1134** trashing WBBR, etc.)." A few of Mark's catches are included in this month's selected BCB loggings. All times are UTC.

**700 KBYR Anchorage, Alaska,** at 0930 on top with talk and "Radio 700, KBYR" ID, have heard this a lot recently. (Martin, OR)

**780 KNOM Nome, Alaska,** at 0920 fair under KKOH with pop music and announcer mentioning "KNOM with 10,000 watts of power" into James Taylor song. (Martin, OR)

**836 RDP, Pico da Barossa, Azores,** at 2325, music hetting Spain/Canaries — 837, and at 0052 male vocal parallel 693 kHz. (Connelly, MA)

**873 SER R. Zaragoza, Spain,** at 2321 parallel 1575 kHz with fast Spanish news by a man and woman; fair through WLAM — 870 splash. (Connelly, MA)

**920 KGHO Olympia, Washington,** is now satellite C and W parallel 99.3 (Aberdeen WA), under a sales agreement with KBKW AM and FM. Call letters will be changed soon to KAYO. Heard ID as "KGHO Olympia-Tumwater-Aberdeen-

Hoquiam." Info is via phone call to KGHO. (Martin, OR)

**1206 Kol Israel Reshet Bet, Haifa,** at 2320 surprisingly dominant at a pretty good level with Semitic talk (presumed Hebrew) on a phone-in talkshow. There was a "Tel Aviv" mention. France was either off or in a deep fade. Numerous Eastern Mediterranean signals were booming in during an apparent ionospheric enhancement of that area. (Connelly, MA)

**1458 RTV Fllake, Albania,** at 2311 with speech in English about Kosovo by an American official, translated by the newsman into a Slavic-sounding language; strong peak over a slight background growl. (Connelly, MA)

**1548 VOA Kuwait, at 2257** VOA commentary in English by a woman rose over the British stations. At 2303, this was blasting in with VOA news; totally dominant. (Connelly, MA)

**1600 KWOM Watertown, Minnesota,** at 1105 fair over/under KCKK with radar weather for Watertown, and spot for law office. (Martin, OR)

Thanks to Mark Connelly, Bob Gilbert, Gary Jackson, Nile Kelly, Ed Lindley, Patrick Martin, and Doug Meyer. 73 ■

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# Product Spotlight

POP'COMM REVIEWS PRODUCTS OF INTEREST

## ScanCat Gold For Windows "SE"

Computer Aided Technologies has long been known for their complete line of listening aids, including their flagship program ScanCat. ScanCat is currently up to version 7.24 for Windows. This program is widely recognized as the "Swiss Army Knife" of computer-control programs and this new version adds several "Surveillance Enhanced" functions, including audio recording and many enhanced graphic and data management functions.

You'd be hard pressed to name a radio that has the option of computer-control that ScanCat doesn't support. The list is impressive. And if you have more than one of these radios, you might well get double or triple duty from the program.

The functions available to you really depend a bit on the receiver you're using. For instance, some radios support uploading memories to the radio, while others do not. ScanCat generally supports all of the functions of the supported radio, including memory upload/download, computer-control of scanning and searching, as well as a host of ScanCat features. These include up to 100 personal scanning "bands" or preset search ranges, manual or automatic frequency entry, and memory storage limited only by your available hard disk space.

For shortwave and ham use, ScanCat includes a "programmable map" feature that can include up to 1000 "hot spots." Each spot contains a frequency and description that can be immediately tuned by clicking the spot with the mouse. As a practical matter, any BMP graphics file can be brought into this map section, so scanner users might find local maps, or create a picture of their own with meaningful areas that "hot spots" could be added to.

ScanCat also has a built-in communications program for use with TNCs (Terminal Node Controller) or digital decoders. This communications mode also includes a split-screen mode for both sending and receiving data — all very convenient features if you use one of these devices.

The program supports operation under Windows 95 and Windows 98.

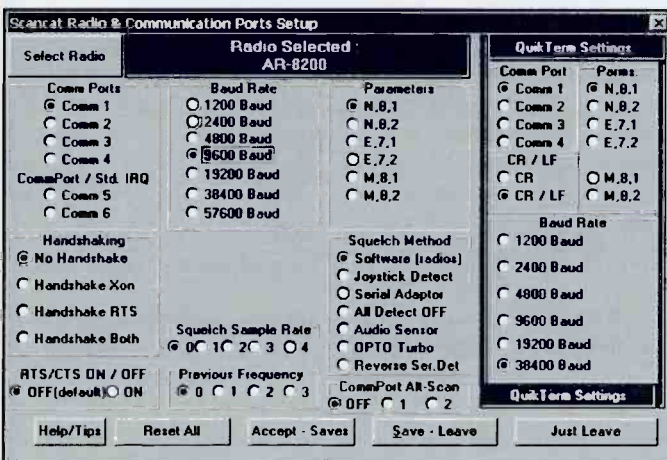
Be sure to check out the back section of the manual (starting on page 85) for hints and tips specific to your radio. Not only does this section explain some of the unique features and options available, but it lets you know about various anomalies and troubleshooting tips for that radio as it operates with ScanCat. It can save you a lot of frustration, and answer questions about your radio. As an example, it answers the question, "Why can't you load frequencies into an Optoscan 456-equipped scanner?"

ScanCat also supports multi-radio operation under ICOM's CI-V protocol. You can hook up both an HF and VHF/UHF receiver to one COM port using the CI-V interface protocol, and ScanCat will make decisions about where to send various commands based on the frequency in use. Or you can connect multiple VHF/UHF receivers and use one as a primary and the other as a secondary in multi-bank scanning situations.

Computer Aided Technologies has made quite an effort to keep the screen clutter to a minimum. Because the program supports so many options and radios, there are, by necessity, a lot of controls. One great feature is that menus

### ScanCat Configuration

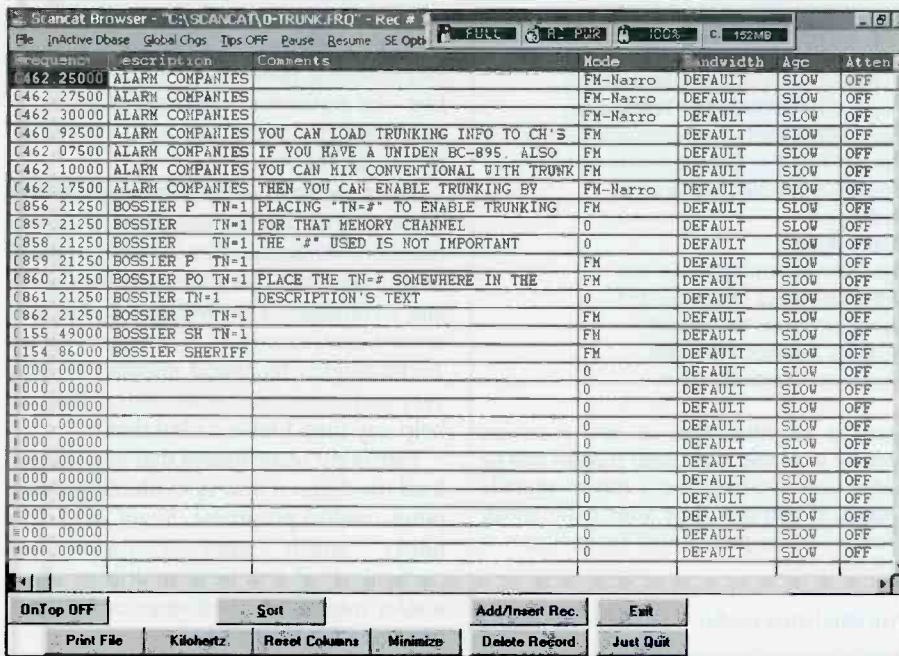
Getting the program set up and connected is the biggest challenge (that's not unique to ScanCat). There are a number of choices that must be correct, including the COM port and the radio that you'll be using. One serial (COM) port is required for the radio, and one for the communications program, if you're using that feature. Windows 3.1 is required, although



The number of radios supported by ScanCat is quite impressive. Here's the setup screen for selecting the radio and communications parameters. Unfortunately, only one radio can be configured at a time, so you'll get familiar with this screen if you have multiple radios.



Here's the screen used to download frequencies to your radio's memories, if that function is supported.



Like many programs, ScanCat uses a spreadsheet-like screen to manage memory information in either of its two file types.

and buttons unique to one particular radio do not appear unless you are using that radio. For instance, unless you have an AOR 8000 or 2700, the menu to reprogram the EEPROM does not appear on your screen.

Once the radio is configured and connected, you'll need to get some data into it so it can scan. ScanCat has two primary file types, but supports a number of others for data conversions and import/export operations. The "FR" or frequency file is a RAM-based file — all of the frequencies load into your computer's memory at the same time. There is, of course, a limit on just how much data can

actually be in your computer's memory at once, and so ScanCat places a limit of 400 channels on these files.

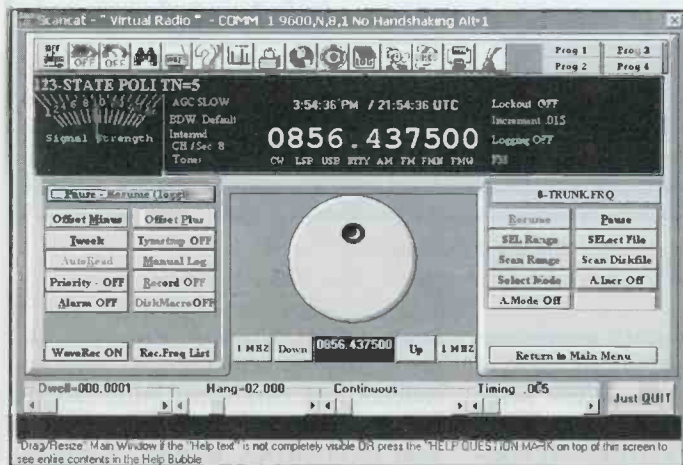
You can also use one of ScanCat's "Random" files, which stores all of the data on the hard disk and only brings into memory small blocks as they are needed. There is no limit on this file size, except your available disk space. As a practical matter, good operating practice would probably dictate that you don't put more than about 1,000 or so frequencies in a single file, but the program will allow you to do that if you choose. On a more practical note, these larger file sizes can be convenient if you're importing FCC data

for an area, while you select records and edit the file down to useful information.

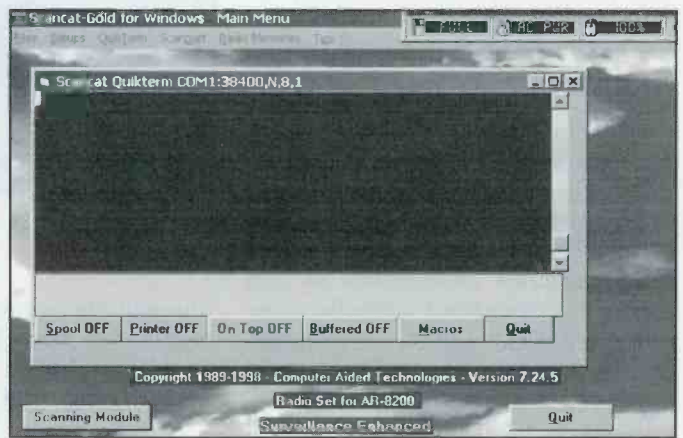
In addition to the two native ScanCat file types, the program supports a number of external file formats for import. These include comma delimited fields, D-base type files, and many variations on the "ASCII" file format. You can also convert your data from the older "FRQ" 400 record file format to the newer "SCN" random file format. In the unlikely event that you can't get your data into one of these formats, Computer Aided Technologies also makes an add-on program called "Magic," which is an excellent data conversion utility. (Magic should probably be in the arsenal of anyone who uses computers with a radio, as its capabilities are impressive.)

ScanCat can be used in a manual mode primarily as a channel changer. It even has a mode to allow for manual operation of some radios and the program will follow along and see what you're up to. This has lots of merit in ham applications and on HF, where scanning isn't all that practical. But the emphasis is on scanning, and ScanCat has some unique features to help both the HF operator, as well as the more traditional VHF/UHF scanner operator.

One of the more interesting features of the program is the ability to scan based on a key word contained in the database. For instance, you could load a data file containing all the HF utility stations that interest you. Then, do a search for "Marine," or "Aero," or any other word that is contained in the data, and only scan those frequencies containing that word or phrase. In addition, multiple keyword searches can be performed, so combina-



Lots of controls here. This is the main scanning window where all the action takes place. Note the alpha display for each memory channel appearing above the meter.



One of ScanCat's handy features for shortwave enthusiasts and ham operators is this full-featured terminal program for packet or other data mode operations.

### ScanCat's Impressive List Of Supported Radios

AR-2500 Scanner  
AR-2700 Handheld Scanner  
AR-3000/3000A Communications Receiver  
AR-3030 HF Communications Receiver  
AR-5000 Communications Receiver  
AR-8000 Wide Band Handheld Scanner  
ICOM R-71 Communications Receiver  
ICOM R-7000 Communications Receiver  
ICOM R-7100 Communications Receiver  
ICOM R-8500 Communications Receiver  
Lowe HF-150 Shortwave Receiver  
Lowe HF-250 Shortwave Receiver  
JRC NRD-525 Communications Receiver  
JRC NRD-535 Communications Receiver  
JRC JRC-245 Transceiver  
Kenwood TS-440 HF Transceiver  
Kenwood TS-450 HF Transceiver  
Kenwood TS-950 HF Transceiver  
Kenwood R-5000 Communications Receiver  
Yaesu FRG-9600 Communications Receiver  
Yaesu FT-757GX HF Transceiver

Yaesu FT-757GXII HF Transceiver  
Yaesu FT-767GXII HF Transceiver  
Yaesu FRG-8800 Communications Receiver  
Yaesu FRG-100 Communications Receiver  
Yaesu FT-747 HF Transceiver  
Drake R-8  
Drake R-8A  
Optoelectronics Optoscan 456  
Optoelectronics Optoscan 535  
Optoelectronics Optocom\*  
Watkins Johnson HF-1000  
Communications Receiver

ScanCat promises that as new receivers become available, additional support will be added and available for a minor upgrade charge. If you don't see your radio listed, check with Computer Aided Technologies at 318-687-2555.

\*(in emulation mode)

use." Unfortunately, one person's ease is another's nightmare, and user interface and essential features are highly subjective. An awful lot is dependent on what you want the computer/radio combination to do for you.

The good news is that Computer Aided Technologies has an excellent Website, including demonstration versions of most of its programs that can be downloaded and evaluated. The Website is <<http://www.ScanCat.com>>. Computer Aided Technologies technical support is also very responsive and more than willing to help any time I have called them.

I strongly recommend that you download the demo if you're evaluating computer-control programs. ScanCat is certainly worth your consideration, particularly if you have multiple radios and/or want to use the computer with HF receivers for scanning.

The ScanCat Gold "SE" is \$159.95 (plus s/h) from Computer Aided Technologies located at P.O. Box 18285, Shreveport, LA 71138 or phone 318-687-2555 (9 a.m. to 1 p.m. CST Monday to Friday) or E-mail <[ScanCat@ScanCat.com](mailto:ScanCat@ScanCat.com)>. The "non-SE" version is \$99.95.

tions like "Marine" and "Coastal Station" would further limit your scanning. Of course, the data has to be configured with these key words and phrases before this will work. It might make more sense to configure your related data in separate

files, and reserve these keyword searches for special events or needs.

ScanCat has a very loyal following in the radio community. When asked why people prefer one program over another, the usual response is because it's "easy to

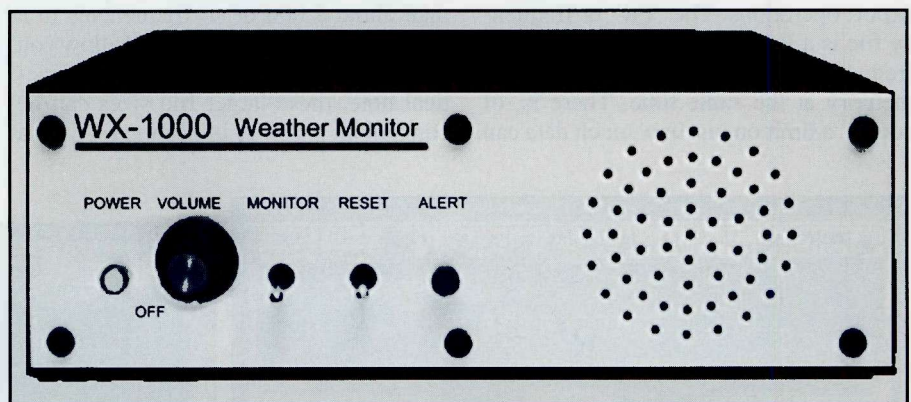
## Computer Automation Technology's WX-1000 Digital Weather Receiver

BY PETER BERTINI

A few months ago, editor Harold flung a new "Product Spotlight" over the mailroom table for my review. "What's this, a weather receiver?" I muttered while rubbing the new bump on my noggin after waking from my prematurely disturbed nap-in-progress. But, after a call to Computer Automation Technology and talking with Ron, I learned that it was no ordinary WX monitor — it represents the latest advances in weather monitoring technology! I also learned that the NOAA weather broadcasts have undergone significant technical upgrades in the past few years.

The WX-1000 is a professional digital weather receiver, and contains its own internal microprocessor controller, non-volatile RAM, speech synthesizer, SAME decoder, RF receiver, audio amplifiers, and associated control logic.

Before using the WX-1000, you'll need to install the supplied configuration program on a computer using the Windows NT, 95, or 98 operating system.



The WX-1000 receiver.

The only other requirement is an open serial port. But, whoa! I am getting ahead of myself here! First, let's review some needed background info.

NOAA's Weather Radio Network operates more than 425 VHF transmitters in the U.S. broadcasting routine inland and coastal waterway weather forecasts 24-

hours-a-day. NOAA also provides National Weather Service warnings, watches, and other hazard information. It isn't practical to continuously monitor your local NOAA weather channel to learn of weather emergencies, so NOAA used a 1050-Hz alert tone to precede emergency weather warnings or watches.

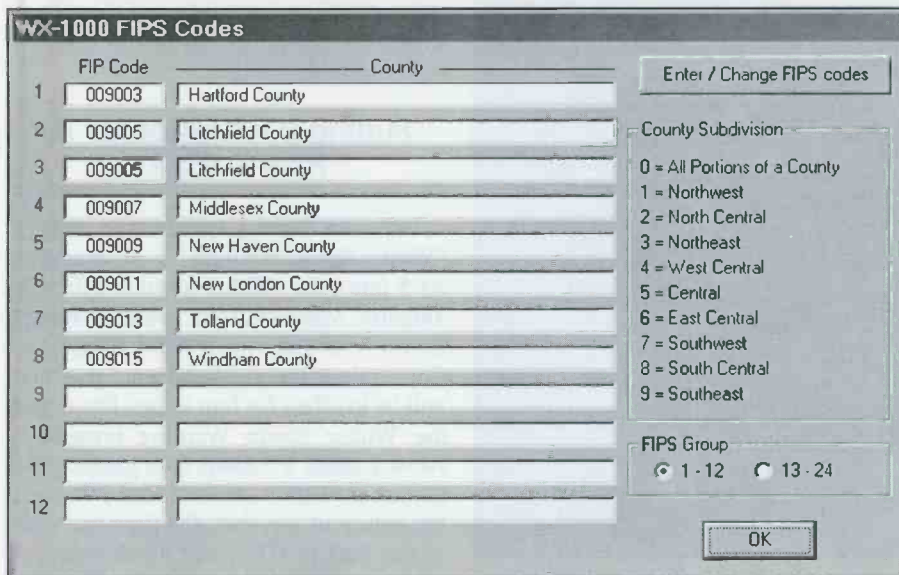


Figure 1. In the WX-100 FIPS Codes screen, the user selects the state counties of interest using FIP Codes.

An inexpensive weather receiver equipped with the 1050-Hz decoder allowed you to hear only those broadcasts announcing potentially dangerous conditions. A few problems remained. First, most NOAA transmitters cover a wide geographical area. For example, my NOAA weather station is on 162.475 MHz, broadcasting from Soapstone Mt. in my hometown of Somers, Connecticut. It covers all of the counties in Connecticut, plus coastal weather information! Normally, I would have to listen to all emergency broadcasts, including those

out of my area of immediate concern. After all, coastal flooding warnings don't normally affect most of us living 60 miles inland. NOAA also performs weekly and monthly routine tests of the emergency system — more "noise" invading my otherwise peaceful environment!

### It's Not The SAME Old NOAA

To solve the problem, NOAA is now using the SAME (Specific Area Message

Encoded) warning system. The SAME system allows NOAA to break down weather alerts to a by-county basis. This is done by preceding an alert with a short packet data-burst. To a regular user, the data-burst sounds like an alert tone, but digitally encoded in the data packet is the nature of the alert, its duration, the current time and date in UTC format, and pertinent FIP Codes (Federal Information Processing Codes). Each county for each state in the U.S. is assigned its own unique six-digit FIP Code.

### Programming The WX-1000

As I mentioned before, the configuration program is supplied with the receiver, and must be installed on a computer using the Windows NT, 95, or 98 operating system. The only other requirements are a free serial port to interface with the WX-1000. The Computer Automation Website always has the latest FIP Code data files on hand for downloading, keeping your system up-to-date with the latest NOAA changes.

### The Setup And The FIP Code Screens

The first time the WX-100 program is run, you will need to run the setup program to assign the serial port and the appropriate time zone where the receiver is going to be used. Next, using the FIP Code Entry screen (see Figure 1) the state (or states, if the NOAA transmitter covers more than one state) is selected. The next screen shows the counties and their respective FIP Codes that we have selected. Each screen will display up to 12 groups; two screens are provided allowing a maximum of 24 groups. Figure 1 shows all of the counties and respective FIP Codes that I have selected for my home state of Connecticut.

### The Event Code And The Options Screens

Figure 2 shows the WX-1000 Event Codes screen. Here the weather watches and warnings we desire to monitor are selected. Up to 24 events may be enabled. Figure 3 shows the Options screen on which special options allow accepting all FIP and Event Codes. The remaining options on this screen deal with special timers that control the synthesized voice messages, local speaker, and front panel options. Another screen, titled "WX-

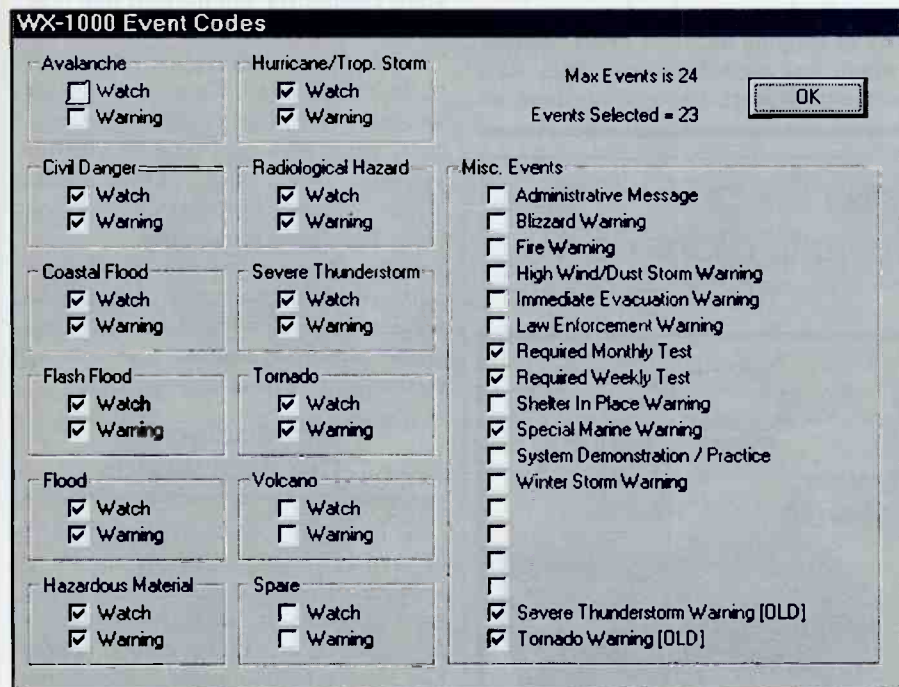


Figure 2. The Event Codes screen selections determine what events will be monitored during a disaster or weather disturbance.

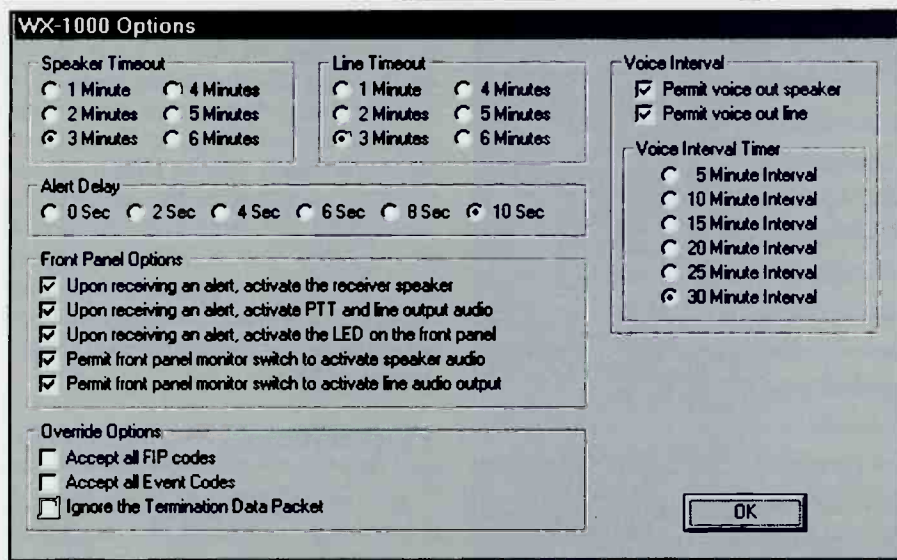


Figure 3. The Options screen is used to set various timers and to program hardware activity during an alert. Other selections permit the user to enable monitoring of all FIP Code and Event Code activity on the receiver's frequency.

1000 Inputs" sets options used for interfacing the receiver to other hardware, such as an amateur radio repeater system.

### Uploading And Downloading

Once all of the parameters have been set, the main WX-1000 Digital Weather Receiver screen (shown in Figure 4) may be used to upload the data to the weather receiver. Once an upload is finished, the information on the last 40 event codes received by the WX-1000 is automatically downloaded to this screen. This alert history or log of events, may be printed

and saved for future reference. Once programmed, the computer and serial cable are no longer needed for normal receiver operation. All data input to the receiver is retained in non-volatile RAM.

### Using The Receiver

The receiver has been in use at my home for the past several months, monitoring local weather conditions in several local Connecticut counties. Monitoring the latest weather forecasts is as easy as flipping the front-panel monitor switch, and adjusting the volume to a comfortable level. The receiver sports an

internal 2.5 inch speaker and the recovered audio remains clean and crisp at high volume settings.

### Putting It All Together — How It Works

Let's run through an example using a "Winter Storm Warning" as an example. At 5 p.m., the NOAA weather office in Taunton, Massachusetts, issues a Winter Storm Warning for Tolland County in Connecticut; the watch starts at 5 p.m. and will be in effect for four hours. Preceding the Winter Storm Warning broadcast, NOAA sends a SAME data packet containing the FIP Code for Tolland County, the nature of the alert, the time and date of the alert in UTC, and the duration of the event. This data is also stored in non-volatile RAM to permit historical downloading at a later date. The internal processor takes care of UTC to local time conversion chores, and counts down alert duration times.

When a SAME data packet is received and decoded by the WX-1000 that is recognized as being an event that should be monitored, the local speaker is activated. The local speaker remains open until either a termination packet is received, or until the Speaker Timeout timer setting is reached. While the alert is in effect, a front-panel red "ALERT" LED will flash for the duration of the alert. I also mentioned earlier that the receiver contains an internal voice synthesizer. For the next four hours of the alert, the speaker will announce "Winter Storm Warning" at intervals set by the Voice Interval Timer on the Options screen. A few other examples of synthesized voice messages include "Tornado Warning," "Severe Thunderstorm Watch," "Hazard Material Warning," and "Law Enforcement Warning."

Since the receiver has the duration information for the weather event, it will remain in ALERT status for four hours until 9 p.m. EST, unless a reset is issued by the front-panel reset switch.

### Interfacing To The Real World

So far we've seen how the receiver can be used as a local weather monitor — an application ideally suited for law enforcement agencies, broadcasters, town road departments, and transportation companies, such as bus companies and railroads, etc. But, the WX-1000 is capable of doing much, much more than this! In fact, the

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CIRCLE 69 ON READER SERVICE CARD

WX-1000 was specifically designed to be used with amateur radio VHF and UHF repeater systems. The receiver provides relay contacts to interface the receiver to the repeater transmitter during a weather bulletin, allowing the receiver to key the transmitter and supply line-level audio for rebroadcasting the information over the air. Many amateur radio groups are actively involved in Skywarn activities, and the WX-1000 can be used to automatically switch a repeater system into a special "NET" mode when weather emergencies occur. The Computer Automation Technology CAT-1000 and CAT-300DX repeater controllers are ideal mates for the WX-1000. If your repeater group is already using the CAT-1000 controller, there is an extra bonus: you can interface the Davis weather station and monitor on-site weather conditions remotely! More information is given at the CAT Website. Instead of an amateur radio repeater, the receiver could key and announce over a simplex radio frequency, or key an intercom or in-house paging system to disseminate vital weather information.

All of the required interconnects are made from a DB-15 connector on the rear apron of the receiver. The connector also has inputs that allow the receiver to be "reset" at anytime by a repeater controller or other means. A DB-15 connector and hood are supplied.

## The Receiver Section

Most of the RF circuitry uses surface-mount technology. This is a single-channel crystal-controlled receiver; one crystal is supplied with each receiver. The frequency for your local NOAA transmitter will be needed when you place your order. The receiver is dual conversion, using a first IF at 10.7 MHz and a second IF at 455 kHz. Two cascaded monolithic crystal filters are fitted in the first IF; the second IF uses ceramic filtering. The front-end of the receiver is designed to be operated in high RF environments, such as encountered at many repeater or commercial locations. The receiver is spec'ed for 20 dB quieting with a .45 uV signal. A 20-dB front-end attenuator is included, and when used makes the receiver virtually immune to RF interference. The antenna connector is a BNC type. The receiver meets FCC part 15 requirements.

The WX-1000 is intended for table-top or optional rack mounting. The front panel is white with contrasting black let-

Num	Date	Time	Length	ORG	Event Code Received
1	7-April	10:08	00:15	WXR	Required Weekly Test
2	23-March	07:53	04:00	WXR	Flash Flood Warning
3	21-March	15:02	06:00	WXR	Flash Flood Watch
4	17-March	11:24	00:15	WXR	Required Weekly Test
5					
6					
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Figure 4. The WX-1000 Main Screen upon entering the program. Once a download transfer of data is completed, the last 40 weather events are shown in the log. This information may be printed for future reference.

tering, while the enclosure is black. The receiver requires an external 12 to 13.8 Vdc at 100 mA power source; power is connected via a 2.5-mm coaxial connector — a matching connector is included. Power may be taken from most repeaters, or an economical wall-wart regulated type supply may be used. The receiver measures (HWD) 3" x 8" x 6.75" and weighs in at about 2.2 lbs. (most likely due to the rugged all-metal housing; no cheap molded plastics here). Construction quality is first-rate.

At \$399, the WX-1000 is rather pricey for the average home user, unless you live

in areas frequented by tornadoes or floods! In a weather emergency, advanced warnings can save lives — seconds matter. The receiver is a "must-have" for amateur repeater operators; and serves the needs of commercial businesses or municipalities whose operations can be adversely affected by the weather.

For more information on the WX-1000, contact Computer Automation Technology, Inc., 4631 NW Avenue, Suite 142, Fort Lauderdale, Florida 33309. Phone them at 954-978-6171 or FAX 954-388-2894. You can also visit their Internet site at <<http://www.catauto.com>>. ■

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# The Listening Post

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

## European Crisis: Radio Broadcasts YOU Can Hear!

As the crisis in Kosovo worsens, international shortwave radio gives you the chance to hear many sides of the conflict. **Radio Yugoslavia** — if it hasn't been bombed off the air — currently has English to North America at 0100 to 0130 and 0530 to 0600 on **9580**, except on Sundays.

**Croatian Radio** to North America (via Germany) offers newscasts in English on the hour between 0200 and 0600 on **6130**. You might also be able to hear the broadcast to Australia on **13820** between 0600 and 1000, also with English news on the hour (the rest of the time the programming is in Croatian). Macedonia, Slovenia, Montenegro, and Kosovo broadcasts are not on shortwave.

**Radio Tirana**, Albania's current English-to-North America schedule is 0145 to 0200 and 0230–0300 on **6115 and 7160**. The former Radio Macarena in Villavicencio, Colombia. (5975) has been sold to a religious organization and is now called Radio Autentica. It's part of the Cadena Radial Autentica de Colombia network, operated by Centro Misionero Bethesda. As Radio Macarena, its schedule was 1000 to 0000, but at this point we don't know if that has changed. It was most frequently logged at, or soon after sign-on.

Various reports recently lead to a strong suspicion that **Radio Tahiti** had finally met its end. Several DXers, well positioned for reception of Radio Tahiti, reported that signals from this one were no longer being heard. Only a few months ago, the station had re-established itself on **15170**, after having varied for several years, but the station appears to have been saved from the doom it was reported to be facing.

A United Nations study, done by Deutsche Welle, has concluded that the UN should go back to doing its own live broadcasts, instead of the taped features and short programs it distributes to stations all over the world. That's the way things were a decade and a half ago, when UN Radio was on the air for several hours each day, even carrying proceedings of



This 1998 RCI QSL commemorated the 125<sup>th</sup> anniversary of the Royal Canadian Mounted Police.

the General Assembly. Most of these broadcasts were aired via rented time on Voice of America transmitters. The UN discontinued the service when rental costs became too expensive. The recommendation, of course, hardly means the return of UN Radio is just around the corner. We'd say chances that it will happen are even, at best.

If you haven't heard **Radio Minurca in the Central African Republic** yet, keep trying. The station is supposed to have a more powerful transmitter on the air by now. Radio Minurca is on **9900** and operates around the clock.

RDP Internacional — Radio Portugal — says its shortwave transmission center is equipped with eight transmitters, totaling 1,000 kilowatts and 18 directional antennas. On shortwave, RDP says it broadcasts to all "relevant" target areas around the world. "Relevant" translates to Europe, Africa, the Middle East, the Far East, the United States, Canada, Venezuela, and Brazil, as well as a special program aimed at troubled East Timor (Indonesia) in Portuguese and Tetum, the main local language there.

The BBC has ceased their German-language programming, says reporter Tricia Ziegner in Massachusetts. They will devote more resources to digital satellite technology. But they are certainly not de-emphasizing shortwave. According to an item we saw recently, the BBC sees shortwave as a main world communications medium for years to come.

Tricia also notes that the **Voice of Turkey** has severely cut back on their traditional Turkish music and instead play a combo of canned "pop-elevator" and "what I call Euro-trash rock — a kind of 'easy listening' format." She says that, as far as she can tell, the traditional stuff is only heard on Monday evenings (2300–0100 on **7300 and 9445**). That is unfortunate, to say the least, Tricia. This is a prime opportunity for listeners to have an effect on what's going on here. TRT External Services Department, P.K.333, Yenisehir, 06443 Ankara, Turkey. Or E-mail to <infotsr@tsr.gov.tr> or <englishservice@tsr.gov.tr>.

Ed Lindley, in Maine, got a letter from WRNO, New Orleans, confirming a report of over a year earlier. They noted





China Radio International recently sent this QSL to Ed Lindley.

that a transmitter fire had put the 15420 unit off the air but expected to return soon, on 7395.

Radio Denmark says it welcomes reception reports and replies with a QSL

card. Return postage in the form of \$1 or one International Reply Coupon is appreciated, but not required. Radio Denmark's shortwave broadcasts are aired over the facilities of Radio Norway's 500 kW transmitters located at Kvitsoy and Sveio (two, each) located on the west coast of Norway. The Radio Denmark broadcasts air around the clock, starting at the half-hour and running to 0055. For North America, these are at 1630 on **13805**; 1730 on **17505**; 1930 on 17505; 2330 on 13805; 0030 on 13805; 0130 on **11960**; 0330 on **11635**; 0430 on 11635; 1130 on **15735**; 1230 on **18950**; 1330 on 18950; 1430 on 18950, and 1530 on 17505. Unfortunately, all their broadcasts are only in Danish. Their address is Radio Denmark, Rosenorns Alle 22, DK-1999 Frederiksberg C., Denmark.

The winner of the shortwave book this month is **Lee Silvi of Mentor, Ohio**. Lee has been a regular reporter of good things for a couple of years now. Lee will receive a copy of *Inside Your Shortwave Radio* from Tiare Publications. Tiare publishes quite a number of titles on various aspects of the radio communications hobby. You can check out their offerings on their Website at <<http://www.tiare.com>>.

Remember, *your* reception logs are

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

always welcome. Just be sure to list items by country, do a minimum double-space between each (so we can navigate scissors easily), and add your last name and state abbreviation after each item. Other things we can put to good use here are spare QSL cards you don't need returned, station photos, and other materials, including schedules.

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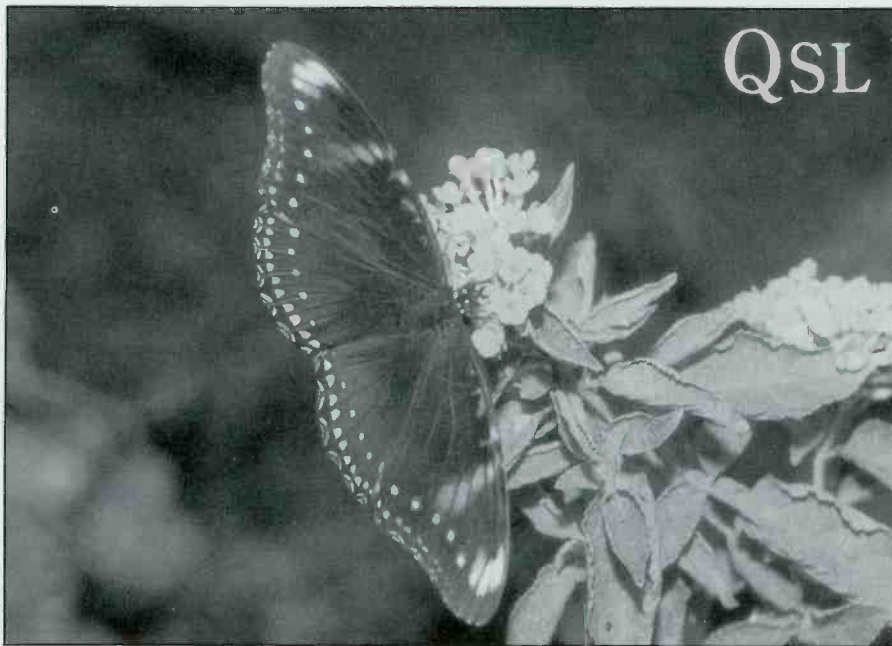
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*Ed Lindley also received this QSL, a flowery specimen from CRI's nemesis — Radio Taipei International.*

And, how about a photograph of you at your listening post? As always, thanks so much for your continued interest and cooperation!

Here are this month's logs. All times are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 5 p.m. MST, and 4 p.m. PST. Double capital letters are language abbreviations (FF = French, AA = Arabic, SS = Spanish, etc.). If no language abbreviation is included, the broadcast is assumed to have been in English. Note: Several logs had to be scrapped this time because the reporters forgot to include the time heard.

**ALGERIA** — Radio Algiers Int'l, in EE from 1600–1700 on **11715** and **15160**; 2000–2100 on 11715. (Kolesov, Ukraine)

**ALASKA** — KNLS, **7365** at 0829 with Tom Osborne hosting news and music. (Jenkins, WV) **9615** with EE to East Asia from 1300 to 1358 close. Presumed it's CC prior to 1300. (Silvi, OH)

**ANTARCTICA** — LRA-36, **15476** at 2330 to 0059 in presumed SS with translation into EE by man for first eight minutes or so, then much music with occasional female announcer. Special broadcast? (Silvi, OH) (*Well past usual sign-off time — Editor*)

**ANTIGUA** — Deutsche Welle relay, **11810** monitored at 1900 to 1950 sign-off. (Conrad, IA) BBC Relay, **9575** at 0000, 0400, 0600,

2200, 2203. (Jeffery, NY)

**ASCENSION ISLAND** — Deutsche Welle relay, **11750** monitored at 0300, // **9535//9640//9700** (Conrad, IA) BBC relay, **7160** at 0400. (Conrad, IA) **15400** at 2000 with Newshour. (Jeffery, NY)

**ARMENIA** — Voice of Armenia, **9965** at 2130 with opera program and comments about each song in between. (Jenkins, WV)

**AUSTRALIA** — Radio Australia, **5995** at 1323, // **6020//6080**. (Miller, WA) **9580** at 1503 with news, "Asia/Pacific." **9660** at 1507 with "Asia/Pacific." (Jeffery, NY) **9710** at 0920 with Papua New Guinea service in EE and TokPisin. **Parallel 5995//6020//12080**. Listed 5890 not audible. (Silvi, OH) **21740** at 2300 to past 0130. (Conrad, IA)

**AZERBAIJAN** — Radio Dada Gorgud, Baku, **9165** monitored at 1437 in unidentified language. (Miller, WA)

**BELGIUM** — Radio Vlaanderen Int'l, **13670** via Bonaire, Netherlands Antilles, at 2230 sign-on to off at 2300. (Conrad, IA) **2230**. (Jenkins, WV) **2252**. Into DD at 2300 with ID, news. (Jeffery, NY)

**BOLIVIA** — Radio Estacion Frontera, Cobija, **4450** at 1239 in SS with music. Weak, with het. (Miller, WA)

**BOTSWANA** — Radio Botswana, **4820** at 0255 with cowbell IS. (Cooper, CA) Voice of America relay, **6035** at 0328 with "Daybreak Africa." (Jeffery, NY)

**BRAZIL** — Radio Educacao Rural, Coari, **5035** at 0929 in PP with live ID, cock crowing, cute homemade jingle, more crowing, into primitive accordion/drum music. (Quaglieri, NY) Radio Educacao Rural, Campo Grande, 2314 in PP with music. (Roberts, NC) Radio Cultura, Sao Paulo, **17815** at 0125 in PP with frequency announcement, address. (Paszkievicz, WI) Radio Brazil Central, Goiania, in PP at 2307 with ID at 2308. (Roberts, NC)

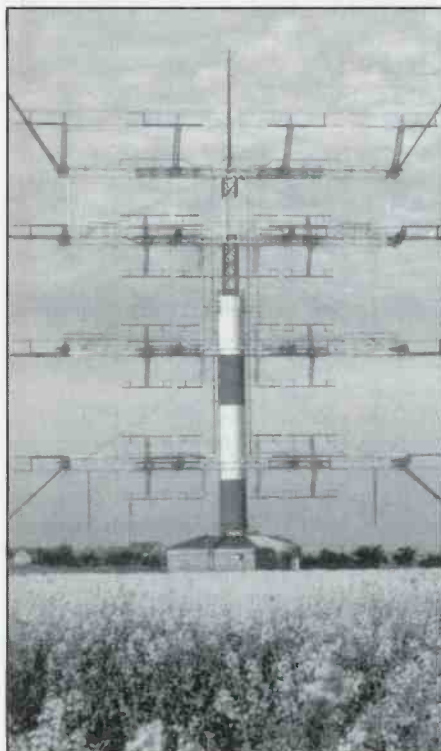
**BULGARIA** — Radio Bulgaria, **17503** monitored at 1600 in Bulgarian and some SS. (Ziegner, MA)



*The English Service group from Radio Prague.*



*This large, fancy building is home to Radio Sweden.*



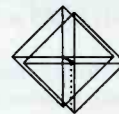
Antennas at Radio France International's transmitting site at Issondun.

**CANADA** — CFRX, Toronto, **6070** at 0635 with talk. (Cooper, CA) (relays CFRB — Editor) BBC Sackville relay, **5965** at 1200, **9515** at 1258 and 1523. (Jeffery, NY) Radio Canada Int'l, **13650** at 1455 with "This Morning." Also **13690** at 2208 with news. Off suddenly at 2211. (Jeffery, NY) **15325** at 1450 in FF and **15425** in FF at 1325. (Northrup, MO) **CHINA** — China Radio Int'l, (via Spain, — Editor), 0320 with regional news. (Jenkins, WV) **11445** at 1350 in CC. (Northrup, MO) **17700** (presumed) at 0312 in CC with talk by woman. (Paszkievicz, WI) **COLOMBIA** — Caracol Colombia, **5077** at 0603 in SS. (Miller, WA) **COSTA RICA** — RFPI, **6975** at 0312. (Jeffery, NY) 0333. (Jenkins, WV) **15050** at 2247, ID 2304. (Zamora, TX) **CUBA** — Radio Rebelde, **5025** at 2303 in SS. (Roberts, NC) Radio Havana Cuba, **6000** at 0200 with news and Cuban music. (Jenkins, WV) **9820** at 0330 with IS, ID, frequency info, news. (Jeffery, NY) **11705 USB** in EE from 0100 tune-in to past 0300. //6000//9820. (Conrad, IA) **15340** in SS at 1350. **DENMARK** (via Norway) — Radio Denmark, **9945** at 0247 in Danish. (Cooper, CA) **DOMINICAN REPUBLIC** — Radio Cristal Int'l, **5012** in SS at 2312 with music and announcements. (Jeffery, NY) **ECUADOR** — HCJB, **15115** at 1930 with ham radio program. (Jeffery, NY) **15295** in SS at 1455. Sudden sign-off. (Northrup, MO) **EGYPT** — Radio Cairo, **9475** at 0300. Poor audio. Female with news. (Jenkins, WV) **ENGLAND** — BBC, **6195** at 1406. (Via Singapore). (Miller, WA) **11730** at 0300;

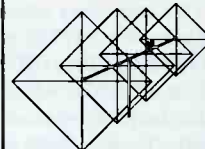
//5975//6175//6185//6195. (Conrad, IA) **15285** at 1300 with EE/CC lesson. (Northrup, MO) **15390** at 2117 with news. (Miller, WA) Merlin Network One, **17630** at 1511 with big band music program. (Jeffery, NY) **FINLAND** — YLE, Radio Finland, **15400** at 1325 with news, ID. (Northrup, MO) **17660** at 1335 with "Capital Café" program. Off abruptly at 1358. (Zamora, TX) **FRANCE** — Radio France Int'l, **15300** in FF with news at 1500. (Northrup, MO) **FRENCH GUIANA** — China Radio Int'l relay, **9730** at 0400. Same program at 0300 on **9690**. (Kolesov, Ukraine). Presumed on **13685** at 1921 with oriental music. Off suddenly at 1926. (Jeffery, NY) Radio Japan relay, **9660** at 0342 in JJ. (Jeffery, NY) Radio France Int'l relay, **15515** in FF with sports at 1240. (Northrup, MO) **GABON** — Africa Number One, **15475** in FF at 1802 with Francophone African music. Station ID and address announcement at 1809. (Kolesov, Ukraine) **GERMANY** — Sudwest Rundfunk, **7265** in GG at 0318 with pops. (Paszkievicz, WI) Deutsche Welle, **9900** at 1215 in GG with news discussion. (Miller, WA) (Listed as via Novosibirsk, Russia — Editor) **15132** (nominal 15135? — Editor) at 1800 in Hausa. Into EE at 1900. (Ziegner, MA) **15275** in GG with news at 1400, **15360** at 1405 in presumed AA. (Northrup, MO) **GHANA** — Ghana Broadcasting Corp., **3366** at 2250 with music. (Roberts, NC) **GREECE** — Voice of Greece, **9420** monitored at 0130 with news. (Jenkins, WV) 0400 sign-on in Greek. (Cooper, CA) **15485** at 2151 in Greek. (Miller, WA) **GUAM** — Trans World Radio/KTWR, **9430** at 1441 in unidentified language. Religious format. (Miller, WA) **15330** at 0900 with preacher Chuck Swindoll. (Jenkins, WV) **GUATEMALA** — Radio Tezulutlan, Coban, **4835** at 1252 with religious program in Quechua. (Miller, WA) Radio Maya de Barillas, Huehuetenango on **3324** at 1050 and 1206 in SS. (Miller, WA) Radio Cultural, Guatemala City at 1153 in SS with religious broadcast. (Miller, WA) **3300** at 0700 to 1100 and **5055v** at 1000 to 1100, all in SS. (Conrad, IA) **HAWAII** — KWHR, **11565** at 1320 with DX show, ID, ads for T-shirts, and "Odyssey" — a kid's religious program. (Zamora, TX) **17510** at 0100 to past 0130. (Conrad, IA) **HUNGARY** — Radio Budapest, **9835** at 0205 with news. (Cooper, CA) **INDIA** — All India Radio, Bhopal, **3315** at 1203 with discussion in unidentified language. (Miller, WA) **11620**, presumed in Hindi at 1435 with singing and woman with ID. (Cooper, CA) 2120 with ID followed by short story. (Kolesov, Ukraine) **13780** at 1800, //11620. Music, news. (Ziegner, MA) **INDONESIA** — Radio Banda Lampung, Sumatera, **3945** in II monitored at 1231 with music. (Miller, WA) **4753.8** Radio Republic Indonesia, Sulawesi in II monitored at 1244. (Miller, WA) Voice of Indonesia, **15150** heard

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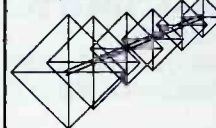
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in FF with news, talks, ID, and II songs. Heard some days in German from 1800 to 1900, French 1900-2000 and EE 2000-2015. (Kolesov, Ukraine)

**IRAN** — Voice of the Islamic Republic of Iran, **9650** at 0220 in SS with letters program AA vocals. (Paszkievicz, WI) **15085** at 1500 in Turkish. (Ziegner, MA)

**ITALY** — Italian Radio Relay Service (IRRS), **3985 LSB** at 1234 with amateur rock. (Miller, WA)

**JAPAN** — Radio Japan/NHK, **7190** at 1415 in JJ, //7245//7275. Also **9505** at 1446 in EE. (Miller, WA) **11705** at 0023 with news interspersed with music. (Jenkins, WV) **17765** at 0100 sign-on, //17865//17835//21670 to 0200 close. Also **17685** at 0130 on a Tuesday which was not parallel to the other frequencies noted above. (Conrad, IA) Radio Tampa, **3925** at 1230 in JJ. (Miller, WA)

**LIBERIA** — Radio Liberia, **5100** at 2312 with UN program. (Roberts, NC)

**LIBYA** — Radio Jamahiriya, **15415** at 0214 in French to Africa. (Paszkievicz, WI) 2137 in AA. (Miller, WA)

**MALAYSIA** — Radio Malaysia, Kota Kinabalu, **5980** at 1357 in unidentified language. **7270** (Kuching) at 1417 in unidentified language with prayers. (Miller, WA) **11800** at 1530 with EE request program. (Cooper, CA)

**MALI** — RTV Malienne, **4783** at 2300 in FF with music. (Roberts, NC)

**MAURITANIA** — Radio Mauritanie, **4845** in AA at 2230. (Kolesov, Ukraine) 2240 with Mideast music. (Jeffery, NY)

**MEXICO** — XERTA, **4800.7** at 0932 with involved SS ID with multiple phone numbers and telling callers to ask for "Senor Echiverria." Then this announcement: "Dear businessmen: expand your international client base with XERTA Radio, and reach the United States, Canada, and South America . . . (unintelligible) . . . Mexico City of 91-5-51-98-56." Next a woman in FF, then a man in RR and back to live announcer with time check. (Quaglieri, NY) 1248 in SS. (Miller, WA) Radio Educacion, Mexico City, **6185** at 0614 and 0709 in SS. (Miller, WA) Radio Mexico Int'l, **9705** at 0420 in SS giving their address. (Jenkins, WV)

**MONACO** (site presumed) — Trans World Radio, **9870** monitored at 0830 to 0920 close with EE. (Silvi, OH)

**MONGOLIA** — Voice of Mongolia, **12085** at 1230. Horsehead fiddle music (?! — Editor) and Mongolian opera. (Ziegner, MA)

**MOROCCO** — RTV Maroccaïne, **15345** at 2130 in AA. (Miller, WA)

**NETHERLANDS ANTILLES** — Radio Netherlands via Bonaire, **6165** in SS monitored at 0407. (Jeffery, NY) **15315** at 2158 in DD. (Miller, WA)

**NEW ZEALAND** — Radio New Zealand Int'l, **9700** at 0715. (Miller, WA) **17675** at 0009 and 0402. (Jeffery, NY) 0130 tune-in to past 0300. (Conrad, IA) 0325 with cricket match in progress. (Jenkins, WV)

**NIGERIA** — Voice of Nigeria, **15120** monitored at 1917 with EE commentary. (Miller,

WA) **7255** at 0500. (Jenkins, WV) Radio Nigeria, Kaduna, **4770** at 2300. (Roberts, NC) **NORTHERN MARIANAS** — Far East Broadcasting Corp./KFBS, **9465** in RR at 1445. (Miller, WA)

**OMAN** — BBC relay to Asia/Pacific, **15310** at 0322 with sports. (Jeffery, NY)

**PAKISTAN** — Radio Pakistan, **15485** monitored at 0230 in EE. Typewriter song. (Paszkievicz, WI)

**PAPUA NEW GUINEA** — NBC, Port Marseby, **4890** at 1259. (Miller, WI)

**PERU** — Radio del Pacifico, **4975** in SS at 1045 tune in. (Conrad, IA) Radio Chanchamayo, La Merced, **4895** at 1300 in SS. (Miller, WA)

**PHILIPPINES** — FEBC Radio Int'l, **9405** at 1439 in Tagalog. (Miller, WA) Voice of America relay, **9760** at 1212. (Jeffery, NY) **15180** at 1930. (Silvi, OH) Radio Veritas Asia, **15335** at 1345. (Northrup, MO)

**PORTUGAL** — Radio Portugal, **15555** at 2139 with sports in PP. (Miller, WA)

**PUERTO RICO** — AFRTS, **6458.8 USB** at 2200 tune-in. Also Florida site on **4278.8 and 12689**. (Conrad, IA) 0348. (Jeffery, NY)

**ROMANIA** — Radio Romania Int'l, **9570** at 0200 with news, ID, letters. (Paszkievicz, WI)

**RUSSIA** — Voice of Russia, **7125** at 0400. **15425** at 0200 sign-on. (Conrad, IA) **7250** at 0300 with news, audio book segment. (Jenkins, WV)

**RWANDA** — Radio Rwanda, tentative, **6053** monitored at 1038 in probable Swahili. (Ziegner, MA) Deutsche Welle relay, **15135** at 1909. (Jeffery, NY) **15410** in FF monitored at 1233. (Kolesov, Ukraine)

**SEYCHELLES** — FEBA Radio, **11745** at 1830 in unidentified language. (Miller, WA) **15555** at 0245 to 0300 close in unidentified language, hymn, IS. (Paszkievicz, WI)

**SINGAPORE** — Radio Singapore, **7170** at 1411 with news. (Miller, WA)

**SLOVAKIA** — Radio Slovakia, **15460** at 1320 in Slovak. Said E-mail letters to <letters@ERU.RU>. (Northrup, MO) Radio Slovakia Int'l, **9440** monitored at 0200 sign-on; news. (Jenkins, WV)

**SPAIN** — Radio Exterior de Espana, **6055** at 0505 in EE. (Cooper, CA) Radio Exterior de Espana, Costa Rica relay, **6055** in EE at 0000 to 0200, in SS from 0200-0500 and back to EE from 0500 to 0600. (Conrad, IA) China Radio Int'l, via Spain, **9690** at 0300 in EE. (Kolesov, Ukraine)

**SOUTH AFRICA** — Trans World Radio, **9510** monitored at 1930 in an African language. (Ziegner, MA)

**SUDAN** — Radio Omdurman, **9200** at 1708 with two announcers doing live sports in AA. (Kolesov, Ukraine)

**SWAZILAND** — Trans World Radio, **9500** monitored at 1758 in EE with interview. (Kolesov, Ukraine)

**SWITZERLAND** — Swiss Radio Int'l, **12010** at 1414 with "Capital Letters," featuring listener's letters and questions about Swiss life. ID 1430, and mailing address given as 3000 Berne 15, Switzerland. (Zamora, TX)

**SWEDEN** — Radio Sweden, **9455** at 0230 with "60 Degrees North." (Paszkievicz, WI) **21810** at 1435 with "Sounds Nordic." ID at 1456 and off at 1500. (Zamora, TX)

**TAHITI** — Radio Tahiti, **15170** at 0315 in FF with music, woman announcer. Barely audible. (Jeffery, NY)

**TAIWAN** — Radio Taipei Int'l via WYFR, **5950** monitored at 0219 with Chinese lesson. (Jenkins, WV) **9680** at 0200 sign-on to 0400 off. (Conrad, IA)

**THAILAND** — Radio Thailand, **9810** at 1236. (Cooper, CA) **13695** at 0049 with sports. (Jenkins, WV) BBC relay, **21660** at 0310. (Paszkievicz, WI)

**TOGO** — Radio Lome, **5047** in FF at 2310. (Roberts, NC) 2327. (Jeffery, NY)

**TURKEY** — Voice of Turkey, **7300** at 0100 in TT with QRM from Radio Slovakia. (Ziegner, MA) **17815** at 1340 with commentary. ID 1345. (Zamora, TX)

**UNITED ARAB EMIRATES** — UAE Radio, Dubai, **13675** at 0330. (Jenkins, WV). **15400** with IS at 0213. (Paszkievicz, WI) UAE Radio, Abu Dhabi, **15315** monitored at 1450 in AA. (Northrup, MO)

**UNITED STATES** — AFRTS, Florida, **12689 USB** monitored at 0332 with "Oldies Radio." (Jeffery, NY) WWBS, Georgia, **11900** at 0025 with sermons, ID, address. (Paszkievicz, WI) 0030 to Europe. In the ID at 0100, Mrs. Josey said the antenna had been re-oriented for Europe and they are seeking reports from Europe. Said they would also be heard on UTC Mondays from 0000 to 0200. (Silvi, OH)

**VATICAN** — Vatican Radio, **7305** at 0243 in FF. (Cooper, CA) **15500** at 1400. ID 1403 and IS. (Zamora, TX)

**VENEZUELA** — Radio Amazonas, **4939.47** in SS at 0917. Long list of morning announcements, time check, canned station promo. Audio oddly clipped, but intelligible. (Quaglieri, NY)

**VIETNAM** — Voice of Vietnam, **7250** (via Russia) at 0235. (Jenkins, WV) **15595** at 0400. (Hill, ID)

**ZAMBIA** — ZNBC, **6265** at 2024 with African folk songs. (Kolesov, Ukraine)

And that ties it up for this time. A roar of approval, please, for the following good guys and gals who came through this month: Dave Jeffery, Niagara Falls, New York; J.W. Roberts, Bernard, North Carolina; Larry R. Zamora, Garland, Texas; Eric Cooper, Mission Viejo, California; John Jenkins, Charleston, West Virginia; Michael Miller, Issaquah, Washington; Thomas W. Hill, Mountain Home, Idaho; Mark Northrup, Gladstone, Missouri; Sheryl Paszkievicz, Manitowoc, Wisconsin; Lee Silvi, Mentor, Ohio; Tricia Ziegner, Westford, Massachusetts; Jim Conrad, Waterloo, Iowa, and Al Quaglieri, Albany, New York. Thanks to each one of you!

Until next month, good listening! ■

# The Old CB Shack

BY DON PATRICK

GIVING LIFE TO YESTERDAY'S RELICS

## Answering Your Letters, And RF Power Levels

I have to apologize for my responses and information sent out by E-mail and snail mail over the past 30 days or so. I have been pretty sick, and sometimes, due to the medication, some of my answers did not make a lot of sense. So, I will do the best I can, with my wife's help, to catch up and correct my mistakes.

One reader asked about when I did the rebuilding of the Cadre CB unit. That issue was the July 1997 *Popular Communications* on page 47. And readers, if you have E-mail, and want to respond to Gary about the old Cadre CBs, he's at <drumlore@ptd.net>.

A while back, we asked for the names of any shops where our readers received good service at a fair price. Please understand that we are not recommending these shops, only passing along their names for your consideration and asking that you check them out yourself.

They are *Citizens 2-way Radio* in Dearborn, Michigan, 313-278-0560 and *Tel-Van Electronics* also in Dearborn, Michigan, 313-561-6080.

### Looking In The Mailbag

Bruce, did I ever send you the information on the Polycom Pro? Let me know.

Jerry, I can't help you with the assembly manual on the Knight Kit C27. If it were a C-22, I could help. Sorry.

Bob and Donna are looking for the company that purchased all of the Tram production parts. If any of you know the company's name, please pass along the information with a Letter to the Editor.

To Bill in Georgia: the main limiting factor to the range of a walkie is the poor antenna system, and its low power. Put a decent antenna on one and you will get pretty good coverage. Walkies in the 150-170 band can be purchased with up to five watts RF power output. Try to stay in the 150-MHz band or higher and don't use low band.

While power is not everything, it sure can help. The FCC power limit is five watts of input power and four watts output power on CB. The reason for the dual limit is that it makes it simple for the

enforcement branch to check and prove a unit is using illegal power without having to open it up.

We are not here to support or condemn power levels, nor do we recommend that you operate a unit illegally. Your unit, the way it was made, and how or where it's used by the owner, is between them and the FCC. RF power, without a corresponding audio modulation level, is of limited use. Input power is the power the tube or transistor runs at in the tuned circuit. Output power is the power level that you are able to couple out of this circuit into the antenna coax. If you have a well-designed output circuit, you will have an efficiency factor of 60 to 80 percent. So, a 10-watt input power unit will get 6- to 8-watts out into the coax. Audio power? To modulate 100 percent, your audio level must be one-half the RF power level. So, with a 10-watt RF circuit, you must have 5 watts of audio power.

There were a number of very popular tube type units that we called "catfish" radios. They were all mouth, no ears — great transmitters, but poor receivers. Some people used one unit for the transmitter and another unit to receive. Mainly these included, but were not limited to, the E.F. Johnson Messenger I and II and the General VS Series units. Of these two, the General was the best by a fair margin. The unit used bigger tubes, a heavier power supply, and a larger modulation transformer. This was because the unit was designed for a higher power level than was allowed for Class D Citizens Band. These higher power levels were legal for other services, such as Civil Air Patrol (at that time) and low band commercial channels.

So, one of the VS Series units would put out up to 25 watts of RF power. The modulation was good too, but while the receiver was sensitive enough, it would hear *everything*, even *near* your channel. This included noise, along with what you wanted to hear. It only had four tubes in the receiver — a good unit would have eight or nine! There's a big difference. And like I said, the General was built to stand this kind of power level and not eat up tubes.

The Johnson Messenger I and Messenger II were in between the two. They were made for higher power (8 to 12 watts), but with a little better receiver than the General VS units. Like I said, some people used a General as a base transmitter with a Poly Com, Tram, or Browning Eagle as a base receiver. While this power level was, and is illegal, people did it anyway.

This is going to be my final column on Old CB rigs for *Popular Communications*. This is strictly due to my health. The doctors have only given me another month or so, and with all of the medicine that I am taking, I have developed cataracts and can hardly see anymore. I thought I would be able to do at least one more, but even as I am writing this article, I can hardly see to read what I have written.

It has been a real pleasure for me to be able to write these articles. Some of your letters have been great, and I hope that I have been able to help with your questions and to maybe "tweak" your interest in these old CB units. Hopefully, it won't be but a few issues until we are able to find a replacement author.

If you check my Reader's Market ad in the back of this issue, you will have a chance to bid on the best collection of CB schematics and goodies in the country — mine! I've broken down my collection into THREE groups. I am going to put up, to the highest bidder, my entire collection of old tube-type CB radios. If not already sold, we will have an extremely rare CB, most likely the rarest in existence today, an E.F. Johnson Gold Award Messenger III. Not only were there only 300 ever made, mine has never been out of the box! So, check for the list and how you can examine these units. GOOD LUCK — Oldestimer — Don Patrick.

*Editor's note: Dedicated. Enthusiastic. Caring. This is Don Patrick. His can-do attitude and perseverance have made "The Old CB Shack" column widely-read and a one-of-a-kind in the radio hobby. He will be missed. Our thoughts and prayers go out to his family.*

# CB Scene

BY ED BARNAT  
<Ed@Barnat.com>

27-MHz COMMUNICATIONS ACTIVITIES

## Making A CB Dipole Antenna You Can Toss In Your Trunk!

Summer is here, and it's time to hit the road and take in the sights. If you're thinking about taking a couple of CB radios with you to enhance the experience, a little advanced planning is in order, particularly when it comes to your choice of antennas. Packing a couple of radios for the trip is a fairly simple matter. Finding antennas that travel, install, and perform well, however, can be a real challenge. If you need an antenna that outperforms a mobile, but is still easy to pack, transport, and install, consider a dipole.

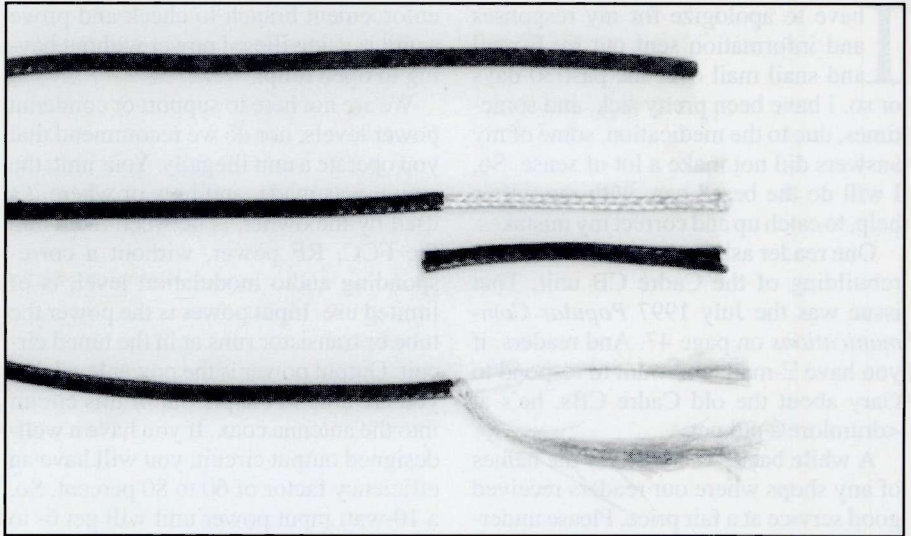
Whether you are heading for the shore or the mountains, the woods or the city, CB radio can keep you in touch with members of your party and let you listen in on, and occasionally chat with, the locals and other vacationers. Yes, taking a CB or two along is a good idea.

Unfortunately, good ideas are not always easy to execute. They often require some advanced planning if they are to work the way you want them to. Using CB radio to enhance your vacation experience is no exception. This is especially true if your plans call for the use of more than one radio. While the radios themselves are usually travel-friendly, antennas often are not. Most antennas that travel well tend to be inefficient, thereby limiting the useful range of the radios. More efficient antennas offer greater range, but tend to be large, cumbersome, and hard to pack and transport.

Talkie antennas, even the biggest extendable ones, are at best short and flimsy. They and their little rubber duck counterparts are designed to travel. However, because they are short and operated close to the ground, their range is limited. Dependable range in the field is about 1/4 to 1/2 mile between similarly equipped units.

### Mobile Antennas

Mobile antennas are a little more rugged and can get out better. A four-footer mounted on top of the car can usually be counted on to communicate with other mobiles a couple of miles away.

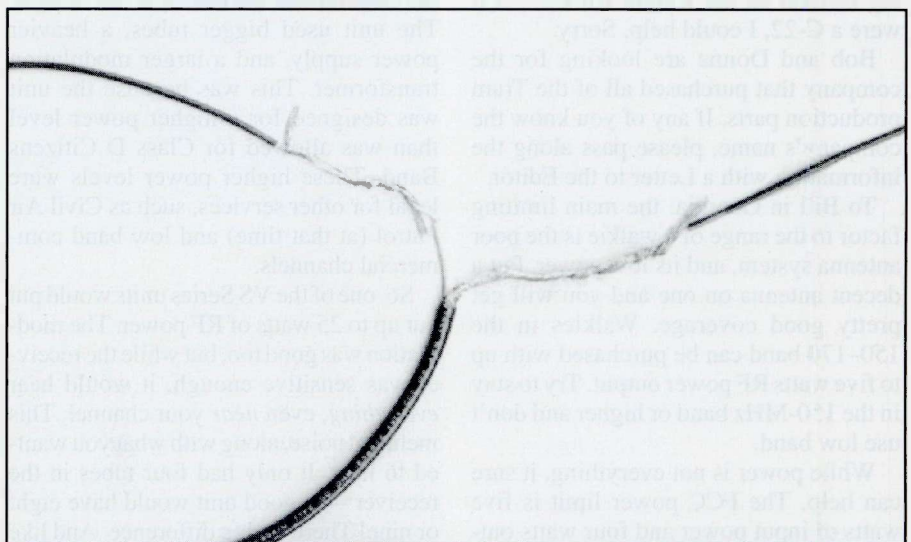


The coax after cutting the outer covering off and shown with about three inches of twisted braid, ready for the next step of construction.

You should even be able to dependably chat with talkies a mile or so away. But the antenna has to stay with the car. If you are camping in the woods, you might not be able to take the car with you.

The best working ranges are achieved with base-style antennas. In case you haven't noticed though, base antennas do

not make good traveling companions. They are long, often measuring 12 feet or longer, and are inflexible. You can't bend or fold them, so, they are difficult to stuff into overstuffed trunks or backpacks. And, as if that isn't bad enough, they need support structures — something to get them up in the air. You will need some



Connect about 20 feet of wire (see text) to the center and braid of the coax.

kind of mast or tower. If you think the base antenna was hard to pack and transport, wait until you tackle the tower!

## The Good Ol' Dipole

Somewhere between the mobile and base antennas, in terms of range and dependability, is the dipole. Dipole antennas are not only good, cheap, and dependable, but they are easy to pack and transport as well. Even better, with a little ingenuity, a dipole can be installed just about anywhere.

Don't look for a dipole at the local electronics store. You won't find one. You will have to make your own. Don't worry, because they are easy to build from readily available parts. If you are a good scavenger, you can put one together for *free*. Even if you go out and buy all *new* parts, it shouldn't cost more than \$25 or \$30. All you need is coax, wire, electrician's tape, a PL-259 connector, and some light rope or twine. If you plan on attaching the antenna to a talkie, you will also need an adapter to convert the PL-259 to the BNC.

You should assemble and test the antenna at home, before you hit the road. Start with a 50-foot length of RG58A/U coax (the thin stuff). I strongly recommend you get the multi-strand core style. I do not recommend solid core (like the kind available from RadioShack) because when you're working with it, it breaks too easy. Install a PL-259 plug on one end. If you are using a pre-assembled coax (one with both PL-259s already on it), cut one connector off. Carefully strip about three or four inches of the black outer covering off the end of the coax without a connector, exposing the braid. Tease the braid open, back as far as the outer covering has been removed. Then twist the now straightened braid together to make a single wire. Finally, strip about two to three inches of the inner covering to expose the center conductor. Leave an inch or so of the inner covering in place between the braid and the center conductor to keep them from making contact.

Get a six-inch round tin can — a coffee can works well. Make a coil by wrapping the coax, starting at the end you have cut and stripped, around the can 10 times. Slide the can out of the coil and tape the coil so it will keep its shape. When you are done, it should look like a little tire. This coil is called a balun.

Next, get about 20 feet of wire. Any size (thickness/gauge) of wire will do (lamp cord works well) — just make sure it is strong enough to take a little pulling



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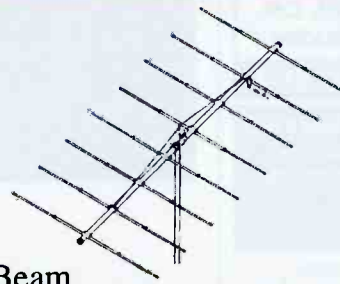
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and tugging. It can be either bare or insulated, but I strongly recommend using insulated wire. Insulated wire will not only keep the antenna from grounding out, but greatly reduces the possibility of

electrocution should it come in contact with power wires.

Cut two, nine-foot six-inch pieces of wire. Strip about two inches from one end of each of them. Securely twist (and sol-



*Wrapping the coax around our coffee can to make a balun.*

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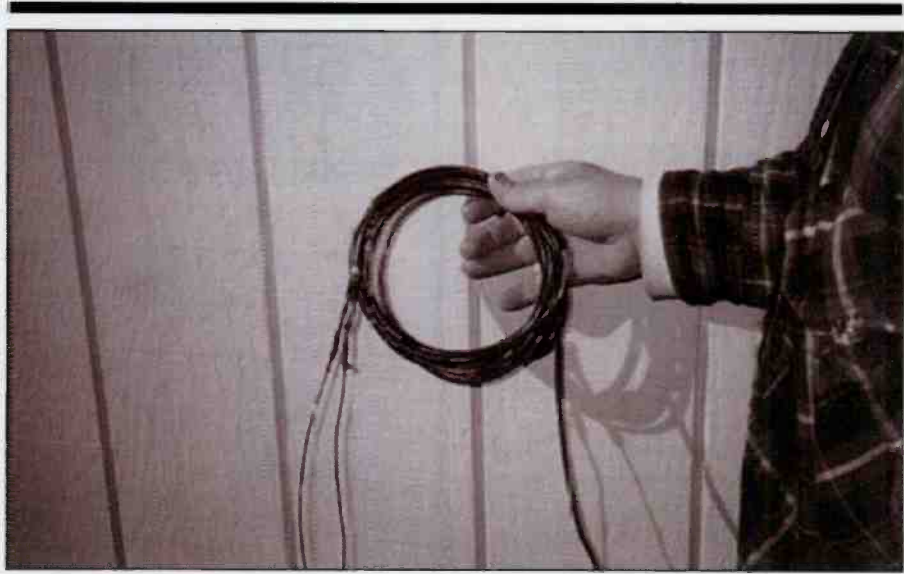
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The completed balun looks somewhat like a small tire.

der if possible) the stripped end of one to the center conductor of the coax, and the other to the braid. Tape the connections well. They not only have to maintain good electrical contact, but will have to support the weight of the antenna, coax, and balun as well.

Now, starting at the point where the center conductor and braid split, measure out nine feet on each wire. Each wire should be the same length. At the nine-foot mark, loop the wire back on itself (the kind of loop you make two of when you tie your shoe) and tape the loop to keep it

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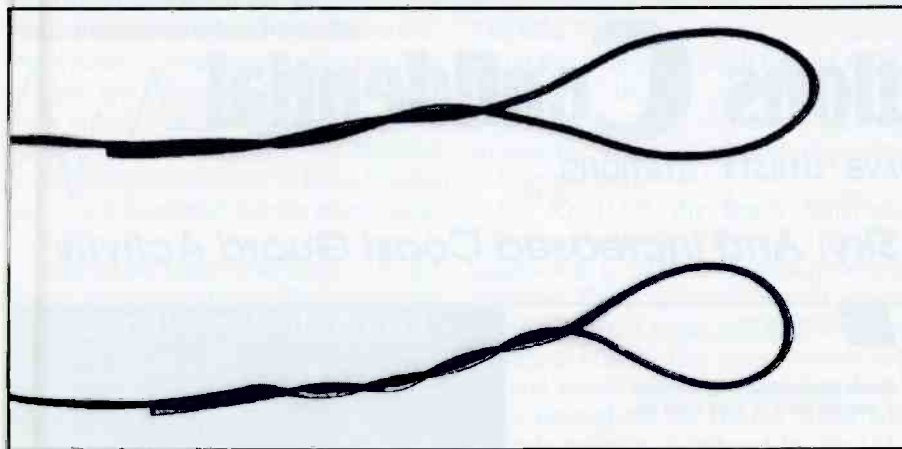
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Loop the wire back on itself at the nine-foot mark.

in shape. Don't use too much tape just yet. You will have to untape it to make some final adjustments.

Now you are ready to hang and test the antenna. Tie a piece of rope or twine into the loop on the wire that is connected to the center conductor of the coax. Throw the other end of the rope over a tree limb and hoist the antenna up at least high enough so the balun is lifted off of the

ground. Stretch the other wire (the one that is attached to the braid) out, either down or out to the side. Use an SWR meter to check the match. If the match is too high, check to see if it is higher on channel 1 or channel 40. If it is higher on channel 1, then the antenna is too short. If it is higher on channel 40, then it is too long. Adjust the length of the antenna by moving the top of each loop up or down

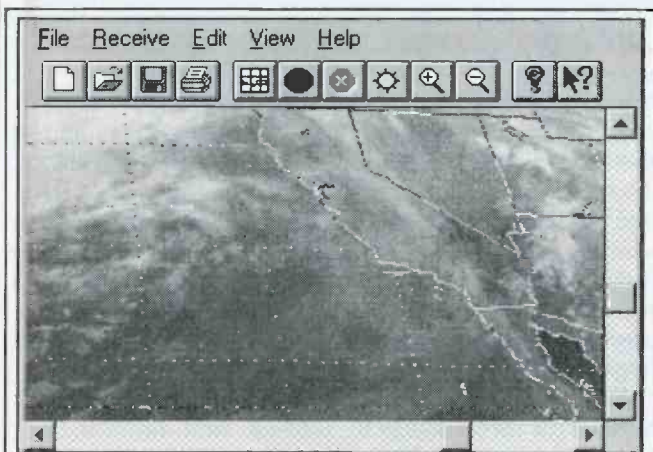
the wire, an inch or so at a time, being sure to keep each wire equal lengths, until the desired SWR readings are achieved.

Once you have found the right length for the antenna, you can securely tape the loops in place. Your dipole is now ready to travel. Enjoy!

### July And August Mixers

Looking for a little chatter on the CB? Then plan on attending the next, now regularly scheduled, on-air CB Mixer. They are held wherever you are, on the last Saturday of the month (the next two will be on the 31<sup>st</sup> of July and 28<sup>th</sup> of August) from 9 p.m. until 10 p.m. local time. SSB operators should work channel 36 LSB; AM operators should work channel 23. For complete guidelines, see the November 1998 issue of *Popular Communications* or drop me a note.

Well, that's it for now. Thanks for writing me here at the magazine — *Popular Communications*, "CB Scene," 25 Newbridge Road, Hicksville, NY 11801, or via the Internet, where my address <ed@barnat.com>. And, as always, if you can (especially on July 31<sup>st</sup> and August 28<sup>th</sup>) — catch me on the radio! 73 ■



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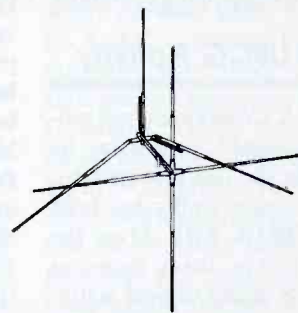


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Another letter comes in from Gerald Johnson (KE0KI) of Ozark, Missouri. Gerald writes, "Keep on writing RD — I always look for your column but read it last 'cause I think, for me, it's more interesting than the others." Gerald goes on to state that he has been a licensed amateur for 53 years! Gerald's favorite stations are KFS/KPH on 12695.5 kHz. He also poses a question: "What/who is the strange CW station on about 4027 kHz, starts about 0300Z on Sunday, makes no call-up, sends about 200 + groups of 5-letter cipher, and at 0336Z he goes away, ending his transmission with AR AR AR VA VA VA?"

Well, Gerald, 4027 kHz is a frequency used by the M8 Numbers station. The "AR . . . VA" is actually "AR . . . SK." Other frequencies for this station include: 6287, 6797, 6933, and 7580 kHz. Welcome to the column, Gerald! I'm sure RD appreciates the kind words.

"John Doe" in London checks in with the current active frequencies for the Russian Navy "C," "P," and "S" CW beacons. "John" writes, "The current active freqs are 4558, 5154, 7039, 8495, 10872, 13528, 16332, and 20048 kHz (at least - there may be some that I don't know about). In each case "C" on the stated freq, "S" 0.1 kHz lower, and "P" a further 0.1 kHz lower — i.e. "P" is on 4557.8 kHz and so on. These are the well-known "clusters" — I have heard "P" on other freqs, also "R" and "L" by themselves." Thanks "John" for the update.

## UTE Loggings SSB/CW/Digital

294: PH: NDB Cap d'Alpech, France at 1112 in CW (AB-NLD)

356: RCX: NDB Rusk County, Ladysmith, WI at 0459 in CW (DG-MI)

2240: WLO: Mobile Radio at 2008 in CW w/maritime marker. (DG-MI)

2582: VBA: Canadian Coast Guard Thunder Bay at 0040 in USB w/MIB (DW-MD)

2598: Unid CANFORCE station monitored at 0110 in USB w/WX. (TS-KS) (*Should be VCM: CCG St. Anthony on the St. Lawrence waterway — Ed*)

2670: NMF2: USCG Group Woods Hole monitored at 0410 in USB w/MIB. Also, NMY42: USCG Group East Moriches at 0010 w/MIB. (DW-MD)

2719: Gale warnings in USB in Italian w/EE transmissions monitored at 2254. Also on 2680 (PP-FR) (*Poss IZN: Puerto Torres Radio, Sardinia — Ed*)

### 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
tfc	Traffic
USB	Upper Sideband mode
w/	With
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

2810: Turku Radio, Finland in USB w/navigation warnings ending at 2240 (PP-FR)

3737: Unid Serbian monitored at 0200 in LSB weak numeric tfc in Slavic numbers (dvoika, troika, etc). Some weak SSTV noted on freq. (AWH-FL)

4030: ARIA Control wkg ARIA 1 at 0600 in USB re: Delta II launch data comms. ABNORMAL 20 and ASHLEY 12 on freq also. (JJ-CA)

4060: "A" Unid beacon at 0300 in CW just sitting there sending the letter "A" one after another, back to back. (SH-IL)

4116: Unid w/5FGs in RTTY 50/500 then "QRU" in CW and disappeared. (JD-UK)

4146: Unid stn wkg ship WBS-7689 in USB at 0207, ship passes posn, wx and supplies needed when back in port, was in Gulf of Mexico. (CS-SC) (*WBS7689 is the Gulf Fleet Marine Tug Gulf Duke, prob wkg "KZR Harvey," Gulf Fleet Marine, Harvey, LA — Ed*)

4271: CFH: CANFORCES Halifax FAX 120/576 at 0001 w/chart. Also at 0056 in RTTY 75/750 w/plaintext wx. (DW-MD)

4295: FUE: French Navy Brest in RTTY 75/810 at 0152 w/calltape. (DW-MD)

4316: Unid wx report monitored at 0509 in USB w/QRN. (DG-MI)

4372: 1BQ: at 0018 in USB wkg 9IX, L4G, and others regarding new day callsign change and target tracks. (DW-MD)

4622: ZLDD 10 and 20: Dept. of Conservation stations North Island New Zealand at 2005 in USB with 2 OMs. One of them was mobile back to Taumarunui, while the other one was organizing possum hunting. (IJ-NZ)

4645.1: GOLF wkg SIERRA at 0604 in USB re: when we get back to HULA DANCER, we need to get that antenna fixed. (JJ-CA) (*Hula Dancer is FACSFAC, Hawaii — Ed*). Charlie calling Foxtrot at 0650 in USB w/req to know what kind of encryption equipment Foxtrot has onboard. (TC-MO) (*Probably USN activity off of Hawaii — Ed*)

4731: MKL, Pitreavie Scotland, at 0110 in CW w/ WX. (TS-KS)

4737: ZKX, RNZAF Auckland, New Zealand at 0715 in RTTY 75/850 with RYRY and Quick Brown Fox tests. (IJ-NZ)

4739: CARDFILE 761 wkg FIDDLE at 0243,

passed spare grp 04 to C3Y. 0243. At 0012, FIDDLE report life raft sitrep w/TRIDENT 71D. (MF-OH)

4742: ARCHITECT, RAF Upavon at 0231 in USB w/airfield color states. (DW-MD)

5170: KPA2, MOSSAD No Stn at 1835 in USB with YL repeating KPA2. (IJ-NZ)

5240: TELSTRA Landmobile Phone, AUS at 0902 in USB. 2 OMs w/chat. Mentioned they would log onto the net in half an hour and they could be reached via ICQ. (IJ-NZ)

5243: TANGO 1 and TANGO 19, Australian Army net at 0912 in USB with radio checks and ANDVT bursts. (IJ-NZ)

5335: ZERO ALPHA and ZERO BRAVO, Army Net South Island New Zealand at 1910 in USB w/logistical msgs. (IJ-NZ)

5342.5: Unid Russian station at 0825 in LSB w/YL in RR repeating names. OLGA, SERGEI, YURI, MIKHAIL, NICKOLEI, IVAN etc. (IJ-NZ) (*This is a version of the Russian phonetic alphabet — Ed*)

5356: RNZAF Woodbourne AFB New Zealand at 1855 in USB calling Base Camp for radio checks. (Common RNZAF P-T-P freq used during exercises) (IJ-NZ)

5358: "A2A," believed somewhere in Romania, at 2045 in RTTY 115.74/360, // w/4109. Followed by CW QSOs w/stns on 4753. This freq is "405 minus 2" so "405" must be 5360 kHz (JD-UK)

5386: ZKNT, Civil Defense Auckland at 2040 in USB wkg ZKG31, Radio technician, New Zealand w/radio checks from their new remote xmit site near Palmerston North. (IJ-NZ)

5402: "A2A" at 2130 in CW // w/5004 kHz, calling-up before a RTTY xmsn using his usual 115.75 mode. (JD-UK)

5406.5: BANDBOX: Dutch Airforce Millingen, Netherlands at 1223 in USB wkg 8EG. Posn and tracking reports (AB-NLD)

5419: Cuban cut #stn (1-0=ANDUWRIGMT) at 0203 in CW w/ 5F msg. (TS-KS)

5431.5: P7X monitored at 0205 in CW w/5L groups interspersed w/high speed data. Also on 5779.5. (TS-KS)

5435: ART2, MOSSAD No Station at 1902 in USB YL repeating ART2. (IJ-NZ)

5470: Unid speech-inversion scrambling at 0218 in USB. (TS-KS)

5541: Unid LDOC at 0115 in USB wkg Jordan Air 262. (TS-KS)

5600: Condor 105 at 0140 in USB wkg New York radio w/pos rpt. (TC-MO)

5678: Aberdeen Coastguard monitored at 1231 in USB asking unid fishermen to QSY to another channel as they were causing QRM to an International Search and Rescue channel. (AG-UK)

5680: DHM 91 at 1412 in USB clg Mission 4823. Also, Belgian Air Force 701 monitored at 1334 w/radio check with Koksidge Rescue. (AG-UK).

5684: UNID: Presumed Military Pacific Islands at 1925 in USB with 2 OMs in heavy accented EE. One of them said "??aruva over and ??isilu over." While the other one was calling "Is one is one over?" and whistling. (IJ-NZ)

5687: German Air Force unit 91 w/aircraft 662

# What's So Unusual About This Arizona QTH?



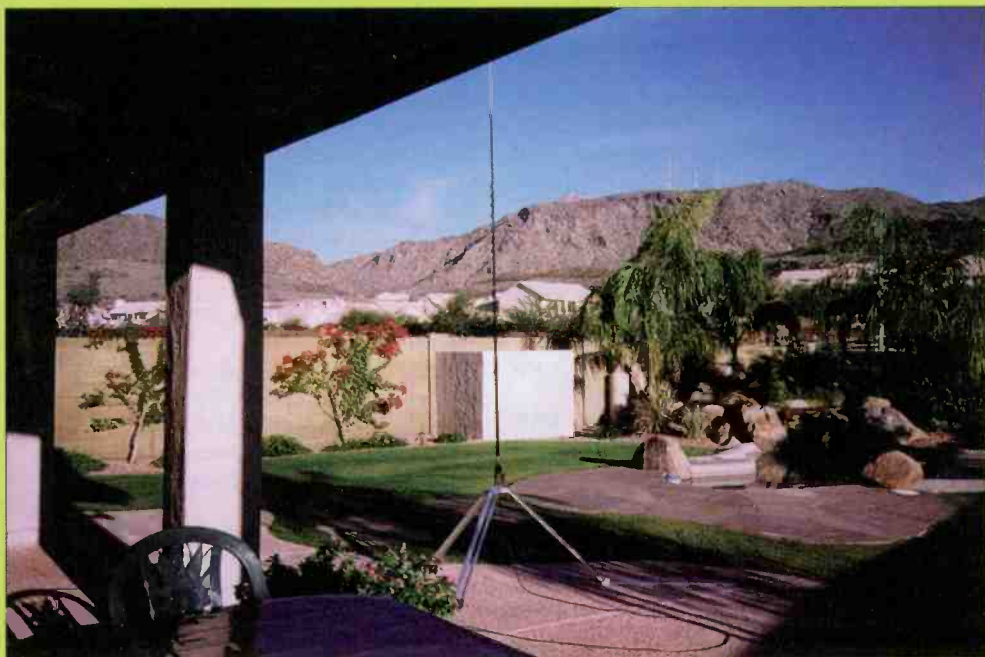
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monitored at 0700 in USB. Crew req freq for Dubai and Abu Dhabi, told to use Oscar and Sierra. (PP-FR)

**5692:** RESCUE 1500:HC-130, CGAS Elizabeth City at 0716 in USB wkg CAMSLANT-Chesapeake w/pp to Atlantic Air Command Ctr re:M/V Dark Shield. Patient awake but speaking w/difficulty. Must consider safety of PJs jumping from a/c into these conditions. Alternative is to land in Bermuda and await conditions to improve. (ALS-FL). Also CAMSLANT at 1858 wkg 2139 and clg STINGRAY-41. No joy. (JK-NY)

**5696:** CAMSLANT at 1903 in USB clg STINGRAY-41. No joy. Also, at 2127, CG 2107 (HU-25A CGAS Cape Cod) established guard with CAMSLANT, en route to HOMEPLATE from Andrews AFB. (JK-NY)

**5698:** ZKX, RNZAF Auckland New Zealand at 0502 in RTTY 75/850 with RYRY and Quick Brown Fox tests. (IJ-NZ)

**5730.8:** FDI22, FAF Narbonne, France at 0602 in RTTY 50/425 w/Ry and Le Brick. (IJ-NZ)

**5732:** Speech-inversion scrambling in USB at 0235. (TS-KS)

**5745:** Unid Telecom Russia at 0930 in USB with YL in RR. (IJ-NZ)

**5757:** ZKX, RNZAF Auckland New Zealand at 0532 in RTTY 75/850 w/RYRY and Quick Brown Fox tests. (IJ-NZ)

**5791:** Unid at 2030 in RTTY 75/500 5L groups. Looked like SOUD "11177" station but I didn't see any headers. (JD-UK)

**5840:** CHARLIE WHISKY at 0143 USB w/radio check with TANGO. At 0155, CP calling CW, discussing available aircraft. (MF-OH)

**5841:** 8 OSCAR at 0058 in USB reporting Ops Normal to PANTHER. (MF-OH)

**5887:** IMB2, Rome Meteo in RTTY w/plain-text wx for Frankfurt, Nurnberg, and other German locations. (PP-FR)

**5910:** ZKX, RNZAF Auckland New Zealand at 0610 in RTTY 75/850 w/RYRY and Quick Brown Fox tests. (IJ-NZ)

**6215:** Unid spook station at 1150 in AM. Poss Korean, open carrier at tune-in, recheck already going at 1200 w/M operatic vocal into poss numbers. Gone by 1210. Fair level. Pyongyang numbers audible same time on 5872.2 but not parallel. (AWH-FL)

**6235.5:** WHW462: Pin Oak Digital at 0326 in PACTOR-II (variant?) 100/40. Sent CW call between transmissions. (DW-MD)

**6242:** Golf at 0639 in USB clg Bravo Foxtrot. No joy. Also Golf clg Mike, re how he has alligator playground. (TC-MO)

**6417:** 4XZ: Haifa Naval Israel, at 0145 in CW w/ 5L msg. (TS-KS)

**6458.5:** AFN broadcast at 0708 in USB w/news (TC-MO)

**6470:** SXA24: Greek Navy monitored at 2255 in CW. (PP-FR)

**6526:** LDOC Kingston Jamaica at 0717 in USB wkg AIR JAMAICA 001 with WX (IJ-NZ)

**6580:** USCG CAMSPAC at 0708 in USB wkg the vessel ? — SEAHAWK arranging a tug from Johnston Island to tow the vessel as it had been drifting for three days and was nearly out of fuel. (IJ-NZ)

**6630:** Virgin Air 34 at 0150 in USB wkg New York radio w/ flight level request (TC-MO)

**6640:** Polar 603 at 0009 in USB wkg New York Radio and Polar Dispatch. (TC-MO)

**6655:** North West 287 at 1049 in USB wkg San Francisco Radio w/posn rpt. (TC-MO)

**6679:** Honolulu Radio at 1100 in USB w/wx rpt for several terminals at (TC-MO)

**6683:** NAVY 49676 at 0335 in USB wkg Andrews VIP. Inbound NAS North Island. Also, SAM 204, wkg Andrews VIP at 0530 w/pps to Mildenhall re: 1005z wx. (JJ-CA)

**6692:** Kharbarovsk at 0808 in USB wkg Yuzhno-Sakhalinsk and Magadan Aeradios with radio checks. (IJ-NZ)

**6708:** ZKX, RNZAF Auckland New Zealand at 0400 in RTTY 75/850 w/RYRY and Quick Brown Fox tests. (IJ-NZ)

**6712:** CIRCUS NOIR, FAF Noumea New Caledonia at 0705 in USB wkg FRENCH NAVY 45?? w/wx for Wallis Island. (IJ-NZ)

**6726:** ZKX, RNZAF Auckland New Zealand at 0420 in RTTY 75/850 w/RYRY and Quick Brown Fox tests. (IJ-NZ)

**6730:** Andrews VIP at 2015 in USB radio check with NAVY 49676. (MF-OH)

**6741.7:** Unid at 1945 in ARQ w/5L groups. Presumed Tunisian Navy listed on this freq in the books. (JD-UK)

**6761:** TUFF 45 at 0255 in USB clg KANSA 56. (MF-OH)

**6763:** "A2A," believed somewhere in Romania, monitored at 0500 in CW. // w/5807. Exchanging signal reports w/the usual large group, which was on 4753 kHz. These are the same three freqs that were used last summer. (JD-UK)

**6779:** DRAI, German Navy FGS Schleswig-Holstein at 0912 in USB clg DHJ59, Wilhelmshaven Naval. (IJ-NZ)

**6780:** Kinloss Rescue at 1647 in USB w/radio check w/Rescue 193. (AG-UK)

**6802:** The Counting Station at 0318 in AM w/YL/SS 3/2F msg. (TS-KS)

**6815.6:** USCG GANTSEC and W8V at 0905 in USB w/no joy in the green. (IJ-NZ) Also at 0128, GANTSEC clg unid in "red" and ANDVT, on top of an apparent audio feedback source. (JJ-CA)

**6826:** Stockholm Aeradio, Sweden at 0608 in USB w/USAir 12 terminating PP. (IJ-NZ)

**6855:** Cuban Numbers Station at 0322 in AM w/YL/SS 5F msg. (TS-KS)

**6865:** Kharbarovsk Aeradio Russia at 0905 in USB wkg Harbin Aeradio China with a dispute about A/C 89961 and 89964, which are not cleared to enter Russian airspace. Must have correct flight plan filed and sent via teletype. (IJ-NZ)

**6945:** VLH, School of Distance Ed., Charleville, Qld, AUS at 2247 in USB w/ debating lesson "when robots take jobs there is nowhere for people to work." (SD-AU)

**6990:** FDG, FAF Bordeaux France at 0550 in RTTY 50/425 w/RYRY and Le Brick. (IJ-NZ)

**6995.5:** Unid Indonesian stns at 0844 in USB w/2 OMs in Indonesian. One of them was passing msgs, while the other one would acknowledge w/OK and Roger. (IJ-NZ)

**6997:** IARD, presumed Italian Navy vessel at 1730 in USB, working somebody whose call-sign I couldn't copy on the same freq. (JD-UK) (*IARD is the Italian Navy Ship Ardito (D550), an Audace-class destroyer — Ed*)

**7330:** Possible South Australian State Emergency Services net at 2235 in USB w/WILSON conducting net checks w/state mobiles. (SD-AU)

**7500:** ECHO-3-MIKE at 0026 in USB wkg ECHO-3-GOLF w/comms setup for upcoming "exercise." (JJ-CA)

**7522:** 71: Unid Australian commercial net at 0326 in USB wkg BASE w/ OMs complaining about load and BASE advising 71 that he'll talk to him once he is loaded (SD-AU)

**7602:** FDI22, French AF, Narbonne, F at 1420 in RTTY 50/400 w/"brick" (JD-UK)

**7637:** VJQ727 Capricornian School of Distance Education, Emerald Qld, AUS at 0332 in USB w/YL conducting pre-school lesson w/ teddy bear song (SD-AU)

**7651.5:** Various USCG units, including SHARKs 12, 14, 15, 17, and 22, Group Miami, WHITECASTLE, STINGRAY 41, and VOODOO 24 in USB w/counter narcotic operations. Logged by (JM-KY), (MF-OH), (SD-AU), and (AWH-FL).

**7719.3:** Unid at 0115 in PACTOR. Repeating AT6TLA, AT6TOK and AT6TTX. (JM-KY) (*This should be U.S. Army MARS stations. The full call-sign PACTOR call-sign protocol — Ed*)

**7712:** TBB5/7 Turkish Navy, Ankara, TUR at 1425 in CW w/"TBDJ de TBB5/7 QAP." Could not hear anything on 4350 (TBB5) or 8555 (TBB7); presumably this is spurious or accidental. (JD-UK)

**7777.8:** U.S. tuna fishing boats at 0423 in LSB 2 OMs w/chat. Mentioned radars and choppers. (IJ-NZ)

**7831:** REDWAGON, USAF E-4B monitored at 0157 in USB wkg WAR46 and PUNCTURE. (DW-MD)

**7890:** New Zealand Dept. of Conservation at 0718 in USB phone link to Kermadec Islands w/ chat. (SD-AU)

**7964.2:** Presumed Portuguese State Police at 0850 in ARQ. (IJ-NZ)

**7985.2:** Unid at 0120 in RTTY 75/850 w/ Quick Brown Fox, counting, and test (JM-KY)

**8000:** OTH radar at 0343. (TS-KS)

**8003.5:** Unid Australian outpost net at 0732 in USB w/husband and wife chatting then trying to convey freq for morning sked using code which wife could not understand, except that all freqs end in 3.5 (SD-AU)

**8130:** Mexican Navy at 1610 in USB and CW cross-mode tfc, no IDs, off w/"pendiente." (AWH-FL)

**8158:** The English Man at 0236 in AM EE w/5FGs (x2) in mid-transmission. QRT at 0319 w/183 (x2) 265 (x2) 00000. (DW-MD)

**8176:** VIT, Townsville Radio at 0618 in USB w/ afternoon sked. (SD-AU)

**8300:** New Star Numbers Station at 1317 in AM w/YL/CC 4F. (TS-KS)

**8514.2:** 5AT, Tripoli Radio in CW. (PP-FR)

**8825:** New York Radio at 2259 in USB wkg

several a/c over Atlantic giving posn and estimates to waypoints. (CS-SC)

**8971:** MOLSON 713, P-3 at 1258 in USB wkg BLUE STAR, request relay to D4E that he is ops normal. (RM-GA)

**8977:** Yeovil Ops: RNAS Yeovilton at 1431 in USB wkg Navy 632, Navy 674, Navy 680, and Navy 645 (AB-NLD)

**8978.8:** CHASER at 0935 in USB wkg unid U.S. Military with "In the red," "remain in PLE," "switch to green," and then into ANDVT bursts. (IJ-NZ)

**8992:** Tiger 23 at 2243 in USB wkg Offutt w/pp to Tiger Ops, does have "TO" onboard. Tiger Ops advises giving "TO" to maintenance upon arrival. Also contact Ops on arrival on Z-190. (TC-MO) LL92: P-3C VP-30 "Pro's Nest" NAS JAX at 0051 wkg Thule with p/p. Also, RESCUE 1706: HC130H7 in USB with Elmendorf GHFS for p/p to Kodiak Air. (JK-NY)

**9022:** WINDSOR 558 at 0824 in USB w/pp to "Air Movements" re 135 paxs, should be w/them at scheduled time. (NJ-NZ)

**9031:** ARCHITECT in USB wkg 8SF w/wx for EGOD. EGOD is likely to be in Wales. (PP-FR) (EGOD is Llanbedr, Wales — Ed) ARCHITECT: at 0639 in USB w/TAFs for EGYPT, FHAW, GOOY, SBGL, SBPA, SBRF, SCCI, SCMU. (SD-AU)

**9101.3:** Unid Philippines station at 0912 in ARQ selcalling FXEU. (IJ-NZ)

**9120:** NAVY 50496 at 2202 in USB wkg Andrews VIP for pp re: 0010z wx. Inbound Mountain Home AFB w/DV-2. (JJ-CA) ZERO ALPHA: at 0930 in USB wkg 40 and 60. Australian Army Relief Ops net Papua New Guinea with closing down the net for the night and mentioned they had no more patrols out. (IJ-NZ)

**9122.5:** WUG, U.S. Army Corps of Engineers Vicksburg at 1605 in USB wkg USACE net as Net Control. WUG2, USACE Memphis, WUG4, USACE New Orleans, WUC5, USACE Savannah, WUI6, USACE Ft. Worth, WUE6, USACE Nashville, and others also active. (DW-MD)

**9180:** ROMEO ECHO at 0440 in USB wkg TANGO GOLFO: Presumed Mexican Navy w/ numeric msgs. VICTOR ROMERO FOX-TROT, SEIRRA ROMERO ROMERO HOTEL, CARLOS PAPA QUETTA repeato, repeato, etc. (IJ-NZ)

**9216:** The English Man at 0215 in USB w/msg callup 598, then 610 (x2) 42 (x2) into 5FGS (x2) QRT at 0226 w/00000. (DW-MD)

**9240:** DELTA NOVEMBER, Papua New Guinea Defense Force Patrol Boat monitored at 0835 in USB wkg ALPHA 2 w/routine traffic and they were having some mechanical problems. (IJ-NZ)

**9270:** Mossad (E10) at 0615 in USB numbers station w/abnormal tx id SYN2 transmitting until 0651 (SD-AU)

**9283.6:** CHARLIE 4 GOLF 6 at 0658 in USB wkg 6 PAPA 6: Presumed USN w/ANDVT bursts and tfc re proceeding to area and will pass posns to them. (IJ-NZ)

**9320:** SAM 682 at 0127 in USB wkg Andrews



Chris Halinar came across this interesting U.S. communications site while traveling through Germany.

VIP for pp re: Security police needed upon landing to handle "the four guys on the aircraft." (JJ-CA) ANDREWS at 0724 in USB wkg SPAR 99 with p/p to unid meteo who did not have the observations for her destination but attempted to interpolate the conditions from a satellite photo. (SD-AU)

**10051:** Gander Radio, CAN at 2125 in USB w/wx for various cities. (CS-SC)

**10072:** Freedom 118 at 0847 in USB wkg Flight Dispatch re off block time and will advise Hamilton Ops. (NJ-NZ)

**10144:** DK0WCY, DARC Aurora beacon, D at 1009 in CW (AB-NLD)

**10192.5:** DHJ59, GN Wilhelmshaven Germany at 0704 in USB wkg DRAS, FGS Rheinland-Pfalz, w/radio checks. (IJ-NZ)

**10204:** DORSAL at 2250 in USB clg Mainsail w/request to secure station, 3 2 1 count, then digital transmissions. (TC-MO)

**10215:** BIG RED, unid monitored at 1957 in USB w/military exercise net wkg "Cowboy," "Farmhand," "Mr. Wizard," and "Cardinal." (TS-KS)

**10412:** KILO BRAVO at 0118 in USB wkg SIERRA ROMEO and CHARLIE CHARLIE. Tongan Defense Services w/radio checks and comms in Tongan. (IJ-NZ)

**10482:** Unid FAPSI station at 0900 in RTTY 75/500 cct ID 80061. (JD-UK)

**10493:** APACHE KID (WGY912) at 1734 in USB clg ARMY RULER. (JM-KY)

**10570:** CHARLIE-WHISKEY at 1910 in USB wkg TANGO re: unid track carrying air-to-surface missiles. (JJ-CA)

**10607:** FDI8, FAF Nice France at 0540 in CW with VVV DE FDI8. (IJ-NZ)

**10622:** Unid at 0915 in Piccolo w/channels 1, 2, and 4 of a four-channel system, no ID seen but presumed MKD. (JD-UK)

**10698:** CMU967 (presumed Russian Navy, Cuba) at 0930 in CW calling RIW. Sent "ZZU 10164/10164"; RIW then appeared on 10164 calling CMU967 but they could not hear one another. (JD-UK)

**10700:** Unid at 0945 in FEC-A 192bd.VFT 3x192 bd channels spaced 680 Hz. (JD-UK)

**10780:** KING 30 at 0105 in USB wkg Cape

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## Tuning In (from page 4)

Association and the Long Wave Club of America, ANARC presented a Certificate of Recognition to Bill Oliver.

In recognition of planning, organizing, coordinating, and hosting 12 Winter SWL Festivals, ANARC presented each member of the "gang of three" a Certificate of Recognition — Bob Brown, Harold Cones, and Kris Field.

A special congratulations to each award recipient!

## New Column Next Month!

No two days in our Nation's capital are ever the same, especially when it comes to legislation and news affecting our radio hobby. From past issues, you'll recall that writer Alan Dixon has been especially prolific when it comes to radio issues. That's why last Friday, when Alan suggested we meet in the "Pop Comm Hot Idea Room," I knew it was important.

Beginning next month, Alan will bring you a new column titled "Washington Beat," in which he'll cover those topics close to our hearts (and monitoring posts). Alan is no stranger to radio and the communication hobby; in 1996, he stood as a Republican candidate for appointment to the FCC, is a Tech-Plus ham, member of the American Radio Relay League, Amateur Radio Emergency Service, and NOAA/Skywarn. He's a former member of the Board of Directors of the Baltimore Radio Amateur Television Society, Inc., and has been involved with public broadcasting.

He was recently the Sunday morning host of Christian programming on WDVR-FM, covering the Penn-Jersey region. Now living in Gwinnett County, Georgia, with his wife, Sylvia, Alan is with Panasonic's Matsushita Mobile Communications Division. He was formerly in engineering with Bell Atlantic Mobile. He has also served on the prestigious Telecommunications Industry Association TR-43 AHAG Standards Committee, participating in encryption and telecommunications security development.

To be *really* informed about what's going on inside the Beltway, look for Alan's "Washington Beat" next month. Of course, neither Alan nor I can get inside the minds of our legislators (would you really *want* to?), but now you *can* be on top of issues affecting our radio hobby!

Radio for msg relay re: ops schedule. (JJ-CA)  
**10915:** JAGO 86 at 0547 in USB wkg JAGO 87 asking whether he was still holding w/the other advising that he was picking his way through. At 0545, JAGO 86 wkg JAGO 75 asking whether he had contacted AMCC to advise they had been delayed due to wx. (SD-AU) (*These "JAGO" aircraft are supporting the NATO SFOR operations in Bosnia — Ed*)  
**10953:** HBD20, MFA Berne, Switzerland at 1420 in ARQ w/5L groups; ended w/"end of message" in EE, then "20/3," then off. (JD-UK)  
**11014:** Unid FAPSI station at 1430 in RTTY 75/500 on cct ID 70004. (JD-UK)  
**11053:** ANDREWS at 0729 in USB wkg SPAR 99 on F354 w/ p/p to an unid embassy. The number was a Cameroon number but no joy on that number nor on any of the other four that were tried. (SD-AU) ELMENDORF at 0427 in USB w/SKYKING msg. (JJ-CA)  
**11072:** REA4: Russia monitored at 1230 w/ RTTY 50/1000. FSK Morse ID 3x into 5FGs. (AWH-FL)  
**11118.4:** JULIET-0-ROMEO at 1935 in USB clg HABITAT and MAGIC CARPET SIER-RA w/no joy (due to misdialed freq; see 11188.4 below). (JJ-CA)  
**11175:** JEDDA-02 at 0107 in USB wkg Thule for p/p to Saber Maintenance regarding problem with data lines. At 0240, AAFA w/ Croughton for p/p. (JK-NY) (*AAFA is USAV SP4 James A. Loux (LSV-6) — Ed.*) AIR GUARD 984 at 1533 in USB w/"Any station" call. AIR GUARD 984 repeated several minutes later, this time specifically calling MacDill AFB for radio check . . . again, no joy. (SH-IL) (*Re MacDill, they are no longer part of the GHFS system — Ed*)  
**11188.4:** JULIET-0-ROMEO at 1941 in USB wkg HABITAT with an ops report. (JJ-CA)  
**11214:** NAVY 515 at 2002 in USB checking in w/ANDREWS VIP. (MF-OH)  
**11215:** RADIO MAINTENANCE at 1842 in USB wkg AIRCRAFT 588 with a signal check and gone. (JJ-CA)  
**11226:** AAFA, USAV SP4 James A. Loux (LSV-6) at 0008 in USB wkg THULE w/pp to AAC2: Ft. Eustis. QSY from 11175 and 11244. (DW-MD)  
**11231:** ZKX, RNZAF Auckland, New Zealand at 0635 in RTTY 75/850 with RYRY and Quick Brown Fox tests. (IJ-NZ)  
**11232:** S ENTRY 63, E-3, at 1650 in USB wkg Trenton Military for PP to Raymond 24 — QSY to 3206. (RM-GA)  
**11256:** Holloway, Ethiopian Airlines Addis Ababa, ETH monitored at 1648 in USB wkg various aircraft. (AB-NLD)  
**11294.7:** MFA Cairo monitored in ARQ to Egyptian Embassy Nouakchott using ATU-80 alphabet. (JD-UK)  
**11297:** Rostovna Donu Volmet at 1655 in USB w/wx for Almaty, Krasnodar, and Volgograd (PP-FR)  
**11339:** Saudia Jeddah, ARS at 1703 in USB wkg Saudia 3761 (AB-NLD)  
**11350:** Unid in USB w/limited EE about unloading today in Nouadhibou. (*this is an important ore tanker terminal on the coast of Mauritania — Ed*) (PP-FR)

**11354:** Falcon, Gulf Air Manama, BHR at 1712 in USB wkg various aircraft (AB-NLD)  
**11369:** Ezeiza Volmet, Argentina at 0716 in USB YL/SS w/wx forecasts. (IJ-NZ)  
**11396:** Ujung Pandang ATC at 1730 in USB w/clear signal wkg various aircraft. (PP-FR)  
**11565:** Mossad (E10) at 0600 in USB numbers station id EZ11 //13533 (SD-AU)  
**11602.5:** 6MK64, YONHAP Seoul S.Korea at 0840 in RTTY 50/425 with NX in EE. (IJ-NZ)  
**12155:** MKD RAF Akrotiri, Cyprus at 1700 in Piccolo-6, Ch 1, 2, and 4 only, wkg GYU on 14460. (JD-UK)  
**12202:** Spanish Man (V7) numbers station: at 0610 in AM w/null msg 629 629 000 (SD-AU)  
**12359:** Brigadoon clg Southbound 2 at 19:47 in USB. No joy. (TC-MO)  
**12633.5:** CLA33: Havana Radio Cuba at 0450 in CW with CQ DE CLA. (IJ-NZ)  
**12662:** 7TF8: Boufarik Radio monitored at 0645 in CW w/marker msg "qsx on 8367/12551 kHz." (PP-FR)  
**12709:** A9M, Hamala Radio Bahrain at 0446 in CW with CQ DE A9M HAPPY EID MUBARAK. (IJ-NZ)  
**12735:** URL, Sevastopol Radio monitored at 0700 in CW w/marker "QSY 12458.5/16658.5 KHZ" (PP-FR)  
**12748:** CIRM Rome at 0715 in CW advertising free radio medical and AMVERservice. (PP-FR)  
**12835.4:** GKB, Portishead Radio at 2355 in CW w/calltape. (DW-MD)  
**13200:** McClellan at 0055 in USB wkg pp for RU140 to OCEANA Base Ops. (MF-OH) (*RU140 would be a USN C-130T, of VR-55 from Moffett Federal Field, in Alameda, CA — Ed*)  
**13206:** SENTRY 63 (E-3) at 1655 in USB wkg Trenton Military for PP to Raymond 24. QSY to 18027. (RM-GA)  
**13211:** USAF Andrews AFB at 0810 in USB wkg SAM 206. (IJ-NZ)  
**13225.4:** U.S. tuna fishing boats at 0650 in LSB 2 OMs with a chit-chat. Ended with good luck for tomorrow. (IJ-NZ)  
**13354:** AirFrance 305 at 1947 in USB wkg New York Radio w/posn rpt. (TC-MO)  
**13465.2:** Unid French Mil at 1806 in ARQ-E3 200/400. (AWH-FL)  
**13902:** Spanish Man (V7) numbers station at 0640 in USB call-up 629 id 8683/68 msg, 98267. (SD-AU)  
**13906:** The Counting Station (E5) monitored at 1200 in AM numbers station id 249 count 215. (SD-AU)  
**13927:** REACH 135 HEAVY at 2321 in USB wkg AFA1JW: USAF MARS w/radio check and pp. REACH 709 active also. (DW-MD)  
**13969.7:** V9BE, unid at 1800 in FSK CW "LZLG DE V9BE" then "QTR? K," clean machine keying, "C AR" then off. Poor/fair. (AWH-FL)  
**13980.3:** Unid French MIL at 2330 in ARQ-E3 100/400, idle. (AWH-FL)  
**14100:** CS3B, Propagation beacon Funchal, AZR at 1414 in CW. OH2B, Propagation beacon Espoo, FNL at 1414 in CW (AB-NLD)  
**14396.5:** KZP602, COTHEN, OK at 1644 in USB w/SHARES net. KOQ898, COTHEN,

NV; KAE326, COTHEN, NV; KHA908, NASA Ames Research Center, Mountain View, CA; DLA303, Defense Logistics Agency, WA; WGY9501, FEMA, WA; AAB1WI, National Guard, Madison, WI; and KPS606, possible DMAT, KY; also active. (JM-KY)

**14411:** UNID: Russian Navy at 1949 in 36-50 36/200. Into 50bd at 1951. (DW-MD)

**14460:** GYU RN Gibraltar at 1630 in two-channel Piccolo-6 working MKD. (JD-UK)

**14470:** NNN0CBY, Unid ship at 2214 in USB w/MARS pp's to stateside. Also NNNOCCL, USCGC Diligence (WMEC-616) at 1636 wkg NNN0KRQ (private op) w/Valentine's Day pp's, tried QSY to 20936 due to poor signal (not heard there). (CS-SC)

**14486:** RFGW, MFA Paris France at 0845 in FEC-A 192/400 with Msgs about French participation in the NATO lead action over Yugoslavia. (IJ-NZ)

**14670:** TSS CHU Canada at 2211 in USB w/good signal. (CS-SC)

**14723.9:** FDY, French AF, Orleans at 0915 in RTTY 50/340 w/usual 10-bit Baudot "le brick" test tape. (JD-UK)

**14759.2:** Unid France monitored at 2330 in ARQ-E3 200/400. Probably ckt FDX to DET. (AWH-FL)

**14914.1:** Unid CIS METEO (Kiev?) at 1608 in FAX 60/576 w/weak signal. (DW-MD)

**14944:** Russian Diplo at 1646 in CROWD36, Handkeyed tfc at 1649 then QRT. (DW-MD)

**15016:** Sierra 80 monitored at 2159 in USB wkg McClellan responds w/pp. Sierra 80 on way home from Sea Check, has small problem w/ #1 engine ignition system, tail #30075. (TC-MO) SWEET 03: tail# 84-403 at 1904 in USB wkg McClellan for ppt to Nellis re: ETA 2100z, depart 2300z, 45 PAX, 1 pallet, fuel, and lav. (JJ-CA)

**15046:** ZKX, RNZAF Auckland, New Zealand at 0340 in RTTY 75/850 with RYRY and Quick Brown Fox tests. (IJ-NZ)

**16000:** Unid TSS at 2156 in AM, poss VNG TSS Perth, AUS, poss YL voice at 2201. (CS-SC) (Yes, this would be VNG — Ed)

**16113:** HBD20, Swiss MFA at 1620 in ARQ w/5LGS. (DW-MD)

**16198:** The Counting Station numbers station at 1245, EE/YL w/ 3/2 grps. (AWH-FL)

**16228:** Unid at 1705 in CW sending "RLLT RLLT RLLT QSA? QWI K" three times, got no answer and disappeared. (JD-UK)

**16316:** Unid CUBA? prob SVR at 1445 in CW "VVV DE YQ5" several times, maybe receiving end of an SVR RTTY session, sent "F" a bunch of times. At 1448, brief burst of RTTY 75/500, sounded like RYRY, then gone. (AWH-FL)

**16358:** Unid, poss U.S. Army Corps Engineers at 1701 w/ALE-pulses. (DW-MD)

**16810:** WLO, Mobile Radio at 1742 w/CW marker. (DG-MI)

**17499:** Cherry Ripe (E4) Numbers station at 0001 in USB id 68538 (SD-AU)

**17922:** VJN628, LDOC Qantas Control Sydney, NSW Australia at 0130 in USB w/a/c clg Qantas Control, no joy. (IJ-NZ)

**18023:** USAF Andrews AFB monitored at 0302 in USB wkg SAM 206 with PP to Hickam Metro. (IJ-NZ)

**18027:** SENTRY 63 (E-3) at 1701 in USB wkg Trenton Military for PP to Raymond 24 re: fighter activity and AR. (RM-GA)

**18110:** 4U1UN, Propagation beacon UN New York, at 1620 in CW. 5Z4B: Propagation beacon Kilif, KEN at 1620 in CW. CS3B:

Propagation beacon Funchal, AZR at 1355 in CW. OH2B: Propagation beacon Espoo, FNL at 1355 in CW. ZS6DN: Propagation beacon Pretoria, AFS at 1644 in CW (AB-NLD)

**18290:** NAVY 496 at 1958 in USB wkg Andrews VIP. It was interesting to note that when Andrews requested they go to F-576, (11153.5) 496 advised that his radio doesn't

do half kHz freqs. (JJ-CA)

**18308.5:** RFGW, MFA Paris France at 0810 in FEC-A 192/400 with msg about the French participation in the NATO lead action over Yugoslavia. (IJ-NZ)

**18449:** MKK, RAF London England at 0820 in VFT 50Bd all channels with RYIRYI and Quick Brown Fox tests. (IJ-NZ)

**18988:** Two UNID Turkish diplo stations at 1520 in FEC-A 144bd exchanging traffic in plain-language Turkish. (JD-UK)

**19131:** 413 at 2024 in USB rep ops normal to ATLAS. At 2141, 60A rep status and ops to ATLAS. At 2205, ATLAS req PANTHER 400 switch to PAPA. (MF-OH) (PANTHER 400 is DEA, Georgetown, Bahamas... PAPA channel is 14686 kHz. — Ed)

**19615:** MKK, RAF Bampton, UK, in Piccolo, channels 1 and 4 only of a 4-channel signal. Ch 1 idle, Ch 4 test tape "de MKK." (JD-UK)

**19884:** Cherry Ripe (E4) at 0102 in USB numbers station id 51384 //21866 (SD-AU)

**20310:** Unid: presumable MTS at 1200 in Piccolo, working presumably MKK on 22890; both were single channel, idling for hours on end, no ID seen. (JD-UK)

**20975:** RFGW, MFA Paris France at 0825 in FEC-A 192/400 with 5LGS. (IJ-NZ)

**21150:** 4U1UN, Propagation beacon UN New York, USA at 1509 in CW. 5Z4B: Propagation beacon Kilif, KEN at 1429 in CW. CS3B:

Propagation beacon Funchal, AZR at 1405 in CW. OH2B: Propagation beacon Espoo, FNL at 1438 in CW. ZS6DN: Propagation beacon Pretoria, AFS at 1429 in CW (AB-NLD)

**21862:** DFZG, MFA Belgrade Yugoslavia at 0655 in RTTY 75/500 with RYRY. (IJ-NZ)

**22108:** Cherry Ripe (E4) at 0031 in USB numbers station in progress (SD-AU)

**22387:** NMO, USCG Portsmouth, VA at 2011 in CW w/maritime marker. (DG-MI) (NMO is actually USCG COMSTA Hawaii, while NMN is CAMSLANT Chesapeake, VA — Ed)

**22410:** WLO, Mobile Radio at 2008 in CW w/maritime marker. (DG-MI)

**23337:** Unid monitored at 1932 in USB clg Offutt Ops. No joy. Andrews then responds and attempts to make contact, but no joy and both gone. (JJ-CA)

**24930:** 4U1UN, Propagation beacon UN New York, USA at 1627 in CW. 5Z4B: Propagation beacon Kalif, KEN at 1026 in CW. CS3B:

Propagation beacon Funchal, AZR at 1036 in CW. ZS6DN: Propagation beacon Pretoria, AFS at 1629 in CW (AB-NLD)

**27860:** Melbourne Volunteer CG VIC, Australia monitored at 0605 in AM with WX forecasts. VMR261, Volunteer CG Sydney NSW, Australia at 2152 in AM with WX forecasts. VMR363, Volunteer CG Lochsport VIC, Australia at 0235 in AM with WX forecasts. (IJ-NZ)

**27870:** Unid at 0203 w/ALE bursts. (SD-AU)

**27880:** Port Stephens Volunteer CG NSW, Australia at 0013 in AM clg boats *Alpha Bravo* and *Big Blue*. VKQ447, Moreton Bay Trailer Boat Club Inc. QLD, Australia at 0010 in AM w/Regal Lady requesting a tow after the motor broke down. Volunteer CG Port Stephens NSW, Australia at 2256 in AM OM adv to go to channel 91. (IJ-NZ)

**27900:** VMR223, Coffs Harbour Royal Coastal Patrol NSW, Australia at 0015 in AM w/wx forecast. VMR267, Port Kembla Volunteer CG NSW, Australia at 0110 w/same. (IJ-NZ)

**27910:** Brisbane Volunteer CG QLD, Australia monitored at 0048 in AM rendering assistance to the boat *Moonraker*, after its engine broke down at the mouth of the Brisbane River. VH2ATH: Nora Head SAR Boat Club at 0052 in AM passing WX to boat Men At Work. (IJ-NZ)

**28200:** OH2B, Propagation beacon Espoo, FNL at 1612 in CW. 4U1UN, Propagation beacon UN New York, at 1554 in CW. CS3B, Propagation beacon Funchal, AZR at 1124 in CW (AB-NLD)

**28285:** VP8ADE, Adelaide Island, Antarctica in CW. "VP8ADE ANTARCT." The final T becomes one long Dah that last 15 seconds, then code ID restarts. (SH-IL)

**29704.5:** Russian Teleprinter system at 0005 in 81-81 81/250 (IJ-NZ)

**29765:** Japanese Phone system at 0227 in NFM with dialing tones and OM and YL in JJ. (IJ-NZ)

**30450:** Ft. Hood TX Range Control at 1922 in NFM w/Blackwell being called by Range Control, Browns Creek. (IJ-NZ)

**33300:** EYE ONE BASE U.S. Military at 2330 in NFM wkg MED4, adv will give maintenance a call and get back to them. (IJ-NZ)

**This month's contributors:** (AB) Ary Boender, Netherlands; (AG) Alan Gale, UK; (ALS) Al Stern, Florida; (AWH) Albert W. Hussein, Florida; (CS) Chris Steele, South Carolina; (DG) Dan Gillespie, Michigan; (DW) Dave Wright, Maryland; (IJ) Ian Julian, New Zealand; (JJ) Jeff Jones, California; (JK) John Kasupski, New York; (JD) John Doe, UK; (JM) Jack L. Metcalfe, Kentucky; (MF) Mike Fink, Ohio; (NJ) Neal Jones, New Zealand; (PP) Patrice Privat, France; (RM) Roland R. McCormick, Georgia; (SD) Simon Denneen, Australia; (SH) Steven L. Hildebrand, Illinois; (TC) Todd Shoemake, Missouri; (TS) Tom Sevart, Kansas. Thanks to all of the contributors.

## Pop' Comm P.O.

(from page 6)

tor from Vincent Ponzio, KA3NRX, in your February edition of *Popular Communications*, and I wanted to make some comments. I have been trying to think of a way I can approach the topic of restructuring amateur radio testing and licensing without sounding like yet another "old timer," Extra-class licensee, who is satisfied with the status quo, or who wants to return to the "good old days" when you went down to the nearest FCC field office to take your tests. Remember field offices?

First, let me say that I firmly believe that if any institution, including the hobby of ham radio, is to survive, it must be flexible and reflect the interests of its participants, and the technical advances of the state-of-the-art. However, you do not serve the best interests of the hobby by also lessening the efforts needed to earn your way to enjoying more of the one resource that is at the heart of our hobby — spectrum space.

I admit that I am indeed a long-time amateur radio operator who has proudly been a part of this hobby for almost 23 years. I have also proudly held the license class of amateur extra for 22 of those 23 years. As such, I have seen my fair share of operating on the HF, VHF, and UHF bands. I have also been a certified Volunteer Examiner for the past four years, during which time I have given license exams to hundreds of people.

I have always agreed with the concept of a no-code classification of license, but I have never supported HF privileges for that license class. I feel that for anyone interested in becoming an amateur radio operator, that the "No-code Tech" license is a good entry point, but should not be an end-all for most future hams. However, over the years, we have discussed and initiated actions that have slowly given more and more privileges to people who have not done anything to earn those privileges.

When my wife and I became hams in 1976, we were refugees from the CB world. We enjoyed radio communications, talking to each other base-to-mobile, and talking to our new-found friends in and around the Atlanta area. But the CB bands were opened up and deregulated, and nominal no-test licensing was done away with. As a result, my wife and I saw an influx of people come into that hobby, and definitely not to its betterment. Because of the interference, the foul language, and the malicious behavior on the CB band, we

**Editor's Note:** *Pop'Comm* reader Ralph Vanover lives in Virginia on the border with Kentucky. You'll recall from his letter in May, his reception of the NOAA station in Kentucky is clear, but it doesn't cover where he lives in Virginia. Here's the National Weather Service's response:

*There are three possible solutions to Mr. Vanover's problem. First, place VA zones on the JKL (Jackson, Kentucky) broadcast cycle — unlikely because offices don't program for areas with few listeners due to weak reception. Second, install a repeater, which RLX (Charleston, West Virginia) says appears unfeasible, or increase the transmit power of the Gilbert (Mingo Mountain) transmitter in West Virginia to reach into Dickenson and Buchanan counties.*

*Dan Bartholf, at RLX (the NWS Charleston, WV office), tells me the transmitter is only licensed to broadcast at 100 watts. A radio propagation study could be done to see if increasing the power to 500 or 1000 watts will change the coverage (a propagation simulator program is used to do this). Assuming the model suggests a favorable result, we would next go to the FCC and see if they'll allow us to increase the power. Sometimes, this causes interference with other stations, so the increase has to be coordinated and approved before scaling up.*

*RLX indicates the hardware in place is capable of broadcasting at a higher power, so no new equipment would be required. The propagation study and FCC approval process usually takes several months, with no guarantee of outcome. But we will try.*

Richard Watling  
NWS Eastern Region Headquarters

moved on. We have seen first-hand, that when you give people something for little or no effort, they don't appreciate what they have, and eventually ruin the enjoyment for others.

Now, we are talking about restructuring ham licensing, and there are serious questions being raised about why the theory tests are so tough, and if we really need to be so technical, and why we need to memorize band plans when we have books we can reference, or why we need to learn Morse code.

During my years of giving tests, I have seen many people who represent the good and bad entering the hobby. I have met some wonderful people who failed their theory or code test multiple times, only to become more determined than ever before to go home, study harder, and keep trying until they passed. They never once complained or asked why we were giving hard tests. And, on the other hand, I have seen a few other people who barely studied come in, fail, and become upset with the people volunteering their time to give these tests. In one session, an individual failed the exam by several questions, and then demanded that we pass him because the questions on the test he got were not from the same section of the question pool that he had studied. Personally, while I wholeheartedly welcome those people who work hard until they succeed, I also am very much against seeing those people who would lessen this hobby because they don't know, and

don't care that what they are receiving is part of a wonderful heritage built by many individuals over the years.

To restructure amateur licensing so that considerably less effort is required to achieve specific licensing goals is to lessen the hard work and effort that thousands of people have put into becoming wonderful participants in this equally wonderful hobby. Please note that I said "considerably less effort" above. I believe that the 13 wpm code test for the General class license should be reduced to 10 wpm. However, I also strongly feel that the 5 wpm and the 20 wpm code tests should remain as is. I especially feel this way about the 20 wpm code test. We make things too easy for people. We are constantly being challenged to review the status quo, and in some cases, that review is not for the best. I believe that this is the case for amateur license restructuring. Did I agree with the ARRL's restructuring ideas? Not for a moment, and as a member of the ARRL, I let them know that. Do I agree with the FCC's restructuring ideas? For the most part, no. But, then again, as yet another "old timer" Extra Class licensee, I don't accept change very well, even though it is inevitable.

Jeff Weinberg  
W0QO

**Dear Jeff:**

*I applaud you on such a well thought out, interesting letter that should make all of us sit back for a moment and think.*



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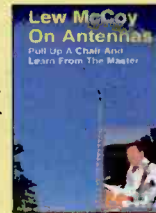
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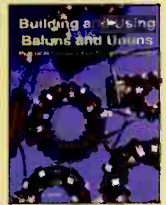
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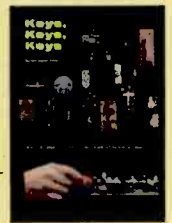
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# The Loose Connection

BY BILL PRICE, N3AVY

RADIO COMMUNICATIONS HUMOR

## Letters — We Get Letters!

A prime advantage of being a humor columnist is that I rarely raise hackles — except for Norm's — and I therefore receive very little mail telling me that I'm a jerk. Several of you have told me about a recurring dangling participle, but I've seen my surgeon and he assures me it's a simple procedure to have it corrected.

However, a reader writes about the January '99 story of Robert William Cathcart's heroic deed (he was issued a medal — you historians and Civil War telegraphy experts can research this if you want) whereby he stuck some wires in his mouth, burned his tongue, but copied sufficient Morse code to "save the day" at Fort Sumter, as it were. My detractor writes (I paraphrase): *I'm a little skeptical that he put two wires of the telegraph line at Fort Sumter into his mouth and read the code by the feel on his tongue. I'm no expert on Civil War telegraphy, but I know these lines operated with a 130-volt DC battery supply, using a ground return at the far end. Further, this system was a closed loop, in which the sender interrupted the line current (62.5 milliamps) with a code key. The sounder was keyed by a relay.*

*I'm sure that Civil War telegraphers performed many heroic acts, but I won't believe anyone could put 130 volt wires into his mouth without affecting the continuity of the telegraph line (assuming his tongue had a resistance of more than 100 ohms or so) and 62.5 milliamps would not have burned his tongue, it would have cooked it.*

So — how many of you are NOT Civil War telegraph experts? Me too. Now — of all of you who are not experts, how many know the line current and battery voltage of a Civil War telegraph circuit? How about the nearest half-milliamp? Had Simpson invented the 260-meter back then? Pretty accurate for a non-expert, I'd say.

Now about this "ground return." You get a 130 V battery (a bank of 10 12V car batteries in series would do), connect the

positive terminal to a wire, string it waaaaaay down the road on poles, and connect the other end to a sounder. To save wire, you use the ground for a return. You connect the negative terminal of the battery to the ground, then way down the road, where the sounder is, you connect the negative terminal of the sounder to the ground. Forget a relay clicking the sounder. It'd mean one more battery (there wasn't a lot of AC available back then), and besides, who needs *two* things clicking at you, one after the other, when you're trying to copy code.

So, with a few acres of dirt as one of your wires, how many of you think your initial 62.5mA and 130 VDC would still be there when you got to the sounder? Would you think that dirt would have, say, more than 100 ohms of resistance — enough to "affect the continuity of the telegraph line?"

Another reader (also with waaay too much time on his hands) wrote: *I'm not really an expert on Civil War telegraphy, but after the war, Feemster's "Pre-Mortem Telegrapher Vital Signs of Confederate Soldiers" showed that Cathcart submitted to having his tongue resistance measured using a Wheatstone Bridge (the bridge had previously been captured and returned by the Yankees prior to the measurement; it had been captured in the second Manassas battle, which took place this morning on Interstate 66, near Sudley Road — bp). It tells us "this Cathcart person had 7.62mA of current passing through a tongue resistance of approximately 3 ohms, that figure confirmed in Henri Cartier-Bresson's little-known "Tongue Resistance Tables for Civil War Telegraphers, Confederate Edition." He goes on: My research shows that the molecules were normally arranged linearly in telegraph wire used by the south during the early days of the war, owing to Price's confusion regarding the current level present in Mr. Cathcart's tongue. Later, as is common knowledge among anyone who's ever picked up a mini-ball*

*knows, the Confederacy changed over to the more efficient Webley-Vickers wire with its now infamous "perpendicular molecular alignment." Naturally, this change would be predicated on a unit's having sufficient financial resources to acquire the newer WV wire. My research shows that Cathcart's unit (per Nussbaum's "Fiscal Reports of Early Civil War Telegraphy Units, Confederacy Edition") was running a bit cash-poor that week, due to some hefty spending on powder and harmonicas during the previous two weeks.*

Well, I stand corrected. Haven't been on the air since the last person I spoke to wanted to initiate a contest to determine who had the best bladder-pressure — seems that's where the hobby is headed. I'll stick with insanity — it's more fun — and a lot easier!

And I swear on Dave Barry's underwear — I'm not making this up! Just as I moved from my word processor to my E-mail program to shoot this off to Pop'Comm World Headquarters, the following note arrived from reader Mike Freeman, causing me to "stop the presses" until I could add this for all to see. Mike writes: *Your column describing the courageous telegrapher at Fort Sumter prompts me to observe that this hasn't been the only time that Signal Corps men received messages with their tongues/teeth. It seems to me that I remember from a biography of the late Gen. Billy Mitchell (who was persecuted for championing the airplane as a weapon of war until WWII proved him right) that he was in the Signal Corps during the Spanish-American War, stationed in Cuba. Mitchell said that it was commonplace for men to hold the cable ends between their teeth and copy code that way!*

Mike figures they were crazy, or masochists. Not a dime's worth of difference between those choices. So Mike restores my faith in humanity just moments before this column is zapped northeastward, where its arrival rings a big red fire-gong over Harold's bed. Thanks Mike; g'night, Harold. ■

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# Radio Land

Vol. 24, Issue 1

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