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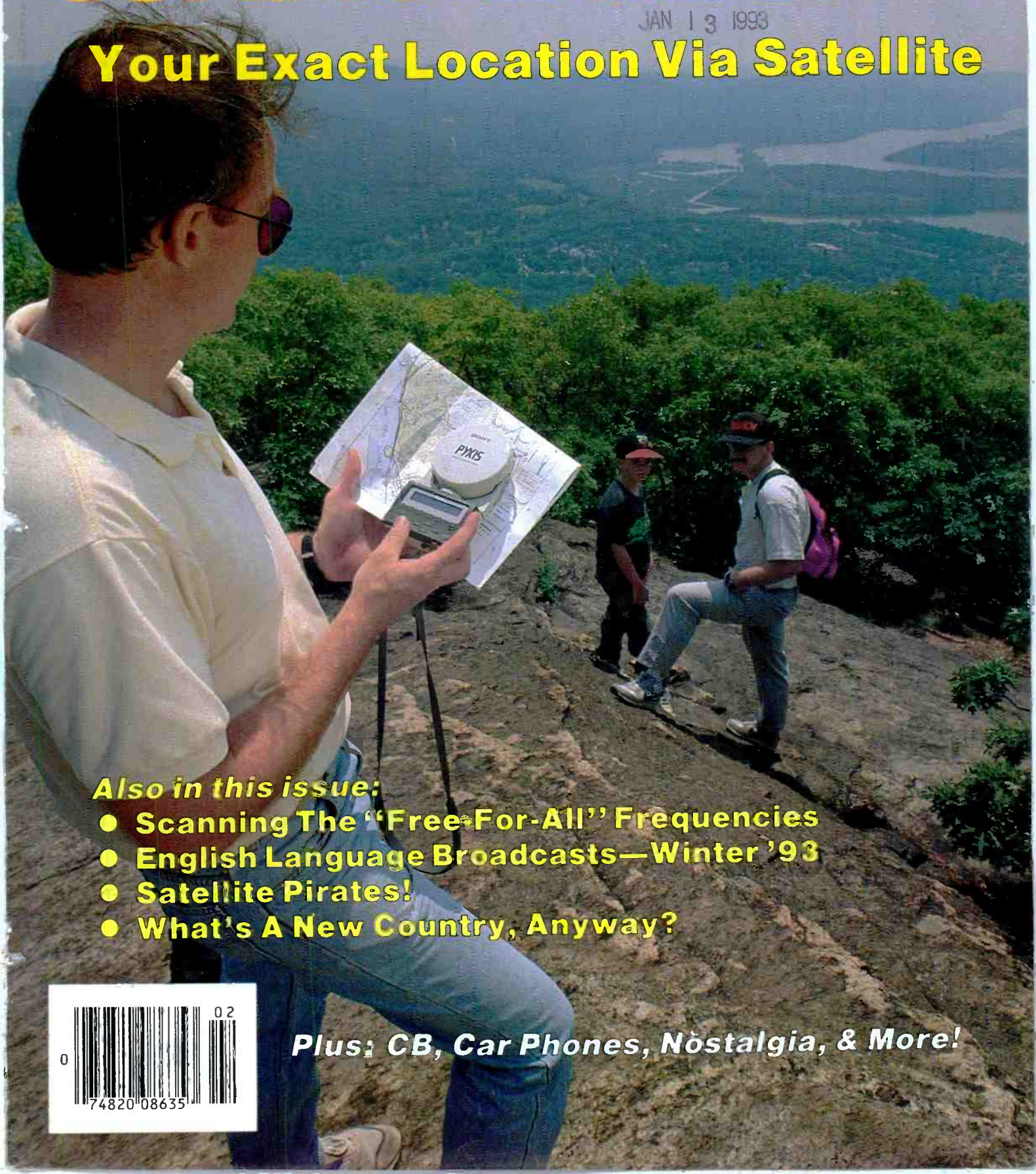
# POPULAR COMMUNICATIONS

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FEBRUARY 1993

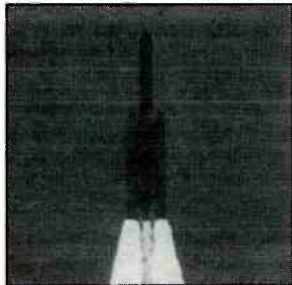
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**This month's cover:** Hiker takes a fix with a Sony Global Positioning System receiver at Bull Hill in Coldspring, NY. Photo by Larry Mulvehill.

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*Note: Radios listed above are all LW-MW-SW-FM digital. Contact us for other models.*

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## AN EDITORIAL

### The Day The Music Stopped

Almost exactly two years ago—it was during the Gulf War—I decided to finally go out and reward myself with that dream receiver I wanted. One of those super-receivers. The photo of the set hanging on my bulletin board had worked its magic on me quicker than my pin-up photos of either the yellow Ferrari or the 50 ft. cruiser.

I was lucky. At \$1,500, the receiver was, by far, the most economical thing on my wish list. There was every reason to believe that I could remain both solvent and married after the statement from the credit card company showed up in the mail.

Every DX listener should have one of these super-receivers. They are truly unbelievable, not only because of their many features, but because of their superb design, and performance. Not only that, the looks of these sets, and quality of their workmanship are constant reminders that you have an extraordinary piece of hardware as your DX'ing partner.

From the moment I turned it on, it was love at first sound. Shortwave broadcast signals never before sounded so good. SSB and CW stations could be separated from one another even under the worst pileups. RTTY signals could be copied through noise and interference that would have drowned them out of many other receivers.

Difficult to describe exactly what it's like to use one of these super-receivers. Did you ever notice the expression of rapture on

the faces of the people in the TV commercials when they taste the sponsor's margarine or granola cereal? That's something like the look I get when I turn this receiver on.

Let's just say that it's all too easy to get used to working with one of these radios. They pamper you, spoil you, and make you feel very special. When you turn the set on, and those dazzling sounds come pouring out and enveloping you in DX, it's so pleasurable that you keep coming back for more, and more, and more. This is not necessarily good.

In my case, one of those times when it wasn't good came about recently. That was the day the receiver decided to test my nerves. The radio had performed like a trooper for hours, and was then turned off. Later, when it was turned on again, it worked fine for only a minute or two. Then it freaked out. Amidst a brief spasm of flashing panel lights, clicking noises, and indignant beeping sounds—the receiver suddenly deprogrammed every one of its memory channels. Even the digital clock lost its programming during the seizure.

Several attempts to program even a single channel into its memory showed that the radio wasn't in the mood to buy this idea. Neither was the radio much interested in doing anything else other than making an occasional click or other hostile, or

*(Continued on page 74)*

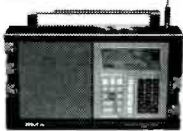
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*Staff review  
Popular Communications*

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*Bill Clarke  
73 Amateur Radio Today*



“Overall, the Drake R8 is simply the best radio we have ever tested for quality listening to programs... There's nothing else quite like it.”

*Lawrence Magne  
Monitoring Times*

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# MAILBAG

## LETTERS TO THE EDITOR

### Radar Detector Detractor

I found your review about a radar detector very offensive. I am not against radar detectors. I agree totally with the idea whereby if somebody is transmitting signals through my car or home, I have a right to detect those signals. I was offended by the review's reference to "waving" at the police as you go by, with perhaps having only one finger up. This is an unacceptable attitude.

Bob Thiele,  
Anaheim, Calif

*Why Bob, we were quite obviously referring to giving them a "thumbs up." We don't know why this got you worked into such a lather.—Editor*

### Braille Edition Available

Beginning with last April's issue, the National Library Service for the Blind and Physically Handicapped began producing Popular Communications in Braille. As one of over 600 readers who received the first issue, I wish to express my appreciation to all who made this possible. I have been an active Amateur for 23 years, an AM DX'er since I was old enough to turn

the dial, and a professional broadcaster since 1976. It is refreshing to have such a variety of information now available to me. POP'COMM is the one magazine that travels with me wherever I go. By the way, I am the coordinator for the Radio Reading Service of Mississippi, which provides radio services for the blind and print handicapped. There are over 100 such services in the United States, most operating on FM subcarriers.

Mike Duke, WB5ADC,  
Jackson, Miss.

What an absolute pleasure it is to finally receive *Popular Communications* in Braille. I don't know who got the idea for a Braille edition, but they should be congratulated for their decision. You will surely be hearing from the many others who are enjoying this edition. I enjoy profiles of radio stations. The recent article on cable radio in Chicago was very interesting.

Paul Burkhardt, WA1GXN,  
Watertown, Mass.

*Yes, a considerable amount of mail has arrived expressing appreciation for the Braille version of Popular*

*Communications. As they say, it was an idea whose time had come.—Editor.*

### No Big Surprise

I detected a sense of surprise and triumph recently in the national news media when Washington passed the law stating that there was yet another new law on the books to prevent the monitoring of cellular phone calls. No big surprise. In the March '92 issue, POP'COMM said that it was just merely formality until the pending bill was signed into law. What with millions of scanners already in the hands of the public, the whole thing seems rather pointless. What's it all about?

P. Champion  
Pennsylvania

*What it's all about is that, of course, it is pointless. But the public has had five years to realize that the ECPA was useless. This new meaningless law hopes to buy another few years of free ride out of an idiotic privacy "law," until digital technology kicks in. Glad to see you didn't buy the cellular industry's hype that they are peddling to the public about this supposedly "great" new law that supposedly grants cellular privacy—Editor.*

## Improve Your Scanning Coverage!

GRE America is proud to introduce a new family of products to enhance your scanning pleasure! First, GRE has designed the new **Super Converter 9001** for base model scanners. The 9001 converts 810 MHz - 950 MHz down to 410 MHz - 550 MHz. The 9001 is the perfect alternative to buying a new, expensive scanner covering the 800 MHz band. Next, GRE announces the new **Super Amplifier 3001** for base model scanners. The 3001 will increase gain by as much as 20 dB, and is engineered to help scanners with low sensitivity pull in weak signals. Both products use BNC connectors, (1) 9 volt battery and have an off/pass switch for returning to normal operation.



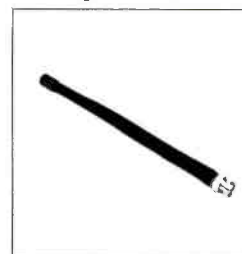
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# NRD-535D

*"Best Communications Receiver"*

World Radio TV Handbook 1992

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 A \$77 value. Offer valid through 3/31/93



*"Unsurpassed DX Performance"*

Passport to World Band Radio 1992

Setting the industry standard once again for shortwave receivers, the NRD-535D is the most advanced HF communications receiver ever designed for the serious DXer and shortwave listener. Its unparalleled performance in all modes makes it the ultimate receiver for diversified monitoring applications.

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- All mode 100 kHz - 30 MHz coverage. Tuning accuracy to 1 Hz, using JRC's advanced Direct Digital Synthesis (DDS) PLL system and a high-precision magnetic rotary encoder. The tuning is so smooth you will swear it's analog! An optional high-stability crystal oscillator kit is also available for  $\pm 0.5$  ppm stability.
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- A state-of-the-art RS-232C computer interface is built into every NRD-535D receiver.
- Fully modular design, featuring plug-in circuit boards and high-quality surface-mount components. No other manufacturer can offer such professional-quality design and construction at so affordable a price.



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Digital programmable 200 channel hand held scanner with raised button keyboard for easy programming of the following frequency ranges: 29-54 MHz, 118-174 MHz, 406-512 MHz, 806-956 MHz. \* Features include: Scan delay, memory backup, key pad lock, sidelit liquid crystal display, channel lockout, 10 twenty channel banks, direct channel access, automatic search, full one year factory warranty, 10 priority channels, Ni-Cad battery pack, AC adapter/charger, flexible rubber antenna carry case are all included. Size is 2-11/16" W x 1-3/8" D x 7-1/2" high. (Optional extended 2 yr. warranty \$29.99, 3 yr. extended warranty \$39.99.) (\* Excludes Cellular)  
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**SR-901**  
AVAILABLE ONLY  
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**ONLY! \$74.99** Each  
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Features include: 10 programmable channels, one touch memory programming, external speaker jack, 29-54 MHz, 136-174 MHz, 400-512 MHz, squelch, lockout, full frequency digital readout, AC or DC operation, retains memory up to 3 days without power, scan button. Includes AC adapter, telescopic antenna, and complete operating instructions. Size: 7 1/4" W x 2" H x 7 1/4" D. One year factory warranty. (Optional mobile cigarette lighter cord #901MPC \$4.99)

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**SPECIAL SALE PRICE \$289.99**  
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100 channel digital programmable mobile scanner, turbo scan up to 100 channels per second, lockout, priority, built-in automatic 2 second delay, dimmer control, back lighted keyboard, track tuning, direct programming of frequencies from front keyboard plus you can also program MR 8100 from your IBM compatible PC computer with software and cables included with scanner from Scanner World. Frequency coverage: 29-54 MHz, 118-174 MHz, 406-174 MHz, 406-512 MHz, 806-956 MHz. Dimensions: 7.9" W x 5.8" H x 1.9" D. Earphone jack, BNC antenna jack, DC power cord, mobile mounting bracket, internal memory backup, bank scanning, 10 banks of 10 channels in any combination.

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BEARCAT BC205XLT	239.99	(8.00)
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**\$99.99**  
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Our best selling mobile scanner, 16 channel, AC/DC, programmable, digital, AC/DC cords, telescopic antenna, mobile mounting bracket, weather search, priority, 29-54 MHz, 136-174 MHz, 406-512 MHz, external speaker and antenna jack

## UNIDEN BEARCAT BC 800XLT



**DIGITAL  
BASE  
SCANNER**

**\$249.99** (\$8.00 Shipping)

Receive police, fire, ambulance, cordless phones, marine, trains, weather, ham, stock cars, public service plus much more. Frequency coverage 29-54 MHz, 118-174 MHz, 406-512 MHz, 806-912 MHz (continuous), 40 channels, AC/DC operation, digital programmable, memory backup requires 2 AA batteries (not included), telescopic antenna included, AC power cord included, external speaker jack, external antenna jack. Dimensions: 9 1/4" D x 4 1/4" H x 12 1/2" W. Channel lockout, direct channel access, scan delay, priority, digital display, auto weather button, automatic search, track tuning.

## BEARCAT BC-100XLT

**100 Channel Digital  
Programmable  
Hand-Held Scanner**

**\$159.99**  
(\$7.00 shipping)

Our best price ever on a full featured complete package hand-held scanner. Manufactured by Uniden. Features include 11 bands of weather, aircraft, public service, trains, marine, plus more (29-54 MHz, 118-174 MHz, 406-512 MHz), 10 channel banks, 10 priority channels, lighted LCD display, earphone jack, channel lockout, AC/DC operation, scans 15 channels per second, track tuning. Special package deal includes following accessories: AC adapter/charger, rechargeable Ni-Cad battery pack, flexible rubber antenna, carry case.

Uniden. Features include 11 bands of weather, aircraft, public service, trains, marine, plus more (29-54 MHz, 118-174 MHz, 406-512 MHz), 10 channel banks, 10 priority channels, lighted LCD display, earphone jack, channel lockout, AC/DC operation, scans 15 channels per second, track tuning. Special package deal includes following accessories: AC adapter/charger, rechargeable Ni-Cad battery pack, flexible rubber antenna, carry case.

## BEARCAT BC-147XLT 16 CHANNEL BASE SCANNER

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Programmable, digital, AC/DC operation. Frequency coverage 29-54 MHz, 136-174 MHz, 406-512 MHz. Weather button, priority lockout button, squelch includes AC adapter, telescopic antenna.

## BEARCAT BC-142 XL 10 CHANNEL BASE SCANNER

**SPECIAL PRICE:  
\$79.99** (\$7.00 shipping)

10 channel version of BC-147XLT

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**Digital Programmable  
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BC-950 XLT covers the following frequencies: 29-54 MHz, 118-174 MHz, 406-512 MHz, 806-954 MHz (excludes cellular). Features compact size of 6-5/16" W x 1-5/8" H x 7-3/8", scan delay, priority, memory backup, channel lockout, bank scanning, key lock, AC/DC power cords, telescopic antenna, mounting bracket supplied, one year factory warranty, search, direct channel access, track tuning, service search including preprogrammed frequencies by pushing a single button for police fire/emergency, aircraft, weather, and marine services plus exclusive optional features never available on any scanner before. First is an RF receive amplifier for boosting weak signals for only \$34.99 plus a CTCSS tone board is available for only \$59.99 to make this the number one scanner available in the USA. Optional cigarette lighter plug #950 MPC \$4.99.

## MODEL: FB-911 ORIGINAL FIRE BOX PHONE

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13 memory phone, 3 direct access emergency memories, auto redial, ringer on/off, top light flashes when telephone is ringing, tone/pulse switchable, desk/ wall mount, front door closes for authentic fire box appearance, FCC approved. Size: 16"H x 8 1/2"W x 7"D.

## GM-1™ GLASS MOUNT SCANNER ANTENNA

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Frequency coverage 25-1200 MHz — only 22 inches tall. NEW REVISED DESIGN — no holes to drill — no glue needed. Complete with 17 foot cable, Motorola connector, and mounting hardware. Swivels to vertical position — performance unaffected by moisture on the window. Made in USA.

**SPECIAL  
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## GLASS MOUNT ANTENNAS FOR TRANSCEIVERS

Includes mounting kit and cable. Low Band, High band and UHF band include PL259 connectors. 800 cellular band antenna includes TNC connector.  
GM-27 27 MHz Low Band for CB \$39.99 (\$4.00)  
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# Scanning The Free-For-All Frequencies

## *You Never Know Who May Next Turn Up On An Itinerant Channel*

BY CHUCK ROBERTSON

**I**tinerant business frequencies are something of a world unto themselves. You're likely to hear anyone and everything on these wild channels—private eyes, criminals, community watch groups, search and rescue parties, sports teams, hot air balloons, hang gliders, campers, survivalists, carnivals, state fairs, scouts, businesses, and you name it. If they're on the go, you stand a good chance of monitoring them.

The low prices and convenient availability of handhelds using these frequencies has flooded them into the hands of the public. Anybody can buy them "over the counter," like a VCR, a CB, or a TV set. Our bet says that the major users are simply individuals, like your neighbors. It's two-way FM radio for the masses, and with better range than 49 MHz FM units.

Program your scanner with these footloose frequencies, and sooner or later you may well hear everybody in the nation. A few words of advice and explanation may help.

### **One For The Road**

Defined, a so-called "itinerant" channel is one that may be used by a licensed itinerant station for use at different unspecified locations for varying lengths of time. This is as opposed to the way other two way stations are licensed, where a base station is assigned to operate from one specific location. In the eyes of the FCC, communications systems consisting entirely of handhelds can qualify as itinerants, even if they are always operated at the same location, such as a store, country club, mall, etc. Itinerant channels exist in the Business and the Special Industrial Radio Services.

The frequency 151.625 MHz is easily the most popular itinerant channel. There are thousands of systems licensed there, with tens of thousands additional systems owned by individuals and companies that never bothered to obtain a license. You never hear call signs, anyway. It's anybody's guess if the FCC can or does attempt to monitor this frequency for enforcement purposes.

Easy availability of handhelds has made

them popular with street gangs, pot farmers, drug dealers, auto chop shops, burglary rings, and other questionable characters. On the other hand, law enforcement officers have turned up on 151.625 MHz, too.

Many over-the-counter handhelds can operate on other channels, or more than one channel. Business frequencies 154.57 and 154.60 MHz are the favorite alternatives, although they aren't specifically designated by the FCC for itinerant use. Other channels could turn up, too, so you could check the bands 151.655 to 151.955 MHz, and 154.515 to 154.54 MHz.

There are more than just handhelds licensed on 151.625 MHz. The FCC licenses base stations (110 watts maximum) and mobile units there. It's just that the base stations licensed on this frequency are permitted to be used at different temporary locations. A listing with this report provides just a sample of some of the licensees on 151.625 MHz.

### **Movin' On Up**

There are also UHF channels set aside for itinerant use, with 35 watts as the maximum. Try 464.50, 464.55, 469.50, and 469.55 MHz. Simplex, semi-duplex, and repeaters (output on 464 MHz) may be used.

These are primarily handheld frequencies. If the radios are equipped for additional channels, check out the 460.65 to 469.975 MHz band in 12.5 kHz steps. Give special attention to 462.575, 462.625, 462.675, and 462.7125 MHz.

### **Long Haulers**

There's low band activity, too. This is on 27.49 and 35.04 MHz. About one third of the licensees on 35.04 MHz operate VHF or UHF repeaters or trunked systems spread out over a wide geographic area. They will use this frequency only when their vehicles are out of VHF/UHF range, or when the VHF/UHF systems are temporarily out of service.

These frequencies have a lot of construction companies, truckers, private security, offshore construction, combines, engineering, and search/rescue teams. This winter,



*This Radio Shack BXT-120 handheld comes equipped to operate on the itinerant frequency of 151.625 MHz, and you can add a second channel.*

F2 skip will permit reception here from thousands of miles away. This 35.04 is a good frequency to monitor. In addition to domestic skip, it brings in Canadian fishing trawlers (some using speech scramblers). A Spanish station with an English-speaking dispatcher is there too, and he enjoys giving US itinerant users a lot of hassle. "You are on a US Air Force Frequency! Where am I? I'm here, man, but we are leaving now. We are going out the door."

As for 27.49 MHz, skip interference from illegal hobbyists (*outbanders*, *freebanders*, or whatever) has caused most legitimate businesses to flee the frequency. AM and FM are

### Frequency Sampler of Itinerants

These are a tiny fraction of the thousands of stations on the itinerant frequencies.

#### Look Who's On 35.04 MHz:

New Jersey Investigation Svc., Hackensack, NJ  
Illini Search/Rescue, Downers Grove, IL  
Pony Express Trucking, St. Joseph, MO  
Federal Express Corp. (464.50 MHz)  
Colo. Search/Rescue, Golden, CO  
Professional Offroad Racing, Mill Valley, CA  
Arizona Racing Assn., AZ, CA, NM, NV  
Gallione Racing Assn., Hasbrouck Hts., NJ  
Tidewater Crane & Rigging Co., Virginia Beach, VA

#### Look Who's On 151.625 MHz:

KKK Watch, Montgomery, AL (also 151.925 nationwide)  
Goodyear Blimp ground crew  
Border Stakeout, NM, TX  
Balloons Over Ohio, Plain City, OH  
Ringling Brothers B&B Circus (also 153.02)  
Pathfinders Way Wilderness Surv. Schl., AZ, ID, MT  
Broadcast News Service, NY City  
Chicago Bears  
USAir, DC  
Confederate Air Force, Harlingen, TX  
NY Jets Football Club  
All American Circus  
Hot Air Affair, Waterford, MI  
Pittsburgh Steelers  
Hang Gliding Center, San Diego, CA  
Thomas' Carnival

Chicago White Sox  
Green Bay Packers  
Arizona Balloon Port, Scottsdale, AZ  
CRB Research Books, NY  
Search & Rescue Assn., New England  
Knotts Berry Farm, Buena Park, CA (also 462.1625)  
Paramount Pictures, Hollywood, CA  
Orange Empire Railway Museum, Perris, CA  
Jefferson City Flying Svc., MO  
Purvis Airfield, Ellisville, MS  
Pinkertons NY Racing Security, NY  
Railways To Yesterday, Allentown, PA  
Los Angeles Dodgers

#### Look Who's On UHF 464.50, 464.55, 469.50 &/or 469.55:

Greenpeace Action, CA  
Bungee Adventures, Palo Alto, CA  
El Paso Search/Rescue, TX  
New England Missing Persons Bureau  
MTV Network, NY  
Commodore Cruise Lines, Miami, FL  
Tropical Cruises, Miami, FL  
Purolator Courier Corp. (also 154.60 nationwide)  
Airship Int'l., Bayside, NY  
Reuters Information, Hauppauge, NY  
Inphoto Surveillance Svc., Naperville, IL  
NBC Network, DC  
Warner Brothers, Burbank, CA  
ABC Network, New York, NY  
Daytona Int'l. Raceway, FL  
Walt Disney World, FL  
Balloons By The Sea, Salinas, CA

both permitted here, and you can sometimes hear tugboats on the Mississippi and Ohio Rivers using this frequency.

## Heavy Industry

The Special Industrial Radio Service (SIRS) caters to construction crews, road pavers, earthmovers, surveyors, crop dusters, demolition crews, oil delivery tank trucks, mining operations, shipyards, mills, plus various ranching, agri and heavy industrial activities.

SIRS exclusive itinerant frequencies are 43.04, 151.505, 158.40, 451.80, and 456.80 MHz. There are also frequencies that may be licensed either for itinerant or permanent location operations. These are 30.64 MHz, 31.28 to 31.96 MHz (40 kHz steps), 33.12 (2 watts), 35.28 to 35.52 MHz (40 kHz steps), 43.02 to 43.14 (20 kHz steps), 43.28 to 43.52 (40 kHz steps), 49.52 MHz, 49.54 MHz and 49.58 MHz.

## North Of The Border

Canada's itinerant frequencies are 34.06, 41.42, 138.405, 142.395, 167.73, 170.94, and 462.65 MHz. Low power itinerant activity is on 32.48, 32.52, 32.56, 462.50, and 462.90 MHz.

It is worthy of mention that sometimes, and for whatever reasons, these frequencies have sometimes been observed active in the US. The frequency 167.73 MHz, in particular, has been widely reported in use within the US, although it is actually reserved for federal operations. Do people bring Canadian two-way radios into the US and continue



*You can hear 'most anything and everything on the itinerant frequencies. The author snapped a photo of this hang glider enthusiast getting ready to zoom off into the wild blue yonder, communicating over one of these handheld radios.*

to use the equipment? It's a mystery, but never ceases to be worthy of a listen.

## On The Air

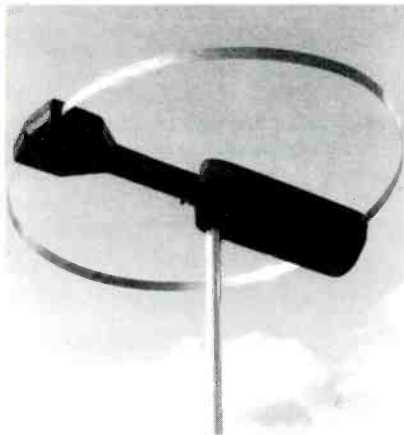
These itinerant frequencies are always in-

teresting. The radios are sold by sporting goods and camping shops, electronics chain stores, auto supply stores, and so many other places that you can tune in on a wonderful cross section of the public at work and play, up to good and no good. ■

# STEP UP YOUR SHORTWAVE SET UP.

## **ISOLOOP 10-30 HF PORTABLE ANTENNA.**

This is the one that gives you freedom of speech, whether you have to deal with restrictive covenants at home or in your apartment or condo, or if you are traveling in your boat, car, or RV. It features 150 watts, continuous coverage from 10 to 30 MHz, narrow bandwidth to suppress out-of-band signals. The IsoLoop antenna comes fully assembled with no mechanical joints. There is simply no better value in antennas!



## **PK-232MBX DIGITAL MULTI-MODE CONTROLLER.**

It can receive eight different types of data signals, including Morse code, Baudot, ASCII, Time Division Multiplex (TDM), WEFAX, NAVTEX, Packet and AMTOR. Also featured is SIAM which automatically identifies many types of digital signals, excellent software support for PC compatibles, Macintosh and Commodore 64 & 128 computers. This unit is essential for the serious digital listener.



## **AEA-FAX.**

Here's the superior way to decode multi-level gray fax images received by your general coverage receiver. Featured is AEA's exclusive on-screen tuning scope that allows you to simultaneously tune and receive. There is also Autolist for unattended image capture and save-to-disk, "daisy-chain" external RS-232 input allowing AEA-FAX to share a COM port with PK-232 MBX, up to 16 gray levels (VGA), support for EGA, CGA and Hercules formats. AEA-FAX prints to HP LaserJet or Epson compatible printers and includes hardware demodulator, 3 1/2" and 5 1/4" software disks plus a comprehensive instruction manual. AEA-FAX is a must for your set-up!

*To connect with the AEA dealer nearest you or for product sheets, call (800) 432-8873.*



*Connect with us*

**Advanced Electronic Applications, Inc.**

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# Where In The World?

## Handheld Receiver Reads Out Your Exact Location Anywhere In The World

**B**y constantly tracking the signals of four Navstar satellites, the Sony Pyxis Global Positioning System GPS (IPS-360) receiver provides a three-dimensional readout of vital navigational data. Within a minute or two, you learn your latitude, longitude, altitude, course, and speed. Your location is accurate to between 98 and 328 ft., no matter where you are in the world. And this device is small enough to be held in the palm of the hand. Including the four "AA" batteries it needs to operate, it weighs less than a pound and a half.

This small, lightweight, and accurate device is ideal for private pilots, recreational boaters, hikers, treasure hunters, mountaineers, people on safaris or scientific expeditions, and adventurers of every

description. In addition, it has many other commercial, governmental, and military applications since it can operate between 14 and 122 degrees F. It will provide accurate readings while it is in motion, even to speeds beyond 600 m.p.h.

Pyxis GPS has a very informative two-line forty-character LCD display. In addition to the basic information mentioned above, you can store up to one hundred checkpoints along your route. The receiver will let you know as you reach each of them. It tells you the distance and direction to the next checkpoint, and an estimation of how long it should take you to get there at your current speed/heading. It tells you if you have strayed off your planned course, and how to get back on the correct course.

The Pyxis also shows the correct time in hours, minutes, and seconds (based on your own local time).

The Pyxis GPS is amazingly simple to operate. It's also a lot faster and more versatile for calculating your location than a sextant or other traditional navigational tools. It works day and night, and in any weather. It updates its information every two seconds.

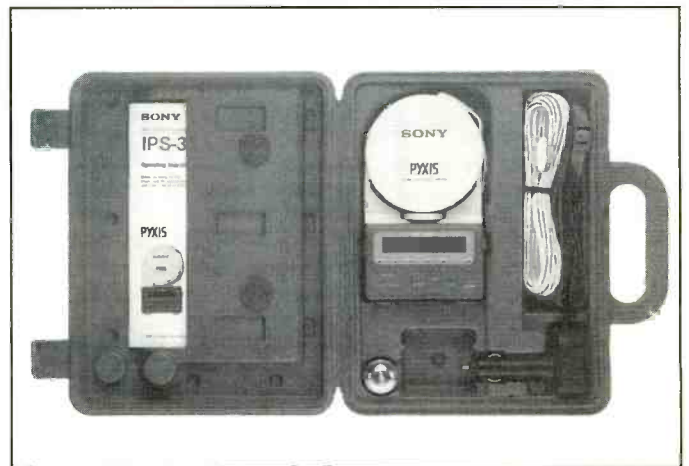
This comes in a carrying case with a number of different accessories for all types of applications. This is a very attractive package that offers wide appeal. The MSRP is \$1,195, and the receiver is available now.

It comes from Sony Corporation of America, Sony Dr., Park Ridge, NJ 07656.



← Sony's Global Positioning System (GPS) allows outdoor enthusiasts and adventurers to pinpoint their location anywhere in the world. All functions are completely automatic.

The Sony Pyxis IPS-360 GPS receiver comes complete with its own carrying case. ↓



# Scanners/Shortwave/CB/Radar

## COMMUNICATIONS ELECTRONICS INC.

### Emergency Operations Center

We're introducing new Uniden *Bearcat* scanners that are just what you've been searching for. Order your *Bearcat* scanner today.

## Radio Scanners

### NEW! Bearcat® 8500XLT-D

List price \$669.95/CE price \$369.95/SPECIAL  
Continuous Coverage • 500 Channels • 20 banks  
Auxiliary Tape Output • Reception Counter • VFO

Frequency range: 29.0000 MHz - 1,300.000 MHz. Continuous Coverage. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz. Due to the high demand for this product, allow 120-180 days for delivery A.R.O.

Signal intelligence experts, public safety agencies and *Popular Communications* readers have asked us for a world class scanner that can intercept just about any radio transmission. The new Bearcat 8500XLT gives you a revolutionary breakthrough in scanners because it has continuous band coverage from 29 MHz. through 1,300 MHz. This feature packed scanner also has 500 channels in 20 banks, VFO knob, turbo scan, weather alert, reception counter, dot matrix - alpha numeric illuminated display, 20 priority channels, automatic frequency storage, instant weather button, auxiliary tape recorder output, selectable delay, frequency step select and more. If you want a very similar model with frequency coverage from 29 MHz. through 956 MHz. and 200 channels in 10 banks with 10 priority channels, then order the lower cost Bearcat 890XLT-D for only \$259.95. Both scanners have the profile of the popular Bearcat 760XLT and operate from 12 Volts DC. An AC adapter is included for base station use. A magnetic mount antenna with a BNC connector part number USAMMBNC-D is \$39.95. Order your new Bearcat scanner from CEI today.

For more information on Bearcat radio scanners or to join the Bearcat Radio Club, call Mr. Scanner at 1-800-423-1331. To order any Bearcat radio product from Communications Electronics Inc. call 1-800-USA-SCAN.

## Great Deals on Great Scanners

NEW! Bearcat 8500XLT-D base/mobile	\$369.95
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NEW! Bearcat 2500XLT-D handheld	\$349.95
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NEW! Bearcat 350A-D info mobile	\$119.95
NEW! Bearcat 700A-D info mobile	\$209.95
NEW! Bearcat 148XLT-D base	\$99.95
Bearcat 800XLT-D base/SUPER SPECIAL	\$199.95
Bearcat 760XLT-D base/mobile	\$239.95
Bearcat 560XLA-D base/mobile	\$89.95
Bearcat 200XLT-D handheld/SPECIAL	\$208.95
Bearcat 100XLT-D handheld	\$149.95
Bearcat 70XLT-D handheld	\$129.95
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Bearcat 855XLT-D base	\$159.95
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Bearcat 172XL-D base	\$109.95
Bearcat 147XL-D base	\$83.95

### NEW! Bearcat® 2500XLT-D

List price \$649.95/CE price \$349.95/SPECIAL  
Continuous Coverage • 400 Channels • 20 banks  
VFO Knob • Auto Store • 20 Priority Channels • Reception Counter

Frequency range: 29.0000 MHz - 1,300 MHz. Continuous Coverage. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz. Due to the high demand for this product, allow 120-180 days for delivery A.R.O.

The Bearcat 2500XLT-D gives you pure scanning pleasure with continuous band coverage to 1,300 MHz. in a handheld scanner. The Bearcat 2500XLT scanner has 400 programmable channels with 20 scanning banks, 20 priority channels, automatic frequency storage, VFO knob, instant weather, speedy turbo scan, illuminated LCD display, reception counter, step select, and much more. Includes antenna, carrying case with belt loop, ni-cad battery pack, AC adapter and earphone. Order your Bearcat 2500XLT today.



## Shortwave

Grundig Satellite 500-D portable	\$359.95
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Grundig Traveller 2-D portable	\$79.95
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ICOM R71A-D base	\$989.95
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ICOM R7000-D base	\$1,149.95
ICOM R7100-D base	\$1,189.95
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Sangean ATS800-D portable	\$79.95
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Sangean ATS818CS-D with tape recorder	\$209.95

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NEW! Uniden GMR100-D UHF GMRS Handheld	\$169.95
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### NEW! Ranger RCI 2970-D

List price \$559.95/CE price \$389.95/SPECIAL

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MOA-D Monitor America - 2nd edition by Richard Barnett  
SMHV1-D Scanner Modification Book, Volume 1 by Bill Cheek  
SMHV2-D Scanner Modification Book, Volume 2 by Bill Cheek  
PWB-D Passport to Worldband Radio by Intl. Broadcasting Serv.  
LIN-D Latest Intelligence by James Tunnell  
NPD-D Uniden National Police Directory by Norm Schrein  
FBE-D Uniden Eastern Frequency Directory by Norm Schrein  
FBW-D Uniden Western Frequency Directory by Norm Schrein  
ASD-D Air Scan Directory by Tom Kneitel K2AES  
TSG-D Top Secret Registry of U.S. Government Frequencies  
TTC-D Tune in to Telephone Calls by Tom Kneitel K2AES  
CBH-D Big CB Handbook/AM/FM/Freeband  
CBR-D CB Radio Hacker's Guide  
TIC-D Techniques for Intercepting Communications  
EEC-D Embassy & Espionage Communications by Tom Kneitel  
CIE-D Covert Intelligence, Electronic Eavesdropping

## Two-way Transceivers

### RELM RH256NB-D

List price \$599.95/CE price \$289.95/SPECIAL

16 Channel • 25 Watt Transceiver • Priority Time-out timer • Off Hook Priority Channel

The RELM RH256NB is the updated version of the popular RELM RH256B 150-162 MHz. VHF sixteen-channel land mobile transceiver. RELM is the choice of many public safety agencies because this radio has built-in CTCSS tone and scanning capabilities as well as a priority function. The radio technician maintaining your radio system should also order programming instructions, part number PI256N for \$10.00.

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# Selected English Language Broadcasts

*Winter-1993*

BY GERRY L. DEXTER

**N**ote: There are hundreds of English language broadcasts aired every day on shortwave. This is a representative listing and not intended to be a complete guide. While every attempt is made at making the list as up-to-date as possible, stations often make changes in their broadcast hours and/or frequencies with little or no advance notice. Some broadcasters air only part of a transmission in English, or may run the English segment into the next hour or more. Some stations have altered schedules on weekends. Numbers in parenthesis indicate an English start time that many minutes past the hour. All times are in UTC, which is five hours ahead of EST.

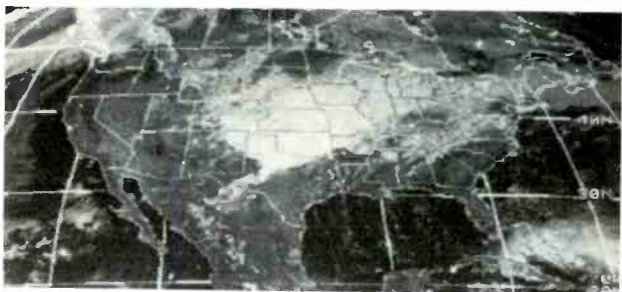
<b>Time</b>	<b>Country/Station</b>	<b>Frequencies</b>	<b>Time</b>	<b>Country/Station</b>	<b>Frequencies</b>
0000	China R. Int'l (R. Beijing)	9770, 11815		Deutsche Welle, Germany	6040, 6055, 6085, 6145, 9515, 9565, 9610, 9700, 9770, 11865
	WEWN, Alabama	7540		R. Sofia, Bulgaria	9700, 11720, 15330
	R. New Zealand Int'l	17770		R. Czechoslovakia	5930, 7345, 9580
	R. Havana Cuba	9655, 11950		R. Canada Int'l	9535, 11845, 11940, 13720
	R. Netherlands (30)	6020, 6165, 11835USB		R. Sweden	9695, 11820
	R. Moscow	7295, 9530, 9640, 9815, 11710, 11735, 11780, 11860, 11780, 11860, 12005		RAE, Argentina	11710
	R. Czechoslovakia	7345, 9580, 11990		R. Free Croatia (30)	7315 (WHRI)
	R. Vilnius, Lithuania	9530, 17605, 17690		V of Greece	9395, 9420, 7430
	Swiss R. Int'l	9650, 9885, 12035, 17730			
	BRT, Belgium (30)	9930, 1365	0200	R. Portugal (30)	9570, 9600, 9705, 11840
	Croatian R.	7315 (30, via WHRI)		Channel Africa	
	R. Pyongyang, N. Korea	11335, 13760, 15115		(R. RSA, South Africa)	9730
	R. Korea (30)	15575		R. Romania	5990, 6155, 9510, 11830, 11940
	VOIRI, Iran (30)	9022, 9765, 15260		VOFC, Taiwan	5950, 9680, 11740, 11945, 13675, 15400, 15435
	Spanish Foreign Radio	9530		UAE Radio (15)	15435
0100	HCJB, Ecuador	9745, 15155		R. Cairo, Egypt	9475
	RFPI, Costa Rica	7375, 13630USB, 15030, 21465		Swiss R. Int'l	6135, 9650, 9885, 12035
	RAI, Italy	9575, 11800		Vatican Radio (50)	7305, 9605
	V of Turkey	9445			
	R. Ukraine Int'l (30)	9670, 9685, 11950, 15180, 17605, 17690			



Time	Country/Station	Frequencies	Time	Country/Station	Frequencies
	R. Austria Int'l	9875, 13720	0700	AWR, Italy	7230
	R. Finland Int'l (45)	9560, 1175		R. Australia	6020, 11880, 15240, 15320, 17630, 17750
	R. Yerevan, Armenia (40)	11675, 11790, 15580		Christian Science Monitor	9455, 9840, 13760
	R. Havana Cuba (30)	13710		R. Moscow	7175, 7260, 7270, 7345, 9825
	R. Japan	5960, 15230		Voice of Free China	5950
0300	V of Germany	6045, 6055, 6085, 6120, 9535, 9545, 9640, 9705, 9770		BRT, Belgium	5910, 11695
	TWR, Bonaire	9535, 11930	0800	KNLS, Alaska	7365, 9615
	China Radio Int'l (Radio Beijing)	11680, 11840		WEWB, Alabama	9870
	R. Czechoslovakia	7345, 9810, 11990		HCJB, Ecuador	9745, 11730, 11925
	VOFC, Taiwan	9680, 9765, 11745, 15345		R. Korea, S. Korea	7550, 13670
	R. Sofia, Bulgaria	9850, 11720, 15160		Solomon Is. Bc Corp	9545
	R. Japan	11870, 15325, 17810, 17825, 21610	0900	FEBC, Philippines	9800, 11690
	Radio Havana Cuba	6180, 11970, 13700		AWR-Italy (30)	7230
	R. Austria Int'l	9870, 13720		R. Ulan Bator, Mongolia (10)	11850, 12015
	R. Ukraine Int'l	9670, 9685, 11950, 15180		R. Australia	5995, 9510, 9580, 11605, 15170
	R. Botswana	3356, 4830, 7255		R. Finland Int'l	17800, 21550
	R. Netherlands (30)	9590, 11720		Swiss R. Int'l	9560, 13685, 17670
	V of Greece (40)	9395, 9420, 11645		R. Netherlands (30)	9720, 11895
	UAE R., Dubai	11890, 11945, 13675		VOIRI, Iran (30)	9525, 9685, 11715, 11790, 11910, 11930
	R. Budapest, Hungary	6110, 9835, 11910	1000	Trans World R., Bonaire (55)	11815, 15345
0400	China Radio Int'l (R. Beijing)	11680, 11840		V of Vietnam	12020, 15010
	Channel Africa (R. RSA)	15220		BRT, Belgium	9905, 11695
	R. Romania Int'l	5995, 6155, 9510, 9570, 11830, 11940		All India Radio	15050, 17387, 17895
	R. Aum Shinrikyo, Japan (30, via Russia)	9470, 9685, 11675,  11850, 11980, 12040,		R. Korea, S. Korea (30)	11715
	R. Sofia, Bulgaria	9850, 11720, 15160	1100	HCJB, Ecuador (30)	11925, 15115, 17890
	R. Czechoslovakia	7345, 9810, 11990, 13715, 15355		Kol Israel (part)	17545
	R. Japan	17825		R. Pyongyang, N. Korea	6576, 9977, 11335
	R. Canada Int'l	9650, 9670		R. Thailand (30)	9655, 11905
	Swiss R. Int'l	6135, 9885, 12035, 13635		Channel Africa (R. RSA)	11900
	V of Turkey	9445		R. Japan	6120
0500	R. Austria Int'l (30)	6015		Adventist World Radio, Costa Rica	9725, 11870
	HCJB, Ecuador	11925		R. Korea, S. Korea	15575
	Kol Israel (part)	11588		Trans World R., Bonaire	11815, 15345
	Deutsche Welle, Germany	6045, 6120, 6130, 9535, 9670, 9690	1200	R. Austria Int'l (30)	13720
	Channel Africa (R. RSA)	7255		China R. Int'l (R. Beijing)	15210
	Christian Science Monitor	9455, 9840, 9870, 13760, 17780		R. Finland Int'l (30)	11735, 15400
	Spanish Foreign Radio	9530		R. New Zealand Int'l	9510
	Swiss R. Int'l	6165, 9535		R. Ulan Bator, Mongolia (non-daily)	11850, 12015
0600	R. Austria Int'l (30)	6015		KHBN, Palau	9830
	R. New Zealand Int'l (30)	9700		V of Vietnam (30)	12020, 15010
	V of Turkey	9445		R. Tashkent, Uzbek	9540, 15470, 17745
	Channel Africa (R. RSA)	15220		Radiobras, Brazil	15445
	R. Czechoslovakia	6055, 7345, 9505, 11990		R. Bangladesh	15200v
	R. Kiribati	17440	1300	KNLS, Alaska	7365, 9615
	Swiss R. Int'l	3985, 6165, 9535		China R. Int'l (R. Beijing)	11855
	RFPI, Costa Rica	7375, 13630, 15030		WEWN, Alabama	9870
	R. Korea, S. Korea	11810		R. Finland Int'l (30)	15400, 21550
	GBC, Ghana	4915		V of Vietnam (30)	12020, 15010
				R. Norway Int'l (Sat/Sun)	9590, 25730
				R. Sweden (30)	15240, 21625
				Polish R. Warsaw	6135, 7145, 9525, 11815
				UAE R., Dubai (30)	15320, 15435, 17775, 21605
				R. Tashkent, Uzbek (30)	9540, 15470, 17745

Time	Country/Station	Frequencies	Time	Country/Station	Frequencies
1400	Kol Israel (not daily)	11587, 11605, 15590, 15640, 17575, 7590		Christian Science Monitor	11580, 13675, 17510, 21640
	FEBA, Seychelles	11710		HCJB, Ecuador	15270, 17790, 17895
	R. Australia	5995, 7240, 11800, 11880		R. Pakistan	11570, 15550
	RTVM, Morocco	17595		All India Radio (45)	9950, 11620
	R. France Int'l	11910, 17650, 17695	1800	R. Kuwait	13620
	R. Finland Int'l (30)	15400, 17880		R. Omdurman, Sudan	9190
	V. of Mediterranean, Malta	11925		Iraqi Radio	13680, 15210
	R. Nacional, Venezuela (40)	9540		All India Radio	9950, 11620
1500	HCJB, Ecuador	11925, 15115, 17890		Radiobras, Brazil	15265
	KTWR, Guam	15610		Kol Israel	11587, 15640
	FEBA, Seychelles	9810, 15330	1900	R. Galaxy, Russia	11880
	UAE R., Dubai (30)	17830, 21700		Radio Kuwait	13620
	R. Pyongyang, N. Korea	9325, 9640, 9977, 13785		VOIRI, Iran (30)	9022, 15260
	R. Sweden	17870, 21500		R. Algiers, Algeria	9535, 17745
	R. Japan	9505, 11865		All India Radio	9950, 11620
1600	WEWN, Alabama	13615		R. Canada Int'l	13670, 15260, 17820
	R. Sweden	15270, 15870, 21500	2000	WEWN, Alabama	13615
	R. Pakistan	11570, 13655, 15555, 17555, 18827, 21495		Kol Israel	9435, 11587, 11605, 15640, 17575
	Polish R. Warsaw	7285, 9525, 11840		R. Aum Shinrikyo, Japan (30, via Russia)	11840, 12050, 12070, 13645, 15355, 15425, 15485, 17695
	BSKSA, Saudi Arabia	9705, 9720		R. Kuwait	13620
	R. France Int'l	6175, 11705, 12015, 15530, 17620, 17795, 17850		R. Damascus, Syria (05)	12085, 15095
	UAE R., Dubai	11795, 15320, 15435		V of Greece	7450, 9395
1700	RFPI, Costa Rica	7375, 13630USB, 15030		RFPI, Costa Rica	7375, 13630USB, 15030, 21645

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	R. Yugoslavia	6100, 7200
	R. Havana Cuba	17705
	R. Moscow	9610, 9640, 9735, 9880, 11605, 11735, 12070, 15385
	Spanish Foreign R.	9875
	R. Damascus, Syria (10)	12085, 15095
	R. Cairo, Egypt	9900
	R. Austria Int'l	6155, 9870, 12010
	R. Georgia Int'l (30)	11760
2200	R. Tirana, Albania	11825
	R. Yerevan, Armenia (40)	11920, 12050, 17760
	R. Ukraine Int'l	9670, 9685, 11950, 15180, 17605, 17690
	R. Sofia, Bulgaria (45)	9700, 11720, 15330
	R. Canada Int'l	5960, 9755
	Swiss R. Int'l	6030, 9810, 9885, 12035
	V of Free China	9850, 11915
	R. Vilnius, Lithuania (30)	9675, 9710
	R. Cairo, Egypt	9900
	Croatian Radio	6210, 7240, 9830, 13640
	UAE R., Abu Dhabi	7215, 9605, 11965
2300	R. Netherlands (30)	6020, 6165
	R. Canada Int'l	9755, 11730, 13670
	R. Sweden Int'l (30)	6065
	R. Sofia, Bulgaria	9700, 11660, 11720, 11950
	R. Pyongyang, N. Korea	11700, 13650

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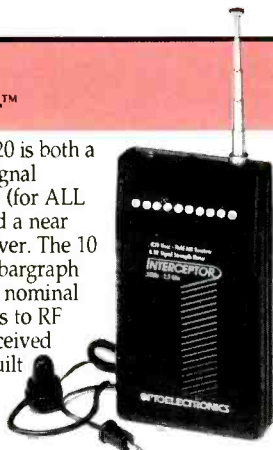
**ALL NEW TECHNOLOGY!!**  
The Interceptor follows & locks on even when frequency changes and intercepts ALL FM Two-Way Transmissions without gaps in coverage. It does not have to tune through RF Spectrum to capture signals.  
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Classified as

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## R20 AM Interceptor™

**NEW!** The R20 is both a sensitive RF signal strength meter (for ALL RF signals) and a near field AM receiver. The 10 segment LED bargraph responds with nominal 3dB increments to RF signal level received through the built in antenna.

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## Bench/Portable Multifunction Counter Model 8030

10Hz - 3GHz extremely High Sensitivity, High Resolution and Accuracy, includes a Bargraph,  $\pm 1$ PPM TCXO, Two Inputs, Adjustable Trigger Level, Trigger Variable and Hold Button

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Optional  $\pm 1$  TXCO: \$135.



## HandiCounter® Model 2810

Our full range counter with bargraph 10Hz to 3GHz. Ultra-high sensitivity, 4 fast gate times, outstanding quality-low, low price.

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## Handi Counter® Model 2300

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## APS104



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### Antenna Packs:

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Ant-Pak 2 (includes five assorted rubber ducks, 27-1000MHz – Save \$32.) .....\$ 99

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**NEW!** Ideal companion for use with the R10 FM Communications Interceptor™ to measure sub audible signalling tones off the air. The TC200 can also be used with

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# Radio Way Back Then

## A Look Back At Olde Tyme Radio

BY ALICE BRANNIGAN

When I got back from my vacation, my desk was *this* high with terrific material that had come in from our readers. I ought to take more vacations!

A letter showed up from John Browne, W6TTD, of Palm Desert, Calif. John also sent along an original photo of the WEEI transmitter building that he had personally snapped in the mid-1930's. This building was near Medford, Mass., and located on marshy ground. He wonders if any reader knows if this structure still exists.

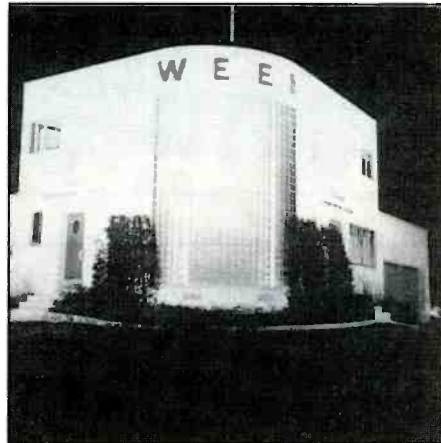
John attended the Mass. Radio School (Boston) in 1939, emerging with a First Class 'Phone Ticket. He landed a part-time job with WHDH, located in the Hotel Touraine, Boylston St., Boston. Our regular readers may recall the WHDH "We Have Dead Haddock" story we told in the December issue. When John worked at WHDH, it was owned by the Matson family, who were connected with the Matson Steamship Line. John's WHDH paycheck was \$12.50 per week, and he thought those were decent wages for a young man working part-time in 1939!

John's job consisted mainly of lugging around the station's two heavy amplifiers to locations where WHDH was conducting nightclub street interviews. These units were moved via subway. An announcer went along, too. When they arrived at a nightclub, the announcer would ask for a check in advance from the owner. If no check was forthcoming from the club owner, John then had to telephone and notify the station. The station would then play a half hour of recorded organ interludes instead of the live interview. John had to drag the heavy equipment back to the studio on the subway.

John, how much would they have to pay you to do that job, today?

### Cannibals Ate The Transmitters

Several years ago, a reader sent in a photo of a small rusting radio tower. It was taken on Fire Island, N.Y., not far from the old lighthouse and the present Coast Guard station. He said that there were stories that the tower had once been used by the *Voice of America*. We were asked if we could offer additional information, but we couldn't. This was not a site known to us as having been used by the VOA, nor did the one pathetic little tower look like it



This photo of WEEI, Boston, is an original that was snapped in the mid-1930's. (Courtesy John E. Browne, W6TTD.)



These nameplates from the Fire Island mystery transmitters identify them as U.S. Coast Guard Model T-133 types, dated 1945. (Photo Courtesy Ed Klein California.)

would have been of any value to the VOA.

Now comes a letter from Edmund F. Klein, Fallbrook, Calif. Ed advises that last summer he visited relatives who are park rangers on Fire Island. They took him into what he describes as "the old Coast Guard building." On the ground floor of the closed building, in the north wing, there are the remains of large transmitters. The control room is gone. Outside, there are the bases (only) for the towers (Ed did not specify how many).

The park rangers told Ed that they are unsure of the history of these transmitters.



Try talking through your hat with this 1936 UHF transmitter. What the well-dressed man-about-town was wearing. (Courtesy of David R. Chamberlin, Victoria, B.C.)



The News Staff at station WMTR, as they were in 1952. (Photo courtesy of Chris Edwards, N.J.)

Ed says that there are plates on them that state they were installed in 1945 for the Coast Guard. The rangers are under the general impression that the last use of these transmitters was for the VOA, but the transmitters were taken out of service because of RF interference. So the VOA story again pops up.

However, the park rangers were vague



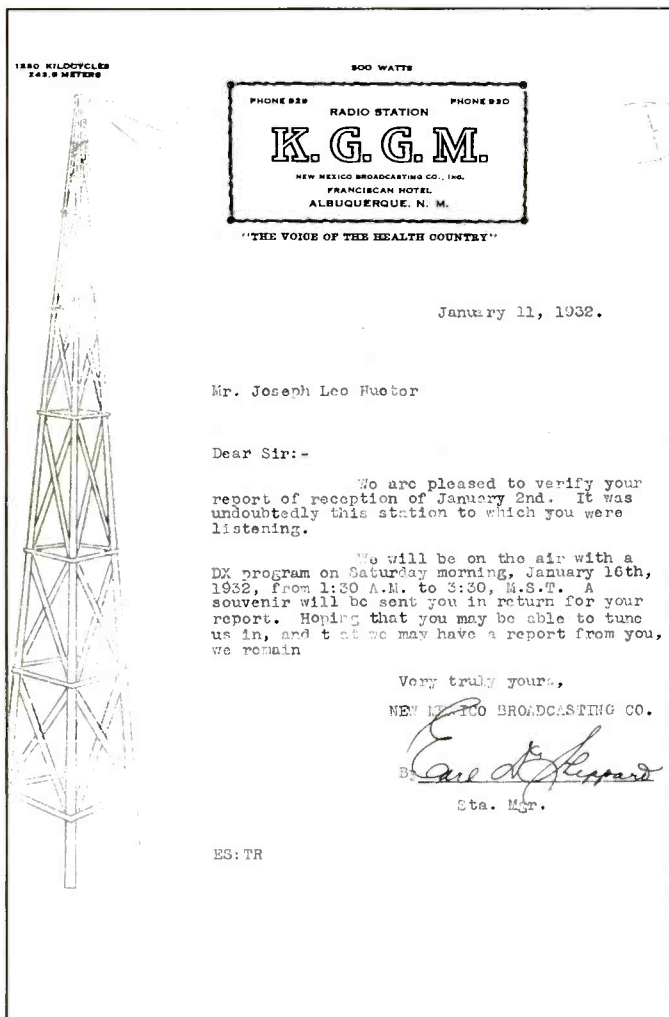
Everybody wants to be an announcer. That's what they said in 1937. Here's NBC's Chief Announcer (of their Central Division) during the mid-1930's, Everett Mitchell. Dig the cut of that-jacket! (Courtesy Chris Edwards, N.J.)



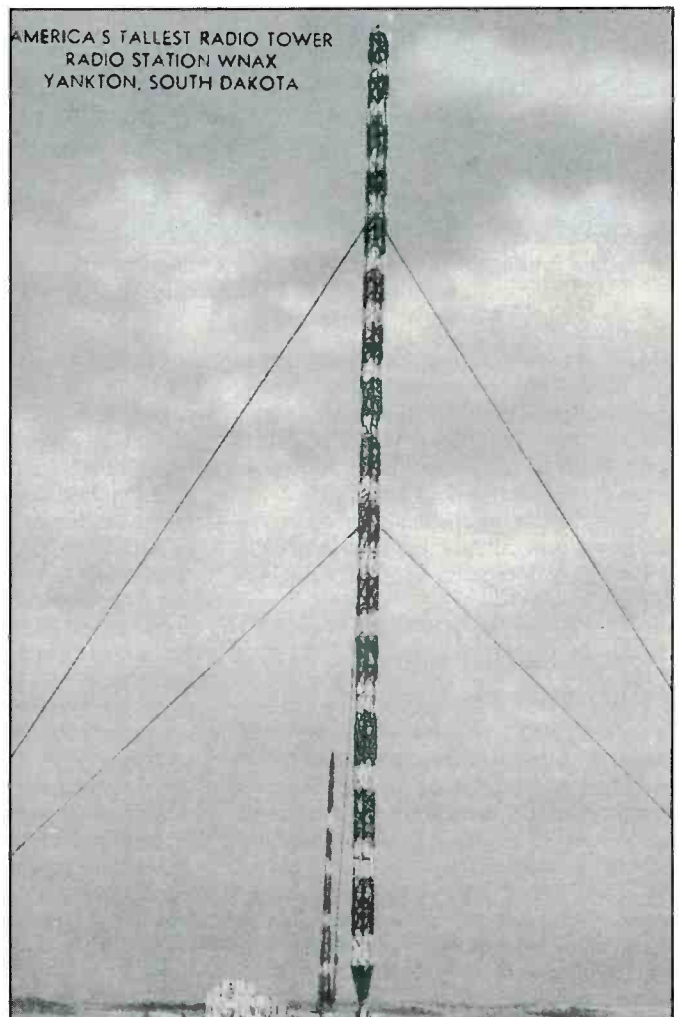
KGGM rode into Albuquerque in 1928 as a mobile broadcasting station. It ran out of money and became a long-term resident. (Courtesy Ann Hebenstreit, via the Albuquerque Journal.)

on their information. They have been hoping that someone would step forward and provide some hard facts. Ed reported that the transmitters are in poor condition and have been cannibalized, or stripped, by vandals or souvenir hunters (although the building is not publicly accessible).

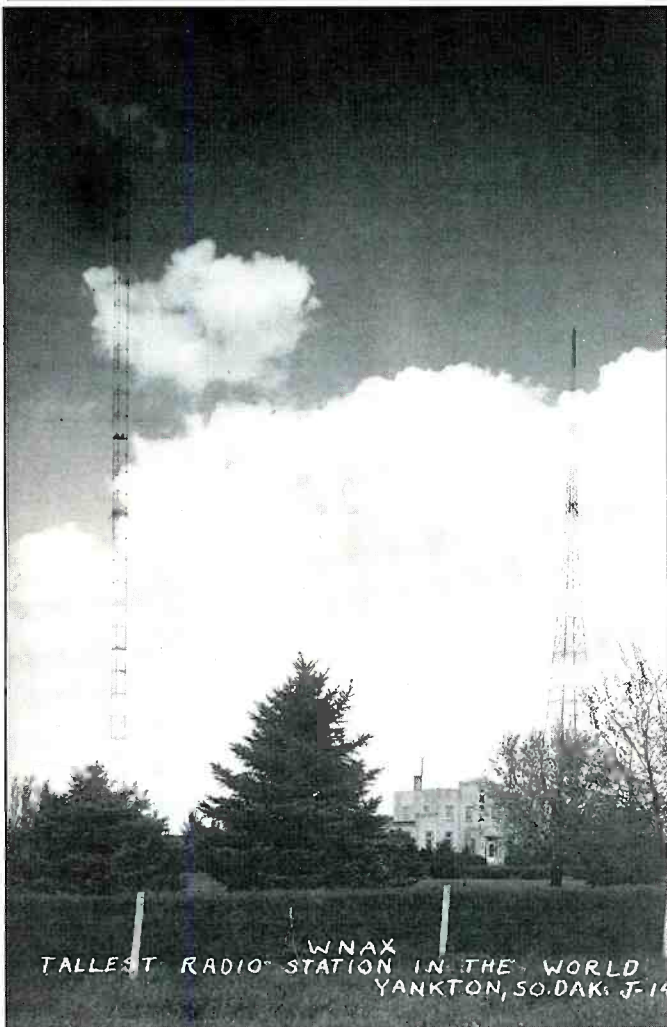
Ed wasn't expecting to see this treasure chest when he went to this place, so he didn't bring the proper photographic gear. He snapped a couple of photos in the dark building. The only light he had was a flashlight with so-so batteries. These resulted in poor photos. We could make them out a



A 1932 veri letter from KGGM gives its ID as "The Voice of The Health Country."



This 1946 postcard shows the 927 ft. WNAX tower and identifies it as America's tallest radio tower



Another (undated) photo of WNAX describes the tower as the tallest in the world.

little, but they wouldn't look like much in print. We could make out that one metal plate indicates that it was on a transmitter "U.S. Coast Guard Model T-133." These look like 6 ft. high broadcast transmitters. There's an entire wall of them.

If any reader has further information, let us know. Or contact Edmund F. Klein, 1450 Santa Margarita Dr., Fallbrook, CA 92028.

## When Radio Went High Hat

In the 1930's, people wore silk top hats. At least, Fred Astaire wore them, so did socialites and dapper movie stars. Perhaps real people did, too. What was the radio interviewer to do when he showed up at a movie or nightclub opening, or a formal ball, and everybody was dressed to the nines? Was the radio man expected to stand out in front of the club or theatre and interview people while he was carrying a bulky remote transmitter on his back? No way. Could ruin the rental tux.

The development of miniature "acorn" type vacuum tubes opened the way for

many innovations during the 1930's. Also, it moved the useful frequency frontiers higher and higher. How high? High enough to allow radio people to talk through their hats.

Using two type 955 triode tubes, a miniature transmitter was designed in 1936 for the purpose of allowing radio interviewers to install them in their silk top hats. These transmitters put out two-tenths of a watt on 270 MHz. They were intended for short range use, but the truck with the receiver was parked only thirty or 40 feet away. The transmitter was powered by 6 volt and 9 volt batteries attached to a special belt.

Using this, the interviewer didn't look too odd. The strange 8-inch antenna sticking up from the top of his hat took some getting used to, but looked like a lightning rod. The batteries on the belt? People probably thought they were pint bottles. He was at last free to wander through the crowd without being tethered by a microphone cord leading to a truck, and he didn't need to wear a heavy low frequency portable transmitter on his back.

Thank you, David R. Chamberlin, of

Victoria, B.C., Canada, for finding this astounding invention and bringing it to our attention.

## 45 Years On The Air

Chris Edwards is the Program Director at WMTR/1250, Cedar Knolls, New Jersey. WMTR dates back to 1948, and Cliff sent us some historic 1952 skeds and staff photos from his station.

The primary reason Chris wrote in was to send us a copy of a 1937 publication he located at a flea market. This is a priceless edition of *Stand By*, which was published by the Prairie Farmer Publishing Co., Chicago, Ill. (owners of WLS/WENR at that time). Among the gems in *Stand By* is information on how to get a job as a radio announcer.

The gist of the information is that announcing is the most glamorous job in all of radio, and it pays a lot. Everybody wants to be a radio announcer. There's a hitch. Any decent announcer, whether at a large or small station, must not only speak and read in flawless English, they should also be conversant in at least three other

May 12, 1931

"WNAX"

Yankton, S.D.

"House of Gurney Inc."

Dear Sir:

I received your letter addressed to WNAX and as you mentioned that you wished the announcer to sign the verification I will mention that the writer is the announcer of that broadcast.

Thanks for the kind words that you wrote in your letter. We announcers do like to hear a bit of praise occasionally. To tell the truth I never attended college, in fact not even the high school. When I was a boy we were lucky if we completed grammar school. Children did not have the opportunities to receive a good education that they have today.

You can also accept this letter as verification of your reception of WNAX on May 6th, from 1:32 to 1:59 A.M.

Hoping that you again write this station and report reception

I am

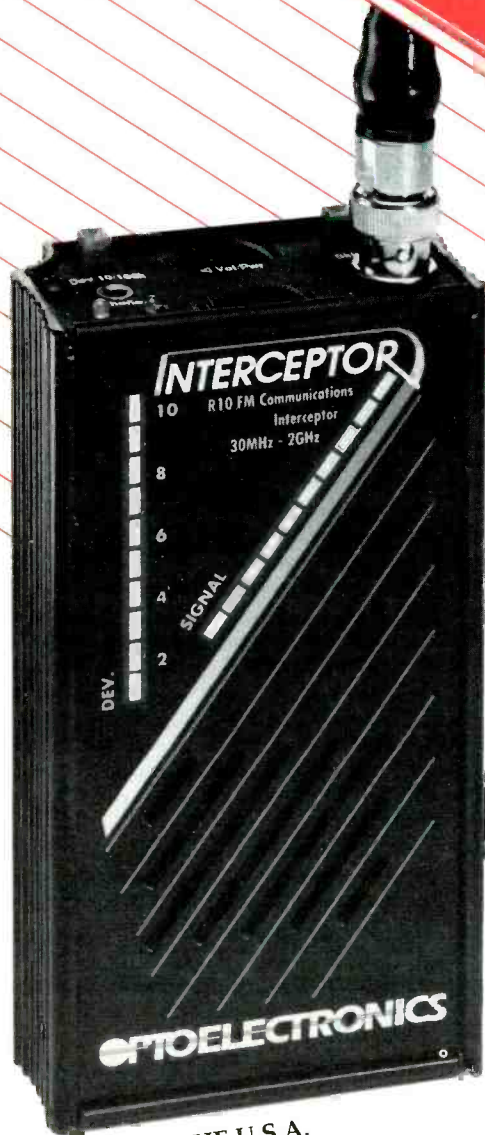
Very truly yours,  
*John P. Andrews*  
 John P. Andrews  
 Announcer WNAX

JPA.

A wonderful 1931 letter from WNAX, which confirms that people did think announcers had glamour jobs. However, it deflates the three-language image described in the 1937 story that WLS/WENR had published!

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languages (preferably French, Italian, and German). In addition, the announcer should have an in-depth knowledge of popular, classical, and operatic music.

That's as good a job description and list of qualifications as any we have yet heard!

## Driving Into History

Our mail brought us a news clipping submitted by Bob Comba, Registered Monitor KCA6RC, of Tome, New Mexico. This clipping was from the *Albuquerque Journal*, and was a story about local TV station KGGM-TV/13 changing its call letters to KRQE.

The story, by Rick Nathanson, told how KGGM started out in 1928 in California as a portable radio broadcast station in a bus. The station was put on the air to follow a cross-country foot race, although it was nearly out of money by the time the west-to-east race reached Albuquerque.

The station's owner, C.C. Pyle, sold the GM bus to a man in Albuquerque, William E. Whitmore. Whitmore knew nothing about running a radio station, so he sold the bus and its broadcasting license for \$10,000 to Anton R. Hebenstreit. Hebenstreit had been Albuquerque's first city manager (1918), and was a civil engineer. He was also a barber.

Hebenstreit moved the station out of the bus and into the Franciscan Hotel. Then, later into a spot in the Kimo Theatre.



A view of the WNAX building was used as a 1962 QSL by a ham.

KGGM-TV went on in 1953, and the stations moved together to 14th and Coal S.W. In '65, space got tight and the radio station moved to the Alvarado Hotel. In '68, the two stations moved in together in newly built facilities.

By this time, the stations were being run by Bruce Hebenstreit, the son of the founder. The AM station was sold in 1973 to become KRKE. Presently it is KZSS.

With the changing of the TV station's call letters, there will be no vestiges left of the old KGGM callsign that rode into town on a bus 65 years ago.

got their set working, and they spoke into the microphone. A receiver was installed on the ground floor of the building where the station was located, so that restaurant patrons could dine and listen.

Gurney recalled that on their first day they said over the air how hungry they were. Ten minutes later, the restaurant sent up coffee and sandwiches. They knew for certain the transmitter worked. More than that, they were amazed that people were really listening to them. Soon after, WNAX was licensed to Madsen.

In 1927, Madsen sold the station to Gurney and his family for \$2,000. Chan Gurney, years later, became a U.S. Senator, and (in the 1960's) was a member of the Civil Aeronautics Board. Gurney sold WNAX 11 years later to Gardner Cowles of the *Des Moines Register*. Since 1969, WNAX has been owned by Roy H. Park Broadcasting, Ithaca, N.Y.

Incidentally, one of the performers who was an early star on WNAX was Lawrence Welk, who had a novelty orchestra. Welk lived in Yankton from 1927 to 1936 and had a daily program over WNAX.

Here's to another 70 good years at WNAX!

## Seventy Years On The Air

Ed Shannon, Staff Writer, *The Albert Lea Tribune*, in Minn., sent us information on the recent birthday of station WNAX/570, Yankton, S.D. Ed, who is one of our readers, did a really fine tribute to WNAX in the *Tribune*.

The call letters WNAX represented *North American Experimental* when E.C. (Al) Madsen put the station on the air November 9, 1922. It's a station west of the Mississippi River, so its "W" callsign is somewhat misplaced. Their original 50-watt signal went to 100 watts within a year, then to 250 watts into a 127-ft. tower in 1927. Later that year, the power was upped to 1 kW.

In 1936, a 450 ft. tower was built five miles east of Yankton, and the station power was increased to 5 kW. By 1943, a 927 ft. tower had been installed, which was the tallest AM radio tower in the world.

As a youngster, one of Madsen's friends and fellow early radio tinkerers was Chan Gurney, whose family owned a local seed and nursery business. Their experiments after World War I led to their construction of the first WNAX transmitter.

The boys hooked up a motor to operate the dynamo. They overloaded it with vacuum tubes. That, in turn, called for electric fans and a ceramic bowl of transformer oil to cool things down. Eventually, they

## March To Our Drummer

We will be here in March. Hope you will, too. Thank you for your support of this column with your clippings, memories, old QSL's, old station photos, and station lists. One last thing. A year or so ago, we ran some information on a WWII press sked between a Yugoslavian guerrilla station ID'ing as "YTK" and Press Wireless in New York. Soon after, one of our readers wrote requesting additional background information on this story. We would appreciate it if that reader would contact us again as we have further information regarding this matter.

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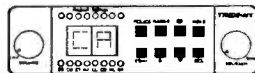
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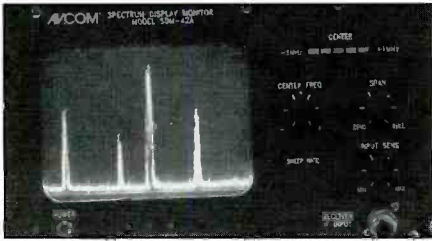
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# NEW PRODUCTS

## REVIEW OF NEW AND INTERESTING PRODUCTS



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AVCOM introduces the SDM-42A Spectrum Display Monitor for use as a panoramic signal display for VHF scanners and communication receivers such as the ICOM R-7000. The SDM-42A displays all signals present in the receiver's IF on a 5" CRT so that the operator can monitor signal activity. The operator can then quickly tune to signals as they appear on the spectrum display. This greatly facilitates locating and tuning of intermittent signals as well as surveilling a particular frequency band. The SDM-42A Spectrum Display Monitor (with a scanner) can

be used with AVCOM's PSA-65A Portable Spectrum Analyzer to create a powerful broad and narrow band spectrum monitoring system.

The SDM-42A spectrum display can be used for other applications such as monitoring satellite receiver IF's and demodulating single channel per carrier satellite signals (with optional demodulator circuitry). It can also be used as a general purpose spectrum analyzer covering specific frequency ranges.

The SDM-42A is available for receiver IF frequencies of 10.7, 21.4, 45 and 70 MHz, and other IF frequencies upon request.

Dimensions of the SDM-42A are 8.25" (209mm) x 5" (127mm) x 11" (279mm). Weight is 8.25 lbs. Power requirements are 110 VAC/60 Hz (other voltages available upon request).

U.S. domestic price \$1145. Availability stock to 2 weeks. For more information contact: AVCOM of Virginia, Incorporated, 500 Southlake Blvd., Richmond, VA 23236, phone 804-794-2500, FAX 804-794-8284.

### High Performance Economical Antenna

Electron Processing announced a new Short-Wave wire antenna for those who want optimum performance on a budget. The BASIC WIRE BW-60 antenna at only 60' long brings in signals like competitive antennas costing much more! The BW-60 covers all SWL bands from 2 MHz to 30 MHz and is comprised primarily of two wire elements of different lengths joined together at the feed point in a compact coupling box. The antenna can be installed in numerous configurations requiring from one to three supports. Quality components are used throughout, and it is supplied with 25' of coax feedline and has a STATIC BLEED built into the coupling box.

The BW-60 is priced at \$40, but a limited time they are offering a special introductory price of \$35. There is a \$5 shipping/handling charge. For additional information, contact Electron Processing, Inc. at P.O. Box 68, Cedar, MI 49621, or circle 107 on our Readers' Service.

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CIRCLE 53 ON READER SERVICE CARD

# MFJ Super Sensitive Scanner Antenna

MFJ-1864

**\$79.95**

Your scanner will come alive with signals you never knew existed when you use this new *super sensitive* antenna.

You'll hear distant mobiles -- even handhelds -- as they talk to base stations.

You'll pull in weak ground signals from distant control towers and air-traffic centers -- even hear *both* sides of conversations!

The MFJ-1864 combines new weak-

signal technology -- an *extremely low noise amplifier* -- with a resonant high gain omni-directional antenna.

You get 20 dB of extremely low noise amplification that'll let you hear signals down to the noise level.

The sensitive high gain antenna operates as two collinear 5/8 wave elements fed in phase on the 108-174 MHz aircraft/VHF high bands and as resonant halfwave elements on 30-50

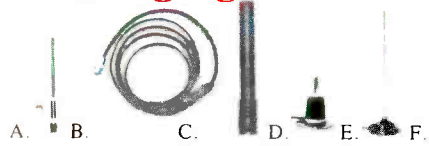
MHz VHF low band.

For really long range reception, you can mount your antenna up extra high outdoors in the clear and feed it with long runs of inexpensive coax.

Coax loss won't degrade your signal. That's because weak signals are amplified at the antenna *before* going into your coax.

Sidemounts to your existing tower, TV mast or any 1 1/2 inch pole with one U-bolt (supplied). 8' high, 2' boom. \$7 S/H.

## MFJ high-gain narrow-band scanner antennas outperform broadband ones



### For Handheld Scanners

**A. Long Ranger™**, MFJ-1714, \$16.95. Super long range reception on 118-174 MHz VHF high-band. 40" extended, 10 1/2" collapsed.

**B. Dual Bander™**, MFJ-1712, \$14.95. 5/8 wave gives maximum gain 406-512 MHz. 1/4 wave 118-174 MHz. 19" tall, 7 1/4" collapsed.

**C. MFJ Pocket Roll-Up™**, MFJ-1730, \$14.95. Roll up this high gain J-antenna and stick it in your pocket! Hang it up for base station performance. Highest gain on 118-174, 406-512 MHz. 58" plus coax.

**D. "Shorty" Duck** MFJ-1718, \$12.95. 4 1/2" Hi-Q super efficient replacement rubber duck.

### For Mobile Scanners

**E. Maximum Gain 5/8 Wave™**, \$29.95. Gives maximum gain of any single element mobile antenna on 108-174 MHz. Resonant 1/4 wave on 30-50 MHz. 48", magnet mount. MFJ-1828B, BNC; MFJ-1828M, Motorola.

**F. All Band Mobile**, \$19.95. Cellular look-alike. 25-1300 MHz highest gain 406-512, 108-174 MHz. 19". Magnet mount. MFJ-1824BB, BNC; MFJ-1824BM, Motorola.

## MFJ World Band radio accessories greatly improve your reception

### MFJ Indoor Active Antenna

MFJ-1020A  
**\$79.95**

You'll rival or exceed the reception of 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. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, \$12.95. 5x2x6 in.

### MFJ Outdoor Active Antenna

High dynamic range active antenna mounts outdoor away from electrical noise to pick up maximum signal with minimum noise. It lets you receive strong, clear signals from all over the world using minimum space.

"World Radio TV Handbook" says MFJ-1024 is a "first rate easy-to-operate ... quiet gain ... low noise ... broad coverage."

Covers 50 KHz to 30 MHz. Has gain control, 20 dB attenuator, ON LED. Select 2 receivers, auxiliary antenna or active antenna. 6x3x5 in. Remote unit has 54 inch whip, 50 ft coax with connector. 3x2x4 in. Use 12 VDC or 110 VAC with MFJ-1312, \$12.95.

MFJ-1024 \$129.95

### MFJ Compact Active Antenna

MFJ-1022  
**\$39.95**

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.

Has detachable 20 inch telescoping antenna. Use 9 volt battery or 110 VAC with MFJ-1312B, \$12.95. 3 1/2 x 1 1/4 x 4 inches.

### MFJ High-Q Passive Preselector

MFJ-956  
**\$39.95**

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. It improves reception from 1.5-30 MHz. Has preselector by-pass and receiver grounded position. 2x3x4 in.

### MFJ Antenna Matcher

MFJ-959B  
**\$89.95**

The MFJ-959B matches your antenna impedance to your receiver so you get maximum signal transfer and minimum signal loss.

You get a preamp with a gain control that boost weak stations 10 times and a 20 dB attenuator that 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

### MFJ High-Gain Receiver Preselector

MFJ-1045B  
**\$69.95**

High-gain, high-Q 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. Has coax and phono connectors. Use 9-18 VDC or 110 VAC with MFJ-1312, \$12.95.

### Beginner's World Band Radio Kit

MFJ-8100K  
**\$59.95**

Spend a fun evening putting this beginner's regenerative *World Band* Radio Kit together!

With just a 10 foot wire antenna you'll listen to international shortwave broadcast, hams on SSB and Morse code, WWV, RTTY, packet and much more. Covers all or part of 75/80, 49, 40, 30, 31, 20, 25, 22, 19, 17, 16, 15, 13 Meters in five bands.

Two earphone jacks let you share your listening pleasure. Use your Walkman style earphones or plug-in speaker. Rugged 7x6x2 1/2 inch aluminum cabinet. Vernier tuning. Use 9 volt battery.

Available assembled/tested, MFJ-8100W, \$79.95.

### MFJ Dual Tunable Audio Filter

MFJ-752C  
**\$99.95**

This *dual tunable* audio filter lets you peak desired signals and notch out interference at the same time. You get two separately tunable filters. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 in.

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Write or Call toll-free 800-647-1800

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

MFJ-1214PC  
**\$149.95**

Use your computer and radio to receive Morse code, RTTY, ASCII and display brilliant full color FAX news photos and incredible 16 gray level WeFAX weather maps with this MFJ-1214PC Multi-mode Data Controller. Includes easy-to-use menu driven software, cables, power supply, comprehensive manual and Jump-Start™ guide. Works with VGA, EGA or Hercules IBM compatibles with 512K RAM and 8 MHz or faster. Plugs between computer and radio.

### MFJ 12/24 Hour LCD Clocks

MFJ-107B  
**\$9.95**

MFJ-108B  
**\$19.95**

MFJ-108B dual clock lets you simultaneously read UTC time in 24 hour format and local time in 12 hour format. 4 1/2 x 1 x 2 in. MFJ-107B single clock shows you UTC time in 24 hour format. 2 1/4 x 1 x 2 in.

Highly recommended by "Passport to World Band Radio" -- 3 star rated!

### SWL's Guide for Apartment Dwellers

MFJ-36  
**\$9.95**

Are you in an apartment in the middle of a crowded city and can't pick up anything?

Let world renowned shortwave expert Ed Noll's newest book give you the key to effective *World Band* radio reception!

You learn what shortwave bands to listen to, the best times to tune in, how to DX and successfully QSL, how to build antennas indoors. Much more.

### Get your No Code ham license -- fast!

MFJ-3212  
**\$14.95**

The MFJ *QuickStudy™* License Guide gives you all the exact questions and correct answers. When you take the exam, the correct answer jumps out at you -- there's no confusion, nothing to clutter your mind. Plus, you have a lot less material to study so you're ready for the exam faster.

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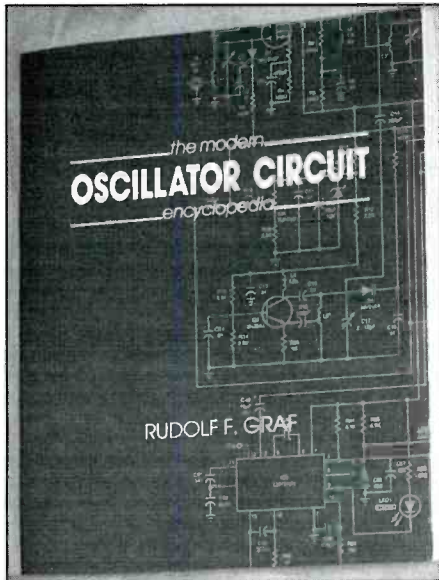
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## A Modern Oscillator Encyclopedia

The Modern Oscillator Circuit Encyclopedia, by Rudolf F. Graf, isn't an encyclopedia in the sense that you can use it to look up the history of and interesting facts about oscillator circuits. Yes, oscillator circuits figure importantly in the designs of



transmitters, receivers, and other electronics. But if you need to begin looking up what they are, you want an encyclopedia like the Britannica.

Graf's 164-page book is a cookbook of more than 250 ready-to-use oscillator circuits intended for people who already know what oscillators are for and how to use them. This is just as well, because we found Graf's dry text accompanying each circuit essentially useless in providing helpful information. Happily, there wasn't very much of it. His book consists of a collection of previously published circuits that can be used for audio, burst, sine-wave, crystal, RF, square-wave, voltage-controlled, colpits, miller, pierce, and other needed oscillator designs.

This book isn't going to hold your hand too tightly through the application, construction, and use of most of the circuits provided. Other than for the author's few perfunctory remarks about each schematic, the user is more or less left to sink or swim with the circuits, unless he wants to seek out the original sources for more information. There is a listing of books and magazine articles in the rear of this book showing the origin of the circuits included. It may be difficult to locate most for further reference at this point because they aren't as "modern" as the name of the book implies. Many date back to the 1970's and early 1980's.

If a person is knowledgeable about oscillators, no problem, and maybe just as well.

Obviously, this isn't a book beginners seeking a basic explanation of how oscillator circuits are our friends.

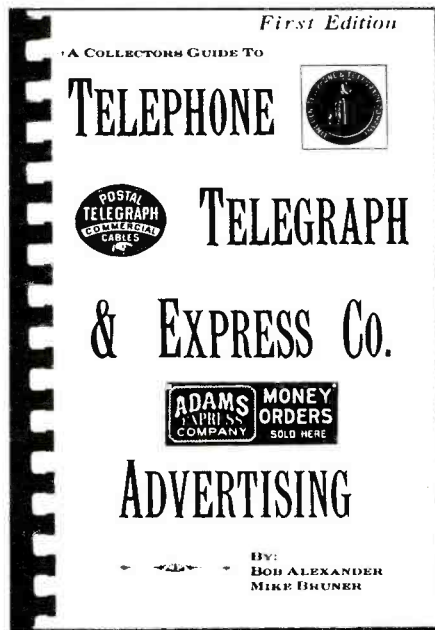
The circuits are arranged according to their type of application, and there's a complete index of everything.

*The Modern Oscillator Circuit Handbook*, by Rudolf F. Graf, seemed to us to be strangely mis-titled. It's neither modern nor an encyclopedia. What is it? It's a collection of some 250 different oscillator circuits published during the last 30-odd years. If the circuits alone, stripped of their original complete descriptive information, are suitable to your needs, then Graf's book may be useful to you.

The book's catalog number is 3893, and it sells for \$12.95. It's from TAB Books, Blue Ridge Summit, PA 17294-0850.

## Early Communications Advertising

*A Collectors Guide To Telephone, Telegraph, & Express Co. Advertising*, by Bob Alexander and Mike Bruner, has a very descriptive title of exactly what the book is.



This 200 page comb-bound book is filled with hundreds of b/w photos and descriptive captions of fascinating items assembled by the authors and some of their fellow collectors. This includes signs, call boxes, telegraph keys, telegraph sounders, blank forms, clocks, logos, and other items.

These were originally used by Western Union, Postal Telegraph, New England Tel. and Tel., American Union Telegraph Co., United Telephone and Telegraph, Michigan State Telephone Co., and numerous other landline companies. The items date from the 19th Century into the earli-

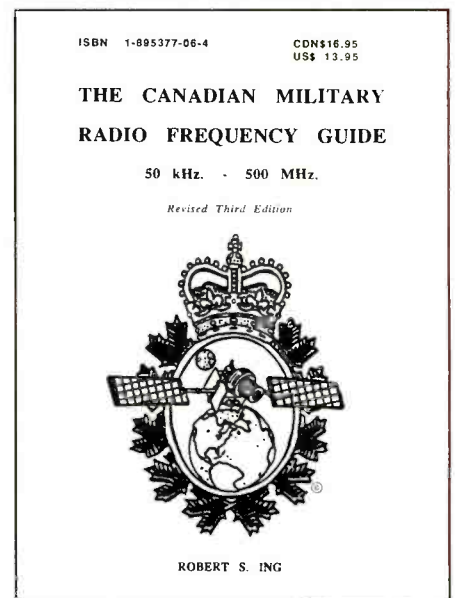
er years of this century.

Quite a nice book. Nothing fancy, mind you. It was obviously done as a labor of love by its authors. Nevertheless, it should easily fascinate everybody intrigued by the romance of clickity-click messages exchanged via old time landline telegraphy.

The book is only \$16.95 (includes postage) from Michael Bruner, 6980 Walnut Lake Rd., West Bloomfield, MI 48323.

## Canadian Military Guide

The 3rd Edition of Robert Ing's *Canadian Military Radio Frequency Guide* is available. Robert Ing, VE3XMD,



is the scanner columnist for the Ontario DX Association. He knows his stuff, and his 66-page directory covers much ground between 50 kHz and 500 MHz.

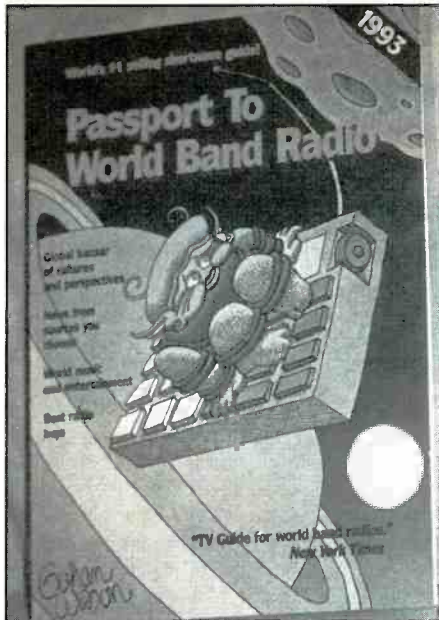
This edition has introductory text offering general comments about Canadian mil comms, and then gets down to facts and frequencies relating to the air, sea, and land forces of Canada. This includes the Canadian Coast Guard, lists of ships, CFARS data, mil radio codes, and other information.

Ing's guide is the same well-done job we saw in the previous editions of this directory, except now he has added some more information and updated everything. Here's a directory that's well worth having to upgrade your Canadian data.

*Canadian Military Radio Frequency, 3rd Edition*, is \$13.95 (in American funds), or \$16.95 (Canadian funds) from Robert S. Ing, 1170 Bay Street, Suite 102, Toronto, ON, Canada M5S 2B4.

## Your Passport

Every year we anxiously wait for the new edition of *Passport To World Band Radio*



to come out. This attractive book has really carved itself a comfortable niche in the world of international broadcast monitoring. We would go so far as to say that, considering the relatively few years it's been coming out, it has stolen a lot of thunder.

The 1993 edition has 416 pages, fronted by a great cover by cartoonist Gahan Wilson. What's inside? What *isn't* inside?

There are many feature articles telling about how, when, and where to listen for the best in international broadcasting, the stations with the best programs, and those with the biggest signals. Then there are equipment reports on current receivers, including shortwave portables, tabletop sets, and shortwave radios for cars. They explain how to buy a shortwave receiver that meets your exact needs. After that, there's an index of all of the 150 radios *Passport* has reviewed since 1985.

We think the heart and soul of *Passport* consists of the hour-by-hour grids, showing each and every international broadcast frequency and which station uses it in which language at any given hour. It tells if it is jammed, and other relevant information. This information is invaluable to anyone listening to shortwave broadcasts. There is a section listing English language broadcasts, and a section listing station addresses.

When you've got the latest edition of *Passport To World Band Radio*, you are really on top of the situation. This book is \$16.95, and is widely available from dealers in communications books and supplies. We loved every page. So will you.

## High-Tech Stuff

It had to come. High-tech techniques applied to the world of getting even with obnoxious neighbors, trespassers, the local bank, and those people whose day just isn't complete until they ruin someone else's day.

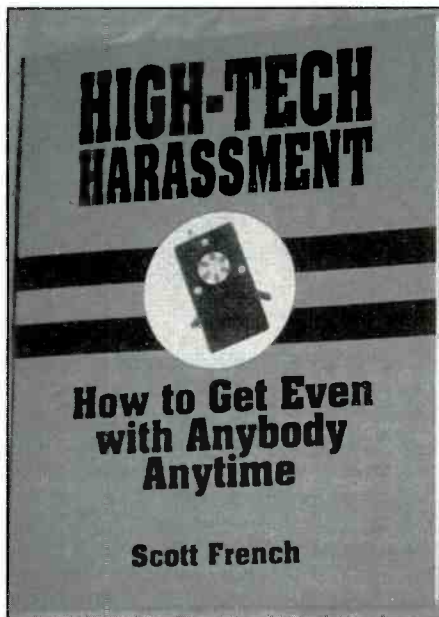
Scott French interviewed and worked with engineers, technicians, phone company personnel, computer people, TV man-

agers, and bank tellers. He asked them, point-blank, "How would you use your skills or job to get even with somebody?"

The result is a rather revealing 154-page illustrated book aptly called, *High-Tech Harassment*. It looks to be the ultimate in high-tech recipes for payback using electronics, computers, chemicals, and common sense. *Bang! Zoom! Right over the edge!*

They told him how to induce mayhem with lasers, breakers, shockers, and blowers; how to clear beaches with "silent sound;" wipe out computer data and discs from a distance; blast boomboxes; bypass computer security passwords; frazzle banks; and much more. In short, how to harness the forces of technology to work little payback miracles. Of course, the author points out that he is presenting this "for information purposes only."

There are photos, and a list of suppliers. French is an extremely interesting and

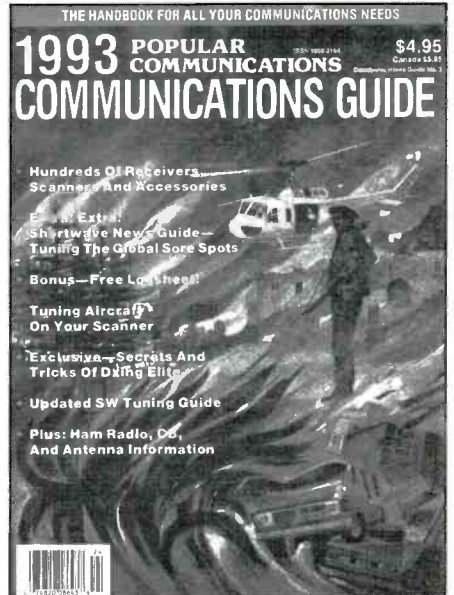


entertaining writer who has long been one of our favorites when it comes to offbeat books. He gets an enormous amount of information into his works, and they're so easy to read. This one is definitely the thinking person's guide to payback. Just great from cover to cover.

*High-Tech Harassment* is \$20.95, plus \$3.50 shipping (\$4.50 to Canada). Order it by mail from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. Residents of NY State, please add \$2.08 tax. VISA and MasterCard orders may be phoned in on M-Tu-Th-F from 10 to 2 Eastern at 1-(516) 543-9169.

## Your POP'COMM 1993 Communications Guide

It's here! The *POP'COMM Communications Guide* for Winter/1993. That means 128 pages filled with feature articles, frequency guides, and equipment specs. This issue has features by Larry Helms, Gerry Dexter, Don Schimmel, Bill



Sanders, Chuck Gysi, Chuck Robertson, and others. They cover SWBC, utes, mystery signals, CB radio, pirates, digital comms, ham radio, antennas, scanners, plus other topics you will find useful. Then, let's not forget the Buyer's Guide directory section listing photos, specs, prices of base station and portable communications receivers, base/mobile scanners, handheld scanners, HF transceivers, VHF/UHF transceivers, all types of CB radios, communications accessories, plus a gigantic roster of communications manufacturers and dealers.

Could you want more? Hardly, and all this for \$4.95, plus \$2.50 shipping (\$3.50 foreign). Order it from CQ Communications, Inc., 76 North Broadway, Hicksville, NY 11801. VISA/MC/AMEX accepted. Phone-in to 1-(516) 681-2922.

In the November issue we mentioned *Radio On Wheels*, which comes in separate East and West editions. Please note that these editions are \$8.95 each (plus \$3.50 shipping for 1 book to USA, \$4.50 for both books to USA addresses; \$4.50 for 1 book to Canada, and \$5.50 for both books to Canada. These books may be ordered from CRB Research Books, P.O. Box 56, Commack, NY 11725. Residents of NY State please add \$1.06 for 1 book, or \$1.82 tax if ordering both books.

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CIRCLE 13 ON READER SERVICE CARD

## 27 MHz COMMUNICATIONS ACTIVITIES

**H**ere's a whole new approach. It's a handheld/mobile CB radio from Maxon Systems Inc., designated the 27-KC. This is a full-powered 40-channel CB radio functionally similar to Maxon's professional style Model 27-LP handheld. But this unit has the added benefit of being able to be placed into and removed from a permanently mounted cradle or base in your vehicle. Thus, it is a handheld, but also delivers the advantages commonly associated with an installed mobile CB radio.

This makes the 27-KC well suited to recreational users, farmers, truckers, business users, emergency teams and others who operate specialty vehicles where CB communication is important, and who have a desire to maintain that communication while away from their vehicle.

As a handheld, the Maxon 27-KC is a fully featured CB with 4 watts output. Other features include a large LED channel read-out, adjustable volume and squelch, and a rubberized antenna. The unit operates on either alkaline or NiCd batteries, and there's a low power selector switch to give you the opportunity to conserve batteries while the set is being used in the handheld mode.

Contact points on the bottom of the 27-KC provide electrical connection to the mounting cradle installed in the vehicle. When placed into the mounting cradle, the internal batteries are bypassed and the vehicle's power system kicks in. An external antenna jack automatically activates to feed the 27-KC into the vehicle's CB antenna instead of the rubberized whip, which also becomes deactivated.

Other features of the mobile mounting cradle help in using the set as a mobile unit. There's a handheld mic with a 6 ft. coiled cable, and a jack for an external speaker. While in its cradle, the LED display is able to be seen when the set is in use. In addition, a jack is provided for an optional vehicular charger that recharges NiCd batteries (not included) used in the handheld.

The MSRP of the Maxon 27-KC is \$159.95. It includes the handheld radio, the mounting cradle, and the microphone. For more information about this very clever design, contact Karen Priebe, Marketing Project Manager, Maxon Systems, Inc., 10828 N. W. Airworld Drive, Kansas City, MO 64153. Be certain to mention POP'COMM. Or, you can circle 101 on our Reader's Service card.

### **Hiding Their Light Under A Bushel**

At the CB desk here, we haven't heard anything from or about K40 Electronics in



*K40 Electronics is recognized by REACT for their help. Holding the award (from left) is Carry Shrigley, of REACT in Illinois; John Boyer, of K40; Peggy Finley, of K40; and Steve Andree, of REACT.*

years. We recall their K40 mobile CB whip that was popular and widely used in the late 1970's. We were therefore pleasantly surprised when a recent press release from K40 advised that the Illinois company still manufactures CB antennas, CB radios, and custom radar detectors. Maybe they haven't liked to talk much about their products. REACT knows about K40, though.

The main point of the press release was

to announce that K40 Electronics was recently recognized by REACT for "Outstanding Contributions to the REACT Program." REACT said that K40 provided a great deal of support to their organization over the past ten years. A good looking plaque was presented by REACT officials to K40 executives.

We like REACT, and appreciate any help this most worthwhile organization



*The DeWald R-1050. So ugly, it could scare a dog off a meat truck.*

# THE PARTS PLACE

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**NEW! Autoranging LCD Digital Multimeter**

Convenient autoranging and auto-polarity at a low price. Select the function—meter does the rest. Diode-check, continuity buzzer. Measures to 1000VDC, 750VAC, 10A AC/DC current, 2 megohms. Fuse protected, UL 1244 listed. #22-184 . . . . . 49.99

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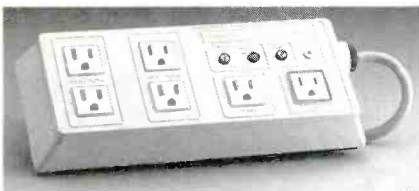
New TECHLINE tools represent Radio Shack's uncompromising dedication to quality. Each is precision-crafted of long-lasting, hard-working materials and employs the latest design innovations for comfort and ease of use. And, each is backed by our full 1-year limited warranty.

**Speedy service and low prices on thousands of parts and accessories!**

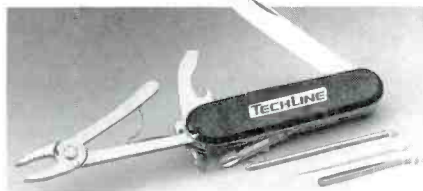


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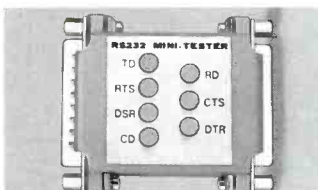
**6-Outlet PC Power Center.** Automatically turns on peripherals when your CPU powers up. Common and differential mode spike protection, 3-way filtration. 6-ft. power cord. #26-1396 . . . . . 69.95



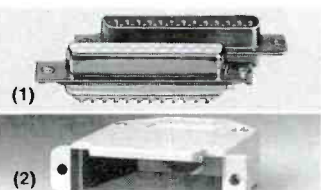
**TECHLINE Swiss Army Knife.** Large cutting blade, Phillips and slotted screwdrivers, wire stripper, can/bottle opener, mini pliers/wire cutter, tweezers and plastic toothpick. #64-2001 . . . . . 29.95



**TECHLINE Rechargeable Soldering Gun.** Great for autos, boats and campers—solder up to 250 joints on one charge. Trigger-activated light. UL listed AC charger, case. #64-2194 . . . . . 39.95



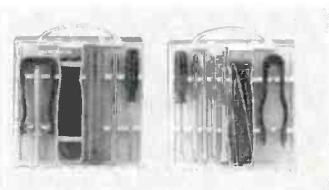
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**12VDC Brushless Micro Fan.** For cooling mobile gear and hum-sensitive circuits. 3.5 CFM. 1 1/16 x 1 1/16 x 1 3/32". #273-244 . . . . . 17.95

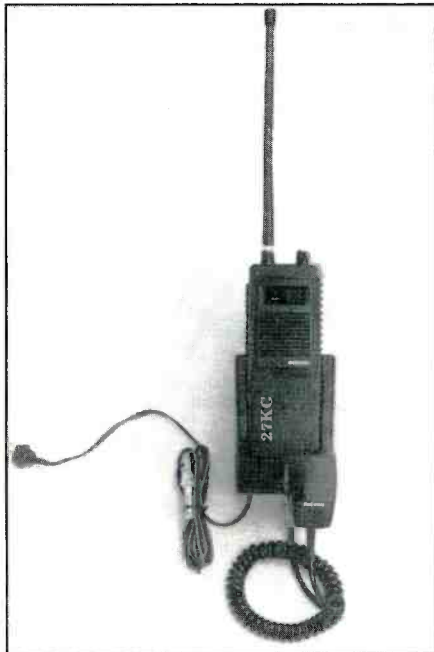


**14-Piece PC Tool Kit.** Slotted and Phillips screwdrivers, chip extractor and inserter, nut-driver, tweezers, parts tube, case. #64-1972 . . . . . 14.95

Prices apply at participating stores and dealers

# Radio Shack® SINCE 1921

## AMERICA'S TECHNOLOGY STORE™



The Maxon 27-KC is a novel approach to a handheld/mobile CB rig.

receives. K40 is congratulated for their good work! It's great to have K40 show up to say they are still involved in CB. They didn't provide information on any of their current CB products. If they do, we will pass it along.

### Junk Needs A Place In History, Too

Our historic CB radio for this month is one of those bottom of the barrel bombs that proliferated thirty years ago when CB was just getting off the ground.

DeWald was a small company located in Long Island City, N.Y. They came into CB early with their 1961 Model TR-910. If there was anything to be said for the five-channel TR-910, it sold for only \$99.95, at least it had a tunable superhet receiver, and an ANL. A panel meter showed S-units and plate current. But it was an ugly, boxy-looking set. It was tinny and wasn't made very well.

The next step in the evolution of the TR-910 was known as the Dewald R-1050. This contribution to the art and science of communications technology showed up in late 1962. It offered six transmitting channels (one more than the TR-910). The receiver could be set to crystal positions, and was also fully tunable. The big feature of the receiver was that it had a Nuvistor front end and three I.F. stages. A panel meter read out S-units and plate current. The transmitter had a built-in low-pass (TVI) filter. This sold for about \$120.

Like it's predecessor, the R-1050 was another big, clumsy, sheetmetal box with square corners. It was so ugly, that when you looked up the word ugly in the dictio-



Here's Norm Patchett, of Calgary, Alberta, Canada. He's an active Sidebander. He monitors 37-Lower with the ID of SSI-22. He's also a long-time member of the SSB Network.

nary, they had a photo of the DeWald R-1050. The quality wasn't all that good, either. It wasn't a terrible radio, but it wasn't especially good, either. The company barely bothered to promote their products, anyway, so not that many CB'ers even knew of the set. There was little reason to believe that this somewhat pathetic offering from a small, independent company could hope

to successfully compete against slick looking units being nationally marketed by the likes of Browning, Hallicrafters, Globe, Multi-Products, Polytronics Labs, International Crystal, and others.

DeWald seems to have sold enough of these to keep the company interested in producing them for a time. This is apparently because little DeWald didn't need to



SSB Network Member SSB-6037A is Rick, who lives on New York's Long Island. He's been on the band for more than ten years. There's a lot of good looking equipment here.



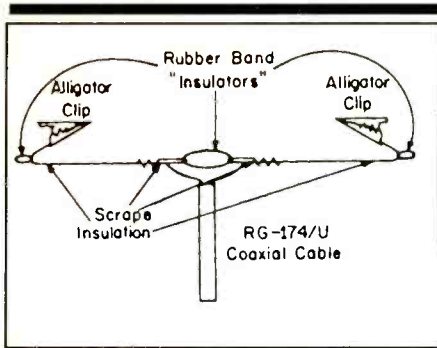
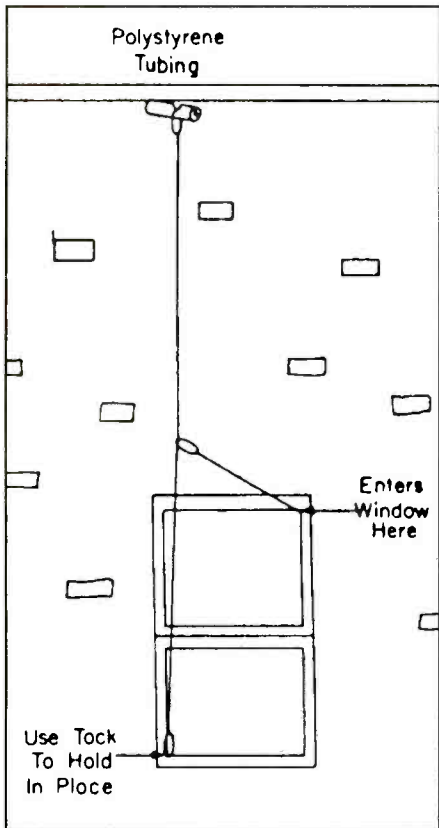


Diagram of the hidden dipole made with super-fine wire.

move a lot of these sets out to make it worth their while. They made non-CB electronics products, too. DeWald's CB radios were never viewed with much enthusiasm by the public, nor even by DeWald, itself. This company didn't stay in CB very long.


### No Need To Be Whipped If There's A Problem

Mobile CB whips have their own unique disadvantages. Like, when you want to run the car through a car wash and the guy at the entrance tells you to get rid of the whip before the rotary brushes take it off for you. Or, when the whip clunks and clanks into low hanging trees and garage doors.



This is how we mounted the hidden dipole. Unless you were really looking hard to spot it, it couldn't be seen from the street.

**30dB** *The Original* **SELECT-A-TENNA**



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- NO WIRES TO CONNECT
- NO BATTERIES
- HIGH-Q SUPER GAIN AND SELECTIVITY
- PROVEN WORLD WIDE FOR OVER 20 YRS
- SATISFACTION GUARANTEED
- THIS ONE REALLY WORKS!

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MADE IN USA

CIRCLE 120 ON READER SERVICE CARD



## 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  
CB Antenna or Your Money Back\*\*  
*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.

#### The Best You Can Buy

So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel; the whip is tapered 17-7 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will outperform any CB antenna (K40, Formula 1, you name it) or your money back!

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

#### Lockheed - California Company

A Division of Lockheed Corporation  
Burbank, California 91520

Aug. 21, 1987

Wilson Antenna Company Inc.  
3 Sunset Way Unit A-10  
Green Valley Commerce 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 K40 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

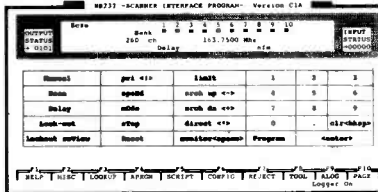
**58%  
MORE  
POWER GAIN  
THAN THE  
K40**

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TOLL FREE: 1-800-541-6116  
FOR YOUR NEAREST DEALER  
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Roof Top Mount ..... **59<sup>95</sup>**  
Trunk Lip Mount ..... **69<sup>95</sup>**  
Magnetic Mount ..... **79<sup>95</sup>**  
Wilson 1000 Trucker ..... **59<sup>95</sup>**  
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- The HB-232 Scanner/Computer Interface Kit + includes:
- printed circuit board and essential electronic parts
  - Control Program on Disk (specify disk size)
  - detailed documentation & photos on assembly, installation & operation
  - wide area network technical support

Designed for the PRO-2004/5/6 scanner series, the HB-232 features AutoLog, AutoProgram, Data LookUp, Scripts & much more with nearly unlimited variations of computer control & data collection from the scanner. Facilitates maximum performance *without* compromise. Easy to install & use; minimal invasion to scanner! Discover a new dimension of radio scanning! Order today! **\$469.95 + \$5 S&H**, ck mo, MC/VISA. BASE for more info

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Only \$80

Get great scanner reception with our SUPER SCANNER STICK. Covers all scanner bands (25-1200MHz) Only 35" long. Powerful 15db amplifier. 25' of cable supplied with connector for your scanner.

SCANNER STICK Same as above but without booster amplifier \$40

CELLULAR reception unsurpassed! Our new SUPER DANA antenna combines a 5db gain antenna with 15db amplifier for fantastic 800-950MHz reception. SUPER DANA \$80

### ANTENNA PLUS

\$90

Make your receiver spring to life! Receives like the large antennas yet sits on your table! Strong internal 15-22db amplifier! 115VAC pwr. Cable to rcvr. INCLUDED!

ANTENNA PLUS-1 0.5-1300MHz "All Bands" (for wide coverage rcvrs)  
ANTENNA PLUS-2 0.3-300MHz "Short-Wave" (peaked for SWL's)  
ANTENNA PLUS-3 25-2000MHz "Scanner" (peaked for VHP-UHF)

### AM BROADCAST LOOP ANTENNA

Fantastic AM (.5-2MHz) reception without bothersome noise! Easily null out interference! Compact desktop unit with internal amplifier. BCL-1 \$125

### CAR ANTENNA RECEIVES SCANNER/SWL!

Yes, with our MSW-1 amplified coupling box your car antenna can provide outstanding reception for your scanner or worldband radio. Existing car AM/FM is unaffected (unlike similar devices that reduce AM reception). Covers 0.5-1000 MHz with 10db amplifier. Only \$70

Continous US Shipping/Handling \$5, Canada, AK, HI, PR \$6. NY and MI add sales tax.

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CEDAR, MI 49621

(616) 228-7020

Then, there's the problem of leaving your car parked with that whip waving around in the air pointing like an arrow to your vehicle as the one containing the CB radio that someone might like to rip off.

Or, there are people who just don't like the aesthetics of the way vehicles look with CB whip antennas protruding from their trunks, cowl, fenders, or wherever. It could reduce the resale or trade-in value of the car.

All is not lost! The Model 1126 *Secret Sam* is a completely hidden CB auto antenna. What it does is turn your entire vehicle into a full performance 40-channel mobile CB antenna, thus eliminating the need for an external whip. It will operate with AM and SSB radios, and won't interfere with AM/FM radio reception. Everything is inside the vehicle. Nothing can be seen from outside to alert thieves. Nothing to get tangled up in a car wash. Nothing to ruin the looks of the vehicle, or reduce the resale value. From outside the car, it's invisible!

It's easy to install, and comes with instructions, the matcher that feeds the signal to the vehicle, 18 ft. of cable, plus all the wire, connectors, and hardware needed. We have used a *Secret Sam* and it worked just fine.

The *Secret Sam* hidden mobile antenna comes from CRB Research, P.O. Box 56, Commack, NY 11725. The price is \$26.95, plus \$3.50 shipping (\$4.50 to Canada). Residents of NY State, please add \$2.59 tax. You can order this by mail. You may also order by phone using your VISA or MasterCard. CRB's phone order line is 1- (516) 543-9169, call any weekday (except Wednesday) from 10 a.m. to 2 p.m. Eastern Time.

## Speaking Of Invisible Antennas

People who live in condos and apartment houses where CB antennas aren't allowed are always complaining. We have a little virtually invisible apartment antenna project that you might want to try building. It's a good way of faking out the landlord or building management, and I know of someone who put one of these up three months ago and it hasn't yet been spotted by Mr. Hawkeye or his evil assistant.

The method to the madness of this hidden antenna is by the use of super-fine wire. Many people who know what they're talking about told me that I had chicken fat between my ears when I came to them with this idea. I was told that the current will cause the wire to go up in a puff of smoke. I was told that resistance in the wire would eat up all of the power. I was told that RF energy travels along the "skin" of a wire, and that a thin wire will cause the RF to make itself scarce because it has no place to travel. I was told that the antenna could not support its own weight, and that every breeze would take it down. I was told many things.

That's when I decided to try building one

to see for myself. Everybody said I was crazy. They said Robert Fulton was crazy. They said Isaac Newton was crazy. They said Copernicus was crazy. They said Maurice L. Flegleman, Sr., was crazy. (My father's uncle, he was crazy.)

To get the wire for this antenna, I unwound the innards of an audio transformer. You could go out and buy some wire. Radio Shack carries an assortment of different types of magnet wire (278-1345), and that contains 200 ft. of 30-ga. wire.

For insulators, I used three rubber bands, one for the center and one at each end.

The feedline I used was skinny little RG-174/U coaxial cable, which is 50 ohms and takes up only one-tenth of an inch.

Construction meant measuring out a dipole with each leg cut for 8 ft. 8 in. If there is enamel on the wire dipole elements, it has to be scraped off at the center point where the coaxial cable and the rubber band insulator is to go. The far end of the coaxial cable goes to the CB rig through a PL-259 connector.

I was surprised to find that this antenna didn't work very well. That is to say, it didn't load up. It was reasonable to assume that when working with wire the thickness of yak hair, there are factors involved that require different considerations than if the antenna was to be made from regular 12-ga. antenna wire. I had a whole transformer full of this wire, so I started over, this time measuring out two 9 ft. 6 in. dipole elements with alligator clips at each end.

This let me experiment with different lengths (each leg of the dipole always equal to the other) until I could get a good reading on the SWR meter. It meant scraping off a lot of wire insulation for the test points.

When I found a good length, I carefully soldered the ends and removed the alligator clips. Depending on the gauge of wire used, the actual length will vary from antenna to antenna. Soldering this peach fuzz is a little tricky and requires a bit of practice on some scrap. No you don't want to use very much heat or the stuff will melt right out as you watch.

Mount the antenna vertically, using glass push-pin tacks, or small nails. Don't let the antenna lay directly up against the building's wall, but hold it away ever so slightly. And don't try to stretch it too tightly or you'll either snap it or pull it from its mountings. Run the coaxial cable away from the antenna at a right angle as far as possible. Don't run more than legal CB power into this. If it goes up in a puff of smoke when you start transmitting, well it was experimental and they told you so. Stop trying to transmit immediately, if your transmitter hasn't blown up altogether along with the antenna.

All I can say is that it worked when I tried it, and it might work for you. Nothing is guaranteed except a hike in income taxes.

Come and see us in March. Let us hear from you. Send in your station photos, CB QSL cards, CB comments, newspaper clippings.

# BROADCAST DX'ING

BY ROGER STERCKX, KVT1JH

## DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

**F**rom A Broadcaster: Our column is read by many broadcasters, and we are delighted when we receive station photos, bumper stickers, and brochures from station personnel. This month, Chris Adams, of stations WSJP/1130 and WBLN-FM/103.7, in Murray, Kentucky, wrote to us and sent some photos.

Chris tells us that both stations share the same tower, which is also used for a radar antenna, an STL antenna, UHF antennas for use with the station's mobile vans. There's also an antenna for the station's scanner.

The AM station control room is in the process of phasing out the use of carts. By the time you read this, the station will be switched over to a CD ROM computer system.

**Watts With 100.1 MHz?** A few months ago, a reader noted how peculiar it was that when you're driving around and listening to FM stations in your car, stations on 100.1 MHz seem to fade out of range rather quickly. He wondered if there was any reason for this, or if it was just his imagination.

R.L. Ferch, Brick, New Jersey, writes in to observe that it's not a matter of the imagination, because 100.1 MHz is a so-called "Class A" channel.

FM stations are categorized by the FCC into seven different classes, based upon various technical factors regarding the relative potency of their signal strength and coverage. This involves factors such as effective radiated power (ERP) and the height of the antenna above the average terrain.

The FM stations with the biggest signal clout are classified as "Class C." They can run 100 kW ERP with an antenna located as high as 600 ft. above the surrounding terrain. They are assigned to FM channels the FCC has set aside for use by this class of station.



*This sign stands outside shortwave WMLK 9465, Bethel, Penna. The sign and the station's antenna are alongside I-78. (Photo by Lawrence Wagner, Camp Hill, Penna.)*

At the bottom of the signal potency scale are the "Class A" stations. These stations are limited to a maximum ERP of 6 kW, and an antenna mounted no higher than 100 ft. above the average surrounding terrain. Many run a lot less power than the maximum, and don't have antennas even 100 ft. high. These stations offer no more than local coverage. They are relegated to

operation on FM channels that the FCC designated for relatively low powered stations, which includes 100.1 MHz.

The five categories of FM stations between these two extremes offer various combinations of power and antenna height maximum limits in order to provide different coverages.

**Speaking Of The Regulations:** While we are on the subject of broadcast regulations, a letter arrived from Henry Hampel, St. Louis, Missouri suggesting that we might be "misleading" our readers.

What got Henry upset was our October issue photo and mention of the broadcasts (on FM) from a 20-ft. tall concrete historic duck. The structure stands by a Long Island roadside and in (the voice of supermodel Christie Brinkley) sends out a short range repeating broadcast asking motorists for donations to restore the duck. We mentioned that the duck uses the unofficial call letters "WBIG."

Misleading our readers? This would only be true if the duck wasn't actually there, or if it wasn't really broadcasting. Be assured, this duck is as big as life and twice as weird, and is transmitting a radio signal, exactly as we stated.

Henry is uncomfortable with our having publicized an unlicensed duck using "unof-

### Applied To Change AM Facilities

KBCN	Fairbanks, AK	1300 kHz	Seeks increase to 5 kW.
KUGN	Eugene, OR	590 kHz	Seeks increase to 5 kW nites.
KVAR	San Antonio, TX	1160 kHz	Seeks to drop days to 5 kW.
WPCT	Alexandria, VA	730 kHz	Seeks increase to 950 watts nites.

### Changed AM Facilities

KOFY	San Mateo, CA	1050 kHz	Increased nites to 10 kW.
WAJA	Franklin, NC	1480 kHz	Added nites with 13 watts.
WLGR	Redwood Falls, MN	1490 kHz	Dropped to 470 watts.
WLJN	Elmwood Twp., MI	1400 kHz	Dropped to 640 watts.

### Applied To Change FM Facilities

KDDR-FM	Oakes, ND	92.5 MHz	Seeks 92.7 MHz, 25 kW.
KITE	Kerrville, TX	92.1 MHz	Seeks 92.3 MHz, 44 kW.
KMJJ-FM	Shreveport, LA	100.1 MHz	Seeks 99.7 MHz, 50 kW.
KRAB	Green Acres, CA	106.3 MHz	Seeks 106.1 MHz, 25 kW.
KTDI	Huntsville, MO	92.5 MHz	Seeks 103.5 MHz, 50 kW.
KTRY-FM	Bastrop, LA	94.3 MHz	Seeks 93.9 MHz, 50 kW.
WCDX	Mechanicsville, VA	92.7 MHz	Seeks 92.1 MHz, 4.5 kW.
WDYL	Chester, VA	92.1 MHz	Seeks 93.1 MHz, 1.35 kW.
WEZX	Scranton, PA	107.1 MHz	Seeks 106.9 MHz.
WMVV	McDonough, GA	90.7 MHz	Seeks move to Griffin, GA.
WNMH	Northfield, MA	91.5 MHz	Seeks 88.9 MHz, 1.2 kW.
WONO	Walterboro, SC	105.3 MHz	Seeks 93.7 MHz, 6 kW.
WPTS-FM	Pittsburgh, PA	98.5 MHz	Seeks 92.1 MHz.
WVCO	Loris, SC	105.9 MHz	Seeks 94.9 MHz, 2.65 kW.

### Changed FM Facilities

KAAR	Medical Lake, WA	95.3 MHz	Moved to 101.9 MHz, 12 kW.
WEZR	Brillion, WI	96.3 MHz	Moved to 107.5 MHz, 6 kW.
WNEK	Springfield, MA	97.5 MHz	Moved to 105.1 MHz.
WQLJ	Oxford, MS	107.1 MHz	Moved to 93.7 MHz, 25 kW.



*Here's a sticker from 4AK/1242, Toowoomba, Australia. (Courtesy Gary Spurway, S.W.W., Australia.)*

## New AM Call Letters Issued

WJIT Sabana, PR

## New FM Call Letters Issued

KBSX Boise, ID  
 KESC Topeka, KS  
 KFMA Wickenburg, AZ  
 KKNG Laramie, WY  
 KNKD Earlmart, CA  
 KNKE Jasper, TX  
 KNKG Yermor, CA  
 KRHT Carlsbad, NM  
 KRHV Big Pine, CA  
 KSWs Sisseton, SD  
 KVER El Paso, TX  
 WBIO Philpot, KY  
 WDFB-FM Danville, KY  
 WLQT Kettering, OH  
 WJWL Bartlett, TN  
 WMLJ Summersville, WV  
 WMLL Wilmington, NC  
 WMLZ Jupiter, FL  
 WNCU Durham, NC  
 WNWK Newark, NJ  
 WVLC Campsville, KY  
 WVZM Essex, NY  
 WVZO Portage, WI  
 WVZP Westport, NY  
 WXJC Crystal River, FL  
 WXRI Winston-Salem, NC

## Requesting Changed Call Letters

Now	Seeks	
WFNR-FM	WBKN	Christianburg, WV
WLMF	WDCZ	Webster, NY
WSLM-FM	WXCD	Salem, IN
WTSW	WYCK	Wilkes-Barre, PA

## Changed AM Call Letters

New	Was	
KEWI	KBBA	Benton, AR
KFIG	KWDO	Fresno, CA
KJBN	KWNN	Little Rock, AR
KKJZ	KSSM	Santa Barbara, CA
KWOG	KKTY	Douglas, WY
KXKW	KXIZ	Tioga, LA
KXQZ	KAYJ	San Angelo, TX
KZZK	KHNN	Springfield, OR
WBBE	WTKT	Georgetown, KY
WBHT	WVEI	Worcester, MA
WEPT	WDSY	Pittsburgh, PA
WEFG	WPBK	Whitehall, MI
WFMB	WCVS	Springfield, IL
WJRB	WKLB	Bradenton, FL
WJRV	WAMQ	Loretto, PA
WKLN	WHWY	St. Augustine Bch., FL
WKVN	WORR	Quebradillas, PR
WSSG	WFXN	Goldsboro, NC
WTKI	WKGL	Huntsville, AL
WTLC	WTUX	Indianapolis, IN
WWWW	WCXI	Detroit, MI

## Changed FM Call Letters

New	Was	
KAJK-FM	KWHZ-FM	Ferndale, CA
KAJZ	KOCM	Newport Beach, CA
KBJZ	KSRF	Santa Monica, CA
KCSP	KPGM	Casper, WY
KCYT	KYOT-FM	Granbury, TX
KIAQ	KRIT	Clarion, IA
KIDI-FM	KOHD	Guadalupe, TX
KIRC	KSLE	Seminole, OK
KIRO-FM	KWMX	Seattle, WA
KKUS	KTMJ	Tyler, TX
KKZR	KKHU	Conroe, TX
KLKY	KLUB	Milton-Freewater, OR
KLTO	KOUH	Nowata, OK

KMMB	KJDN	Medara, CA
KMXB	KMGR-FM	Orem, UT
KPGM	KCSP	Casper, WY
KSSZ-FM	KDDR-FM	Kindred, ND
KSYX	KFIG-FM	Fresno, CA
KVSE	KRGY	Brownsville, TX
KWOG-FM	KKTY-FM	Douglas, WY
KCKC	KDEA	New Iberia, LA
KYSR	KXEZ	Los Angeles, CA
KYKN-FM	KCDH	Nephi, UT
WADQ	WVZP	Westport, NY
WARQ	WAAS	Columbia, SC
WDNT-FM	WTCX	Dayton, TN
WEFG-FM	WPBK-FM	Whitehall, MI
WEHM	WQEH	East Hampton, NY
WGCT	WZYG	Ellettsville, IN
WIII	WJZQ	Kenosha, WI
WJBX	WZCR	Ft. Myers Beach, FL
WJLC	WYPA	S. Boston, VA
WKCN	WYAZ	Lumpkin, GA
WKDY	WIBQ-FM	Renssen, NY
WKHL	WQQQ	Stamford, CT
WKVN-FM	WJDZ	Levittown, PA
WLFA	WKDB	Asheville, NC
WLQT	WVUD-FM	Jupiter, FL
WNDD	WJFC-FM	Jefferson City, TN
WNNV	WRFE	Aguada, PR
WNUC	WEZQ	Arcade, NY
WOWF	WDFX	Detroit, MI
WRCH	WRCH-FM	New Britain, CT
WRZX	WFXF-FM	Indianapolis, IN
WTHQ	WCKP	Shelbyville, KY
WTLC-FM	WTLC	Indianapolis, IN
WUPX	WUFJ	Marquette, MI
WWWW-FM	WWWW	Detroit, MI
WXEZ	WKOD	Yorktown, VA
WYSR	WIOF	Waterbury, CT
WYXY	WYRM	Mountaintop, PA
WZZP	WKVF	Kankakee, IL

ficial call letters." He questions whether this is a legal duck, or a pirate duck. If it's a pirate, he fears that maybe our mention of this would get others in trouble who might try the same thing.

POP\*COMM's not in the radio station licensing and enforcement business. We are only in the information reporting business. We are responsible for letting our readers know what's happening in radioland, and without filtering and sanitizing the information through the FCC's regulations. If other people have large cement ducks they want to establish as FM stations, they'll just have to face the possible ramifications.

From what we can discern of this operation, the "WBIG" duck appears legal and being operated under the FCC's Part 15 low power rules. Naturally, if the FCC doesn't like the bird, it's up to them to go over and barbecue the thing. Save me a drumstick.

**Format Changes:** The exceptionally large number of AM and FM station call letter changes in this month's listings is a tell-tale sign. In about 75 percent of the instances, these are probably stations that have made significant format changes. The changed call letters point out to listeners and advertisers that there's an all-new station, a new image, a new sound to take the place of the previous station that had the old sound and an image that someone felt it was time

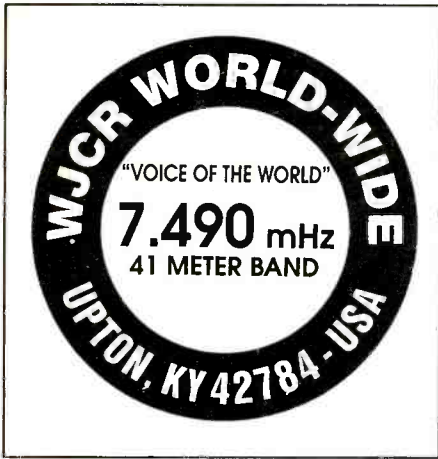
to shed. A new station is guaranteed to start off with a boost from curious listeners who want to hear what's going on.

Last year, more than half of the radio

stations lost money. In a tight economy, stations must make heroic efforts to stay on the air. What can a station do? Cut expenses? Run contests? Sell more com-



This is The Frog, otherwise known as the van of WAXT/96.7. Was snapped at the Madison County 4-H Fair, in Indiana. (Photo by R.C. Watts, Louisville, Kentucky.)



Sticker from religious shortwaver WJCR, on 7465 and 7490 kHz, from Upton, Kentucky. They seem to be good folks. (Courtesy Dennis Rock, Clearwater, Fla.)

mercial time? Make tie-ins with local merchants? Eventually a station wrings all of the potentials out of these approaches and comes to the conclusion that the station needs a larger market share, a bigger audience. This can only be done at the expense of one or more other stations in the same listening area.

This can be accomplished expensively by upping the station's power. If it works, a less expensive way is to change the station's program format and image, operating as a "new station." A careful examination of successful stations in the listening area offers ideas for which formats "sell" to local audiences. The trick is to then attempt to move in on that same audience, either with a new angle or by a direct confrontation with another station. The fur really flies as the

### Applications Filed to Construct New FM Stations

FL Ingilis	104.3 MHz	6 kW
HI Polpu	95.5 MHz	1.1 kW
IL Pinckneyville	104.3 MHz	
IL Sandusky	90.7 MHz	18 kW
IN Union City	88.9 MHz	3.5 kW
MS Richton	91.7 MHz	29 kW
NM Los Alamos	107.5 MHz	100 kW

### Permits Granted To Construct New FM Stations

CA Baker	94.4 MHz	15.5 kW
CA Copperopolis	105.5 MHz	580 watts
FL Ft. Pierce	91.1 MHz	3 kW
FL Pennsuco	88.3 MHz	3 kW
GA Bostwick	92.3 MHz	3 kW
GA Trion	95.7 MHz	600 watts
ID Boise	91.5 MHz	4 kW
IN Union City	105.7 MHz	6 kW
IN W. Lafayette	89.9 MHz	1 kW
KY Campsville	99.9 MHz	3 kW
ME Bar Harbor	107.7 MHz	6.3 kW
NE Crete	91.9 MHz	200 watts
OH Zanesville	90.1 MHz	4 kW
PA West Chester	91.7 MHz	100 watts
SD Sisseton	89.3 MHz	3 kWj2

other station defends itself.

Or, careful study or survey of the local audience may reveal that no station is providing some particular format that people want. That's why there are stations with polka, Beatles, Elvis, financial, comedy, ethnic, and other specialty formats.

If a new format works, it's still less expensive than buying a new transmitter to run more power. And it sheds that old format and image that had stopped doing the job.

So, when a station in your listening area suddenly changes its call letters and makes a radical switch in its format, you have some idea of probably what went into the decision.

**Decal & Sticker Swapper:** A letter arrived from reader Gary Spurway, in Australia. Gary loves POP\*COMM. Can't get enough of us, he says. Also, he has some duplicate station decals in his collection that he'll gladly swap with other collectors. These are from Australian stations, so we'd say that they would be excellent additions to any collection. They are quite beautiful.

Contact him at: Gary Spurway, 42 Haymet St., Blaxland, N.S.W. 2774, Australia.

**It Was Fine With Them:** The licensee of WREM, Monticello, Maine, was ordered to forfeit \$10,000 for transferring control of the station to another party without prior FCC approval.

When inspecting WREM in April of 1989, the FCC found another party operating WREM pursuant to a lease about which the FCC had not been informed. The licensee insisted that he maintained full control of the station under terms of the lease. The FCC's feelings were that WREM's licensee was simply a landlord who collected fixed rental payments. In April of 1991, the FCC issued a Notice of Apparent Liability.

WREM's licensee subsequently requested that the amount be either reduced or rescinded, although he presented no new evidence on his behalf to refute what the FCC insisted was "substantial evidence that an abdication of control had occurred." Furthermore, the licensee did not properly document his claim of financial hardship.

Although the FCC agreed with the licensee that there was no intent to deceive, the agency said that this did not mitigate the decision for the forfeiture to be paid in full.

**Making Light Of This Forfeiture:** An FCC review board upheld the decision to revoke the license of WOKJ, Jackson, Miss, and assessing a forfeiture for failing to light the station's towers at night for five months. However, because of a change in the way the FCC now determines forfeitures, the amount was reduced from \$20,000 to \$8,000.

The licensee claimed that he should be allowed to remain a licensee, that the forfeiture amount was arbitrary and capricious, that he was singled out to be an example, and that he has no way to pay



This decal was received from an intern (whose signature we couldn't make out) at KNOR/1400, Norman, Okla. That character holding the microphone is Norman Radio, himself! No relation to Norman Conquest.

the forfeiture. The FCC rejected each of these claims.

Tower lighting is something the FCC has regarded with considerable seriousness. WOKJ was the first license ever revoked for tower lighting violations. The FCC said that the problem was made worse because WOKJ was close to an airport, because the FCC felt that the licensee didn't take meaningful steps to resolve the problem, and because the FCC claimed that the licensee misled the agency into believing that a solution to the problem was at hand.

Send us your AM/FM station photos, decals, bumper stickers, recent QSL's, and news clippings. We hope you tune in next month!

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## INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

### So What's A Country, Anyway?

When radio buffs get together, one common topic of conversation is how many countries they have heard or QSL'd. But exactly what constitutes a "country" varies according to who you talk to. You could show the same stack of QSL's to two different SWL's and, depending on what they consider to be a valid radio country, get two very different totals of countries. The situation gets even stickier when hams and SWL's compare country totals. To hams, a place like the United Nations building in New York City is a separate "country," which most SWL's would dispute. But for many SWL's, there are still such countries as "East Germany," while hams say there's only one Germany around now.

Now exactly what is or isn't a radio country wasn't a big issue in the last presidential election, and for most SWL's and hams it isn't something that keeps them awake at night. But if you're like me and like to track of how many "countries" you've heard, then you have to figure out what you're keeping track of!

#### Political Criteria

When trying to determine what's a country, hams and SWL's have a lot in common with the diplomatic community. They are in the business of extending or withdrawing "diplomatic recognition," which means they have to decide whether or not some land area qualifies as a country. Diplomats and SWL's/hams don't have problems with many countries: everybody agrees that the United States, Canada, France, Great Britain, Australia, and Japan are countries. They have their

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AA6FW	27.06.89	06.07	21	59	SSB

ex: EU2WBL, UC2WBL, EW2WO  
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PSE QSL 73! Alex  
(TNX)

Here's a QSL from Byelorussia when there was still such a thing as the Soviet Union.

own currency, passports, military forces, postage stamps, and everything else you need for a "real" country.

So why not use the same criteria the diplomatic community does for ham/SWL purposes? That sounds appealing, but there are some problems. For one thing, diplomatic recognition of countries is not consistent nor entirely logical. For years, whether or not such countries as Taiwan, North Korea, South Korea, West Germany, and East Germany "existed" depended on which side of the Iron Curtain the recognizing country was located. Today, countries around the world differ in their recognition of countries like South Africa and the different republics that made

up the former Yugoslavia.

Another problem with the "political" approach to country determination involves entities such as Puerto Rico and Guam. Both are American territories and their residents are U.S. citizens. However, Puerto Rico and Guam are different from the rest of the United States. Neither has Congressional representation nor can their residents vote in presidential elections. In the Olympics, Puerto Rico even fields its own teams in the Olympics. A similar situation is found with various colonies of other countries. For example, the Cayman Islands, Hong Kong, Bermuda, and the British Virgin Islands are all British colonies and are not recognized diplomatically as

**Y61HQ**  
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To: AA6FW

Y61HQ confirms this qso:

DAY	MONTH	YEAR	UTC	MHz	TWO-WAY	RST
9	July	1989	0446	21	CW SSB	599 RSV 59 RSV

Operation QTH: Ilmenau KK: K05  
Locator: JO 50 LQ

The photo shows the Palace of the Republic with the cathedral.

The crew of Y34K was very glad to contact you by this special activity during the IARU-championship.

Y34K-ops: Y21 YK  
Y23 EK, PK  
Y24 TK, UK  
Y42 IK, LK, MK, OK, PK, QK

guests: Y21 TL  
Y25 ZO  
Y27 FN  
Y33 VL  
Y37 XJ

*verified*

From the Radioclub of the German Democratic Republic came this QSL.

4U1UN IS LOCATED AT  
THE HEADQUARTERS OF THE UNITED NATIONS

TO RADIO AA6FW CONFIRMING QSO/REPORT

DATE	UTC	MHz	RST	MODE
19.VI.88	0922	14	59	2xSSB <input checked="" type="checkbox"/> 2xCW <input type="checkbox"/> 2xRTTY <input type="checkbox"/> 2x <input type="checkbox"/>

GRID LOCATOR FN30AR  
LAT. N. 40° 45' 00"  
LONG. W. 73° 58' 04"  
CQ ZONE 5  
ITU ZONE 8

PSE/TNX QSL  
VY 73  
NA2K

UNITED NATIONS AMATEUR RADIO CLUB  
United Nations Headquarters, Box 20, New York, N.Y. 10017

The "country" of the United Nations sends out this QSL.

being independent countries separate from Great Britain. But no one—inside or outside the radio hobby—would seriously argue that the Cayman Islands and Hong Kong are the same territory as Great Britain itself.

Obviously, we have to keep political considerations in mind when determining a radio country. But we need to keep other things in mind—like geography.

## Geography

Geography is probably the most important factor in determining what a radio country is. This isn't too surprising, since DX'ing is the art of radio communication over great distances.

Geography takes care of such cases as Puerto Rico, Guam, Hong Kong, Bermuda, and the Cayman Islands. These areas are separated by significant distances from the main land mass of the country they belong to, and it's easy to consider them as separate "countries" for radio purposes.

Separation by significant distance from the main land mass of a country "creates" several new countries that would not be considered countries from a diplomatic or legal perspective. For example, SWL's and hams consider Alaska and Hawaii to be separate countries even though they are states. The huge territory of Russia is divided into European and Asiatic portions, with the Ural Mountains usually considered the dividing point. Another example is Kaliningrad, a small chunk of Russia located on the Baltic Sea. It is located between Poland and Lithuania, and is isolated from the main land mass of Russia by Lithuania, Latvia and Belarus (the former White Russian republic of the old USSR); in effect, it's a Russian "island" surrounded by other nations. Because of this, Kaliningrad is considered a separate country by hams and SWL's even though it is part of Russia.

So politics and geography are all you need to determine if some place is a valid "radio country" or not? Well...not quite. Depending on which SWL or ham you talk to, places like the U.S. Navy base at Guantanamo Bay, Cuba or the United Nations building in New York City are sometimes considered as "countries" in their own right! That's because there's another factor in determining what a "country" is or isn't, and it's the stickiest one of all.

## Tradition

When you get down to it, tradition is the reason a lot of stuff is done in every aspect of life. The radio hobby is no exception. But—just as in life—tradition in the radio hobby often isn't too logical or consistent.

Let's take the U.S. Navy base at Guantanamo Bay as an example. This is often rationalized as a separate country because of politics and geography. Okay, but why don't all U.S. military bases around the

world count as separate countries? The answer is tradition. For some reason, Guantanamo Bay has always been counted as a separate country, while other U.S. bases in Germany, Great Britain, and Japan that meet the same criteria as Guantanamo Bay don't. Doesn't make much sense, does it? But that's tradition.

Perhaps the most notorious example of tradition overriding logic is that of Monaco. Monaco is a very small country, and all broadcasters licensed to Monaco have their transmitters in France. But SWL's count QSL's from such stations as Radio Monte

Carlo and Trans World Radio-Monte Carlo as "Monaco" even though the transmissions are coming from France. Hams also have cases where tradition overwhelms common sense. Would you consider the building in Geneva, Switzerland that houses the International Telecommunication Union to be a separate country? Hams do. There's no real logical reason to do so, other than "that's the way it's always been done."

## Deleted Countries

What happens when a country "disap-

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# POP'COMM'S World Band Tuning Tips

## February—1993

Freq.	Station/Country	UTC Notes	Freq.	Station/Country	UTC Notes
2310	ABC, Alice Springs, Australia	1000	6030	R. Globo, Brazil	0000 PP
2490	R. Oito de Setembro, Brazil	0059 close, PP	6050	R. Nigeria, Ibadan	2230
3200	Trans World Radio, Swaziland	0300	6055	R. Sweden	2200
3205	R. Ribeirao Preto, Brazil	0900 PP	6060	R. Universo, Brazil	0600 PP
3215	R. Oranje, South Africa	0300 EE/Afk	6060	R. Nacional, Argentina	0600 SS
3221	Rdf. Togolaise, Togo	0530 s/on, FF	6085	Deutsche Welle, via Canada	0530 GG
3231	R. Madagasikara, Madagascar	0330 unid lang.	6090	R. Nigeria, Kaduna	2300 close
3250	R. Luz y Vida, Honduras	0230 SS	6115	R. Universidad, Mexico	0500 SS
3260	R. Madang, Papua New Guinea	1100	6120	R. Japan	1130 via Canada
3270	Namibian Bc Corporation	0300	6130	CHNX, Canada	24 hrs
3275	R. So. Highlands, Papua New Guinea	1200	6135	R. Aparecida, Brazil	2330 PP
3285	LV del Rio Tarqui, Ecuador	0900 SS	6150	Swiss Radio Int'l	0230
3290	R. Namibia	0500 unid lang.	6150	Caracol, Colombia	0100 SS
3315	SLBS, Sierra Leone	0600	6160	R. Japan via England	2330
3320	R. Orion, South Africa	0245	6180	R. Nac. Amazonas, Brazil	2200 PP
3325	R. Maya, Guatemala	1030 local lang.	6185	R. Educacion, Mexico	0900 SS
3335	TWR, Swaziland	0345 s/off	6210	Croatian Radio	0000 Croatian/EE
3380	MBC, Mali	0330 local lang.	6250	RN Malabo, Eq. Guinea	2200 s/off, SS
3380	R. Chortis, Guatemala	0230 SS	6280	Voice of Hope, Lebanon	0000
3385	R.E. New Britain, P/New Guinea	1100 pidgin	6300	R. Venceremos, El Salvador	0230 SS
3395	R. Eastern Highlands, P/New Guinea	1200	6560	Iraq Republic Broadcasting	0130 AA
3500	LV de Guainia, Colombia	1030, SS	6560	R. Pyongyang, N. Korea	1000 JJ
3880v	R. Free Bougainville	0800	6754	R. La Merced, Peru	0130 SS
3955	BBC, England	0400	6803	Ondas del Mayo, Peru	1000 SS
4000	RRI, Kendari, Indonesia	1100 II	6910	R. Africa 2000, Eq. Guinea	2200 close
4331	R. Horizonte, Peru	1100 SS	7105	RTVC, Congo	0600 FF
4409	R. Eco, Bolivia	0100 SS	7110	V of Ethiopia	0330 local lang.
4553	R. Tropico, Bolivia	0135 s/off, SS	7115	V of Pujiang, China	1130 CC
4649	R. Santa Ana, Bolivia	0100 SS	7125	IRRS, Italy	0600
4697	RKJP, Surabaya, Indonesia	1200 II	7150	R. Australia	1330 VV
4712	R. Abaroa, Bolivia	0230 s/off, SS	7155	La Voix du Sahel, Niger	0600 FF
4754	Rdf. Maranhao, Brazil	0100 PP	7170	ORTS, Senegal	0700 FF
4760	R. Frontera, Venezuela	0130 SS	7200	R. Omdurman, Sudan	0300 AA
4765	RTVC, Congo	0355 s/on, FF	7220	All Union Radio, Russia	0100 RR
4775	R. Tarma, Peru	0500 s/off, SS	7230	Channel Africa	0500 FF
4785	Baku R., Azerbaijan	0230 unid lang.	7235	Deutsche Welle, Germany	0400 AA, via Malta
4795	R. Nova Difusora, Brazil	0758 s/on, PP	7240	R. Australia	0800 pidgin
4800	Radio Lesotho	0300 Sesotho	7255	V of Nigeria	0500 s/on
4824v	LV de la Selva, Peru	0100 SS	7260	Sudwestfunk, Germany	0100 GG
4835	R. Buenaventura, Colombia	0930 SS	7265	VOA Relay, Botswana	0300 sign on
4845	ORT, Mauritania	0600 FF	7275	ELBC, Liberia	0652 sign on
4850	CRTV, Cameroon	0430 FF/EE	7290	R. Nacional, Angola	0500 PP
4850	R. Luz y Vida, Ecuador	0300 SS	7345	R. Czechoslovakia	0300
4865	LV del Cinaruco, Colombia	0300 SS	7380	V of Broad Masses of Eritrea	0327 sign on,
4875	V of Jinling, China	1100 CC	7385	RFPI, Costa Rica	2330 ex-7375
4879	R. Nac. Espejo, Ecuador	0130 SS	7400	R. Belarus, Belarus	0030 Byelorussian
4890	R. France Int'l, Gabon relay	0400 FF	7450	V of Greece	2330 GG/EE
4890	NBC, Papua New Guinea	1100	7460	WJCR, USA	0300
4900	R. Centinela del Sur, Ecuador	1100 SS	7465	Reshet Bet HS, Israel	0100 Hebrew
4904v	R. Relogio Federal, Brazil	0230 PP	7540	WEWN, Alabama	0100
4915	R. Cora, Peru	1000 SS	9190	R. Omdurman, Sudan	0255 sign on, AA
4915	R. Anganguera, Brazil	0030 PP	9265	Icelandic Ntl Bc Svc	0730 EE
4915	GBC, Ghana	0600	9280	Voice of Asia, Taiwan	1000 CC
4925	Rdf. Taubate, Brazil	0700 PP	9345	R. Pyongyang, N. Korea	1300
4945	Channel Africa, S. Africa	0357 sign on	9420	Voice of Greece	0330 GG
4955	R. Cultura, Brazil	0200 PP	9425	KFBS, Saipan	1500 RR
4962	R. Cima, Dominican Republic	0100 SS	9445	Voice of Turkey	2330 TT
4975	Super Radio Tupi, Brazil	0000 PP	9475	R. Australia	0900
4980	Ecos del Torbes, Venezuela	0200 SS	9475	R. Cairo, Egypt	0200
4990	R. Nigeria, Lagos	2230	9480	TWR, Monaco	0645
4990	Hunan PBS, China	1200 CC	9505	R. Record, Brazil	2300 PP
5005	R. Libertad, Bolivia	0100 SS	9510	KJES, New Mexico	1800 not daily
5020	LV de Sahel, Niger	0500 FF	9510	R. New Zealand	0930
5025-28	R. Rebelde, Cuba	1030 SS	9515	TWR, Bonaire	0700
5030	R. Continente, Venezuela	0330 SS	9535	Trans World Radio, Bonaire	0300
5035	Rdf. Centrafricaine, Cent Af Rep.	0430 FF	9540	R. Nac. Venezuela	1140 EE
5050	R. Tanzania	0300 Swahili	9545	R. Tirana, Albania	0530 sign on
5055	Faro del Caribe, Costa Rica	0330 EE	9555	R. Portugal	0230
5075	Caracol, Bogota, Colombia	0400 SS	9560	FEBE-Russia	0900 RR
5280	R. Guiaba, Brazil	0330 PP	9560	R. Japan	0100
5700	R. Netherlands	0030	9565	R. Universo, Brazil	0200
5850	R. Patria Libre, anti-Colombia	0030v SS+	9570	R. Portugal	0230
5882	Vatican Radio	0000	9575	RAI, Italy	0100
5955	LV de los Centauros, Colombia	0900 SS	9580	R. Tirana, Albania	0230
5960	R. Japan	0100 via Canada	9585	HCJB, Ecuador	0600 German
5975	BBC relay, Antigua	0400	9595	R. Tanpa, Japan	1000 JJ
5995	RTV Malienne, Mali	2330 FF	9600	R. Renascenca, Portugal	0030 PP
6010	R. Mil, Mexico	0700 SS	9605	Vatican Radio	0230
6015	R. Austria Int'l	0530 via Canada	9610	ABC, Perth, Australia	1200



Freq.	Station/Country	UTC Notes	Freq.	Station/Country	UTC Notes
9615	KNLS, Alaska	1400 sign on	12005	RTV Tunisienne, Tunisia	2200 AA
9615	R. Cultura, Brazil	2330 PP	12050	R. Cairo, Egypt	0300 AA
9615	R. Veritas, Philippines	1430 RR	12070	R. Tiky Okean, Russia	0715 RR
9645	Faro del Caribe, Costa Rica	0400 SS	12085	R. Damascus, Syria	2005
9660	ABC, Brisbane, Australia	1200	12160	WHRI, Indiana	0200 SS
9665	R. Marumby, Brazil	2330 PP	13620	R. Kuwait	2000
9685	RTV Algerienne, Algeria	2100 FF	13625	KHBI, Saipan	1400
9695	R. Sweden	0200	13635	Swiss Radio Int'l	2130
9700	R. New Zealand	1030	13640	Croatian Radio	0130 EE
9705	R. Portugal	0230	13650	R. Pyongyang, N. Korea	0000
9715	R. Tashkent, Uzbekistan	1330	13655	BRT, Belgium	2330
9725	Adventist World R., Costa Rica	1250	13660	R. Havana Cuba	0200 USB, EE
9735	R. Oman	1945 AA	13680	Rep. of Iraq Radio	2030 AA
9735	R. Oman	2300 SS	13685	Swiss R. Int'l	0700
9735	R. Oman	0200	13700	VOA Botswana relay	2030
9735	R. Oman	2000 AA	13755	R. Australia	1600
9735	R. Oman	1200	13830	Croatian Radio	2100 EE/Croatian
9735	R. Oman	0530	15010	V of Vietnam	1230
9755	R. Monte Carlo, Monaco	0400 AA	15070	BBC	1400
9760	R. Tirana, Albania	0130 Albanian	15084	VOIRI, Iran	0430 Farsi
9760	VOA relay, Philippines	1330	15090	Vatican Radio	2245 s/on
9770	China R. Int'l, via Mali	0000	15095	R. Damascus, Syria	2130
9810	R. Czechoslovakia	0300	15105	Deutsche Welle relay, via Sri Lanka	1300 CC
9830	Croatian Radio	0600	15125	AWR, Kuybishev, Russia	1700
9830	Voice of Hope-Asia, Palau	1100	15135	R. Ukraine Int'l	2100
9835	R. Budapest, Hungary	0200	15170	China R. Int'l, via Mali	2000
9865	R. Ukraine Int'l	2100 s/on	15180	Rep. of Iraq Radio	2300 AA
9870	WEWN, Alabama	0800	15185	R. Finland Int'l	2300
9870	BRT, Belgium	2330	15195	R. Japan	0500
9885	Swiss Radio Int'l	0200	15200v	R. Bangladesh	1230 EE
9900	R. Cairo, Egypt	2200	15215	R. Veritas Asia, Philippines	2300 Japanese
9930	BRT, Belgium	2355 close	15220	Channel Africa, S. Africa	0600 (ex R. RSA)
9950	All India Radio	2200	15260	VOIRI, Iran	0230 sign on
9980	Rep. of Iraq Radio	2200 AA	15265	Radiobras, Brazil	1800
11250	R. Ukraine Int'l	0000	15305	UAE Radio, Abu Dhabi	2300
11550	RTT Tunisia	1800 AA	15330	R. Sofia, Bulgaria	1830
11570	R. Pakistan	1600	15340	Iraq Rep. Broadcasting	0230 EE/AA
11620	All India Radio	2000	15340	R. Japan, via Gabon	2000 RR
11620	Vatican Radio	0145 SS	15345	Trans World Radio, Bonaire	1230
11635	R. Netherlands via Madagascar	0100	15345	RTM, Morocco	1400 Berber
11645	V of Greece	0140	15345	RAE, Argentina	1300 SS
11650	KTWR, Guam	1500	15355	R. Czechoslovakia	0400
11680	China R. Int'l, via Fr. Guiana	0400	15360	Deutsche Welle, Germany	2100
11685	R. Ala, Russia	0200 RR	15375	VOA relay, Botswana	0500 Hausa
11705	R. Sweden	2330	15400	UAE Radio, Dubai	0345
11710	RAE, Argentina	0100	15400	Radio Finland Int'l	1500
11715	VOA, Philippines	1300	15400	BBC, via Ascension Island	1930
11715	R. Korea, S. Korea	1030 via Canada	15415	R. Jamahiriya, Libya	2000 AA
11720	R. Sofia, Bulgaria	0300	15445	SLBC, Sri Lanka	2330
11725	R. Korea, S. Korea	1000 SS	15480	V of the UAE	1600 s/on, AA
11735	R. Pyongyang, N. Korea	1330 CC	15490	HCJB, Ecuador	1930
11745	R. Norway Int'l	2300 EE/NN	15505	R. Kuwait	2245 AA
11750	BBC Singapore relay	1200	15530	R. France Int'l, via Hungary	0630 FF
11755	R. Finland Int'l	0130	15570	R. Ukraine Int'l	1500
11760	R. Tbilisi, Georgia	2130 RR/EE	15580	R. Yerevan, Armenia	0230
11765	R. Beijing, China	2100 SS	15580	V of Freedom, via R. Moscow	1330 anti-Viet
11780	R. Vilnius, Lithuania	2300	15640	Kol Israel	2130
11790	R. Ukraine Int'l	0000	15750	R. Russia	1800 RR
11795	R. Denmark, via Norway	2300	17515	V of Greece	1230
11800	RAI, Italy	0100	17535	HCJB, Ecuador	0000 USB
11805	KTWR, Guam	0930	17555	BRT, Belgium	1300
11810	R. Jordan	1400 AA	17630	Africa No. One, Gabon	1100 FF
11815	Trans World R., Bonaire	1130	17715	R. Alma Ata, Kazakhstan	2030
11825	R. Tirana, Albania	2200	17725	V of the Great Homeland, Libya	2100 AA
11830	Radio Romania Int'l	0158 sign on	17730	Vatican Radio	0628 s/on
11830	R. Anhanguera, Brazil	0200 PP	17730	R. Alma Ata, Kazakstan	1830
11850	R. Tbilisi, Georgia	0445	17740	R. Yugoslavia	1200
11855	R. Beijing	1300	17740	R. Sweden	1300 EE
11870	R. Yugoslavia	0040	17760	BSKSA, Saudi Arabia	0500 AA
11880	R. Galaxy, Russia	2130	17770	R. New Zealand Int'l	0445
11885	WEWN, Alabama	0800 PP	17770	R. Havana Cuba	1800 SS
11905	RAI, Italy	0230 II	17775	R. Jamahiriya, Libya	2300 AA
11910	R. Budapest, Hungary	0200	17815	R. Tashkent, Uzbekistan	1200 EE
11920	R. Yerevan, Armenia	2245	17815	RTV Morocaine	1700
11925	R. Bandeirantes, Brazil	0000 PP	17840	BBC	1400
11945	R. Space, Russia	1500 RR	17860	Qatar Bc Service	1300 AA
11945	Iraq. Republic Broadcasting	0030 AA	17870	R. Sweden	1500
11955	Voice of Turkey	0400 TT	17880	R. Finland Int'l	1300
11955	BBC relay, Oman	0130	17890	Spanish National Radio	1200
11960	R. Sweden	1130	17895	HCJB, Ecuador	24hr SSB
11960	RTV Malienne, Mali	0900 FF	21505	BSKSA, Saudi Arabia	1530 AA
11965	V of the UAE	1800 AA	21515	Radio Portugal	1630
11970	R. Havana Cuba	0130	21605	UAE Radio, Dubai	1640 close
11980	R. Ukraine Int'l	0230 Ukrainian	21665	R. Romania Int'l	1330
11980	R. Aum Shinrikyo, Russia	0400	21675	R. Kuwait	1600 AA
11985	UAE Radio, Dubai	2100 AA	21810	BRT, Belgium	1300

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pears," as happened in 1990 when East and West Germany merged into a single Germany? For hams, you "lose" a country. For SWL's, nothing has changed. Why the difference?

For hams, what is or isn't a country is determined by the American Radio Relay League (ARRL), which administers the popular DX Century Club (DXCC) award and the accompanying DXCC countries list. The DXCC countries list includes only "current" countries—that is, countries which now meet the DXCC criteria. (The DXCC criteria are a mixture of politics, geography and tradition). For example, when East Germany was absorbed into West Germany, the country of East Germany "disappeared" and only one Germany was left. This practice means that ham DX'ers have two sets of country totals, "current" and "all-time" totals that include deleted countries. Countries "count" for ham DX'ers depending on the date they became "active" or were "deleted." A lot of hams (like me) have "lost" countries like East Germany as a result of political actions that have nothing to do with getting a radio signal to or from the country in question.

The most commonly used country list for SWL's is the one compiled and maintained by the North American Shortwave Association (NASWA). Unlike the ARRL list, the NASWA list is based on the philosophy of "once a country, always a country." Under the NASWA list, it's still pos-

sible to hear and verify the country of East Germany, if the station is located within the boundaries of what used to be East Germany, the NASWA will recognize a QSL from that station as being from "East Germany," even if the reception takes place in 1992! This might seem inconsistent and illogical, but NASWA doesn't recognize some the oddball "countries" (like the United Nations building in New York) that the ARRL does.

Copies of the latest ARRL countries list can be found in ARRL publications such as *The ARRL Operating Manual* or you can order one for \$2 from ARRL, 225 Main St., Newington, CT 06111. The NASWA list is also \$2 from NASWA, 45 Wildflower Rd., Levittown, PA 19057; a sample copy of the monthly NASWA bulletin is also \$2 from the same address.

Which list do I use? For ham DX'ing, I use the ARRL list since I participate in the ARRL's DX Century Club (DXCC) awards program. For SWL'ing, I use NASWA's list. My personal favorite is the NASWA list, since it tries to strike a balance between available "countries" without the arbitrary notion of making office buildings into countries. But what if you don't like either the ARRL or NASWA lists? That's the good part—you're free to make up your own list and count the countries you've heard as you see fit! After all, this is a hobby and is supposed to be fun, so don't take "country counting" too seriously!

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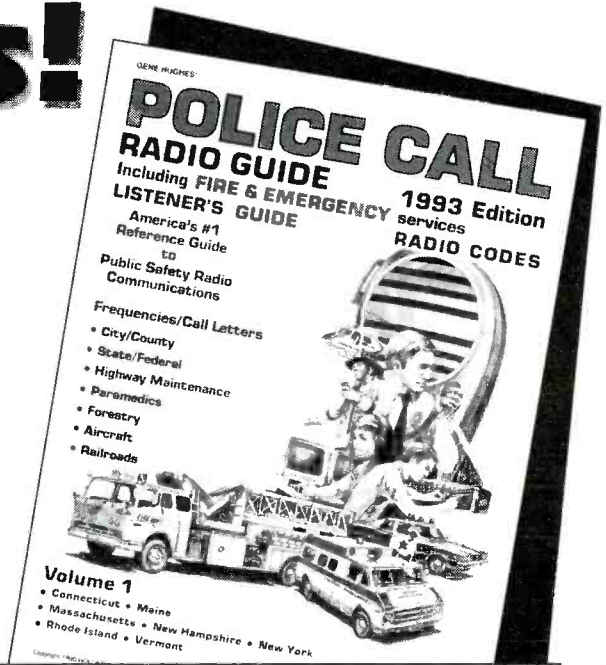
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## HOW I GOT STARTED

**P**opular Communications invites readers to submit, in approximately 150 words (more or less), how they got started in the communications hobby. They should preferably be typewritten, or otherwise easily readable. If possible, a photo of the submitter should be included.

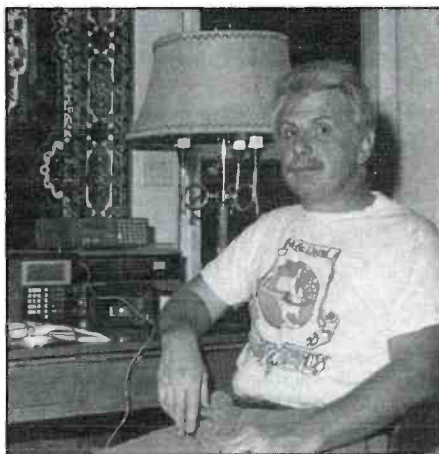
Each month we will select one entry and run it here. You need submit your entry only once, we'll keep it on file. All submissions become the property of *Popular Communications*, and none can be acknowledged or returned. Entries will be selected for use taking into consideration if the story they relate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

The person whose entry is submitted will receive a one-year gift subscription (or one-year subscription extension) to *Popular Communications*.

Address all entries to: How I Got Started, Popular Communications, 76 North Broadway, Hicksville, NY 11801.

### Our February Winner

This month our winner is Lewis L. Kubicek, who teaches at the Little Wound



*Lewis L. Kubicek teaches geography. He tells us that his students find learning an adventure when it involves the use of shortwave radio. Maybe you can help.*

School, Kyle, South Dakota. Lewis told POP'COMM:

"My first contact with shortwave was when Al, my older brother, tuned in news of the Korean War on our father's Spartan.

Later, while I was still a youngster, I visited a friend who had come into possession of the older brother's Collins receiver.

"As I grew, I attended college, then worked at a variety of jobs from land surveyor to cartographer. My interest in shortwave radio stayed with me. I have always had at least one with me at any given time. Presently, as a geography teacher, I have three loaner DX-440 radios for my students to take home and use. Shortwave is a wonderful learning aid.

"At my home, I have an FRG-8800, a DX-160, a PRO-2006 scanner, and a Satellite 500. My shortwave antennas include a dipole, a half-wave, and an amplified antenna.

"My students are very interested in shortwave. If any POP'COMM readers have old (but operating) shortwave radios they could donate for the students at our school, the equipment would be put to good use by these young people who love learning by adventuring around the word."

Editor's note: Lewis may be contacted at: Lewis L. Kubicek, Geography Department, Little Wound School, P.O. Box 400, Kyle, SD 57752. His phone number at the school is 1-(605)455-2461, Ext. 142.

# COMMUNICATIONS CONFIDENTIAL

## YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Each year the SWL Winterfest held at Kulpsville, PA gets better and better. There are always very interesting seminars and plenty of nifty door prizes. I am sure that the Fest this year will also be a well planned informative event. Make your plans now to attend the 6th Annual SWL Fest scheduled for Feb. 18-21. For further details and registration forms write to SWL Winterfest, PO Box 591, Colmar, PA 18915.

During a trip to England, R.C. Watts, KY noted an interesting HF antenna array on the roof of the British Admiralty building in London. R.C. pointed out that the camera did not show the antennas very well but he suspected the basic installation dated back many years.

Perry Crabill, VA forwarded some more beacon loggings and said "These bring my total up to 722 loggings, which makes it harder and harder to find new ones."

After the Iraqi conflict had terminated, several observers who had been in the area commented that they heard many signals of the raspy dots and dashes type. Such signals were heard through the HF bands and right on up into the VHF bands with one logging of 358.85 MHz being reported. It would certainly seem that these transmissions are definitely associated with the US Military.

Broadcast Engineer James Viele, OH offered some clarification regarding the photo in the September, 1992 column which showed the building housing the Juneau, AK FCC office.

James pointed out the antennas on the roof were commercial broadcast service antennas and not connected with the FCC office. "The top-most antenna is a 2-bay RCA "batwing" for transmitting VHF television. Below that on the left side of the tower are several bays of an FM transmitting antenna. The dish and parabolic reflector antennas on the right side of the tower are microwave antennas. The lower of the two is the style used for STL (studio-transmitter link) service. The other is most likely for ENG purposes. Evidently the FM station has studios located elsewhere and the STL antenna receives the audio from that location and feeds it to the transmitter equipment.

The FCC office in the building is most likely a Field Office which is administrative rather than a monitoring site. The latter would be located in a rural area with some degree of radio silence and room for some rather large antenna arrays."

Thanks, James, for the explanation. Some readers may have been misled into thinking the antenna installations on the



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Federal Aviation Administration

Fort Worth SFO  
4651 N. Main  
Fort Worth, TX 76106

APR 27 1992

J. S. McDonald

Dear Steven:

It was a pleasure receiving your "Report of Reception" for our FT non-directional beacon (NDB). Thanks for giving the circumstances of your reception and a description of your receiving equipment.

I found your receiving location very interesting, as I was stationed in Alaska on Level Island, between Petersburg and Wrangell. I maintained a VORTAC station there in the late 60's.

The FT NDB has a 400 watt Nantel, FA-9781, transmitter driving a 120 foot self-supporting tower, one of the old Adcock towers. We use an automatic turning unit to match the transmission line impedance to impedance of the tower. The surrounding terrain is flat and is farm and pasture. The elevation is 746 feet MSL.

Best Wishes,

Edward E. Norton  
Manager, Fort Worth/Meacham SFO

Along with the return of his PFC, Steve McDonald, Canada received this letter.

# FT

FT. WORTH - TEXAS  
MEACHAM FIELD  
365 kHz



THIS WILL VERIFY YOUR RECEPTION OF RADIOBEACON  
"FT" ON 365 kHz AT 0721 UTC ON MARCH 19-1992.

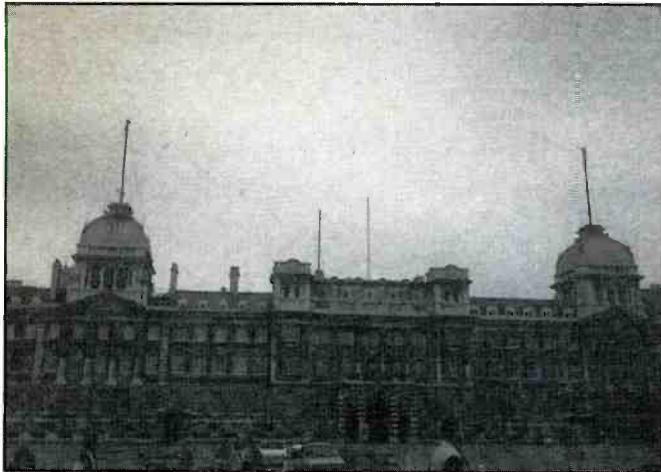
BEACON POWER: 400 watts

BEACON ANTENNA: 120 ft. tower, "Adcock"

SIGNATURE & OFFICIAL STAMP:

FEDERAL AVIATION ADMINISTRATION  
FORT WORTH MEACHAM SFO  
4651 NORTH MAIN  
FORT WORTH, TX 76106

PFC used by Steve McDonald, Canada.



Antennas on British Admiralty building. (Photo courtesy of R.C. Watts, KY.)

PORTO VELHO AVIACION RADIO BRAZIL

---

**VERIFICATION OF RECEPTION**

---

TO: EDWARD RAUSCH III

DATE: April 24 92 FREQ: 8855khz MODE: USB  
 XMTR: SR 1650R ANTNA: DIPOLO  
 POWER: 1 KW WATTS LOCATION: 084248S/0635408W  
 REMARKS: Our xmtr are from Scientific Radio, Inc.  
Our main service is Air Traffic Control.

*Edinaldo Antonio da Oliveira*  
 Chefe de Estação W/G  
 PORTO VELHO

(Station Seal)

Here is a PFC returned to Ed Rausch, NJ.

roof of the building were connected with the FCC office.

From Kevin Tubbs, Germany we received an article from the *Stars & Stripes* describing the opening of a naval radio transmitter facility on Sicily during this past summer. The site has a transmitter building, 33 antennas (with 13 more to be installed) and is remotely controlled from the Naval Computer and Telecomm Station (NAVCOMTELSTA) located elsewhere on Sicily. This activity provides support to the air station and the US 6th Fleet as well as some NATO facilities in the Mediterranean.

Kevin also sent along an article from *Soldiers* magazine which outlined the support given by the Fort Huachuca Special Electronic Missions Aircraft Training Division "to the various federal law enforcement agencies in the war against drug smuggling on the nation's southwestern border."

During training flights, if suspect ground movements are noted on the SLAR (side-looking airborne radar), the instructors on the ground can pass the data to other agencies via normal channels.

Joe Weatherly, PA wrote that he is 69 years old and he started SWL'ing in 1935 and is still hooked on it. "While doing some shortwave listening I came across a signal on 25, 873 kHz at 1400 UTC. To my amazement it ID'ed as AM station WFLA in Tampa, FL on 970 kHz. I am located nearly 1000 miles from Tampa. The signal remained on till approximately 1600. I was listening on a Kenwood R-5000 receiver at the time with an Alpha Delta Sloper antenna. I also have a Panasonic R-4900 with a random length single wire antenna in the attic. This receiver also picked up the signal on the same frequency, but not quite as strong.

Could it have been some type of image or harmonic or perhaps some outbender repeating the WFLA program?"

Joe, I lean toward the outbender theory but perhaps some readers have another explanation to offer.

A newcomer to SWL, Michael Schmehl, PA said "After reading comments about 'utility' stations, I decided to have a look. The beacons I found puzzled me. I eventually found they were navigational aids.

What I still don't understand is where you get the addresses to QSL them? If you could, how about some information that would bring us novices 'up-to-speed' regarding beacons."

Alright Michael, here are some details I hope are of help to you as well as to others who had the same questions.

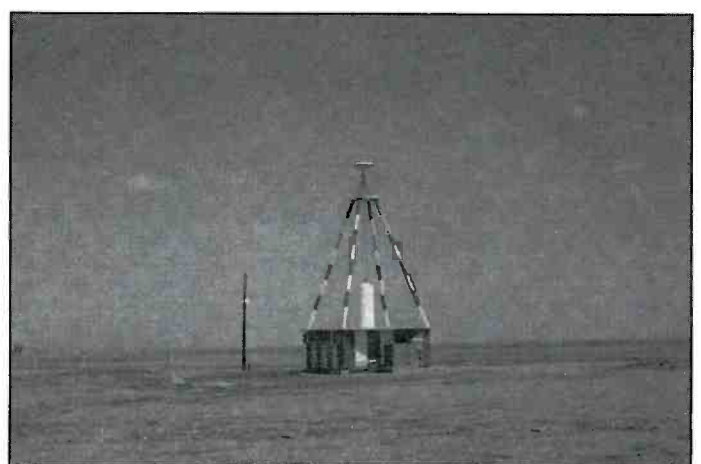
I highly recommend *The Aero/Marine Beacon Guide* by Ken Stryker. Not only does this publication provide you with ID's of beacons but it is chock full of informative material concerning the lower portion of the frequency spectrum. One section deals with instructions for "QSL'ing the Beacons." Written by Steve McDonald, a frequent contributor to this column, it contains clear procedures to follow in your efforts to obtain beacon QSL's.

For ordering information for the *Beacon Guide* write to Ken Stryker, 2856-G West Touhy Avenue, Chicago, IL 60645.

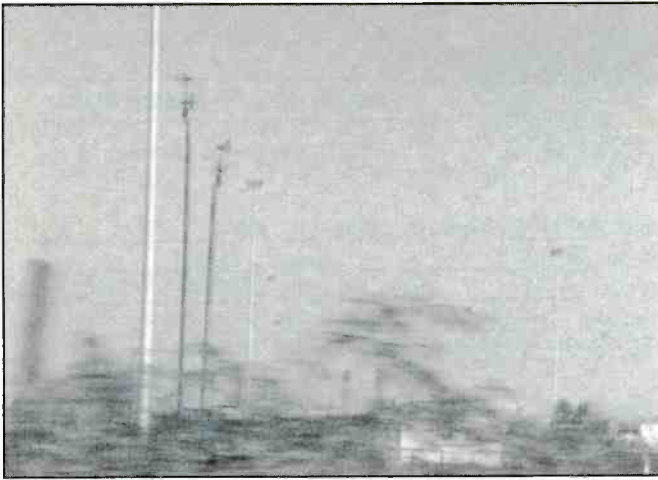
Another valuable aid is the *LOWDOWN* which is the monthly publication of the LONGWAVE Club of America. It has a variety of ELF/VLF/LF articles including a column by Ken Stryker in which he pro-



Listening post of "The Sarge" in Saudi Arabia.



HFR, Al-Qaisumah VHF beacon on 113.1 MHz. Photo by "The Sarge."



Antennas of the Patriot missile battery at Ad-Damman. Photo by "The Sarge."



Antennas of the USNS Altair. Photo by "The Sarge."

vides updated ID's of beacons. For additional information write to LWCA, 45 Wildflower Road, Levittown, PA 19057.

First time contributor Mike Boles, PA said he has been SWL'ing since November 1991. "I had been a fairly active listener in the mid 60's to late 70's but going to college and then 20 years in the Military, I dropped out from listening. However, in November of '91 I dusted off my Realistic DX-160 that I had used for 20 years and hooked on 8' longwire and it did a good job, but the tuning system was hit and miss. In June of '92 I picked up a Realistic DX-440 and it has been super. Then in August I tried some Utility listening and found it to be very interesting."

Some unidentified loggings were sent in by Kevin Tubbs, Germany. In looking at the header it appears it would break out as follows: A3XF A3XF A3XF DE 5CEW 5CEW BT QTCNR 08 (msg nbr) 27 (group count) 10 (date) 2015 (time) 08 (msg nbr repeated) BT. The text was 5L groups but 5F groups have been seen as well as mixed letter/figure groups. European listeners report these signals as being quite strong.

A huge thank you to all who have sent in photos, news items, QSL's and other interesting material. I do try to use something from everyone and I want you all to know that your efforts are very much appreciated.

#### UTE Loggings. (Times=UTC)

- 147.3: DDH47, Hamburg, Germany w/wx, CW at 1817. (Tubbs, Germany)
- 212: Beacon UCF, Cienfuegos, Cuba at 0928. Listed as 210 kHz; possible LSB. (Crabill, VA)
- 227: Beacon SJY, Ryan, San Jacinto, CA at 0448. (Vaage, CA)
- 233: Beacon LG, Daugherty Field, Long Beach, CA at 0449. (Vaage, CA)
- 245: Beacon TLR, Melford Field, Tulare, CA at 0453. (Vaage, CA)
- 251: Beacon ZQA, Nassau, Bahamas at 0944. (Crabill, VA)
- 253: Beacon UR, Burbank/Glendale/Pasadena Airport, Burbank, CA at 0454. (Vaage, CA)
- 260: Beacon XCB, u/i at 1301. (Crabill, VA)
- 268: Beacon MO, u/i at 1600. (Tubbs, Kenya)
- 278: Beacon OS, Los Angeles (International

Airport), CA at 0458: Beacon XSD, Tonopah Test Range, Tonopah, NV at 0459. (Vaage, CA)

289: Beacon MR, Light 3, Marina Del Rey, CA at 0511. (Vaage, CA)

289: Beacon CB, poss Cape Henry, VA, ex-298. Hrd at 1250. (Crabill, VA)

293: Beacon OC, Ocean City, MD at 1254. (Crabill, VA)

302: Beacon L, Light Station, Point Loma, CA at 0515; Beacon V, Light, Point Vicente, CA at 0516. (Vaage, CA)

326: Beacon MCY, Desert Rock, Mercury, NV at 0520. (Vaage, CA)

329: Beacon RVN, Rogersville, TN at 0152. (Crabill, VA)

346: Beacon PA, u/i at 1606. (Tubbs, Kenya)

347: Beacon DBR, u/i at 1605. (Tubbs, Germany)

348: Beacon NID, China Lake, CA at 0523. (Vaage, CA)

356: Beacon NCA, Jacksonville, NC at 0203; Beacon YZD, Downsview, Ont., Canada at 0205; Beacon JZP, u/i at 0936. (Crabill, VA) Beacon RD, Reading, PA at 0010. (Schmehl, PA)

370: Beacon GW, u/i at 2036. (Tubbs, Germany) Beacon PAI, Barton Heliport, Pacoima, CA at 0529. (Vaage, CA)

374: Beacon EKG, Palomar, Carlsbad, CA at 0531. (Vaage, CA)

379: Beacon GDQ, u/i at 0015. (Schmehl, PA) This possibly GKQ, Newark, NJ. (Ed.)

382: Beacon LQ, Boston, MA at 0133. (Crabill, VA)

385: Beacon BF, Meadows Field, Bakersfield, CA at 0534; Beacon MR, Peninsula, Monterey, CA at 0536. (Vaage, CA)

388: Beacon NXX, Willow Grove NAS (Warminster NAF), PA at 1242. (Schmehl, PA)

391: Beacon EBY, Neah Bay, WA. No time. (Vaage, CA)

392: Beacon RW, u/i at 2038. (Tubbs, Germany)

397: Beacon LLJ, Challis, ID at 0542. (Vaage, CA)

400: Beacon ENS E, u/i w/strong signal all day but dips a little at sunset. (Vaage, CA) Stryker believes beacon located in Ensenada, BCN, Mexico. (Ed.)

403: Beacon PO, Poughkeepsie, NY at 0046. (Crabill, VA)

411: Beacon RD, Roberts Field, Redmond, OR at 0545. (Vaage, CA)

413: Beacon DLS, u/i at 1607. (Tubbs, Germany)

439: OST, Oostende, Belgium at 1000 in CW w/tic list. (Boender, Netherlands)

442.5: FFB, Boulogne-sur-mer, France in CW at 0810 w/tic list. (Boender, Netherlands)

472: NMC, Coast Guard San Francisco, CA w/notice re NRV on Guam reduced operations. (Vaage, CA)

500: NMC, CG San Francisco, CA in CW at 1830 re marine information best on 472 kHz. (Vaage, CA)

525: DAN, Norddeich, Germany in CW at 2105 w/navigational warnings. (Boender, Netherlands)

770: Beacon LR, u/i at 0459. (Tubbs, Poland)

1705: OXB, Lyngby, Denmark in USB at 2140 w/nav warning. (Boender, Netherlands)

2095: Bravo Charlie, Charlie Alpha & Papa Bravo in USB at 1642. CA appears be control. (Tubbs, Saudi Arabia)

2103: FDC, Air Force Metz, France in CW at 2155 w/VVV DE FDC mkr. (Boender, Netherlands)

2652: IGJ41 DE IGJ44 in CW at 2257. (Tubbs, Germany) The IGJ calls are Italian Navy but I do not hold locations for 41 or 44. (Ed.)

2670: USCG Hampton Roads, VA (NMN80) w/notice to mariners in USB at 0204. (Hill, MI)

2716: 8AD wkg R4Y re permission to enter harbor. USB at 0958. (Hill, MI)

3368: OM/EE in USB at 0541. Hrd calls 31, Horse & Serpent. (Tubbs, Saudi Arabia)

4041: N2K Mil Tac unit on field ops clg another stn for rdo check. Got check from NNN0EXT. Hrd at 2210. (Rausch, NJ)

4270: PCD, Mossad in AM at H+00 & H+30; also CIO, Mossad at H+30. (Tubbs, Saudi Arabia)

4376: HMAS Brunei (Australian Naval Patrol boat) w/coded msgs for CMSTAR Darwin & Canberra. OM/EE opr in USB at 0800. (Spurway, Australia)

4380: New Zealand wkg KROI in USB at 0805 w/phone call to South Korea. (Spurway, Australia)

4408: Halifax, NS CG w/high seas wx for Canadian maritime region. (Rausch, NJ)

4789: CW stn at 0547 keeps rptng Red Dragon. (Tubbs, Saudi Arabia)

4926: FDC, Air Force Metz, France in CW at 1750 w/VVV DE FDC mkr. (Boender, Netherlands)

5177: CW stn w/NNN sign on from 2100-2105. Then YL/GG w/Gruppe 20 and into 5F grps. (Mason, England)

5320: Key West CG Station wkg Miami Ops in USB at 1850 re MayDay call on a/c freq 122.9 & 123.4 MHz. Investigated and nothing found. Requested permission to end mission. (Koch, IL) USCG Cutter Sweetgum wkg CominSta New Orleans. Shifted freq several times to go Green. No joy on Green comms. New Orleans xmid in Green, Cutter recd in Green and answered in the clear. Hrd at 0125. (Rausch, NJ)

USCGC Point Arena WPB82346 wkg USCGC Point Wells WPB82343 w/position & speed, etc. USB at 0015. (Hill, MI)

5445: D6H & D9H in CW at 0514. (Tubbs, Saudi Arabia)

5629: CIO, Mossad H+30 in AM. (Tubbs, Saudi Arabia)

5692: Detroit Air 6590 in USB at 0905 enroute to Pontiac, MI, needing flight info & relief pilot. (Koch, IL)

5694: USS Forrestal CV59 clg ComSta New Orleans but no joy. USB at 0253. (Hill, MI)

5696: CG1716 (HC130H) wkg ship F6 (ELPF) for medical emergency. A 3-man medical team was going to parachute from the 1716. CG1716 needed F6 to launch lifeboat to pick-up medical team and to illuminate area. 1716 eta area in 40 mins. USB at 0247. (Hill, MI)

**5700:** Reindeer & Dogpatch wkg Moccasin in USB at 0642. (Koch, IL)

**5960:** Analog enciphered voice on USB at 1113. (Tubbs, Saudi Arabia)

**6224:** Charlie Romeo Sierra wkg WZA7707. Sub Sig II. CRS was 3 miles east of rendezvous point. USB at 0130. (Hill, MI)

**6288:** IGJB, MV Bormida in CW at 2138 w/VV/DE IGJB. (Boender, Netherlands)

**6290:** U/i CW stn at 1326 w/mixed ltrs/nbrs groups. (Tubbs, Saudi Arabia)

**6425:** URD, S. Petersburg in CW at 2134 w/DE URD QXS. (Boender, Netherlands)

**6500:** Portsmouth, VA USCG CommSta in SSB at 1825 w/marine wx. (Boles, PA)

**6501/6200:** Cargo vessel Klamath Horizon giving position & wx to Commsta Boston at 2317. Vessel enroute to Gibraltar. USCG Commsta Boston wkg pp for USCGC Dallas. (Rausch, NJ)

**6514:** Sydney wkg Asian Exporter in USB at 0900 w/2 pp's one to Perth & other to Darwin. Opr was YL/EE. (Spurway, Australia)

**6519:** WLO, Mobile. AL w/tfc list in USB at 1000. (Hill, MI)

**6666:** EG w/coded msgs in USB at 0306 & 0338. (Hill, MI)

**6675:** YL/EE w/43671 call up at 2020. Then Ready Ready 25 25 and into 5F grps. (Mason, England)

**6724.5:** Rain Song, Hold Down, Sea Scout, Straight Lift, & Touch Football in USB in net passing encrypted data at 2036. (Willmer, MI)

**6756:** Trenton Military in SSB at 0230 w/wx. (Boles, PA)

**6770:** USB net at 1457 w/A3Z, J8I, U3T, R1P, M26, R6E. British calls also hrd: Alpha-1, Alpha-18, Bravo-3, Bravo-4 Romeo-1, Scorpion-1. (Tubbs, Saudi Arabia)

**7446.5:** U/i CW stn at 0934 w/5L grps incl some Cyrillic characters. (Tubbs, Saudi Arabia)

**7450:** U/i looking for any station to check-in. Said he was working for the Arizona National Guard & that this was net control. Other end also u/i. USB at 1030. (Koch, IL)

**7525:** At 2345 King 70 wkg Patrick Rescue in LSB during relief operations. This was also the HH-60's primary HF voice circuit during the relief ops. (Willmer, MI)

**7552.1:** WNID658 (Southern Bell Telephone, Jacksonville, FL) wrkg a Key West, FL station, call sign WMRX at 2015 w/calls to relatives re survivors. (Willmer, MI)

**7565:** School of the Air, Dubbo NSW, Australia in USB at 0436 w/Primary school lessons & talk on Olympic games. (Spurway, Australia)

**7663:** Analog enciphered voice in USB at 1137. (Tubbs, Saudi Arabia)

**7887:** YL/SS at 0600 rptng Atencion 866 05 then 05 110 & into 5F grps then 3 Finals. (Mazanec, OH) YL/EE in AM at 1329 w/5F grps (each grp sent twice). Sent a little song in between each msg. Heavily jammed. (Tubbs, Saudi Arabia)

**8148:** OVG8, Navy Frederikshavn, Denmark in CW at 0853 w/call & QSX mkr. (Boender, Netherlands)

**8300:** Gulf Commander in SSB at 0045 receiving daily status reports from Gulf Mist. (Boles, PA)

**8557:** SPE41, Szczecin, Poland in CW at 0928 w/call & QSX mkr. (Boender, Netherlands)

**8731:** Vessel Meridian in USB at 2330 wkg WOM, Pensucco, FL w/ship to shore call. Ship was on 8207 kHz. (Koch, IL)

**8764:** Commsta Portsmouth wkg Cutter Escanaba (8240 kHz) in USB at 0114. (Hill, MI)

**8775:** E4P in SSB at 0230 doing comm checks w/UOJ, U6I, E3M, IJE and others. (Boles, PA)

**8790:** YL/GG rptng 209 from 2130-2135 in AM. Then 643 x2 118 x2 and into 5F grps. Very slow delivery. (Mason, England)

**8805:** PCD. Mossad in AM at H+00 & H+30. (Tubbs, Saudi Arabia)

**8830:** Honolulu Volmet in USB at 0700. (Spurway, Australia)

**8867:** Nadi wkg Polynesian 842 w/position check at 0847; QF6 wkg Auckland w/position check & Selcal at 0342; Airvan 24 wkg Sydney-maintaining FL310, ground speed now 560 knots. Hrds at 2320. All in USB. (Spurway, Australia)

**8879:** U/i stn in USB at 0252 w/OM singing in

#### Abbreviations Used For Intercepts

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

foreign language. Also hrd on 8915 kHz. Hrd again next day. (Hill, MI)

**8903:** Manilla in USB at 1304 wkg United 816 w/wx forecast. (Spurway, Australia); Naha, Japan in USB in contact w/United Airlines flight at 1023. (Toniolo Dos Anjos, Brazil)

**8909:** U/i a/c requested permission from u/i stn to land on runway 33. LSB at 0211. (Bradt, Ont., Canada)

**8912:** W8274, u/i wkg other u/i stn in USB at 0935 re delivering some parts to Selma, Alabama from Atlanta. (Koch, IL)

**8918:** Merida, Mexico in USB at 0043 in contact in SS w/Aer. Mexicana flight from Acapulco to Lima. (Toniolo Dos Anjos, Brazil)

**8967:** At 1340 FT, G, and D in Alligator Playground net. Sierra tracks were id'd as Blue forces. FT also requested G to clean up his alligator picture as he was transmitting a lot of bogus tracks. One track id'd as an Army LTU traveling at 70 knots. At 0140 King 24 in pp via Thule to Acclimate w/eta to Patrick AFB. All in USB. (Willmer, MI)

**8972:** USN "FT" at 0051 wkg Rhetoric w/"My Papa Uniform is in the Alligator." (Pihale, MN)

**8984:** San Francisco in USB at 0420 wkg rescue a/c. A/c reports sea state & SF replied with "OK, drop the pump and proceed to other vessel 90 miles away. (Vaage, CA); CG1710 wkg Miami Ops in USB at 0920 w/report on damage in Bahamas from Hurricane Andrew.

**9009.5:** Baby Face, Lightning Zero, Second Marines, Terminator, Chiefton Forward, and Chiefton Rear in USB net at 1408. Rdo checks in clear and secure, talk of troop lift missions and landing zone (LZ) sites. (Willmer, MI)

**9060:** FIT569, Lyon, France in CW at 1151. Other end not hrd. (Tubbs, Saudi Arabia)

**9085:** T10 advising T26 to send msg via ProComm to Brigade Commander. USB at 2233. (Willmer, MI)

**9120:** At 1445 Raymond 01 (Hq TAC, ALCC Langley AFB) in pp via Red Stone 19 w/Raymond 15 (31st TFW, Homestead AFB) coordinating arrival of ATT Rep. USB mode. See also 14399 kHz. (Willmer, MI)

**9133:** OM/EE in USB at 1035. Hrd Papa Golf, Papa Lima, Papa Two. Poss passing tracking data. (Tubbs, Saudi Arabia)

**10141:** YL/Chinese w/3G x3 5F x2 2F x2 x2 call up from 2100-2105. Then into 4F grps. Hrd same call up in Nov. 89. (Mason, England)

**10255:** Every Thursday YL/GG at 2100 rptng 393 x3 07917 049 until 2106. Then five tones and into 5F grps. Also on 5315 kHz. Says 9 as 'Noynor.' (Mason, England)

**10493:** WGY907, FEMA Kansas City, MO wkg WGY957, FEMA Lincoln, NE at 1424. QSY'ed to 7348 kHz (F22) as LQA showed this to be best freq. Conducted data testing using a Harris 1290 modem. USB mode. (Willmer, MI)

**10740:** YL rptng Oscar Alfa w/electronic tones from 1330-1335 then into 5F grps on GG for 122 and 820. This is new 2 letter station. (Mason, England)

**11176:** Ascension AFB in USB at 1710 w/pp for

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CIRCLE 136 ON READER SERVICE CARD

u/i (illegible) a/c w/Howard AFB & watsn wx. (Koch, IL) UN Western Sahara clg Ascension AFB at 2200. Negative contact. I would guess that was a UN Relief team. (Rausch, NJ) King 70 w/pp via Andrews to Gun Runner w/status report. Advised King 24, 87, 621 and 6 Jolly's (F-16's) 200, 201, 202, 227, 228, and 229 plus 2 Jolly's from the 41 ARS at Patrick were on scene. King 621 w/pp via Andrews to Rep from the 908th. 621 advised that due to cellular saturation only 1 call every 4/5 hours was getting out. 908th Rep arranged to have InMarSat equip flown down by the 440th Air Lift Squadron. (Willmer, MI)

**11179:** McDill in SSB at 2145 wkg a pp between a/c & CO where passengers to be dropped off. (Boles, PA)

**11199.5:** Falcon 540, 544, 532 and 553 wkg Falcon Base with tasking order, sectors of operation, etc at 2010. On 6709.5 kHz at 1300 Falcon 543 had advised base that engine two had failed operation power check. USB mode. (Willmer, MI)

**11024:** Ascot 5071 in USB wkg Belize Flight Watch requesting wx at 1152. HMS Cardiff (D108) w/rdo check w/Belize Flight Watch. Believe Cardiff was assisting in Bahamas relief. (Willmer, MI)

**11226:** Andrews AFB wkg Air Force 1 for rdo checks. Moved to triple 8, which turned out to be 6812 kHz. Also hrd SAM 29000. USB mode at 0157. (Hill, MI)

**11228:** SAM 60202 in USB returning from Homestead AFB in pp via MacDill w/Pentagon. Advised portable TACAN wkg on ch. 64, 3 of 13 tankers have fuel to refuel planes, and VFR rules are in effect. Also advised that damage was "like nothing I've ever seen." (Willmer, MI)

**11229:** SAM 049 in USB at 0533 wkg Andrews AFB w/rdo checks than had pp. Shifted from USB to LSB. (Koch, IL)

**11230:** Mother wkg Tanker, Guns and HQ1 w/relief operations. Talk of casualties, priority of clearing roads, & need for water. Also mentioned a C-130 w/Royal Marine Engineers would be arriving at Gregory Town from Belize. USB mode. Believe this is British relief effort in Bahamas after Hurricane Andrew. (Willmer, MI)

**11260:** OM/EE w/418 callup at 2004 foll by 573 x2 60 x2 and into 5F grps. Ended w/00000. (Mason, England)

England)

**11545:** YL rptng Sierra Bravo from 2330-2335 w/electronic tones. Then 5F grps in GG for 498 and 962. At same time on 8063 same YL w/Hotel Kilo w/5F grps in GG for 393 and 621. (Mason, England)

**11602:** YL/EE w/292 call up from 1300-1310 in RCS. Ten tones and into 225 3/2F grps. (Willmer, MI)

**12210:** KWA80, u/i in CW at 2052 w/QRA/QSZ mkr. (Tubbs, Saudi Arabia)

**12221:** YL/EE in RCS w/992 call up from 1500-1510. Then ten tones and into 225 3/2F grps. Also on 14703 kHz. (Willmer, MI)

**12250:** OM/EE w/RR accent w/821 call up every Thu/Fri at 2020 w/very strong signal. Originally tuned up on 12255 kHz at 2006 but switched freq at 2015. Ended w/00000. (Mason, England)

**12355:** YL/SS w/5F grps in AM at 2014. (Hill, MI)

**12662:** 7TF, Skikda, Algeria in CW at 2037 w/call mkr. (Boender, Netherlands)

**12736.5:** TAH, Istanbul, Turkey in CW at 2006 w/call mkr. (Boender, Netherlands)

**12747:** KPA, Mossad, in AM at H+15; SYN, Mossad, in AM at H+30. (Tubbs, Saudi Arabia)

**12803:** UDK2, Mumansk, Russia in CW at 2005 clg 4LS DE UDK. (Boender, Netherlands)

**12857:** 6WW, French Navy, Dakar, Senegal in CW at 2020 w/call mkr. (Boender, Netherlands)

**12940:** LZW53, Varna, Bulgaria in CW at 2027 wkg several vessels. (Boender, Netherlands)

**13164:** KMI, Point Reyes, CA (High Seas Radio) in SSB at 0000 w/marine wx and announcement that all oprs are busy, please standby. (Boles, PA)

**13580:** RIL2 wkg RKN2 (both unlocated) in CW at 1455. (Tubbs, Saudi Arabia)

**14269:** SSB net at 2200 controlled by K4UUD in Orlando, FL. Had status of damage in FL from Hurricane Andrew and set up Health & Welfare tlc. (Boles, PA)

**14275:** Amateur Emergency net in USB at 1035. Various stns with comm re medical personnel required treat victims of Hurricane Andrew. (Koch, IL)

**14392:** YL/EE in RCS w/804 call up until 1510. Ten tones and into 225 3/2F grps. Also on 15450 kHz. (Willmer, MI)

**14399:** Red Stone 20 in USB wkg Raymond 15 re progres of relief convoy at 1505. (Willmer, MI)

**14752:** YL/EE w/1-0 count and 679 from 2100-2110. After ten tones count 225 and into 3/2F grps. In parallel w/12242 kHz. (Mason, England)

**15015:** Incirlik, MAC 13425, MAC 13157, Phantom, Crayon all in USB at 1111. (Tubbs, Saudi Arabia) A/c 60126 wkg MacDill for wx for Randall-Gray airfield. USB at 0316. (Hill, MI)

**15481:** YL/EE in RCS w/333 call up from 1300-1310. No tones and into 210 3/2F grps. (Willmer, MI)

**15867:** Hammer (Customs, Riverside, CA) wkg Omaha 10 (Customs a/c) in USB at 1356. Check made on Mexican a/c tail nbr, came back a Piper Cherokee from LA. CA. They then went scrambled. (Koch, IL)

**16245:** OM/EE every Thu/Fri at 1920 w/821 call up. Then 957 x2 31 x2 and into 5F grps. Very powerful signal. Ends w/00000. (Mason, England)

**16317:** YL/EE rptng 652 from 1700-1739 in AM. Then 809 x2 154 x2 and into 5F grps x2. (Willmer, MI)

**16395:** Powerful DSB carrier at 1945. At 2000 YL/SS w/659 call up then 184 x2 27 x2 and into 5F grps. Ended w/00000. This is same outfit as OM/RR, OM/EE, OM/GG. It had same carrier and all stns have pause after every 'zero' in the texts. (Mason, England)

**16528:** Tanker Overseas Alice (WOVL) wkg USCG New Orleans requesting Med-A-Vac for ill crewman. USB at 2300. (Hill, MI)

**17016:** SLHFM's P, C and S in CW at 1056. ID's given as Kaliningrad, Moscow & Arkhangelsk respectively. (Boender, Netherlands)

**17129.5:** OM/EE in USB at 0613 clg Bravo-02 from Kilo-79 then sent 100 bd F1B xmsn. (Tubbs, Saudi Arabia)

**17560:** YL/GG in RCS at 1837 w/3/2F grps. (Willmer, MI)

**21395:** Goddard Space Center in USB at 1600 w/relay of Endeavor shuttle comms. (Boender, Netherlands)

**23195:** VLB, Mossad in AM at H+45. (Tubbs, Saudi Arabia)

**26105:** WLO, Mobile, AL in CW w/call mkr foll by SITOR A phasing signal. (Booher, CA)

**27550:** Analog enciphered voice in USB at 1630. (Tubbs, Saudi Arabia)

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## FOCUS ON FREE RADIO BROADCASTING

**T**here's another flood of reports this time so let's get on with them. A station ID'ing as "CQ On The Radio" was heard on 7415 at 0211 by Mike Mancuso in North Carolina, playing Led Zeppelin and Primus and announcing the broadcast as a test on 7415.

Mike also heard CSIC on 7413 from 0205 with fake commercials and songs. Announced the Blue Ridge Summit address, requesting \$1 from US listeners and Canadian stamps from Canadian listeners.

Cathy Zylka in New York heard Radio Beaver (PO Box 293, Merlin, Ontario N0P 1W0) on 7419 at 0018 to 0048. They were appealing for "no" votes on a referendum.

Robert Ross, Ontario, had EBO Radio carrying the Voice of Bob at 0113 on 7415.2, as did Michael R. Schmehl in Pennsylvania.

Michael also heard EBO with its own programming on 7414.7 at 0000 giving a location as "Frogmore, South Carolina" and the Wellsville mail drop address. Also claimed it was their "second mobile broadcast." Mike also logged the station on other occasions at 0057 and on 7415 at 0022 to 0151. Pat Murphy, Virginia noted them at 2315-0044 sign off. Peter J. Stawicki in Oklahoma found them on 7417LSB at 0125, claiming to be in Broadmore, South Carolina. John Cruzan in Missouri had them on 7415 at 0230 with technical problems.

Cruzan noted WKIK come on after the EBO broadcast, claiming to be in Jacksonville, Florida. Schmehl had this on 7414.8 USB at 0007, though very weak and only briefly. He also heard them at 0016 and 0010 on other days. Also heard at 0004 on 7416. The station seems to play "Banded In The USA" on many or all of its broadcasts. Murphy found this to 0056 sign off, announcing an address in Jacksonville.

North Jersey Coast Radio was spotted on 7415 at 2243 by Marie Lamb, New York, carrying country, rock and new age music, noting this was their first broadcast and announcing the Merlin, Ontario mail drop. Taped reports will also be acknowledged with a studio quality tape of the broadcast. Schmehl had this one at 2247 on 7412.

Cruzan had Jolly Roger International on 7415 at 0415, hosted by "Blackbeard" with heavy metal and FCC skits.

East Coast Music radio showed for Schmehl on 7415 at 0149 with Wellsville maildrop, music and comments. John C. Bolling, Junior of North Carolina had this at 0226 with a "ghostly voice" talking about death.

Pat Murphy had Radio Free America on 7415 to 0210 with satirical songs and talks. Pat thinks this may be a new version of the former station and notes that both

## RADIO FREE AMERICA



*Free Americans exercising their right to free speech are called PIRATES by the government. Free Americans know their rights! Free Americans know the government is wrong!*



**I WANT YOU! TO LISTEN TO RADIO FREE AMERICA**

*Pat Murphy got this red, white and blue QSL card from Radio Free America.*

the production and the QSL (see illustration) are nicely done.

Robert Ross got WRMR on 1620 at 0303 with an ID as "AM 1620 and 97.5 FM", though Bob's not sure of the FM frequency. Mostly oldies like Elvis and the Beatles and claimed to be in Monticello, New York. Murphy had this one on two occasions, at 0331 to 0351 and 0205 to 0301 sign off. Uncopyable phone number announced, with a 914 area code.

Murphy heard WEED on 7415 at 0246 to 0325 close. The station featured a spoof on Yankee Doodle, various rock songs and mentioned KRAB Radio. Pat wonders about a mail drop for this station? John Cruzan had this one at 0405 and says the announced Radio Hobby BBS in Chicago (1-708-238-1901) as a QSL source.

Donna Coulter of Texas picked up a station identifying as Radio Caroline, on 7415 between 0310 and 0340. The broadcast featured pop music and a female or French-speaking announcer (I'm not sure how you used the "FF" abbreviation, Donna)

WORK Radio was heard by Cruzan on 7415 at 0200 with songs about work, buying American, a skit about job hunting and an interview with "an FCC agent" explaining his job of hunting down pirate stations. Wellsville address. The broadcast was repeated at 0250.

Pat Murphy picked up the Lobotomy Radio Network on 7413 at 0230 to 0251 close with back to back rock music and announcements for the Wellsville address.

Robert Ross reports replies from Europirate DLR-106 (6220) and WVOL, The Voice of the Loon (7416).

That covers the things on hand for this month. Despite a couple of widely touted FCC busts in recent months pirate activity

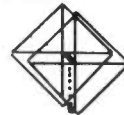
continues at a pretty high level—so there's much to be heard.

Keep those cards and letters coming in! Operators, we'd like to get more info on skeds.

See you again next month.

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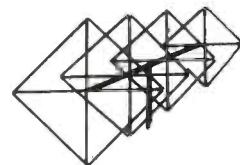
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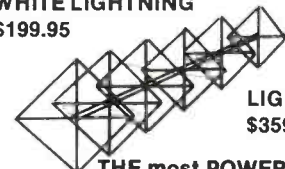
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# LISTENING POST

BY GERRY L. DEXTER

## WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

This month, for once, we don't have any news of new 500 kilowatt transmitters being planned. Perhaps it's just the law of averages at work. Nevertheless, there is the usual assortment of interesting items to make note of.

Transmitters in the former Soviet Union continue to be very much in demand. Dr. Gene Scott (Mr. He's Everywhere) has added broadcasts over transmitters at Novosibirsk, though we don't yet have times and frequencies. Radio Netherlands is coming on board, too, sometime in the coming months. The BBC, also, is set to use transmitters in Tashkent, Uzbekistan and Chita in the Russian Far East and will beam the BBC to China, India and Pakistan for nine hours a day.

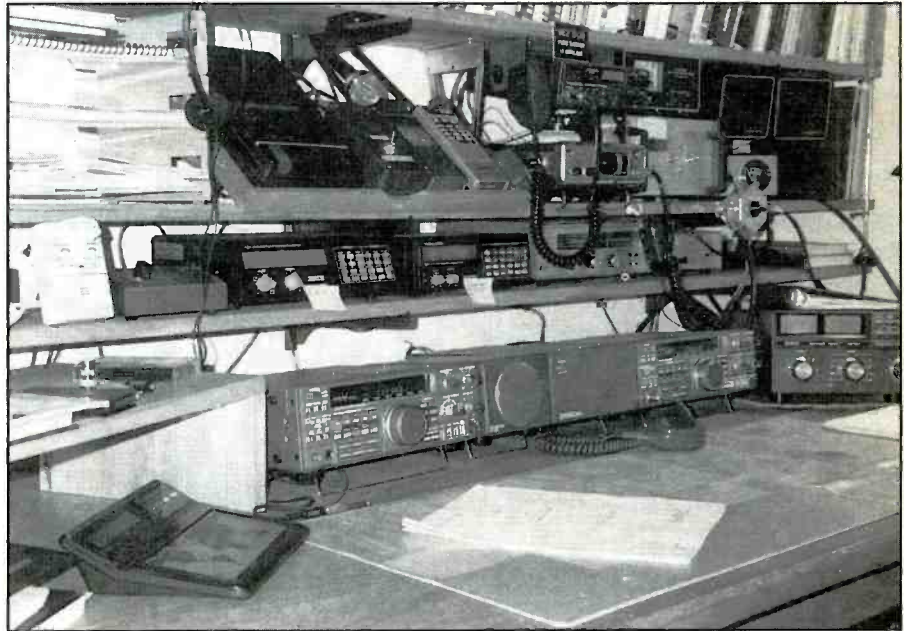
The weekend English broadcasts from Radio Norway International are in some trouble. The Foreign Ministry is pulling funding for the broadcasts at the end of the year and RNI the station is trying to work out an agreement for the Norwegian Broadcasting Corporation to take over the costs. Write the English Department at Radio Norway International if you want the broadcasts saved. Radio Norway International, N-0340 Oslo 3, Norway.

Radio RSA has changed its name to Channel Africa. The new moniker matches that of a new RSA TV service on satellite. At least they didn't call it Channel Africa International.

Radio Beijing is also getting a new name. Effective at the first of the year it will become China Radio International. Both names are used on the air until January 1. The station says the new name will help distinguish the external service from local services, especially local Beijing radio and to make the foreign language name identical with its Chinese name. The station says the Radio Beijing name had created confusion in mail delivery and for visitors trying to find the station.

KNLS in Alaska has dropped its old "Chariots of Fire" interval signal and replaced it with one, as yet untitled. It was written especially for the station by Jeff Brock of Brock Music in Nashville. It will be heard two minutes prior to the start of each transmission, as well as in various forms during the broadcast. KNLS is looking for name suggestions from listeners. Write Kevin Chambers, Station Manager, KNLS, Anchor Point, AK 99556.

Radio Cima Ciento is a new station in Santo Domingo, Dominican Republic and is being widely heard on 4962 in the evenings and early mornings in North America. It's affiliated with and relays the programs of 100.5 FM. The address is Av. 27 de Febrero #265, Santo Domingo.



*Yvon Carrier of La Sarre, Quebec uses a Kenwood R5000 and TS440S transceiver. His ham call is VE2BCH.*

Radio Kiribati has moved from 14917 to 17740. It still signs on at 0600 with a relay of BBC news. The higher frequency will make the station harder to hear now that propagation on the higher bands is getting steadily worse.

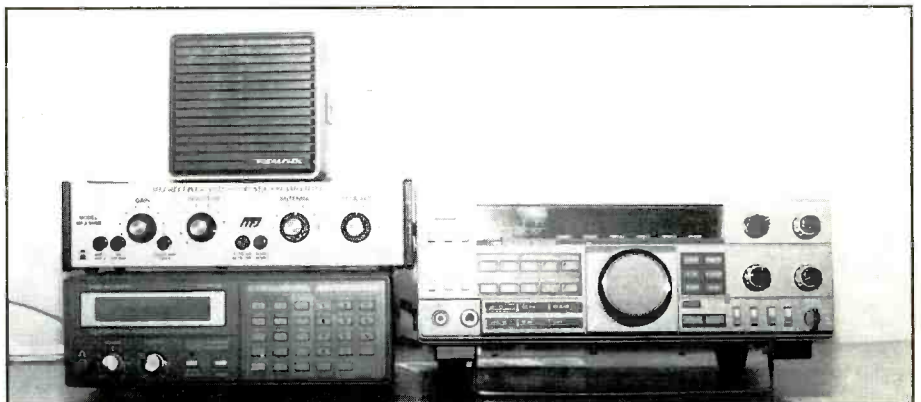
Long time religious broadcaster ELWA plans to go back on the air from Liberia after the civil war there destroyed its facilities. The station will have a pair of 10 kilowatt transmitters but we've seen no indication of when we might expect these to be active.

HCJB's two single sideband transmitters have been active lately with tests on 21455 and 25950—and also 17535 and 17685. They are only running around 10 kW each.

Iraqi Radio is now running English at



*Catherine Fet is a Russian service announcer on KNLS, Alaska.*



*Here's the Listening Post of reporter Ed Rausch, Cedar Grove, NJ.*



Here's a portion of the new KNLS interval signal.

1800 to 2000 on 13680, in addition to 15210, apparently running fairly high power.

FEBC in the Philippines is replacing its old 50 kilowatt transmitters with a quartet of 100 kW units. No indication as to when these will be brought into play.

John Miller in Thomasville, Georgia wants to know if there's any English broadcasting out of Grenada. Unfortunately not, John. In fact the station hasn't been on the air since the US invasion in 1983. It was nice to meet you recently, John!

Note that we have some shack photos to share with you this month! Please keep 'em coming!

Remember, we also welcome contributions in the form of station news, schedules and literature, questions, comments and spare QSL's you don't need returned. Reports for the loggings section should be sorted by country and must include your last name and state abbreviation after each item. Please double or triple space between items so they're easier to cut and sort. We look forward to hearing from you often!

Here are this month's logs. All times are UTC. Broadcast is considered to be English unless otherwise indicated (SS = Spanish, RR=Russian, AA=Arabic, etc.)

#### SWBC Loggings

**Albania:** Radio Tirana, 11825 at 0236 with news. (Jensen, IA)

**Angola:** Radio Nacional, 4951 at 0005 with salsa, reggae, ID. All in PP. (Paszkievicz, WI)

**Antigua:** BBC Relay, 5975 at 0206; 0521. (Moser, PA; Carson, OK)

**Angola:** Radio Nacional, 4951 at 0005 with salsa, reggae, ID. All in PP. (Paszkievicz, WI)

**Argentina:** RAE, 11710 at 0159 EE sign on. (Carson, OK) 0230 with features, tangos, DX program. (Paszkievicz, WI) 0137 in SS with sporting event, commercials. Carried Son/Mon UTC in place of RAE/English. (Lamb, NY)

**Ascension Island:** BBC Relay, 15160 at 2057 in PP, 0116 in EE. (Lamb, NY) 15400 at 2152. (Zamora, CA)

**Australia:** Radio Australia, 5995 and 6020 at 1220. (Northrup, MO) 9580 at 1135. (Moser, PA) 11800 at 1254. (Carson, OK) 15240 at 0246. (Jensen, IA) 21740 at 0217. (Vaage, CA)

ABC, Perth, 9610 at 1210 with vocal groups, ID, news. (Lamb, NY)

**Austria:** Radio Austria Int'l, 9875 at 0152. (Jensen, IA) 21490 at 1532 in GG with ID. (Lamb, NY)

**Belgium:** BRT, 9930 at 2345 to 2355 close. (Carson, OK) 17555 at 1308, press review, "Radio World." (Lamb, NY)

**Bolivia:** Radio Altiplano, 5045 at 0005 in SS, ID at 0030. (Rausch, NJ)

**Brazil:** Radiodifusoras Amazonas, 4805 in PP at 0308 with Brazilian pops. ID jingles, commercials. (Lamb, NY)

Radiobras, 15445 at 1225. (Northrup, MO)

Swiss Radio Int'l relay, 17730 at 0015. (Moser, PA)

**Bulgaria:** Radio Sofia, 9580 at 0308. (Moser, PA)

11660//11720//15330 at 0007 with news, comment, ID. (Lamb, NY)

**Canada:** CFRX, Toronto, 6070 at 0212 with usual CFRB relay; 0550. (Jensen, IA; Gruber, FL)

Radio Canada Int'l, 6150 at 0600. (Gruber, FL) 9755 at 0246, 11845 at 0256, 15305 at 1609 and 17820//21545 at 1603. (Jensen, IA) 9800 at 0400 in FF. (Vaage, CA) 11955 at 1500. (Moser, PA)

BBC via Sackville, 6175 at 0207. (Moser, PA) 9515 at 1306. (Zamora, CA)

**China:** Radio Beijing, 9690 (via Spain, editor) at 0349. (Carson, OK) 11680 at 0450. (Gruber, FL) 11715 (via Mali, editor) at 0055 close 11840 in SS (with "Radio Peking" ID at 0300 and 15170 in EE at 2034. (Jensen, IA)

Hunan People's Broadcasting Station, 4990 at

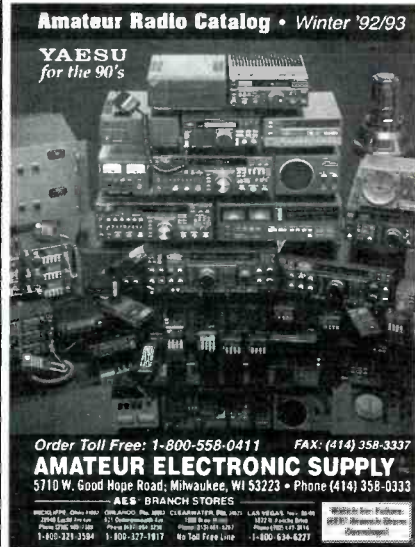


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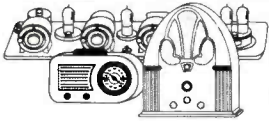
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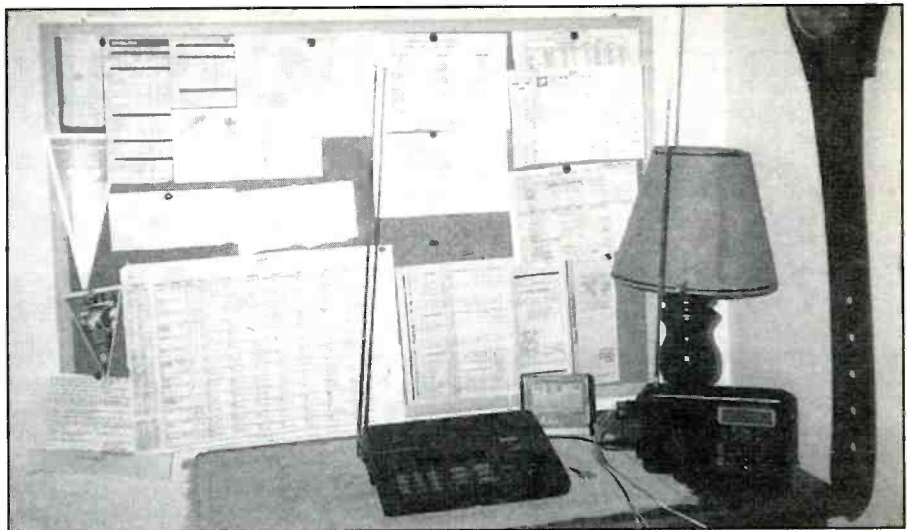
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Bob Colon of West Allis, Wisconsin has a DAK shortwave portable and Bearcat scanner in his shack.

1332 with EE lessons, other programs in CC. (Zamora, CA)

**Colombia:** Caracol Bogota. 5075 at 0213 in SS with ID jingles, sports. (Lamb, NY) 6150 at 0534 "Ela es Caracol." (Carson, OK)

**Costa Rica:** Radio For Peace Int'l. 7385USB, ex-7375) at 0243. Also 13630USB and 15030. (Brookman, AK) 21465 at 2337. (Lamb, NY)

**TIFC:** Faro del Caribe. 5055 at 0300 with religious programming. (Boles, PA)

**Croatia:** Croatian Radio. 13830 at 2100 in EE/Croatian. News of fighting. (Miller, GA)

**Cuba:** Radio Havana Cuba. 7950 at 0234 with news, 13660 USB at 0032 with news and DX program and 17705 at 2050. (Jensen, IA)

11950//16660USB test at 0149 in SS, into EE at 0200. At time of logging SSB tests were being conducted in EE 0200-0400 on Saturdays and Sundays. (Lamb, NY)

**Cyprus:** BBC relay. 21470 at 1318. (Moser, PA)

**Czechoslovakia:** Radio Czechoslovakia. 5930 dat 0103. (Moser, PA) 7345 at 0615. (Gruber, FL) 9810 at 0411. (Lamb, NY)

**Denmark:** Radio Denmark, via Norway. 9565 at 0230 EE ID, into Danish. Moves to 9560 at 0330. (Vaage, CA) 15355 at 1225. IS, EE ID, into Danish. (Northrup, MO)

**Dominican Republic:** Radio Cima Ciento. 4961 at 0403. Cuban type music, several "viva Caliento" shouted. TC, ID 0435 with location and frequency. (Paszkievicz, WI) 0100 with merengue and salsa, also 1100. ID "Desde la capital Dominicana en sus 500 anos de historia transmite Radio Cima. 100.5 FM y 4960 banda tropical de 60 metros." Address is Radio Cima, Av. 27 de Febrero #265, Santo Domingo.

**Ecuador:** Radio Jesus del Gran Poder. 5050 at 2353 in SS with IDs. "Un Bolero Para Ti" music program. (Lamb, NY)

**Egypt:** Radio Cairo. 9475 at 0319. Off at 0326. (Lamb, NY) 15375 at 1220. (Northrup, MO)

**England:** Radio Japan via Skelton. 9665//9770 at 0459 sign on. (Lamb, NY)  
VOA via Woolferton. 7180//18275 Greenville LSB feeder at 2134 in Polish. (Lamb, NY)

**BBC** on 6195 at 0540 to Europe. (Carson, OK) 7325//9915 at 0208. (Moser, PA)

**Ethiopia:** Voice of the Broad Masses of Eritrea. 7380 at 0328 with drums, music, talk in unidentified language. African vocals. No ID, so tentative. (Paszkievicz, WI)

**Finland:** Radio Finland Int'l. 15400 at 1132; 1230. (Moser, PA; Northrup, MO)

**France:** Radio France Int'l. 15300 at 1220 in FF. (Northrup, MO) 17620//17795//17850 to Africa at 1555. (Lamb, NY)

**French Guiana:** Radio France Int'l relay. 15325 at 0309. (Carson, OK) 15435 at 1220 in FF. (Northrup, MO)

**Gabon:** Rdf Gabonaise, Libreville. 0500 sign on with national anthem, announcements, news in FF. (Paszkievicz, WI)

Radio Japan relay. 11735 at 2100 sign on. (Moser, PA)

Africa Number One. 9580 at 0702 in FF. (Moser, PA) 17630 at 1300 in FF. (Boles, PA)

**Germany:** Deutsche Welle. 6040 (Antigua, ed) at 0122. (Jensen, IA) 6145 at 0105. (Moser, PA) 9515 with IS and ID at 0500. (Gruber, FL) 9700 at 0259. EE ID. (Vaage, CA)

Bayerischer Rundfunk. 6085 at 0159 with blues, ID, news, traffic, weather, country and pop. (Lamb, NY)  
VOA Wertachtal relay. 21535//21720 at 1525 in AA. (Lamb, NY)

**Ghana:** GBC. 4915 at 0608 with woman in EE. (Moser, PA)

**Greece:** Voice of Greece. 9395//9420 at 0336 with Greek pops. EE news at 0340. (Lamb, NY) 11645 at 0130. (Boles, PA)

**Hawaii:** WWWH time station. 10000 at 0625 over WWW. (Gruber, FL)

**Hong Kong:** BBC relay. 17830 at 0011. Off at 0045. (Lamb, NY)

**Hungary:** Radio Budapest, 9835 at 0230 and 11910 at 2115. (Jensen, IA) 11910 at 0158 with IS

**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

and sign on. (Moser, PA) 15220 at 0235. (Carson, OK)

**India:** All India Radio, 9950 at 0035 with General Overseas Service. Off at 0045. (Lamb, NY) 11620 at 2221. (Moser, PA)

**Iran:** VOIRI, 15084 in Farsi at 1810 with domestic relay. 15260 at 1901 in EE with "Perspectives," local music, ID, address. (Lamb, NY)

**Iraq:** Radio Iraq International, 15210 at 2135 anti-US commentary, ID "This is Baghdad, Radio Iraq International", news, woman with letters from listeners. (Miller, GA)

**Israel:** Kol Israel, 11588 at 0359 sign on. (Carson, OK) 0500 with "Morning News Report." (Moser, PA) 15640 at 1921. (Jensen, IA)

**Italy:** RAI 7275//9575 sign on in EE to the Mediterranean. (Lamb, NY) 11800 at 0120 with music. In II. (Moser, PA)

Italian Radio Relay Service, test to North America on 7125 at 0201 in EE. UN program, ID, address, letters. (Lamb, NY)

**Japan:** Radio Tanpa, 3925//9595 at 1258 with music, 1300 time check, ID, talks, all JJ. (Zamora, CA)

Radio Japan, 5960 (via Canada) at 0131. 11735 (Gabon) at 2124, 11865 at 1510 and 15230//15325 (French Guiana) at 0308. (Jensen, IA) 6120 via Canada at 1136, 11815 at 1445. (Moser, PA) 11770 (via Skelton) at 0545. (Gruber, FL)

**Kuwait:** Radio Kuwait, 13620 at 2030. (Moser, PA)

**Lebanon:** Wings of Hope, 11530 at 2340 with religious programs. Lebanese national anthem at 2359. (Miller, GA)

**Libya:** Voice of the Great Homeland, 15235//14515 at 2031 in AA. (Lamb, NY)

**Lithuania:** Radio Vilnius, 11780 at 2322 and 17690 at 0012. (Moser, PA) 15580 at 2259 sign on. (Carson, OK)

**Luxembourg:** Radio Luxembourg, 15350 at 0145 with pop. (Gruber, FL)

**Madagascar:** Radio Netherlands relay, 9860 at 2029 in FF. Several IDs. (Moser, PA)

**Malaysia:** Radio Malaysia, Kuching, Sarawak, 4950 at 1400 sign on with time, ID, news, editorial, financial roundup. (Zamora, CA)

**Mali:** Radio Beijing relay, 9770 at 0032. (Lamb, NY) 11715 at 0302. (Moser, PA)

RTV Malienne, 7285 at 0703 with march music, man in FF, mentions of Bamako. (Moser, PA)

**Malta:** Deutsche Welle relay. 9565 at 0104. (Moser, PA) 11865 at 0108. (Lamb, NY)

**Mauritania:** Radio Mauritanie, 4845 at 0713 in FF with chants. (Moser, PA)

**Mexico:** Radio Mil, 6010 in SS at 0708 with pops, IDs, mentions of "Districo Federal." (Lamb, NY)

**Monaco:** Trans World Radio, 9480 at 0603 with Bible story. (Moser, PA)

**Morocco:** VOA relay, Tangier, 17895 at 1952. (Lamb, NY)

**Namibia:** Radio Namibia, 3290 at 0415 with news, editorials. (Rausch, NJ)

**Netherlands:** Radio Netherlands, 9890//15150 (Madagascar, ed) at 1603. (Carson, OK) 9895 at 2031 in FF. (Moser, PA) 13700 at 0125. (Gruber, FL)

**Netherlands Antilles:** Radio Netherlands Bonaire relay, 9590 at 0357. (Carson, OK) 11835 at 0053. (Zamora, CA) 21515 at 1124. (Vaage, CA)

Trans World Radio, 9535//11930 at 0330. 15355 at 2344 in GG. (Carson, OK) 11815//15345 at 1139. (Moser, PA) 15375 sign on in PP to Brazil at 2200. (Zamora, CA)

**New Zealand:** Radio New Zealand Int'l, 9700 at 1137 with music, comments. (Moser, PA) 17770 at 0251, pops, ID, NZ country. (Lamb, NY)

**Nigeria:** Voice of Nigeria, 7255 with 0447 sign on, IS, ID, "Morning Flight" at 0500. (Carson, OK)

**North Korea:** Radio Pyongyang, 11335 at 1138. (Moser, PA)

**Norway:** 9560 at 0301. (Vaage, CA) 11795 at 2324. (Moser, PA)

**Papua New Guinea:** NBC, 4890 at 1304 with British comedy program, 1332 time check, ID, into soft pops. (Zamora, CA)

**Paraguay:** Radio Nacional, 9735 at 2310 with ID, music, announcements in SS. (Boles, PA)

**Peru:** Radio La Merced, 4960 at 0330 in SS with Latin Music, ID at 0345. (Rausch, NJ)

La Voz de San Antonio, 6628.5 at 0335 with

Andean music, time checks, 0355 ID, all SS. (Paszkiwicz, WI)

**Philippines:** VOA relay, 15425 at 1141. (Moser, PA)

**Portugal:** Radio Portugal, 11840 at 0248. (Jensen, IA)

Deutsche Welle Sines relay, 15470 at 1557 with IS, sign on in Romanian. (Moser, PA)

**Russia:** Radio Moscow, 12050 at 0619 and 15425 at 0411. (Carson, OK) 15375 at 1930. (Jensen, IA) 15425//17690 at 2119. (Zamora, CA) 17735 at 2105. (Moser, PA)

Adventist World Radio, Samara, 15125 at 0430 with ID, address, multi-lingual IDs. Also via Novosibirsk, 11855 at 0112 with religious program; under WYFR. (Paszkiwicz, WI)

Radio Rossi, tentative, 17760 at 1724 with long RR talk, ID, address, phone number. But Radio Moscow's IS at 1800. (Paszkiwicz, WI)

**Rwanda:** Deutsche Welle relay, 15275//17890 at 1923 in GG. (Lamb, NY)

**Senegal:** ORT du Senegal, 7170 at 0658 in FF with African choral music, news, ID, mentions of Dakar. (Lamb, NY)

**Singapore:** BBC relay, 11750 at 1509. (Carson, OK) 0059 sign on. (Lamb, NY)

**South Africa:** Radio Oranje, tentative, 9630 at 0558 in EE and presumed Afrikaans with pops, Mozart, commercials. Fade by 0617 with no ID heard. (Lamb, NY)

Radio RSA, 9695 at 0400 with news, sports. (Boles, PA) 15220 at 0611 with promo about name changing to "Channel Africa" and playing new interval signal. (Lamb, NY)

**South Korea:** Radio Korea, 9750 at 1232. (Moser, PA) 15575 at 0127. (Jensen, IA)

**Spain:** Spanish Foreign Radio, 9530 at 0134: 0516. (Jensen, IA; Gruber, FL)

**Sri Lanka:** SLBC on 9720 at 0035. Woman with program of instrumental music. local time checks. IDs. (Paszkiwicz, WI)

Radio Japan relay, 15210 at 1715. (Moser, PA)

**Sudan:** Radio Omduman, 7200//9190 at 0327 with AA talk. Music from Nutcracker Suite. (Paszkiwicz, WI)

**Sweden:** Radio Sweden, 11705 at 0209. (Moser, PA) at 0159 and 17870 at 1521 to 1530 close. (Jensen, IA)

**Switzerland:** Swiss Radio Int'l, 6135 at 0210. (Moser, PA) 9650 at 0215 in FF. 9885 at 0158, 12035 at 0200 in FF and 21770 at 1714 in FF. (Jensen, IA) 13635 at 0405. (Gruber, FL) 17730 at 0010. (Carson, OK)

**Syria:** Radio Damascus, 15095 at 2027; 2124.

(Lamb, NY; Moser, PA)

**Taiwan:** Voice of Free China, 9550 via WYFR at 0317; 21720 via WYFR at 2201. (Jensen, IA) 9680 via WYFR at 0302 sign on. (Moser, PA)

**Togo:** Rdi Togolaise on 5045 (list 5047) at 2300 in FF with US pops and country. Off at 0003. (Rausch, NJ)

**Tunisia:** RTV Tunisienne, 7475 in AA at 2219 with local music, IDs over music. (Lamb, NY)

**Turkey:** Voice of Turkey, 9445 at 0305 with news. (Gruber, FL) Here and //11895 at 2338 with Turkish music and talks in TT. (Moser, PA)

**Ukraine:** Radio Ukraine, 15135 at 1800 sign on in Ukrainian. (Lamb, NY) 2118 with features. Also 17605 at 0015 and 17690 at 0116. (Moser, PA)

**United Arab Emirates:** UAE Radio, Abu Dhabi, 13605 at 2336 with comment. (Moser, PA)

UAE Radio, Dubai, 13675 at 0330. (Gruber, FL) 21605 at 1637 to 1639 close. (Jensen, IA)

**United States:** Croatian Radio via WHRI. 7315 at 0500. (Gruber, FL)

VOA leeder, 6873ISB at 0506. (Carson, OK)

Uzbekistan: Radio Tashkent, 15470 at 1210. (Moser, PA)

**Vatican:** Vatican Radio, 6245 at 0439 with EE ID and into FF. (Vaage, CA) 7305 at 0236 in FF. Into EE at 0250. (Moser, PA)

9605 at 0305. Into SS at 0314. Also 15090 at 2006. (Lamb, NY)

**Yemen:** Radio Sana'a, 9779.7 at 0320 with Koran, talk, mentions of Sana'a. (Paszkiwicz, WI)

**Yugoslavia:** Radio Yugoslavia, 11870 at 0136 with war news, ID. (Moser, PA) 0030 with news, press review. (Boles, PA)

That's it for this time. A tip o' the cap to the following good folks: Gerald R. Brookman, Kenai, AK; John Spencer Carson, Jr., Norman, OK; Larry R. Zamora, Highland, CA; Dino Bloisse, Jersey City, NJ; Paul Jensen, Mason City, IA; William Moser, New Cumberland, PA; Ed Rausch, Cedar Grove, NJ; Sheryl Paszkiwicz, Manitowoc, WI; Mike Boles, N. Huntingdon, NJ; Marie Lamb, Brewerton, NY; Bjorn F. Vaage, Granada Hills, CA; Mark A. Northrup, Gladstone, MO; Darren Gruber, Palm Bay, FL and John Miller, Thomasville, GA. Thanks to each of you!



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# TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

## WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

**T**he mobility, portability, and ease of installation of cellular emergency callboxes are changing the way drivers summon aid along our highways. BellSouth Cellular Corporation has some innovations in cellular callbox technology that allow emergency response teams to be in constant comms with people needing assistance, no matter how remote the area from which they may be calling.

Cellular callboxes are able to be located in areas where it was too costly to install hardwire callboxes. This doesn't mean only inaccessible rural areas, it means city installations where concrete increases installation costs.

Once freed of hardwire installation constraints, callboxes may be placed at many locations where motorists have problems. More calls for assistance can be placed, and public emergency personnel can be more effective. These cellular callboxes are also finding applications at ski resorts and private federal organizations, such as universities, parks and recreation areas, that are responsible for security within a wide geographical area but can't incur the cost of an extensive hardwire network.

The GTE-developed cellular callboxes being installed by BellSouth are able to be installed immediately without costly digging, trenching, and cable laying. At any time, call boxes can easily be moved to new locations in minutes. The cellular callboxes are solar powered, and offer two-way direct voice comms with emergency personnel who are able to dispatch police, fire, or medical aid, or a tow truck. The callboxes have circuitry that can even report problems with their own operation.

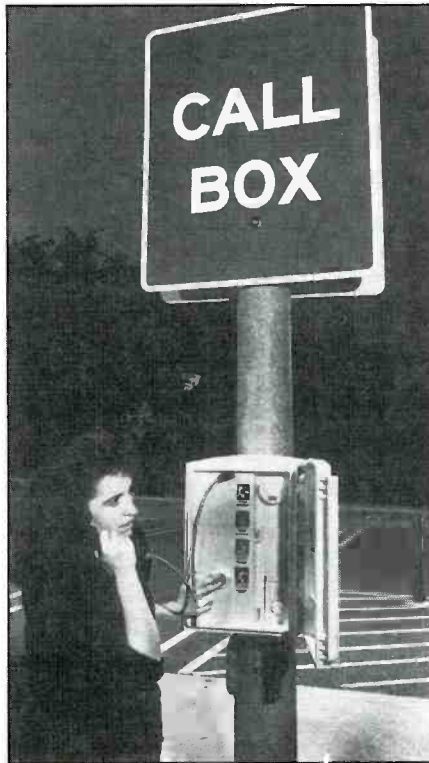
At specified intervals, the callboxes automatically radio in their operational status, including providing a report of any damage or circuitry malfunctions. This minimizes maintenance costs as well as down time.

These callboxes are now installed on campus at Louisiana State University and the University of Georgia. They have worked out well along the highways in Kern County, California. A cellular callbox has recently started operating in the Los Angeles area.

### Wireless LAN Adapter

Solectek Corp. brought out a wireless network adapter that attaches externally to IBM PC's and clones, making possible mobile and temporary local area network connections, and providing seamless compatibility between wired and wireless networks.

This device sets up very easily. You plug



*Cellular callboxes are now becoming familiar sights along highways.*

it into any common parallel port, then follow the menu of instructions to configure the computer to the network. No internal modifications are required.

Within minutes, users connect to an existing local area network and have the full range of services available to hardwire users.

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For further information on the AirLAN, contact Solectek Corp., 6370 Nancy Ridge Dr., San Diego, CA 92121. The phone number there is (619) 450-1220.

### Interactive TV On-Line!

Wireless interactive TV is no longer a thing of the future. Interactive Network (IN), of Mountain View, Calif., has their system operating in areas of Northern California, with plans for full national operation later this year.

Interactive TV means that viewers can use their wireless (around 200 MHz) remote units to participate in opinion polls,



*This new Motorola cellphone is claimed to be the most lightweight ever.*

purchase items, be a part of live TV game shows, and join into the action of many other programs now being developed especially for this medium that lets the viewer communicate with the TV studio.

The portable control units will be on sale at Sears, Montgomery Wards, and other larger retail outlets. The MSRP is about \$200 each. Consumers can subscribe to IN when it comes to their area (watch your local newspaper for an announcement). You'll need to buy a control unit, then subscribe to IN for about \$15 per month. Those who want to compete for prizes can pay a higher monthly service charge, or else between 50 cents and \$2 per game (depending upon the type of broadcast).

Interactive Network is located at 1991 Landings Drive, Mountain View, CA 94043.

### Small, Lightweight, Cellphone

Motorola's Cellular Subscriber Group introduced the MicroTAC Ultra Lite Telephone. Weighing less than 6 oz., Motorola claims it is the world's lightest cellular phone, and the first to weigh only 5.9 oz.

Features include the optional *Vibra-*



*Interactive Network is finally on-line, and expects to be operating nationally this year. This portable control unit operates at about 200 MHz.*

Call, which allows you to become aware of calls by means of the unit vibrating instead of ringing aloud. Nickel metal hydride batteries offer extended talk time beyond that offered by NiCd batteries. They offer up to 65 minutes of continuous talk time, up to nine hours of standby time.

The *VibraCall* is a good idea. When you have the phone in your pocket you can feel it vibrating when a call is coming through. Some golf courses, theatres, and restaurants have gone so far as requesting patrons turn off their cellphones because the ringing annoys those within hearing range. Motorola doesn't mention it, but this is a good feature for anyone doing surveillance or espionage work.

More information on this unit from Motorola Cellular Subscriber Group, 1475 West Shure Drive, Room N232, Arlington Heights, IL 60004.

## Rent-A-Phone

The Mall of America, in Bloomington, Minn., is 4.2-million square feet in floor area. The place is so huge that shoppers can rent cellphones and pagers in order to keep in touch with family and friends, both in the mall and back at home. No kidding!

US WEST Cellular and US WEST Paging are in charge of this project. It started off with 29 cellphones, but proved such a success after only one week they had to add another 50 phones for rental. There are 40 pagers being rented out.

This is only one of the growing applications for these devices by malls and their tenants. Some busy mall restaurants now give pagers to patrons waiting for tables, then let them continue shopping until they are paged when a table becomes available.

## Saved: \$16,000!

It's not every day that a business can save \$16,000. Here's how one cellular company managed to get it done.

SEG Cellular constructed and operated two cell sites in Des Moines, Iowa. The FCC claimed that it was done without the agency's authorization. There was no FCC claim that any harm or interference had



*Solectek's AirLAN works with any PC or clone.*

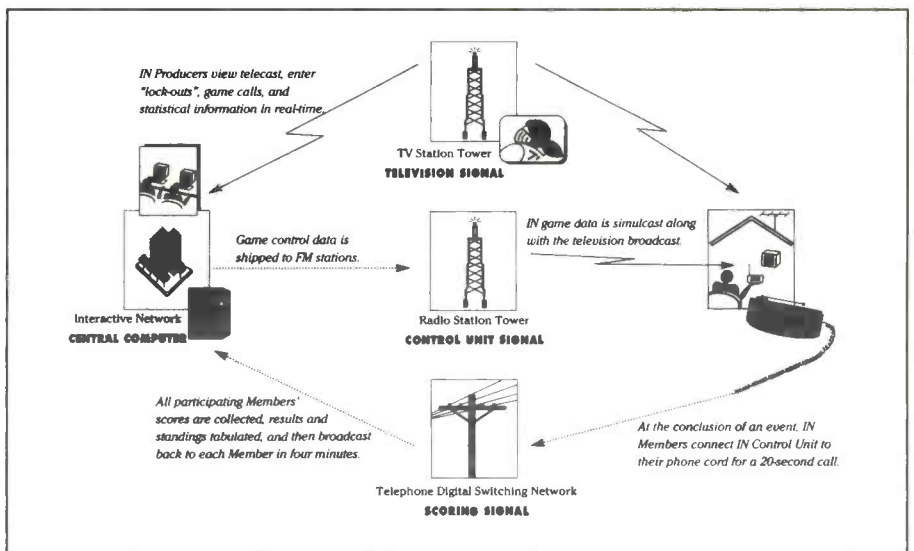
come of the deed, or that any sinister intent had been involved. Still, the FCC told SEG Cellular that they were being given a monetary forfeiture of \$64,000.

SEG Cellular requested that the forfeiture be either reduced or completely removed from the books. They said the construction of the cell sites was an inadvertent mistake, not willful and repeated conduct, as defined in the Communications Act. Also, SEG pointed out that the forfeiture amount was too high, based upon the current methods for determining forfeitures. Lastly, SEG contended that the incident was actually a minor one, and that the company had voluntarily disclosed the unau-

thorized construction to the FCC on no less than two occasions. Moreover, SEG had never before violated this rule previously.

The FCC decided that SEG had justified reduction of the forfeiture based upon its history of overall rule compliance. As for their other contentions, no sale. The agency lopped \$16,000 off the amount, telling SEG Cellular to pay the reduced amount of \$40,000. Truly, a kinder, gentler government, no?

Dial us up again in April. Send along your cellular, paging, and related clippings, comments, and questions. We are always seeking press releases on new products and services in these fields.



*A diagram of how Interactive Network operates between a person's home and a TV station.*





Station, VA. When the printouts were found to match, I assumed that the station on the new frequency was at Norfolk.

I called Chief Warrant Officer John Tramock at NAVEASTOCEANCEN and asked him why NAM was using the 12 MHz frequency for radiofax. He said that the transmission was not coming from Norfolk and that what I described to him appeared to be a retransmission of NAM's charts. He said he didn't know who was doing the rebroadcasts, but he believed it was not being done at any Navy facility. He ventured a guess that it was a U.S. Coast Guard station, but added that it would be quite difficult to find the source because it was "like finding a needle in a haystack."

It took over an hour to get a somewhat decent printout from the station using 12722.5 kHz because another military station was also there with 75-baud encrypted RTTY that completely covered the fax signal. Even tuning out some of the RTTY signal with a bandpass filter did little to improve the quality of the fax signal. The RTTY station went off the air briefly at 1400 UTC and then a GOES satellite picture could be seen clearly. The RTTY station returned momentarily during the transmission, placing a thick band of RTTY noise across the picture (see Figure 2). This gave me a tentative ident. At the next fax broadcast, at 1415 UTC, I used the two fax decoders and determined that the weather charts on both frequencies were the same.

Now that this matter has been cleared up, I don't know if NPM, Pearl Harbor Naval Base, Hawaii, has another frequency, 4045 kHz, for weatherfax operations, or if it is a retransmission. Signals were coming in loud and clear on Sept. 25, from 0239 UTC to 1300 UTC, but the printouts were somewhat fuzzy. One printout shows a warning of two hurricanes and a tropical storm that were in the Pacific Ocean on Sept. 25 (see figure 3), and another shows the stormy areas on a chart (see Figure 4).

On Oct. 5, I received weather charts possibly from NDT, U.S. Navy, Yokosuka, Japan, on 23882 kHz, between 1755 and 1900 UTC, before the signal faded away. The frequency is not listed for any radiofax transmissions by the U.S. Navy. The charts I saw, however, followed NDT's schedule.

On Sept. 20, while tuning across the 26 MHz band, I came across a radiofax signal on 26285 kHz at 1946 UTC, 120/576. If you live in North America and have listened to the area around that frequency, you'd know all about the single sideband voice clutter that's to be heard from the Western Hemisphere. This cacophony of voices virtually buried the fax signal. I tried filtering out as much of the din as possible but met no success. Meanwhile, the radiofax station continued to send something every 15 minutes. Finally, from 2040 to 2045 UTC, the band quieted just enough for a portion of the fax transmission to be

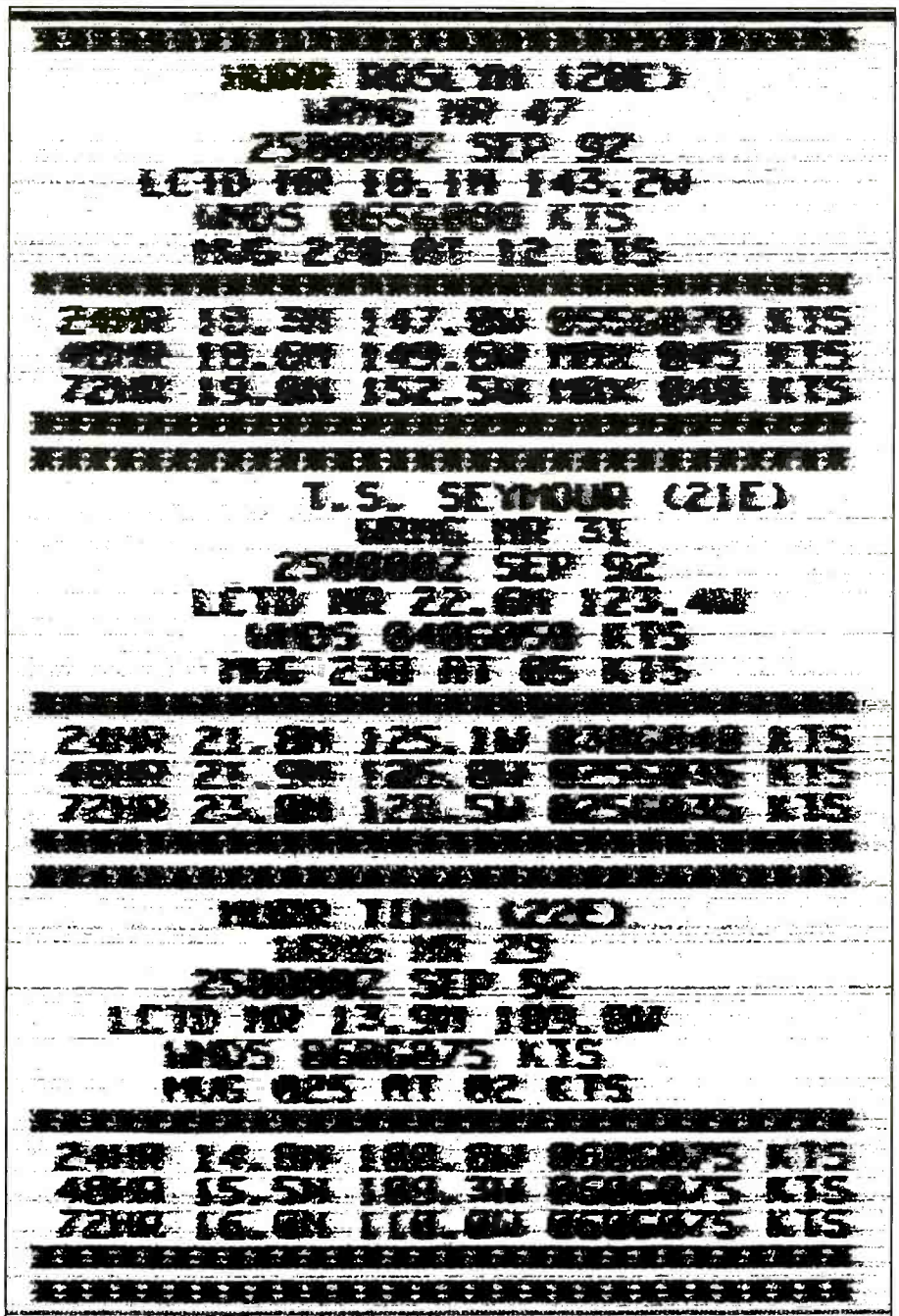


Figure 3

seen, albeit not too clearly (see Figure 5). There appears to be a series of numbers near the top middle to the righthand side of the printout when viewed under high magnification. I cannot make any sense out of the rest of the chart. Can you?

The British Defense Communications Network is responsible for all point-to-point military services of the British Army (BA), Royal Navy (RN) and Royal Air Force (RAF). Included are GXQ, BA, London; GYU, RN, Gibraltar; MKD, RAF, Akrotiri, Cyprus; and MKK, RAF, London, all of which use multiplex transmissions.

"John Doe" of England, whom we met last month in discussions of other topics dealing with the British military, says that the four stations operate on Independent

Side Band (ISB), "and until the Persian Gulf war they had phone calls on one sideband and multiplex RTTY on the other. The phone calls stopped suddenly when that war started and have not come back."

"At present, MKK, and MKD working MKK, have multiplex RTTY on both sidebands. GXQ working MKD, and MKD working GXQ, are using multiplex RTTY on USB only. GYU, and GXQ working GYU, usually also use one sideband only, but occasionally have multiplex RTTY on both sidebands," Mr. "Doe" said.

"Each of these stations uses two frequencies in parallel, so that at any time there are 12 frequencies in use. The two circuits between the U.K. and Cyprus have a test tape (foxes and RYI's) on six of the

VVV DE HWN VVV DE HWN  
 VVV DE HWN VVV DE HWN  
 RYRYRYRYRYRYRYRYRYRYRY  
 SSGSGSGSGSGSGSGSGSGSG  
 VVV DE HWN VVV DE HWN  
 VVV DE HWN VVV DE HWN  
 RYRYRYRYRYRYRYRYRYRYRY  
 SSGSGSGSGSGSGSGSGSGSG  
 VVV DE HWN VVV DE HWN  
 VVV DE HWN VVV DE HWN  
 RYRYRYRYRYRYRYRYRYRYRY  
 SSGSGSGSGSGSGSGSGSGSG

Test tape of HWN, Paris Naval Radio, France, ran on 12741.3 kHz at 2253 UTC, 950/75N. (Logged by Robert Margolis)

eight channels. Channel 1 is the 'engineering' channel and channel 2 is permanently encrypted, and is apparently the only traffic channel. Channels 3 to 8 have done nothing else during the years that I have been listening," he continued.

"The U.K.-Gibraltar circuit does not use a test tape. Channel 1 is the 'engineering' channel and all the other channels may be used for traffic, usually encrypted, but I have heard meteo information in plain language occasionally," Mr. "Doe" said.

"I was glad to see that you were now receiving reports on Piccolo transmissions. At the present time, there is one circuit between MKK and MSS, Belize, one between MKK and MTS, Falkland Islands,

and one between 'RBFWJP,' Joint HQ, British Forces, Rheindahlen, Germany, and 'RBFWYS,' RAF, Decimomannu, Sardinia. There is frequently another circuit between MKK and MUH (or MUH2, MUH3, etc.). MUH is a kind of portable or mobile callsign used by the Army when on an exercise outside the U.K., and tells one nothing about the location of the station. In 1992, I heard one MUH in Norway, one in the Middle East, and one which I could not identify. Until recently there was a CW MUH at Nanyuki, Kenya," Mr. "Doe" said.

"MTS working MKK is the same. I think its channel 3 uses the callsign MTP but I am not certain. The JHQ/Deci circuit is single channel only and is not encrypted. A few messages are in five-letter-group code, but most are in the clear. MKK/MUH, when it is in operation, is on two channels, one permanently encrypted, Mr. "Doe" continued.

"The Australian station used the callsign VMA until recently then changed to VHC. I have not heard it often enough to know whether the callsign has been changed permanently, or whether both callsigns are still used, possibly depending on whether the traffic is Navy or Air Force," Mr. "Doe" said.

"There are also occasional transmissions from MKD (two channels) and GYU (four channels spaced 400 Hz apart), and many permanently encrypted single-channel transmissions, some of which are undoubtedly the British MFA transmitter at Creslow, 35 miles north of London, and the remainder are presumably British embassies abroad," Mr. "Doe" said.

"MKK and GYU are sometimes on two frequencies in parallel. Since the beginning of August, JHQ Rheindahlen has been using two frequencies in parallel, but Deci and all the other stations normally use only a single frequency," Mr. "Doe" concluded.

Reader input is always welcome. Please send all loggings, station info, comments, questions, etc., to: Bob Margolis, RTTY, c/o Popular Communications, 76 North Broadway, Hicksville, 11801.

**RTTY Intercepts**

- 3320.0.** FDY. French Air Force, Orleans, France, w/RYRY & le bricks, 50 baud at 2330. (Ary Boender. NLD)
- 4258.8.** MTO, Rosyth Navrad, Scotland, w/availability tape, 75 baud at 0345. (Robert Hall, RSA)
- 4462.5.** WLO. Mobile R., AL, w/wx. FEC at 0355. (Hall, RSA)
- 4489.2.** GFL26, Bracknell Meteo. England, w/coded wx at 0400, 48 baud. (Hall, RSA)
- 4512.7.** Jeddah Meteo. Saudi Arabia, w/coded wx at 0403, 50 baud. (Hall, RSA)
- 4788.1.** 6VU23, Dakar Meteo, Senegal, w/coded wx + CQ & ID. 50 baud at 0438. (Hall, RSA)
- 5702.3.** Un-ID U.S. mil. w "request permission to close watch kkkk bt k nnnn." Was 75 baud at 0459. (Ed.)
- 5731.0.** YRR4. Bucharest Meteo. Romania, w/coded wx at 0510, 50 baud. (Ed.)
- 5765.0.** NNN0MSD, USMC MARS, San Diego, CA, w/MARSgrams. ARQ at 0518. (Ed.)
- 5770.0.** Un-ID w/300-baud encryption at 0519. (Ed.)
- 6453.3.** AFS, Offutt AFB, Elkhorn, NE, w/KAWN wx data, 75 baud at 0148. (Ed.)
- 6771.5.** RFLI, French Navy, Fort de France, Martinique, w/"controle de voie," ARQ-E3/192 at 0245. (Ed.)
- 7428.3.** Un-ID w/coded wx. 50 baud at 0035. (Ed.)
- 7610.0.** 3XA. Conakry Air, Guinea, w/RYRY, QJH1, 50 baud at 0130. (Ed.)

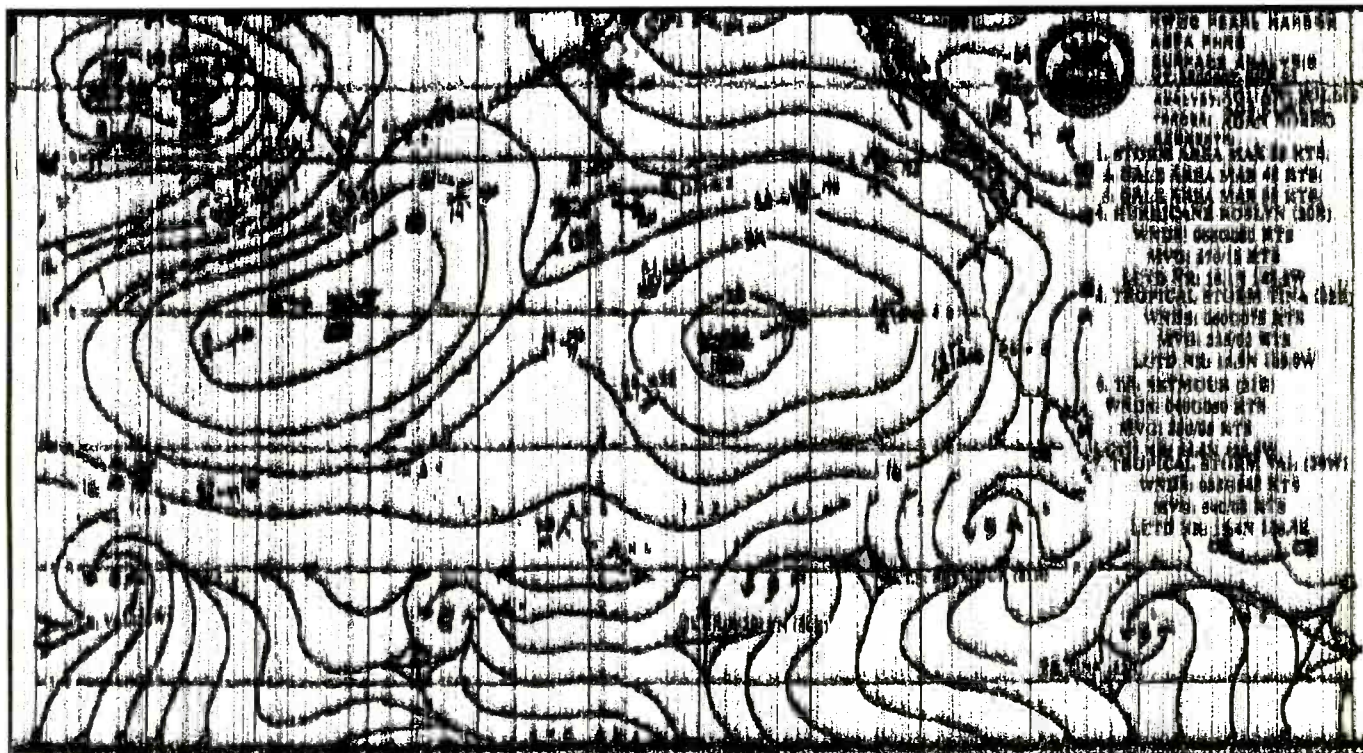
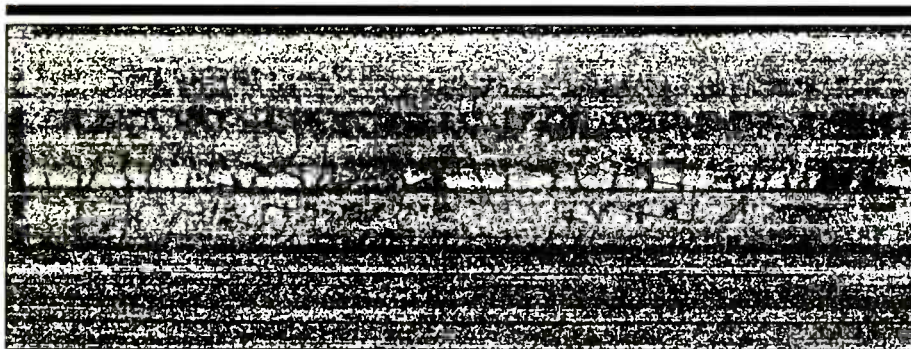


Figure 4



**Figure 5**

**7641.8:** RFVI, French Forces, Le Port, Reunion, w/"non protege" msgs in FF at 0212, ARQ-E3/100. (Ed.)

**7685.0:** Various USN MARS stas. use this freq. throughout the day in ARQ mode. (Ed.)

**7776.5:** OST38, Oostende R., Belgium, w/msgs in FEC at 0418. (Ed.)

**7821.8:** "LYNX," MFA, Lagos, Nigeria, w/XXQK selcal in ARQ & CW ID at 0313. (Ed.)

**7915.0:** USAF MARSnet, regions 1 & 2, at 0004, 50 baud & FEC. (Ed.)

**7996.0:** NNN0MCP, USMC MARS, Cherry Point AS. NC. w/MARSgrams & NMCP selcal, ARQ at 0017. (Ed.)

**8032.4:** AFRTS, Los Angeles, CA, w/AP/UPI nx at 0103 & 1610. FDM 50 baud. (Ed.)

**8416.5:** NMF, USCG, Boston, MA, w/navareas & hydrolants, and wx from NAM, Norfolk NAS, VA. Was FEC at 1630. Said that the next B/C was sked for 0140 UTC. (Ed.)

**8419.5:** VCS, Canadian Coast Guard, Halifax, NS, w/Newfoundland wx forecasts & synopses, ice-berg locations, and notices to shipping, FEC, 1650-1702. (Ed.)

**8429.0:** EAD, Madrid R., Spain, w/a t/c list, FEC at 0500. (Hall, RSA)

**8436.0:** Un-ID w/lots of diff. selcals, ARQ at 0241. (Ed.)

**8463.3:** CKN, Canadian Coast Guard, Halifax, NS, w/a NAWS freq. list at 0250, 75 baud. (Ed.)

**8625.5:** GYU, Royal Navy, Gibraltar, saying it's available only on freqs 08A & 12A, 75 baud at 0349. (Ed.)

**8677.5:** URD, St. Petersburg R., Russia, w/an ARQ phasing sig. + CW ID at 0413. (Ed.)

**8843.5:** Possibly Goeteborg R., Sweden, w/a telex at 0446, ARQ. (Ed.)

**9076.8:** RFFA, Mindefense, Paris, France, w/"controle de voie" to Libreville, Gabon, ARQ-E3/50 at 2305 & 0005. There was no sync at 48 baud on any of my decoders, but the sig locked in at 50 baud. The same thing happened to Murray Lehman of Australia, as was ment'd in last month's column, when he got sync only at 50 baud. I've found this to be true on other freqs as well, further substantiating Murray's claims. (Ed.)

**9194.9:** 5ST, ASECNA, Antananarivo, Mada-

gascar, idling at 0544, ARQ-E3/48. (Hall, RSA)

**9217.0:** TTL, ASECNA, N'Diamena, Chad, idling at 0548, ARQ-M2/96. (Hall, RSA)

**9318.0:** DHJ51, Gregelg Meteo, Germany, w/aviation wx at 0639, 100 baud. (Ed.)

**10102.5:** 3XA, Conakry Air, Guinea, w/RYRY, QJH1, 50 baud at 0654. On another day, an un-ID sta. idling for several hrs after 2330 tune-in. ARQ-E3/100. (Ed.)

**10134.0:** TZH, ASECNA, Bamako, Mali, w/RYRY, QJH1, 50 baud at 0705. (Ed.)

**10257.8:** AFS, Offutt AFB, Elkhorn, NE, w/wx data from KNGU, NAVEASTOCEANEN, Norfolk NAS, VA. Was 75 baud at 1723. (Ed.)

**10407.0:** 6VY56, ASECNA, Dakar, Senegal, w/RYRY, QJH1, at 0727, 50 baud. (Ed.)

**10536.0:** CFH, Canadian Forces Meteo, Halifax, NS, w/coded wx at 0753, 75 baud. (Ed.)

**10600.0:** XVN37, VNA, Hanoi, Vietnam, w/RYRY at 1150, 50 baud. (Ed.)

**10749.5:** "C37A" w/RYRY & QSY 60 to "6XM8" at 0352, 100baud, foll by encryption at 0353, ARQ-E/288, foll by RYRY & foxes at 0355, 100 baud. (Ed.)

**10800.0:** RFLI, French Navy, Fort de France, Martinique, idling, ARQ-E3/100 at 1157. (Ed.)

**10871.5:** AJE, USAF, Croughton AB, England, w/aviation wx at 0738, 75 baud. (Ed.)

**10905.0:** ANSA, Rome, Italy, w/nx in II, 50 baud at 0715. (Boender, NLD)

**11012.5:** Un-ID w/aviation wx, 75 baud at 0433. (Ed.)

**11018.0:** GXQ, British Army, London, England, w/foxes, 10 count & RYI's, FDM 50 baud at 0040. (Ed.)

**11139.0:** PWN33, Natal Navrad, Brazil, w/RYRY, SGSG, & 10 count to PWKD (ship), 75 baud at 0239. PWKD sends coded wx to Natal at 0245. (Ed.)

**11421.7:** FJY5, TAAF, Crozet Is., idling 1209-1213, then going QRT, ARQ-E3/96. (Ed.)

**11493.0:** SNN299, MFA, Warsaw, Poland, w/a msg at 1005, POL-ARQ. (Boender, NLD)

**11541.7:** RFLI, French Navy, Fort de France, Martinique, idling at 1221, ARQ-E3/96. (Ed.)

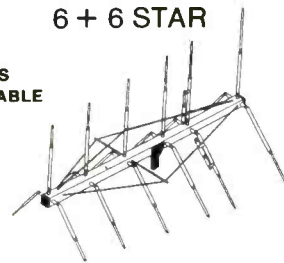
**12127.5:** Un-ID Swedish diplo idling, 1240-1245, SWED-ARQ. (Ed.)

**12204.0:** ZRH1213, Fisantekraal Navrad, RSA,

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(ANSA) - ROME, SEPTEMBER 28 - DAYLIGHT SAVING TIME CAME TO
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SATURDAY: 0600 GHT TO 2000 GHT APPROX
SUNDAY: 8 1630 GHT TO 2300 GHT APPROX
KBG
28-SEP-92 16:7 NHHH
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This notice by the Italian news agency, ANSA, was issued last Sept. 28, on 22955 kHz, at 1537 UTC, 350/50R. (From Robert Margolis)

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CIRCLE 130 ON READER SERVICE CARD

### Abbreviations Used In The RTTY Column

AA	Arabic
ARQ	SITOR mode
BC	Broadcast
EE	English
FEC	Forward Error Connection mode
FF	French
foxes	"Quick brown fox. . ." test tape
GG	German
ID	Identification/led
MFA	Ministry of Foreign Affairs
nx	News
PP	Portuguese
RYRY	"RYRY . . ." test tape
SS	Spanish
tfc	Traffic
w/	With
wx	Weather

w/several NAWS msgs containing 5L grps, a wx forecast & misc. items to be posted on bulletin boards. During periods w/o tfc, this sta. would maintain the freq. by sending "NAWS S42D/" markers. Was 75 baud at 1319. (Ed.)

**12313.0:** 5YE, Nairobi Meteo, Kenya, w/coded wx, 50 baud at 1843. (Ed.)

**12455.0:** Un-ID w/5L grps at 1419, 75 baud. Header began "11177..." (Ed.)

**12702.0:** CKN, Canadian Coast Guard, Vancouver, BC, w/a NAWS freq. list, 75 baud at 0216. (Ed.)

**12714.0:** UXN, Arkhangelsk R., Russia, in ARQ at 1253 as a receiving sta. Went to FEC at 1305 w/a tfc list. (Ed.)

**12741.3:** HWN, Paris Navrad, France, w/"VVV de HWN" + RYRY & SGSG, 75 baud at 2253. (Ed.)

**12840.8:** PBC, Goeree Island Navrad, Netherlands, w/an availability tape at 2246, 75 baud. (Ed.)

**13399.0:** DFZG, MFA, Belgrade, Yugoslavia, w/Tanjung nx in SC, 75 baud at 1417. (Ed.)

**13415.2:** PCW1, MFA, The Hague, Netherlands, idling, ARQ at 1434. (Ed.)

**13506.3:** AAA6USA, U.S. Army MARS, Fort Sam Houston, San Antonio, TX, calling AAT5TFC, packet at 2215. (Ed.)

**13526.5:** DHJ51, Gengel Meteo, Germany, w/plaintext wx, 100 baud at 1249. (Ed.)

**13542.0:** ZRO8, Pretoria Meteo, RSA, w/coded wx, 75 baud at 2300. (Ed.)

**13545.3:** LBL1, Norwegian Forces w/the UN in Beirut, Lebanon, w/ARQ tfc at 1356. PCW1, MFA, The Hague, Netherlands, w/ARQ phasing sig. + CW ID at 2307. (Ed.)

**13665.2:** 6VU73, Dakar Meteo, Senegal, w/coded wx at 0053, 50 baud. (Ed.)

**13828.2:** NNNNOICE, USN MARS, McMurdo Sta., Antarctica, gives QSL's for receiving MARSgrams from NNN0HLQ on the same freq. Was FEC at 0104. (Ed.)

**13868.0:** Un-ID w/a KMXQ selcal in ARQ or idling, 1849 to past 2000. (Ed.)

**13940.0:** CLP65, Cuban Emb., Managua, Nicaragua, w/crypto after ZZZZZ, 75 baud at 1546. (Ed.)

**13965.4:** AAA0USA, U.S. Army MARS, Fort Lewis, Tacoma, WA; AAR8USB, Fort Carson, Colorado Springs, CO; & AAT8TFC, Colorado Springs, all using packet radio at 1747. (Ed.)

**13996.5:** STK, Khartoum Aero, Sudan, w/RYRY, 50 baud at 0136. (Ed.)

**14353.0:** Rompress, Bucharest, Romania, w/nx in FF, 75 baud at 1512. Went to CW at 1525. (Ed.)

**14370.0:** RCF, MFA, Kupavna, Russia, w/RYRY & CQ at 1640, foll by 5L msgs, 1643-1651, 75 baud. (Ed.)

**14405.0:** 4UZ, UNHCR, Geneva, Switzerland, w/tfc in EE & FF to Zaire, ARQ at 1427. (Ed.)

**14429.0:** PTT, Lubumbashi, Zaire, w/tfc in FF to Kinshasa at 1933, ARQ. (Ed.)

**14452.8:** "A1A" w/a BBS menu for "A5C," packet at 1616. (Ed.)

**14455.0:** Un-ID w/aviation wx, 1445-1559, 50 baud. (Ed.)

**14467.3:** DDH8, Pinneberg Meteo, Germany, w/wx in GG foll by RY's & freq. list, 50 baud at 1209. (Ed.)

**14478.5:** OEC, MFA, Vienna, Austria, w/APA

nx in EE & msgs in GG, ARQ-S6/96 at 1404. (Ed.)  
**14480.0:** OMZ, MFA, Prague, Czechoslovakia, w/nx in Czech (diplomatic bulletins), 100 baud at 1257. (Ed.)

**14481.5:** RFTJ, French Navy, Dakar, Senegal, w/nx in FF at 1118, ARQ-E3/48. (Ed.)

**14497.5:** CSY, Santa Maria Air, Azores, w/wx at 1217, 50 baud. Someone keeps adjusting the freq. up/down, causing me to perform finger gymnastics with the tuning knob to keep up with him. (Ed.)

**14518.0:** Un-ID Austrian diplo w/s/off in GG at 1215, ARQ-S5/96. (Ed.)

**14524.0:** SAM, MFA, Stockholm, Sweden, w/5L msgs + a circular in Swedish to Lisbon, SWED-ARQ at 1222. (Ed.)

**14543.0:** MKK, RAF, London, England, w/foxes, 10 count & RYI's, 50 baud at 1136. (Ed.)

**14546.5:** Un-ID Italian diplo w/a 5L msg, 1444-1500, ARQ. (Ed.)

**14531.8:** The foll USAF MARS stas. were found using packet radio at 2215: AFA2FK, Lakeland, FL; AGA0HO, Howard AFB, Panama; AFA2ZS, Alexandria, VA; & AFA6FN, Albuquerque, NM. (Ed.)

**14573.0:** Jana, Tripoli, Libya, w/nx in AA at 1138, 50 baud. (Ed.)

**14605.0:** Un-ID w/5F grps at 1503, foll at 1506 by "all qtc 1 all qtc 1 qru qru sk sk," 75 baud. (Ed.)

**14626.8:** RFLI, French Navy, Fort de France, Martinique, w/"controle de voie." ARQ-E3/192 at 2200. (Ed.)

**14642.5:** Un-ID w/garbled text in an undetermined lang, ARQ at 1855. Goes QRT at 1907, returns 1920-1921 w/a QTVV selcal. (Ed.)

**14648.3:** "AFA03," USAF, Bonita Springs, FL, w/CQ, packet at 2309. "AFA01," Washington, DC, w/ID in SS at 2340. (Ed.)

**14678.0:** Un-ID Romanian diplo w/encryption, ROU-FEC/164.5 at 1706. S/off in CW at 1709. Fifty minutes later, a sta. was seen here w/a brief msg in Romanian at 75 baud. (Ed.)

**14681.0:** "V5G," MFA, Bucharest, Romania, w/a circular in Romanian at 1146, ROU-FEC/164.5. (Ed.)

**14721.3:** Un-ID w/encryption, ARQ-E/288 at 1900. (Ed.)

**14760.0:** CNM61, MAP, Rabat, Morocco, w/RYRY & freq./timetable list. Was 50 baud at 1201. (Ed.)

**14760.5:** PWX33, Brasilia Navrad, Brazil, w/exercise msgs (not IAWG 92) to YWM1 at 1233, 75 baud. (Ed.)

**14816.2:** CLP1, MFA, Havana, Cuba, sending to Managua, Nicaragua, 75 baud at 1621. (Ed.)

**14878.8:** AAA6USA, Fort Sam Houston, San Antonio, TX, sending to AAA0USA, packet at 1645. (Ed.)

**14880.0:** JMG4, Tokyo Meteo, Japan, w/coded wx, 50 baud at 1251. (Ed.)

**14926.8:** RFTJ, French Forces, Dakar, Senegal, w/"controle de voie" at 1246, ARQ-E3/48. (Ed.)

**14934.0:** APS, Algiers, Algeria, w/nx in FF at 1241, 50 baud. (Ed.)

**14934.5:** NNN0NUW, USN MARS, Whidbey Is. NAS, WA, w/msgs, ARQ at 1827. (Ed.)

**14950.5:** CLP1, MFA, Havana, Cuba, w/crypto after ZZZZZ, 75 baud at 1548. (Ed.)

**14964.0:** RFFXL, French Forces, Beirut, Lebanon, w/"controle de voie," le bricks, 10 count, & RYRY, Was ARQ-E/72 at 1230. (Ed.)

**14991.7:** MFA, Cairo, Egypt, w/5L msgs to London, ARQ at 1815. (Ed.)

**15801.5:** RFGW, MFA, Paris, France, w/routine diplo msgs in FF at 1310 & nx in FF at 1530, ARQ6-90/200. (Ed.)

**15855.0:** DMK, MFA, Bonn, Germany, w/encryption to Athens, Greece, ARQ-E/96 at 1332. (Ed.)

**15859.5:** DMK w/encryption to Madrid, Spain, ARQ-E/96 at 1354. (Ed.)

**16005.0:** Bulgarian Emb., Brussels, Belgium, w/crypto after DDDDD, 75 baud at 1316. (Ed.)

**16015.5:** MFA, Sofia, Bulgaria, w/some type of a data list, 75 baud at 1220. (Ed.)

**16054.7:** Un-ID Egyptian diplo w/text in AA, ARQ at 1347. (Ed.)

**16058.5:** USMC MARS sta. NNN0MDW w/MARSgrams to NNN0MDT, packet at 1423. (Ed.)

**16111.2:** HBD20, MFA, Berne, Switzerland, w/5L grps, ARQ at 1230. (Ed.)

**16116.8:** 6VK317, PANA, Dakar, Senegal, w/nx in FF at 1247, 50 baud. (Ed.)

**16117.5:** 3GB6R, Punta Arenas, Chile, w/a wx synopsis in SS & a list of banking checks w/their serial nums & amts. Was ARQ at 2300, w/QSY to 8 MHz band at 2330. (Ed.)

**16124.3:** Two un-ID stas. passing encrypted msgs separated by CCCCC at 1243, 50 baud. Both went to CW at 1244. (Ed.)

**16137.7:** Un-ID Egyptian diplo w/a KVZK selcal in ARQ, 1715-1730, foll by a msg in AA. (Ed.)

**16152.7:** Un-ID w/badly garbled ARQ t/c at 2051. The day's date was seen clearly, however. Sent a TVVV selcal. (Ed.)

**16195.5:** CCS, Santiago Navrad, Chile, w/many rpts of a 5L msg to CCMP, 100 baud at 2159. (Ed.)

**16211.7:** Un-ID Egyptian diplo w/a very lengthy text in AA. 1749-1830. ARQ. (Ed.)

**17054.0:** Un-ID w/RYRY + vmgtcnjhb between encrypted msgs. 75 baud at 1921. (Ed.)

**17147.1:** Kerch R., Ukraine, wkg ship "Kapitan Butrimov," 50 baud at 1700. (Hall, RSA)

**17156.8:** MFA Cairo, Egypt. w/227 5L grps & msgs in AA to Washington, DC, ARQ at 1629. (Ed.)

**17172.5:** Un-ID w/text in RR. 1559-1605, & s/off in CW. (Ed.)

**17197.4:** LOR, Puerto Belgrano Navrad, Argentina. w/5L grps, 100 baud at 1650. (Hall, RSA)

**17362.7:** 5YE, Nairobi Meteo. Kenya, w/coded wx at 1950, 100 baud. (Ed.)

**17461.5:** CLP1, MFA, Havana, Cuba, w/5F msgs to Nigeria, 50 baud at 2300 on a Saturday night. There must be a sign on the MFA door reading, "We are never closed." (Ed.)

**18030.3:** "7L1." Czech Emb., Havana, Cuba, w/5F grps & nx in Czech to OMZ. 100 baud at 1152. (Ed.)

**18060.0:** SNN299, MFA, Warsaw, Poland, w/5F grps & msgs in Polish, POL-ARQ, 1413-1432. (Ed.)

**18061.4:** Un-ID w/"TEST TEST TEST..." + foxes, 10 count. RYRY, & INT ZBZ (rptd 3X). FDM 75 baud at 1315. This channel, and one on 18061.7 w/the same test, were the only clear channels among several encrypted ones. (Ed.)

**18152.2:** Un-ID w/encryption, ARQ-E/192 at 1221. (Ed.)

**18189.3:** Un-ID w "ga ga bd bd asm asm qsn qsn bd asm asm qsy 12211 qsy 12211 om all prkh bd qsp tx ga ga ok ok qtr2 cfm ur ga hr ky." Was 75 baud at 1451. Sta. went to CW at 1457. (Ed.)

**18447.7:** RFPTC, French Air Force, N'Djamena, Chad, w/"controle de voie," ARQ-M2/200 at 1740. (Boender, NLD)

**18557.5:** Un-ID w/encryption, ARQ-E/288 at 1534. (Ed.)

**18721.7:** MFA, Cairo, Egypt, w/a telex in AA, ARQ at 1407. (Ed.)

**18751.7:** Un-ID Egyptian diplo in AA, ARQ at 1434. Was QSA2 w/QSB. (Ed.)

**18972.0:** DFZG, MFA, Belgrade, Yugoslavia, w/nx in EE re the country's expulsion from the United Nations. Was 75 baud at 1456. (Ed.)

**19006.7:** MFA, Cairo, Egypt, w/tfc in ARQ & FEC to Muscat, Oman, at 1536. (Ed.)

**19027.8:** PWX33, Brasilia Navrad, Brazil, w/RYRY, SGSG, & 10 count at 1835, 75 baud. (Ed.)

**19350.0:** Un-ID w/encrypted msgs separated by RYRY + vmgtcnjhb. 75 baud at 1807. (Ed.)

**19662.4:** Un-ID Hungarian diplo w/a msg in EE, DUP-ARQ at 1205. (Takashi Kuroda, Japan)

**19718.0:** UDK2, Murmansk R., Russia, w/RYRY, freq. list, & t/c list to 4LS, 50 baud at 1300. (Ed.)

**19747.5:** 6VU79, Dakar Meteo, Senegal, w/coded wx at 1800, 50 baud. (Boender, NLD)

**19756.5:** MFA, Jakarta, Indonesia, w/an encrypted msg to embassies, ARQ-S5/96 at ??? (Kuroda, Japan)

**19943.0:** Un-ID w/encryption, FEC-A/192 at 1210. (Kuroda, Japan)

**20055.0:** CLP1, MFA, Havana, Cuba, w/5F grps to Guinea Bissau at 1419, 50 baud. (Ed.)

**20066.5:** German Emb., Shanghai, China, w/encryption at 0125, ARQ-E/96. (Kuroda, Japan)

**20070.3:** CLP1, MFA, Havana, Cuba, w/"informacion 183" foll by text in SS, 50 baud at 1507. The same "informacion 183" was seen over 3 hrs later in

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a xmsn on 20791.5. (Ed.)

**20107.0:** AAA0USA, U.S. Army MARS, Fort Lewis, Tacoma, WA, & AAA6USA, Fort Sam Houston, San Antonio, TX, using packet radio at 1915. (Ed.)

**20119.7:** MFA, Cairo, Egypt, switching back & forth between ARQ & FEC after 1341. (Ed.)

**20132.2:** DFZG, MFA, Belgrade, Yugoslavia, w/a "daily survey," 75 baud at 1433. (Ed.)

**20135.0:** Un-ID w/mil. t/c in SS, 50 baud at 1251. Much fading & became covered by atmospheric noise at 1308. Part of garbled copy read, "fm base-beldoeoto." (Ed.)

**20124.0:** "BZQU" w/ID + RYRY, 1548-1549, 75 baud. (Ed.)

**20160.0 & 20160.5:** Same test tape as found on 18061.4 & 18061.7, and also the only clear FDM channels among several encrypted ones. Was 75 baud at 1556. (Ed.)

**20179.7:** RFFA, Mindefense, Paris, France, w/a msg in FF at 1715, ARQ-E3/100. (Kuroda, Japan)

**20286.5:** SPW, Warsaw R., Poland, w/nx in Polish, FEC at 1919. (Ed.)

**20321.5:** GXQ, British Army, London, England, w/RYL's & foxes on several FDM channels, 50 baud at 2055. (Ed.)

**20348.5:** 9RE203, PTT, Lubumbashi, Zaire, w/3 telexes for Brussels, Belgium, ARQ-M2-242/96, ch. B, at 1507. (Hall, RSA)

**20372.0:** IRS23, ANSA, Rome, Italy, ending nxcst w RYRY at 1554, 50 baud. (Ed.)

**20473.3:** CXR, Montevideo Navrad, Uruguay, w/RYRY, SGSG, foxes & 10 count. to CPF2 at 1412, 75 baud. (Ed.)

**20560.0:** 5AQ88, Jana, Tripoli, Libya, w/nx in EE, 50 baud at 1615. (Ed.)

**20596.0:** HBD34, Swiss Emb., Caracas, Venezuela, w/msgs in GG & FF at 1548. ARQ, HBD80, un-ID Swiss diplo. w s/off msg. ARQ at 1525 on another day. (Ed.)

**20607.2:** SAM, MFA, Stockholm, Sweden, w/tfc for African embassies, SWED-ARQ at 1212. (Hall, RSA)

**20609.6:** HBD20, MFA, Berne, Switzerland, w/5L grps, ARQ at 1145. (Hall, RSA)

**20617.5:** KNY23, Czech Emb., Washington, DC, relaying telexes in Czech from Santiago, Chile. to OMZ, 100 baud at 1414. (Ed.)

**20619.2:** OMZ, Prague, Czechoslovakia, w/diplo t/c at 1138, 100 baud. (Hall, RSA)

**20622.4:** Un-ID w/5L grps at 1308, 50 baud. (Hall, RSA)

**20628.5:** CLP5, Cuban Emb., Algiers, Algeria, acting as relay sta. for embassy t/c from Syria, Yemen, & Egypt. Was 50 baud at 1728. (Ed.)

**20700.0:** SAM, MFA, Stockholm, Sweden, w/tfc to Algeria, SWED-ARQ at 1120. (Hall, RSA)

**20716.8:** RFFA, Mindefense, Paris, France, w/"controle de voie," ARQ-E3/48 at 1250. (Hall, RSA)

**20734.1:** 4UZ, UN, Geneva, Switzerland, w/tfc for UNHCR Conakry, ARQ at 1432. (Hall, RSA)

**20750.0:** OEC, MFA, Vienna, Austria, w/APA  
 nx in GG & EE, ARQ-S/96 at 1255. (Hall, RSA)

**20754.4:** HBC88, ICRC, Geneva, Switzerland,  
 w/tfc in FF, ARQ at 1055. (Hall, RSA)

**20780.0:** RFGW, MFA, Paris, France, w/5L  
 grps, FEC-A/192 at 1010. (Kuroda, Japan)

**20791.5:** CLP1, MFA, Havana, Cuba, w/cables  
 in SS to Thailand & No. Korea, 1823-1843, 50 baud.  
 (Ed.)

**20805.0:** RFQP, French Air Force, Djibouti,  
 w/"controle de voie." ARQ-M2/200 at 1114 (Hall,  
 RSA), & at 1355. (Boender, NLD)

**20865.5:** RFFA, Mindefence, Paris, France, w/a  
 msg in FF at 1655, ARQ-M2/200. (Kuroda, Japan)

**20948.7:** Un-ID Hungarian diplo w/a msg in EE.  
 DUP-ARQ at 1200. (Kuroda, Japan)

**21761.8:** PWX33, Brasilia Navrad, Brazil,  
 w/RYYR, SGSG, & 10 count at 1656, 75 baud. (Ed.)

**21856.2:** Un-ID w/encryption, ARQ6-90/200 at  
 1749. (Ed.)

**21859.5:** DFZG, MFA, Belgrade, Yugoslavia,  
 w/nx in EE re a plea by Yugoslavia to partially lift UN  
 sanctions. Was 75 baud at 1456. (Ed.)

**21884.0:** "SPK" w/RYYR + "SPK 2/96" foll by  
 2 5F msgs, 50 baud at 1555. (Ed.)

**22424.0:** Un-ID coastal sta. w/plaintext wx, FEC  
 at 2248. (Ed.)

**22607.3:** SAB93, Goetoberg R., Sweden,  
 w/"maritex s" in ARQ at 1514. (Ed.)

**22685.5:** UJY, Kaliningrad R., Russia, w/nx in  
 RR, including an item re the Fischer-Spassky chess  
 match in Yugoslavia, & telegram tfc. Was 50 baud at  
 1515. (Ed.)

**22772.0:** NBA, USN, Balboa, Panama,  
 w/AWG-92 war games tfc in SS & EE, 75 baud at  
 1344. (Ed.)

**22863.0:** "Echevery" w/msgs in SS, 50 baud at  
 1647. Suspect this is a Cuban sta. S/off w "737373  
 de echevery." (Ed.)

**22888.0:** DFZG, MFA, Belgrade, Yugoslavia,  
 w/nx in EE at 1520, & in SC at 1548, 75 baud. (Ed.)

**22897.0:** Un-ID w/encryption, ARQ-E/288 at  
 1715. Mystery sta. "6XM8" has been noted here in the

past xmtg at 100 baud & ARQ-E3/192. (Ed.)

**22904.5:** Un-ID German diplo idling 1552 to past  
 1720, ARQ-E/96. Had a sister sta. 1 kHz higher in  
 freq. which also was idling during the same period, but  
 it gave a c/s ID in CW at 1621, which was DMK, MFA,  
 Bonn, Germany. (Ed.)

**22909.0:** Un-ID w/encryption, ARQ-E/192 at  
 1224. (Kuroda, Japan)

**22930.5:** SAM, MFA, Stockholm, Sweden, w/a  
 telex to Ethiopia, SWED-ARQ at 1525. (Ed.)

**22955.0:** ISX22, ANSA, Rome, Italy, w/nx in EE  
 at 5126, & in FF at 1639, 50 baud. (Ed.)

**23012.0:** PWX33, Brasilia Navrad, Brazil,  
 w/AWG-92 test msgs in PP to NBA, 75 baud at 1808.  
 PWX was last year's host at the annual war games that  
 involve many of the navies throughout North and South  
 America. (Ed.)

**23014.5:** GXQ, British Army, London, England,  
 w/foxes, 10 count, & RYI's, FDM 50 baud at 1340.  
 (Ed.)

**23052.5:** CLP45, Cuban Emb., Luanda, Angola,  
 w/Angolan election results, 100 baud at 1615. (Ed.)

**23057.2:** CLP1, MFA, Havana, Cuba, w/pren-  
 saminrex, 75 baud at 1632. (Ed.)

**23180.8:** Possibly a Norwegian diplo idling in  
 ARQ mode 1322-1332. (Ed.)

**23234.5:** RFQP, French AF, Djibouti, w/wx on  
 ch. A & 5L grps on ch. B, ARQ-M2/200 at 1616. (Ed.)

**23264.0:** Un-ID w/encryption, DUP-ARQ at  
 1419. (Ed.)

**23305.3:** RFQP, French AF, Djibouti, w/"cont-  
 role de voie." ARQ-M2/200 at 1442. (Ed.)

**23357.5:** Un-ID Swedish diplo w/a msg in EE,  
 SWED-ARQ at 1356, going QRT at 1358. (Ed.)

**23370.0:** HZN50, Jeddah Meteo, Saudi Arabia,  
 w/coded wx, 100 baud at 1407. (Ed.)

**23373.0:** Italian Emb., Brasilia, Brazil, w/5L grps  
 & a telex in II to Rome at 1615, ARQ-E/96. (Ed.)

**23387.5:** LOR, Argentine Navy, Puerto Belgrano  
 w/a "boletin meteorologico" at 0012, 75 baud. (Ed.)

**23388.0:** Italian Emb., Brasilia, Brazil, w/msgs in  
 II, ARQ-E/96, 1639-1707. The next day, in the same  
 time period, LOR, Puerto Belgrano Navrad, Argentina,

was here w/5L grps, 75 baud. (Ed.)

**23451.6:** Un-ID w/msgs in FF in response to a  
 sta. on another freq. Was ARQ at 1624. (Ed.)

**23502.0:** PWX33, Brasilia Navrad, Brazil,  
 w/RYYR, SGSG, & 10 count at 1541, 75 baud. (Ed.)

**23548.0:** SAM, MFA, Stockholm, Sweden,  
 w/circulars in Swedish to Kinshasa, Zaire, SWED-ARQ  
 at 1359. (Ed.)

**23691.0:** DGX69, PIAB, Elmshorn, Germany,  
 w/nx in SS at 1326, and in GG at 1345, FEC-A/96.  
 (Ed.)

**23773.0:** Un-ID in the rarely used mode of RS-  
 ARQ/228.65, at 1712. This mode is not decodeable  
 with my present equipment. (Ed.)

**23818.7:** Probably MFA, Lisbon, Portugal, idling  
 at 1737, and going QRT at 1817. ARQ. (Ed.)

**24012.0:** PWX33, Brasilia Navrad, Brazil,  
 w/RYYR & SGSG, 75 baud at 1234. (Ed.)

**24102.0:** DFZG, MFA, Belgrade, Yugoslavia,  
 w/nx in SC, 75 baud at 1448. (Ed.)

**24551.5:** PWX33, Brasilia Navrad, Brazil,  
 w/RYYR & SGSG, 75 baud at 1416. (Ed.)

**25012.0:** MTO, Rosyth Navrad, Scotland,  
 w/availability tape, 75 baud at 2133. (Ed.)

**25227.0:** HBD20, MFA, Berne, Switzerland, w  
 date/time stamp & ID used at s/off. Was ARQ at 1440.  
 (Ed.)

**25271.0:** ISX22, ANSA, Rome, Italy, w/nx in FF,  
 50 baud at 1442. (Ed.)

**25460.0:** Un-ID idling at 1457, going QRT at  
 1502, ARQ6-90/200. (Ed.)

**26092.0:** Un-ID w/encrypted msgs separated by  
 letter strings containing a mixture of the letters b, f, m, p.  
 Each encrypted msg ran for about 10 secs. foll by the  
 letter strings for around 20 secs. Was 75 baud, 1543-  
 1552. (Ed.)

**27538.5:** French Guianese outbender sta.,  
 GUY3AE, now calls itself "South America Network 5"  
 and "South America Network 6" in worldwide packet  
 nets that have been written up in past RTTY columns.  
 Tuned in at 1455. (Ed.)

**29823.5:** Un-ID w/encryption, 75 baud at 1738.  
 (Ed.)



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## Six UHF Frequencies Wide-Open For Emergency Personnel

If your emergency communications team is affiliated with REACT (Radio Emergency Associated Communications Teams), then chances are you are well aware of the GMRS 8-channel repeater service. REACT members may usually monitor the "675" channel, 462.675 MHz base and mobile transmit, and mobile repeater input 5 MHz higher on 467.675.

The general mobile radio service is covered by Part 95, Subpart A, of the Federal Communications Commission Rules and Regulations. A GMRS system is comprised of: 1 or more station operators; 1 mobile station consisting of 1 or more mobile units; 1 or more land stations, optional; and, paging receivers, optional.

Mountain-top repeaters will dramatically improve the range between mobile and portable units. The repeater receives mobile units on a 5 MHz split frequency. Mobile units and portable units transmit up 5 MHz to access the repeater. Mobile and portable units may also communicate directly on the repeater output frequency, called "talk-around." This simplex inter-communication allows for two close units to communicate without needlessly tying up the repeater.

Throughout the United States, many REACT operators use Channel "675" for emergency communications and traveler assistance communications. There is a growing nationwide network of repeater stations available on this particular channel for just this purpose. This means that

a GMRS mobile radio set will be just as valuable to a user 5 states away as it is in their own hometown. New FCC rules now allow personal licensees in the GMRS service to operate on "675" for traveler's aid and emergencies, even though the specific FCC authorization is for an alternate GMRS channel. Up to 50 watts of output power may be used on the regular GMRS channels.

### GMRS Channels

Designator Mobile Freq.	Frequency	Base & Mobile
550	467.550	462.550
575	467.575	462.575
600	467.600	462.600
625 (blk. dot)	467.625	462.625
650	467.650	462.650
675 (orange dot. REACT)	467.675	462.675
700	467.700	462.700
725	467.725	462.725

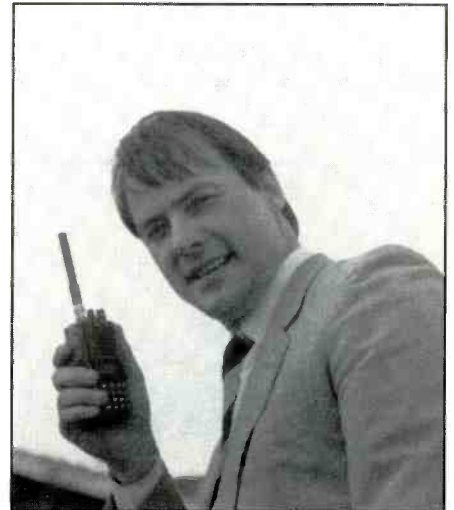
Relatively new on the channels scheme are splinter frequencies available for simplex operation to properly licensed GMRS users.

### Splinter Frequencies For Simplex Operation

Designator	Frequency
5625	462.5625
5875	462.5875
6125	462.6125
6375	462.6375
6625	462.6625
6875	462.6875

These splinter frequencies are in between the repeater and base station output frequencies in the GMRS service. There is little activity on these frequencies because it was only a little while ago that the Federal Communications Commission allowed for low power operation on a non-interfering basis on these channels.

Good news—if you have a GMRS license now, you may go on these 6 channels



GMRS repeaters will extend the range of low power handheld units.



Portable GMRS repeater system for emergency deployment.

immediately without any further licensing. In fact, many individuals who are members of a rescue squad are obtaining a GMRS license specifically to operate on these interstitial frequencies as opposed to the actual channel pair they are assigned.

To obtain a GMRS license for a channel pair, and ultimate to the 6 interstitial frequencies, you will need to obtain an FCC Form 574. The current FCC application fee for the GMRS license is \$35, and the license is good for 5 years and must be renewed.



GMRS equipment is available from most land mobile radio dealers.

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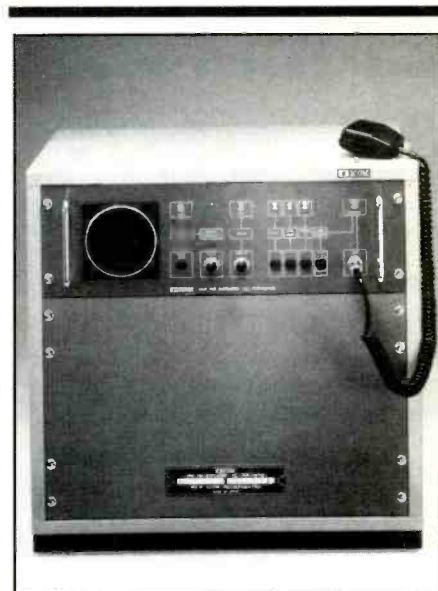
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GMRS repeaters require individual team membership.

Getting through FCC Form 574 is tough if you have never done it before. There are two organizations that will assist you in setting up a GMRS system for your emergency communications team: Repeater User Group, PO Box 395, Corona, CA 91718; and Personal Radio Steering Group, PO Box 2851, Ann Arbor, MI 48106.

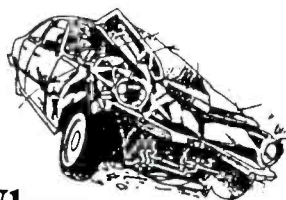
Federal Communications Commission Form 574 is available by calling 202-632-3676. Be sure to order the booklet of instructions for completion of the FCC Form 574, Booklet 295-168(40399). You'll get a recording—be patient, and speak clearly, and within a few days the booklet and Form 574 will arrive in the mail, free.

There is no frequency coordination required for obtaining a GMRS license. However, a \$35 licensing fee must be submitted along with your Form 574.

Shortly Radio Shack will be announcing an inexpensive UHF FM transceiver, crystallized up for one of the 6 interstitial frequencies. Motorola is also unveiling a low-cost GMRS interstitial-frequency handheld, specifically designed for simplex use.

Ideally, you would want to select a multi-channel FCC type-accepted GMRS UHF transceiver that would give you one channel of repeater operation for your assigned frequency pair, a second channel for repeater "talk-around," a third channel for the "675" repeater operation, a fourth channel for "675" talk-around, and the remaining channels to hold those 6 interstitial frequencies for intercommunication between your rescue squad team members.

So if your rescue squad unit has been holding out for a "clear channel" for its on-scene emergency work, do consider the GMRS service, as well as those relatively unknown frequencies for interstitial channel operation. I've tried them, and they work great!



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# WASHINGTON PULSE

## FCC ACTIONS AFFECTING COMMUNICATIONS

### **Propose Revisions To The Private Land Mobile Radio Services**

The FCC put forth a number of proposals to revise the Private Land Mobile Radio (PLMR) services and to modify the policies that govern them. This is the most comprehensive review of the policies and rules governing the PLMR services since their inception in the 1930's.

Specifically, the Commission is asking for comment on proposals to: 1) create new private land mobile radio channels by splitting existing channels between 72 and 512 MHz; 2) create a marketplace mechanism giving applicants the ability to obtain channel exclusivity in the 150-174 and 450-470 MHz bands; 3) designate a block of channels for wide area highly spectrum efficient operations; 4) provide users technical flexibility to convert to more advanced technology; 5) introduce three broad radio services to replace or supplement the 19 existing PLMR services; 6) reduce permissible power and antenna height to increase frequency reuse; and, 7) substitute a new, simpler and clearer, Part 88 for Part 90. The Commission said these proposals are designed to reduce congestion, meet future communications capacity needs, and permit, facilitate, and encourage licensees to be spectrum efficient.

The Commission stated that in the past seven decades, PLMR has become one of the largest, most important areas regulated by the FCC. When making new PLMR spectrum allocations, the Commission has been innovative and has required or induced the industry to be innovative as well. Although the current rules for the bands in use longest have been amended often, they remain based on much earlier technologies and regulatory concepts. The Commission pointed out that many PLMR channels are now unacceptably crowded and that its rules for certain bands are unacceptably archaic and convoluted.

Consequently, the Commission proposed a series of major changes in the way it regulates the PLMR services below 512 MHz. First, the Commission proposed spectrum efficiency standards to increase capacity. These standards would generally reduce channel spacing to 6.25 kHz or less, creating 2200-3100 new channels depending on the geographic market, while providing technical flexibility. To ease the transition to spectrum efficient technology, the Commission proposed a two stage process that provides many years for existing systems to fully convert to narrowband or similarly efficient technology. (See Attachments).

Second, the Commission proposed a

channel exclusivity option in the bands above 150 MHz. This would be accomplished by using a market-based approach called "exclusive use overlay," which involves achieving exclusivity through concurrence of existing users. In addition, the Commission would leave a significant number of channels available for licensing on the traditional shared use basis.

Third, the Commission proposed to designate approximately 250 channel pairs in the 150-162 MHz band for wide area, highly spectrum efficient operations. These channels would be made available to five licensees in each of seven regions on either a shared basis or as 50 channel exclusive blocks.

Fourth, the Commission proposed to consolidate the current 19 radio services. The Commission would either (a) consolidate the current radio services into three broad radio services (Public Safety, Non-Commercial and Specialized Mobile Radio) plus a General Category Pool encompassing all three services; or, (b) retain the current services and assign to those services their existing frequency assignments, but assign all new frequencies to the proposed new broad categories and the General Category pool.

Finally, the Commission proposed new technical and operational standards. For example, the Commission would significantly reduce permissible transmitting power levels to permit geographic co-channel reuse. In addition, the Commission proposed to permit centralized trunking, to set aside channels for specific operational characteristics, and generally to simplify the rules. The new Part 88 would eliminate over 500 rules and footnotes. The Commission said these changes would greatly expand capacity and improve quality of service, without imposing unreasonable burdens on present or future licensees.

### **Transfer Of Enforcement Functions To Gettysburg**

The Commission approved a reorganization of the Private Radio Bureau, effective June 16, 1992. Pursuant to this reorganization, various compliance functions have been transferred from the Private Radio Bureau's Land Mobile and Microwave Division, Compliance Branch to the Private Radio Bureau's Licensing Division, Gettysburg, Pennsylvania or to the Field Operations Bureau. This reorganization will facilitate the Commission's objective of providing excellent service to the public and, in addition, will conserve and make better use of the agency's resources.

Under the terms of the reorganization,

the Compliance Branch of the Private Radio Bureau's Land Mobile and Microwave Division has been abolished. The Compliance Branch's channel recovery programs based on construction and mobile loading requirements have been transferred to the Private Radio Bureau's Gettysburg Licensing Division. Licensees with current construction and loading deadlines are already receiving correspondence from the Private Radio Bureau's Licensing Division providing a telephone number for individuals who may have questions and showing the applicable address or FAX number to which replies should be sent. The Private Radio Bureau's Licensing Division will also assume responsibility for handling all waivers and finders preferences cases.

The Commission also transferred to the Field Operations Bureau total responsibility for handling interference complaints, including those involving private land mobile and microwave radio facilities. The Field Operations Bureau will act as the central point for and respond to all cases of interference or co-channel use complaints in the Private Radio Services, including providing technical and operational assistance to the applicants and licensees regarding such matters. All such complaints received in the Private Radio Bureau will be referred to the appropriate Field Operations Bureau Field Office.

Questions relating to these and all other licensing matters in the Private Radio Services should be directed to the Private Radio Bureau's Consumer Assistance Branch, 1270 Fairfield Road, Gettysburg, Pennsylvania 17325-7245 (Telephone: (717) 337-1212).

### **New FCC Form 302-FM Available**

As part of the FCC's Total Quality Management (TQM) initiative, a TQM team, made up of Audio Service Division employees, was formed in June 1991 to improve the FM station licensing process. As a result of this effort, the Commission has developed a new FCC Form 302-FM (Application for FM License) and Instructions to enable applicants to easily complete the form.

This new form was approved by the Office of Management and Budget. The new FCC 302-FM and Instructions have been printed and are available for use. Applications for FM license must now be filed on FCC Form 302-FM. Please note that FCC Form 302-FM is for FM license applications only. AM and TV license applicants are to use FCC Form 302.

Application forms may be obtained by writing to the Commission's Form Dis-

tribution Center, 2803 52nd Avenue, Hyattsville, Maryland 20781, or by calling Telephone Number (202) 632-FORM and leaving your request on the answering machine provided for this purpose. Please be sure to specify FCC Form "302-FM" and if you would like the instruction booklet that accompanies the form.

### **Suspend Enforcement Of Rules To Permit Additional Use Of Line 19 Of The Television Vertical Blanking Interval**

The Commission suspended enforcement of restrictions on the use of line 19 of the vertical blanking interval of NTSC television signals pending action in a future rulemaking proceeding to codify appropriate changes.

This action was taken at the request of the Advanced Television Systems Committee (ATSC). ATSC asked the Commission for a waiver of the rules to permit testing of a ghost-cancelling reference (GCR) signal on line 19 and to permit provisional implementation of GCR equipment.

Currently, line 19 of the vertical blanking interval of NTSC television signals is used for the transmission of the Vertical Interval Reference (VIR) signal. Its current use appears to be insufficient to justify the continued restriction of line 19 to that singular use, especially in light of recent advances in television broadcast technology which could provide substantial improvements in the quality of television signals, but might be delayed or foreclosed by continuing restrictions on the use of line 19.

While many advances in NTSC television quality have been made over the years, the Commission said that picture degradation through "ghosting" is probably the most significant reception defect yet to be eliminated or at least minimized. Extensive over-the-air testing of ghost-canceling systems, as intended by the ATSC, would serve the public interest, and would identify any incompatibility between ghost-canceling reference signals and television receivers that are equipped to receive VIR signals on the same line.

The Commission noted that there may be other unidentified uses for line 19 which could benefit by having access to line 19 and which have not been brought to its attention due to the reservation of line 19 for VIR. Therefore, the Commission will temporarily suspend enforcement of the rules so that line 19 can be used for any purpose and in any manner consistent with the FCC's regulation of uses of the vertical blanking interval, subject to the condition that such use does not interfere with the proper operation of television receivers. Because line 19 is essentially "vacant," the Commission believes that it is in the public interest to take this approach rather than to require interested parties and the FCC

to face the delays and administrative burdens associated with case-by-case waiver requests.

### **FCC Requirements In The Maritime Service**

The FCC's Maritime Service Rules require that each vessel equipped with a marine radio have a ship station license. It also requires a coast station license for stations on land that use marine frequencies to communicate with vessels, such as private coast stations. Operation of these types of stations without a license is a violation of Federal Law and may subject the user to prosecution or a fine of up to \$10,000 and one year in prison. Recent Commission studies indicate a large number of unlicensed marine stations. We are very concerned with this increase in unlicensed activity in a safety service such as the Maritime Radio Service.

The primary purpose of this public notice, therefore, is to remind the maritime community of the radio license requirements and to provide information on how to obtain a license. Additionally, this public notice is intended to put the maritime community on notice that the Commission, with the assistance of the United States Coast Guard, intends to strictly enforce the Maritime Service Rules as of the start of the 1993 boating season.

Entities wishing to obtain a marine stations license should follow the instructions below.

FCC Forms are available from the Forms Hotline (202) 632-3676. FCC forms and informational bulletins on marine radio are also available at Commission field offices and the Private Radio Bureau, Licensing Division, Consumer Assistance Branch, Gettysburg, PA 17325-7245. The phone number for the Consumer Assistance Branch is (717) 337-1212.

For a ship station license: Mail a completed FCC Form 506 together with a check or money order for \$35.00 payable to the FCC to the Federal Communications Commission, Marine Ship Service, PO Box 358275, Pittsburgh, PA 15251-5275.

For a coast (land) station license: Mail a completed FCC Form 503 together with a check or money order for \$70.00 payable to the FCC to Federal Communications Commission, Marine Coast Service, PO Box 358265, Pittsburgh, PA 15261-5265. Note: Applicants for coast station licenses must meet the eligibility requirements contained in Part 80.

### **Extension Of Compliance Dates For Video Cassette Recorders**

The Chief Engineer, under delegated authority, has extended the dates by which video cassettes recorders (VCRs) must comply with the current standards in Part 15 of the Commission's Rules and

Regulations. Under this extension, any VCR submitted to the Commission for authorization on or after June 23, 1994, or manufactured or imported on or after June 23, 1996, must comply with the current standards. Prior to these dates, VCR's must comply either with the current Part 15 standards or with the Part 15 standards that were in effect before June 23, 1989.

The standards in Part 15 were revised on June 23, 1989. As part of this revision, the permitted levels of radio frequency emissions were decreased for several categories of devices. The Commission required that any VCR submitted for authorization on or after June 23, 1992, or manufactured or imported on or after June 23, 1994, must comply with these revised standards. The Commission also delegated to the Chief Engineer authority to extend the compliance date for up to two years upon a showing of need.

The Electronic Industries Association of Japan (EIAJ) requested the extension to the compliance dates. It indicated that the majority of VCR manufacturers were experiencing difficulty in designing the receiver portions of VCR's to comply with the revised standards. Further, manufacturers of compliant VCR's recognized that compliance was marginal and may not be sustained due to variations in mass production.

EIAJ demonstrated that there is an industry consensus that additional design modifications are necessary in order to ensure that VCR's comply with the revised standards. Further, EIAJ demonstrated that these design modifications could not be completed by the compliance dates specified in the rules. The U.S. Electronic Industries Association also supported extending the compliance dates for VCR's. Accordingly, a two year extension has been provided.

Questions regarding this Public Notice should be directed to John Reed at (202) 653-7313.

### **AT&T Ordered To Educate Customers Concerning 0+ Dialing**

In response to alleged competitive problems resulting from the use of AT&T proprietary calling cards with the 0+ form of access, the Commission ordered AT&T to educate cardholders to check payphone notices and to use 0+ access only at public phones presubscribed to AT&T. The Commission also ordered AT&T to provide clear and accurate 800 access code dialing instructions on every proprietary calling card issued and make 800 access code dialing easier to use. The Commission will also be seeking further comment on ways to compensate Operator Service Providers (OSPs) for costs incurred in connection with misdirected 0+ AT&T proprietary card calls.

The Commission noted that this was an interim measure, pending resolution of the Billed Party Preference proceeding in

which the Commission is considering whether to require that 0+ calls be routed directly to the operator service provider by the party being billed for the call.

Proprietary calling cards are those whose customer databases, necessary for card validation and billing, are not available to the card issuer's competitors. The 0+ format access connects a caller with the AT&T network at public phones presubscribed to AT&T but, when used at phones presubscribed to other carriers, results in the call's not going through unless other billing arrangements are made with the carrier. A caller wishing to reach AT&T from a phone pre subscribed to another carrier must dial an AT&T access code, such as 10288 or an 800 number, and the receiving number.

AT&T began issuing proprietary cards using the card issuer identifier (CIID) numbering format in February 1991, in anticipation of the termination of its transitional post-divestiture obligations to continue sharing with the Bell Operating Companies (BOCs) various calling card issuances, maintenance and validation systems. The AT&T CIID card was specifically intended to replace its "joint use cards." AT&T established independent CIID card systems to implement this separation of the formerly shared card systems. Similarly, the BOC's established new and separate card validation databases for their joint use cards, the line identification databases. Pursuant to Court and Commission Orders, the LECs must offer their joint use card validation service on non-discriminatory terms, under tariff, to all interexchange carriers (IXCs).

AT&T has stated that issuance of its proprietary CIID card ended the anomalous situation whereby the AT&T joint use card could be validated (through access to the jointly-maintained AT&T/BOC card account database) by its competitors. AT&T stated that its customers complained when they used AT&T joint use cards and received service from unknown carriers, often at rates higher than AT&T would charge. AT&T further argued that the proprietary format put AT&T's CIID card on equal footing with the proprietary calling cards of its principal IXC competitors, whose cards cannot be used to charge calls on another IXC's network.

In response to complaints that arose in the Billed Party Preference proceeding, the Commission asked for comments addressing whether, prior to implementation of billed party preference, the Commission should require IXC's to share with other IXC's billing and validation data for any calling card usable with 0+ access. This interim remedy is known as "0+ public domain." It would expressly permit an IXC to issue a proprietary calling card, but only if that IXC instructs its cardholder to dial around the presubscribed OSP at payphones and reach the card issuer directly by means of the issuer's network access

code, e.g., 10XXX, 800 or 950 codes.

The Commission concluded, after studying the comments, that 0+ public domain would not serve the public interest as an interim solution because of the customer inconvenience, frustration and potential cost it would generate in order to obtain the limited benefits to competition it might bring. AT&T has stated that rather than open its card account databases to competitors, it would keep its CIID cards proprietary in order to ensure that its customers' calls will be handled by AT&T. This would mean that AT&T's CIID cardholders would have to dial access codes to reach AT&T at all public phones, even though dialing such extra digits is unnecessary to connect with AT&T at most public phones.

An immediate competitive problem disclosed in this proceeding was the unnecessary imposition of potentially unrecoverable costs on AT&T's competitors. This is caused by AT&T's instructing its cardholders to dial "0" plus the receiving number from any payphone, without checking first to see if AT&T is the presubscribed carrier. In fielding such calls, AT&T's competitors incur costs for which they cannot bill the caller because they cannot complete CIID card calls.

The Commission said AT&T could easily avoid having its customers send uncomplete 0+ CIID card calls to its competitors by dialing instructions which clarify when, and under what circumstances, AT&T can be reached by dialing one of its access code sequences. The Commission also required AT&T to make its 800 access code easier for customers to use. The Commission said it would review AT&T's plan to implement these requirements prior to implementation to ensure compliance with this order. The Commission said this should result in AT&T's competitors receiving significantly fewer misdirected calls and incurring fewer potentially unrecoverable costs.

Further comment will also be sought on cost issues associated with OSP handling of misdirected AT&T CIID card calls. ■

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# SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

## MONITORING THE 30 TO 900 MHz "ACTION" BANDS

In most parts of the country this time of year, it's still quite cold outside and thoughts of warmer outdoor activities aren't in too many folks' minds. However, while you're spending time at your listening post on cold, winter nights, now is the perfect time to start organizing your frequency lists for when the weather starts to warm up once again.

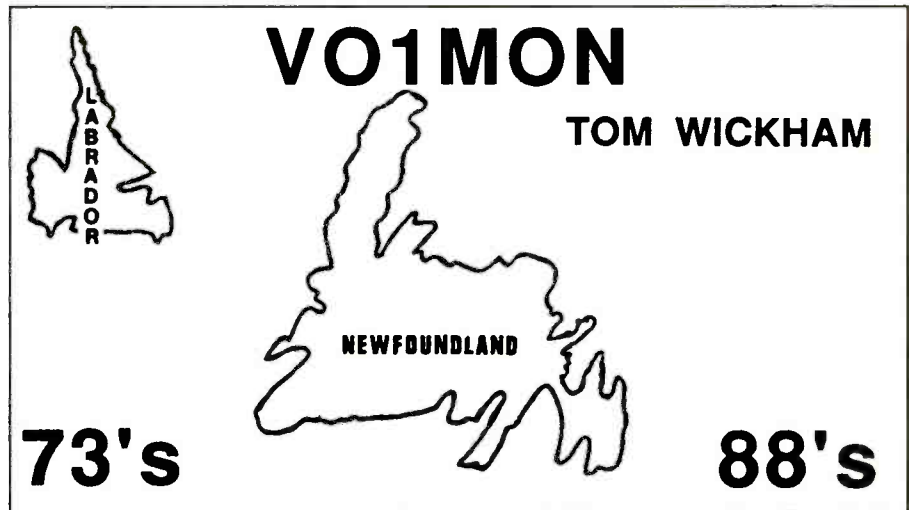
If you're planning a vacation this summer, figure out what frequencies you want to listen to while you are traveling. Now's the perfect time to start gathering information. Check out frequency directories that might help you plan your travel listening. Start compiling lists now. When the warm weather comes, you'll be preoccupied with tending to the yard (well, perhaps) and time for the radio end of things will come harder to find.

Peter Stawicki of Norman, Okla., says he has a Bearcat 350XLT and Bearcat 800XLT that are in need of repair and wants to know where the work could be done. One outfit I've heard of that does such work is G&G Communications, 9247 Glenwood Drive, Leroy, N.Y. 14482, (716-768-8151). It's a small shop that's been in existence for 19 years and they keep an ample supply of dead scanners on the shelf to pull working parts out of for repair jobs. Repair charges are a set fee plus parts, and carry a 90-day warranty on the work. Write to them for a flier detailing their services and repair policies.

Peter also sends along a list of frequencies of interest for his area: 154.740, Norman, Okla., police patrol; 154.650, Norman police secondary; 154.800, University of Oklahoma police; 154.265, Cleveland County Sheriff's Department (yes, that's normally a fire frequency, but apparently they licensed on the frequency through an interservice sharing agreement); 45.20, Oklahoma Highway Patrol planes; 465.5625, Oklahoma State Patrol walkie-talkies; 156.015, Oklahoma Lake rangers.

Jeff McKinzie of East McKeesport, Pa., sends a list of frequencies for the Pittsburgh area: 453.100, 453.250 and 453.400, Pittsburgh police; 460.475, Pennsylvania narcotics agents; 462.675, Pittsburgh REACT teams; 455.350, WPXI-TV Channel 11 news; 450.850, WTAE-TV Channel 4 news; 450.950, KDKA-TV Channel 2 news; 155.475, Pennsylvania State Police surveillance and narcotics agents; 453.700, Pittsburgh fire dispatch; 453.850, Pittsburgh fire fireground; 462.950, Pittsburgh EMS dispatch; 462.975, Pittsburgh EMS F-2; 418.900, federal Drug Enforcement Agency.

Chris Jones, Registered Monitor



QSL from Registered Monitor VO1MON10, also known as Tom, in Newfoundland, Canada.

KMO0EL, of Hazelwood, Missouri, reports a variety of frequencies he likes to listen to in the St. Louis area. At Ford Motor Co.'s minivan plant in Hazelwood, Chris reports activity on 462.350, 462.400, 462.475 and 462.5125. Chris has worked for TWA for 20 years and reports the following frequencies used by the airline at Lambert Field in St. Louis: 460.675, 460.875, 129.625 and 129.900. In addition, Lambert Field police operate on 453.400. Another interesting frequency is 463.325, where Chris reports hearing the Arch Helicopter Ambulance while in flight. Finally, Chris says he likes listening to the VHF marine frequencies used by barges along the Mississippi River. Lock and Dam 26 uses 156.700 and Lock and Dam 27 uses 156.600.

Nestor Noy, Registered Monitor, N2OGC and KNJ2NV, of Union, New Jersey, says he has heard that New Jersey has changed their law regarding the use of scanners in vehicles. He wondered about the implications of using his 2-meter HT while driving, especially if he wanted to listen to local public safety channels on the ham gear. It's true, New Jersey Gov. Jim Florio signed into a law that was pushed through the state Senate and Assembly by hams and scanner hobbyists. The old law prohibited the use of scanners in vehicles by anyone unless they were a police officer, firefighter or first-aid squad member. In addition, there was a provision in the old law that allowed civilians to obtain permits from the police chief in their municipality, however, few chiefs issued the coveted letters.

The new scanner law in New Jersey reads as such:

*Any person who intercepts any mes-*

*sage or transmission made on or over any police, fire or emergency medical communications system, or any person who is the recipient of information so intercepted, and who uses the information obtained thereby to facilitate the commission of or the attempt to commit a crime or a violation of any law of this state, or uses the same in a manner which interferes with the discharge of police operations, shall be guilty of a crime of the fourth degree.*

*Any person who, while in the course of committing or attempting to commit a crime, including the immediate flight therefrom, possesses or controls a radio capable of receiving any message or transmission made on or over any police, fire or emergency medical communications system, shall be guilty of a crime of the fourth degree. For purposes of this section, the term "police, fire or emergency medical communications system" shall not include radar devices used to monitor vehicular speed.*

John Bailey of Vernal, Utah, says he enjoys this column each month and that he has picked up several good tips and useful information. John says he's a dispatcher for the Uintah Basin Consolidated Dispatcher Center. His agency handles 911 and all the highway patrol, police, fire and ambulance services in three counties, which includes three cities and several smaller towns. In addition, communications are provided to wildlife and forest service personnel.

Here are some frequencies used by the agencies John dispatches for: 155.670, Utah Highway Patrol, Vernal police, Uintah County sheriff, Naples police;



*This tower atop the headquarters of the gendarmerie in Waterloo, Belgium, apparently is used for dispatch purposes. It was snapped by R.C. Watts of Louisville, Kentucky, as he passed by in a bus. It's unknown what frequency the gendarmes use in this village.*

154.770, Utah Highway Patrol, Duchesne County sheriff; 155.640, Roosevelt police; 155.055, Uintah County Emergency Services; 155.835, Duchesne County Emergency Services; 155.415, Bureau of Indian Affairs tribal police. John scans with a Uniden Bearcat 200XL T and likes listening to emergency services, aircraft and some local business frequencies. He really enjoys tuning in low-band skip and regularly listens to the Gulf Fleet, fire and ambulance services from the East Coast and some Canadian communications.

"Elephant Ears" from Anderson, Calif., says he's been a scanner listener for a couple of years now. He says there isn't as much action to hear in northern California as there is in the big cities, but he still finds plenty to tune in on his Realistic Pro-2022 and Pro-38. Here are some frequencies of interest from his monitoring area: Redding police (trunked system) - 856.9625, 857.9625, 858.9625, 859.9625 and 860.9625; Shasta County sheriff, 158.730 F-1, 154.920 F-2, 155.190 detectives; Calcord (sheriff's informal and interagency), 156.075; California Fish &

Game, 151.415; California Highway Patrol, 42.44 base, 42.28 mobile; Shasta County fire, 154.430; Redding fire, 154.325; California Department of Forestry, 151.160 fire, 151.190 tac-4, 151.445 tac-11, 151.280 "blue" air; U.S. Forest Service air dispatch, 168.025.

Elephant Ears adds that he hears sometimes what sounds like Donald Duck on the radio. This is what is called voice-inversion scrambling. The highs in the voices are made low and the lows are made high, which makes it almost unintelligible for those tuned in. The voice-inversion form of scrambling is one of the oldest, yet more popular forms of scrambling. Ears also asks about the laws regarding descrambling and whether it can be done. First of all, the Electronic Communications Privacy Act of 1986 makes it illegal to descramble communications not sent directly to you. This is the same law that makes it illegal to listen to cellular and mobile telephone calls. Prior to the law's enactment, descramblers were readily available from a few suppliers. The law kind of killed that industry, though. Ears adds that the scrambling he hears is similar to what he hears from ham operators using upper or lower sideband on HF. However, I guess you are in the AM mode when you are tuning in these hams. By using a sideband-capable receiver, you can hear the hams fine. The sideband mode of communications is not like scrambling.

Bill Archer of Las Vegas, Nevada, says he wants to be able to tune in federal agencies, but doesn't know where to start. First, the easiest way is to start by searching the 162-174 and 406-420 MHz bands. You're sure to find federal activity here, just about anywhere you may live. By paying close attention to what you hear, you may be able to figure out what agencies you are tuning in. A second good idea is to purchase the new 8th Edition of *The 'Top Secret' Registry of U.S. Government Radio Frequencies*. This unique guide details frequencies used by all federal agencies across the entire country. It will give you a good reference point in searching out certain agencies and attempting to figure out what agencies you may stumble on. Many federal agencies use a form of digital encryption, however, that sounds like static on your radio. There's no way to decode these messages because there are billions of possible codes that can be used to encrypt the signals. The *Top Secret* guide is available from CRB Research Inc., P.O. Box 56, Commack, N.Y. 11725. (Free catalog!)

What are you hearing on your scanner or communications receiver? How about a list of your favorite frequencies to share with others? What questions do you have about listening to VHF/UHF signals? And how about a photo of your listening post while you're sending a letter! Write to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 N. Broadway, Hicksville, N.Y. 11801-2909.

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## INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

### Satellite Pirates

**F**or many years there has been a split within the shortwave broadcasting community concerning the place of pirate broadcasters. One school says we should not give pirates any editorial coverage or publicity in any form. Sort of starve them of what they need most, notoriety. The other and more common point-of-view is to simply handle them as any other news worthy item.

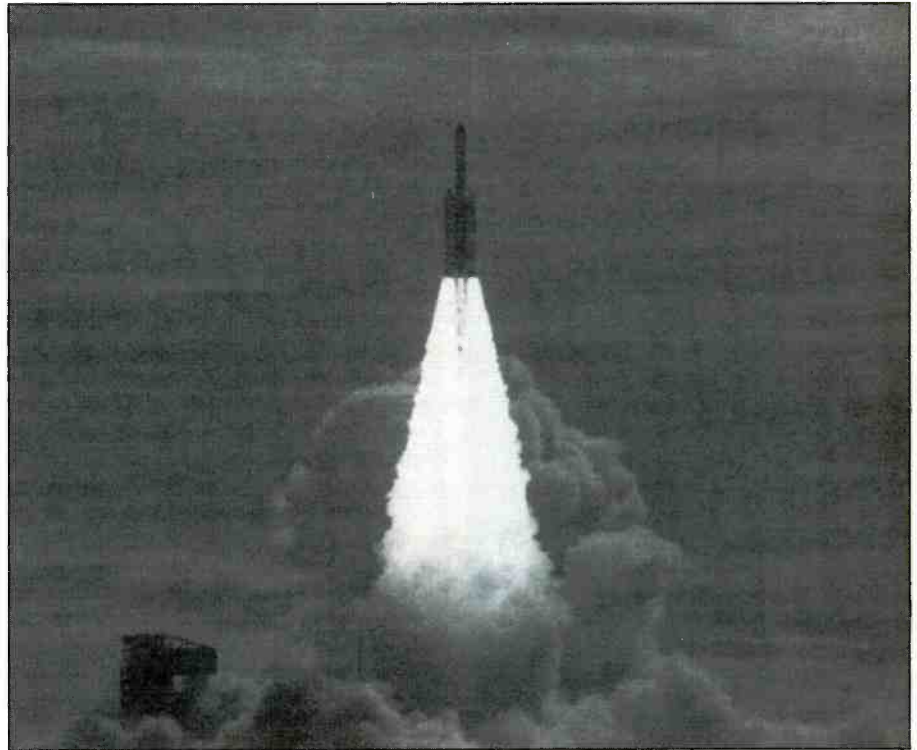
While the space age arrived some time ago, the pirate broadcaster has largely occupied the HF shortwave bands. This fringe form of broadcasting is filled with risks, poor propagation, and a limited audience. The risks, of course, stem from the fact that pirate broadcasting is illegal and could result in fines, confiscation of equipment, and possibly imprisonment.

The Space Age, and satellites in particular, have brought about many changes in our world of communications. This is no less true for the would-be broadcaster. Today it is possible to broadcast your own programs via satellite to a large, waiting audience, on a clear frequency and at regularly scheduled intervals. You do not need a license, expensive equipment or the skills of an engineer to take advantage of this medium.

It was a year and a half ago that Scott Becker, KN5MUH, an Amateur Radio operator, shortwave listener and ex-pirate discovered a way to bring pirate broadcasting into the space age, legally. Having worked in broadcasting, both commercial and pirate, Scott became interested in the possibility of using satellite channels with audio sub-carriers to provide regular broadcasts. The sub-carriers on a satellite carry the main audio for the TV signal. There is usually enough space left on the transponder to add additional sub-carriers for other services. Most of your satellite radio networks use this method to distribute their signals nationwide. In fact, there are a lot more radio stations on TV satellites than TV broadcasters.

The result of Scott Becker's efforts is the Becker Satellite Network. This network is what is known as a common carrier. It provides the satellite space for programmers, pirates or you at incredibly reasonable rates. Since it is a common carrier you need not be licensed and you are not limited by FCC prohibitions against regular broadcasters. In other words, this common carrier method is how the cable programmers can bring you some pretty vulgar stuff.

The Becker Satellite Network currently broadcasts on Spacenet 2, Transponder 7 on a 7.5 sub-carrier. The network carries Radio Newyork International, the Satellite



The Vandenberg AFB, CA witnessed the launching of a Titan 34D. (Photo USAF).

Information Service, the Johnny Lightning Show, the World Jazz Federation, DBI Satellite Radio Talk shows, interviews and much more. One of its most popular programs tells you how to beat the tax man be exercising your constitutional rights.

Becker Network program schedules can be found in the three major satellite TV guides, *OnSat*, *Orbit*, and *Satellite TV Weekly*. So if you want to be a pirate without any of the usual dangers call Scott at (316) 825-4882. Tell him *POP'COMM* sent you.

#### News

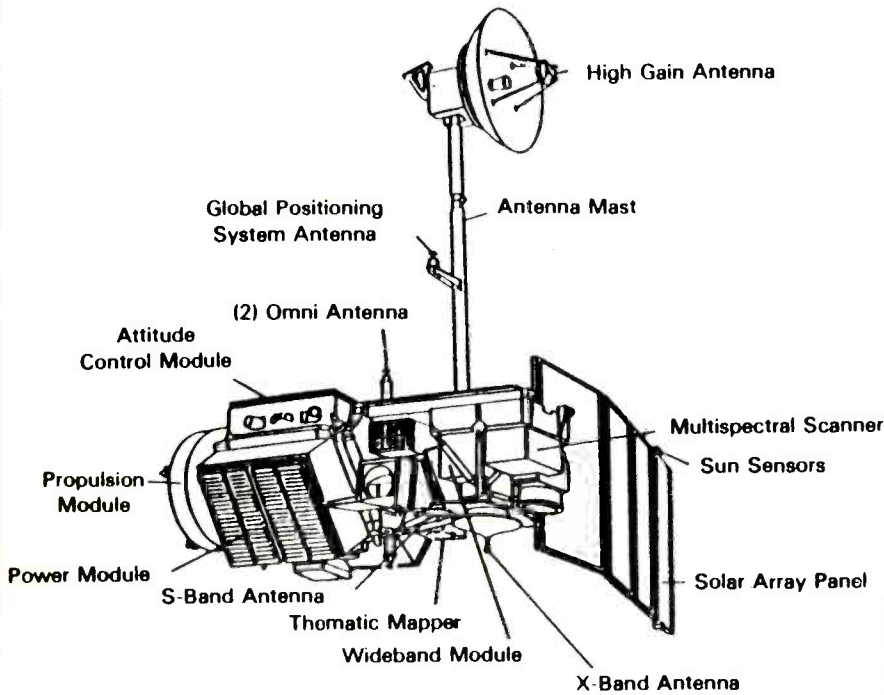
According to a recent article in AMSAT-UK's OSCAR NEWS, by Bernard Pidoux (F6BVP), the French will launch a multi-mode Amateur Radio satellite this spring. The ARSENE (Ariane Radio Amateur Satellite pour l'Enseignement de l'Espace) radio club of CNES (Centre National d'Etudes Spatiales), which is the French equivalent of NASA, AMSAT-F and the French Packet radio association (ATEPRA), all contributed to the project. The satellite will be the heaviest Amateur satellite launched, weighing in at over 350 lbs. This Packet satellite will have three 70 cm uplinks, 435.050/.100/.150 MHz and a 145.975 MHz downlink on mode B. The S-mode is a single 435.100 MHz uplink

and a single 2446.540 MHz downlink, the frequencies of which were dictated by the French military. The S-band RF output will be 800 mW. VHF RF output will be switchable between 15 and 2 watts.

This satellite will use the standard 1200 baud FSK format, not the standard PSK as used by the current fleet of micro-sats. This should allow more people to use the satellite with less equipment. All you need is the classic Bell 202 modem. The orbit will have a perigee of 12,000 miles (20,000 km) and a apogee of 24,000 miles (36,000 km). With a period of 17 1/2 hours, one third of the earth will be able to see the satellite at the same time. It should make for some great contacts.

Remember all the de-regulation frenzy during the 80's. You remember, the S&L scandals, anti-trust violations, price gouging and the stock market crash. Well, during that time, President Reagan wanted to end government control of NOAA and Landsat. He wanted to give the weather satellites and our Landsat spacecraft over to commercial interest, you know, the private sector. He was successful with the Landsat program. Changing it, that is. This caused prices for satellite images and data to sky-rocket. This effectively put them out of business. No one was buying or using the data. Gore and Hollings sponsored a

## Landsat-4 Flight Segment

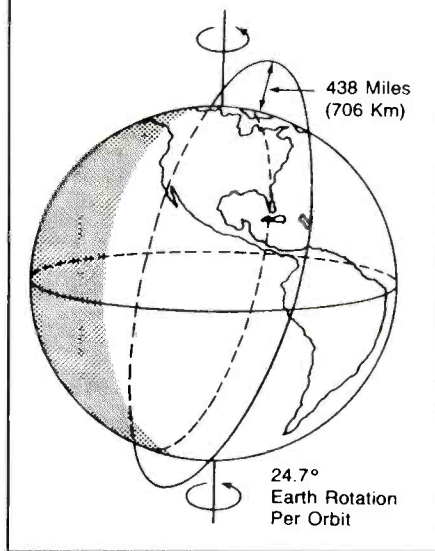


Senate bill that would effectively place Landsat within the control of NASA/DOD. The bill, S2297, will dramatically reduce prices so that researchers, non-profits and commercial interest can make use of this data that is so generously provided by the US taxpayer.

Are you TVRO or cable equipped? Do you sometimes see images or ghosts? Of course, sometimes for up to 20 minutes. What, pray tell is the reason. It seems that over 75% of the cases are caused by satellite uplink stations operators who suffer from more than their share of human error. According to an article by Harry Jessell in a recent issue of *Broadcasting*, NASA's Goddard Space Flight Center is not immune. It accidentally turned on the C-band transponder on one of its TDRSS satellites causing quite a stir. In addition, it is thought that VSAT (Very Small Aperture Terminals), small portable data uplink stations may be at fault as owners sometimes do less maintenance than necessary to keep the units in proper operating order. Such congestion and interference problems are going to get worse. Between now and 1994, nine new domestic satellites are scheduled for launch. Look and listen for news on the launchings of two Telstar, three Satcom and four Galaxy spacecraft in the near future.

Spacelink Systems of Houston Texas has introduced a portable VSAT satellite communications center for disaster recovery teams. It is a fully contained voice, data and facsimile terminal. It is a Ku-band system capable of 9.6 through 1544.0kbps.

## Landsat-4 Orbit



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The Federal Communications Commission has proposed allocating the 1610-1626.5 MHz and 2483.5-2500 MHz band for Low Earth Orbit Mobile Satellite Services (MSS). Geo-stationary systems already use these bands.

See you next month.

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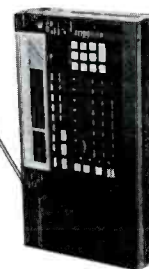
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## Beaming In (from page 4)

at least bizarre, sound effect in my general direction. You can't be very subtle with me. I knew the radio was trying to tell me something. But what was it?

When people begin acting in a somewhat similar manner towards me, I generally assume that it's because of something I did or said. Telling the radio I was sorry served no useful purpose. This is about the same reaction an apology brings me from people.

My next thought was to assume that the cat had somehow shrunk down and gotten in back of the radio to jiggle the power cable loose. When that proved not to be the case, then I tried wiping the dust off the cabinet. I also relied on my sure-fire, old faithful repair technique of giving the thing a few good raps with the palm of my hand. When all of these proven emergency measures failed, I realized that I had used up all of the high-tech approaches I knew that might possibly have solved the problem.

Amazingly, I was still able to locate the owner's manual. It had an entire page of troubleshooting hints. None suggested anything like the possibilities of a total rebellion of the entire machine, with the set just lying there at death's doorstep, flashing, winking, clicking, and beeping at its master.

Everybody volunteered advice. The XYL offered a repair idea, based upon the proven method of dealing with her car when it balks at starting on a cold day. She said I should pretend I was indifferent. "Tell it you don't care whether or not it works because tomorrow you're going out to buy a better one." Can you believe anybody would suggest something so completely ridiculous? Anyway, the radio didn't think much of this approach, either.

Ever since my 7 year old grandson demonstrated that he's the only one who knows how to program the VCR, he was proclaimed the family electronics whiz. His idea to revive the radio was to simultaneously point the wireless remote control units from the TV, VCR, and cable box at the radio, then zap it with repeated blasts of "on" signals. When this scheme failed, he stormed out of the room crying, insisting the technique worked when it was used by TV's *X Men*.

Most of my XYL's relatives, bless 'em, look like characters who should be in Fellini movies and Fox TV Network sitcoms. She has this eerie cousin, Delmer. He contributed to the zapping effort by aiming his pocket calculator at the receiver and pressing the calculator's buttons. This is the guy with the plastic pocket protector holding the five *Bic* pens. For as long as I can remember, Del's eyeglasses have been held together in the center with a *Band-Aid*.

Del finally announced that my only hope was to call Shirley MacLaine so she could channel the dead radio through from the



"other side." At that point, the entire family suddenly decided it would be best for all concerned if they took Del and immediately departed the house to go shopping. It was apparent that I needed to be left alone for at least two or three hours, or days.

In a way, Del was right. It was dead. The truth was sinking in. The horrible realization that my DX'ing for the immediate future was obviously going to be severely curtailed. This wasn't going to be a quick fix. The receiver is a sophisticated piece of electronics. Things like this can and do happen to any type of electronics gear. It takes no more than a single tiny chip to fail. In any case, it wasn't going to be fixed by the old wiping off the dust or checking the power connector tricks. The next day I called the manufacturer's service department.

They were anxious to help. But, as I had expected, they never heard of a receiver with symptoms that even remotely sounded like what I described. Any time I have a problem with a car, a house, a refrigerator, a radio, or a tooth, invariably it falls into one or more of the following categories: It turns out to be something far beyond the present knowledge and experience of science, industry, and technology. It has never before been observed in western civilization. It defies the presently known laws of physics. The part needed is no longer manufactured. The only person who could deal with it has rejected mundane concerns and is now meditating atop a mountain in Nepal. In addition, there aren't enough number slots on modern cash registers to total up the repair bill.

The manufacturer said I should send the set back for them to look at, although it might take a few weeks to get to it. They thought that there was a possibility that the glitch might be no more than the CPU going sour. If I wanted, they would be happy to send me a replacement CPU card that I could install myself. They assured me that this is a simple task. Probably true.

Sure, I have had great success and lots of fun repairing and modifying scanners, CB's, and military surplus radios. Would I root around inside a modern professional grade kilobuck receiver? No way! Not on a bet. Finally, I spoke to the dealer from whom I had purchased the receiver. I was told to give it to their service department and they'd get on it as soon as they could.

In the mean time, I was lost without my great super-receiver. So, I went to the attic to look for a temporary replacement, namely the receiver I had used before getting the super-receiver. It wasn't to be found. My XYL reminded me that 6 months earlier, in a moment of unexplainable weakness, I had happily given away that receiver to my friend Glenn, N2RPF. Glenn needed an HF receiver to practice copying CW to run up his speed.

That meant that I had no choice but to dig out the very old receiver I had used prior to the one I had given to Glenn. This is a

quaint relic from the days of built-in tunable preselectors and tunable PLL circuits. Sure, it was considered a decent enough receiver in its day, but that was at least 15 years ago.

Had I never gotten used to the super-receiver, maybe the old substitute receiver wouldn't seem so inefficient, so ancient, so feeble and rinky-dink. It works OK, but it's so primitive. It's like driving around in an old VW Bug while your new Mercedes is getting serviced. Besides its limited capabilities, I don't want my friends to come over and see this thing in use as my receiver.

I'm lost without my radio. Many evenings have been spent watching *Nick at Night* with the rest of the family. I've recently learned who *Ren and Stimpy* are. Maybe I should have called up *Nick at Nite* about the radio problem and let Clarissa explain it all. I don't know how much longer I can go on like this. What's even worse, my family doesn't know how many more evenings they can deal with the situation, either.

My pal, Rusty, owns a bunch of service stations, including our local one. He's a radio nut, too. I like to gripe to Rusty about little things such as this. That's because, like most guys that own service stations, he's also a homespun philosopher. Rusty says that I should think about how lucky I am. I might have spent more than 120 times the cost of the super-receiver to buy that yellow Ferrari tacked to my bulletin board, and been just as easily sidelined by something as cheap as a bad spark plug, or a leaky radiator hose.

Of course, he's right. But, now that I think about it, Rusty can afford to be philosophical about my dilemma. He's driving around in a Ferrari, and he owns the same model super-receiver I have. Both of them work.

*Lessons I have learned:* 1) A super-receiver is a wonderful thing. 2) Nevertheless, don't leave yourself without a backup receiver. 3) It's good to own a chain of service stations. From replacing cheap spark plugs and radiator hoses, you can buy a super-receiver and have enough left over to also get a \$180,000 Ferrari. ■

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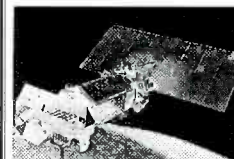
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 Sensitivity: .35uV NFM, 1.0uV WFM, 1.0AM  
 Speed: 20 ch/sec. scan. 40 ch/sec. search  
 IF: 561.225, 58.075, 455KHz or 10.7MHz  
 Increments: 5 to 955KHz selectable/ 5 or 12.5 steps.  
 Audio: .4 Watts  
 Power: Input 9 - 13.8 V. DC  
 Antenna: BNC  
 Display: LCD  
 Dimensions: 6 7/8H x 1 3/4D x 2 1/2W. 12oz wt.

**100 Channels. Low, Air, High, UHF & 800MHz.**

**Standard Features:**

- Extremely compact size.
- Unrestricted 800MHz coverage.
- 100 channels permanent memory.
- Earphone Jack.
- Delay, Hold features.
- Channel 1 Priority.
- 5 Scan Banks, 5 Search Banks.
- Two antennas included.
- AC & DC Power cord w/mobile mnt. hrdwr. (AR950)
- NiCad battery w/chr adapter. (AR900)
- One Year Limited Warranty.

**Options:**

Base type antenna	
25 to 1000MHz w 50' coax.	AS300 \$59.95
Mag Mnt Mobile Antenna. 15' coax.	MA100 \$25.00
Cigarette Lighter power adaptor.	CP100 \$5.00
Wide band preamp	GW-2 \$89.00
Extended Warranty. 2/3 yrs	\$40/\$55

**Specifications:**

Coverage: 27-54, 108-174, 406-512, 830-950MHz  
 Sensitivity: .4uV Lo,Hi. .8uV Air. .5uV  
 UHF. 1.0uV 800  
 Scan Speed: 15 ch/sec.  
 IF: 21.4MHz, 455KHz  
 Increments: 10,12.5,25,30  
 Audio: 1W  
 Power: 12.8VDC, 200MA  
 Antenna: BNC  
 Display: LCD w/backlight  
 Dimensions: 2 1/4H x 5 5/8W x 6 1/2D. 14oz wt. (AR950)  
 5 3/4H x 2W x 1 1/2D. 12oz wt. (AR900)

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# Unbelievable Price.

**AR2500**

**\$429**



**2016 Channels. 1 MHz to 1500 MHz**

**Standard Features:**

- continuous coverage.
- AM, FM, wide band FM, & BFO for SSB, CW.
- 64 Scan Banks.
- 16 Search Banks.
- RS232 port built in.
- Includes AC/DC pwr crd. Antenna, Mntng Brckt.
- One Year Limited Warranty.

**Options:**

Earphone.	EP200	\$2.00
External Speaker. Mobile Mount.	MS190	\$19.50
Extended Warranty. 2/3 yrs.		\$65/\$75
Mobile Mounting Bracket.	MM1	\$14.90
RS232 Control Package	SCS2	\$295.00
(software & cable) offers spectrum display and database.		
Wide band preamp	G-W2	\$89.00

**Specifications:**

Coverage:	1MHz-1500MHz
Sensitivity:	.35uV NFM, 1.0uV WFM, 1.0AM/SSB/CW
Speed:	38 ch/sec. scan. 38 ch/sec. search
IF:	750.00, 45.0275, 5.5MHz 455KHz
Increments:	5,12,5,25 KHz
Audio:	1.2 Watts at 4 ohms
Power:	Input 13.8 V. DC 300mA
Antenna:	BNC
Display:	LCD, backlit
Dimensions:	2 1/4H x 5 5/8W x 6 1/2D Wt. 1lb.

**AR3000**

**\$1095**



**400 Channels. 100KHz to 2036MHz.**

**Standard Features:**

- Extremely compact size.
- Continuous coverage.
- Attenuation Programmable by Channel.
- Manual tuning knob.
- Tuning increments down to 50Hz.
- AM, FM, wide band FM, LSB, USB, CW modes.
- Backlit LCD display.
- 4 Scan and Search Banks, Lockout in Search.
- 4 Priority Channels.
- RS232 control through DB25 connector.
- Delay, Hold Features.
- 15 band pass filters, GaAsFET RF amp.
- Sleep and Alarm Features.
- AC adaptor / charger. DC power cord.
- Telescopic Antenna
- One Year Limited Warranty.

**Options:**

Earphone.	EP200	\$2.00
External Speaker. Mobile Mount.	MS190	\$19.50
Extended Warranty. 2/3 yrs.		\$65/\$75
Mobile Mounting Bracket.	MM1	\$14.90
RS232 Control Package	SCS3	\$295.00
(software & cable) offers spectrum display and database.		
Wide band preamp	G-W2	\$89.00

**Specifications:**

Coverage:	100KHz-2036MHz
Sensitivity:	.35uV NFM, 1.0uV WFM, 1.0AM/SSB/CW
Speed:	20 ch/sec. scan. 20ch/sec. search
IF:	736.23, (352.23) (198.63) 45.0275, 455KHz
Increments:	50Hz and greater
Audio:	1.2 Watts at 4 ohms
Power:	Input 13.8 V. DC 500mA
Antenna:	BNC
Display:	LCD
Dimensions:	3 1/7H x 5 2/5W x 7 7/8D Wt. 2lb 10oz.

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*Prices and specifications subject to change.*

# KENWOOD

## Hear it All!



### R-5000 R-2000 High performance receivers.

Scan the world bands with Kenwood's R-5000, R-2000 and RZ-1. Listen in on foreign music, news, and commentary. Monitor local police, fire, and other public safety services, as well as the Marine channels, and the many other services.

(The VHF converter options must be used in the R-5000 and R-2000.)

### R-5000

The R-5000 is a high performance, top-of-the-line receiver, with 100 memory channels, and direct keyboard or main dial tuning—makes station selection



### R-2000

The R-2000 is an all-band, all mode receiver with 10 memory channels and many deluxe features such as programmable scanning, dual 24-hour clocks with timer, all-mode squelch and noise blankers, a large, front-mounted speaker, 110 volt AC or 12 volt DC operation (with the DCK-1 cable kit), and 118-174 MHz VHF capability with VC-10 option.

### Optional Accessories R-2000:

- VC-10 VHF converter
- DCK-1 DC cable kit for 12 volt DC use.

### R-5000:

- VC-20 VHF converter
- VS-1 Voice module
- DCK-2 for 12 volt DC operation
- YK-88A-1 AM filter
- YK-88SN SSB filter
- YK-88C CW filter
- MB-430 Mounting bracket.

### Other Accessories:

- SP-430 External speaker
- SP-41 Compact mobile speaker
- SP-50B Mobile speaker
- HS-5 Deluxe headphones
- HS-6 Lightweight headphones

### RZ-1

### Wide-band scanning receiver



The RZ-1 wide-band, scanning receiver covers 500 kHz-905 MHz, in AM, and narrow or wideband FM. The automatic mode selection function makes listening

super easy! Other useful features include programmable scanning, large, built-in speaker, 110 volt AC or 12 volt DC operation (with optional DCK-2 cable), VHF capability (108-174 MHz) with the VC-20 option, dual 24-hour clocks with timer, and even voice frequency readout with the VS-1 option.

easier. One hundred memory channels with message and band marker, direct keyboard or VFO frequency entry, and versatile scanning functions, such as memory channel and band scan, with four types of scan stop. The RZ-1 is a 12 volt DC operated, compact unit, with built-in speaker, front-mounted phones jack, squelch for narrow FM, illuminated keys, and a "beeper" to confirm keyboard operation.

- Optional Accessory**
- PG-2N Extra DC cable

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