

# POPULAR COMMUNICATIONS

SEPTEMBER 1997

## DXing FM Stations

### Get Long Distance Reception Without Spending a Fortune!

- **EXCLUSIVE—Answers to Your TrunkTracker Questions**
- **Proposed Bill Allows Local Government to Enforce CB Rules!**
- **Product Spotlight: Alinco's New DJ-X10 Multi-Mode Handheld Receiver**

The 320 ft. towers of KOMA radio in Oklahoma City, Oklahoma

**Communications Confidential, Hannigan, The Loose Connection, MUCH MORE!**

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# Look To AOR For The Best Receivers



The introduction of the all new AR7030 shortwave receiver is geared to the discerning and dedicated listener. The AR7030 is the result of a combined project between AOR and a UK designer. The AR7030 represents the very latest and best design, featuring exceptionally strong signal handling and bristling with enhanced features, with coverage from 0 - 32MHz. The AR7030 has been targeted to handle strong signals that are of prime concern of European listeners. It offers greater than +35dBm IP3 (Intercept Point) and greater than 100dBm dynamic range. The DMOS FET QUAD first mixer with NCO drive DDS offers the ultimate performance. All this and great sensitivity better than 0.5µV for 10dB S/N in AM mode and better than 0.3µV for 10dB S/N in SSB. Selectivity too is razor sharp offering greater than 90dB @ 10kHz SSB and greater than 100dB @ 20kHz. No other receiver "in this class" nor indeed at considerably higher price can match the sheer performance excellence of the AR7030, RS232.

## AR5000 Cyberscan

*Test Results of the AR5000 vs. the competition show the AR5000 Superior in...*

- Widest Coverage 10kHz to 2600MHz\*
- 77 Functions front panel or RS232 controlled
- Sensitivity -Noise Figure -Dynamic Range
- Minimum detectable signal (MDS) -Superior IF Filtering
- 10.7MHz IF output levels and more

Government Agencies and Serious Scanner Users also gave the AR5000 two thumbs up.

- Fastest Scan Speed with or without a computer -Easier computer control (ASCII not CI-V) -Up to 4 antenna inputs (with opt. AS5000) all RS232 controlled -Cascade filters in 10.7 & 455 IF w/6 filters (opt. CW)
- AGC Fast, Slow, Off -Tuning steps 1Hz-1MHz -External 10MHz freq. std. input -Front facing speaker -Smaller, lighter and less power

## AR8000 - Worlds Most Popular Scanner 500kHz - 1900MHz\*

AOR incorporated newest technology to produce this amazing scanner, packed with features not found in other scanners.

### Features Like...

- High visibility dot matrix LCD readout, providing great detail including a signal strength bar meter, band-scope, 2 VFO's displayed simultaneously, Alpha numeric comments stored along with freq., mode, attn. and more -Computer control & cloning. Up/Down load freq., mode, step size and more with your computer or share your memories with a friend, (opt. cables req.) -1000 memories with 20 banks of 50 channels
- Step sizes 50Hz to 1MHz -Scan/Search speed up to 50 channels per second -Internal ferrite antenna below 2MHz

**\*AR8000B non restoreable cellular blocked, unblocked available for export-government & qualified users.**



AOR, LTD. 2-6-4 Misuji, Taito-Ku, Tokyo 111 Japan (c) 1995 AOR, LTD.  
Licensed under US. Pat. 4,270,217

## AR7030 Superior by Design

Here is what the Pros say...

- \*Larry Magne Passport To World Band Radio ★★★★★ Five Stars
- \*World Radio TV Handbook. Table top Receiver of 1997
- \*John Wilson noted U.K. Receiver guru —Shortwave Magazine 5/97 "AR7030 is at the leading edge of RF performance and will not be bettered for a long time."
- \*Radio Netherlands ★★★★★ Five Stars

## AR7030 'PLUS'

For those who want the "edge" this model has been designed for you. All aspects of performance have been carefully studied and specific performance enhancements makes this the ultimate receiver.

- Increased balance of the mixer for greatest IP2 & IP3
  - High tolerance 0.1% components in DDS ladder for low noise
  - Enhanced RF attenuator operation for minimal intermod
  - Higher spec wire antenna input transformer for minimal mixing products
  - Ceramic metal cased 4kHz, AM filter fitted as standard (typical bandwidths: 2.2kHz, 4.0kHz, 5.3kHz, 9.5kHz) -Features CPU fitted, 400 memories, multi timers & alpha tag
- The new AR7030 'PLUS' will be available form July '97 and is the best of the best

**PLUS**  
PERFORMANCE

Price TBA



**PLUS**  
PERFORMANCE

## AR5000+3

All the same features PLUS...

- Noise Blanker -Auto freq. control -AM synchronous detector and a new 2x memory 2000Ch, 40 banks plus 40 search.

Price TBA

## AR3000A 100kHz-2036MHz\*

The Most Respected Scanner on the Market!!  
Over 70,000 Sold!

Compact, low cost wide band multi-mode reception. Small size has allowed the AR3000A to be used in many applications from battery powered brief case to multi-receiver rack-mounted installation to air born EWA systems.

The AR3000A has proved itself as an easy to operate, rugged, low-cost and reliable contender for many requirements.

- Coverage: 100kHz-2036MHz\*
- Memory: 400 CH 4 banks
- Selectivity: 2.4, 12, 180 KHz
- Size: 5.4 x 3.15 x 7.9" , 2.4 lbs
- Sensitivity: NFM 2.5-1.800MHz .35NV
- Power: 13.8VDC < .5A AC Adapter included
- Modes: FM, FMW, AM, LSB, USB, CW
- Scan Speed: up to 50 CH/Sec.
- Antenna: BNC 50 Ω
- RS232 Control



## distributed by:

**Electronic Distributors Corp.  
Vienna, VA.**

[www.elecdist.com](http://www.elecdist.com)

\* Cellular blocked; Unblocked OK to FCC approved users



**AR8000 \$588.00**

Worlds Popular Scanner

.1-1900 MHz\*. All mode AM, FMN, FMW, LSB, USB, CW, 4 line back lite LCD readout, twin freq. display VFO 1 & 2. Alpha numeric text comments. Ferrite antenna below 2 MHz, RS232 control using low cost software **Truly the Scanner of Choice. Ask anyone that owns' one.**

AR8000B Cellular blocked. Unblocked available.\*



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Puts the fun back in the AM/FM DX'ing. Larger ferrite rod antenna, 6.5" woofer, 2" tweeter, 4 I.F. stages and wide/narrow filters for superior reception. Separate controls for bass and Treble. Uses 120VAC or 6 "D" cells (not included.) Everyone needs this great sounding radio.



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BC3000XLT		369.95
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- Wind speed (Hi/Lo)
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- LCD



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Every Family Needs FRS on their Vacation.

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- \*Talk up to 2 miles
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- \*Family safety & security are priceless
- \*Specify black, green, yellow, camo

Buy 2 or more and SAVE even more!

**AR7030 Nothing Like It**



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- IBS '97
- Radio Netherlands: Table Radio of The Year
- WRTVH97

For the novice & seasoned DXer. The AR7030 can't be beat!

- 0-32 MHz • All mode RS232 • High 3rd order intercept/dynamic range • Synchro AM detectable

**AR7030 \$1149**

NEW AR7030 PLUS \$TBA

**AR5000 Best Tested!**

- Widest Range 10kHz - 2.6GHz\*
- 1000 Memory • 45 ch/sec scan-RS232
- 6 IFB with cascade
- RS232 All functions (ASCII)
- Nothing in it's class! We'll tell you why!



**AR5000 \$1995**

AR5000+3, NB, AFC, Synchro, 2K memory Price TBA

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ICOM's Latest WideBand Receiver

- 100kHz - 2000MHz\*
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- 900 Memories
- CI-V-RS232

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- 30kHz - I.F. Filter
- MUX - Output Wideband
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**\$1995**

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Complete wide band receiver inside your computer. .5 - 1300 MHz\*, AM, FM, FMW, SSB, Fastest computer scanner, unlimited memory. Now w/SDU display & NEW software. **\$499.95**



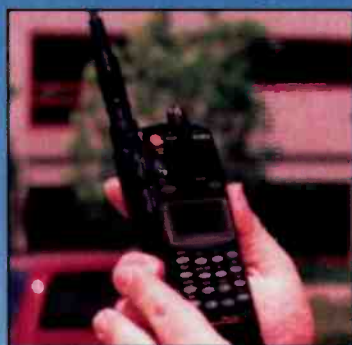
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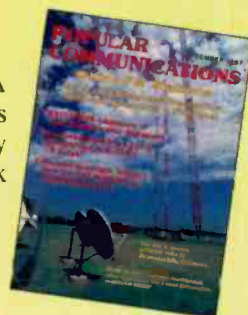


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**ON THE COVER:** The 320 ft. towers of KOMA radio in Oklahoma City, Oklahoma. The station broadcasts on 1520 kHz and runs 50 kW. Find out how to successfully QSL stations in "QSLing TV and FM Stations" by Frank Aden on page 10. (Photo by Larry Mulvehill)



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*By Bruce F. Elving, Ph.D.*

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*By Frank Aden*

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*By J.T. Ward*

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*By Alice Brannigan*

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# QUALITY COMMUNICATIONS EQUIPMENT SINCE 1942



**Shortwave Receivers Past & Present** is your guide to over 500 communications receivers made from 1945-1996. This huge 351 page Second Edition includes 80 chapters representing: Collins, Cubic, Dansk, Drake, Eddystone, Galaxy, Gonset, Hallicrafters, Hammarlund, Heathkit, Icom, JRC, Kenwood, Knight, Lowe, Mackay, McKay Dymek, Morrow, National, Plessey, Racal, RME, Rohde & Schwarz, Sony, Squires-Sanders, Ten-Tec, Vigilant, W-J, Yaesu and many more. Entry information includes: receiver type, date sold, photograph, size & weight, features, reviews, specifications, new & used values, variants, value rating and availability. Become an instant receiver expert! #0002 \$19.95 (+\$2)

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The self-contained Universal M-450 reader decodes: Baudot, SITOR A & B, FEC-A, ASCII, SWED-ARQ, Weather FAX (to the printer port), ACARS aviation teletype, plus GOLAY and POCSAG (512/1200/2400) digital pager modes. Even off-the-air decoding of DTMF, CTCSS and DCS. Big two-line, 20 character LCD and bi-dir. parallel printer port. The M-450 runs from 12 VDC or with the supplied AC adapter. No computer or monitor is required. Now with serial port. #0450 \$399.95 (+\$8)

◆ **Universal Upgrades** Upgrades are now available for the M-400v2, M-8000v5 and the M-1200. Contact us for details.

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The new 1997 **Universal Communications Catalog** covers everything for the shortwave, amateur and scanner enthusiasts. This informative 100 page catalog is **FREE** by bookrate or \$2 by First Class mail. Rising postage costs prevent us from sending this catalog out automatically so please request your free copy today!



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## COMMUNICATIONS RECEIVERS

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**DRAKE**



**ICOM**



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**In stock now!**

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Universal offers over 40 portable receivers from \$50 to over \$500. Our free catalog fully describes & prices all models. The new deluxe **Sangean ATS-909** shown above is on sale for \$249.95 (+\$8). This includes the AC adapter and ANT-60.

## COMMUNICATIONS BOOKS

- **Passport To Worldband Radio 1997** By L. Magne  
Graphic presentation of all shortwave broadcast stations. Equipment reviews, too. #1000 \$19.95 (+\$2)
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# Tuning In

AN EDITORIAL

## Freebanders: Get Licensed!

By Duane P. Mantick, WB9OMC

**Editor's note:** *The last time we gave the Tuning In microphone to anyone was back in April. Since then, we've received lots of interesting letters, many of which get published in our Pop'Comm P.O. But once in a while, like we did in April, we hand over this space to a reader who has a particularly interesting viewpoint. Congratulations to reader Duane Mantick of Indiana!*

There has been considerable bantering, bickering, whining and name-calling back and forth regarding the illegal radio hobby known as "freebanding" or freeloading. A recent letter to *Pop'Comm* by a ham who freeloads, er, freebands really turned my stomach. Of all people, a licensed ham *ought* to know better. One of the first things that any decent ham class should teach is that out-of-band operation is illegal except in emergencies, PERIOD. "Skip-talking" does not, to the best of my knowledge, constitute an "emergency" in the FCC's definition of the word.

Now I don't know how that person got his ham ticket, via a class or on his own study, but to have a ham *support* freebanding strikes me as a VERY poor example to set. Having said that, I will also point out that the same ham also wrote some things that I do agree with. He said that a large number of hams are "... primadonnas with a 'little Napoleon' syndrome." In many respects he is right about that; and an opinion piece which I have submitted to another ham publication regarding the continued use of Morse code as a "barrier" to becoming licensed partly addresses that issue.

As for a lack of respect from Generals and up, I will call that a gross stereotype that is not accurate. I will further submit to the writer that the percentage of Novice/Technician/Technician-Plus has skyrocketed, and that perhaps instead of trying to curry favor with the upper crust, he should spend more time making QSO's (oh, that is "contacts" for those who don't know) with the "N's and T's" who can be found on the bands. Try 28.3 to 28.5

BY HAROLD ORT, N2RLL, SSB-596

MHz; you'll find a whole slew of Tech-Plus types there—and surprise, you'll find a whole slew of General, Advanced and even (gasp?) Extras who are fine ladies and gentlemen and will be happy to QSO with you.

I will further agree with the writer when he comments about the rude and obnoxious behavior directed toward Novices and Technicians by the snob segment of the ham community. I have been a ham for 23 years and I *still* find such behavior disgusting and totally uncalled for. And I will agree that it is NOT conducive to upgrading; most of the hams I know who have left the hobby have cited this very reason as a main cause for their departure. Upper class licensees: This is a *hobby*, not a verbally sadistic crusade. Lighten up. Those of you who are guilty of such practices should rethink your reasons for being hams; those of you who are not guilty should feel proud that you have not stooped to that level of idiocy—nor should you have to take a bad rap simply because you have an Advanced or Extra Class license. You're not ALL bad.

To remain on the topic, however, I will confine my comments to the freebanders. I recently moved into a neighborhood where I find that I have one in close proximity to my ham station. This person has so much excess power and splatter that he completely wipes out signals on the 10-meter band when he operates. I haven't physically located him; but the FCC has expressed some interest in further "information." If the popular perception among freebanders is that there is NO enforcement, they are dead wrong—these operators just have to get the wrong kind of attention.

Another assertion by the writer of the aforementioned letter was that there is a considerable amount of CB lingo on the 2-meter band. While there is some validity to his comments, it should be pointed out that 2-meters is generally step one for new hams who have a Technician/code-free ticket. Since many of them don't

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## POPULAR COMMUNICATIONS

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# iCan Reaction Tune Another Receiver!

Reaction Tune the NEW ICOM IC-R10



Another radio to tune, another reason to purchase the Scout.

Until now the AOR AR8000/2700 were the only hand held scanners to take advantage of the Scout's Patented Reaction Tune function. The Scout can now tune the new ICOM IC-R10 hand held scanner (shown below). Connection is easy: No modifications required - No custom cables to buy - Just plug and play.

Use the OptoLinx for computer controlling the ICOM IC-R10 \$129.00



Computer Not Included

Scanner hobbyists and communication professionals benefit from the Scout's unique functions. Whether you're searching for new frequencies in your neighborhood, or testing for interference, the Scout is the ultimate communications tool.

Armed with a 400 frequency memory register, the Scout does not record duplicate frequencies, instead it coordinates repeated frequencies into a hit register storing up to 255 hits per frequency. Attach it to your belt and begin your day, the Scout will alert you when a signal is received by its beeper or vibrator function.

You won't miss a thing with Reaction Tune. The Scout's CI-V compatible output allows it to interface to the AOR AR2700/AR8000, ICOM R7000, R7100, R8500, R9000 and now the new IC-R10 (shown opposite). The Scout captures the frequency, then sends the serial data to the receiver and tunes the scanner to the frequency for instant monitoring in less than one second. Recorded frequencies can be downloaded to a PC using the optional OptoLinx universal interface.



U.S. Patent No. 5,471,408

Radio Not Included

Scout with ICOM IC-R10 Mono Cable required (shown)

- ### SPECIFICATIONS
- ▶ 10MHz - 1.4GHz frequency coverage
  - ▶ Stores and records 400 frequencies in memory with 255 hits for each
  - ▶ Interface to a PC for frequency download using optional OptoLinx PC interface
  - ▶ Distinctive beeps indicate frequency hits, pager style vibrator for discreet recording
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  - ▶ 16 segment RF signal strength bargraph
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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*, 76 North Broadway, Hicksville, NY 11801-2909, or send e-mail via the Internet to <popular-com@aol.com>.

### Live Long, and . . . Enjoy the Hobby

Dear Editor:

I read your article on Railroad Scanning with great interest. But at the same time, felt I must point out one of the dangers associated with this.

A few months ago I was watching an east bound Southern Pacific going through Pt. Pinole, CA when I suddenly noticed a pickup truck pull up. He too must have heard it on his scanner. This man jumped out fast and went running across the Santa Fe tracks that were only 40 feet from us to take a photo of the SP. When he got to the tracks, a rather loud horn from a fast-approaching Santa Fe caught his quick attention, and he nearly ended up becoming part of that train.

In other words, think first about the situation and don't cause more problems to one of our finest hobbies. I've been a ham operator for 15-1/2 years and have played with scanners and shortwave and CB radios for 22 years. It's a great hobby. I don't think any of us need to be hampered by more restrictions.

Sincerely,

Larry Fields

### Don Shares His QSL

Dear Editor:

Enclosed is a copy of my first QSL letter in a foreign language. I'm not sure how many other people get these, but I was thrilled to death! I'd just like to share my wealth with others. Is it common to

get a "letter" and not a QSL card in another language?

73's,

Don Aspinall  
Virginia

Dear Don:

Thanks for letting us see your QSL letter from Radiodiffusion Television Gabonaise in Libreville. It's fairly common

to receive QSL letters from some shortwave broadcasters written in the country's official language. One of my favorite QSLs is from Radiodiffusion Nationale Tchadienne that I got largely because my daughter wrote a French-language reception report, enclosed a couple of mint stamps and waited a couple of months. The wait is always worthwhile!

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LIBREVILLE, LE 20 NOV. 1996

N° 67/96/L2 ;RTG;

Le Directeur Général Adjoint Chargé  
de l'Équipement et de la Maintenance  
Radio et Télévision

Monsieur Donald N. Aspinall

Monsieur,

C'est avec un réel plaisir que nous avons reçu votre rapport de réception du 2 Aout 1996, sur la fréquence de 4.777 Kilo-hertz dans la bande de 60 mètres de 21.15/21.30 U.T.C.

Les détails que vous avez donnés sur notre Station sont exacts.

En vous souhaitant bonne réception de la présente lettre, je vous prie d'agréer, Monsieur, nos salutations distinguées.

P.O. - LE DIRECTEUR TECHNIQUE  
RADIO

A. RANAUD - BÉNOÛBO. / -



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# Hook Your Stereo To An Antenna and Try FM DXing!

*Long Distance Reception of FM Stations, Without Expensive Equipment, is This Easy . . .*

By Bruce F. Elving, Ph.D.

Those of you who enjoy AM or shortwave radio DXing, CBing, or scanning might think of the FM band as a nice place to hear stereo music, get the latest traffic reports, weather and the news, or as a background to other activities. But FM (88 to 108 MHz) offers a lot more. It can even be DXed!

If we define "DX" as listening to non-local signals and stations, a lot of what can be heard on FM is really DX. It used to be said that FM signals were limited to the approximate horizon. That's true if you think of a market where stations sell their advertising and do their promotions. As a listener, however, you have the freedom to "invade" stations outside the local market. With more and more stations coming on the air, broadcaster interest in FM radio is at an all-time high. True, many of the new stations are not that different in their programming from what has already been on—with most commercial stations opting for some version of country or rock music. Even public stations resemble one another with minor variations in the amount of classical, jazz, religion or talk that they broadcast. Nonetheless, a good reason for trying FM DXing is to seek out stations that might offer a true "alternative" in their programming to everything else you pick up on the local dial.

## The FM Experience

Seeking to improve your DXing abilities on FM can be an end in itself. Like other types of DX, you can log stations heard on FM, write or fax stations for a QSL, and collect memorabilia. Many stations send bumper stickers, key chains, caps and T-shirts—all with the station's call letters or slogans.

Better sound and freedom from interference and static has helped FM gain the majority of listeners in the U.S., but

the FM DXer enjoys something else; discovering what can be tuned in from afar.

A must for the best FM DXing is a directional FM antenna, such as a yagi turned by a rotator and connected to a stereo tuner or receiver. Even without an external antenna, however, FM signals are heard for great distances when conditions are right. "Skip," caused by disturbances in the ionosphere, brings in stations 800 to 1000 miles away! This kind of reception lasts for periods of up to an hour or more and is most common during daytime in late spring to early summer, with a minor peak in December. Stations picked up by skip are usually marked by excellent stereo separation and clarity.

Another way FM signals are propagated over long distances is by the troposphere, or lowest portion of the atmosphere, which can extend normal reception. While distances aren't as great as those caused by skip, the reception can be impressive, even up to 500 miles or more.

Ducting is a special type of long-distance tropo reception, where signals come in from only a certain far away city or small geographical area. Quality of tropo reception, and distance you can hear, is dependent on the quality of your antenna and receiver. A problem blocking tropo reception is the proliferation of stations. As more and more stations come on the air, your chances of finding FM frequencies clear enough for excellent tropo reception diminish. There are, however, usually enough channels in any area that are good enough for tropo DX to come in on—and those are the frequencies you should check from time to time, perhaps twice daily.

Other forms of FM DX include auroora, or the hearing of rather garbled signals off the "northern lights," particularly with your antenna aimed north, and meteor scatter propagation. During mete-

or showers (often mentioned in advance in your local newspaper), you can try for DX by tuning a frequency not covered by a local or nearby station and listening for all the "pings" and "bursts" or stations coming in for up to a minute. It helps to have really sensitive equipment for meteor scatter reception, plus a somewhat masochistic-type patience!

Only on FM can you rely on reception as clear and reliable over as great a distance, day and night. Although the AM broadcast band is famed for long-distance reception, you must realize that AM is affected by frequency, poor ground conductivity, interference, and time of day. Even stations near the suburban listener can be quite annoying to hear, especially at night. A person in Worcester, MA complained that, at a distance of 30 km, the signal of 50,000 watt WEEI on 850 kHz (Boston) is unreadable because they go directional at night to protect stations to their west and southwest.

FM DXers can expect their best long-distance reception by aiming their antenna in directions away from their local broadcasters. If you live close to a city having two or more stations, it might invite overload across the dial if you were to point your antenna at the local towers. FM receivers are very sensitive devices and they work best when not allowing too much signal to reach the antenna terminals! This is true of even the best FM tuners, although the quality of reception might vary from one type of tuner or receiver to another. And you don't need to invest \$1000 or more in an FM receiving system to become proficient in DX.

---

*“. . . FM is now being recognized as a medium affording regular service at long distances . . .”*

---

Most modest-priced tuners and an antenna, such as the RadioShack 15-2163, will work just fine. Maybe you already have a component high-fidelity stereo system. Merely adding a modest outdoor FM antenna system might turn it—and you—into a DXing instrument.

### Get on the FM Bandwagon!

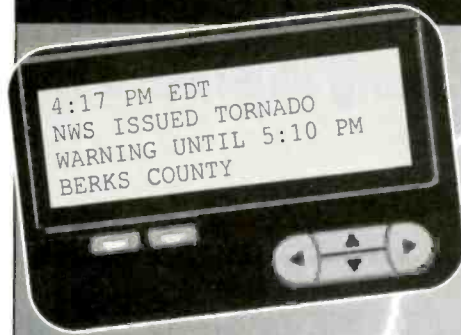
Besides having the merits of high-fidelity, stereo, and static suppression, FM is now being recognized as a medium affording regular service at long distances, as well as a medium famed for spectacular coverage at certain times, when receiving conditions are especially good. Excellent equipment, plus a willingness to tune in parts of the dial not covered by local stations can mean a lot of exciting DX for you.

Many DXers in the Worldwide TV-FM DX Association have logged over 1000 stations each. I have been an FM DXer since 1948, and from the Duluth, MN area have heard over 1700 stations. This DXing interest sparked a desire to produce a guide to the FM radio stations of North America; my first "FM Station Atlas" was printed in 1971. By turning to the maps or the directory pages, you can see all the stations in the area from which you may be getting skip or tropo reception. The current edition is the 17th and costs \$18.50 with shipping from FM Atlas, P.O. Box 336, Esko, MN 55733-0336. The book also shows low-power FM educational stations and FM translators (which rebroadcast another station on a different frequency because of distance or terrain problems), and which FM stations have subcarriers, all of which can be DXed. In a future article we'll show you how to DX these FM subcarriers.

For more information on the non-profit Worldwide TV-FM DX Association, write to P.O. Box 17333, Asheville, NC 28816. Annual dues are \$24 in the U.S. and \$25 in Canada. ■

*Editor's note: Bruce F. Elving was the FM DX editor of the former Newark News Radio Club in the 1950s, did a DX column for DXing Horizons in the '60s and was FCC-FM editor of the WTFDA. Besides publishing the FM Atlas he produces the FMedia! newsletter which updates the book and offers a free radio and electronics catalog featuring various radios, FM tuners and gear used to receive FM subcarrier reception. His Ph.D. in instructional communications is from Syracuse University.*

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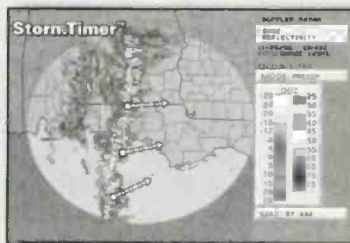
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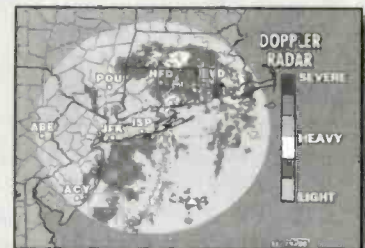
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# QSLing TV and FM Stations

*It's Not The Same As QSLing Shortwave Stations, But It Is Just As Easy . . .*

By Frank Aden

Any shortwave DXer who has spent time and money collecting QSLs knows such an endeavor can be a fine art. Getting a station to verify a correct report is not always easy; a DXer has to convince the station he or she *did* hear the station and deserves a verification reply.

Each area of the DXing world; international shortwave broadcast, shortwave utilities, amateur, public service bands (VHF/UHF), TV and FM, all have their "rules and regulations" on how to send proper reports for QSLs. Sending reports to TV and FM stations require techniques that differ considerably from the other areas. This article will cover some of the finer points to this specialized "art".

Many other publications have published articles on TV and FM DXing and usually imply obtaining QSLs from TV/FM stations heard by skip is almost impossible. Yet talk to just about any veteran TV/FM DXer and you will find that is not the case. There are many TV/FM DXers with large QSL collections.

## Here's The Solution

The key to obtaining QSLs is convincing the station that it was heard (or seen). With TV and FM stations, the DXer is dealing with a group of broadcasters, most of whom believe their signal is limited to 50-100 miles from their transmitter site and are unaware that long distant skip is possible. The problem is getting the report to someone at the station who *knows* that long-distance reception can and does occur, or who can be informed of such reception. This is complicated by the fact that many broadcast stations have a high rate of turnover in personnel. A station may have a period where the person answering the mail is knowledgeable of skip and another time when they are not.

Even though many TV/FM stations receive DX reports each year, it has to be assumed the person reading the reception

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TO: <u>Frank E. Aden, Jr.</u>		
Thank you for your report!		
Your reception of	<u>KDLO-TV</u>	on <u>May 14, 1972</u>
is hereby verified <u>per your tape. Thank you for writing.</u>		
By: <u>M. Artus, Engr. Secy.</u>		

*This QSL from KDLO-TV in South Dakota is in response to a tape sent to the station by the author.*

report letter does not know about DX via skip. I have found that enclosing an information sheet on the various types of TV/FM propagation can help the station personnel understand why the distant reception was possible. You can write one up yourself or use those ready made available to members by the DX clubs.

Start the report out in a friendly and polite manner, just like any other reception report. In the introduction mention the frequency or channel, date and time (use the local time of the station). Follow that with an explanation what type of propagation caused the reception to occur and point out how often that type of propagation occurs (I have had some stations reply to my reports with the misconception that the skip was happening all the time, even though it was far outside of their normal broadcast range!) Mention the condition/quality of the signal and also list some of the other stations or areas which were received at the time.

There has been debate for years among AM/FM/TV DXers if return postage

should be included in reception reports. A rule-of-thumb I have found is that it isn't always necessary to do so with larger commercial stations, but is mandatory with small town, educational and religious stations. If enough information is not available on the station to determine its status, then go ahead and include return postage.

Following the signal condition information list the program details you heard. For TV stations running network programming and FM stations running satellite or network services you must try to put emphasis on the *locally transmitted material*. Stations running network feed are allowed several minutes each hour to run their own local commercials (spots). List details of local advertisements, local station promotional announcements, local newscasts or local public service announcements. With local commercials, list names of advertisers, including phone numbers. On promotional announcements, list station slogans and times of upcoming specials.



E.O. LAWRENCE TELECOMMUNICATIONS CENTER  
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August 22, 1974

Frank Aden, Jr.

Dear Mr. Aden:

We are pleased to confirm your reception report of KUSD-TV, Channel 2, Vermillion, on June 13, 1974. Your description of our station identification slide and announcement were correct and sufficient to demonstrate reception of our video and audio.

KUSD-TV operates from a transmitter located two miles south of Beresford, South Dakota with an authorized visual power of 100,000 watts and an aural power of 20,000 watts. The antenna is a batwing type 657 feet above ground (2,167 feet MSL, 760 feet HAAT).

Thank you for your interest in our station.

Sincerely,

Dennis L. Haarsager  
Administrative Services Officer

DLH: mrd

*A letter QSL from KUSD-TV in South Dakota.*

With local newscasts, give the name of the news program (if any) and list any of the names of the announcers you heard. If a station's sign-off is heard during the reception, list the owners name or the call letters of the station's STL (Studio-transmitter link.).

If only partial details were logged, put them in the report anyway. E skip and Tropo reception can include deep fades, so it might not be possible to receive complete information that would normally be needed to go into a report, but the person reading the letter may still be able to identify the information and you'll have a better chance of receiving a reply. Close the report with a list of equipment used (receivers, antennas, preamps, etc.). Politely request a verification and do not use the word "QSL" as most people in domestic broadcasting have no idea what it means.

### The Follow-Up

After a reasonable amount of time has passed and no answer has been received from the station, send a follow-up report.

Include all of the details from the original report and add a comment stating this is a follow-up report. I usually include an audio tape in follow-up reports. This is one reason for always having a tape recorder running when DX is coming in. The tape should be a standard cassette (reel-to-reel used to be the standard but is rarely seen now). Radio stations use cassettes for news-gathering and sales presentations. I also include return postage in all follow-up reports.

Since VCRs are now commonplace, sending a VHS tape is another way to convince a TV station they were received. Many local electronic stores sell T-5, T-15 and T-30 VHS tapes that are cheaper to mail (being lighter in weight) than the regular T-120 but they are about the same price as T-120. A cheap source for T-5 or larger VHS tapes is thrift stores. It is not unusual to find promotional/informational video tapes for less than a dollar. Just place some cellophane tape over the record-guard on the left side and the tape can be used. The C-05 and C-10 cassettes are also great for sending reports to FM stations and even audio portions to TV sta-

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February 21, 1973

Mr. Frank E. Aden, Jr.

Dear Mr. Aden:

Your letter of last June has just crossed my desk. Please accept my apology for the lack of a prompt reply.

We confirm your reception of KLFM on 6/8/72. Your enclosed tape did, indeed, contain commercials from our station, one of them recorded by myself.

This is the farthest reception we've ever had reported to us, and we've jokingly referred to it in some of our dealings with sponsors who inquire about our coverage area.

With your permission, we will keep your short tape for our records.

If you receive our signal again, we would enjoy hearing from you about it.

For your records, we are enclosing our "normal" coverage map.

Yours truly,

Mark R. Lund  
Operations Manager, KLFM

The author's reception of KLFM back in 1973 was the farthest reception reported to the station.

tions. If a photograph is taken of a TV station's identification, it can be used in a report, especially a follow-up report (I have had several TV stations verify after sending a photograph in a follow-up reception report).

## Finding the Station's Location

If you heard or saw the call letters of a station via Eskip, Tropo, or meteor skip (the most common forms of TV/FM DX) but do not know the station's location, you will need help from one or more of the available TV and FM station directories. For FM, the *FM Atlas* by Bruce Elving is the best and is published yearly. It's available through most of the major shortwave electronic retailers or can be ordered direct

from: FM Atlas, P.O. Box 336, Esko MN 55733-0336.

The Worldwide TV-FM DX Association usually has information on available TV station lists. If you have access to the Internet, you can run a call search on: Elliot Broadcast Services, <<http://www.radiostation.com/fccdata/fmcallsql.html>> or the Federal Communications Commission at: <<http://www.fcc.gov/mmb/asd/amq.html>>. From there you can access FM and TV station information (including AM).

Getting addresses of TV and FM stations can be a problem. Local libraries may have out-of-town phone books and even some of the broadcast industry annuals which contain addresses. Unfortunately most of the current TV and FM guides published by DXers and clubs do not contain station addresses. A short

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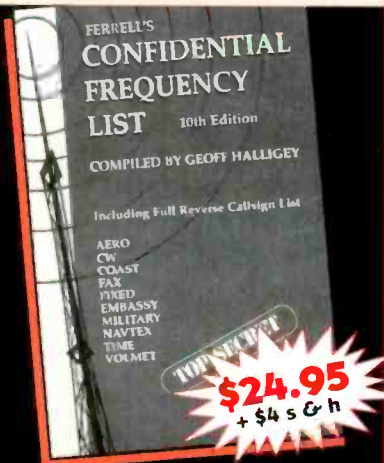
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April 18, 1997

## FMQ FM Radio Database Query

The FM Database is updated every morning at 5:00 AM and contains the transactions of the previous day.

### MENU

- ☆ [Home Page](#)
- ☆ [About the FM Database](#)
- ☆ [About the ASD Database](#)

### Query by Call Sign

When submitting a query by Call Sign, *do not enter the suffix*. For example, WZZZ-FM would be entered as **WZZZ**

By Call sign:

[Back to the Menu](#)

### Query by File Number

When submitting a query by file number, *do not enter the prefix*. For Example BPH960425AQ would be entered as **960425AQ**

By File Number

[Back to the Menu](#)

Questions on the FM Queries may be referred to [Bill Ball](#) at (202)-418-2660.

### Jump to:

[ASD Subjects Index](#), [ASD Alphabetical Index](#), [FCC Search Engine](#)  
[Filing an Application](#), [Application Information](#), [AM, FM and FM Translators & Boosters](#), [Decisions](#), [Links Within FCC](#).

PRODIGY Web Browser: FMQ FM Radio Database Query Program (FCC) -- USA (<http://www.fcc.gov/nmb/asd/fmq.html>) Page 1

*A look at part of the FCC's Web site where you can find a radio station's location.*

**"The Worldwide TV-FM DX Association usually has information on available TV station lists."**

phone call to a station is also a way to obtain an address. It's easy to get out-of-area phone numbers by calling 1-area code-555-1212. There is usually a small charge for this by the local phone company. And for those who have access to the Internet, getting both phone numbers and addresses is easy. Lycos has an on-line phone directory at: <http://www.lycos.com/pp1fndr.html>. If long-distance phone rates are not a concern, a

phone call report is another way to obtain a QSL and or act as a follow-up report. Some DXers are now sending reports by E-mail. Station E-mail addresses can also be found via Lycos.

If you're new to TV/FM DXing and would like more information about the hobby try the Worldwide TV-FM DX Association, the only club currently specializing in TV/FM DX in North America. Write them at P.O. Box 17333, Asheville NC 28816. They have a Web page at <http://www.users.sccoast.net/daustin/wfda.html>.

Putting together a collection of TV and FM stations QSLs can be a fun and rewarding part of the DXing hobby. Success can be obtained by following the above tips. Good luck and good listening!





# NRD-345

*Japan Radio Quality. Synchronous Detection. Great Price.*



Famous for its top-gun DX receivers, Japan Radio once again pioneers with a new receiver. Only the NRD-345 offers Japan Radio performance and quality at a surprisingly affordable price.

The NRD-345 delivers hour-after-hour of listening pleasure with synchronous AM detection to help tame fading, dual IF filter bandwidths (with a third optional), and high dynamic range. Compact, light, and refined, the NRD-345 offers advanced multifunctions, 100 memory channels, and even personal computer control. The NRD-345 brings shortwave listeners an outstanding value in a high-performance receiver for under \$1,000.



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- Dual IF filter bandwidths, 4 kHz and 2 kHz, with optional filter position.
- High sensitivity and wide dynamic range. The RF amplifier and first mixer in the front-end incorporate four low-noise junction-type FETs with excellent cross modulation characteristics to ensure both high sensitivity and high dynamic range.
- 100 memories that store frequency, mode, AGC time constant, ATT on/off, VFO, IF filter bandwidth, and NB status.
- Noise blanker.
- Clock/Timer.
- High/low antenna inputs.
- Memory scan and frequency scan functions.
- Personal computer control with optional RS-232C interface cable.
- One-chip DDS-IC in PLL circuit to enhance carrier-to-sideband noise ratio.

# TrunkTracker Talk

## Answers to Your Most-Often-Asked Questions

By J.T. Ward

Since before the first units got into the hands of customers the new Uniden Bearcat 235XLT "TrunkTracker" scanner has been the hottest topic on the Internet radio newsgroups. Below is a selection of questions and comments culled from these and other on-line radio forums with responses, where appropriate, from Greg Knox, designer of the TrunkTracker's software, and Jill Prince, Uniden's media and trade show director.

### Why Not GE/Ericsson?

**Q.** *Why won't the Uniden BC235XLT "TrunkTracker" work with trunked systems outside the 800 MHz range, and why won't it work with GE/Ericsson or Johnson LTR trunking systems? Is this some plot of Uniden's to make people buy two, or even three different radios?*

**A.** While there is no technical reason the BC235XLT could not have been made to track Motorola trunked systems in the 900 MHz range, there are relatively few of these systems in use, so a marketing decision was made not to include that capability. GE/Ericsson, Johnson and even Motorola trunked systems in the 400 MHz range use different data protocol transfer schemes than do the Motorola 800 MHz public safety systems. The Uniden BC235XLT is designed to work with the Motorola 800 MHz public safety systems, which is what most people want to monitor.

Remember, the BC235XLT is a first generation trunking-compatible scanner. Later models will likely be more sophisticated and offer more features, hopefully including multi-system capability.

### Fleet Maps and Block Sizes

**Q.** *When adjusting the size of Type 1 blocks, I have noticed that the sub-fleet identifications change. Is consistency of identification a way to tell whether the block size is correct? If not, then all anyone who does not have access to the actu-*

*al fleet map for a target system will ever have is a "best guess."*

**A.** There's no magic technique for determining if you have the size code for a given block correct. You have to listen to the conversations coming from that block and determine that you're hearing all the replies. If you miss replies on a consistent basis, then you probably don't have the size code set correctly.

Concerning the fleet-subfleet affiliation of a particular group of users, it will often be the case that changing the size code of a block will cause the affiliation of various users to change, but not always. For example: If block 0 is set to an S8 size code (4 subfleets/fleet, 128 IDs/fleet) then users who show up as 000-0, 000-1, 000-2, and, 000-3 will still show up there if the block is changed to S3 (8 subfleets/fleet, 128 IDs/fleet). On the other hand, a group of users showing up as 001-1 under the S8 size code, would display as 000-5 with an S3 size code assigned to block 0. There is no easy way to figure this out in the general case without a computer program. And, it's not particularly useful anyway.

### Block ID Numbers

**Q.** *What is meant by "b0," "b2," "b3," "b4" and "b8," etc.?*

**A.** B0 means Block zero, b1 means Block 1 etc. The total range of possible ID values has been divided up into eight blocks—b0 through b7. A size code must be assigned to each of these blocks. But some size codes take up more than a single block so it looks like some blocks have been skipped. They haven't. It's just that if a size code fills more than one block the next block to be assigned won't be what you think it should be.

For example, if you assign b0 a size code of S12 you will see that the next block to which you can assign a size code is b2. This is because an S12 size code occupies two blocks, in this case b0, and b1. Therefore b2 would be the next block to be assigned. As far as Motorola equiv-

alence is concerned: Block 0 would represent fleet-subfleet values such as 000-x or 001-x. Block 1 would represent fleet-subfleet values such as 100-x or 101-x. With b0 being assigned an S12 size code there could be no 100-x series fleet-subfleets because b1 is occupied by 000-x series fleet-subfleets due to the S12 size code starting in b0 and extending into b1.

### System ID

**Q.** *What is the "system id"?*

**A.** Every Motorola trunked system has associated with it a unique number known as the System ID. This is periodically transmitted on the control channel and lets the radios assigned to the system know that they are operating on the correct system. In fact they won't operate at all if the wrong System ID is detected. Further, in order to program one of these radios you must know the System ID. The BC235XLT has no need of the system ID and in fact has no way to use it even if you know what it is.

### Entering Trunked System Frequencies

**Q.** *So far my unit has been unable to acquire the data channels in my area. In normal scan mode the city and county trunked frequencies are hopping with action. But my shiny new Uniden hasn't yet locked onto a data channel or displayed a talkgroup ID. I'm suspecting a faulty unit. Anyone have a similar problem? Any fixes?*

**A.** It sounds like one of two things may be wrong. First, are you certain the systems that you're trying to monitor are Motorola systems? The BC235XLT won't work with GE/Ericsson trunked systems. If you're certain these are Motorola systems, then perhaps you didn't follow the instructions closely enough when programming the radio.

Frequencies for trunked systems must be entered while in the trunking mode. The BC235XLT is not a radio that you

can use successfully without following the manual, no matter how many scanners you've owned.

## Extra Frequency Problem

**Q.** *I've had my TrunkTracker for four days now and this morning when I turned it on it would not track the trunk system in Bank 1 that I've been tracking since day one. I have the same system in Bank 3 and it would track it OK there. I went to manual mode and could hear the data channel in Channel 15 of Bank 1. I compared the two banks and the only difference was that I had an additional frequency in Bank 1, Channel 16, which was not in Bank 3. I zeroed out Channel 16 and it now tracks on Bank 1. The extra frequency was not a duplicate of any of the others. I wonder why the extra frequency would not let the TrunkTracker track Bank 1.*

**A.** I couldn't duplicate this problem on my radio. One possibility is that the "rogue" frequency in channel 16 was the control channel for another system. If the radio locked on to this errant control channel it would never see any valid traffic due to the invalid (for that control channel) frequencies. However, since this frequency appears to have been in the last position it would seem that the radio should have locked onto the real control channel since it would be checked first. So the answer is I don't know.

## Even and Odd Numbers

**Q.** *Broward County, Florida, has been reported to be on a "Smartnet Type IIII" system. In scanning them with the TrunkTracker, I've found all even numbers, and from what I've read this means it is indeed a Type II system. However, I have found the ID 6707 pop up numerous times. With this being an odd number, I was wondering if on this type of system is it possible to have even AND odd numbers pop up?*

**A.** It's possible that there are a few Type I radios lurking in your system. If so, one or more of the eight blocks will be designated as Type I blocks. In this case you have a hybrid system, and it may be either a mix of Type I and Type II or Type III. Type III is where the radios transmit a Type II ID to the site controller but the controller looks up the Type II ID in a database and then formats and transmits a Type I Outbound Signal Word reflecting the fleet/subfleet affiliation of the requesting radio. These radios and their IDs appear as, and are treated as, Type I

IDs by the mobile units. It's only of academic interest to the user which of these radio types, (I or III) actually generated the channel grant, it's all the same to the BC235XLT receiver.

In general, you can identify a Type II system by the predominance of IDs which are integral multiples of 16. Even a pure Type II system will occasionally display some non-Type II appearing IDs. These can be a number of things, including a "patch" where two or more talkgroups are "connected" together, an emergency button activation by a radio user, a digitally (DVP, etc.) encoded talk group, and other stuff. If you're seeing a number of Type I IDs interspersed within what you know to be Type II IDs you will want to determine what block(s) the Type I IDs are in.

Try this: divide the Type I ID by 8192 and discard the fractional part. This will tell you what block the ID is coming from. Do this for several of the IDs across the range of IDs you are seeing so that you are sure you've got all the Type I blocks. There might be more than one. After you figure out which blocks seem to be Type I, reprogram the fleet map to make these blocks one of the Type I size codes. S3 or S4 are good ones to start with. Make all the other blocks Type II, (S0). Now pay attention to the Type I conversations, and see if you are hearing all the replies (make sure you have DELAY on). If so, you're all set. If not, try a different size code and repeat. There's no way around it.

## Signal Strength

**Q.** *Does the Trunk Tracker need a relatively strong signal in order to trunk track? I would imagine it needs a clean read of the data channel and if the signal is in and out, it might not work.*

**A.** Of course the better the signal the better the overall performance. But I have found the radio to track the control channel well enough even when the signal is sufficiently weak to render the audio hard to listen to.

## Just 100 ID Lockouts

**Q.** *The Type 2 system here in Gwinnett County, GA has a slew of IDs. I've been locking them out daily since I started monitoring it a week ago. When the parks department came up with yet another ID this afternoon, I went to lock it out and the TT displayed FULL. I guess there's a limit as to how many IDs you can lockout on all banks.*

**A.** A maximum of 100 subfleet or talkgroup IDs can be locked out at one time. In practice this shouldn't prove to be too much of a problem except for those people trying to identify the IDs on more than one system at a time.

The preferred way to listen to a system is to put those IDs you're interested in into the scan lists and then scan the lists. Large systems like the Gwinnett county system have an enormous number of users. Many of them, as you point out, aren't of much interest. Rather than locking out all the junk, leaving only the interesting stuff to be found while searching, simply scan for the interesting IDs. Until you find all the interesting stuff the 100 ID lockout limit is limiting.

## NiCd Powered

**Q.** *I'll bet you the BC235XLT is NiCd battery powered, which will make it useless for continuous use. Uniden did it wrong again.*

**A.** All bets are off. Yes, the BC235XLT is powered by a special rechargeable NiCd pack. Whether this is wrong or right is a matter of personal opinion. Uniden does include two battery packs with the radio, as well as a charger that can power (and charge) the radio at the same time it's charging the spare battery pack. We've had reports of the TrunkTracker lasting for as much as eight hours on a single charge.

## Too Many Talkgroups

**Q.** *I've had my TrunkTracker for 3 days now and it looks as if the parks and water people must have an almost infinite number of IDs. I've been locking them out for three days now and they still show up. They appear to be what they call private line calls. They are all very high numbers 16000 and there is even an occasional phone patch. Had one just now on ID 22335. Is this common? It's a Type II system for Gwinnett County, Georgia.*

**A.** The Gwinnett county system has lots of talk group IDs up in that range. But you are right. It seems like parks and recreation has more than their share of talk groups. Private calls and phone interconnects should be ignored by the radio, however noise may occasionally flip the bit that tells the radio a call is a private call or interconnect. When this happens pressing the SRCH key will generally make it go away and you will not see the ID again. ■

# Hollywood's Rolling Radio Station

*During the Roaring '20s, Warner Brothers Had a Great Idea!*

By Alice Brannigan

When station KFVB took to the air on March 4th, 1925 it was on 1190 kHz with 500 watts. They said the call letters stood for "Keep Filming, Warner Brothers," for the station was owned by Warner Bros. Motion Picture Studios, alma mater of stars such as John Barrymore, Myrna Loy, Louise Fazenda, and the wonder dog, Rin Tin Tin. Back in 1925, KFVB was the only studio-owned radio station. The station's slogan was, "Movieland: Lights! Camera! Action!"

KFVB operated from the film company's studios at 5842 Sunset Blvd., situated on 15 acres in the heart of Hollywood, CA. No doubt about the fact that KFVB was a great promotional idea for the film studio. But KFVB went one step further.

As written about here previously, during the 1920s, there were a spate of portable and mobile radio stations used for actual broadcasting purposes. In those pioneer days of radio, Warner Brothers addressed the problem of bringing the broadcaster to the locations of the stars if the stars would not come to the station.

***"Warner Brothers studio owned and operated a station, 6XBR, that could travel anywhere in the Los Angeles area."***

Warner Brothers studio owned and operated a station, 6XBR, that could travel anywhere in the Los Angeles area. This was the largest and most elaborate of all of the 1920s portable broadcast facilities. It was used in conjunction with Warner Brothers' KFVB. Portable station 6XBR was licensed to operate on 2778 kHz. It ran 250 watts, which was more than many of the regular broadcasters of the era.

Station 6XBR was located in a 22-foot-long Moreland motor coach, which provided ample room for the four panels and



*The KFVB facilities, shown at the Warner Brothers studios when the station first began operation back in 1925.*

the transmitter. It operated under all weather and terrain conditions and proved itself to be quite reliable. Best of all, the station could be set up to operate in only a few minutes, and actually broad-

casting within fifteen minutes of arriving at its destination.

The antenna system consisted of two collapsible towers that could fold down against the top of the vehicle. When fully

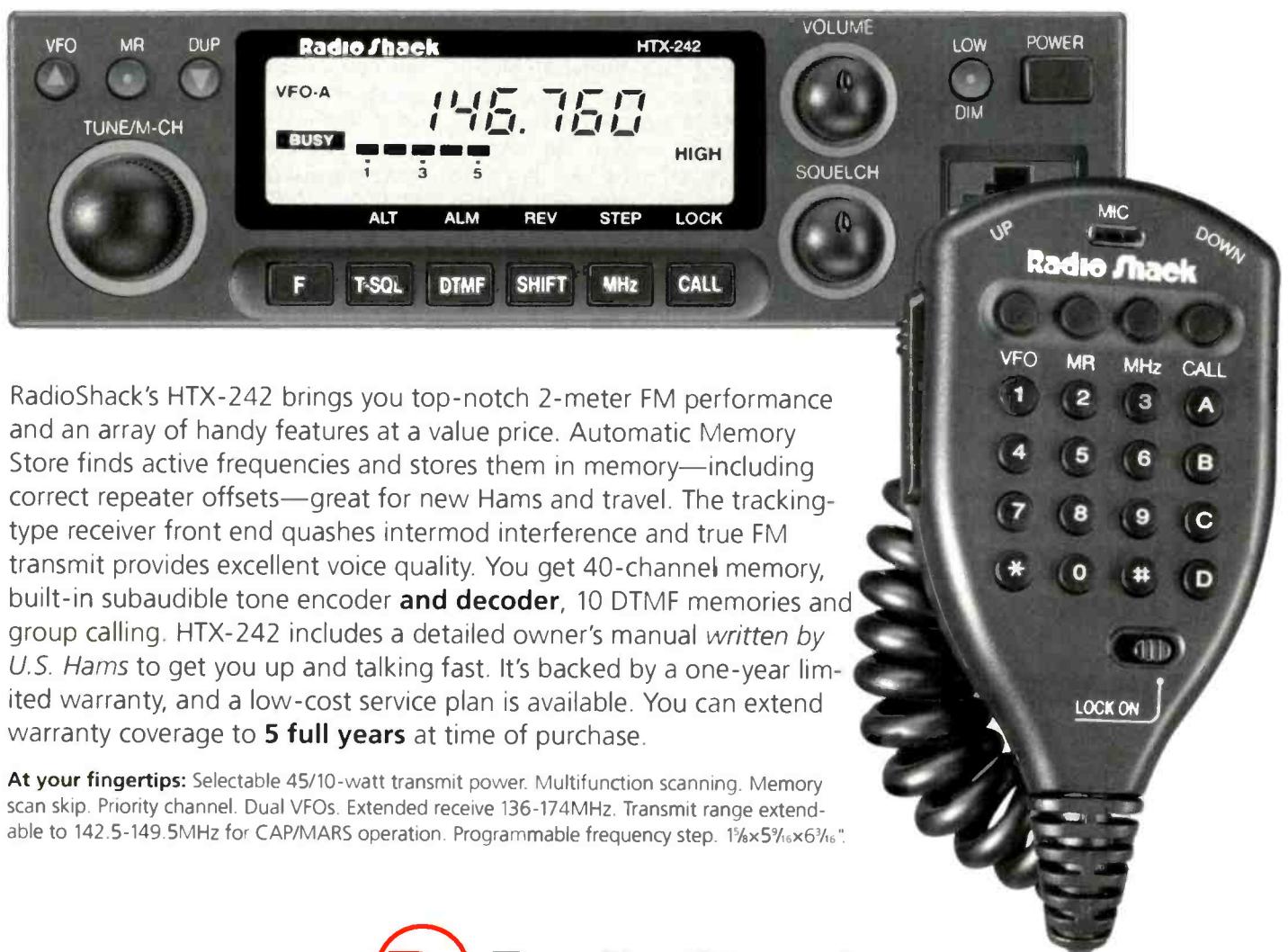


*KFVB, at night, after it had moved to a new location on Hollywood Blvd., about 1930.*

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## RadioShack's 45-watt 2-meter FM mobile Amateur Radio transceiver

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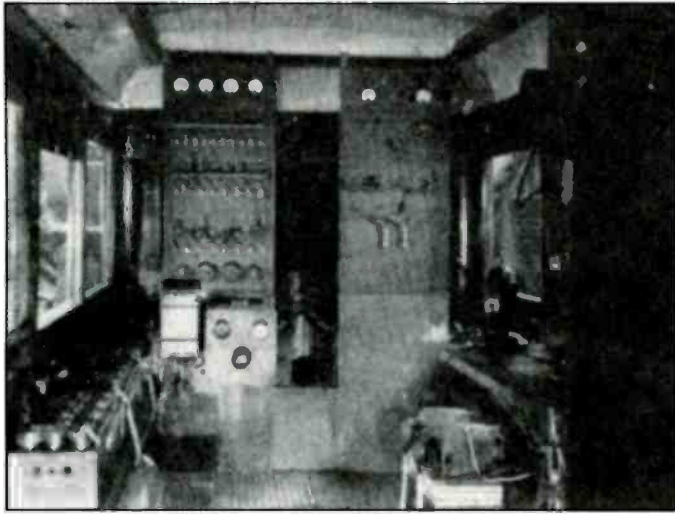


RadioShack's HTX-242 brings you top-notch 2-meter FM performance and an array of handy features at a value price. Automatic Memory Store finds active frequencies and stores them in memory—including correct repeater offsets—great for new Hams and travel. The tracking-type receiver front end quashes intermod interference and true FM transmit provides excellent voice quality. You get 40-channel memory, built-in subaudible tone encoder **and decoder**, 10 DTMF memories and group calling. HTX-242 includes a detailed owner's manual *written by U.S. Hams* to get you up and talking fast. It's backed by a one-year limited warranty, and a low-cost service plan is available. You can extend warranty coverage to **5 full years** at time of purchase.

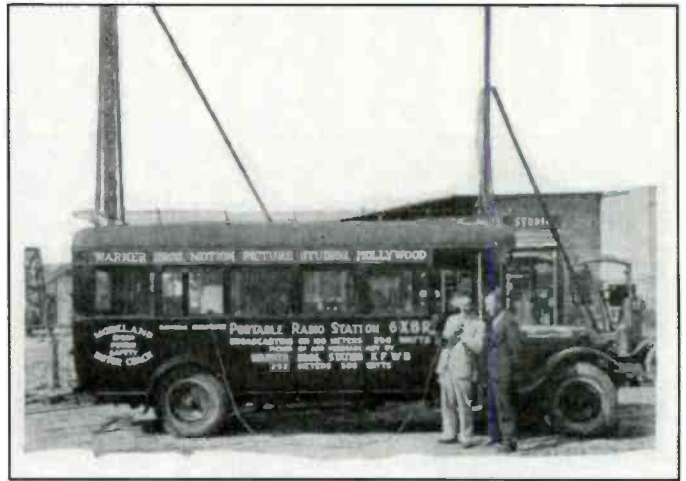
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Portable broadcaster 6XBR was owned and operated by station KFWB.



Interior of station 6XBR. At the left are the battery packs. The two long panels operated the generators and transmitting tubes.

extended they reached a height of 45 feet at the high end and 25 feet at the low. The antenna wires were brought down in a fan and attached to a lead-in insulator. A counterpoise ran around the roof of the truck, and was open at the front.

The transmitter used a coupled Hartley circuit. The antenna circuit was kept detuned 33 percent to "keep the wave steady." Heising modulation was employed. A 50 watt tube acted as an amplifier for the 250 watt modulator. The speech amplifier was transformer-coupled to the modulator.

A multi-stage amplified input panel was used, and impedance-coupled for best audio quality. It delivered about 10 watts to the 50 watt speech amplifier. A 500K-ohm pot controlled the volume of the input panel. Two mics could be used, with a

switch to change from one to the other.

A separate panel operated the generators. This contained switches for selecting the generator to be used, or operating both in parallel. The panel also contained meters showing each generator's output.

A fourth panel operated the entire power supply. When all of the switches were in the "on" position, the batteries were on discharge, when "off" they were on charge. One full charge would enable four hours of continuous operation. Jelly batteries were used for the generators and low-voltage supply.

In designing and constructing 6XBR, KFWB's Chief Engineer Frank N. Murphy, realized the possible problems of stray RF getting into the wiring. Therefore, all wires run in the truck, whether from batteries to tubes, or

between panels, were in grounded lead-covered cables.

The concept behind 6XBR was for it to be used for remote broadcast of sports events, musical concerts, premiers and other events at theaters showing Warner Brothers' films. The remote programs were sent out by 6XBR on 2778 kHz specifically for the purpose of being picked up and rebroadcast by KFWB on 1190 kHz.

Upon first testing 6XBR with KFWB, Frank Murphy was surprised when he received a big stack of reception reports from area hams and SWLs who had heard the 6XBR shortwave signals directly on 2778 kHz. Murphy told the savvy KFWB management, and they had a great idea. They immediately realized that this was an untapped potential radio audience. Thereupon, portable 6XBR scheduled a number of innovative "reverse" operations wherein the portable station rebroadcast the KFWB signals via its 2778 kHz channel for the benefit of hams and SWLs. On the first of these "reverse" broadcasts, reception reports poured in from as far east as Denver and as far north as Portland.

### Before Its Time?

No doubt about the fact that 6XBR was one of the first remote pickup broadcast units, and certainly was the most formidable. But maybe it was more than that.

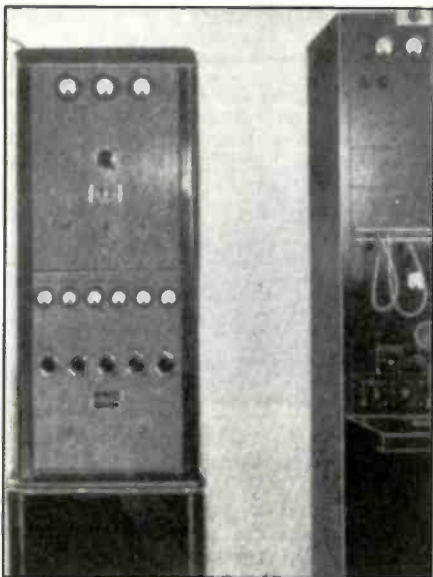
Beginning in 1936, the FCC allowed local broadcasters to try operating experimental shortwave relay transmitters to carry non-commercial programming. These AM relays operated on 10 discrete

**THE PIONEER SHORT WAVE STATION OF THE WEST**

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<b>W6XKG</b> 25,950 Kc.	<b>BEN S. McGLASHAN, Owner</b> 1417 South Figueroa Street, Los Angeles, Calif.	<b>KGFJ</b> 1200 Kc.
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QSL sent out in 1938 by high frequency broadcaster W6XKG, which relayed Los Angeles station KGFJ.



Transmitter at high frequency broadcast station W8XWJ, which relayed Detroit's WWJ.

channels allocated between 25.90 and 31.60 MHz. The High Frequency Broadcast Service was an attempt to offer stations improved local coverage during night hours when DX signals interfered on mediumwave frequencies and made reception of local stations difficult.

Los Angeles station KGFJ was a 100 watt station on 1200 kHz in the mid-1930s. They opened up one of the first of these stations, W6XKG on 25.950 MHz.

A typical station was W8XWJ, operated in Detroit, MI, by broadcaster WWJ. This 100 watt station used 31.60 MHz, and had its antenna mounted 650 feet high on the roof of the Penobscot Tower (at that time, the tallest building in town). WWJ offered free construction plans for building a receiver to pick up this frequency inasmuch as communications receivers of the 1930s seldom could tune as high as 31 MHz (then considered UHF).

The High Frequency Broadcast Service was immediately popular with hams and SWLs, as skip propagation on these frequencies bounced the signals across the continent as well as around the globe. More than 30 stations took out experimental licenses to operate these

*"... Frank Murphy was surprised when he received a big stack of reception reports from area hams and SWLs who had heard the 6XBR shortwave signals ..."*

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- "The best...built like an antenna should be." -Larry Magne in *World Radio TV Handbook*
- "Our best seller." -EEB in their recent ads and catalogs
- "Now in use in 45 countries." -Giffler Shortwave in 1983

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CIRCLE 81 ON READER SERVICE CARD

September 1997 / POPULAR COMMUNICATIONS / 21



Station WEBC, in Superior, WI, sent out this QSL for its relay, W9XJL, which ran 250 watts on 26.10 MHz.



Station KAPA was a 1938 California Highway Patrol portable radio facility and command post. Had it been inspired by 6XBR?

shortwave relay transmitters, including WSPA, WOR, WTAR, WTCN, WEBC, KSTP, WTMJ, WMCA, WBZ, WEA, WABC, WCAO, WTAR, WFBR, WCAU, KYW, WDOD, WKY, KJBS, WHAM, WBEN, KDKA, WGAR, WADC, WENR, KMBC, WCCO, KLZ,

and KSD. Most stations issued special QSL cards, and several even produced programming aimed specifically at radio hobbyist listeners.

The High Frequency Broadcast Service was phased out because of the development and advent of FM broad-

casting, which offered improved fidelity. Experimental FM stations had started popping up by the late 1930s.

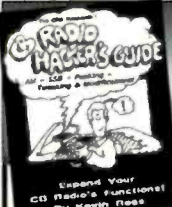
*“The High Frequency Broadcast Service was immediately popular with hams and SWLs . . .”*

But remember, about 10 years before the creation of the High Frequency Broadcast Service, station KFWB had quite possibly been the first local station to offer shortwave rebroadcasts of their programs intended for direct reception by area listeners.

### What Else Did It Inspire?

Was it merely coincidence, or was it by inspiration from 6XBR, that the California Highway Patrol built station KAPA? In 1938, when it was constructed, KAPA ran 50 watts on 1692 kHz. It wasn't a broadcasting station, but a complete, self-contained portable radio facility and command post. Housed in a sleek silver trailer, its call letters were displayed on its side. KAPA could be taken to any temporary location and used to communicate with the CHP's five base stations that existed in 1938. We like to think they got the idea from 6XBR.


That's a wrap for now. Please pass along your old time radio photos, QSLs (originals or good copies), picture postcards, station listings, news clippings, etc. If you have any anecdotes, memories, or column ideas to share, send them by mail or e-mail. Our e-mail address is <Radioville@juno.com>. We'll see you on the road to Radioville. ■



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CB Radio's Function!  
By Kevin Rice

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Changes  
& Add Functions  
Simple instructions for 40 & 50 Radios  
By Kevin Rice


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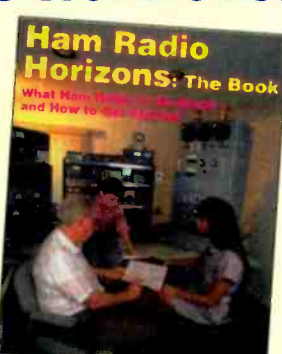
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# The Radio Connection

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

A LOOK BEHIND THE DIALS

## Let's Help a Reader and Then Look at Cap Voltage Ratings

It's hard to believe I'm sitting here writing the September column early in June! It seems like winter just finished. Yet, we are approaching our first anniversary with *Pop'Comm*. Thanks to everyone for your letters of support. I hope most of you had some lucky finds this past summer at fleamarkets or tag sales. There is plenty of stuff still out there, you just have to hunt for it. I found a nifty 1934 vintage set last weekend at a local tagsale! I have plans for this gem in upcoming columns, so I can't reveal too much about it at this time.

Please send in some photos or yourself and your latest finds! Some readers asked about photos. Standard 35mm color snapshots are fine. Most of the photos used in this column have been 35mm color shots. Get your camera out and start clicking.

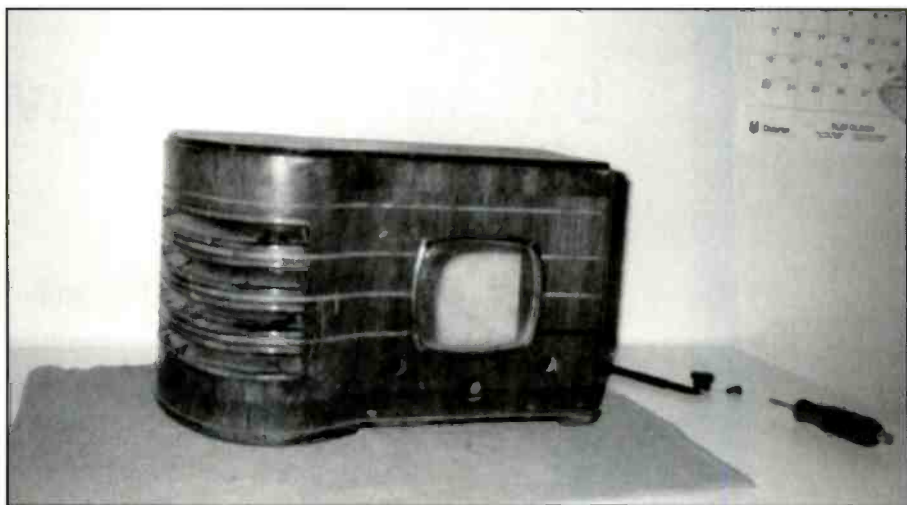


Photo A: Warr's wooden cased Emerson radio.

### A Reader Needs Help

In a letter written earlier this year, *Pop'Comm* reader Tod Warr <warr.tracey\_tod@salt-lake.va.gov> requesting help in identifying two radios he wishes to restore. The first radio is an Emerson wood table model, shown in photos A, B and C. The radio covers the standard broadcast band, and also short-wave from 1.6 to 4 MHz. The second radio is shown in photo D, and has a white cabinet with blue knobs and a blue speaker grill. I have to admit, it is one sharp looking radio! Warr was wondering if Emerson produced small radios under the Silvertone brand name for Sears. Can anyone help with this?

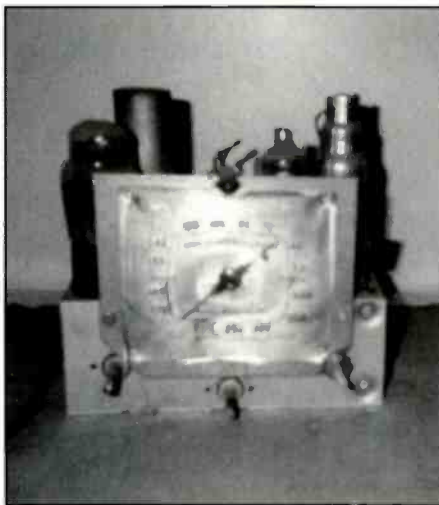


Photo B and C: Front and rear views of the Emerson chassis. Can you help Id this set?

### More On Capacitor Voltage Ratings

In the June column we discussed class A audio biasing. Class A biasing is always used in single-ended audio stages (one tube). We showed how the needed negative biasing voltage could be generated in the high voltage power supply. You can be sure the bias voltage is supplied externally if the audio tube cathode goes directly to ground.

Let's take another look at **Figure 1**, as was shown in the June issue, and let me offer some questions. What should the voltage rating be for the two filter caps C1 and C2? What is the polarity of C3?

Looking again at **Figure 1**, let's see what happens when power is applied before you give me an answer.

1. The 5Y3 filament will heat up within seconds, much sooner than the 6F6 with its indirectly heated cathode.

2. While the radio tubes are still warming up, they are drawing no current, and the voltage drop across the field coil is zero.

3. With no load on the power supply, the supply voltage will be higher than normal because the DC voltage wants to creep nearer to the peak AC voltage. Remember when we discussed AC RMS and peak voltages earlier?

4. All rectifier tubes have an internal

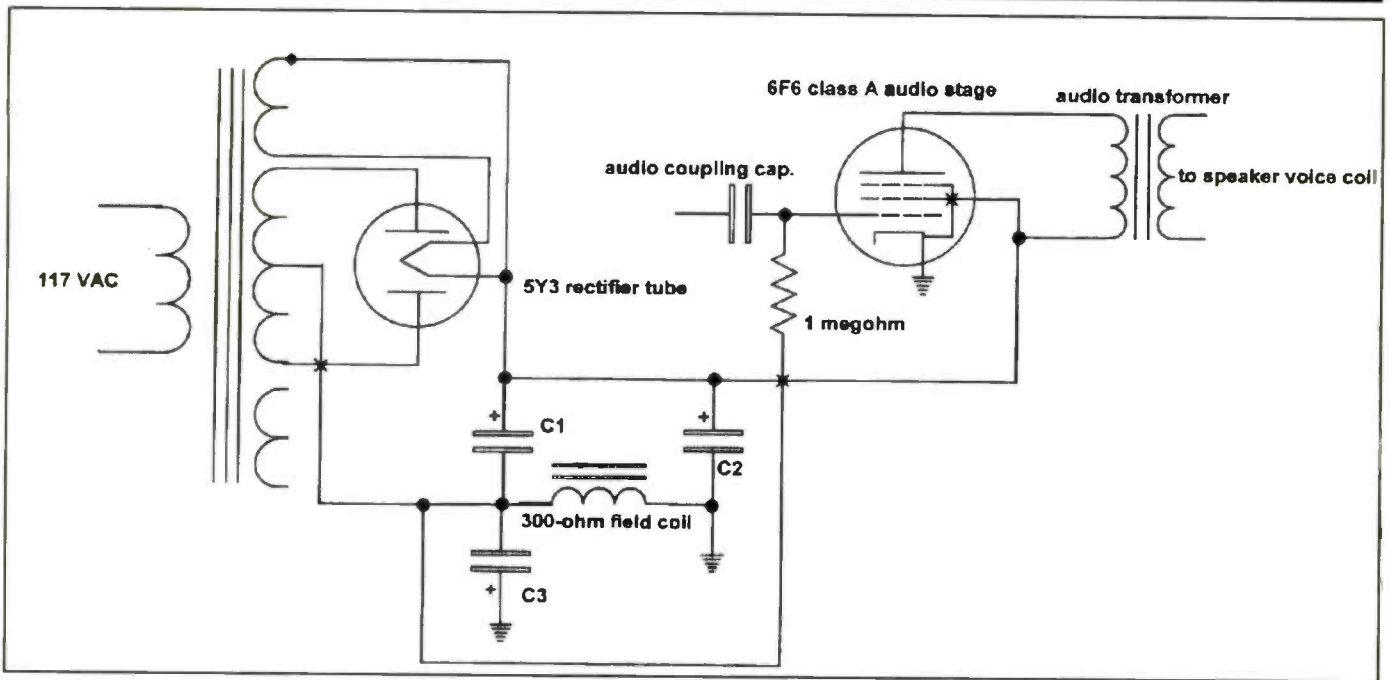


Figure 1: Schematic of a typical radio power supply and audio stage.

resistance. As the supply current increases, the internal voltage drop in the rectifier increases—this is a basic principle of Ohm's law. With no load, the power sup-

ply voltage will be higher than normal because the voltage drop across the rectifier tube is much lower.

So, what is the correct voltage ratings

of C1 and C2? Well, with the radio playing, a 350 Vdc rating appears fine. But, soon after we first turn the set on, the voltage on those caps will be surprisingly

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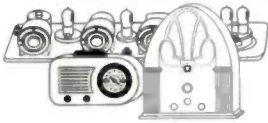
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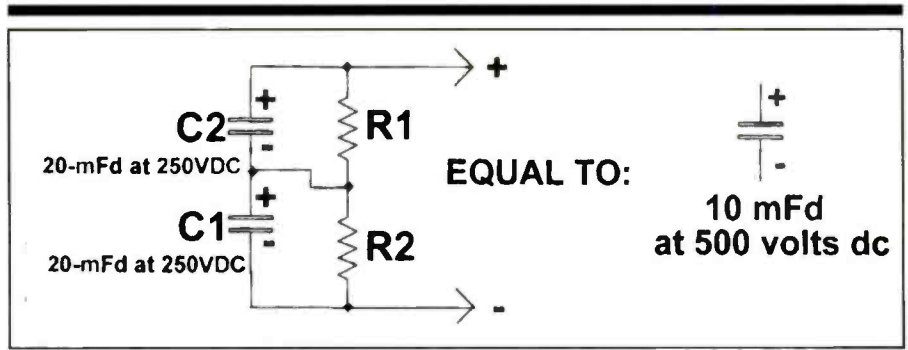


Figure 2: Two capacitors of equal capacitance value, and voltage ratings, may be used in series to produce a capacitor with a higher voltage rating. The voltage rating is twice the rating of one capacitor, and the capacitance is one-half the value of one capacitor.



Photo D: Warren's Silvertone kitchen radio. The white cabinet with contrasting blue knobs and speaker grill is eye catching.

high! The 5Y3 quickly warms up, delivering voltage. The radio tubes are still "cold," and drawing no current. The 20.1 volt drop across the field is not there—add that to the capacitor voltage. The internal resistance of the 5Y3 has little effect, so add another 20 volts to the total.

Several months ago I did an American Bosch chassis restoration. I used 450 Vdc rated filter caps. The B plus was under 400 volts when the set was playing. I thought I had ample safety margin. Yet, when I measured the voltage across what would be C1 in Figure 1, I saw it soar to 475 volts as the rectifier warmed up! It stayed there for several seconds until the tube cathodes warmed up and the those stages began drawing current. Modern electrolytics may survive a temporary voltage surge. But, why chance it?

You should always check the B plus voltages across the first filter cap (C1) as the cold radio warms up. Never assume that the original filter cap voltages were always adequate!

As for capacitor C3, remember it is in

a negative supply voltage circuit. The positive terminal goes to ground! It is easy to goof this one up, since many early schematics failed to indicate the polarity markings on the capacitor symbols. Sometimes C3 is included in a custom filter can package, so you must be aware of the polarities when installing replacement parts.

**Where To Find High Voltage Filter Caps**

Finding electrolytics rated for 450 volts dc is relatively easy, but those with greater ratings are more difficult to find. What do you do when you need a 475 volt or 500 volt rating? One solution is to "series" two capacitors. For example, you need a 10 mFd/500 volt filter cap. You may take two 20 mFd capacitors, each with 250 volt ratings, and connect them in series as shown in Figure 2. Always use identical capacitor values—this ensures the voltage drop across each will be equal. Connect them positive to negative, just as you would with flashlight batteries. Resistors R1 and R2 are added for two reasons. First, they provide a discharge path for the capacitors when the set is turned off to prevent shocks. Secondly, they help keep the voltages across both capacitors equal. Use about 470k ohm resistors here, with at least 3 or 5 watt ratings. Wirewounds are best. Remember that for two identical capacitors in series, the capacitance value is halved, and the voltage rating is doubled.

In a future article I will discuss cathode biasing, and show why other original capacitor voltage ratings should be taken with a grain of salt! Until next month, 73 and don't forget to contact me with your questions and comments about our column!



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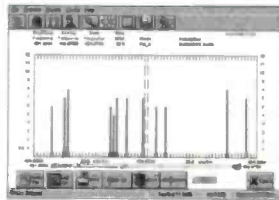
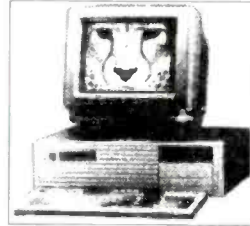
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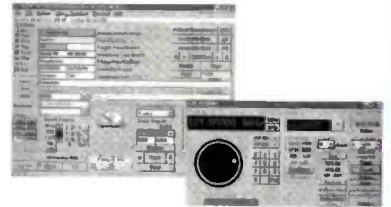
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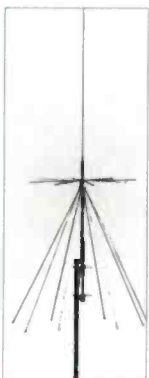


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BY GORDON WEST, WB6NOA

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I just added a new combination antenna to the fiberglass roof of our new communications vehicle, and I must say the boost in performance over lower-mounted antennas was impressive. The new antenna is the Everhardt FM/CEL-1, a high-gain cellular antenna that also doubles as a powerful replacement to a regular AM/FM automobile whip. If your automobile radio also has 162 MHz FM weather channel capabilities, this antenna receives the weather, too!

We mounted the FM/CEL-1 on the top of our fiberglass roof relying on the promise it needed absolutely no ground

plane to work well. "This antenna does not require a ground plane for its radiation pattern, and the elevated feed collinear design gives you a much more horizontal signal pattern," comments Mike Simmons, Marketing Manager for Everhardt. "And since many automobile AM/FM entertainment radios now include the VHF weather band, this new antenna has a weather band trap that is tuned specifically to the 162 MHz band," adds Simmons.

The antenna worked fabulously, doing a much better job on our AM radio than the small automobile antenna which we converted into a communications antenna. On cellular, running this antenna on the top of our vehicle gave us a big boost to a distant hard-to-reach cell site when we were traveling in the mountains. The antenna also gives a 6 dB gain in both transmit and receive capabilities from its collinear design.

On FM, it worked just fine, and on the weather band, it picked up signals slight-

ly better than our ham radio 2-meter antenna mounted slightly lower. The antenna comes with the mounting hardware as well as the duplexer that splits out the cellular pigtail with a TNC and to the AM/FM pigtail which features the customary Motorola plus that goes in the back of our stock AM/FM/weather band vehicle radio. About the only thing that was tough in the installation was getting perfect vertical alignment on our non-level fiberglass roof. But after playing around with the mounting hardware and adding one additional wedged spacer, the antenna is now standing tall and is doing a remarkable job. You can contact Everhardt Antennas in Fort Worth, Texas at 1-800-735-0176.

### Using the Wilson 5000

I also changed out my big 10-meter, quarterwave length, 96-inch whip (which also doubles as my 11-meter CB radio antenna) with a base-loaded Wilson 5000

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795: Coverage: vicinity of Coeur d'Alene (SW) (Boise) (Boise)

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797: Coverage: vicinity of Coeur d'Alene (SW) (Boise) (Boise)

798: Coverage: vicinity of Coeur d'Alene (SW) (Boise) (Boise)

799: Coverage: vicinity of Coeur d'Alene (SW) (Boise) (Boise)

800: Coverage: vicinity of Coeur d'Alene (SW) (Boise) (Boise)

yard-long whip system. I was worried that my 10 and 11-meter capabilities would suffer when I abandoned that big 98-inch whip. To my surprise, not only was performance on both bands slightly better on transmit, and significantly less noisy on receive, the yard-long whip from the Wilson 5000 gave me a better VSWR match when preset to straddle the 10 and 11-meter bands than the big whip. I normally operate on ham 10-meter SSB down at 28.333 MHz, plus CB below 27.405. I preset the whip with an MFJ SWR analyzer to 27.8, and to my surprise, both my CB and ham set tuned quite nicely into the Wilson 5000 base-loaded antenna with the VSWR not terribly high on either 10 or 11 meters.

On 10 meters, I pumped the power up to 500 watts from an SGC "Power Cube" solid-state amplifier; and after talking with a station in Australia for about 45 minutes, I went out and put my hand on the coil, and it was only moderately hot. The technical sheet indicates the Wilson 5000 uses 10-gauge, silver-plated, solid-copper wire to minimize the resistive loss when the RF travels on the outside of the wire surface. The coil of wire is also spaced away from the Thermoplastic core to further minimize dielectric losses. I rate the Wilson 5000 base-loaded, 10-meter/11-meter antenna as a great performer when you can get it over a good ground plane on your vehicle.

## The GMRS Good Book!

The General Mobile Radio Service (GMRS) National Repeater Guide, 10th Edition, has just been released and this new volume is so up-to-date it even includes everything about the new Family Radio Service (FRS) which is indeed a thorn in the side of GMRS users.

This user's guide is more than just a list of GMRS repeater stations throughout the country. There is valuable supplemental information on how to identify and contact repeater owners, plus valuable information about the repeater's operating range and CTCSS and DCS access codes. There is also a listing of fact guides reprinted by the Personal Radio Steering Group, Inc., plus a Q & A section on what GMRS along with FRS is all about. The new 10th Edition is available for \$25 from the Personal Radio Steering Group, Inc., P.O. Box 2851, Ann Arbor, Michigan 48106; 313-662-4533. If you are a GMRS operator, or are planning on purchasing Family Radio Service equipment, this

book is your directory of what's happening in the United States.

## Power Up and Down

There are now three suppliers of 12 volt DC mobile power motorized antenna mounts. Two are designed for your common scanner and small mobile antennas, and one is designed to raise big 10-foot whips like those white fiberglass whips found on boats.

To raise 40-inch or shorter communi-

cation whips from a 12 volt DC motor, the Maldol "Power Mount" MK-30 or the Diamond 12 volt DC motorized up-and-down antenna system puts your antenna in the proper plane without you having to go up and physically raise it or lower it. Both power mounts also have a slip clutch adjustment that lets the antenna flop down in case you have it in the up position and you pull into your garage late at night!

But if you really need a major 12 volt DC power-up and power-down antenna



# World's Most Powerful CB and Amateur Mobile Antenna\*

**Lockheed Corp. Test Shows  
Wilson 1000 CB Antenna Has  
58% More Gain Than The  
K40 Antenna (on channel 40).**

In tests conducted by Lockheed Corporation, one of the world's largest Aerospace Companies, at their Rye Canyon Laboratory and Antenna Test Range, the Wilson 1000 was found to have 58% more power gain than the K40 Electronics Company, K40 CB Antenna. This means that the Wilson 1000 gives you 58% more gain on both transmit and receive. Now you can instantly increase your operating range by using a Wilson 1000.

**Guaranteed To Transmit and Receive  
Farther Than Any Other Mobile  
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New Design**

The Wilson 1000 higher gain performance is a result of new design developments that bring you the most powerful CB base loaded antenna available.

### Why Wilson 1000 Performs Better

Many CB antennas lose more than 50% of the power put into them. The power is wasted as heat loss in the plastic inside the coil form and not radiated as radio waves.

We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it.

In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

In order to handle higher power for amateur use, we used the more efficient direct coupling method of matching, rather than the lossy capacitor coupling. With this method the Wilson 1000 will handle 3000 watts of power.

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\*Inductively base loaded antennas  
\*\*Call for details.

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Green Valley Commercial Center  
Henderson, Nevada 89015

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	58
27.405	2.00	58

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K40**

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500 Magnetic Mount.....59<sup>95</sup> Call About Fiberglass!!!  
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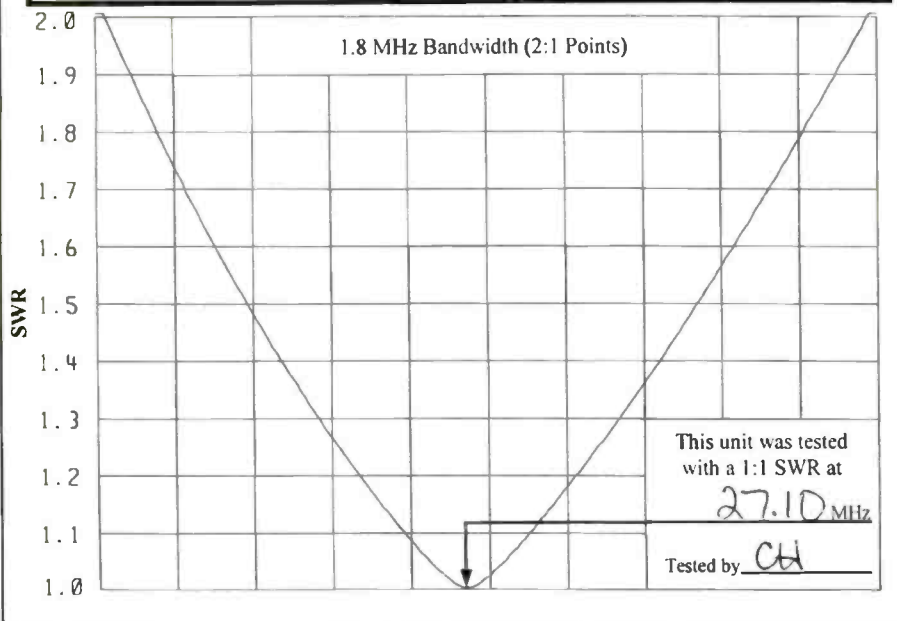
**Wilson**

ANTENNA INC.

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## Wilson 5000 Base Loaded Antenna Test Results

These test results are specific to this Antenna (Serial # A3199)



The Wilson 5000 VSWR curve shows good performance on both 10 and 11 meters.

***“And now there is a computer ham radio system that will let ham radio operators both receive as well as TRANSMIT.”***

mount with a one-inch pipe thread, consider the 12 volt power mount from a company called Newmar (Newport Beach, California; 714-751-0488) that has a running torque of 25 foot pounds. I have raised some 12-foot antennas with this mount, and it works well. There is even a panel indicator which gives you an indication when the antenna is fully up or fully down. This same company also produces commercial power supplies and voltage regulation equipment for marine, base station, and avionics applications. They don't sell direct, so you will need to contact them to find out where your nearest Newmar dealer is located or how you can order through a Newmar authorized mail order source.

### Green Batteries Are Here

The new nickel metal hydride batteries will play your handheld scanner or handheld ham transceiver about twice as long as similar-sized nickel cadmium batteries. Although original equipment manufacturers are still not including nickel metal

hydride batteries as part of their new-radio package, after-market suppliers like W & W Associates, Falkner Enterprises, Batteries Plus, and Advanced Battery Systems (you know them as Periphex) are working closely with the manufacturers to convince them that these new batteries won't go up in smoke in normal trickle-chargers supplied by the manufacturers. And for those of us with scanning and communications equipment wanting the most out of the new nickel metal hydride technology, a fast-charger specifically for nickel metal hydride would be the best way to go. These chargers are usually available from the same manufacturer of the actual battery cells.

### The Computer Connection

Well-known radio enthusiast, Bob Grove, was recently seen at a ham show working the new WINRADIO radio receiver card, along with software, in a computer that would tune from 500 kHz to 1300 MHz. Bob was having so much fun playing computer radio that he drew a large crowd to see how well this Australian hardware and software package works. If you have an extra slot in your computer, stand by—WINRADIO's PC card simply plugs into a slot on your motherboard, and the wideband receiver allows you to tune in everything from worldwide shortwave to space shuttle UHF.



It takes a special charger to rapid-charge nickel metal hydride batteries.



A fiberglass roof is no problem for the new Everhardt FM/CEL-1 antenna mounted on the right rear of fiberglass roof.

And now there is a computer ham radio system that will let ham radio operators both receive as well as TRANSMIT. It's from Kachina Communications (Cottonwood, Arizona; 520-634-7828). The Kachina 505 DSP is a computer-controlled ham radio, high-frequency station with all of the controls via the computer, there are no controls on the actual white box that sits beside the computer. It simply plugs into the computer serial port, and will receive and transmit on all nine amateur radio high-frequency bands, plus provide you with general coverage reception. It is a completely digital radio, so you can imagine that the performance was terrific.

Well-known manufacturer ICOM





Nickel metal hydride batteries will play almost twice as long as NiCds, but require careful charging!

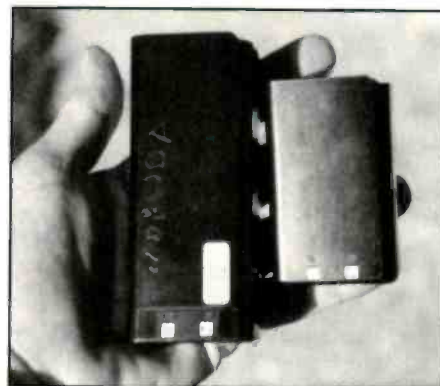
America is also in on the marriage between radio and computer by their recent demonstration of the IC-PCR 1000 software-controlled communications receiver that will bridge the gap between computer hardware and communications equipment with a "user friendly software interface." While WinRADiO's receiv-

er system plugs *inside* the computer, the ICOM system sits on the *outside* of the computer with an RS-232 serial cable. It will tune between 100 kHz to 1300 MHz. (Of course, like all USA units, the cellular band is locked out). ICOM plans to release working units by mid-summer.

### Micro Transceivers

And just when you hams thought that your little 2-meter or dual-band radio couldn't get any smaller, imagine a handheld communications transceiver for the 2-meter band (plus they have one for the 440 MHz band, too) that is no thicker than five credit cards stuck together. The Alinco DJ-C1 weighs only 75 grams, and is sized just like a credit card for length and width. This unit is so small that there is no room for a speaker. You listen via earphone. But I tried it, and it works well. It's powered by a lithium ion battery, and this in itself is brand new technology.

Ham radio giant Yaesu also came out with a 125 gram dual-band transceiver, with built-in speaker, that also runs on a lithium ion battery. It puts out 500 milliwatts and offers 290 memory channels on

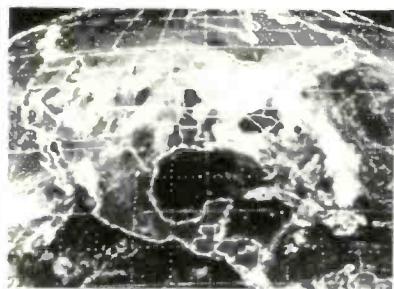


The nickel metal hydride battery on the right lasted just as long as the NiCd battery on the left.

both VHF as well as UHF. It is sized in millimeters; 81mm high x 47mm wide x 25mm deep. If you really must have the world's smallest handhelds, you now have two choices.

Well, it looks like a good year for communications equipment and accessories. Keep tuned in, and we will be reviewing some of these newly announced products just as soon as the manufacturers get type-acceptance and one of these hot sets in our hands.

## Get A New Image



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PC Slow Scan Television is a complete system for sending and receiving full color amateur SSTV. The package includes an SSTV FSK modem, SSTV software, image capture utilities and reference manual. All popular formats are supported including Robot, Scottie, Martin and AVT. The system requires a 286, 386 or faster PC with VGA or super VGA display.



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THE MONITORING MAGAZINE

CIRCLE 75 ON READER SERVICE CARD

September 1997 / POPULAR COMMUNICATIONS / 33

# Antennas & Things

SIMPLE ANTENNAS AND ACCESSORIES FOR SIGNAL IMPROVEMENT

## Pin-Pointing Those Radio Signals Is A Fine Art

Radio direction finders are special antenna-receiver combinations that find the direction of arrival of a radio signal. These devices have been used since the earliest periods of radio technology. During World War II, the Allies used radio direction finders to locate the source of enemy radio transmissions. German and Japanese forces also used them for the same purpose. In addition, the Germans used radio direction finders to root out partisans, spies and others who were assisting the Allies (note: collecting those low-powered spy radios of WWII is a well-established sub-hobby amongst antique radio enthusiasts).

If you make the measurement from two or more locations, then the point where the receptions cross is the location of the transmitter. Most authorities agree that three measurements, each from a different direction, will give accurate position (it's called "triangulation").

In more modern times, radio amateurs use radio direction finding for "fox hunting" events. In those games, one ham operator with a portable or mobile transmitter will hide somewhere, and a bunch of others will try to find him. A buddy of mine was into "hidden transmitter hunting" in the early 1960s. He had an old 1947 Plymouth that was painted green and red, and looked like the paint was put on with a paint brush. His direction finding antenna was a small square loop about one-foot on each side, mounted on the top of a broomstick. When he was near the transmitter site one Saturday morning, he probably exceeded the speed limit a little bit, bringing some unwanted attention. It seems that some homeowner in the neighborhood complained to the police: "There's a nut speeding up and down the street waving a cross out the window."

### Other Radio DF Uses

In some areas of the country a radio direction finding system is used to recover stolen cars. A beacon transmitter is placed inside the car somewhere (in a hidden location, I presume). Police cars in the area are equipped with a radio direc-

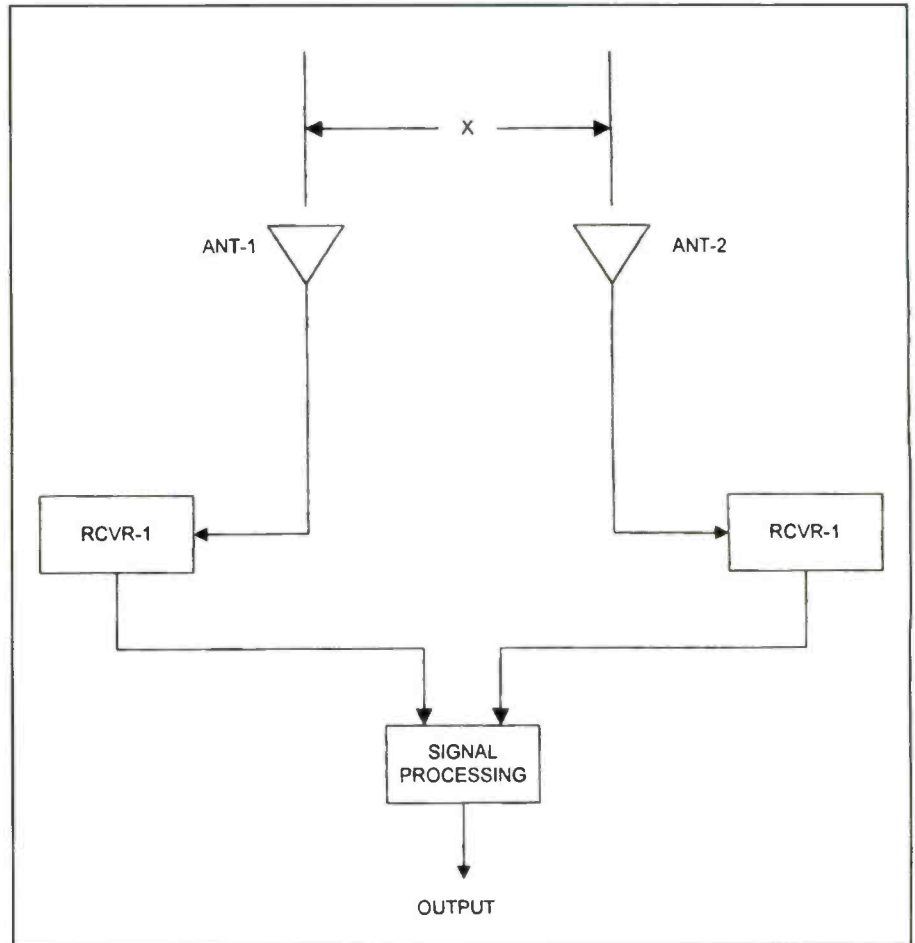


Figure 1

tion finding receiver. When the car owner reports the car stolen, the Lowjack™ system is activated and the vehicle is (hopefully) soon recovered. You can recognize Lowjack-equipped police cars by the four VHF whip antennas arranged in a small square on the roof.

In later columns we will talk a bit about radio direction finders, but this month let's talk about a specialized system that greatly improves the resolution. Antenna-receiver resolution determines the ability of the system to discriminate between two closely spaced sources (i.e. two transmitters close to each other). It also improves the ability to pin-point the location of a single source. The method

we will discuss this month is capable of providing angle of arrival to minute-of-angle precision.

Unfortunately, this particular method is not for everybody. This system will not recover modulation because it works on the signal strength alone. In some cases, you can use the receiver automatic gain control (AGC) DC signal. In other cases you will rectify and integrate the audio output signal in order to create a DC level. Radio astronomers and solar flare hunters use this method on VLF receivers all the time. Commercial and military RDFs also use it.

Figure 1 shows the basic system. It requires two identical antennas, spaced

*"In some areas of the country a radio direction finding system is used to recover stolen cars."*

some arbitrary distance (X) apart, and two receivers. In some commercial systems they use two-channel receivers for this purpose. The method is derived from airborne radar, where it is called monopulse resolution improvement (MRI).

The outputs of the two receivers are passed to a signal processing circuit. It can be either an analog circuit or a micro-computer (or the related micro-controller devices). The basis for this circuit's ability to improve resolution is shown in Equation 1. Consider V1 and V2 to be the output voltages of the two receivers:

**Equation 1:** Where: VO is the output voltage from the signal processor, V1 and V2 are the receiver output voltages, and k is a constant used to control the process. The reason for the k constant is to prevent the value of VO from trying to hit infinity when V1 = V2. The value of k is scaled to provide the maximum allowable output voltage in any given system.

In analog circuits, the sum and difference signals are created in operational amplifiers. The absolute value of the difference voltage, ABS (V1-V2) in Equation 1, is created by an op-amp circuit called a fullwave precise rectifier. The division is carried out using an analog multiplier chip connected in the division mode. In computerized versions, the arithmetic can be carried out by software.

Figure 2 shows the results of some experiments I did using a light emitting diode target and two op-amp optical sensors. The optical sensors were spaced 10-mm apart, and were in a fixed position. The red LED was moved along a line parallel to the line of centers between the sensors using a micrometer mechanism that I fashioned. The numbers along the horizontal axis are the LED position in millimeters. The center of the line between the sensors are at 37-mm from one end.

The curves V1 and V2 are the outputs of the two sensors as the light travels in front of their sensitive windows. Note that the curves are the same shape, but are displaced by 10-mm, which is the separation of the sensors. The sum curve (V1+V2) is made by taking the algebraic sum of V1 and V2, and is broader than either. The difference signal (V1-V2) has a two-humped appearance, but one hump is positive and



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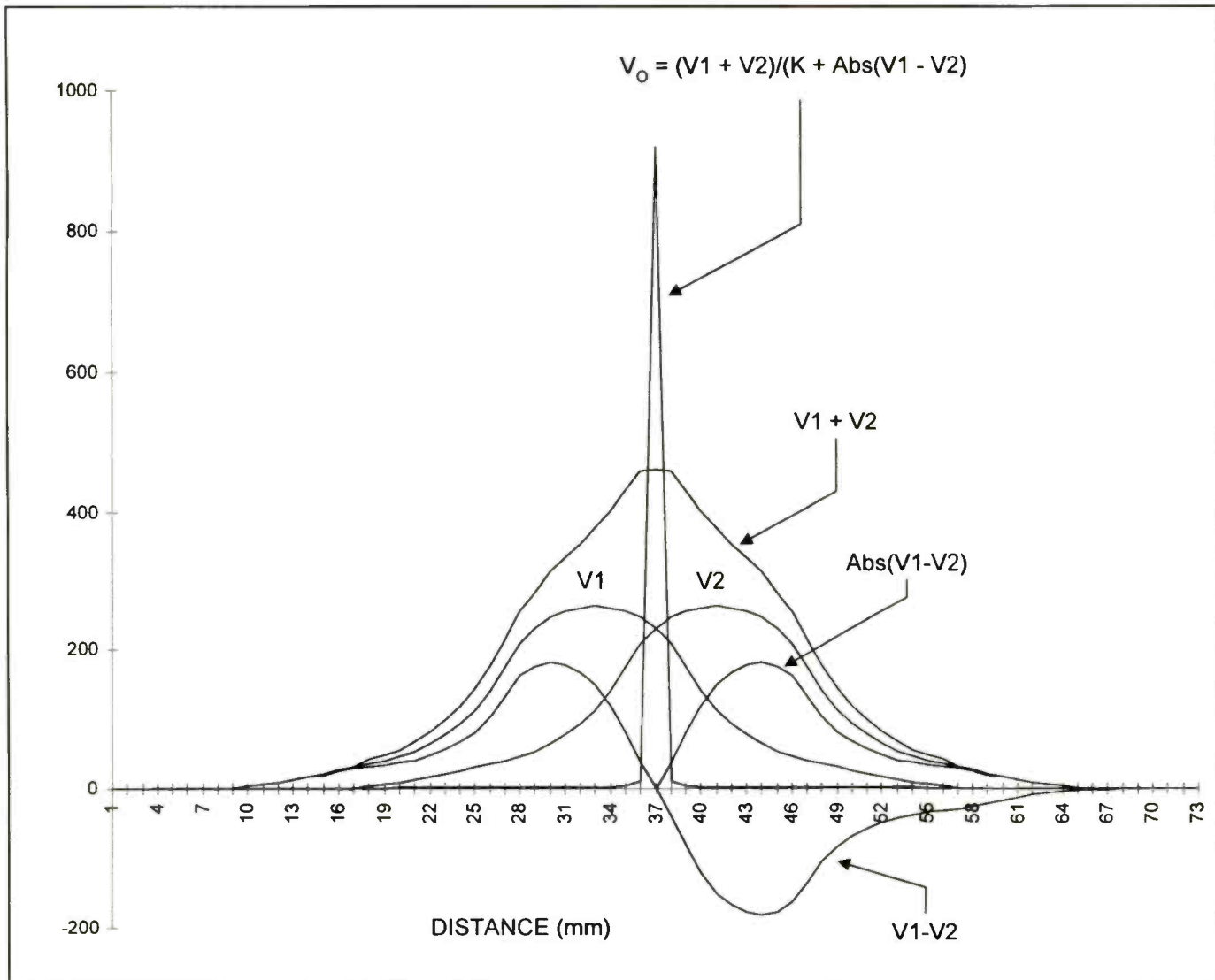


Figure 2

***“You can recognize Lowjack-equipped police cars by the four VHF whip antennas arranged in a small square on the roof.”***

the other is negative. The ABS(V1-V2) signal, which is the absolute value of the difference signal, is a double-humped reflection of the difference signal, but is positive on both humps.

The output of the signal processing circuit is the very large spike in the center. Notice that it's considerably narrower than either V1 or V2. If this data were taken using antennas, then V1-vs-X and V2-vs-X represent the beam width patterns of the two antennas, while VO is the resolution improved combination effect of the two antennas working together.

Like I said, this system is not applica-

ble to all radio direction finding applications, but it is an intriguing way to achieve a large degree of resolution improvement where it is appropriate. There is also a method for achieving this effect using just one antenna . . . but that's a tale for a different time.

### Coaxial Cable Loss

A reader recently contacted me and asked about coaxial cable losses. He uses a high frequency shortwave receiver for DXing. He wanted to know the lowest loss cable for use with his antenna. At first I thought he was talking about an installation with a huge run of transmission line between the antenna and the receiver. He wasn't—it was only 30 feet or so. At HF frequencies coaxial cable loss is so small that it's not worth the trouble to optimize the system in most cases. The only time where it becomes an issue at HF is where

the run is quite long (more than 200 feet or so). For short runs, the loss is a fraction of a decibel.

At VHF/UHF, however, the loss can be considerable. In those bands be sure to use the lowest loss cable available. Unfortunately, other than TV antenna cable (which is 75-ohms and uses an aluminum foil shield), some coaxes are frequency sensitive. You would have to look at the manufacturers loss-vs-frequency graphs to see whether a particular cable is best for your particular case.

### Connections

I can be reached at P.O. Box 1099, Falls Church, VA, 22041, or via e-mail at <car-rjj@aol.com> or if you'd prefer while sending your loggings, QSLs and other material to the Hicksville office, enclose your antenna questions and photographs. See you in November! ■

# How I Got Started

## Congratulations to Alexander Kaminski of Ohio!

**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 and grammar, and to improve style.

The person whose entry is selected will receive a one-year gift subscription (or one-year subscription) to Popular Communications. Address all entries to: How I Got Started, Popular Communications, 76 North Broadway, Hicksville, NY 11801-2909 or e-mail your entry to <popularcom@aol.com>. Letting us know if you're sending photos.

*"... working at McDonalds didn't allow me to buy an amateur handheld for \$400 just to use it for five frequencies."*

### Our September Winner

Twenty-three-year-old Alexander W. Kaminski, N8UCN of Miamisburg, OH writes, "When I was 17 I joined the Civil Air Patrol-United States Air Force Auxiliary. One of the missions is search and rescue (SAR). And one of the qualifications is to have a radio permit for communications. But working at McDonalds didn't allow me to buy an amateur handheld for \$400 just to use it for five frequencies.

At that time I became aware of a class sponsored by a ham radio club in the



Dayton area. I passed my test for no-code tech and received the call N8UCN on my high school graduation day.

After passing the test, I purchased my first shortwave and scanner. Before I knew it, I was sitting in front of the radio every night listening to foreign broadcasts, ships at sea, aircraft crossing the "pond" and police and fire transmissions. I received the monitoring registration KOH8IG. I then got my feet wet in single-sideband CB which gave me the call SSB-108S. All this has yielded a few QSLs from China, Cuba, South Africa, Japan and some AM DX contacts.

I now have four calls under my name, meet lots of new and interesting people and have increased my knowledge of communications, benefitting the SAR functions of the CAP. I'm also a head communications officer with the CAP, Squadron 708 in Wilmington, OH and work for Skywarn from time to time. If anything, this hobby has brought joy and knowledge that I will have for a lifetime!"

*"... this hobby has brought joy and knowledge that I will have for a lifetime!"*

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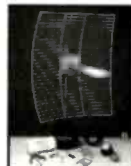
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CIRCLE 63 ON READER SERVICE CARD

# The Pirate's Den

FOCUS ON FREE RADIO BROADCASTING

## A Long List of Stations Reported This Month—Not All on 6955!

The squeeze is on, which is a happy problem I'd like to have to deal with every month. Here we go:

**Mystery Radio, 6955 SSB** heard at 0319 with long instrumentals. (Marina Pappas, SD)

**WREC-Radio Free East Coast, 6955 SSB** at 1900 with humorous ads and parodies. Belfast and Blue Ridge addresses given. (Dave Jeffery, NY) P.J. Sparxx with Miss Kitty in the studio at 2037 and 0321. (Lee Silvi, OH)

**Black Rock Radio, 6956** at 0113 with rock. (Eric Miller, CA)

**WARR, 6955** at 0139 with T-shirt ad and an address on Connecticut Ave., Washington, D. C. (Mark Schmidt, MA) 0139. (Silvi)

**Radio Metallica, 6955**, claimed 10 kW, they said no mail drop yet but an e-mail address was coming. Heard on various days at 2100, 2200, 2326, 0016, 0136, 0154, 0316, 1305, 1446, 1830, (Silvi) 2303 with Pink Panther theme. (Brad Hudgins, VA) 2155. (Sue Wilden, IN)

**Radio Azteca, 6955** at 0104 "top ten things to do to phone solicitors," etc. Also noted at 2154. (Silvi, OH) 2115, "we're in the yellow pages under 'Dead Indians.'" Also at 1643 with "top 10 things Americans fear about Canadians." (Mike Layden, PA) 2323 on LSB, "Looney Tunes" music. (Dick Pearce, VT)

**He Man Radio, 6955 USB** at 2309 with a test. Said USB was the "manliest of all modes." Another day at 2307 (Hudgins) 2306 with test. (Silvi)

**Lounge Lizard radio, 6955 SSB** at 2056 with soft music, mention it was their first show. Box 28413, Providence, RI 02908. (Jeffery, NY) 1730 with Program 2. Also at 0137 (Silvi)

**KRAP, 6955** various days at 2240, 0024, 0056, 0157, 0313. Good audio. (Silvi) 0004. DJ said he's a "country boy" and asked for music requests to the Blue Ridge address. (Hudgins)

**Radio Juliet 6955 USB** at 0002. Other times at 2148 with the announcer advising women to get a ham license and get on the air; not to let radio be "just a boy's club." Also 0226 (Hudgins) (Voice of Juliet) heard variously at 1530, 2146,

**Confirmation of reception**

**R                  F                  S**

**Radio              Free              Speech**

**6955 Khz**  
**Shortwave**

**The government should never control the mechanisms of free speech. They can only be trusted in the hands of the citizens' Bill O' Rehts - Radio Free Speech - P.O. Box 452 - Wellsville, NY 14895**

*Radio Free Speech is but one of a long list of stations reported this month.*

2227, 0200 (with Program 3). (Silvi)

**Radio Two, 6950** at 0118 with various tunes to 0150. Also at 0200. (Silvi)

**Radio Tellus, 6955 USB** on various days at 2028 (tentative), 0026, 0058, 0149, 0257, 0407. (Silvi)

**Radio Garbanzo 6955 USB** at 0359 with phone segment, comedy, rock, animal sounds. (Pappas,)

**(Totally Bogus) Radio 3**, "Americas Pal Sal." **6955 USB** at 2058 to 2125 sign off. (Layden, PA)

**K-2000, 6955 USB** heard at 2310. (Layden, PA)

**Tangerine Radio, 6955 SSB** at 2121 with rock. ID, off at 2135. (Jeffery, NY)

**WLWLIS (We Love WLIS), 6955 USB** at 0018 with interval signal using Skynard's "Free Bird" and then the whole song. Also at 2008 with "Attention, this is not WLIS." Announced a Rhode Island address. (Hudgins) 0120 with loop "this is not WLIS" announcement. (Layden) 1945, when also said something about W-Jazz. Another time at 0104. (Silvi)

**Voice of Green Acres, 6955 LSB** at 0343. Said was not Green Acres Radio but the *Voice of Green Acres* and was the initial broadcast. Also hrd at 2320 saying they are probably the worst station on the air. (Silvi) 2320 with "Green Acres"

theme and other stations came on the air and announcers sang along. (Hodgins)

**Partial India Radio, 6955 USB** at 0228. Also at 2128. (Hodgins) 0130, 0202. (Silvi)

**WEED, 6955 USB** at 0500 with rock, some dedications. No address for QSLs yet. (Pappas)

**WMPR, 6955**, 2056; techno, rock, computer voice ID. Also at 0002. (Silvi)

**Free Hope Experience, 6955 USB** at 2112 with host Major Spoke and Blue Ridge address. Also at 2331. (Hodgins) 2111, 2329 with thanks to several pirate operators. (Silvi)

**Big Harry Bald Guy International(al?—Ed) 6955** at 0035, host "Bill Buttocks" with first broadcast and "if you want a QSL, go to hell." (Hodgins)

**FBI Radio, 6955** at 0211. Huntsville address. (Silvi)

**Lazer Hot Hits, 6955 USB** at 1535 relaying a Euro FM program. (Layden)

**Stereo Sound Radio, 6955 USB** at 0006 with Colonel Billy Bob. (Layden,)

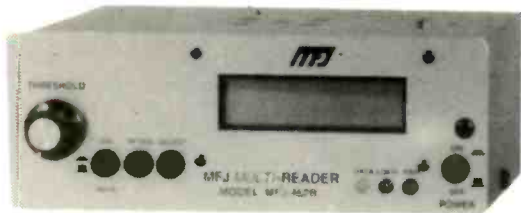
**WBIG, 6955** at 1637 with IDs from many pirates. Also at 2310. (Layden)

**Solid State Radio, 6955**, at 0057 with mention of Providence drop. Also tentative at 0108. (Silvi)

*(Continued on page 75)*

# Tap into secret Shortwave Signals

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MFJ-462B Plug this self-contained MFJ MultiReader™ into your shortwave receiver's earphone jack.

**\$169<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 30 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 54 inch whip, 50 ft. coax.

3x2x4 in. 12 VDC or 110 VAC with MFJ-1024 MFJ-1312, \$12.95.

**\$129<sup>95</sup>** 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).

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

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## MFJ MessageSaver™

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

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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

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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.

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## Receive Color News Photos, Weather Maps, RTTY, ASCII, Morse Code

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computer and radio to receive and display *brilliant full color* FAX news photos and incredible WeFAX weather maps with all 16 gray levels. Also RTTY, ASCII and Morse code.

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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.

## Super Hi-Q Loop™ Antenna

The Super Hi-Q Loop™ is a professional quality remotely tuned 10-30 MHz high-Q antenna.

It's very quiet and has a very narrow bandwidth that reduces receiver overloading and out-of-band interference.

## 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 position. 2x3x4 in.

## Mobile Scanner Ant.

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25-1300 MHz. High -- est gain on 406-512 and 108-174 MHz. 19 in. Magnet mount. MFJ-1824BB has BNC/UHF plug; MFJ-1824BM has Motorola plug.

## 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.

## 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.

## 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.

## Easy Up Antennas Book

How to build MFJ-38 **\$16<sup>95</sup>**

and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before.

Covers receiving antennas from 100 KHz to almost 1000 KHz. Includes antennas for long, medium and shortwave, utility, marine and VHF/UHF services.

## MFJ 12/24 Hour LCD Clocks

MFJ-107B

**\$9<sup>95</sup>**

MFJ-108B MFJ-105B

**\$19<sup>95</sup> \$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-105B, accurate 24 hour UTC quartz wall clock with large 10 inch face.

## MFJ Antenna Switches

MFJ-1704

**\$59<sup>95</sup>**

MFJ-1702B

**\$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>**

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

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

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# Pop'Comm's World Band Tuning Tips

September 1997

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 UT equals 7 p.m. EST, 6 p.m. CST, 4 p.m. PST.

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0000	5930	Radio Prague, Czech Republic		0300	4460	Radio Norandina, Peru	SS
0000	9705	R. Mexico Int'l	SS	0300	4845	Radio Fides, Bolivia	SS
0000	15240	Radio Australia		0300	4955	Radio Nacional, Colombia	SS
0028	5900	Radio Vlaanderen Int'l, Belgium	EE/Flem	0300	4985	Radio Brazil Central	PP
0030	4980	Ecos del Torbes, Venezuela	SS	0300	5025	Radio Rebelde, Cuba	SS
0050	6010	RAI, Italy		0300	6480	Radio Altura, Peru	SS
0100	3365	Radio Cultura, Brazil	PP	0300	7150	Radio Ukraine Int'l	
0100	4777	Onda Musical, Dominican Republic	SS	0300	9690	China Radio International, via Spain	
0100	4805	Radiodifusora Amazonas, Brazil	PP	0300	9700	Radio Bulgaria	
0100	4850	Radio Luz y Vida, Ecuador	SS	0300	15270	Radio Pilipinas, Philippines	
0100	4915	Radio Anhanguera	PP	0330	5019	Ecos del Atrato, Colombia	SS
0100	5012	Radio Cristal, Dominican Republic	SS	0330	5030	Adventist World Radio, Costa Rica	
0100	6055	Radio Exterior de Espana, Spain		0400	3270	Namibian Broadcasting Corp.	
0100	6135	Swiss Radio Int'l		0400	3330	Christian Voice, Zambia	
0100	6190	Radio Budapest, Hungary		0400	3380	Malawi Broadcasting Corporation	
0100	6260	Voice of Greece	GG/EE	0400	4765	Radio Congo, Congo-Brazzaville	FF
0100	7115	Radio Yugoslavia		0400	4820	La Voz de Evangelica, Honduras	SS
0100	7180	Radio Ukraine		0400	7300	Voice of Turkey	
0100	7260	Voice of Vietnam, via Russia		0430	6165	Radio Netherlands via Bonaire	
0100	7345	R. Prague, Czech Republic	EE	0500	4904.5	Radiodiffusion National Tchadienne, Chad	FF
0100	9545	Deutsche Welle, Germany		0500	6105	Radio Universidad, Costa Rica	SS
0100	9580	Radio Budapest, Hungary		0500	6185	R. Educacion, Mexico	SS/EE
0100	9745	HCJB, Ecuador		0500	7255	Voice of Nigeria	
0130	7290	Radio Sweden		0500	7480	R. Bulgaria	
0200	3250	Radio Luz y Vida, Honduras	SS	0500	9475	Kol Israel	
0200	4755	Radio Rural, Brazil	PP	0500	9580	Africa No. One, Gabon	FF
0200	4870	La Voz del Upano, Ecuador	SS	0500	9675	Channel Africa, South Africa	
0200	5077	Caracol Colombia	SS	0530	4960	Voice of America via Sao Tome	Hausa
0200	6000	Radio Havana Cuba	EE	0530	9810	Radio Kiribati	EE, other
0200	6045	Deutsche Welle, Germany		0600	3290	GBC Radio, Guyana	SS
0200	6090	Radio Bandeirantes, Brazil	PP	0600	3366	Ghana Broadcasting Corp Radio One	
0200	6150	Adventist World Radio, Costa Rica	SS	0600	4815	RadioTV Burkina, Burkina Faso	FF
0200	7465	Radio Norway Int'l	NN/EE	0600	4870	ORTB, Benin	FF
0200	9615	Radio Cultura, Brazil	PP	0600	5100	Radio Liberia	
0200	9735	R. Nacional Paraguay	SS	0600	6090	Radio Esperanza, Chile	SS
0230	7160	Radio Tirana, Albania		0600	7295	Radio Norway Int'l	NN/EE
0230	9495	Radio Austria Int'l	EE	0630	6015	R. Austria Int'l, via Canada	
0250	4910	Zambia National Broadcasting		0630	15570	Vatican Radio	
0230	7200	Republic of Sudan Radio	AA	0700	3316	Sierra Leone Broadcasting Service	



UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0700	4783	Radio TV Malienne, Mali	FF	1430	21645	Radio Portugal Int'l	
0700	4915	Radio Cora, Peru	SS	1500	9410	BBC	
0700	5860	HCJB, Ecuador		1500	9785	China Radio Int'l	
0700	6205	RFPI, Costa Rica	USB mode	1500	9880	Radio Kuwait	AA
0730	9660	Radio Australia		1500	9910	All India Radio	
0800	4885	Radio Clube do Para, Brazil	PP	1500	9980	Radio Norway Int'l	NN/EE
0800	6070	Radio Japan-NHK World, via Fr. Guiana		1500	11580	Trans World Radio, Guam	
0800	9500	Trans World Radio, Swaziland	EE	1500	13635	Swiss Radio Int'l	
0800	9750	Voice of Malaysia		1500	13785	Radio Pyongyang, North Korea	
0830	6100	Radio New Zealand Int'l		1500	17545	Reshet Bet, Israel	Hebrew
0900	6030	Radio Globo, Brazil	PP	1600	11750	Qatar Broadcasting Service	AA
0900	6035	Radio Vlaanderen Int'l, Belgium		1600	11840	Radio Norway Int'l	NN/EE
0900	6160	CKZU, Canada	PP	1600	11900	Channel Africa, South Africa	Swahili
0900	7445	Voice of the Mediterranean via Russia	FF	1600	15460	Radio France Int'l	
0900	9505	Radio Record, Brazil	PP	1600	21560	Deutsche Welle, Germany	GG
0900	9885	Swiss Radio Int'l	II	1630	21700	R. Japan NHK World, via Gabon	JJ
0900	9930	KHBI, Hawaii		1700	11690	Radio Jordan	
1000	4790	Radio Atlantida, Peru	SS	1700	15210	Radio France International	
1000	4996	Radio Andina, Peru	SS	1800	13780	All India Radio	
1000	6030	Radio Vlaanderen Int'l, Belgium		1800	15265	Radiobras/Radio Nacional, Brazil	
1000	6115	La Voz del Llano, Colombia	SS	1800	15450	RTT Tunisia	AA
1000	6135	Radio Santa Cruz, Bolivia	SS	1815	11655	Radio Netherlands	
1000	9535	Swiss Radio Int'l		1830	11645	Voice of Greece	
1000	21605	UAE Radio, Dubai		1830	11705	Radio France International	FF
1030	5020	Solomon Islands Broadcasting Corp.	EE	1830	11990	Radio Kuwait	
1030	5995	Radio Melodia, Peru	SS	1830	13695	Voice of Turkey	
1030	6155	Radio One, Singapore		1900	9870	BSKSA, Saudi Arabia	AA
1100	3235	Radio West New Britain	Pidgin	1900	11605	Kol Israel	
1100	3340	Radio Altura, Peru	SS	1900	12015	HCJB, Ecuador	
1100	4770	Radio Centinela del Sur, Ecuador	SS	1900	15345	RAE, Argentina	
1100	4800	Radio Buenas Nuevas, Guatemala	SS	1900	17785	VOA via Morocco	
1100	6175	Faro del Caribe, Costa Rica	SS	1930	9310	Voice of Hope, via Georgian Rep.	
1100	11815	Radio Japan/NHK		1930	15505	Radio Kuwait	AA
1100	15540	FEBA, Seychelles	various	2000	11620	All India Radio	
1130	3260	Radio Madang, Papua New Guinea	Pidgin	2000	11805	Radio Globo, Brazil	PP
1130	6120	R. Japan, via Canada		2030	9510	Trans World Radio via South Africa	EE, others
1130	9650	R. Korea, S. Korea, via Canada		2030	11960	HCJB, Ecuador	
1200	9370	Adventist World Radio, Guam	CC	2030	13610	Radio Damascus, Syria	
1200	13790	R. Bulgaria		2100	7240	Trans World Radio, Monaco	Turkish
1200	13800	Radio Norway		2100	13725	Radio Havana Cuba	USB mode
1200	15400	R. Finland Int'l	Finnish	2100	21455	HCJB, Ecuador	USB mode
1216	13860	Icelandic State Bc Service	Ice., s/on	2200	9388	Israel Broadcast Authority	Hebrew
1230	11900	Radio Finland Int'l		2200	9445	Voice of Turkey	TT/EE
1230	12085	Voice of Mongolia	EE, others	2200	9555	BSKSA, Saudi Arabia	AA
1300	7365	KNLS, Alaska		2200	9570	R. Portugal	PP
1300	9590	R. Norway	NN	2200	17795	Radio Australia	
1300	15605	Radio Norway Int'l	NN/EE	2230	5945	Radio Austria Int'l	
1300	17745	R. Romania Int'l		2230	9855	Radio Kuwait	AA
1320	21520	RAI, Italy	s/on; Sun.	2245	9600	Vatican Radio	
1330	13730	Radio Austria Int'l		2300	5895	Croatian Radio	
1400	9615	KNLS, Alaska		2300	5975	BBC via Canada	
1400	11865	BBC via WYFR		2300	7125	Voice of Russia	
1400	11985	Voice of Russia		2300	7475	RTV Tunisienne, Tunisia	AA
1400	13580	Radio Prague, Czech Republic		2300	9725	Adventist World Radio, Costa Rica	
1400	13610	R. Vlaanderen Int'l, Belgium		2300	9755	Radio Canada Int'l	
1400	15160	Radio Algiers Int'l, Algeria		2300	9900	Radio Cairo, Egypt	
1400	17560	Radio France Int'l, via Gabon		2300	11700	Radio Pyongyang, North Korea	
1400	17780	RAI, Italy	II	2300	11795	UAE Radio, Dubai	AA
1400	17830	Qatar Broadcasting Service	AA	2330	5960	Radio Canada Int'l	
1430	9485	Radio Sweden		2330	7105	Radio Romania Int'l	
1430	9535	Radio Japan NHK World					

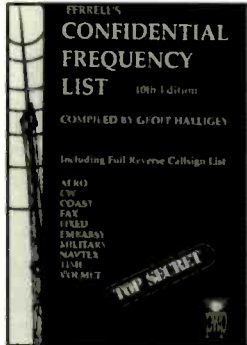
# Product Parade

BY NANCY BARRY  
AND R.L. SLATTERY

REVIEW OF NEW, INTERESTING AND USEFUL PRODUCTS

## Ferrell's "Top Secret" Frequency Listing

Ferrell's Confidential Frequency List—10th Edition is a list compiled by Geoff Halligey that covers 1.6–30 MHz. It has been dubbed "The Definitive Guide to Utility Stations" covering all modes, utility services and NAVTEX within its 400 plus pages. The spiral-bound guide also features a reverse frequency list showing every known frequency against each call sign, who's using what frequency and the latest WUN updates.



For more information, contact PW Publishing, Ltd., Arrowsmith Court, Station Approach, Broadstone, Dorset BH18 8PW, United Kingdom; phone (+44) (0) 1202 659930; fax (+44) (0) 1202 659950; e-mail <bookstore@pwpub.demon.co.uk>. To order, contact CQ Communications, Inc., 76 N. Broadway, Hicksville, NY 11801; phone 516-681-2922; fax 516-681-2926.

## SoundTracker™ Technology from Cobra

In response to consumer demand for less static and increased range in CBs, Cobra Electronics has developed the first patent-pending technology that improves the reception and transmission of CB signals. The SoundTracker™ system reconfigures the transmission signal which allows it to be transferred more effectively

through cluttered air waves. Cobra has developed a line of six CB radios that utilize this SoundTracker technology.

SoundTracker carries a CB signal through the thousands of other signals that are on the air at any one time, resulting in an increase in the range of the CB and stronger signal reception and transmission. The technology also reduces the amount of static on all incoming CB signals by dynamically adjusting between the signal and the surrounding noise. The end result is clearer, cleaner reception of signals and more powerful transmissions.

For the 2.8 million professional truck drivers in the U.S. who rely on CBs to communicate, Cobra has enhanced its Classic CB line with SoundTracker technology. Four models, the 29 LTD ST, 29 WX ST, 25 LTD ST and 25 WX ST, will be available to professionals that rely on CB radios.

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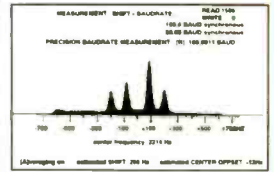
"The Standard Against Which All Future Decoders Will Be Compared"

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?

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- TDM342/ARQ-M2/4
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- FEC-S • FEC1000 Simplex
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Two units have access to 24-hour weather broadcasts which provide localized forecasts and regional weather summaries, as well as weather-related highway and waterway travel information. In the event an emergency bulletin is issued by the National Weather Service, the units activate automatically. When such broadcasts are made, a special tone-alert will override CB operation, prompting the user to tune to the area weather channel.

Cobra will also offer SoundTracker in a new mobile CB, model 18 WX ST. This full 40-channel CB has sophisticated features such as electronic tuning for easy channel scanning and squelch control for signal clarity. The 18 WX ST also provides access to the weatherband for 24-hour-a-day local broadcasts from the National Weather Service. Cobra's new HH-36 ST is also available with the SoundTracker technology. The HH-36 ST comes with power settings for utility vehicle and handheld use.

The models feature illuminated RF/signal-strength meters with dimmer, switchable ANL and noise blanking, CB/public address switches, instant emergency channel 9 controls, Dynamike

gain control and front mic connection for easy installation.

For more information, contact Cobra Electronics Corp., 6500 W. Cortland St., Chicago, IL 60707; phone 773-889-8870; fax 773-794-1930.

## Drake TR270 FM Transceiver

R.L. Drake Company has re-entered the amateur radio market with the TR270 FM Transceiver—the only desktop FM transceiver on the market dedicated specifically to 2-meter operation. The TR-270 is actually two radios. The first permits full 2-meter transceiver capability (142–150 MHz), while the second permits independent dual band reception (136–174 and 420–470 MHz). This range allows users to listen in on public service, marine, weather and amateur bands.

The TR270 utilizes internal card slots for integrating 1200/9600 bps packet radio, satellite, weather fax and data reception. The optional TNC270 Terminal Node Controller and DEMOD270 Demodulator plug-in cards fit inside the TR270. These cards are designed and pre-configured for maximum performance and they eliminate the need to jerry rig

multiple components together. The TR270 boasts total integration of FM voice, packet, satellite, weather fax and data reception.

The Drake TR270 offers over 60 user defined parameters including selecting filters or antennas, setting memory scan modes, or customizing channel lists for receiver and transmitter. Each parameter can be selected easily with setup menus and front panel input.

In addition to complete integration, customization and convenience, the TR-270 employs a built-in 140 watt, 115/230 Vac switching power supply for use around the world. Other features include a high-quality dynamic microphone, and external DC input for mobile or emergency power operation, DTMF and CTCSS tone encoding and decoding for both 2-meter and wideband (decode) receivers, external audio-in jack for copying short-wave fax/data transmissions, external speaker jack, headphone jack and transmit time-out timer.

For additional information, contact the R.L. Drake Company, 230 Industrial Drive, Franklin, OH 45005; phone 513-746-4556; fax 513-743-4510; or via the Web <<http://www.rldrake.com>>.

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BY CHUCK GYSI, N2DUP  
e-mail: <SCAN911@aol.com>



## *Being Prepared Can Pay Off*

**S**ometimes the scanning can be so exciting that it is downright scary. If a disaster or large-scale incident takes place in your community, are you prepared for all the monitoring you can handle? If you have a scanner that has a capacity of hundreds of channels, use it as a tool. In fact, take at least one full bank and store in it frequencies you hope you never need to listen to. These may be frequencies that would become active, for instance, if a plane crashed in your community or rioting or flooding required the activation of units such as the National Guard. You may very well never hear any activity on frequencies reserved for the National Transportation Safety Board, or the National Guard, but when the incident happens, you don't want to find yourself twiddling with dials and fumbling through frequency lists. The time you spend searching and programming may lead to the loss of important calls that may provide you with the information you need to know in your community.

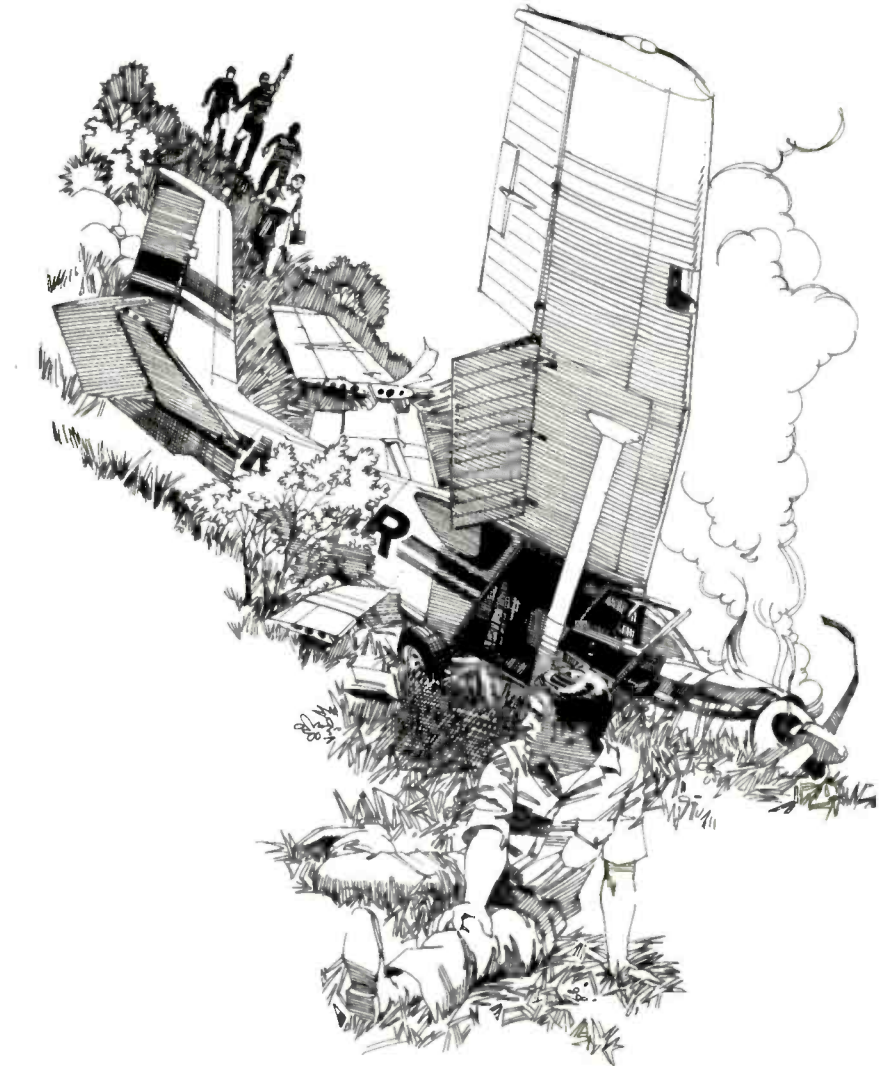
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***"To determine what types of emergencies your community faces, do what emergency planners do."***

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To determine what types of emergencies your community faces, do what emergency planners do. Most counties and large and small towns across the United States have emergency plans that have been written and implemented. These plans are put together typically by a person designated as the local government's emergency management coordinator. Sometimes this position is a full-time job, and other times it may be carried out by someone who functions in another role, such as the mayor, fire chief or police chief.

Before drawing up the emergency plans for your community or county, the emergency management coordinator was required to assess what types of emergencies the area had the most potential to experience. For instance, if an interstate



highway traverses your area, there might be nuclear waste that travels on the highway on a regular basis. Perhaps there is a path in the sky over your town that commercial aircraft fly over many times each day. There may be a factory or business that has hazardous materials on site. A river or stream may lead to possible flooding after heavy rains. If you sit down and think about it, you probably could draw up a hazard assessment for your own community. The emergency management plan for your community is a public document and you may want to

trot off to the town hall or county courthouse in search of the guide to review to learn of other potential hazards, too.

After you determine the hazards you face in the area in which you live, think about the frequencies that might become active. For instance, you probably already have all the local police and other emergency services frequencies programmed into your scanner, so you're safe there. However, if a factory deals in hazardous materials, perhaps there is a security frequency that might become active in an emergency. Most day-to-day

*"... the place you'll find most tow trucks isn't generally on automobile emergency radio service frequencies."*

communications would prove routine and uninteresting. But when there's an emergency, having the frequency programmed in may mean the difference of being in the know and depending on the local news media to keep you informed.

If there is the potential for an aeronautical disaster in your town, you should have programmed in frequencies that might be used at local airports, as well as the Civil Air Patrol (122.9, 123.1, 148.15 MHz for starters). If you have access to frequency lists that show what might be used by investigators, such as the National Transportation Safety Board, punch those in as well, as they would become active when the agency's "go team" arrives on site.

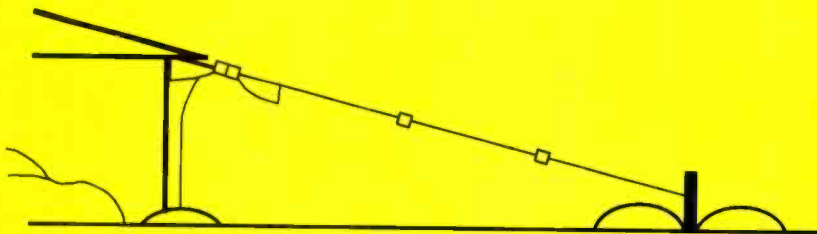
Plug in news media channels, particularly those used by reporters and photographers. You can easily fill up a bank of 20 to 40 channels with frequencies that you don't want to listen to on a daily basis, but they will prove the most exciting listening when something happens. Keep in mind, too, that what you are hearing is raw information. You don't want to cause any unnecessary panic by misinterpreting the communications you overhear. Remember, having a scanner or communications receiver is a right and using one's head goes with the freedom. And don't forget to tell us hear at *Pop Comm* after such an incident so we can pass on your listening tips.

### Rail Radio

Brett Benson of Baltimore, Maryland, says he wants to know all the frequencies that are used by railroads. He's heard that railroads have both short-distance and long-distance communications.

Railroads usually use remote transmitters along rail lines to keep in touch with trains while they are traveling in certain areas. These remote transmitters usually operate on designated road channels and can be activated by dispatchers either by microwave or telephone lines. This allows rail crews to have constant contact with their dispatchers no matter where they are. Some railroad communications, such as those in a rail yard, are short distance by their very nature, and don't need to transmit over a wide area. In many

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areas of the United States, railroads will operate private telephone systems on dedicated frequencies so rail crews can make telephone calls over their radios.

To find railroad communications, search in 15-kHz steps in the following range: 160.215 to 161.565. There also are some 12.5-kHz channels on UHF from 452.3125 to 452.4875 and 452.7625 to 452.9625. Likewise, the accompanying "input" frequencies 5 MHz higher also may be used for inputs or mobile communications. In fact, on UHF you'll probably find data tones as trains pass by. These tones are transmitted by radio boxes installed on the last car of a train to send signals to the crew in the locomotive. The rear-end detectors have replaced the caboose of the past.

## On Her Tows

A reader inquired via e-mail to say she likes to listen to tow trucks, especially during bad weather, but thinks she hears only about half the tow trucks in her area. She says she has punched into her scanners all the frequencies allocated to the automobile emergency radio service, but knows there are other operators in her

area that must not be using frequencies reserved for tow trucks.

First, let's take a look at the frequencies reserved for privately operated tow trucks: 150.815, 150.830, 150.845, 150.860, 150.875, 150.890, 157.470, 157.485, 157.500 and 157.515. In addition, the following frequencies can be used by auto clubs providing emergency road service for members: 150.905, 150.920, 150.935, 150.950, 150.965, 452.525, 452.550, 452.575 and 452.600. The four UHF frequencies are simplex only—without repeaters—meaning the base stations and mobiles operate on the same frequency, which is unlike most wide-area UHF radio services. Tow operators also are eligible for automobile emergency frequencies in the 851–866 and 935–940 MHz bands.

The place you'll find most tow trucks isn't generally on automobile emergency radio service frequencies. Most use business band frequencies because it's easier for radio shops to set up their customers this way. Because any profit making enterprise can use business radio service frequencies, tow operators are included in this group. While some tow trucks may take advantage of frequencies in the VHF low band range between 30 and 50 MHz,

as well as those frequencies available for businesses in the 151 and 154 MHz ranges, many simply operate on wide-area repeater systems in the 461–465 MHz band. In larger metro areas, you also will find tow trucks using the 470–512 MHz T band, the 851–856 repeater band, the 856–866 MHz trunked band, or the 935–940 MHz trunked band.

A towing firm may require wide-area coverage that a repeater offers, however, the automobile emergency radio service does not allow repeaters on UHF. Because the business radio service does allow repeaters on UHF, that may prove a viable alternative for a tow operator. Also, it may prove cheaper for a tow operator to operate on a community repeater on UHF that is owned by a radio shop and which is rented to various firms that all use the same repeater. It certainly is a lot more expensive for a firm to put its own repeater on the air, so community repeaters with monthly user fees usually prove more palatable to the checkbook. It is the same reason you may see newspapers using community repeaters for news and circulation activities, instead of putting their own repeaters on the air on the two available frequencies at 452.975 and 453.000.

It also should be noted that there are a handful of frequencies available to tow operators for low-power (2-watt) operation. These frequencies — 452.5125, 452.5375, 452.5625, 452.5875 and 452.6125 — technically could be used for on-scene use, but might be more practically employed for mobile repeater use. For instance, the tow truck driver would carry a UHF handheld while outside his truck and transmit to the truck on UHF while a repeater in the truck retransmits the signal onto the VHF channel with much more power output, allowing the driver to maintain contact with his or her dispatcher while outside the tow truck. As a general rule, these frequencies just aren't used, but don't be surprised to find something pop up!

## Write In

What are your favorite frequencies? Do you have any scanner-related questions? Do you have any listening tips that might be worth passing along to your fellow readers? How about sending in a photo of your listening post or antenna farm? Write to: Chuck Gysi, N2DUP, Scanning the Globe, *Popular Communications*, Box 11, Iowa City, Iowa 52244-0011, fax to (516) 681-2926, or e-mail to <SCAN911@aol.com>.

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# Product Spotlight

POP'COMM REVIEWS PRODUCTS OF INTEREST

## Alinco DJ-X10 Multi-Mode Handheld Receiver

*Editor's Note: This device has not been approved by the FCC. This device is not, and may not be offered for sale or lease, or sold or leased until the approval of the FCC has been obtained.*

One of the neat things about living in Southern California is our proximity to some of the major communications importers. And when you think of an import facility, you might envision a bunch of boxes from Japan coming in one door, and going out another door non-stop to the distant radio dealers. Not so. Radio giants like Kenwood, Yaesu, ADI, Maha, Ranger, Magellan, and Alinco are all within a few miles of each other. Radio accessory manufacturers like Communications Specialties, Inc., Astron, Diamond, and Comet are also just around the corner, and this gives me a good opportunity to pull some surprise visits to see what's new on their full-facility test benches. Almost all importers have service technicians on premise, and have plenty of equipment to check out their new radio products coming in from overseas.

### Looks Like Dual-Band Ham Handheld!

When I stopped in at Alinco, technicians were playing with a handheld radio that I mistook for the popular Alinco amateur radio dual-band VHF/UHF, 5-watt transceiver, Model DJ-G5TH. Everything looked almost identical except what was showing on the LCD display and the inscription "Wideband Communications Receiver X10." There it was: a brand new handheld communications receiver being prepared for the ultimate test, an outside antenna system near a major metropolitan area. I would soon hear that this new wide-range scanning receiver held up well in this strong RF interference area.

The new Alinco DJ-X10 covers 100 kHz to 2000 MHz with all-mode capabilities; Regular narrowband FM, wideband FM (for listening to standard FM broadcasts), AM, medium-frequency and



*The new Alinco DJ-X10 is easy to operate even though I didn't spend time memorizing the instruction manual!*

shortwave, CW, and selectable Upper sideband and lower sideband.

The 100 kHz to 2000 MHz coverage is uninterrupted except for the required cellular telephone blocks. I don't think any scanner or wide-range receiver manufacturer wants to go through what RadioShack did when they voluntarily pulled off their dual-band handheld from their stores because of potential cell phone scanning. Alinco tells me there is absolutely no way to "trick" this unit into tuning the cell channels.

### Testing the Receiver

When I first turned the unit on during a two-day trial period, I confirmed the 100 kHz to 2000 MHz reception capabilities with a service monitor, and I also noticed that the modes could automati-

cally "self-select" as you went from one portion of the spectrum to another. But because every country has its own "band plan" for its broadcast services, don't expect that the automatic mode selection is always going to be right for a specific frequency that you have dialed up. You may look down and find yourself on wideband FM, when you're really tuning in a narrowband FM frequency just below the normal USA FM band. So consider the automatic mode a feature, but it doesn't guess the right mode every time.

### 1200 Memories!

The DJ-X10 can store up to 1200 channels into a non-volatile EEPROM memory, and the memories will hold any automatic or user-selected mode of your choice. The memory channels then break down into 30 different groups, so you can organize what type of services you may want to scan or what type of areas you may be scanning in as you move around your local city.

Once I loaded up the receiver's memories, I then had to select what type of scanning I wanted:

- \* Programmed scan up to 10 groups
- \* Programmed memory scan
- \* Any memory scan
- \* Mode scan (not a common scanning feature)
- \* VFO search
- \* Dual VFO search
- \* Band excursion scan
- \* Priority scan
- \* Any channel skip scan

I also found the automatic memory write useful where an active frequency automatically loads into the memory for later scanning. Because there are so many signals and errant whistles and tones, I really didn't need this feature on the outside antenna. But for local monitoring, it has value.

Just as I was getting into the neat LCD display with its channel scope graph readout, the radio suddenly turned off. Sure



Alinco Sales Manager, Doug Wynn, KB6YZD demos the HF SSB capabilities of the X10. It needs more than the rubber duck on HF.



Alinco Technician, Yoshi Nakiyama works on the new X10 handheld receiver.

enough, a clock function with auto-timer on and auto-timer off came into play, so I had to learn about this before I was back on the air. If you're new to multi-mode, all-frequency monitoring, you can call up the USER LEVEL menu and select "beginner" instead of "expert." In the "beginner" mode, some functions that are selectable, become automatic:

- \* Auto mode
- \* Auto step
- \* Auto attenuate on certain frequencies

In the "expert" mode, you can customize these "automatic" functions to best suit how you plan to zoom through the frequencies. To get started in any mode, you adjust the volume by a push-key that steps the volume up or down. Same thing with squelch—it's a little rocker button on the side of the unit, and you can push it up for a tighter squelch, or down in order to go into open squelch. You can also open the squelch by pushing the "moni" button which is in the exact spot where you would normally find a two-way transceiver push-to-talk (PTT) button.

In that same push-to-talk button area, above the "moni" button, is an "F" key serving as a function key in order to enable sub-function items on the keyboard. There is also a button to quickly search frequencies, and the very bottom button allows you to momentarily turn on the lamp, or by pushing "function" and the lamp button, you cause the lamp to stay on continuously. I recommend leaving the lamp only in the momentary push mode so as to not accidentally run down your batteries while using your unit during the day with the light "on."

You can set a desired frequency by

using the keypad, or by using up-and-down buttons, or by using the big top knob. If I knew exactly where I wanted to go, I would set a frequency by the numeric keys, and then go over to the mode button and select the proper mode in case it didn't automatically get pre-selected. If I just want to look up or down from the specific frequency, I would use the top knob on the set.

The Alinco DJ-X10 has twin-running, variable-frequency oscillators that allow you to listen to one frequency while inputting another frequency. You can then quickly jump from one VFO to another in case you may be monitoring a duplex conversation or are trying to track a trunked radio system.

### The Channel Scope and More

The channel scope will display either a wide band of 40 discrete frequencies or a narrow band of seven discrete frequencies. The vertical length of each indicator illustrates signal strength. In the 40 frequency search mode, the little vertical bars are relatively thin, but in the seven channel search mode, they are thick enough to let you see what's happening a few kilohertz above and below your operating frequency. Unfortunately, during the channel scope search, your receiver is dedicated to sampling the channels, not to receiving when you first hit the channel scope button. This means that your unit will mute every few seconds as it does a quick look at what's above and below you when it comes to activity. Even the ham radio handheld channel scopes are identical to this, giving you an interruption during the search process. Unfortunately, there is no way around

this, so the best way to use the channel scope is when you're not really tuned into anything, and you just want to look for activity above or below.

While listening to different frequencies, I sometimes found it necessary to turn on the ATT (attenuator) which gave a good 15 dB reduction of receiver sensitivity. I was curious as to whether or not the attenuator mode on a specific memorized channel could be retained in memory for just that channel, or would it effect all channels? I'm happy to report that you can tag specific memorized channels for 15 dB attenuation.

In the scanning mode, you get all the usual options like stop-on signal, stop-on open channel, stop and pause, and scan up or scan down. In the pause mode, the scanning stops for five seconds, and then moves on.

I discovered one nice scan setting, and that was the ability to set a scan signal level. You call up the signal strength level, then set the scan S-level between sensitive and insensitive, and then press the enter key. Would I be able to tag each memorized channel with how I wanted it to scan by level? Unfortunately, no.

The receiver also has all of those neat priority and search modes, too, but do note that I call it a *receiver* rather than a *scanner*. There is something about copyright laws on scanning techniques, so let's just call it an agile receiver while you and I really know it's a great scanner, too.

You can copy memory channels from one DJ-X10 to another by using a simple cloning cable and the clone mode built into each set. This tells me that soon there may be an interface between this equipment and a computer, much like what ICOM has been doing lately with their own computer set-up as well as ICOM and



# SPECIFICATIONS

Frequency range	0.1 ~ 1999.999950 MHz		
Radio systems received	WFM, NFM, AM, USB, LSB, CW		
Frequency steps	50 Hz, 100 Hz, 1 kHz, 2 kHz, 5 kHz, 6.25 kHz, 9 kHz, 10 kHz, 12.5 kHz, 15 kHz, 20 kHz, 25 kHz, 30 kHz, 50 kHz, 100 kHz, 125 kHz, 150 kHz, 200 kHz, 250 kHz, 500 kHz		
Sensitivity (Typ.)	AM	0.1 ~ 0.5 MHz 0.5 ~ 5 MHz 5 ~ 30 MHz 30 MHz ~ 1000 MHz (1 kHz 30 %mod 10 dB S/N)	10 $\mu$ V(20 dB $\mu$ ) 1.5 $\mu$ V(3.5 dB $\mu$ ) 1 $\mu$ V(0 dB $\mu$ ) 1 $\mu$ V(0 dB $\mu$ )
	SSB	0.5 ~ 5 MHz 5 ~ 30 MHz 30 MHz ~ 1000 MHz (10 dB S/N)	0.5 $\mu$ V(-6 dB $\mu$ ) 0.25 $\mu$ V(-12 dB $\mu$ ) 0.5 $\mu$ V(-6 dB $\mu$ )
	NFM	5 ~ 30 MHz	0.35 $\mu$ V(-9 dB $\mu$ )
		30 ~ 1000 MHz	0.25 $\mu$ V(-12 dB $\mu$ )
		1000 ~ 1300 MHz	1.5 $\mu$ V(3.5 dB $\mu$ )
		1300 ~ 1999 MHz (1 kHz 3.5 kHz 12 dB SINAD)	10 $\mu$ V(20 dB $\mu$ )
	WFM	30 ~ 1000 MHz (12 dB SINAD)	1.5 $\mu$ V(3.5 dB $\mu$ )
Memory channels	1200		
Search pass mode channels	1000		
Priority channel	1		
Memory banks	30		
Channels per bank	40		
Search bands	20		
Scan speed	Approx. 25 CH/sec		
Antenna connector	BNC, 50 $\Omega$		
Power supply	4.8V DC (Ni-Cd)/6V DC (AA dry cell)		
External power supply	8 ~ 15V DC		
Rated AF output	Min. 100 mW, 10% THD		
Power consumption	At rated output	Approx. 200 mA	
	Squelched	Approx. 140 mA	
	BS ON	Approx. 30 mA	
Weight	Approx. 320 g		
Dimensions	57 x 150 x 27.5 mm (without projections)		
Operating temperature range	-10 ~ +50°C		
Frequency stability	$\pm$ 10ppm		

Optoelectronics. I imagine Opto will be looking at this unit very carefully to see what neat things they can put together.

Something else I discovered with the DJ-X10 was the ability to name memory channels. This involves turning the dial to select the right character you want, and then developing the word that will identify each channel. Once you get into the swing of things, it takes just a few seconds to tag each memorized channel with a channel name.

But most important, how does the unit actually work on the airwaves? We compared it to our favorite ICOM handheld wideband receiver, and I'm pleased to report that this unit is also an admirable performer. The little rubber antenna is an adequate performer on VHF and HF fre-

quencies, but like any rubber antenna below the FM broadcast band, it doesn't hear much of anything. If you want to hear any medium-strength or weak-signal activity down on the low bands, it's best to switch the little rubber antenna for a base-loaded telescopic whip, or better yet, an outside mobile or base whip. But a big base station antenna doesn't necessarily mean everything is going to work just right with this new unit. Anytime you attach a little pocket receiver to a big outside base antenna, you are sure to overload the front-end, yielding squeaks and squawks from local paging frequencies that really aren't what you've actually tuned in. Hearing two signals at the same time is a classic example of front-end overload, mixing, and intermodulation,

and about the only way around this would be to go with some sort of variable band-pass filtering, with my favorite choice as the excellent portable band-pass adjustable filters available from Optoelectronics. The same band-pass filtering they use on their counters and wide-band receivers can also be used quite nicely on portable scanning receivers.

Down on the shortwave bands, a good outside antenna is a must. I didn't find any problems with front-end overload down on the high-frequency ham bands from 160 to 10 meters, and this little receiver was picking up some foreign DX just about as well as my big \$4000 base station ham set, although my big ham set on single-sideband had a lot more selectivity than what this set was able to do on HF SSB, but it worked quite well in letting me tune into my favorite 40 and 20-meter SSB amateur radio nets when I was working out of a hotel room on a recent ham radio convention.

Audio output was judged good; however, adding an external speaker when you are running this unit off an external power supply really improves the fidelity. But you can still hear the calls when this unit is hanging on your belt. Alinco has always done a good job of giving you plenty of good audio output from their oversized internal speakers.

Like any new full-functioned radio receiver, you may only discover one-half of all the neat features during your first month of operation. It might be a year or so later that you find out even more things that the unit can do as you begin to work with it on a daily basis. Even the engineers and technicians at Alinco were still discovering neat things that this set would do as they continued to play with it on their best bench in Torrance, California.

At the time of this product test, Alinco was still transmitting to Japan final small improvements to make the unit even better when it finally receives type-acceptance and becomes available about the time you read this. There was no indicated retail price, but I imagine it will be available for about the same amount of money as the ICOM and AOR portable scanning multi-mode receivers. It's hard to top what's already available, but this new unit will certainly be one to watch and listen to before making your buying decision. Additional information on the Alinco DJ-X10 can be obtained by contacting Alinco at 438 Amapola Avenue, Suite 130, Torrance, CA 90501 or phone 310-618-8616 or check out their Web site at <<http://www.alinco.com/>>. ■

## 27 MHz COMMUNICATIONS ACTIVITIES

### Death of CB Predicted

**W**arning! The end is near! The end of CB, that is. Sure, I know, we've heard this before. This time, however, could there be some solid reasons to think that the predictions might actually come true?

Fueling the current round of speculation about the demise of CB is S.608, a bill now before Congress introduced by Wisconsin's Senator Russell Feingold. The goal of Feingold's bill is to help reduce interference to home electronic entertainment equipment (TVI/RFI), caused by CB radios. A goal, that if achieved, would be good news for everyone. Feingold's method of achieving this goal, however, could bring about the end of CB radio, at least that is the view held by some, including Bill Pasternak, editor of the *Amateur Radio Newsline*. "This bill, if passed," says Pasternak, "could give power to states and cities to literally legislate 11 meter Class D CB radio out of existence on a city-by-city basis."

Pasternak is not alone. Originally, the bill would have allowed localities to pursue complaints of interference caused by any radio service. When the amateur radio community got wind of it, however, they saw it as a threat. They not only managed to get themselves exempted from the bill, but limited its powers specifically to CB. Gee, thanks!

#### The Problem

"My bill," says Senator Feingold, "is intended only to help localities solve the most egregious and persistent problems of interference—those caused by unauthorized use of CB radio equipment and frequencies. Over the past several years I have received complaints from at least 10 Wisconsin communities in which whole neighborhoods were experiencing persistent radio frequency interference. Since I have begun working on this legislation, my staff has also been contacted by a number of other Congressional offices who are also looking for a solution to the problem of radio frequency interference in their states or districts caused by unlawful CB use."



Senator Russ Feingold.

The problems cited by the Senator are all too familiar to members of the CB community. Perhaps you've been there. You've got a problem operator in your neighborhood. You know who they are, and you know where they are. You know what they are doing. In short, you've got a good case against a bad apple. So, off you go to the FCC and lodge a complaint. At best, they give you a sob story about how they get over 30,000 complaints each year about interference caused by CB. Then they explain that, due to budget cuts and staff reductions, they don't (or at least rarely) handle these types of complaints anymore. Finally, they give you a packet of suggestions on how to resolve the situation yourself. Those suggestions include installing filters and talking to the folks who are causing the problem. The latter of which, usually generates several more suggestions on where you can go and what you can do when you get there.

When these suggestions prove ineffective or unsatisfactory, you appeal to your state or local authorities for relief. Though sympathetic, they tell you that they can't do a darn thing for you. Why? Because, the Communications Act of 1934 provides exclusive authority to the

federal government for the regulation of radio. But S.608, if passed, would remove that restriction.

#### Is This Good News?

It could be. At last, conscientious members of the CB community might have access to an effective means of wresting control of our airways from the "low and the loud." Now there's a refreshing thought! But wait a minute, could fears that the bill goes too far be justified? Well, maybe.

The bill would allow the enforcement of "a regulation that prohibits the unauthorized operation of citizens band radio equipment on a frequency between 24 MHz and 35 MHz." Could "unauthorized operation" be construed to include broadcasting net announcements, ignoring the "five minute rule" or talking skip? Could local authorities really use their new powers to totally ban CB?

I asked Senator Feingold's press secretary, Mary Bottari. "S.608," said Bottari, "provides states and localities with the authority to enforce FCC regulations only for unauthorized equipment and frequencies. Communities cannot create their own regulations for CB because they are currently preempted by federal law from doing so and would continue to be preempted under S.608. The bill confers only limited enforcement authority on states and localities and does not allow any additional local regulation of CB radios. S.608 provides absolutely no authority to states and localities to enforce the FCC's rules on allowed length of communication, content of communications, communications with distant citizens band stations, or any other regulation that does not pertain to authorized equipment or frequencies."

#### My Two Cents

It's refreshing to see someone with the power and prestige of a Senator Feingold finally taking an interest, however indirectly, in the current state of affairs of CB radio. The passage of S.608, even as cur-

# S.608

To authorize the enforcement by State and local governments of certain Federal Communications Commission regulations regarding use of citizens band radio equipment.

IN THE SENATE OF THE UNITED STATES

APRIL 17, 1997

Mr. FEINGOLD introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation.

## A BILL

To authorize the enforcement by State and local governments of certain Federal Communications Commission regulations regarding use of citizens band radio equipment.

1 Be it enacted by the Senate and House of Representa-  
2 tives of the United States of America in Congress assembled,  
3 SECTION 1. ENFORCEMENT OF REGULATIONS REGARDING  
4 CITIZENS BAND RADIO EQUIPMENT.

5 Section 302 of the Communications Act of 1934 (47  
6 U.S.C. 302) is amended by adding at the end the follow-  
7 ing:

1 "(f) (1) Except as provided in paragraph (2), a State  
2 or local government may enforce the following regulations  
3 of the Commission under this section:

4 "(A) A regulation that prohibits a use of citi-  
5 zens band radio equipment not authorized by the  
6 Commission.

7 "(B) A regulation that prohibits the unauthor-  
8 ized operation of citizens band radio equipment on  
9 a frequency between 24 MHz and 35 MHz.

10 "(2) Possession of a station license issued by the  
11 Commission pursuant to section 301 in any radio service  
12 for the operation at issue shall preclude action by a State  
13 or local government under this subsection.

14 "(3) The Commission shall provide technical guid-  
15 ance to State and local governments regarding the detec-  
16 tion and determination of violations of the regulations  
17 specified in paragraph (1).

18 "(4) (A) In addition to any other remedy authorized  
19 by law, a person affected by the decision of a State or  
20 local government enforcing a regulation under paragraph  
21 (1) may submit to the Commission an appeal of the deci-  
22 sion on the grounds that the State or local government,  
23 as the case may be, acted outside the authority provided  
24 in this subsection.

1 "(B) A person shall submit an appeal on a decision  
2 of a State or local government to the Commission under  
3 this paragraph, if at all, not later than 30 days after the  
4 date on which the decision by the State or local govern-  
5 ment becomes final.

6 "(C) The Commission shall make a determination on  
7 an appeal submitted under subparagraph (B) not later  
8 than 180 days after its submittal.

9 "(D) If the Commission determines under subpara-  
10 graph (C) that a State or local government has acted out-  
11 side its authority in enforcing a regulation, the Commis-  
12 sion shall reverse the decision enforcing the regulation.

13 "(5) The enforcement of a regulation by a State or  
14 local government under paragraph (1) in a particular case  
15 shall not preclude the Commission from enforcing the reg-  
16 ulation in that case concurrently.

17 "(6) Nothing in this subsection shall be construed to  
18 diminish or otherwise affect the jurisdiction of the Com-  
19 mission under this section over devices capable of interfer-  
20 ing with radio communications."

*An actual copy of the bill introduced by Mr. Feingold.*

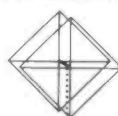
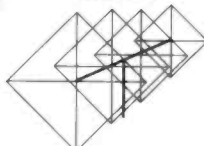
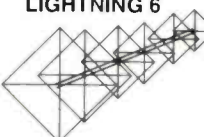
rently written, could go a long way in helping us remove some of our most embarrassing and long running problems. Regrettably, the bill, as written, appears to fall short on at least three points.

First, Bottari's statement, while reassuring (and in line with the Senator's remarks in the Congressional Record) appears nowhere in the bill (see sidebar). Considering the tendency of some bureaucrats to "amplify" the best intentions of the most benign regulation, is it unreasonable to think that S.608 might be carried to extremes? The restrictions and limitations cited by Bottari should be included directly in the bill.

Second, it fails to directly address any "in band" problems, such as interference with channel 9, on air harassment, profanity, and intentional interference in general. Perhaps no one has told the Senator that CB itself is electronic equipment, often used in the home, which can be useful as well as entertaining.

Third and most importantly. While it is true that most troublesome operators run non-type accepted equipment, not all operators of non-type accepted equipment are troublesome. The bill (short of legal-

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News From:  
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<http://www.senate.gov/~feingold>

**Feingold Response to *Popular Communications* Questions  
 June 13, 1997**

**Since the bill is still in Committee and the end of the session is near, is it safe to assume that no action will be taken on the bill this year? If not, what are the chances of it being introduced again next year?**

"The 105th session of Congress began in January of this year and will continue through late fall 1998 with a mid-session recess in late 1997. If s.608 does not pass in 1997, it will not have to be reintroduced in 1998."

**If it will be introduced again next year, is there still time for the CB community to have any say in it?**

"While it will not be necessary to reintroduce the bill next year, I always welcome input from the CB community or any other interested constituent on how to improve the bill."

**What in S. 608 would prevent communities from banning CB radio altogether?**

"S. 608 provides states and localities with authority to enforce Federal Communications Commission (FCC) regulations only for unauthorized equipment and frequencies. Communities cannot create their own regulations for CB use because they are currently preempted by federal law from doing so and would continue to be preempted under S. 608. The bill confers only limited authority on states and localities and does not allow any additional local regulation of CB radios."

**What in S. 6078 would prevent certain groups or individuals from using it to conduct a vendetta against other groups or individual operators?**

"Localities would only have authority to enforce FCC regulations in cases in which CB operators are using unauthorized equipment or operating on unauthorized frequencies. If federal regulations in this area are not being violated, localities have no authority to take any action against a CB operator. Anyone operating lawfully is protected from state or local action. Localities are unlikely to use the authority conferred on them by S. 608 in an irresponsible manner because the bill provides any individual affected by a decision of a state or local government with the right to appeal the decision to FCC for a determination that the state or locality acted within their authority. FCC retains the ability to overturn a state or local decision. This means that, in addition to the usual requirements of due process at the state and local level, there will be an additional level of oversight by the FCC to ensure that localities are not improperly enforcing FCC regulations."

**How does S. 608 protect users of CB radios and other forms of radio communications from unwanted interference?**

"S. 608 does not specifically address radio frequency interference, rather it addresses one of the most egregious and persistent causes of interference — use of unauthorized CB equipment (i.e. not FCC type-accepted) and operation on unauthorized frequencies. S. 608 allows states and localities to enforce FCC regulations on equipment or frequencies regardless of whether the user is interfering with a residen-

tial phone, reception of radio signals of emergency services, or other CB radio users."

**Would local expertise be utilized under S. 608 to identify, locate and document problem operators?**

"States and localities would be able to use local expertise in addition to FCC's technical assistance. However, state and local governments have the burden of defending their actions and proving their technical case before the FCC if the action of the state or locality is appealed."

**Would this bill, if passed, allow local authorities to enforce FCC regulations or just their own laws and ordinances or both?**

"S. 608 allows localities to enforce FCC regulations on unauthorized equipment and unauthorized frequencies. States and localities could not write their own regulations on CB radio use. States and localities would continue to be preempted from regulating radio services by federal law."

**What, if anything, in the bill would restrict or prevent local authorities from actively or aggressively enforcing any or all of the FCC's CB regulations? Would, for example, this bill permit local authorities to prosecute an operator who, not causing interference to his neighbors TV, VCR, radio or telephone, was in violation of FCC regulations by:**

1. Being engaged in a conversation that lasted longer than the allowed five continuous minutes?
2. Making net announcements which may be a violation of the non-broadcast rule?
3. Talking to a station more than 150 miles away?
4. Talking on a frequency not specifically assigned to the CB service?

"If a state or locality attempted to enforce an FCC regulation on any matter other than unauthorized frequencies and equipment, the decision could be overturned by FCC as well as challenged in state and federal court. S. 608 provides absolutely no authority to states and localities to enforce FCC's rules on allowed length of communication, content of communications with distant CB stations, or any other regulation that does not pertain to authorized equipment or frequencies."

**What kinds of penalties or sanctions would local authorities be allowed to impose? Civil? Criminal? Fines? Jail time? Confiscation of equipment? Other forms?**

"Localities must first pass ordinances providing the local law enforcement with the ability to enforce FCC rules. Localities will be able to use discretion in setting penalties for violations of their own ordinances. In some cases, the locality may look to FCC's existing penalties as the basis for setting their own penalties for violations of the ordinance. Under current law, FCC's penalties for rule violations range from cease and desist orders to fines of up to \$10,000 per violation. If convicted by a federal court, existing statute also provides for fines of up to \$500 per day for every day a violation occurred, up to \$10,000, or imprisonment for up to one year."

*In response to a letter from Pop'Comm columnist Ed Barnat, Senator Feingold's office responded with this news release.*

izing operation between 27.405 and 29.995 MHz, among other things) must stipulate RFI as the basis for investigation and prosecution; not simply the possession of non-type accepted equipment. Even the most minor modification, such as unlocking the clarifier, will void your radio's type acceptance. So, many if not most (of all but the most casual of) CB operators already own at least one piece of gear that puts them in violation. Therefore, this bill will unintentionally provide certain groups and individuals with a powerful new tool with which to wage personal vendettas, totally unrelated to the problem of RFI, against other groups and individuals. Anyone, who doesn't see the danger of that happening, hasn't spent a lot of time on CB.

Should the CB community support this bill? Yes, it is a step in the right direction. Even as currently written it is better than what we have. But this bill should be changed! While well-intentioned, it misses the mark and could be used to harass good and bad operators alike. Can the bill be changed? Yes, it is possible.

Senator Feingold says that he would welcome input from the CB community. Whether or not he can get it is probably the biggest question of all.

As Bill Pasternak points out, "CB has no central core 'national society' to lobby for it. Nor does it have the ability to secure a viable national magazine devoted to it that can be its voice." He is right, you know. The closest we come to the amateur's ARRL and QST is REACT and this column in *Popular Communications*. Both of which, in this case, should prove about as efficient as spitting into the wind.

Whether you think S.608 should or shouldn't become law, the time for action is now. If the bill is to be changed, it will be up to you to do it. Contact Senator Feingold. Let your Congressman and Senators know what you think. For that matter, let me know what you think. If time allows, I'll try to include some of your comments in a future column. If you, or someone you know has an e-mail address, drop me a note via the Internet and I'll try to keep you posted on the bills' progress over the next several months.

Well, that's it for now. I look forward to hearing from you soon. Please send your comments, questions, suggestions, QSLs, and shack photos to me in care of the magazine. I can also be reached on the Internet where my address is <edbar-nat@global2000.net>. Better yet, if you can, catch me on the radio.

73—Ed.

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# The Old CB Shack

GIVING LIFE TO YESTERDAY'S RELICS

## Separating CB Fact from CB Fiction . . .

One of the definitions of a myth is "an opinion, belief, or idea that has no basis in truth or fact." CB radio has had more than it's share of them. Some are still with us and are spread as gospel from one CBer to another. As we discuss some of them this month, I'm leaving out many small details or some exceptions in the following explanations. If I tried to cover all conditions, the article would be too lengthy or get too technical. Let's get on with business.

*"... a nine-foot whip antenna is the best CB antenna you can have on your car or truck."*

### Trimming the Coax

Trimming the coax to adjust or lower your SWR reading does not change your SWR, only what your meter reads. The SWR is generated at the junction of the coax and the antenna because the antenna is not tuned (resonate) to 27 MHz. Any returned power has peaks and nulls. For the purposes of this discussion, we are ignoring the fact that there are both voltage and current peaks and nulls and that they are not in phase. Your SWR meter is reading the SWR voltage present at the point you placed the meter, but the actual SWR remains the same! Only by adjusting *the antenna* can you lower the SWR. In fact, you might happen to have a coax length on your present base or mobile that results in a low meter reading when you actually have a high SWR. So, make a reading with the length you are going to use, then insert a 4 to 5 ft. jumper with proper connectors and read it again. Use whichever length gives you the poorest reading (highest SWR) while making your antenna adjustments. As long as you can get the reading down to around 1.5 to 1 or better, that's fine. Then use whichever length you want for everyday operation. Before you get excited and say that 1.3 is better than 1.5, I will agree. However, you could not tell the differ-



*It may not be a full 102-inch fiberglass whip, but mounting your CB antenna in the center of your car's roof will give best all-around performance on transmit and receive.*

ence in actual use. Besides, you are making the measurement while the car is sitting still. Reach up and flip the antenna rod where it sways back and forth, and see how the reading changes with the antenna rod moving.

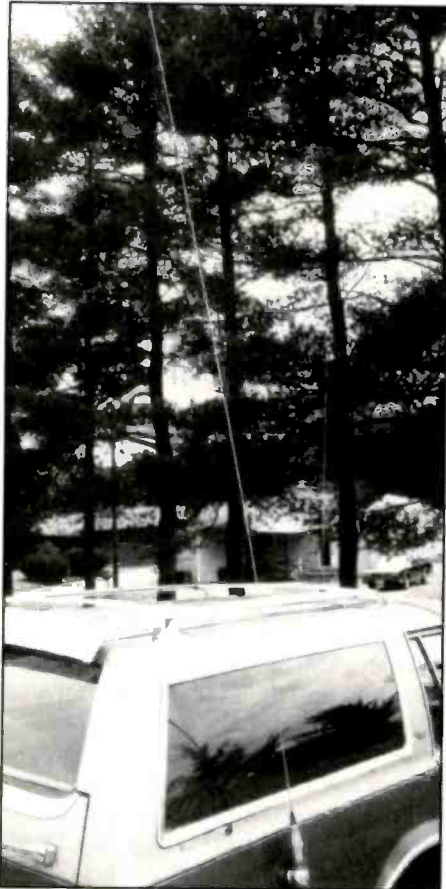
### Motor Noise

Connecting the power lead directly to the battery is touted as a way to get rid of motor noise. If one of my employees connects any radio directly to the battery terminal, they know they are subject to immediate termination! Hooking to the battery terminal WILL result in eventual poor performance due to corrosion. For high-powered radios (25 watt or larger

commercial radios), we connect to the starter solenoid, or the power point under the hood some cars provide or a power tap connector attached to the positive cable at least 15 inches away from the battery. For low-powered radios such as a CB, we connect to the under dash fuse box. That takes care of the radio power requirements, now let's consider any noise. If you have noise when running the engine (volume up and squelch open), remove the antenna from the radio and see if you still have the noise. If the noise goes away when removing the antenna, the noise is coming in through the antenna. Where or how you connect the power lead will not matter. You will have to suppress your engine to get rid of the noise—and that can get interesting. If, on the other hand, you are lucky and the noise remains there with the antenna off, it is easy to get rid of it. You can purchase a CB/Stereo Power line filter from most automotive supply houses or RadioShack and insert it into the power line, thereby correcting the problem. Be sure to follow the instructions and place it fairly close to the CB input.

### Twin Antennas

First let's cover a small amount of antenna theory. Mounted in the same place, a nine-foot whip antenna is the best CB antenna you can have on your car or truck. Anything less (shorter) will not get out as far, regardless of the manufacturers claims. But because you would look silly with a nine-foot antenna mounted on the top of your pick-up cab, we compromise and use an antenna which is physically shorter, but is electrically nine feet long. We trade a little range for looks and not beating all the stoplights and overhead gas station lights to pieces. To get any more range (with any base or mobile antenna) than you get with a good antenna properly mounted can ONLY be obtained by focusing the signal in some manner. Omni-directional base antennas (both 1/2 and 5/8 wave types) do this by taking the signal that was being radiated



*It's big, and it's ugly, but it gives the best overall performance—the 102-inch whip. In this case the CBer mounted it on the side of the station wagon. We've all seen them mounted on the top of the vehicle, but then again, how many streetlights does it take out?*

at high and low angles and bending it out toward the horizon—kind of like a light bulb with a reflector taking the light that was going up to the ceiling and sending down and out into the room where you need it. This is great for a base station, but you would find it cumbersome to travel very far with an 18-foot-long antenna on your car, at least until the first overpass with 12 to 14 foot clearance. So, on a vehicle we cannot use the lower radiation feature of a 1/2 wave antenna. The only other way to get gain is with a beam-type antenna or multiple antennas spaced and phased properly. Because you need some nine feet of spacing between elements, you don't have enough room for these type of antennas, but let's say you did have room for sake of this discussion. There is no free lunch! You can only get improvement in any one area by taking away from another area. Which do you want to lose? Reduce range in front and off the sides to favor behind you? Or how about less behind and off to the sides of

your vehicle to favor the front? It's a law of physics that says you have to take away from somewhere to gain range elsewhere. So at best you have something like a two-element beam (sort of, due to improper spacing) with a very irregular pattern that is better in some directions and worse in others and even that varies as the wind moves the two antennas around, changing the spacing and angle between each of them. The best mobile antenna you can have (since you don't know which direction you will be talking) is a good antenna mounted in about the center of your vehicle. A good antenna is one that is at least 36 inches long, mounted directly to the car body. Antennas loaded so much that they are real short have very low performance: magnetic-mount antennas are imitating *both* a nine-foot antenna and the ground plane, so they are typically very poor performers. The worst antenna I ever saw was an 18-inch one with a magnet mount. However, they are easy to sell because they fit our desire for something for nothing. We want performance without any holes to cut, any installation to do, low cost, small and out of the way. But the fact is, they just don't work as well as a 102-inch whip. The idea of twin antennas originated with truckers, but it hurts more than it helps.

### Peaking

We are regularly asked to "peak out" a unit for more power. Many CBers have said "don't touch my transmitter because I paid \$15 to \$35 to have it peaked out to 15, 20 or more watts!" They further say, "I saw it putting out this many watts after he was finished." RIP-OFF! I can adjust my wattmeters to show you any power you want to see, but I *cannot* adjust your CB to get that power. First, your final would go up in smoke. Most CB units operate at 70 to 80 percent efficiency, so for 15 watts out, you would need to have about 20 watts input power. Old 23 channel and new 40 channel unit finals would melt in 10 seconds or less. Second, for 100 percent modulation, an AM radio must have 50 percent of the transmitter input power available in audio watts, so for 20 watts of RF, you need 10 watts of audio. How did this friendly radio man get this extra audio? Your set was running at five watts of RF and had 2.5 watts of audio and there are no peaking or tuning adjustments in the audio stages. So, if he was able to adjust or peak your transmitter to 20 watts, you would still have 2.5 watts of audio and that would give you 25

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***"It's a law of physics that says you have to take away from somewhere to gain range elsewhere."***

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percent modulation even if you had two power mics on your unit. If he tried to boost the output of the audio section, your modulation transformer and audio output transistors would join the finals in melting. Last, but not least, I ask the person (claiming his radio was peaked to some high power) what size fuse he is using in the power cord? The general response is two amps, the same size he was using before the "peaking." Where did the power increase come from? If you are not putting more in, how the heck are you getting more power out? If you want more power, which is illegal, the only way is with a linear RF amplifier.

### Power Microphones

Most CB radios get a full 100 percent modulation with three or four stages of audio amplification. All a so-called power mic does is add one more stage and you can get 100 percent with the microphone at arms length. Also, you get the kids arguing in the back seat, any wind noise, the radio or TV audio and anything else that you can hear with your ears, but no increase in *range*. The CB with its regular microphone held sideways to your lips and AT your lips has the best audio quality and has only your golden voice without all the surrounding sounds. Other than a radio with a bad microphone or internal problem, I have only seen a few sets that would be helped by a power microphone and they are all old, tube-type 1960-70 vintage units.

### 23 Channel Vs 40 Channel Units

The rules always have said that five watts input power was the limit and 100 percent modulation. That didn't change. They did set a limit on how heavy a final amp could be used, because a few manufacturers were making TUBE units capable of up to 15 watts input power with eight to 12 watts output. These radio came with a warning not to remove or strap a certain resistor as that was legal only outside the USA and would result in exceeding the power limits. We all know what

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1,000 watt station and maybe a 5,000 watt station, compare how far away you can go before each gets noise. Trust me, if you insist on using an illegal amplifier, anything more than 60 watts only interferes with more TV sets, stereos and phones.

**Advertisements**

Everyone knows that just because you read an ad for a product doesn't make it true. The best example I know of in CB is the insert promoting the "L-Coil" antenna from many years ago. It goes against all antenna theory and is pure baloney. This ad came out in the early 1960s. The late Mr. Carl Mosely of Mosely Antennas (the premier manufacturer of high-quality amateur antennas) was in my place of business one time. When I showed him this brochure, he just about fell out of his chair laughing. However, if you are not knowledgeable in antennas and how they work, you could be suckered into spending your money. The ad sounds reasonable and we are including it only to show how you could be lead to believe that you need this or that wonder item.

In our next column, we're going to "rebuild" a Heathkit GW-10 CB unit. I've needed one for my collection for years and thanks to Mr. Greg Katkowski of Sloatsburg, NY, we now have one. Greg wrote about a Granada CB unit and included a picture of some of his other units. In my reply, I mentioned the Heath in his picture and that I've been trying to find one. He wrote back and said that besides the one in the picture, he also had a complete one which was only missing tubes and one for parts only. He said that I could have them and sent them both. My sincere thanks and he will get to see it rebuilt. Hopefully, I can do it in one column. Now about all I need to find is a Globe 100, and Eico 770, 771 or 772, a General V5-4, an old Philmore Super-Regen unit and a Heath CB-1. This will complete my collection.

If you have any questions or comments, just write and enclose an SASE to Don Patrick, 3701 Old Jenny Lind, Fort Smith, AR 72901.

'Til next time, this is the Old Timer saying 73!

happened as soon as you got it home. The FCC did add a four watt OUTPUT power limit so that they didn't have to open up the set to measure the input power. The FCC could just measure the output and if it was more than 4 watts, you were busted. I have never seen a set exceed 80 percent transmitter efficiency, so this didn't hurt your performance any. With regard to performance, a 40 channel unit is just as good as a 23 channel unit, if you are comparing sets of equal quality.

**Illegal Power**

We all know the legal limit is five watts. I don't sell or work on "linear amplifiers." If I did (or my employees did), I could

lose my federal license that I need for my commercial two-way business and Broadcast station engineering. I could care less if you have one or not, since that is between you and the FCC. But, if you want one, don't be power crazy. Without going into all of the details and laws of physics to explain why, you can't really tell the difference between 60 watts and 500 watts, since it would take 60 squared (60 x 60) or 3,600 watts to really be a useable difference over 60 watts. I have proven this to more than one person over the years. You can prove it to yourself in a less scientific way than I used (but an effective way) by comparing the DAY-TIME range between some of your local AM broadcast stations. If you have a local



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# Broadcast DXing

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

## Low-power Canadian Stations Would Offer New DX Opportunities

A couple of low-power stations are in the works in Canada, according to applications filed this spring with the Canadian Radio-television Commission (CRTC). BAF Audio Visual, Inc., in May applied for a license to start a 99 watt station on 1610 kHz in Toronto. The English-language station would broadcast 30-40 hours per week, carrying remote, play-by-play broadcasts of amateur sports events in the area. The proposed setup calls for a mobile studio to provide remote broadcasts.

If approved, BAF's station would be the second low-power broadcaster in Canada given the go-ahead in recent months. The CRTC in May awarded a license for a low-power radio network to accompany a series of upcoming annual Canadawide "Marches for Jesus." The license is limited to broadcasts accompanying the daylong marches, to be held on May 31, 1997; May 30, 1998; May 22, 1999; and June 10, 2000. The network will use as-yet-unspecified and unprotected frequencies.

### WJDM Gets New Antenna Now, New Owner Later

Expanded AM band pioneer WJDM is among the 13 AM stations Radio Aahs syndicator Childrens Broadcasting Co. (CBC) is selling to Global Broadcasting Co. for \$72.5 million. The proposed sale comes less than eight months after ABC Radio rolled out its rival Radio Disney format—a debut marred by CBC charges that ABC used confidential information to develop the format aimed at the 12-and-under set. "Although it is CBC's present intention to continue its mission to create and distribute children's programming content responsive to today's kids and families, CBC has been forced to alter its operations because of ABC/Disney's method of entering the children's radio market," said Christopher T. Dahl, CBC's president and CEO.

Included in the sale, subject to shareholder and FCC approval, are Los Angeles' KPLS, Chicago's WAUR,



*Princess Anne, MD's WOLC helped train 18-year-old Derek Bryckol, whose parents run the first non-denominational, Christian station in Warsaw, Poland. (Courtesy an anonymous Maryland reader)*

Philadelphia's WPWA, Detroit's WCAR, Dallas-Ft. Worth's KAHZ, Minneapolis' KYCR, Denver's KKYD, Tulsa's KMUS, Houston's KTEK and Milwaukee's WZER. CBC also will sell its flagship station, Minneapolis' WWTC, and Phoenix's KIDR, which it bought the day before the sale was announced.

WJDM, meanwhile, in June moved its antenna to a new site in the New Jersey Meadowlands—a move CBC officials say will allow the 1660 kHz signal to reach an additional five million listeners in New York. From its previous transmitter site, the Elizabeth, NJ, station had a potential audience of nine million. Engineers responsible for the upgrade say the new setup also makes more efficient use of the same power, currently at 10 kW daytime and 1 kW nighttime, both with a non-directional signal. Radio Aahs

debuted on WJDM's 1660 kHz outlet in February 1996, following CBC's purchase of the station.

The Meadowlands have long been prime real estate for broadcasters, thanks to the marshy soil, which makes for good ground conductivity, and because of its location next door to the New York metropolitan area.

### Their Way

In spite of what some may have thought, the Internet hasn't made pirate radio passe. In fact, unlicensed stations are thriving, sprouting up nationwide on both the AM and FM dials. Part of the reason for the continued boom is the closure of 13 of the FCC's 14 regional monitoring stations: If no one complains about a pirate station, it now often goes unnoticed. And then there's a myriad of other reasons, including relatively low cost—less than that of a mid-range PC—and the sheer romance of pirate radio.

For Michael Gonzallo Calderon, going unlicensed was the only way to go. A decade ago, the Kansas City man spent three years and \$45,000 bidding for a license to start a Spanish-language station, but lost out to a competing bidder. Now, he runs KCMG, using 107.9 MHz—the only way, he sees it, to fulfill his dream and serve the estimated 60,000 Hispanics in the area. "I did it their way the last time, and I did it my way this time," he told The Associated Press. "If anybody should be upset with me for



*Pocomoke City, MD's WDMV first signed on Aug. 1, 1955. (Courtesy an anonymous Maryland reader)*

throwing a signal up in the sky, it should be God, not the FCC."

In the case of radio station KIND, it was neither God nor the FCC who went after operator Joe Ptak. The city of San Marcos, Texas, hauled Ptak as well as two of his fellow operators into municipal court on charges of violating a zoning ordinance prohibiting operation of a business in a residential area. But Ptak counters that the 30-watt station broadcast on 105.9 MHz isn't a business because it runs no commercials and the 50-member staff are all volunteers. Partner Zeal Stefanoff agrees: "We consider it more like a hobby, like Thomas Paine was doing with his pamphlets, just electronically," he said in a San Antonio Express-News article sent in by Jay S. Jackson, WPE5EBZ/KA5SBP, of Nacogdoches, Texas.

What really got KIND in trouble, Ptak claims, is that many of its hosts support a medical marijuana proposition on an

upcoming city ballot. Not true, counters the city's attorney, who said that even though the ordinances' definition of a business is a venture conducted "for gain," it isn't restricted only to financial gain.

## All Aboard

Italy and South Korea are two of the latest countries to commit to digital audio broadcasting (DAB). The Italian Ministry of Post and Telecommunications has allotted a portion of the VHF band for DAB, but is likely to expand that spectrum to include the L band. Plans call for DAB stations to debut by late summer in Turin and Milan, followed by Naples and Rome.

South Korea also announced plans to convert its FM stations to DAB, with the first broadcasts expected by the year 2000. During the phase-in, slated to take place between 2001 and 2010, stations would broadcast in both analog and digital to give listeners time to adopt DAB, which requires new receivers. AM and shortwave stations also would convert to DAB, but when and how are still under consideration by the Ministry of Information and Communication.

## In Brief

When Alberta's CKUA was forced to shut down March 20 for what threatened to be a permanent hiatus, announcer Chris Martin signed off defiantly, "We'll be back after this." Five weeks later, Martin was behind the mic, signing the province-wide public broadcaster back on with, "None speak louder than those forced to shut up." The station was given a one-month reprieve, starting April 25, thanks

to former staffers who volunteered to put Canada's oldest public broadcaster back on the air. Now, they're asking listeners to vote with their checkbooks whether they want to keep the 70-year-old network on the air. A fund drive is underway to raise the \$1.4 million needed to keep the station on the air for one year.

Houston's KTRH—the station where CBS anchorman Dan Rather got his broadcast start—will switch its affiliation from CBS to ABC. The change, set to take place Aug. 11, comes on the heels of similar defections to ABC by Miami's WINZ, Austin's KLBJ and St. Louis' WIBV. But CBS did manage to re-sign Washington's WTOP, which last May announced it would end its contract with the network.

Trans World Radio (TWR) is expanding its English-language programming to over 14 hours a day—a change that involves shifting the bulk of that programming from its 500 kW outlet on 800 kHz to a new, 50 kW station on an as-yet-unannounced frequency. The 50 kW station, located in Bonaire, Netherlands Antilles, will beam toward Aruba, Bonaire, Curacao and Venezuela. The change also sets the stage for making the English-language programming available via satellite to about 20 Christian-format stations located in the Caribbean, according to a TWR press release. TWR expects to have that network in place by October. By switching much of the programming to the 50 kW transmitter from the 500 kW unit, TWR will be able to broadcast significantly larger blocks of English programming because it won't have to share airtime with Spanish and Portuguese programming.

Toronto's CHIN-AM has applied for a 22 watt transmitter on 101.3 MHz to supplement its nighttime coverage of outlying suburbs. The 1540 kHz station powers down to 30 kW at night. Saint John, New Brunswick's CHSJ, meanwhile, wants to abandon AM entirely. It's applied for a 50.4 kW outlet on 94.1 MHz, with the 700 kHz station slated to shut down within three months of the FM station's sign-on.

## Thanks

Your news clippings, bumper stickers, station and shack photos and QSLs are always welcome, as are your questions and comments. Send 'em to "Broadcast DXing" at *Pop'Comm's* Hicksville address. Until next month, 73. ■

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IL	Colchester	104.1 MHz	
IL	Earlville	102.9 MHz	
IL	Fairbury	107.7 MHz	
IL	Quincy	91.1 MHz	
KS	Winfield	91.9 MHz	
KY	Drakesboro	103.9 MHz	
KY	Elkhorn City	103.1 MHz	(WPKE-FM booster)
LA	Abbeville	89.9 MHz	
LA	Arcadia	92.5 MHz	
MA	Nantucket	91.9 MHz	500 watts
MI	Gladstone	105.5 MHz	
MI	Goodland Twp.	88.1 MHz	500 watts
MI	Muskegon	88.1 MHz	1 kW
MN	Grand Marais	90.7 MHz	
MO	Benton	89.9 MHz	8.3 kW
MO	Ellington	103.9 MHz	
MO	Hannibal	91.7 MHz	
MO	Savannah	91.9 MHz	
MO	St. Joseph	91.9 MHz	
NC	Aurora	104.5 MHz	
NC	Robbins	103.1 MHz	
NE	Ralston	88.1 MHz	
NH	Farmington	106.5 MHz	
NH	Peterborough	88.1 MHz	
NM	Belen	90.9 MHz	
NM	Grants	90.5 MHz	
NY	Ithaca	90.1 MHz	1.8 kW
NY	Lancaster	90.7 MHz	430 watts
NY	Lyon Mtn.	89.7 MHz	
NY	Old Forge	94.1 MHz	
NY	Truxton	88.7 MHz	100 watts
OH	Millersburg	90.5 MHz	
OK	Alva	103.5 MHz	
OK	Crescent	88.5 MHz	
OK	Magnum	97.7 MHz	
OK	Piedmont	88.5 MHz	
OK	Stillwater	89.1 MHz	500 watts
OK	Tulsa	88.7 MHz	5 kW
OK	Klamath Falls	88.5 MHz	840 watts
OR	Pine Grove	89.5 MHz	
PA	Oil City	88.3 MHz	3.9 kW
PR	Pastillo	90.1 MHz	
RI	Westerly	88.1 MHz	
SD	Lead	94.3 MHz	
SD	Rapid City	88.3 MHz	
TX	Athens	88.1 MHz	
TX	Beaumont	88.1 MHz	
TX	Brackettville	94.7 MHz	
TX	Farmersville	92.1 MHz	
TX	Hebronville	101.7 MHz	
TX	Levelland	91.9 MHz	250 watts
TX	Mount Enterprise	99.9 MHz	
TX	Palestine	89.1 MHz	1 kW
TX	Rudolph	90.7 MHz	2.4 kW

### We don't make SCANNERS or the ICOM IC-R8500 RECEIVER - We make them better -

DELTACOMM I-8500 Communication Manager! for the ICOM IC-R8500 communication receiver. With speed as a design goal DELTACOMM's QUICK LOG function will log signal level, frequency, mode, date, time and optional Global Positioning System (GPS) coordinates at speeds in excess of 2400 channels per minute. Here are a few examples of the many advanced features DELTACOMM I-8500 has to offer.

- Load 40 channels of information including ALPHA NUMERICS into one of the R8500's memory banks in 3 seconds.
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CIRCLE 67 ON READER SERVICE CARD

September 1997 / POPULAR COMMUNICATIONS / 61

TX	Temple	88.5 MHz		WCHB	Taylor, MI	1200 kHz	Seeks to change night power
TX	Waco	88.1 MHz		WCHE	W. Chester, PA	1520 kHz	Seeks increase to 1 kW
TX	Waco	88.9 MHz	16 kW	WOKA	Douglas, GA	1310 kHz	Seeks increase to 3.9 kW
UT	Blanding	92.3 MHz		WRKL	New City, NY	910 kHz	Seeks to change night power
VA	Deltaville	92.3 MHz		W5NR	Hartford, NY	1600 kHz	Seeks to change community
VA	Dilwyn	105.3 MHz					
VA	Wise	905. MHz	100 watts				
VT	Bennington	88.1 MHz					
VT	Wallingford	91.5 MHz					
WA	E. Wenatchee	88.1 MHz					
WA	Littell	88.9 MHz	540 kW				
WI	Algoma	104.1 MHz					
WI	Forestville	102.1 MHz					
WI	Nekoosa	105.5 MHz					
WI	Siren	105.7 MHz					
WI	Two Rivers	97.1 MHz					

### Seeking Permits to Construct New AM Stations

AK	Seward	1240 kHz	10 kW
NH	Hanover	720 kHz	

### Granted Permits to Construct New FM Stations

AR	Viola	94.3 MHz	
AZ	Flagstaff	96.7 MHz	(KVTF booster)
MI	Reed City	97.3 MHz	2.85 kW
OH	Marion	91.1 MHz	2 kW
OK	Woodward	95.9 MHz	
TX	Hereford	103.5 MHz	50 kW
TX	Leakey	104.3 MHz	

### Cancelled or Expired

KAIN	Vidalia, LA	1040 kHz
KBDY	St. Louis, MO	89.9 MHz
KCLS	Flagstaff, AZ	690 kHz
KDEW	Dewitt, AR	1470 kHz
KFAS	Casa Grande, AZ	1260 kHz
KHAT	Lincoln, NE	1530 kHz
KHUG	Rocky Ford, CO	95.9 MHz
KTYN	Minot, ND	1430 kHz
WAYB	Waynesboro, VA	1490 kHz
WAZE	Dawson, GA	92.1 MHz
WBHQ	Bloomfield, IN	101.1 MHz
WHIA	Dawson, GA	990 kHz
WHRF	Bel Air, MD	1520 kHz
WHSY	Hattiesburg, MS	1230 kHz
WLVN	Brantley, AL	1080 kHz
WMFL	Monticello, FL	1090 kHz
WRHX	Herndon, VA	1440 kHz
WSRR	Washington, NJ	1580 kHz
WTOLX	Lincoln, ME	1450 kHz
WRSS	Scranton, PA	1320 kHz
WUWU	Cordele, GA	1490 kHz

### Requesting Changes to AM Facilities

KLAY	Lakewood, WA	1180 kHz	Seeks daytime increase to 5 kW
------	--------------	----------	--------------------------------

### Changed AM Facilities

WETR	Eden, NC	830 kHz	Moved to Kernersville, runs 10 kW nights
WQBS	San Juan, PR	870 kHz	Increased to 10 kW

### Requesting Change to FM Facilities

KRRC	Portland, OR	107.5 MHz	Seeks to move to 104.1 MHz
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### Changed FM Facilities

WA2XKB	Charlotte, NC	98.7 MHz	Changed channel
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### Pending AM Call Letter Change

New	Old	
WNAI	WXKN	Newburg, KY

### Changed AM Call Letters

New	Old	
KBAD	KORK	Las Vegas, NV
KBBA	KNTS	Abilene, TX
KLDY	KTOL	Lacey, WA
KNEZ	KWTR	Georgetown, TX
KNHD	KATH	Camden, AR
KOPT	KXOA	Sacramento, CA
KTFN	KLOQ	Merced, CA
KVCA	KWNK	Simi Valley, CA
WFII	WCOL	Columbus, OH
WINW	WPGY	Canton, OH
WLCG	WQTK	Macon, GA
WPGR	WDSY	Pittsburgh, PA
WSCR	WJJD	Chicago, IL
WSNL	WTAC	Flint, MI
WSQL	WRAQ	Brevard, NC
WTKG	WCUZ	Grand Rapids, MI
WTZK	WZQR	Black Mtn., NC
WTZY	WLVM	Fairview, NC
WYPA	WACR	Chicago, IL

### New FM Call Letters Issued

KAUJ	Walhalla, ND
KAUL	Show Low, AZ
KBFN	Big Sky, MT

KLZA Falls City, NE  
 KNLG New Bloomfield, MO  
 KQWK Wallace, ID  
 KRUC Las Cruces, NM  
 KUTE Ignacio, CO  
 WASW Waycross, GA  
 WCBF Clinton, KY  
 WDZD Ocean Island Beach, NC  
 WRFN Warrenton, GA  
 WZJT Dora, AL

KSFQ  
 KSIG-FM  
 KYUL  
 WATI  
 WBFM  
 WBRB  
 WDGL  
 WDLZ  
 WDRE  
 WEBR  
 WGGZ  
 WGL-FM  
 WGZO  
 WGZR  
 WHAK  
 WJZJ  
 WLWS  
 WLCG-FM  
 WLYR  
 WMHS  
 WPHI  
 WRTR  
 WSHI  
 WSRA  
 WTZY  
 WVRR  
 WWJR  
 WXCM  
 WXXX  
 WYSN  
 WZNE

KNLA White Rock, NM  
 KCRL Rayne, LA  
 KNRV Harker Hts., TX  
 WAQO Vincennes, IN  
 WWJR Sheboygan, WI  
 WBUC-FM Buckhannon, WV  
 WGGZ Baton Rouge, LA  
 WBCG Murfreesboro, NC  
 WLIR Westhampton, NY  
 WWFX Belfast, ME  
 WBBU Baker, LA  
 WGLL Auburn, IN  
 WLWS Parris Isl., NC  
 WSHG Ridgeland, SC  
 WELG Rogers City, MI  
 WTHM Glen Arbor, MI  
 WOCW Parris Isl., NC  
 WYIQ Warner-Robins, GA  
 WCEZ Delaware, OH  
 WDHT Luverne, AL  
 WDRE Jenkintown, PA  
 WACT-FM Tuscaloosa, AL  
 WDJB Columbia City, IN  
 WYSN Central City, PA  
 WLVM Fairview, NC  
 WXXX-FM Newport, NH  
 WBFM Sheboygan Falls, WI  
 WKCM-FM Hawesville, KY  
 WVRR Lebanon, NH  
 WADJ Somerset, PA  
 WAQB Brighton, NY

**Pending FM Call Letter Change**

New Old  
 WXPT WFMJ Brookfield, WI

**Changed FM Call Letters**

New Old  
 KCYQ KKWZ Richfield, UT  
 KGRP KRAZ Middletown, CA  
 KHTW KSOF Caledonia, MN  
 KIHK KDUT Rock Valley, IA  
 KIIC KASD Lamoni, LA  
 KJYE KJYE-FM Grand Junction, CO  
 KMKT KASK Bells, TX  
 KNHD KOSG Camden, AR  
 KOBB-FM KATH Bozeman, MT  
 KQUIS KSIG-FM Basile, LA  
 KQPT-FM KQPT Sacramento, CA  
 KRAZ KAGA Santa Ynez, CA

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# The Listening Post

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

## Catch Radio Tahiti Before It's Too Late!

You might say it was a bad investment. The Investment Channel, which opened a 24-hour-a-day service broadcasting business and investment news via South Africa's Meyerton transmitter facility has already left the air! As far as we know, no announcement or explanation was given.

World Music Radio has begun testing from Meyerton, initially on the weekends, on 3345 and 6290, signing on at 1800 and running to 2200 close. You can reach them at World Music Radio, P.O. Box 112, DK-8900 Randers, Denmark.

That new shortwave station coming on the air from Georgia won't be operating under the moniker of WEUR after all. The call letters will actually be WWBS. Spare parts from that WWCR transmitter which was damaged in that fire some years ago are being used in building the WWBS transmitter.

The end for Radio Tahiti seems near. The only frequency still active is 15167 (variable) and the power of that transmitter seems to be extremely low. The other two Radio Tahiti shortwave transmitters which, for years, were active in the 49 and 25 meter bands, have already died. Sadly, when 15167 is gone that's gonna be the end as the station does not plan to spend any more money on its



CBC CENTRE - VANCOUVER, BRITISH COLUMBIA

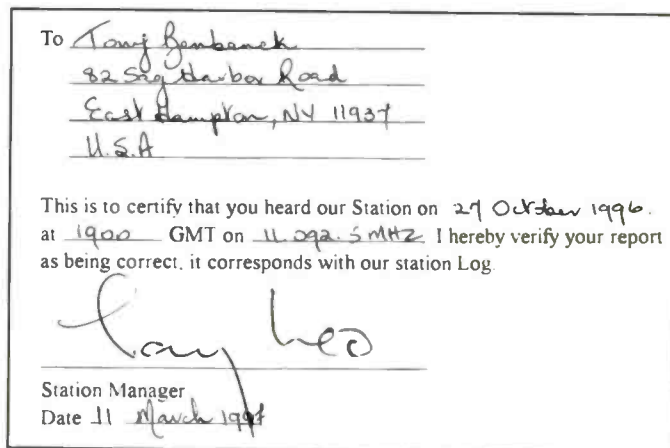
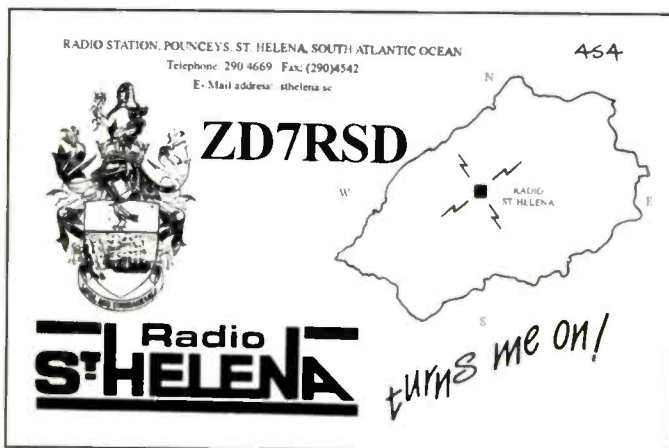
*This card confirmed reception of CKZU, Vancouver on 6160. (Thanks to Trevor Fletcher in Alberta, Canada)*

shortwave operation. Nineteen meters should still be open a few hours into the evening, so if you haven't heard Radio Tahiti yet we suggest you make a concentrated effort to hear them during the next month or two.

The financial shake-up for Radio Australia means that the station has had to

discontinue use of its Darwin transmitting facility. Apparently the Darwin station won't be torn down. We're guessing one or more international broadcasters will lease time for broadcasts via Darwin.

With all the recent news about Zaire (now Democratic Republic of the Congo) lately it's interesting to note that Radio



*Tony Benbenek in New York State got this QSL for the 1996 broadcast from Radio St. Helena.*

**VOA**  
VOICE OF AMERICA

760 kHz 4920 kHz

LA VOZ DE LA CAPITAL

# RADIO QUITO

*Radio Quito, in Ecuador, sent this red, white and blue pennant to Andy Johns in Texas. Looks like they must carry some VOA programs! (In the real world they are on 4919 rather than 4920)*

Nationale Congolaise, across the river in Brazzaville has been reactivated. Check 4765 around 0400. The former Zaire government station, now called Voix du Congo or, more officially, RTNC—Radio-television National Congolaise is “more or less” active on slightly variable 15244, but most DXers who find this one report it with quite weak signals. Check for them during late mornings or early afternoons in North America.

HCJB (Ecuador) finds itself in the unhappy position of being under a government order to tear down its Pifo transmitter site because a new international airport is going to be built nearby and all those antennas would be a flight hazard. Getting the job done will take anywhere from three to four years. In the meantime, HCJB has some important decisions to make about its shortwave future.

By now we should be getting excellent reception of the Voice of Greece. The station is due to start 12-hour-per-day relays via VOA transmitters in the U.S. One frequency which may be used is 9590 from Delano, CA.

Deutsche Welle is now operating with four new 500 kW transmitters at its Nauen transmitter site, near where the former East Germany’s Radio Berlin International’s transmitters used to be located. The new DW units are capable of digital broadcasting.

Zambia, too, will soon be speaking with a louder voice. The Zambia National Broadcasting Company is putting two 100 kW transmitters on the air—one for 60 meters one for 49 meters. These will replace the 20 year-old units now ending their service. China provided the funding for both the old and the new transmitters.

The Voice of Charity, a Catholic station based in Lebanon, is now being relayed by Vatican Radio from 0400 to 0500 on 11715.

Don’t forget that your log reports and other items are always sought and appre-

ciated. Logs should be listed by country (alphabetizing them is not necessary) and be double spaced (at least) so they’re easier to cut for sorting. Be sure to add your last name and state abbreviation after each one or we can’t use them.

We also seek information from and about shortwave stations, changes in addresses, QSL policies, spare QSL cards or other items you may receive, station photos and photos of you and your shack to include as illustrations. Thanks for your continued support!

Here are this month’s logs. All times are UTC, which is five hours ahead of EST; i.e. 0000 (midnight) UTC is 7 p.m. EST, 6 p.m. CST, 5 p.m. MST, 4 p.m. PST. Double letter abbreviations such as SS, PP, RR, AA, etc. are for languages (Spanish, Portuguese, Russian, Arabic), etc. The lack of a language mention assumes the broadcast was in English (EE).

**ALBANIA**—Radio Tirana, 7160 at 0143 with IS, ID, frequency info, then Albanian news. (Jeffery, NY)

**ARGENTINA**—RAE, 11710 at 0225 with commentary, news, features, news, Argentine economic news. (Jeffery, NY)

**AUSTRALIA**—Radio Australia, 6080 at 1240 in Chinese. Jammed. Also 9580 at 1235. (Miller, WA) 9580 at 0824. (Foss, AK) 1245 with “Australia Today.” Also 17795 at 2334 with a news magazine program. (Jeffery, NY) 9860 at 1321. News at 1332. (Wilden, IN)

**AUSTRIA**—Radio Austria Int’l, 6155 at 1638 with interviews in EE/GG. (Halinar, Germany) 9655 at 1259 in GG with Strauss waltz, time pips, frequencies, news. (Miller, WA)

**BENIN**—Radiodiffusion du Benin, Parakou, 5025 in FF at 0517. Also at 0950. (Jeffery, NY) Radiodiffusion du Benin, Cotonou, 4870 in FF at 0511. (Jeffery, NY)

**BOLIVIA**—Radio Movima, 4471.8 at 0115 to 0130 sign off, in SS with ballads to ID “Radio Movima su radio.” (Rausch, NJ)

Radio Fides, 9624.9 at 0040 in SS with comunicados, time check. YL call-in to respond to the comunicado, ID. (Rausch, NJ)

## 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

**BRAZIL**—Radio Nacional Amazonia, 11780 in PP at 0053 with musical request show. (Miller, WA)

China Radio Int’l relay, 11765 at 0334 with classical Chinese music and announcer in SS. (Foss, AK)

**BULGARIA**—Radio Bulgaria, 11720 heard at 0400 with music and voice IDs, “This is Radio Bulgaria calling.” News in FF at 0401. (Foss, AK)

**CANADA**—BBC Americas/European program stream via Sackville, 9515 at 1236. (Jeffery, NY)

Radio Canada Int’l, 5995 at 2040 with “Earth Watch” program. (Halinar, Germany) 9350 at 1210 with news in FF. (Jeffery, NY) 9535 at 0228 with Canadian Forces Radio; 17820 at 2030. (Miller, WA) 11960 at 1220 in CC. 13650 at 1235 with comedy program. (Northrup, MO)

CBC Northern Service, 9625 at 0213 with “Story Time.” (Miller, WA)

**CHAD**—Radiodiffusion National, 4904 at 0516 in FF with talk by man, ID. (Jeffery, NY)

**CHINA**-Tibet—Xizang PBS, 6200 at 2345 in CC with traditional Chinese flute and pops. ID by woman at 0000 and presumed news. (Rausch, NJ)

**CONGO**—Radio Congo, 4765, reactivated,



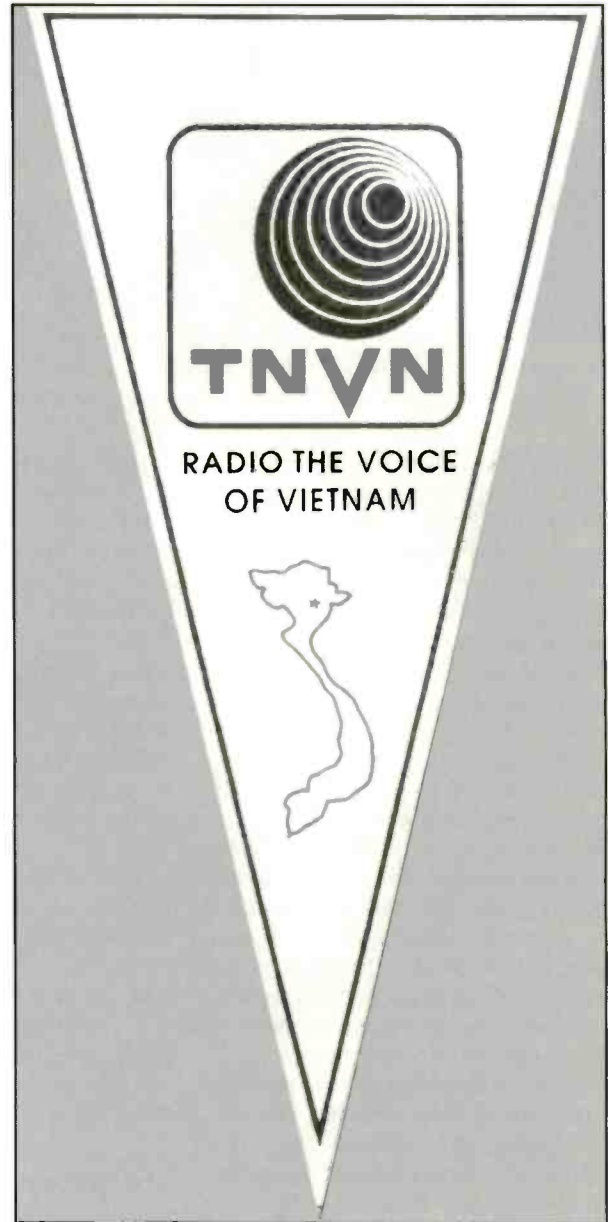
**RADIO SLOVAKIA INTERNATIONAL  
TIME AND FREQUENCY SCHEDULE**

**SUMMER 1997 (from March 30, 1997 to October 26, 1997)**

Broadcast time UTC (GMT)	Region	Language	Frequency (kHz)
01,00 - 01,30	North America	English	5 930, 7 300
	South America		9 440
01,30 - 02,00	North America	Slovak	5 930, 7 300
	South America		9 440
02,00 - 02,30	North America	French	5 930, 7 300
	South America		9 440
08,00 - 08,30	Western Europe	German	6 055, 7 300
08,30 - 09,00	Australia	English	11 990, 15 460, 17 570
09,00 - 09,30	Australia	Slovak	11 990, 15 460, 17 570
13,00 - 13,30	Eastern Europe	Russian	9 440, 11 990, 13 715
13,30 - 14,00	Western Europe	German	5 915, 6 055, 7 345
15,00 - 16,00	Western Europe	Slovak	6 055, 7 345
	Southern Europe		5 915
16,00 - 16,30	Western Europe	French	5 915, 6 055, 7 345
16,30 - 17,00	Western Europe	English	5 915, 6 055, 7 345
17,00 - 17,30	Western Europe	Slovak	6 055, 7 345
	Southern Europe		5 915
17,30 - 18,00	Eastern Europe	Russian	5 915, 7 345, 9 485
18,00 - 18,30	Western Europe	German	5 915, 6 055, 7 345
18,30 - 19,00	Western Europe	English	5 915, 6 055, 7 345
19,00 - 19,30	Western Europe	Slovak	5 915, 6 055, 7 345
19,30 - 20,00	Western Europe	French	5 915, 6 055, 7 345

*Here's the broadcast schedule of Radio Slovakia International, good through (almost) the end of October.*

*B. Fisher in Michigan got this pennant from the Voice of Vietnam (done in good ol' red, white and blue!).* →

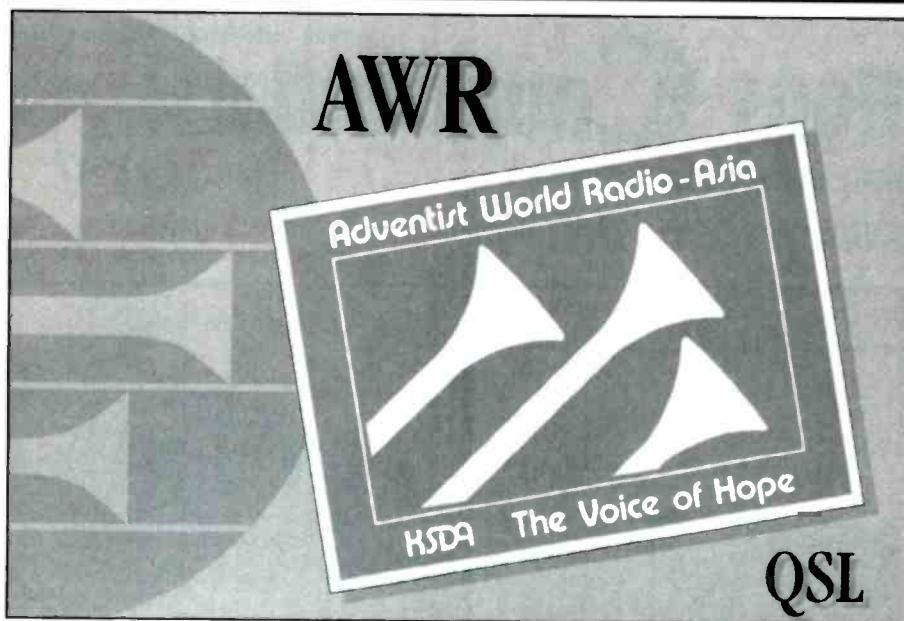


from 0400 sign on in FF with IS, national anthem, ID: "Ici Brazzaville." (Rausch, NJ) 0358 with march music, man in FF, mentions of Brazzaville; an American pop song at 0402 with man speaking over the song and a lion's roar. (Wilden, IN) News in FF at 0501. (Jeffery, NY)  
**COSTA RICA**—RFPI, 7385 at 0200. (Jeffery, NY) 0502. (Foss, AK) Radio Exterior de Espana, presumed. 9630 in SS at 2208 with music, IDs. (Jeffery, NY) Radio Reloj, 4832 in SS at 0502 with music and commercials. (Jeffery, NY)  
**CROATIA**—Hrvatskaa Radio, 11635 at 2128. (Miller, WA)  
**CZECH REPUBLIC**—Radio Prague. 7345 at 0300 to 0330 "Magic of Baroque" program. (Paszkiwicz, WI)  
**DENMARK**—Radio Denmark via Radio Norway. 7465 heard at 0225 and 9560 at 0239, in Danish. (Miller, WA) 11840 at 1503. (Moser, IL)

**ECUADOR**—Radio Quito, 4919 at 0851 with romantic vocal. SS. (Foss, AK) Radio Luz y Vida, 4850.7 at 0010 in SS with religious talk, announcement about conserving water, ID. (Rausch, NJ) HCJB, 11615 at 0209 in PP. (Wilden, IN) 15115 at 1552 with discussion of leadership issues. (Wilden, IN)  
**ENGLAND**—BBC, 6195 at 1722 with news. (Halinar, Germany) 1500 with news. Also 9410 at 0205 via Cyprus. (Miller, WA) Via Delano, CA on 9515 at 0245. (Jeffery, NY) 11865 via WYFR, at 1355 with "News Hour." (Northrup, MO) 15220 at 1500 with classical music. (Wallesen, IL)  
**FINLAND**—Radio Finland, 9655 at 0427. Not hearing scheduled English at 1330 on 11900 or 15400. (Miller, WA) 11900 at 1230. (Northrup, MO)  
**FRANCE**—Radio France Int'l, 15530 with mailbag and music. (Moser, IL)  
**FRENCH GUIANA**—Radio France Int'l

relay, 13625 at 1245 in FF. (Northrup, MO)  
**GABON**—Radio France Int'l, via Moyobi, 0431 with commentary in FF. (Miller, WA)  
**GERMANY**—Deutsche Welle, 6085 in GG at 0403. Also 2008 in GG on 17810. (Wilden, IN) 11810 at 0119 in EE; 15105 via Antigua in PP at 2252, 15275 via Rwanda at 2254 in GG and 17810 at 2027 in GG. (Miller, WA) 11980 at 1550 in GG. Also on 17715 via Antigua at same time but airing different program. (Moser, IL)  
**GREECE**—Voice of Greece, 7450 at 0138 with news, into Greek at 0139. (Jeffery, NY) 9420 at 0211 in Greek with music, ID, frequencies, news. (Miller, WA)  
**HONDURAS**—Radio Internacional, 4931 in SS at 0510 with ID, music. (Jeffery, NY)  
**HUNGARY**—Radio Budapest, 9835 at 2100 sign on with news. (Halinar, Germany) 11910 at 0248 with classical music, e-mail address and other closing announcements. Off at 0300. (Wilden, IN)





*Adventist World Radio is always coming up with new QSL designs. Here's one of the latest.*

**ICELAND**—Icelandic Nat'l Broadcasting, 11402 SSB at 2326 in Icelandic. (Miller, WA)  
**INDIA**—All India Radio, 10330 in Hindi; music of India. 11585 from Bangalore at 1617 in tentative Farsi. Mentions of Iran, Bangladesh. (Miller, WA)  
**ITALY**—RAI, 11800 heard at 0100 with weird musical signal. Nearly unreadable. (Miller, WA)  
**JAPAN**—Radio Japan/NHK on 7230 via England at 0611 with news. (Foss, AK) 9835 at 1701 with news of Japan. (Miller, WA)  
**KUWAIT**—Radio Kuwait, 11675 at 0334 in AA. (Foss, AK) 11765 at 0207 in AA with apparent political discussion. (Miller, WA) 15505 at 1929 with AA songs, conversation between a man and a woman. Highlights included a healthy belch from the man. (Wilden, IN)  
**MOLDOVA**—Voice of Russia via Moldova, 9665 at 2301 with news. ID. (Jeffery, NY)  
**MOROCCO**—RTV Marocaine, tentative. 15335, in AA at 2304. (Miller, WA)  
**NETHERLANDS**—Radio Netherlands, 12090 in unidentified language at 1215. (Northrup, MO)  
**NEW ZEALAND**—Radio New Zealand Int'l, 15115 at 0205 with New Zealand weather forecast. "Cadenza," and "In Touch With New Zealand." (Jeffery, NY) 0404 with commercials, weather, interview. (Wilden, IN)  
**NIGERIA**—Voice of Nigeria, 7255 at 2250 to 2300 closing, talk in language, music, mention of Lagos, Abuja. (Paszkievicz, WI) Radio Nigeria, Kaduna, 4770 at 0501 with Nigerian news, ID. (Jeffery, NY)  
**NORTHERN MARIANAS**—KSDA/Adventist World Radio, 9370 at 1537 in unidentified language. (Miller, WA)  
 KTWR/Trans World Radio, 9865 at 1000 sign on to 1100 sign off with IS, ID, religious pro-

gram, sports magazine feature. (Rausch, NJ)  
**PAKISTAN**—Azad Kashmir Radio, 4790.4 heard at 0040 in unidentified language. Man and woman with music duet with drums. Two plus one time pips to ID by man at 0100. (Rausch, NJ)  
**PAPUA NEW GUINEA**—NBC Port Moresby, 4890 heard at 0855. (Foss, AK) 1314. (Miller, WA)  
 Radio Manus, 3315 heard at 0904 with news. (Foss, AK)  
**PARAGUAY**—Radio Encarnacion, 11939.25 heard at 0240 in SS with pop and folk, ID at 0300 and off. (Rausch, NJ)  
**PERU**—Radio Huamarca, 5385.2 in SS at 0135 with huaynos to ID. (Rausch, NJ) Radio Ondas del Rio Mayo, 6797.75 at 0125 to 0203 sign off, SS with huaynos, laughter but not the usual "yippling." Full canned ID and anthem at closing. (Rausch, NJ) Radio Sicuani, 4826.3 at 0120 in SS with ballads, Peruvian flute music, time check, ID. (Rausch, NJ)  
**PHILIPPINES**—Far East Broadcasting Corporation, 9405 heard at 1539 in CC. (Miller, WA)  
**ROMANIA**—Radio Romania Int'l, 9510 at 2258 with IS, ID, news. (Jeffery, NY) 0418. (Miller, WA) Here and parallel 11940 at 2310 to 0000. (Silvi, OH) 11940 at 1800 sign on with news in GG. (Halinar, Germany) 0301 and 0404. (Wilden, IN)  
**RUSSIA**—Voice of Russia on 9810 at 1837. (Halinar, Germany) Sakhalinsk Radio, 11840 heard at 0331 in RR. (Foss, AK)  
**SAUDI ARABIA**—BSKSA, 11870 at 0348 in AA. (Foss, AK) 11910 at 1630 in AA. (Moser, IL)  
**SEYCHELLE ISLANDS**—Far East Broadcasting Association, 9810 at 1413 in uniden-

tified language and "What a Friend We Have in Jesus" interval signal. (Miller, WA)  
**SINGAPORE**—Radio Singapore Int'l, 6135 at 1251 in Indonesian. (Miller, WA)  
**SLOVAKIA**—Adventist World Radio 9455 via Rimavska Sabota site heard at 1541. (Miller, WA)  
**SOLOMON ISLANDS**—SIBC, 5020 at 0845 with announcements about flight changes for Solomon Islands. (Foss, AK)  
**SOUTH AFRICA**—The Investment Channel, 7190 at 0404 with business news and IDs. (Jeffery, NY) (This has left the air already! Editor)  
**SOUTH KOREA**—Radio Korea, 9570 at 0850 with a detailed rundown of the North's military build-up over the last few years. (Foss, AK)  
**SPAIN**—Radio Exterior de Espana, 15110 at 2053 in SS. (Miller, WA)  
**SWAZILAND**—Trans World Radio, 4765 at 0423 in unidentified language. 4775 at 0423 in German. (Miller, WA)  
**SWEDEN**—Radio Sweden, 7290 at 0129 with ID, news. (Jeffery, NY) 15240 at 1139. (Moser, IL)  
**SWITZERLAND**—Swiss Radio Int'l, 9905 at 0115. (Wilden, IN) 0219. (Miller, WA)  
**TAIWAN**—Voice of Free China, 9680 via WYFR at 0209. (Miller, WA) 11745 at 0351 with CC lesson in EE. (Foss, AK)  
**TOGO**—Radio Lome, 5047 in FF at 0529 with music, news update, more music. (Jeffery, NY)  
**TURKEY**—Voice of Turkey, 7300 at 0305. (Moser, IL) 13695 to end of program announcement at 1921. (Wilden, IN)  
**TURKMENISTAN**—Turkmen Radio on 5015 at 0130 in unidentified language with Mideast-influenced string music, 3 gongs at 0200, ID by man, woman in RR. (Rausch, NJ)  
**UKRAINE**—Radio Ukraine Int'l, 7150 at 0253 to 0330 in EE with talk, music, ID, address: "Ukraine Today." (Paszkievicz, WI) 7150//9550 at 0000-0100. (Silvi, OH) 9550 at 0237. (Miller, WA) 0314. (Moser, IL) 12050 at 1703 in possible Ukrainian. (Wilden, IN)  
**VIETNAM**—Voice of Vietnam, heard to closing at 0125. (Moser, IL) (This is via Russia. Editor) 7250  
**ZAMBIA**—Presumed Christian Voice, 6065 at 0547 in unidentified language. Music, talk, including a prayer, more music. No ID. (Jeffery, NY)

A whopping big thank you to the following this month: Howard J. Moser, Lincolnshire, IL; Chris Halinar, U.S. Army, Germany; Mark Northrup, Gladstone, MO; Sue Wilden, Columbus, IN; Michael J. Miller, Issaquah, WA; Dave Jeffery, Niagara Falls, NY; Sheryl Paszkiewicz, Manitowoc, WI; Marty Foss, Talkeetna, AK; Ed Rausch, Garden Grove, NJ; Elmer Wallesen, LaGrange Park, IL and Lee Silvi, Mentor, OH. Thanks to each one of you.

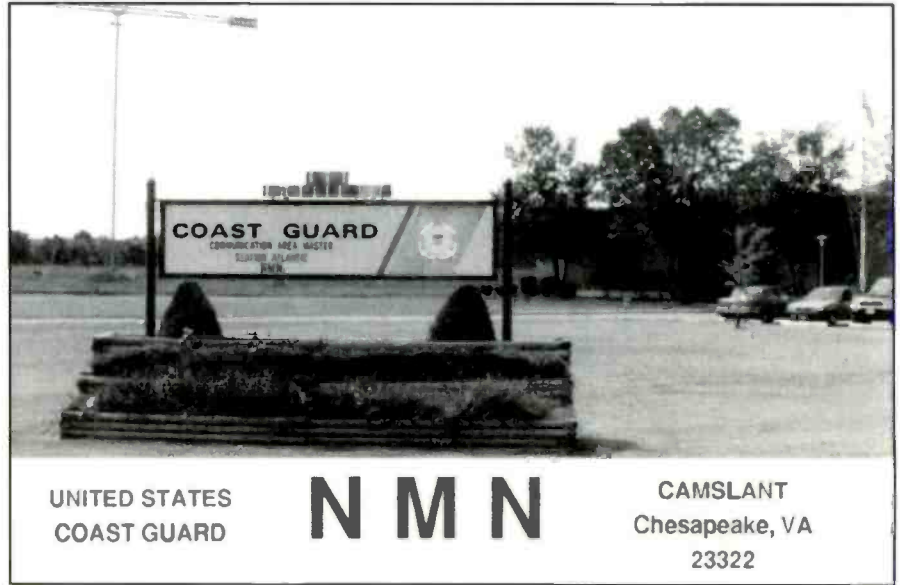
Until next month, good listening! ■

# Communications Confidential

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

## QSLing Utility Stations

Readers have sent in a great number of questions regarding the QSLing of utility stations. It has been an enjoyable part of the hobby for me for many years. Properly done, you can have very good results. My lifetime average for some 1,500 requests sent, is about a 68 percent return rate. I have known others who have hit an 80 percent return rate. Utility station QSLing is completely different from broadcast station QSLing. I always start my letter and introduce myself, explain a little bit about my hobby, and my interest in their station. By their very nature, most utility station transmissions are not intended for the general public to hear. Therefore, it requires some skill in providing information for the station to confirm it was their transmission, without the paragraphs of detailed information that may be offensive to them, similar to that required in QSLing a broadcast station. In fact, what was heard normally should not be quoted. Exceptions include weather and marine information broadcasts. I have found that simply indicating who the station was in contact with, at what time (in UTC) and on what day, works best. For example if I'm sending a request to a cruise ship, it might go like... "This was concluding radiotelephone traffic with AT&T station WOM at 2115 UTC on August 5, 1997." This way, you avoid quoting anything that was said. I also always include a "PFC" or Prepared Form Card. A PFC is a QSL you make up and send along for the station to fill out and mail back. These can be as simple as a file card with the information penned in, or an elaborate computer-generated version. A very small percentage of utility stations have their own QSL cards. For stations within the United States or ships flying the U.S. flag (including U.S. Navy Coast Guard, Army Transportation Corps and NOAA ships) I always include a No. 10 SASE. A SASE is a Self-Addressed Stamped Envelope. The No. 10 envelope is also called "business letter size." For stations outside the U.S., I send mint stamps purchased from a stamp dealer. There are a few dealers that specialize in



QSL card used by NMN, USCG CAMSLANT Chesapeake, VA from the collection of Don Turner, CA.

selling other countries stamps that equal the air mail postage rate to SWLs. Prices vary depending on the country. I also sometimes include a postcard from my area. Others, like Ary Boender in the Netherlands, have their own SWL QSL cards they include. I then place my letter, PFC, SASE or postage, and postcard in a 6" x 9" clasp manila envelope for mailing. The point is to make it as easy as possible

for the station to respond. Remember, they are doing you a courtesy in replying. Nothing says they "have to" QSL, in fact, it's quite the opposite.

Now we know what to say and what to send, but where to we send it? That is the million dollar question. There are several good utility station address books on the market, although they are becoming dated. Publication 65 is the two-volume

Verification of Reception

**PACIFIC AIR EXPRESS 3517**

Date: April 28, 1996 Time(UTC): 0526 UTC

Frequency: 5867 kHz kHz Mode: USB

Aircraft Type: L788C

Registration Nr. N360Q

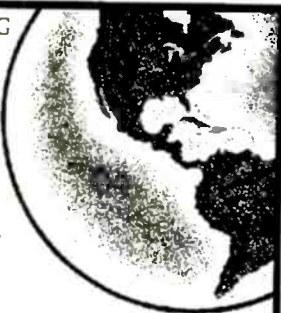
Approx. Position: S14 00.0° E 158 25.0°

Enroute HONIARA to BRISBANE

Signature & Official Stamp

PFC card returned to Steve McDonald (BC, Canada) for his reception of this Lockheed Electra w/kg Brisbane Radio, Australia

LISTENING  
TO THE  
SOUNDS  
OF THE  
EARTH  
AND  
BEYOND....



DATE \_\_\_\_\_  
UTC \_\_\_\_\_  
FREQ \_\_\_\_\_ KHz (USB/LSB) 73  
ANTENNA \_\_\_\_\_  
RECEIVER \_\_\_\_\_

**Ary Boender**

The Netherlands

**SWL**

SWL QSL card used by Ary Boender. The Netherlands.

zip code directory available from the U.S. Postal Service, and includes all U.S. Navy ships, some USCG cutters, NOAA ships, and military commands in Section 12. Computer users can purchase CD-ROMs that provide business addresses, and there are search sites on the Internet that also work well.

## Reader Mail

In the June column I introduced Scott Diback (MI) with one problem. His name was Scott Pastor! Scott uses e-mail and his "screen name" is Diback. That's what happens when one "assumes." Sorry about that Scott, but now we have it right. Chris Halinar e-mails in from Darmstadt, Germany with his first logs. Chris uses a RadioShack DX-394 with a 65-foot-long wire antenna and primarily goes for anything he can receive in utility station land. He also sent some Linconshire Poacher times and frequencies to add to Dave Sabo's list that he has heard in Germany: Monday at 2200, 6965.0, 9251.0, 11545.0; Tuesday at 1900, 6965.0, 9251.0, 11545.0; at 2000 on 5746.0, 12603.0 and at 2200 on 9251.0 kHz. Some of these face heavy jamming and are barely audible at his location.

Michael Fleming in Helena, AL, checks in with his first ever ute log. Mike uses a DX-390. Nolan Tucker (TX), WPE7ACW, who refuses to give up his

old DX call letters, spent 30 1/2 years as a air traffic controller. Nolan passed on some info regarded logs in the June, 1997 column. In the logs under 6532.0 kHz, he correctly points out the correct name of the Australian airline is Qantas rather than Quantas. The log was correct when it came in, so I'm not sure where it was "mangled." I'll have to watch my spell checker. Qantas is an acronym of the original company name Queensland and North Territories Air Service. Also, Nolan reports the log on 5710.0 was a Lockheed pre-delivery flight test of a new C-130. The number used (5414) is a "Construction Number", or C/N, and 5414 is a valid C-130 C/N. Last, he provided insight as to how the Navy C-9B's ID, such as in "Navy RX 113." The last three digits of the Bureau Number ("tail number" to the USAF) are used, along with the tail-code for their home base. So in the example of RX-113, RX is used by VR-57 "Conquistadors" at NAS North Island and 113 is BuNo 159113. My list of Navy tail-codes is dated, evidenced by my listing of VR-62 still being at Selfridge ANGB. As soon as I have an updated list, I'll pass it along here. Table 1 is a listing of known C-9B "Skytrain" bureau numbers and their last known assignments (circa 1995). Interestingly, Nolan has legally used more call letters or callsigns than most I know. In the past he has used the following call signs: USAF: WYWW (CW), Walker Airways, Walker Tower (Walker AFB, Roswell, NM), Biggs Tower, Biggs DF, McClellan Tower, AFH28 (mobile McClellan—on a jeep), Stead Tower, CAA/FAA: KYWU (CW), Unalakleet Radio (CAA, Alaska), El Paso Center, Isla Grande Tower (P.R.), San Juan Tower (P.R.), OOJFH (CW) Air National Guard AC&W, Tucson Tower, Tucson Approach Control (at Davis-Monthan AFB), GRIDIRON (AC&W GCI site on top of 9185' Mt. Lemmon, AZ where he worked the first Civil Air Carrier Turbojet Flight Following program—the first coast-to-coast radar control of high altitude aircraft circa 1957), Edwards Approach Control, NASA ONE (where he controlled NASA's Mach III YF-12s (later SR-71's) and EMERALD, Operation BOLDEAGLE 76 (forerunner of Red Flag), where his Jeep was WAR-LOCK, and finally "Mojave Race Control" for races there in 1976.

Alan Gale (UK) caught the final message sent by GNI, Niton Radio (UK) at 0000 UTC on June 1st over 500.0 kHz. (International CW Maritime Distress): "CQ CQ CQ GNI GNI as of 2400 UTC

Niton Radio/GNI is ceasing watch on 500 kHz stop. We wish all remaining stations good luck for the future = GNI GNI AR VA". The station was then called by OST, Oostende Radio (Belgium), EJK, Valentia (Ireland), and SAA, Karlskrona (Sweden), who all wished them luck, and ended their message with RT AGN. Alan reports Niton also ceased watch on MF channel Uniform 2628/2009 kHz at the same time. Falling traffic levels were blamed for this, along with the approaching GMDSS. Alan also reports another SAR exercise or 'major rescue' June 4 on 5680.0 kHz taking place off Norway. Stavanger Radio was in contact with JAG, MAL and UUS for long periods. Interestingly enough throughout this period Kinloss Rescue was telling stations to use 5699 kHz again. Tony Orr (VA) reports the recent addition of even flight levels, as spacing across the Atlantic has gone from 2,000 feet to 1,000 feet vertical on the NAT tracks, most flights taking the evens at F340 and F360.

Craig J. MacKinnon in Halifax, NS, Canada writes about an interesting log he caught. Canada was in the midst of a federal election campaign, and Craig caught the PM's plane using the callsign Liberal 1 (the PM being a member of the Liberal party there), instead of the usual CanForce 01. Craig thinks this has to do with parliamentary democracy. The PM asks the Governor General (the Queen's representative and formal executive) to dissolve parliament so he can call an election. Therefore, as "just" a candidate, perhaps the PM can not use the CanForce 01 call. Sounds like a reasonable theory, perhaps another reader can tell us for sure?

## Golden Oldie

Recent internet posts Craig and I made about NASA comms that use to be heard on 20186.0 kHz USB, and 20192.0 kHz, LSB, brought an interesting e-mail from Dave Emery (MA). Dave reports this was a four-channel ISB link from Malabar north of the Cape to Ascension in the south Atlantic. The link the other way was on 19 MHz. Usually one channel carried a modem with high speed data on it and sometimes another had VFT RTTY. They ran night freqs around 11 MHz and 7.5 MHz. This circuit dates from the late '60s or very early '70s, according to Dave, and he used to copy it in the Apollo moon shot era when it often had the tracking network and mission voice circuits on it. These were not available to the public via anything like NASA select at that time. The

link had ring-down voice channels from Ascension to the Patrick switchboard, which was the ringing telephone answered by the Patrick AFB operator widely reported up 'til around 1993. Possibly the availability of fiber cable links may have spelled the end of it, since those supply another path in addition to the SatCom link.

## Digital News

Joe Richard (FL), is retired from the U.S. Navy since 1972 and enjoys tracking Cuban diplo stations using Sangean ATS-803A and Yacht Boy YB400 receivers, along with a MFJ-462B and a Universal M400 for decoders. Joe sent a great list of Cuban logs and also reports my log of CLP-1 on 13969.5 in the June issue may have been CLP-65 Managua, whom he has had on a regular 1900 UTC schedule for some time. Managua is the only Cuban that maintains a standard schedule and frequency so it's possible I caught a relay of CLP-1 traffic. We'll have to keep an eye on that frequency. Joe also caught CLP44, Cuban Embassy Harare, up on 18332.0 and 18528.0 sending part of his daily schedule to CLP8, Cuban Embassy Conakry in 50/425 RTTY:

H/GMT	CORRESP/FF	FF/CLP44
0400	CLP1 6935	6960
0500	CLP67 14525	15965
0630	CLP18 12160	18094
0700	CLP22 20035	18094
1400	CLP1 17520	18636

So far, nothing heard at these times. The message concluded to the effect that they also send the press review to Iraq at 0500 UTC, and Tanzania at 0630 UTC.

Albert W. Hussein (FL) reports that a friend of his has been able to confirm the source of the RTTY weather transmissions on 7784.0 kHz as coming from NAR, NAS Key West, FL at the Saddlebunch Key, FL transmitter site. A portable receiver was used to confirm the site. The source of these transmissions has been in question for some time. They have been attributed to NAS Roosevelt Roads among other locations in the past. I had also received a letter from Mr. Anonymous confirming the RTTY frequencies that had been in use by Homestead AFB, FL, a few years back, are now used at NAS Roosevelt Roads, PR. They are remoted from Offutt AFB, NE as part of the USAF Air Weather Service. While were on the subject, the Air Force will combine the Air Weather

### 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
tf	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)

Service Headquarters and the Air Force Global Weather Center to form the Air Force Weather Agency at Offutt Air Force Base, NE. This action is to complement the on-going move of the Air Force Combat Climatology Center to Asheville, NC, to consolidate with the operating location already there and to co-locate with the National Climatic Data Center, according to a release by the *Air Force News Service*.

Dave Wright has picked up some interesting transmissions on 10225.2 kHz, in Sitor-B, ASCII, RTTY and CW. Sent were RY's, and "KXNJ DENLXB CIP CIP CIP CIP CIP CIP KKKKK KKKKK KKKKK" and back to RY's. Next came: "NLXB DE KXNJ RGR RGR RGR GAGAGAGAGAGAGAGAGA KKK KKKK KKKKKK KKKK." RY's and "KXNJ DENLXB BT 15240 170430 152 BT" and 5LG's. Tom Severt (KS) had the station May 1996 to February 1997 on 16303.6. He also copied this station back in December 1995 on 16172. Tom reports the station uses various digital modes in various speeds, but always uses the same shift. It simulates a net operation, but is always one station.

This is especially notable when copying the CW traffic. Transmissions would generally last for about two hours, during which it would switch modes often. Both agree the traffic seems to be used for training purposes. Tom also copied this broadcast from WCC on 6324.0 kHz mid-June: "CQ DE WCC, IMPORTANT NOTICE TO MARINERS: PLS NOTE: EFFECTIVE 30JUN97, THE CALL LETTERS AND FREQUENCIES OF STATIONS KPH AND WCC WILL BE ASSIGNED TO THE FACILITIES OF GLOBE WIRELESS. AFTER MANY YEARS OF CONTINUOUS SERVICE FROM OUR QTH AT BOLINAS, MARSHALL/POINT REYES, AND

CHATHAM, THE EMPLOYEES OF KPH AND WCC WISH YOU FAIR WINDS AND BON VOYAGE." So when you read this, these stations will already be on the Globe Wireless net. Dave Gentile (UK) reported recently receiving this message from Hamburg meteo. Germany: "CQ CQ CQ DE DDK2/4583 kHz DDH7/7646 khz DDK8/11638 kHz, for test purposes the Offenbach (main)/Pinneberg RTTY broadcast DDK2/4583 kHz, DDH7/7646 kHz and DDK8/11638 kHz for shipping will additionally broadcast on frequency DDK9/10100.8 kHz from 2nd June 1997 to 31st August 1997." So if you had an unidentified meteo RTTY station on 10100.8, that's who it was.

In an effort to reduce lead time, you can now mail logs and info direct to me at: P.O. Box 4222, Youngstown, OH 44515-4222. This will save having the mail relayed from the office. Lot's of great info this month, now on with the show.

### UTE Logging's SSB/CW/DIGITAL All Times in UTC

272: WRLB3121. New Ulm Muni Apt, New Ulm, MN at 1508 in AM w/automated wx observations. (TJ)

279: NDB "OZ", Oneonta Apt, Oneonta, NY at 0315. (RK)

285: Pipestone Muni Apt, Pipestone, Mn heard at 1527 in AM w/automated wx observations. (TJ)

355: Appleton Muni Apt, Appleton, MN at 1515 in AM w/automated wx obs. (TJ)

500: GNI. Niton Radio (UK), station close down msg at 0000 UTC on 31st/1st June. (AG)

518: ZSC, Capetown R. Hydrosan at 1622 in FEC/NAVTEX for Navarea 7. Russian yacht Apostle Andrew SOS off Kerguelen Isl. (RH)

1640: WCO767, American Airlines, Dallas-Fort Worth w/departure gate info in AM at 0430. (TJ)

1680: WCO767, American Airlines, Dallas-Fort Worth w/arrival gate info in AM heard at 0502. (TJ)

2182: S/V Bright Eyes at 0136 in USB w/kg USCG Group Mayport, FL re injured crewman who struck head. vsl was 12 mi outside of Bimini. (RK)

2270: Mossad, 5LG's in weak USB at 2209. Haven't heard this frequency for long time. (TY)

2887: New York CAR-B, NY, at 0015 in USB w/kg Belair 181 for posn report & flt info. (TJ)

2892.3: MGJ, Faslane Naval, Scotland, in RTTY 75/850 w/availability tape. (TS)

2953: VLB2 Mossad best in USB heard at 2127. (TY)

3476: KLM 662 at 0320 in USB, selcal EH-BL, w/kg Gander w/ARP 47N40W FL 360, is 744 reg. PH-BFK. (TO)

3485: Gander Radio, Gander, NF at 0645 w/wx conditions to 0700. At 1215, New York radio w/wx for air terminals. Both in USB. (TJ)

## U.S. Navy C-9B Bureau Numbers

BuNo.	Sdn. ID	Name	Location
159113	VR57 RX-113	Conquistadors	NAS North Island, CA (USNR)
159114	VR57 RX-114	Conquistadors	NAS North Island, CA (USNR)
159115	VR57 RX-115	Conquistadors	NAS North Island, CA (USNR)
159116	VR57 RX-116	Conquistadors	NAS North Island, CA (USNR)
159117	VR56 JU-117	Globemasters	NAS Norfolk, VA (USNR)
159118	VR56 JU-118	Globemasters	NAS Norfolk, VA (USNR)
159119	VR56 JU-119	Globemasters	NAS Norfolk, VA (USNR)
159120	VR56 JU-120	Globemasters	NAS Norfolk, VA (USNR)
160048	VR58 JV-048	Sun Seekers	NAS Jacksonville, FL (USNR)
160049	VR58 JV-049	Sun Seekers	NAS Jacksonville, FL (USNR)
160050	VR58 JV-050	Sun Seekers	NAS Jacksonville, FL (USNR)
160051	VR61 RS-051	Islanders	NAS Whidbey Island, WA (USNR)
161266	VR58 RY-266	Lonestar Express	NAS Dallas, TX (USNR)
161529	VR58 RY-529	Lonestar Express	NAS Dallas, TX (USNR)
161530	VR58 RY-530	Lonestar Express	NAS Dallas, TX (USNR)
162753	VR51 RV-753	Flamin Hookers	NAS Glenview, IL (USNR)
162754	VR51 RV-754	Flamin Hookers	NAS Glenview, IL (UNR)
163036	VR52 JT-036	Taskmasters	NAS Willow Grove, PA (USNR)
163037	VR52 JT-037	Taskmasters	NAS Willow Grove, PA (USNR)
163208	VR46 JS-208	Peach Airlines	NAS Atlanta, GA (USNR)
163511	VR46 JS-511	Peach Airlines	NAS Atlanta, GA (USNR)
163512	VR46 JS-512	Peach Airlines	NAS Atlanta, GA (USNR)
163513	VR62 JW-513	Was Motowners	Selfridge ANG, MI
164605	VR60 RT-605	Volunteer Express	NAS Memphis, TN (USNR)
164606	VR60 RT-606	Volunteer Express	NAS Memphis, TN (USNR)
164607	VR60 RT-607	Volunteer Express	NAS Memphis, TN (USNR)
164608	VR60 RT-608	Volunteer Express	NAS Memphis, TN (USNR)

Table 1.

**3927:** SS/YL at 0100 Sun in USB w/5FG. (CS)  
**4023:** AARGJN in FEC w/ MARS bulletins at 1253. (TS)  
**4041:** MULLIGAN 01, 02 & 03 w/MOTHER GOOSE for lots of radio ck's, poss USMC net at 0150 in USB. (RK)  
**4177:** MV Perle in ARQ at 0059 w/telegrams in RR. (TS) (c/s is P3CJ6, ex-YLCX—Ed.)  
**4218:** WLO Mobile Radio at 0329 w/Sitor free signal & CW ID. (SP)  
**4270:** Mossad lady passes 5LG's in USB at 2136. (TY)  
**4274:** KFS, Palo Alto Radio, CA at 0337 w/CW marker. (SP)  
**4294:** WNU, Slidell Radio, AL at 0339 w/CW marker. (SP)  
**4305.5:** JNA, Tokyo, w/CQ/CW marker at 0830. (TY)  
**4369:** WLO, Mobile Radio, AL at 0155 in USB w/ship to shore telephone call. (TJ)  
**4372:** 6XG, L4P, others in USN net tracking u/i ship, later turned out to be USCG cutter. Hrd 0126 in USB. (RK)  
**4387:** WOO at 0400 w/computer-generated voice giving t/c list. (TS) WOO, AT&T Manahawkin, NJ at 0600 w/traffic list. (TJ) Both in USB.  
**4417:** Maritime calling, Ch. 423, at 0157 in USB w/Seaboat Gallagher wkg Seaboat Patrick, & vsl Dream Catcher wkg Aerion. (TJ)  
**4426:** NMC, CAMSPAC Point Reyes (San Francisco) CA, at 0430 in USB w/maritime wx. (TJ)  
**4435:** Unid heard at 1135 in USB to 1200 on, coastal station repeating 38-second electron-

ic tune over and over vaguely reminiscent of "Waltzing Matilda". VIP Australia listed here. (AWH)  
**4442.5:** RGC72, Kiev meteo at 2235 in 50/1000 RTTY. (DG)  
**4466:** New York Civil Air Patrol net (now 'White Peak' calls, was 'Empire') w/units checking in at 2247 in USB.  
**4473:** 7DI, unid military at 0347 in USB wkg 9MJ (British), others, w/unid type net. (Ed.)  
**4577:** 6PXJ rptng "V ABY7 DE 6PXJ" (both U/i CW stns) at 1027. (TY)  
**4637.5:** KOR, Houston TX in USB at 0924 wkg numerous oil rigs. (TS)  
**4645:** The Counting Station at 0100 Sun in USB. EE/YL 3/2FG to 012. (CS)  
**4665:** Abnormal Mossad transmission heard. Mossad lady rptng "Victor Lima Brave Two" for more than 30 mins at 2125 with QRM from Tokyo ACC (4666 kHz). Another day MIW2 Mossad best at 2117. (TY)  
**4670:** The Counting Station at 0100 Sun in USB. EE/YL 3/2FG to 234. (CS)  
**4690:** CLG1 (Cuba) clg "CLG" at 1220 in USB. (AWH)  
**4876:** XBRH, Mexico at 1130 in CW ID'ing as such & wkg voice in SS USB station on 4875, sent a few CQs after QSO ended. (AWH)  
**5081.5:** Unid "273 REAR" at 1154 in USB clg "273 FORWARD", nothing heard. (AWH)  
**5091:** JSR Mossad best in USB at 2201. (TY)  
**5100:** Naval Observatory Caracas, Venezuela, time station here w/time pips and OM/SS ann: "Observatorio Naval Capital, Caracas, Venezuela." (RK)

**5238:** The Counting Station pgm fm 4645 at 1700 Mon hrd faintly in background. (CS)  
**5301:** Very fast CW numbers at 2340, seemed to be synchronized w/CW on 9320. (SP) (This is O LX, reportedly Czech Intelligence, Prague. Yes, same station as 9320—Ed.)  
**5430:** Alma Radio, Quebec at 0000 in USB w/pp's in FF, this is one of their secondary frequencies (TB)  
**5437:** Mossad lady passes 5FG's heard at 2206. (TY)  
**5447.9:** French Forces, Mururoa (presumed) at 1105 in ARQ-M2 128.5/85, MNS/MOS running on 5120.9 at the time w/usual format, so suspect this was the return link. Actually on same freq 5447.9 the following day also, unlike Tahiti end of circuit. (AWH)  
**5535:** Speedbird 2224 at 0436 in USB wkg Speedbird London re HSI indicator problems, selcal BD-EH. (TO)  
**5541:** DHL 017 at 0139 in USB wkg Stockholm R. for selcal check, BH-FG. (TO)  
**5574:** San Francisco (CEP-5) wkg United 6002 & Hawaiian 2 for posn reports at 0510 in USB. (TJ)  
**5600.5:** 6PXJ rptng "V ABYZ DE 6PXJ" (both unid CW stns) at 1014, // 3440 //6785 kHz. (TY)  
**5644.5:** 4XML rptng "V 6FR7 DE 4XML" (both unid CW stns) at 1035. (TY)  
**5649:** Gander ATC wkg Shamrock 112, Lot 002, others w/selcal ck's at 0209 in USB. (RK)  
**5670:** Madras ACC wkg various a/c at 2045 in heavily accented EE. (TY)  
**5688:** Babbler station, Cuba, at 1500 in USB, active here for about a week, mostly 24 hr/day but not since, little t/c during the active period noted. (AWH)  
**5696:** NJCS?, USS John C. Stennis (CVN-74) at 1928 wkg NMN, CAMSLANT Chesapeake, passing ETA to area of SAR of 2300L. NMN adv RESCUE 1501 was att comms w/them on 2644.5 no joy. At 2032, NOP, "Brooklyn Air", Brooklyn, NY, wkg RESCUE 6539 re ETA on-scene. At 2229, USS John C. Stennis wkg RESCUE 1501, adv launching E-2C whose ETA is 1 hr. At 0237, NDXU, USS Santa Barbara (AE-28) wkg Stennis re search area. BLUETAIL 601, E-2C from Stennis, at 0245 wkg USS Santa Barbara (AE-28) re is airborne again and is holding them on radar. SAR comms re distressed sailing vessel in USB and why this is always an interesting freq (Ed.) RESCUE 1502 (USCG HC-130) wkg CAMSLANT Chesapeake re "nighttime search object" at 2256 in USB. (RK) CAMSLANT Chesapeake, VA at 1442 in USB wkg CG 6001, CG 6014. (TJ)  
**5715.1:** French Forces Tahiti (presumed) at 1125 in ARQ-M2 128.5/85, probably C.I. MNS/MOS to Mururoa but off before ID'ed. This one changes frequency every single day, 5-8 MHz range. (AWH)  
**5736:** Cuba? at 1500 in CW, "RSB RSB ZIA ZIA" into 5FLGs, weak/buzz tx, sounds like typical Cuban 5 MHz CW operation. (AWH)  
**5757:** HBD20, MFA Berne heard at 0901 in ARQ. (DG)  
**5764:** YL at 0241 in AM on Sat, w/5LG's in SS, gone at 0243. (SW)

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5780: CLP1 MFA Havana at 0300 in 75/425 RTTY msgs to Managua. (JR)  
5806.6: ZKLF in CW at 0840 w/ WX. (TS) ZKLF, Auckland meteo at 0500 in CW w/"vuv de zklf." //9458.6 and 13550 but heard nothing on 16349. sent 5fg wx till 0522 then, "run out of time transmission stops." At 0530 he was up again w/"cq de zklf" and "all ships from meteo Wellington" and clear text wx forecasts until 0547. (WT)  
5903.4: Cuban spook Atencion station at 1139 in AM. SS w/5FGs. (AWH)  
6200: Heard at 2256 in USB, tones, then music box heard at 2300, Swedish Rhapsody station, music box with 1234567890 count rpt twice. Then 2 5FG groups, "Achtung" then into 5FG traffic. each group rpt. Close w/"Ende". (CS) NIW: USCGC Willow (WLB-202) at 1854 in USB wkg NMN, CAMSLANT (on 6501.0) w/pp LANT area to req immediate medevac for two injured crewman struck by buoy (ID "B"). (Ed.)  
6270: ULX2, Mossad best in USB at 2032 also // 4880kHz. (TY)  
6315.5: KFS, San Francisco Radio, w/Sitor free sig, CW ID at 1120. (TY)  
6446.5: WLO Mobile Radio at 2310 in CW w/CW wheel. (SW)  
6535: 'Dakar' ATC wkg various A/C in USB at 0445. (TS)  
6586: Air Europa 158 at 0012 wkg New York for selcal check JR-AG, 767 reg. EC-276. Angola 658 at 0018 wkg Accra F310 est STM 0040 R979 at 0056, selcal CF-DJ. Both in USB. (TO)  
6604: New York Volmet at 2342 in USB w/aviation wx. (SW)  
6637: American 912 at 0522 wkg Cedar Rapids LDOC o/h GYV at 0517, FL 310. Big A 604 at 0444 wkg Miami Radio LDOC, departed Guayaquil 0422, ETA Miami 0822. Both in USB. (TO)  
6640: American 689 at 0312 in USB w/request for wx through New York. (TB)  
6643: TWA 840 at 0359 in USB w/selcal check through Berne LDOC. (TB)  
6658: YL/EE in USB at 1545 ann SYN2 phonetically. //8645 kHz. (TY)  
6667.1: Cuban stn at 1330 to 1800 on in USB, strong carrier w/ telco noises, no t/c noted. Suspect related to 6589 net that appears occasionally. (AWH)  
6694: TUSKER 12.413 SQD Greenwood. NS a/c. at 0340 in USB wkg Halifax Military w/att pp Greenwood base op's after QSY from 5717. (Ed.)  
6730: Andrews at 1816 wkg SAM 202 w/pp, switched to F64 (11214.0) where pp was continued to Howard meteo. (MF)  
6751: HUSKER CONTROL 155th ARW CP, Lincoln Muni Apt, NE at 0150 in USB clg HUSKER 25 no joy here after QSY from 9022.0 kHz. (Ed.)  
6761: Unid USAF air-to-air comms at 1552 in USB. (SP) (common air/air refueling & Mystic Star freq—Ed.)  
6768: SS/YL at 0118 in USB Sat w/5FG in progress. (CS)  
6769: SNN299, MFA Warsaw at 1009 in

POL-ARQ 100/250. (DG)  
6814.4: LJA30. MFA Oslo. Norway at 1205 in Twinplex 100/400. (DG)  
6840: EE/YL ann at 2200 in USB reptg "EZI" then into msg grps. (DB) (Mossad—Ed.)  
6844.5: FDY, French Air Force, Orleans, F at 1637 in CW w/mkr. (DG)  
6855: "Flight Following" at 2240 in USB wkg unid plane relaying ETA of 2027 local, then called PEMAIR a/c w/wx for Halifax at 2200. I've heard this LDOC before with no ID... the PEMAIR reference is the first I've heard an airline mentioned. Is this PEM AIR (PD) operations channel? This and 9060.0 remain unsolved LDOC stations for me. (TB) (Maybe one of our readers can help? Ed.)  
6868: Bored Man Cuban Spook stn at 1328 in USB. SS/YL w/long counts, open carrier, at 1403 check into SS/OM traffic "X345" in typical format, at 1422 "final final" and quickly gone. (AWH)  
6870: FDG, French Air Force w/CQ CW mkr at 2040. 6871.5 kHz is listed in CFL. (TY)  
6959: Musical notes at 2101 in USB, then YL/EE repeating numbers, at 2102 tune again, into 5FG's at 2103, off repeating numbers twice and music notes. (KL) (Lincolnshire Poacher—Ed.)  
6996: WAR, U.S. Army, Ft. Meade, MD at 1800 in LSB clg CQ, QSX 7232. nothing heard there in reply. Armed Forces day operation. (AWH)  
7358: AAE, Army MARS Station Fort Sam Houston, TX in USB at 0336, and again at 0437 w/75 bd RTTY test traffic then message from Secretary of the Defense in honor of Armed Forces Day. (SW)  
7540: JSR Mossad best heard at 1530 hrd in USB. (TY)  
7727: SS/YL at 0527 in USB Sun w/5FG in progress. (CS)  
7802.2: Unid French circuit at 0230 in ARQ-E3 200/400, no t/c, probably ex-5374 which has been quiet lately. poss to N'djamena, 5397.7 M2 200/400 to Sarajevo has vacated also, to 7643.2. (AWH)  
7841.7: RFFXI, French Forces, Bangui, CAF at 0050 in ARQ-E 96/371 idling. (DW) (should be C.I. "XZI"—Ed.)  
7878: Unid stn 4XZ rptng "VVV DE 4XZ" in CW at 1445. What is this? (TY) (Israeli Navy, Haifa—Ed.)  
7980.5: XFU2, Veracruz, Mexico at 1320 in USB. odd non-marine freq but not that unusual for the Mexicans. wkg unid vsls w/posrep 21-52N. 86-58W, but stupid shipboard op kept changing coordinates while shore op kept requesting futile repeats. Ship op requested freqs for XBC, which were given as 3488 and 6976.6. At 1326 QSO ended and shore then clg m/v MOLINA or similar. (AWH)  
8089: Numbers stn at 1943 in LSB w/5FG's in GG. (CH)  
8122: HMAS Waller, Collins-class submarine at 1043 wkg Darwin Control, switched to a "3 Meg ship to shore freq". Back on 8122 at 1049. At 1045, Canberra Control wkg HMAS Protector (ASR-241) for radio check and msg servicing. Interesting as the Waller is a new-construction Collins-class submarine and the

Protector is used in support of Collins-class submarine sea trials. At 1044 next day, HMAS Darwin (FFG-04) wkg Darwin Control. All in USB. (DW)  
**8139.5:** FDE14, FAF Cazeaux, F at 0903 in CW w/marker. (DG)

**8271.7:** North Korean Embassy, Cuba at 0205 in 50/850 RTTY, 5FGs w/ 100's grp count subtotals at end of line every 10th line. Msg headers used format "376 24 05100 05100." 0215 into "Lenin School" CW on 8272.2 center freq. (AWH)

**8303:** LOR: Argentina Navy, Puerto Belgrano at 0037 in 75/173 RTTY w/wx in SS. (DW)

**8402.5:** YLFT: BATM Sergey Esemán 2150 RTTY 50/170 Latvian-flagged large autonomous long range/endurance trawler, w/TG listing types/total weight of fish catch transferred to TR Olympus using hull#/ID BATM-6123, also sends fish catch report for BATM-6125. BATM Vetsmilgravis. (Ed.)

**8464:** Lincolnshire Poacher lady passes 5FG's in USB at 2217. (TY)

**8465:** YL/EE at 1936 in LSB w/5FG's, heavy QRM. (CH) Abnormal Mossad transmission heard, YL opr at 1513 rptng only SYN2 phonetically for more than 30 min in USB. Another day YL opr rptng SYNOK2 phonetically at 1531. First time I've ever encountered such a curious Mossad call sign. Able to hear SYN Mossad best in USB 1449. (TY)

**8503.9:** NMG, New Orleans USCG at 2010 in 120/576 WxFax for Gulf of Mexico. (SW)

**8528.5:** EBA, Spanish Navy, Madrid at 1400 in CW w/wx t/c on Mediterranean Sea, other locations. w/QRM. (CH)

**8531:** WLO, Mobile Radio at 1609 w/CW wheel. (SW)

**8685:** IRM, CIRM, Rome, Italy w/"Free Radio Medical service and AMVER Service on 8/16 Mhz common K" in CW at 1103. (CH)

**8788:** Gdynia Radio, Poland at 0258 in USB running pp's for several vessels... one was for '3FR'. (TB)

**8828:** 'Honolulu Radio' in USB w/ VOLMET at 0437. (TS)

**8894:** Swissair 265 at 0044 in USB AG-EQ Wkg Algiers for selcal check, AG-EQ, MD11 reg. HB-IWK. (TO)

**8903:** VP-BJA at 2339 in USB clg Niamey here twice no joy. (TO)

**8906:** Speedbird 9684 at 2344 in USB wkg New York for selcal check DH-CL. (TO)

**8930:** Austrian 514 at 2354 in USB wkg Stockholm R. w/pp to Ops in GR. (TO)

**8965.5:** L6R clg NAWS (spelled phonetically), 11F answers, L6R then ann 'Smart Bravo Smart Bravo' and reports 3 Foxes fired, hrd 2044 in USB. (RK) (may have been the term "Fox 3", which means a Phoenix (AIM54) missile fired. Fox 1 is the Sidewinder, Fox 2 is the Sparrow, and Fox 4 is the Amraam—Ed.)

**8968:** TOEHOLD clg McClellan at 1412 in USB, no joy. (RK)

**8970:** Stockholm Radio at 0222 in USB wkg an unid a/c who was just ending a PIREP. (TB)

**8971:** BLUESTAR at 1835 passing QSL time to RED LANCER 713, RL 712 req comms w/the watch officer (WO). (MF) FIGHTING

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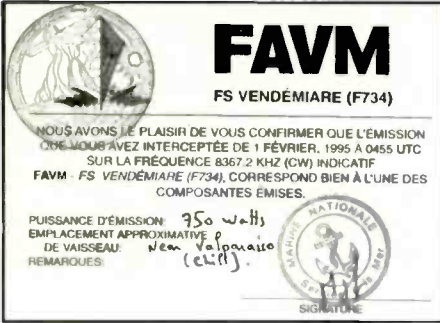
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CIRCLE 74 ON READER SERVICE CARD

September 1997 / POPULAR COMMUNICATIONS / 73



*PFC from the collection of Jim Pogue (TN) returned for his reception of the French Navy frigate Vendemiare (F-734).*

TIGER 720 wkg Hotel 4 Romeo, ea having a hard time hearing ea other. H4R later called BLUESTAR (?) and had them call 720. (FT 720 is probably a P-3C-II.5 of VP-8 "Tigers" at NAS Brunswick, while BLUESTAR is reportedly the P-3 Patrol Sqd Duty Office at NAS Roosevelt Road, PR—Ed.) FIGHTING TIGER 725 at 1745 wkg TIGER OPS re in-flight emergency of bird strike on canopy. All in USB. (RK)

8975.5: As Paul Harvey would say: "Here's a strange!"—Hrd the word 'tiger' spelled out in CW for 10 mins, then OM/EE spelled out 'G-H-A-N-P' in NATO phonetics, then read first few lines of William Blake's 'Tigerr Tiger' and off w/"This is Star Tiger. OUT." Hrd starting at 0100 & ending at 0120. (RK) 8987: MKL, RAF Pitreavie (Northwood), w/M7J DE MKL heard at 1110 in CW, then w/wx. (CH)

8992: MacDill at 1846 w/pp for WAFER 740 to unid. (MF) DRAGNET UNIFORM (?) w/pp to RAYMOND 24 (Tinker AFB) via Andrews at 1949 in USB. (RK) (E-3 AWACS reportedly out of the 966th Airborne Air Control & Training Sqd (AACTS), 552nd Air Ctl Wing (ACW) at Tinker AFB, OK—Ed)

9016: RESCUE 860 (C-130) wkg PONY OP's re search for missing A-10 that crashed in Colorado, hrd 0200 in USB. (RK)

9041: 5YE, Nairobi Meteo, Kenya at 0034 in 100/769 RTTY w/RYS & 'CQ de 5YE'. At 0040, w/synoptic wx. (DW)

9048: Polish Embassy, Paris, F at 1203 in POL-ARQ 100/250. (DG) 9130: YL/EE rptng EZI phonetically in USB at 2301. (TY)

9218: The Counting Station at 0017 in USB, EE/YL/3/2FG in progress. End at 0023, so not a 215 count msg. This station appears to be sending real traffic, regular Wednesday 0000z sked. (CS)

9227: PWX33, Brazilian Navy, Brasilia at 0026 in 75/796 RTTY w/RYS & 'ZRH1 de PWX33'. (DW)

9251: Lincolnshire Poacher lady passes 5FG's in USB at 2137. (TY) Same at 2200, YL/EE w/5FG's, jammed, to 2245. (RK)

9253: At 0025, OM/SS in USB w/5FG phonetics. Live. Then a QSO w/ another OM/SS op, then more phonetics, then both stns were exchanging traffic? Non standard phonetics used (like "Digital" for D). (CS)

9320: OLX, heard at 0111 Tue in USB, in progress. (CS)

9983.7: RFFA, MOD Paris at 0011 in ARQ-E3 100/396 idling. (DW)

10051: New York Radio w/aviation wx at 1838 in USB to 1850, then Gander Radio to 1900, then back to NY. (MF2)

10125: VLB2 Mossad best in USB hrd at 1645. (TY)

10225.2: Various Tactical calls: at 1600 in FEC w/RYS & tfc, down at 1611. At 1613, into RTTY 45/161 with same msg format but different calls. Down at 1619. At 0621, ITA-5 (ASCII) 57/161 w/same msg format but also different calls. Down at 1633. At 1635, up w/CW (16wpm) w/same format tfc, but different calls. Down at 1648. Back into FEC at 1651. (DW)

10411: Unid at 1930 in ARQ, unknown language (Russian?). (BOZ)

10493.9: RFTJ, FF Dakar at 1716 in ARQ-E3 48/400 w/"CdeV" on C.I. "JFJ". (RH) (JFJ is RFTJF Port Bouet, 'to' Dakar—Ed.)

10952: HBD20, MFA Berne heard at 1351 in ARQ. (DG)

10991.7: RFFVAY, Sarajevo, Bosnia at 0257 in ARQ-M2 200/400, ch B running METAR wx w/ckt ID FKWB. (AWH)

11119: KAWN 75 bd RTTY at 1526 w/METAR reports. (SW) (AFS, Offutt AFB, Ne—Ed.)

11175: MacDill at 1752 wkg VIPER 01 w/pp Keesler Base Ops. (MF) Offutt at 1730 wkg BADGER 11 w/pp re transportation when they arrived & parking configuration. Bear 23 also being worked. (SW) ISRAELI 005 wkg McClellan GHFS w/pp Seymour Johnson AFB. CASEY 01 (KC-135 55th Wing, Offutt AFB, Ne) wkg Andrews for FAX #5, then w/pp Langley AFB meteo & CP, hrd at 1532. (RK) (Commander-in-Chief of Strategic Commands a/c—Ed.) All in USB.

11232: CANFORCE 3475 wkg Trenton Military for wx at KBDK (Albuquerque) Hrd at 0209 in USB. (RK)

11244: TRANSFIX wkg Thule for 'drop points, when asked for PI-REP, replied that it would be a compromise (?). hrd 0227 in USB. (RK) (Pirep is a Pilots Report, must have been a pp to a meteo stn. To give the aircraft type required in a Pirep app would have compromised the ID of TRANSFIX, which is a tactical callsign—Ed.)

11306: American 907 at 0431 in USB wkg Flight Support Lima LDOC, Peru, w/ARP RONIL, FL 330. (TO)

11455: KKN50 at 1700 in CW w/"QRA QRA QRA DE KKN50 KKN50 KKN50 QSX 8/10/12/15 K". (CS)

11491: The Counting Station at 1700 Mon EE/YL 3/2FG to 571, count 203, not in synch w/4645 or 4670. (CS)

11526: CIA Counting stn at 2100 in AM, This is app a Wednesday bdest as it wasn't there on Thur. YL/EE w/1 to 0 count for 10 mins, then 5FG's to 2145. (RK)

12186: Jamahiriyian News Agency (JANA) heard at 1842 in 50/170 RTTY the w/nx on Egypt. (CH)

12359: Herb, HLX498 at 2122 in USB wkg

various vsls w/maritime wx net, vsls in Caribbean area. (TJ)

12490.5: MN Oceantramp in ARQ at 2129 wkg shore stn w/msg in unid lang, re to a pump. (TS) (this may have been Polish vsl sending TG to Oceantramp, Szczecin, Poland—Ed.)

12505.5: ESGI, ML Kuusalu at 1640 in ARQ w/admin rpt to Tallinn from master KM Vilson. (RH)

12569: UDUR, Russian-flagged stern ramped super trawler/freezer RTMKS Admiral Starikov at 2135 in 50/170 RTTY w/admin TG's to Murmansk BVTS Sevryba using hull#/ID MA-1812 from master, KMD Pavlov. (Ed.)

12876: VAL, CCG Vancouver at 1653 in CW w/call tape. (DW)

12917: KLB, Seattle R. at 1650 in CW w/call tape. (DW)

12952.5: VIP, Perth Radio, Australia, w/CQ/CW mkr at 1050. (TY)

13043: FUV, French Forces, Djibouti Naval heard at 1512 in 75/850 RTTY w/RYS/ID & Testing 1234 etc., off freq, normally 13024.5 kHz. (RH)

13089: NMN, CAMSLANT Chesapeake in USB at 2223 w/computer-generated voice giving wx. (TS)

13113: YL ship-to-shore operator in USB at 1405 re OM on board unid vsl. She didn't believe that he was the real holder of callsign 3ERY5. (TS)

13270: New York Volmet at 2302 in USB w/aviation wx. (TJ)

13376.5: RETXX, Guardia Civil, Madrid, Spain at 1017 in ARQ 100/400 w/tfc. (DG)

13505: AAA6USA, U.S. Army MARS Central Gateway, San Antonio, Tx at 1530 in PACKET 300bd w/callups and tfc to various U.S. Army MARS stns. (DW)

13533: EZI Mossad best in USB at 1532. (TY)

13541: UNID at 1543 in ARQ idling, also w/selcall's NCTI & NCXT. K-Fuss lists ICRC on this freq. (DW) (U.S. Navy/Marine Corps MARS—Ed.)

13969: CLP65, Cuban embassy Managua in 75/425 RTTY at 1900, CLP1 on 12250. (JR)

13970: CLP12, Cuban embassy Lima in 75/425 RTTY at 1900 clg CLP1 (MFA). (JR)

14467: Navy MARS stn NNN0A10 at 1610 wkg NNN0NHK (unid stn) in USB w/pp's. (TS) (most NNN0Nxx calls are deployed units or military shore stns, no ID on this one—Ed.)

14487: Lincolnshire Poacher w/5FG's in USB at 1001, also //16084, //15682 kHz. (TY)

14531: Air Force MARS stn AFA2FK wkg AFA2ZS in 300 baud packet at 1932. (TS)

14901.7: MFA Cairo, Egypt in ARQ at 1141 w/tfc. (DG)

14912: DZFG, Belgrade, Yugoslavia, in 75/400 RTTY at 1430. (TS)

15016: MacDill GHFS at 1806 w/pp for AEROVAC622(C-141) to Kelly AFB meteo. (MF) OXIDATION wkg Croughton GHFS (UK) w/pp to 'GRAND FOX' at 1942. Changed freqs to 13200 then 11175. (RK) Both in USB.



**15682:** Lincolnshire Poacher lady passes 5FG's in USB at 1310, also // 14487 kHz. (TY)  
**16014:** CLP8, Cuban embassy Conakry in CW at 1500, CLP1 on 18710. (JR)  
**16109:** MFA Warsaw, Poland in POL-ARQ 100/250 at 1205. (DG)  
**16227:** Unid Cuban diplomatic in CW at 2000, freq listed for Cotonou, Benin. (JR)  
**16332:** MFA Bucharest at 1020 in RUM-FEC 164.5/375 w/"circulara" t/c re NATO/Moscow accord. (RH)  
**16343:** CLP4, Cuban embassy Bisseau in CW at 1800 clg CLP1 (MFA) on 18054. (JR)  
**16349:** CLP65, Cuban embassy Managua in CW at 1900 clg CLP1 (MFA). (JR)  
**16352:** CLP12, Cuban embassy Lima in 75/425 RTTY at 1300 w/5FG's to CLP1, MFA. (JR)  
**16356:** CLP8, Cuban embassy Conakry in 50/425 RTTY at 1400, CLP1 on 17915 qsy to 18710. (JR)  
**16798.6:** UCBW, RTMS Nikifor Pavlov at 0822 in 50/170 RTTY w/TG'S to Novorossiysk Rdo (UGW) fm KMD Kalmykov. (RH)  
**17427:** CLP23, Cuban embassy Lagos in CW at 1600. (JR)  
**17445.5:** 5YE, Nairobi meteo heard at 1150 in 120/576 FAX, nice surface analysis chart. (RH)  
**18046.7:** MFA Lisbon, Portugal in ARQ at 1627. (DG)  
**18332:** CLP44, Cuban Embassy, Harare heard at 1715 in 50/425 RTTY w/t/c to CLP8, Cuban Embassy Conakry. Heard at 1750 QSY to 18528. (JR)  
**18415:** 8BY, unid in France, in CW at 1235. (DG) (reportedly French intelligence—Ed.)  
**18416:** Unid Cuban diplomatic CW at 1500 (poss Hanoi). (JR)  
**18528:** CLP44, Cuban Embassy, Harare at 1750 in 50/425 RTTY w/circular's to CLP8, Cuban Embassy Conakry, who is on 16357 in CW thru entire sked, Harare also sends his sked. (JR)  
**18552:** V5G, MFA Bucharest at 1018 in RUM-FEC 164.5/340 crypto, then press circulara at 1050. (RH)  
**18638:** CLP22 Hanoi in 75/425 RTTY at 1700, w/SS to (MFA), relays msgs fm Pyongyang & Phnom Pehn. (JR)  
**18639:** CLP44 Harare in 50/425 RTTY heard at 1630 with SS nx fm EMBACUBA Zimbabwe. (JR)  
**18993.5:** SPW, Warsaw Rdo, Poland in FEC at 1800. (DG)  
**19081:** Unid Cuban diplomatic in 50/425 RTTY, CLP19 mentioned in chat at 1639. (JR)  
**20015:** CLP1 in CW at 1600 clg CLP65. (JR)  
**20018:** CLP1 in CW at 1640 clg CLP56. (JR)

This month's contributors: (AG) Alan Gale, UK; (AWH) Albert W. Hussein, FL; (BOZ) Richard in Iceland; (CH) Chris Halinar, Germany; (CS) Chris Smolinski, MD; (DB) Dean Burgess, MA; (DG) Dave Gentile, UK; (DW) Dave Wright, TX; (JR) Joe Richards, FL; (KL) Kenny Love, SC; (MF) Mike Fink, FL; (MF2)

Michael Fleming, AL; (RH) Robert Hall, Capetown, RSA; (RK) Richard Klingman, NY; (SP) Scott Pastor, MI; (SW) Sue Wilden, IN; (TB) Tim Braun, VA; (TJ) Terry Jones, SD; (TO) Tony Orr, VA; (TS) Tom Severt, KS; (TY) Takashi Yamaguchi, Japan; (WT) Wade Taylor, CA; and (Ed.) ye editor in Ohio. Thanks to all. ■

### Pirates Den (from page 38)

**Radio Free London**, tentative, **6399.5** heard at 2248 with English-accent announcer. (Pearce)

**Radio Marabu**, **6950.85** heard at 1520, including P.O. Box 1166, 49187 Belm, Germany. (Pearce) **6950.9** heard at 1509 sign on to close at 1547, DJ "Lord Litter." (Layden)

**Radio USA**, **6950.6** at 1400 to past 2000 with Mr. Blue Sky, sounded like a number of programs broadcast one after the other. (Pearce) 0131 on 6950. (Silvi)

**Cherokee Radio**, **6955 USB** at 0257. The announcer said be patient; will QSL logs in the ACE. (Silvi)

**Radio Eclipse**, **6955 USB**, briefly to 0116 close. (Silvi)

**Radio Free Speech**, **6975** at 2350 at 2312. Other logs at 0016, 1354. (Silvi)

**Radio Atlantica**, **6955 USB** at 0157 with initial test broadcast, "Fishhead the DJ" a.k.a. "Dr. Fishhead" and "Grandpa." No drop yet. (Silvi)

**Radio City**, **6975** heard at 2350, many IDs. (Silvi)

**Up Your Radio**, **6975** at 2242. Republican Bellyache edition. (Silvi)

**Rocket 99**, tentative ID, **6955 USB** at 1910. Might have been "Brocket" mentioned during program but the "B" sound not heard in the IDs. Funny ads for Brocket Funeral Home, news and weather bits. (Pearce)

**WSRR**, **6955 LSB** at 1439 very weak, some gospel-sounding music and 1-800-809-1101. (Pearce)

**WMFQ**, **6955 USB** at 1650. Also noted at 0136, 0236. (Silvi)

**WLIS**, **6955 USB** at 1704 sign on with 7<sup>th</sup> anniversary show. (Layden)

**Radio KAOS**, **6955 USB** at 0018 sing on with farewell show. (Layden)

**KIWI**, **7475 USB** at 0717. Radio Northsea, then Cougar Radio, then KIWI for 14 minutes at end. (Silvi)

**WPRS**, **6955** heard at 1648. Broadcasting an old radio program "The Unknown World Of..." (Silvi)

Wow! First rate! Keep it up, folks! Another batch of loggings coming your way next month. ■

### Tuning In (from page 4)

know what to expect, they emulate the one thing that they have had more public exposure to—CB. Most of these newcomers will learn fairly quickly that amateur radio has its own "lingo" which does not typically include "10-4" or "What's your 20?" but rather "roger" or "affirmative" (and several other choices) and "QTH" or perhaps even more simply, "location." That writer asserted that there is more CB lingo on 2-meters than "out of band." I haven't bothered to count; but I don't think that such comparisons have much validity in light of my comments about new ops who simply need to learn "ham lingo."

As a further point about freebanders that gives them a very considerable black eye amongst hams is the freebander who decides to drop in on the 10-meter amateur band, quite uninvited. I have had to put up with these types before—so have quite a few other hams. It is exactly this kind of attention that causes freebanders to be a target of scorn. To those freebanders who otherwise run a clean operation, I challenge them to go legal and get a ham ticket. There's plenty of spectrum that's even better than the 11-meter area for the use of those operators who will simply get legally licensed. All of us radio hobbyists should run a clean, legal operation.

While the FCC may be short some enforcement funding currently, you would be foolish to bet that they will never get it back. And if you get caught operating an unlicensed transmitter in an out-of-band area without an *awfully* good reason, you may NEVER be able to legally operate again. Why take that chance? C'mon people, you don't really have a good excuse for what you're doing. Get legal. STAY legal. And most of all, when you do so, HAVE FUN. That's the whole point of having a hobby, even though some people forget that now and then. And yes, you CAN have fun *without* freebanding and breaking the law.

Consider that an open invitation from one ham to go legal, operate legal and STAY legal and ENJOY your right to operate in the radio spectrum that has been set aside for "hobby" use. The amateur radio offers a tremendous variety of techniques; but there is also room for just what I hear most freebanders doing—simple ragchewing.

You don't need to be out of band, you don't need to cuss and swear, you don't need a kilowatt and you don't need to splatter over half the spectrum. C'mon in and learn how to do it legally, effectively, and enjoyably. Find an Elmer and just do it! ■

# The Ham Column

BY KIRK KLEINSCHMIDT, NTØZ

GETTING STARTED AS A RADIO AMATEUR

## Build It Yourself!

Back in the “good old days,” communications superstores hadn’t been invented, there were no toll-free “800” numbers and the compact, do-everything transceiver was an outright impossibility! Hams who wanted radios—receivers, transmitters, whatever—usually built them from scratch after scrounging up the parts (which, they say, was half of the fun).

Today, of course, our rigs have every modern convenience, and then some. Digital displays track our operating frequencies to the nearest Hertz, powerful DSP chips—supercomputers in their own right—filter and massage our receiver audio, and a multitude of gadgets and handy “RF tweaking” controls are never more than a moment away.

Yet for many hams, despite the compelling performance of modern radios, the mystique and satisfaction that accompany building and using radio gear you’ve built yourself is in a class by itself. Believe me, when you make a contact—any contact—with a low-power transmitter or simple transceiver you’ve assembled from raw parts, you’ll feel just like you did when you made your first contact. And unlike your ham radio programmers, you won’t have to go it alone and build everything from “scratch and schematics.” Quality amateur radio kits ranging from simple station accessories to powerful multiband transceivers are more plentiful than ever before—including during the “good old days.”

In the ‘50s and ‘60s, for example, the electronic kit-building industry was ruled by Heath and a scattering of smaller companies. Tens of thousands of hams and soon-to-be hams assembled their kit-built stations, guided by impressively detailed, step-by-step assembly manuals. And while the giants of kit-building’s glory years are long gone, more than a dozen modern companies have stepped in to fill the void. Their products are nothing short of amazing and, collectively, the variety of radio-related kits is impressive.

Reflecting the changing face of kit-building, today’s kits include QRP rigs, CW filters, antenna tuners, station accessories, test equipment, and even a few VHF/UHF transceivers and an occasional multiband CW rig. Many magazine construction projects are available in kit form from one or more kit vendors.

### Doing It Yourself

What about tools? Most kits can be built using a soldering iron, wire cutter/stripper, pliers, a screwdriver or two and some solder. If you don’t have a well-stocked toolkit, chances are good that one or more of your ham friends does. So don’t be shy—building kits isn’t as difficult as it might seem. Be patient, study the assembly guide and go through assembly steps one at a time and you’ll have few problems, if any.

Regardless of your kit and its manufacturer, the first step in building any kit is to lay everything out on a clean, uncluttered surface and check each part against the parts list. Make sure



*The Ramsey SX-20, 20 meter SSB/CW transceiver kit sells for \$299.95. It's compatible with all ICOM style desk mics. (Courtesy Ramsey Electronics, Inc.)*

nothing’s missing and be sure the part values are correct! One trick used by veteran kit builders is to write each part’s value on a small piece of masking tape (remember to stick the tape to each part!). Spending a little extra time at this early stage can save headaches later.

Once you’ve made sure everything’s OK, it’s time to dive in and get started! Here are a few tips to help make your kit-building process successful.

- ✓ Check off each step as you complete it. That way you won’t duplicate any of your efforts.
- ✓ Keep your soldering iron tip clean and bright. Wipe it with a wet sponge to clean off the crud. Your solder joints will be consistently good. (According to kit manufacturers, poor solder joints are the main cause of non-functional kits.)
- ✓ Always bend component leads away from foil pads and circuit traces on the underside of the printed circuit boards, and also make sure to trim the leads of soldered components as close to the circuit board as possible. This will greatly reduce the incidence of those nasty solder bridges.
- ✓ When attaching wires, tin each lead with a bit of solder. This keeps wires from fraying and helps make a strong mechanical connection.
- ✓ Although you may never need to use it, owning a “solder sucker,” a small spring-loaded device to help you unsolder components, can make correcting bugaboos a snap. RadioShack and

## Get Your Kits Here

This short list of kit suppliers, although by no means exhaustive, will get you started on the right kit-building track. If you have access to the worldwide web, then point your browser to <<http://pw2.netcom.com/~ac6v/pageay.html>> or <<http://www.arrl.org/tis/info/kits.html>> for a comprehensive list of amateur radio kit suppliers.

### Ten-Tec

1185 Dolly Parton Pkwy  
Sevierville, TN 37862  
800-833-7373  
<<http://www.tentec.com/>>

### Ramsey Electronics, Inc.

793 Canning Parkway  
Victor, NY 14564  
716-924-4560  
<<http://www.ramseyelectronics.com/>>

### FAR Circuits

18N640 Field Court  
Dundee, Illinois 60118  
(847) 836-9148 Voice/Fax  
<<http://www.cl.ais.net/farcir/>>

### Oak Hills Research

20879 Madison Street  
Big Rapids, MI 49307  
616-796-0920  
<<http://www.ohr.com>>

### S & S Engineering

14102 Brown Rd  
Smithsburg, MD 21783  
301-416-0661  
<<http://www.xmetric.com/sseng/>>

many parts jobbers sell these and other de-soldering tools for only a few dollars.

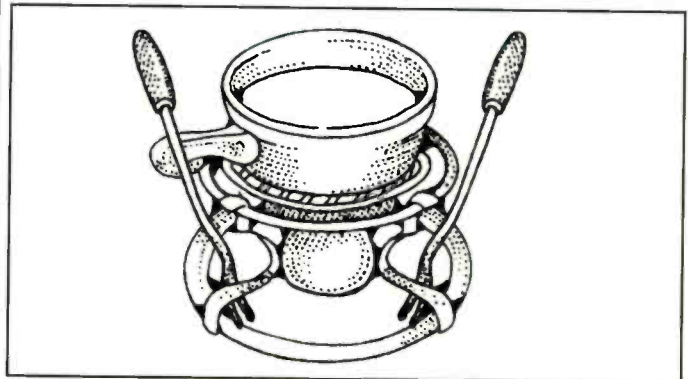
- ✓ Before powering up your new creation, double check the assembly instructions, look for bad solder joints and solder bridges, make sure there aren't any "left-over" parts sitting around and confirm the polarity of power supply wiring, etc.
- ✓ After inspecting your new kit, carefully apply power and follow any alignment and setup instructions.
- ✓ If your kit doesn't work after you've double-checked everything, ask a friend to take a look. I've been embarrassed a time or two when someone else instantly spotted a problem that had left me scratching my head!

## Oh, What a Feeling!

Now that your kit is working it's time for a hearty congratulations! Not only do you have a fine piece of ham radio gear that you made yourself, you're a little bit closer to experiencing the original magic of amateur radio—with a modern twist!

Your suggestions, letters—and QSL cards—are always welcome. Write to me at ARRL HQ, Department PCN, 225 Main St, Newington, CT 06111. See you on the bands! ■

## Loose Connection (from page 80)



the letter. Sorry you won't be getting free satellite TV, but you can replace those two missing forks at a thrift shop.

### Dear Editor:

*Me and my friend Tommy are experimenting with microwave communications. When no one's home, we take our microwave ovens out on our back porches, open the doors and aim them at each other (Tommy lives a block away—we have "line of sight" between our houses, except when trucks pass by between us. How can I hook up a microphone to the microwave? How can we make them transmit with the doors open?*

*Your pal,*

Jimmy R. Age 10

Whoa there, buckaroo! Guess this is the first time I've been glad for interlocks. Anyway, you've got the wrong kind of "microwaves." You'd never be able to hook up a microphone to them, and besides, a pair of \$9.95 walkie-talkies will out-do most appliance communication—except "porch-light morse-code," but that's only good at night—and it wears out the switch. When I was a lad, we used semaphore, which is Greek for "two"—it comes from semi, meaning "half," and phore, meaning "4." Half of 4 = 2. Have you thought of yelling? Are there free local phone calls where you live?

And finally, from Elephant Butt—no, that's Butte—Elephant Butte, New Mexico, Ms. Fannie Toukas writes:

### Dear Editor:

*I've studied a few home electronics courses and bought a schematic for my color TV. I know that I need to fix it, but I just can't seem to get any cooperation from our local parts store. I need an R101, and when I ask for it, the guy at the store says he needs a value. I tell him it can't be more than a dollar, and he shakes his head and goes into the back room. After fifteen minutes, I give up and go home. Do I need some sort of professional designation to buy parts?*

### Dear Fannie:

Not at all—you're just being victimized by the last remaining member of the "good-old-boy" parts network. Of course he has an R101. He's got a whole box full of them. You just need to give the secret password. To prevent others from hearing the password, you must get in really close—almost nose to nose, and whisper, sort-of like Clint Eastwood, "Get the part, punk—or do you feel lucky?" I know it sounds crazy, but once the parts guy knows you know the password, he'll stop what he's doing every time you walk into the store. Trust me, Fannie. ■

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**RF TRANSISTORS, TUBES** 2SC2879, SAV17, 2SC1946A, MRF247, 2SC1969, MRF455, MB8719, MRF454, 2SC2312, 2SB754, SRF3749, 4CX250B, 572B, 3-500, ETC. WESTGATE 800-213-4563.

**INTERNATIONAL SSB-CB CLUB**—looking for members in Georgia, Mississippi, Missouri, and Tennessee. You get call sign, directory, member card, award program, contest program and club magazine. We issue separate QSL cards for each state/country. Fee is \$20 money order mailed to A.S.A. DX-Group, P.O. Box 685, S-521 21 Falkoping, Sweden.

**TOP DOLLAR PAID. WANTED.** used (but not abused) Regency MX-3000 scanners (30 channel communications receiver) for back-ups and parts bins. Check your shack and vehicles for surplus or unused units (MX-3000's only). Advise condition and price wanted to Jan D. Lowry, 28243 Royal Road, Castaic, CA 91384-3028. (No calls please).

**EarthSound:** A portable listening device to hear the Earth. \$39.95 plus \$4 S&H. Humanform, P.O. Box 158486, Nashville, TN 37215.

**NOW YOU CAN DEAL DIRECT WITH THE SHED!**  
We only deal with CB's - we have to be good! The CB Shed, PO Box 585, Chouteau, OK 74337, 918-476-8656.

**1997 CATALOG, SCANNERS, CB radios, microphones, power suppls, hard-to-find electronics, catalog \$1.00 (refundable), 10 yrs. in business, GALAXY, BOX 1202, Akron, OH 44309.**

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**TUBE-TYPE CB RADIO COLLECTION sale!** Free List. Ed Clink, WA9PFB, 1285 New Salem Church Rd., New Berlin, IL 62670.

**WWW.RADIOFINDER.COM** for classic amateur & military shortwave equipment: Collins, Hallicrafters, Hammarlund, National, more. Joel Thurtell, finder@radiofinder.com; 1-313-454-1890.

**POPULAR COMMUNICATIONS, 1983-present, \$75.** Callbooks, US/DX, 1979/80/84, \$10 All. U ship, W9STB, 2608 West 1000 North, Michigan City, IN 46360.

**1997 PICTURE CATALOG, CB RADIOS, SCANNERS, INCLUDING NEW TRUNKING UNITS, POWER SUPPLYS, METERS, MICROPHONES AND HARD TO FIND ELECTRONICS, \$1.00 (REFUNDABLE), GALAXY ELECTRONICS, BOX 1202, AKRON, OHIO 44309. (13 yrs. IN BUSINESS).**

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**FOR SALE: SONY CRF-V21** visual World band receiver with built-in printer. One year old, rarely used. Price as of 1991 \$7,000. YOURS FOR \$1500. Call Yassin Abdela: (808) 841-1793 or write to: 963 Robello Lane #46, Honolulu, Hawaii, 96817.

**R9000 RECEIVER \$4000 CALL (314) 947-3917.**

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**MILITARY TECHNICAL MANUALS** for sale. Basic Electricity, Basic Electronics, Antenna Theory and mechanical books. Write or call for listing: ART'S BOOK WORLD, INC., 6822 22nd Ave., N., Ste. 175, St. Petersburg, FL 33710; phone 813-525-4880; or TOLL-FREE 1-888-414-BOOK; <http://artsbookworld.com>.

**DRAKE SW8, MINT CONDITION, MANUAL \$495.00, SONY ICF-2010 AS NEW BOXED ALL LITERATURE \$275, KENWOOD R-300 MINT, \$95.00. CALL JERRY, 954-720-1972.**

**NEW TRUNKING SCANNERS, CBs, POWER SUPPLYS, MICROPHONES, ALSO HARD TO FIND ELECTRONICS AND MORE!! 1997 PRICE PICTURE SHEETS \$1.00 (REFUNDABLE), GALAXY, BOX 1202, AKRON, OHIO 44309... OVER 10 yrs. IN BUSINESS!!**

**FREE DISK CATALOG!** Electronics, IBM Shareware and CD-ROMS. CATALOG 'N' POP'S SOFTWARE, P.O. Box 15003-HI, Springhill, FL 34609-0111, 1-352-688-9108.

**WANTED:** Square four blade socket power connectors or power cords for old type Bearcat III or IV scanners. Gary Jones, P.O. Box 467, Buckeye Lake, OH 43008.

**FOR SALE:** ICOM R71A SW receiver, \$575.00. Contact R. O'Donnell, 314-296-4673.

**WANTED:** Schematics or books for: Heath CB-1, EICO-147 Signal Tracer, R-122A/ARN-12 receiver. Will pay reasonable copying costs. W8MIA, FAX questions 805-498-3424.

**FOUND: AOR-2500 COMPUTER SOFTWARE/CABLE SCANNER SYSTEMS, ORIGINALLY \$150, ONLY 4 TO SELL \$49.95 EACH! ALSO CB RADIOS, SCANNERS (TRUNKING TOO), MICROPHONES, POWER SUPPLYS, METERS, THOSE HARD TO FIND ELECTRONIC PRODUCTS AND MORE! PICTURE CATALOG \$1.00 (REFUNDABLE), OVER 10 YRS IN BUSINESS! GALAXY, BOX 1202, AKRON, OHIO 44309; (330) 376-2402; 9:30-4:00 EST.**

**FOR SALE:** Terminal Node Controller (TNC) AEA PakRatt PK232 MBX, \$200.00. Contact R. O'Donnell, 314-296-4673

# The Loose Connection

BY BILL PRICE, N3AVY

RADIO COMMUNICATIONS HUMOR

## Bill Finds Some "Unusual" Mail

We have several mailbags here at *Pop'Comm* world headquarters. Our editor, Harold ("National Bureau of Standards") Ort gets to deal with all the normal mail—the ones that read, "Love your magazine—could you please include more articles on frabistan-tuning the Hallicrafters S-38D?," or "I think your take on that Gingrich-scanner business is all wet!"

It's not just Harold's corner office and big paycheck that has me envious—it's that *he* gets to read all the *good* mail—and write all those cute replies. Well—once again, Mr. "Hold my calls—I'm going to Hawaii" has left Ms. Barry in charge of the mailroom key, and she's just *powerless* against chocolate eclairs. Anyway, I've found a few letters on a back shelf that look as if Harold never got around to answering them—so while he's dipping his toes into a Pina-Colada, we'll now go to Upper Sandusky, where a Mrs. A.D. writes:

*Do they make a digital signal processor that my dentist can install into one of my fillings? I keep hearing these voices in my head, and it wouldn't be so bad if the one didn't come in right on top of the other. It seems that every time I'm about to get the lottery number or the winner of the seventh at Canton Downs, this other voice blasts in calling me "Skeeter," and telling me to check the meat and rice in my belly—and I don't even eat rice!*

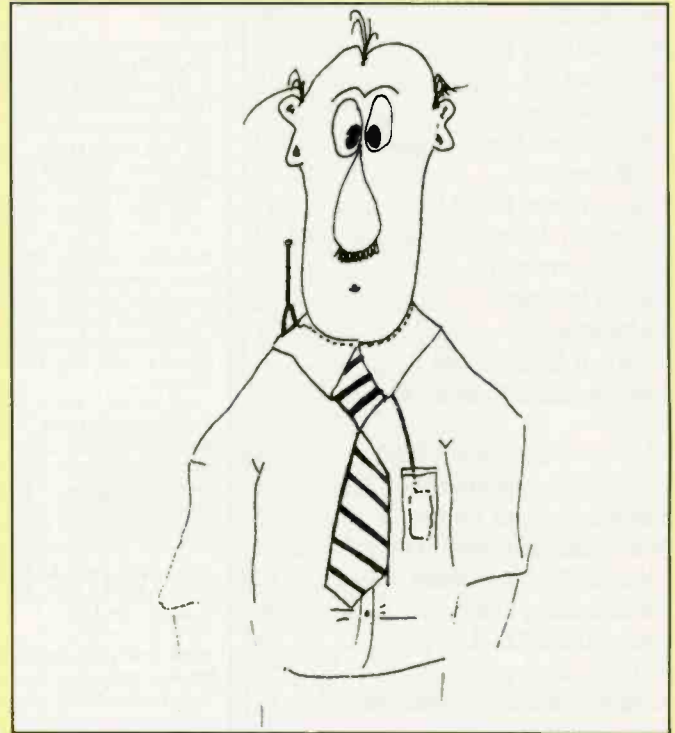
### Mrs. D:

Whatever you do, don't act on those voices! I called a scanner club in your area and they told me that the lottery and racing information you're receiving is not divinely inspired, but is coming from a mis-aligned satellite uplink in your neighborhood. Don't bet on the numbers you hear, because by the time you hear them, they've already won! With regard to that other voice—the one calling you "Skeeter"—it took us a while, but we found it's a superstore at the end of your street, calling a "skater" to zip down the aisle and check the meat price in the deli—so again—don't act upon that voice either. Your dentist should be able to eliminate the problem by installing a .01mfd capacitor across the wide part of the offending filling. If the filling's on top of a molar, have him use a surface-mount chip-cap, so you can chew on it.

And Mrs. H.J., from Heber City, UT writes this letter:

*Last year, we got one of those electronic fences for our dog. Whenever he gets near the edge of our property, his collar gives him a little electric shock, which gets stronger as he gets nearer the buried "fence." How hard would it be to wire my husband's shirt collars like that, and could I install some of that electronic fence near his favorite bar without the owner finding out?*

Oh my—these situations do get sticky, don't they?



### My Dear Mrs. J.:

Yes, you *could* wire your husband's collars like that, however he'd probably notice the 9-volt battery in his pocket, unless of course he's really as dull as your picture makes him out to be. You might get away with installing an electronic fence outside a country saloon, but I'm afraid the jackhammering and fresh concrete by the doorway would tip your hand to all but the most sluggish bartender. Perhaps a better arrangement would be to get him a filling from that dentist in Upper Sandusky. Once you found the right frequency, you could talk directly into his head, and within a week or two, you would probably have him stopping at the grocery store instead of his favorite hangout. The possibilities are endless.

Here's one with a picture enclosed:

### Dear Editor:

*I found this in my attic—it's painted avocado green. Is it some kind of microwave antenna or a small satellite dish? I've been afraid to plug it in for fear of radiation.*

Mr. J.M.D.,  
Tallahassee, FL

No need to fear, Mr. D., what you've got there is a fondue-pot. At first those two forks fooled me too—looked just like rabbit-ears, but the picture was sideways when you glued it to

(Continued on page 77)

"The VX-1R is smaller than most pagers!"

"Over 19 hours\* of use from the rechargeable lithium ion battery!"



"VHF, UHF, AM, FM, Air Band, Police, Fire--TV" too? Wow"

"Looks like Yaesu did it again!"

# VX-1R

Ultra-Compact  
Dual-Band Handheld

## The world's smallest HT with all the high-tech features you'd want in the world!

The ultra-compact size of the VX-1R Dual-Band is the first thing you notice as you cradle it in your palm. But the high-tech features make this radio one you must have now! Simple combinations, using seven buttons and one knob, control this marvel of engineering. One soft key touch, and wide receive VHF/ UHF--76~999 MHz RX (except cellular); 144~148, 430~450 MHz TX, or AM/FM Broadcast, Aircraft, Police, Fire--even TV, spring to life! Touch again for Yaesu-exclusives, SmartSearch™ and ARTS™, or Priority Channel Alarm. Built-in CTCSS and DCS Encode/Decode for 2m/440 amateur bands, CTCSS/DCS Tone Search, and Dual Watch, are included along with 291 Memory Channels in 9 banks with 500 mW power output. Backlit LCD Display shows 6-character alphanumeric capability; backlit keypad makes operation easy in dim light. And, although the VX-1R is the world's smallest dual-band HT, you get over 19 hours\* of use with just a 1 hour recharge from its long-lasting lithium ion battery! Big features, small size--the most satisfying combination in the world!



Actual Size  
Shown  
1 7/8" x 3 3/16" x 1 5/16"

### Features

- Frequency Coverage
  - Wide Multi-Band Receive
    - RX: 76~999 MHz\*\*
    - TX: 144~148, 430~450 MHz
- AM/FM/TV Broadcast Receive
- AM Aircraft/Public Safety Receive
- CTCSS Encode/Decode
- DCS Encode/Decode
- CTCSS/DCS Tone Search
- Dual Watch
- SmartSearch™
- Auto Range Transpond System™ (ARTS™)
- Priority Channel Alarm
- ADMS-1D Windows™ Programmable
- 1 Watt External Power Supply
- 80 Minute Rapid Charger
- Flexible Antenna, Belt Clip, Hand Strap
- \*\*Cellular blocked

\*Battery Life: 5-5-90 duty cycle.

FT-50RD  
Compact  
Dual Band  
Handheld



FT-51R  
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There is **no setup necessary**-Whether you're in the field or in the shop, the Xplorer is the portable, compact and **economical solution** for any two-way communications business.



Patent No. 5,471,408

## FEATURES

- Nearfield receiver, sweeps **30MHz-2GHz** in <1 second ( Cellular bands are blocked on all U.S. versions)
- Decodes **CTCSS**, **DCS**, and **DTMF**. Manually record tones into memory
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## SPECIFICATIONS

Freq. Range	30MHz - 2GHz
Modulation	FM Deviation
Freq. Response	50 - 3000Hz
Auto Sweep Time	<1 second
Input 50 Ohm	-59dBm @ 100MHz -25dBm @ 1GHz
Display	2 line LCD
Power	Internal NiCad



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