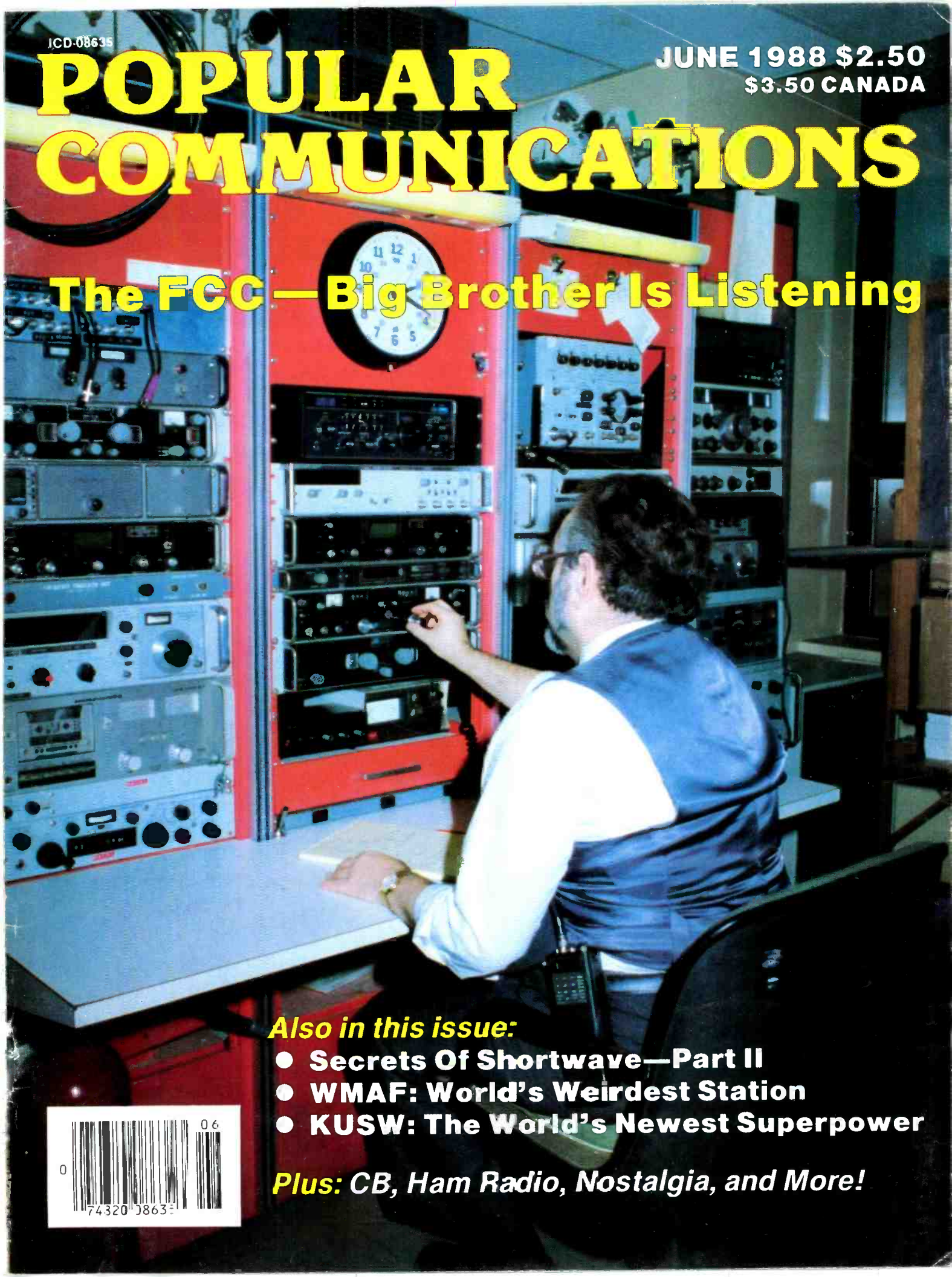


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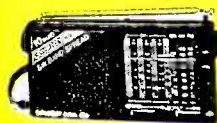
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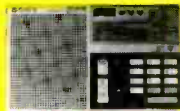
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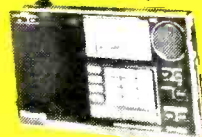
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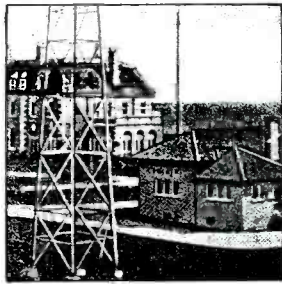
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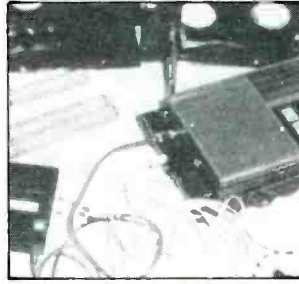


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AN EDITORIAL

The Cellular Hotline

Ever since these pages first covered news of the impending arrival of the Electronic Communications Privacy Act (Public Law 99-508), better known as the ECPA, we have been receiving a steady stream of mail from readers with their comments regarding the same. And, throughout the entire process whereby the cellular mobile telephone (CMT) industry moguls slick-talked the ECPA through the sham of being rubber stamped into law, the reader comments and letters continued, often amplified by copies of letters sent to and received from industry and political leaders. Mixed in, we've been sent many pages torn from newspapers and other magazines that mentioned CMT's and/or the ECPA.

Somehow, I figured that after the ECPA was passed into law, it would all begin winding down. But no, this recently devised idiotic concept of attempting to create an illu-

sion and expectation of "privacy" of radio communications sent "in the clear" really hit a tender nerve deep within many people involved in communications. If anything, the mail on CMT's, the ECPA, and communications privacy has increased in recent months! And, it seems, that maybe this absurd and totally unenforceable law has opened up a few cans of beans that its supporters would have preferred had remained closed.

For instance, by forcing into existence a law that seeks to forbid people to listen to communications that can be easily heard on receiving equipment they own, the CMT industry has stirred up the public's natural curiosity in such matters. It's the old "please don't touch the wet paint" syndrome I wrote about when they first conceived the idea for the ECPA. It has now brought about newspaper stories concerning the interesting

things that might be monitored on the supposedly off-limits frequencies.

For example, a few months ago in *The Seattle Times*, Staff Columnist, Erik Lactis, wrote a lengthy feature called "Tapping In: Car-phone technology is a voyeur's dream." His story told about the many fascinating, unusual, curious, humorous, and scary things a person might overhear while eavesdropping on CMT calls from cars. Excerpts from actual conversations between drug dealers, midnight Lotharios, and (possibly) some guys arranging to put out a contract on someone were included in Lactis' column, along with information on the equipment required to hear such calls, and the fact that the new law created to make such eavesdropping illegal is "practically unenforceable."

(Continued on page 72)

A WORD ABOUT PRIVACY

It is a crime under state and federal law to eavesdrop on telephone conversations. Normally, you don't have to worry about the privacy of conversations you have on telephones located in your home or business. However, if you make calls using a cellular telephone or receive calls from people who do, you need to be aware that your conversations on *these phones* may not be entirely private.

Cellular telephones send calls over *public radio frequencies*. While it is true that calls on these frequencies may be scanned by other parties, conversations made on a cellular network are very hard to intercept because of this network's unique design, which assigns calls on a *random basis* to any one of hundreds of radio channels. Also, as the

mobile unit moves, one radio channel may be changed to another one during a single call, so that it is almost impossible to hear an entire conversation. Still, there is a chance that calls on cellular phones may not be *completely private*. For this reason, the California Public Utilities Commission (CPUC) has asked that those placing calls on cellular telephones advise the people they are calling about the privacy issue at the beginning of each conversation. The CPUC also asked us to inform you that there are "scrambling" devices for cellular phones. These are available for purchase from many mobile phone companies and can help assure your privacy.

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The California Public Utilities Commission seems less than fully convinced that the ECPA insures privacy. So am I.

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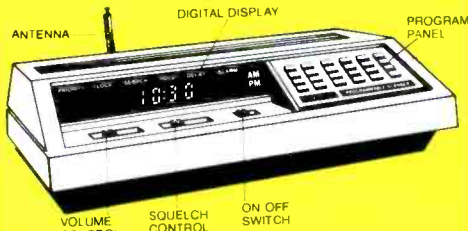
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Sophisticated microprocess-controlled circuitry eliminates the need for crystals, instead, the frequency for each channel is programmed through the numbered keyboard similar to the one used on a telephone. A "beep" acknowledges contact each time a key is touched. The Z60 scans approximately 15 channels per second.

Any combination of channels can be scanned automatically, or the unit can be set on manual for continuous monitoring of any one channel. In addition, the search function locates unknown frequencies within a band.

Other features include scan delay, priority and a bright/dim switch to control the brightness of the 9-digit Vacuum-Fluorescent display. The Z60 can be operated on either 120VAC or 12 VDC. Includes one year warranty from Regency Electronics (optional 3 yr extended warranty only \$39.99, gives you a total of 4 yrs complete warranty or 2 yr extended warranty only \$29.99, gives you a total of 3 yrs complete warranty.)



Bearcat

BC-600 XLT

\$224.99 (\$7.00 shipping)

Digital Programmable 100 Channel Scanner

BC 600 XLT covers the following frequencies: 29-54 MHz, 113-174 MHz, 406-512 MHz. Features compact size of 6-5 16 Wx1-5 8 Hx7-3 8 D. 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 pre-programmed 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 \$24.99 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 #600MPC \$4.99.

BEARCAT BC-950XLT

Same features as BC-600XLT but also receives 800-954mhz.

\$289.99 (\$7.00 shipping)

BEARCAT 70XLT

20 CHANNEL HAND-HELD SCANNER

Small size 6" Hx1" Dx2 3/4" W, full digital readout, priority, search, channel lockout, scan delay, key lock. Covers following frequencies: 29-54mhz, 136-174mhz, 406 512mhz. Package includes rubber antenna, rechargeable Ni-Cad battery pack, AC adapter/charger, and carry case.

SPECIAL \$169.99 (\$6.00 shipping each)
PACKAGE DEAL

SCANNER WORLD EXCLUSIVE UNIDEN BEARCAT BC205XLT

\$289.99

(Plus \$7.00 Shipping each)

Digital programmable 200 Channel hand held portable scanner with 12 led bottom keyboard for easy programming of the following frequency ranges: 29-54MHz, 118-174MHz, 800-956MHz. Features include: Scan delay, memory backup, key pad lock, sidelit liquid crystal display, channel lockout, 10 twenty channel banks, direct channel access, auto search, full one year factory warranty, 10 priority channels, Ni-Cad battery pack, AC adapter/charger, flexible rubber antenna, carry case, a all included. Size is 2 11/16 Wx1 3/8 Dx7 1/2" high (Optional extended 2 year warranty \$59.99, 3 year extended warranty \$79.99)



SCANNER WORLD SPECIAL

COBRA SR-925

\$109.99

(plus \$7.00 shipping each)



Digital programmable, 16 channel AC/DC mobile/base, with raised button keyboard for easy programming of the following frequency ranges: 29-54mhz, 118-174mhz, 406-512mhz. Covering aircraft, marine, police, fire, weather, trains, public service, plus much more. Features include digital display, priority, scan delay, weather button, channel lockout, search, scan speed, automatic squelch, memory backup, one year factory warranty, external speaker jack. (Extended warranty 2 years extra \$29.99, 3 years extra \$39.99.)

ORDERING INFORMATION

Call (518) 436-9606 to place orders by phone or mail orders to Scanner World, 10 New Scotland Av., Albany, NY 12208. Orders will be shipped same day received by United Parcel Service. Scanner World accepts VISA, MasterCard (COD shipments by United Parcel will be for cash or certified checks only). Mail orders with personal or business checks will be held 4 weeks for bank clearance. Orders with cashiers checks or money orders shipped same day to received. Prices, specifications and terms subject to change without prior notice. If items are out of stock we will backorder and notify you of delivery date. All shipments are F.O.B. Scanner World warehouse in Albany, NY. We are not responsible for typographical errors. All merchandise carries full manufacturers warranty. Bid Proposals and Purchase orders accepted from Government agencies. Free full line catalogue available upon request. No minimum order. New York State Residents add 7% sales tax. Any claims must be made within 7 days of merchandise receipt.

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(* Add \$5) per scanner, and \$3.00* for all accessories ordered at same time. C.O.D. shipments will be charged an additional \$3.50 per package. Full insurance is included in shipping charges. All orders are shipped by United Parcel Service. Shipping charges are for continental USA only. Outside of continental USA, ask for shipping charge per scanner.

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MAILBAG LETTERS TO THE EDITOR

The most interesting questions we receive will be answered here in each issue. Address your questions to: Tom Kneitel, Editor, Popular Communications magazine, 76 North Broadway, Hicksville, NY 11801.

Clubbed From All Directions

Your May Beaming In editorial mentioned seven specific national SWL clubs that published worthwhile newsletters. I was surprised that you didn't consider worthwhile the newsletters published by the NRC, RCMA, IRCA, and CIDXC. I have seen these newsletters, and I feel you should have included them. You didn't even give the addresses of the ones you had recommended. Shame on you!

Tom O'Connor
Spokane, WA

The newsletters I listed in the May issue were described as being "from the club newsletters we normally see here at POP'COMM." The three clubs you mentioned don't have us on their mailing lists so it's not possible for us to offer any opinions on nor recommendations for their respective newsletters, even assuming they are worthwhile. For those we regularly see and think highly of, the addresses are:

American Short Wave Listeners Club (ASWLC), 16182 Ballard La., Huntington Beach, CA 92649.

Ontario DX Association (ODXA), P.O. Box 161 Station A, Willowdale, Ontario M2N-5S8.

SPEEDX, 7738 East Hampton St., Tucson, AZ 85715-4212.

North American Shortwave Assn. (NASWA), 45 Wildflower Rd., Levittown, PA 19057.

Longwave Club of America (LWCA), 45 Wildflower Rd., Levittown, PA 19057.

Association of DX Reporters (ADXR), 7008 Plymouth Rd., Baltimore, MD 21208.

Association of Clandestine Radio Enthusiasts (ACE), P.O. Box 1744, Wilmington, DE 19899.

For further information on what they have to offer, send a self-addressed, double-stamped long envelope to each individual group. Most will supply a sample copy of their club publication, but I'd suggest enclosing \$1 if you ask for one. —Editor

Grist For Our Mill?

It was eye-opening to learn (in your March issue *Beaming In* editorial) that the magazine has received some critical comment regarding the coverage of pirate broadcasters. Unlicensed broadcasters (including *Radio Newyork International*) have

received extensive coverage over all three national TV networks, plus space in weekly news magazine, as well as the *New York Times*. Are those who have offered you criticism saying that it's OK for the mass media to offer such coverage, but the subject is off-limits to the leading publication specializing in communications? I fail to see any logic in such an argument. *POP'COMM's* continuing coverage of unlicensed broadcasters is to be applauded. Your April issue story by RNI's Al Weiner ("Radio With A Conscience") was a welcome insight into that newsworthy station.

Harris Cosgrove,
Upper Montclair, NJ

Interesting to note that clandestine broadcasters (unlicensed broadcasters with a revolutionary viewpoint) appear to have a far more "respectable" image when it comes to media coverage than do pirate broadcasters (unlicensed broadcasters who primarily exist for hobby or entertainment purposes.) Moreover, "undercover" ham stations that exist in nations where the respective governments frown upon ham activity have generally been viewed in a most sympathetic light by the ham fraternity at large. When you scrape away the thin veneers that cause these stations to be categorized as different from one another, you realize that they are all essentially alike. I agree with *POP'COMM's* position that all such activities fall within the publication's scope of coverage. Readers can then be sufficiently educated to enable them to put together well-informed opinions. How can a person expect to formulate a valid opinion in an information vacuum?

Joseph Twyce,
Ft. Worth, TX

Here's my vote against stories like the one in the April issue about RNI. The magazine should take a more responsible approach and filter our coverage of stations and activities of questionable status.

Bonnie Searle,
Osage City, KS

It's The Volga Boatman

Several times I've copied a CW station with the callsign UMS operating on 14141 kHz. This frequency is in the 20 meter ham band, yet this station isn't using a standard ham callsign. Is this a special event station?

Justin Bonnehomme, KLA5LB,
Bossier City, LA

The only thing special about UMS is that it has used this ham frequency for many years and is believed to be operated by the Soviet Navy in Moscow, USSR. In addition to this ham frequency, UMS also operates in the 15 meter ham band on 21032 kHz, as well as a score of non-ham frequencies. The sta-

tion continues to use the two ham frequencies on an intermittent basis despite the many long standing efforts by the ARRL and other ham organizations to convince the Soviets to discontinue these activities.
—Editor

Good For A Boost

I have a Palomar VLF converter that receives 10 through 500 kHz and changes it to the 3500 to 4000 kHz portion of the spectrum. My station also uses a tunable Ameco shortwave preselector. The converter instruction sheet doesn't state whether the unit is to be hooked up between the antenna lead and the preselector, or between the preselector and the antenna connector of the receiver. All it says is to place it between the antenna and the receiver, although it does appear to function with either placement.

Jerry Waterman,
Venice, FL

As you discovered by trial-and-error, the converter will work with either placement. Personally, I'd opt for locating the converter between the antenna lead-in and the preselector. By doing that, you can utilize the benefits of the shortwave preselector for boosting the VLF signals after they've been converted to shortwave. —Editor

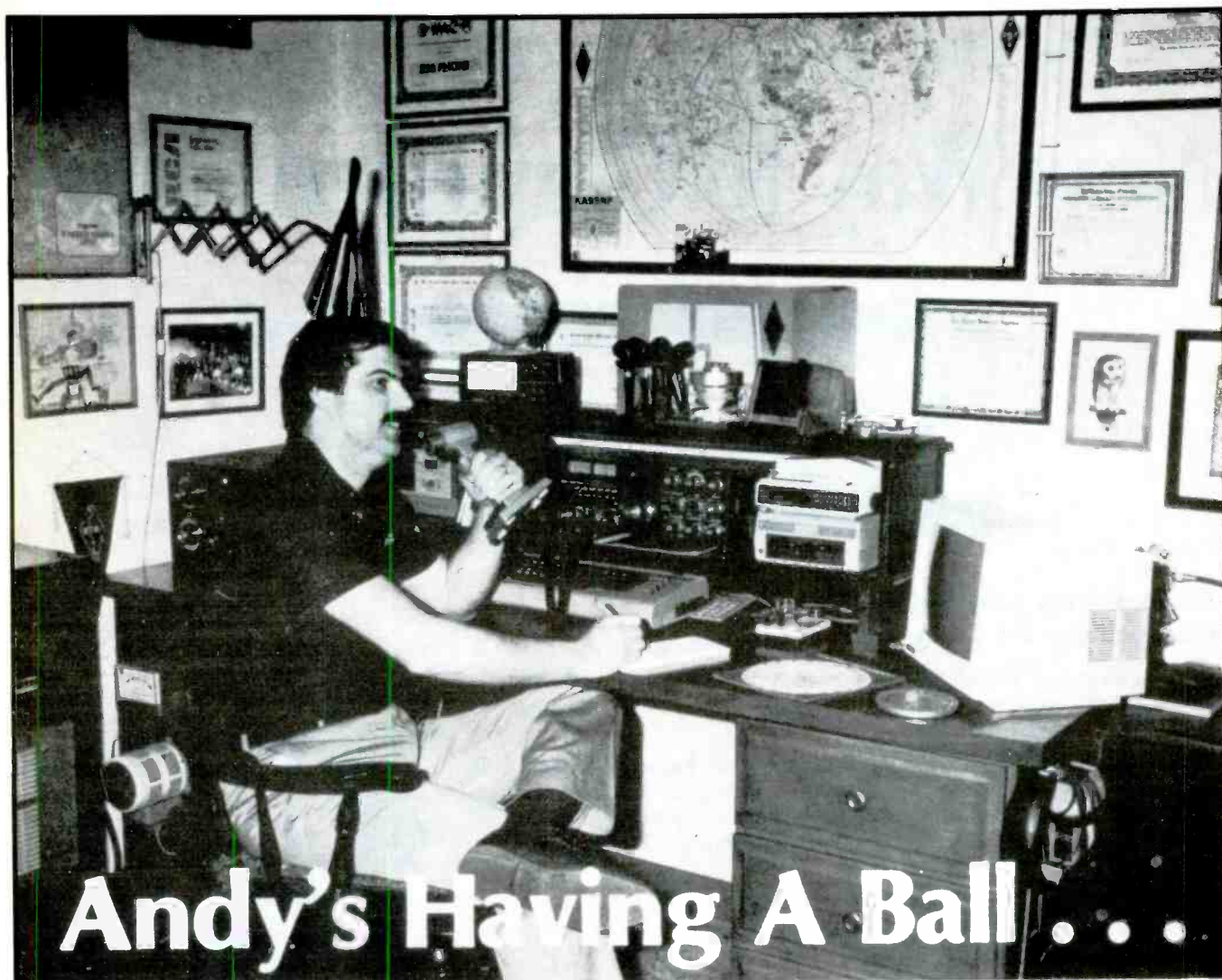
Double Header

When monitoring RTTY press stations, I've noticed that very often stations will transmit the exact same information simultaneously on two different frequencies within the same band. What's the purpose of this?

Robert Wilkinson
Hamilton, Ont.

One possibility is that each of the transmissions is beamed to a different target area. Most likely, however, the reason is to provide commercial news services with error-free copy. Sometimes ionospheric fading, interference, or atmospheric (static), etc. could cause letters or entire words to garble or altogether drop out. Some commercial receiving stations will copy both of the transmissions so that they can be checked against one another. Another technique for achieving error-free copy is called diversity reception. It can be used with either single or double frequency transmissions. With this method, two antennas are established at a specific distance from one another (one may be vertically polarized while the other may be horizontally polarized). Signals from both of the antennas are then fed into equipment that automatically selects the best incoming signal and rejects the poorest one. This equipment might switch back and forth from one signal to the other as often as several times per minute.

PC



Andy's Having A Ball . . .

and you can too!

Andy is a Ham Radio operator and he's having the time of his life talking to new and old friends in this country and around the world.

You can do it too! Join Andy as he communicates with the world. Enjoy the many unique and exclusive amateur bands . . . the millions of frequencies that Hams are allowed to use. Choose the frequency and time of day that are just right to talk to anywhere you wish. Only Amateur Radio operators get this kind of freedom of choice. And if it's friends you're looking to meet and talk

with, Amateur Radio is the hobby for you. The world is waiting for you.

If you'd like to be part of the fun . . . if you'd like to feel the excitement . . . we can help you. We've got all the information you'll need to get your Ham license. Let us help you join more than a million other Hams around the world and here at home. Who are we? We're the American Radio Relay League, a non-profit representative organization of Amateur Radio operators.

For information on becoming a Ham operator
circle number 110 on the reader service card or write to:

AMERICAN RADIO RELAY LEAGUE

Dept CQ, 225 Main Street
Newington, Conn. 06111.

Now Your 2-Way Has a New Way to Communicate!



Actual Size: 4¾ w × 1½ h × 6" d

Introducing the first digital audio recorder for 2-way radio.

With the new Palomar VC-300, you can now record, broadcast and receive any type of message—up to 34 seconds—with any type of 2-way radio... amateur, marine, commercial or CB.

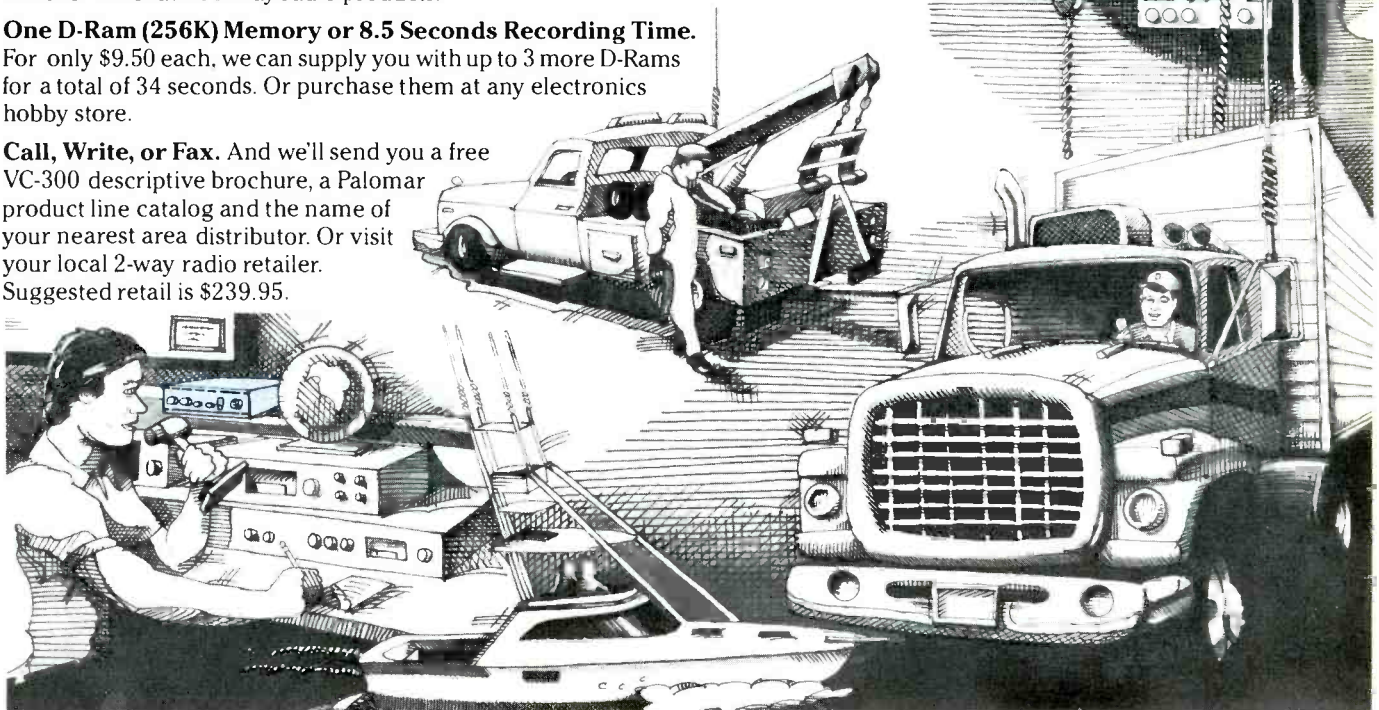
It's Like a Telephone Answering Machine for 2-Way Radio. And when used by both sender and receiver, the VC-300 is the ideal way to get messages to truckers having breakfast, wrecker operators hooking up a car, fishermen landing the big one, amateur ham operators away from the shack or RV club members out on the road.

Only With the VC-300. Perfected after two years of intensive development, the VC-300 is manufactured in Japan exclusively for Palomar, known worldwide for innovative 2-way radio products.

One D-Ram (256K) Memory or 8.5 Seconds Recording Time.

For only \$9.50 each, we can supply you with up to 3 more D-Rams for a total of 34 seconds. Or purchase them at any electronics hobby store.

Call, Write, or Fax. And we'll send you a free VC-300 descriptive brochure, a Palomar product line catalog and the name of your nearest area distributor. Or visit your local 2-way radio retailer. Suggested retail is \$239.95.



CIRCLE 9 ON READER SERVICE CARD



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Celebrate Our 10th Anniversary With Us

It's hard to believe, but 1988 marks our 10th anniversary. Many of our members have been with us from year one when we published just three issues of a small digest size magazine with the same title as this column, "Scanning Today". (We had planned to publish four issues that year, but as veteran SCAN members know we were always chronically late.) Later came a bigger publication, "SCAN Magazine", which was supposed to be published six times a year ... a few years that actually happened! Finally, we were able to incorporate our editorial in *POP'COMM* and begin supplying our members a much more timely and frequent publication. In 1984 we became incorporated as a not-for-profit educational corporation under the laws of Illinois.

Over these ten years, we won some battles and lost others. Most notable in the "win" category has been the formal endorsement of the National Sheriffs' Association and the International Association of Chiefs of Police of the concept of citizen participation in crime prevention through the use of scanners. Back in 1978, there were many law enforcement agencies who believed that scanners should be banned. How far we have come in just ten years! Another success was the overturning of a Philadelphia law banning scanners; we were able to get that law declared unconstitutional after considerable effort. SCAN was a very active participant testifying in that case. We were also able to defeat proposed restrictive legislation in a number of states, including Minnesota, New Jersey, and California. Unfortunately, however, certain cellular telephone interests, after a crushing loss in California, succeeded in having the infamous Electronic Communications Privacy Act passed in Congress. On balance, however, SCAN has been able to protect the rights of American citizens to freely monitor the airwaves, a right allowed in few other countries. Our thanks to all of you who helped in these efforts. We all should be proud about what we have accomplished.

Another reason to celebrate is the growth of SCAN, itself. From just over a few hundred members, to the tens of thousands today, SCAN is now one of the largest radio clubs in the country. That's important, because the larger an association is, the more influence it has in important legislative matters. It also permits us to offer more benefits, such as the free insurance plan for members. It has been fun to watch the hobby of scanning and the Scanner Association of North America grow. Happy 10th Anniversary!

Over 100 Winners in SCAN Sweepstakes!

Each year, SCAN has a sweepstakes drawing with prizes for members. This year there were over 100 lucky winners selected by a random computer drawing. The Grand Prize winner of a Uniden Bearcat 800XL scanner is William Seaver of Crescent City, California. There are also ten First Prize winners who will each receive a NiteLogger automatic tape recorder activator which records scanner received messages with no "dead time" on the tape. First Prize winners are Layne Bladow, Mountlake Terrace, Washington; J. Gray, Houston, Texas; Armand Chagnon, Fairhaven, Massachusetts; Henry Plant, San Jose, California; Larry Starkey, New York, New York; S. Searcy, Houston, Texas; Alan Bean, Kansas City, Missouri; Roger Mravik, Gilman, Wisconsin; Fred Weber, Millburn, New Jersey; Oraganoic Computing, Joshua, Texas.

Second Prize winners of the MFJ Scanner Interference Filter are: D. Sabala, Houston, Texas; Stephen Necchi, Framingham, Massachusetts; Richard Vicens, Baltimore, Maryland; Henry Jacobi, Southold, New York; John Vick, Woodland, California; Reyburn Wick, Saint Augustine, Florida; Wilson Pecot, Los Angeles, California; George Madan, Hanson, Massachusetts; Tome Madine, Westerville, Ohio; Wardie Anderson, Dryden, Virginia; R. Boe-

digheimer, Sequin, Washington; Barbara Stefanowicz, Harrison, New Jersey; Ralph Queener, Arjay, Kentucky; Robert Stern, Oceanside, New York; Loren Iversen, Bellingham, Washington; H. Hoepfer, Alexandria, Virginia; James Owens, Glen Carbon, Illinois; George Beeson, Paradise, Texas; Bob Pfeiffer, Chatham, Illinois; Herb Hoffmeier, New Cumberland, Pennsylvania.

Third Place winners are: Denis LaGrande, Allen Kegerise, Franklin Rogers, Konard Jagst, Larry Schirra, Artine Tchimayan, Harry Johnson, E. Wojciechowwski, Louis Baker, Marshall Bolland, Roger Malboeuf, David Allen, Anthony Williams, George Hull, Edward Palkot, Ray Milner, Gary Salley, John Fulton, T. Holman, Stephen Alley, Raymond Filion, Daniel Cummings, Tony Demelo, Donald Simons, Robert Dymond, James Wince, Lawrence Tonklin, Bob Mann, K. Jones.

Fourth Place winners are: Alfred Lindsley, Stanley Hunter, Thomas Ernst, Rick Link, Greg Manley, R. Hunter, Jim Soper, Joel Hopwood, R. Doran, Laverne Nordenberg, Francis Burrows, Mark Harman, John Harding, Bernard Jerguson, Pedro Torres, David Perry, Miles German, George Merritt, James Bartholow, Frank Marx, Ned Harward, Dennis Port, C. Wartman, Larry Morris, James Vesey, Greg Pysny, John Kasl, Richard Rus, Edgar Vest, Fred Easton, Peter Viterbo, S. Rutherford, David Outman, John Little, Robert Pitts, John Otto, Jeff Shull, Joseph Chuhay, Helen Young, James Slusser.

Congratulations to you all! All winners will be notified by mail.

How do you enter this year's sweepstakes. Just be sure you are a current member of SCAN. If you are not a member, you can write us for information at SCAN, P.O. Box 414, Western Springs, IL 60558. Be sure to tell us if you are already a *POP'COMM* subscriber because a special discount from the normal rates is available.

Part 15 Controversy Continues

The FCC's proposal to allow unlicensed transmitters almost anywhere continues to draw fire. On the one hand, there are those who would like to market many consumer products, from radio "baby sitters" to movie selection controls. They would like unlimited use of the spectrum. On the other hand, there are the current users of that spectrum, including Public Safety, Amateur Radio, Transportation, and Commercial Land Mobile (delivery trucks and the like). Even though the FCC has proposed in some ways tightening the radiation limits of these unlicensed transmitters, there are important implications for any service using low power hand-helds or relying on weak signal reception. The case being made, is that under normal circumstances, the licensed user would overwhelm the low power user; indeed that is true in most cases. But consider the police officer in the basement of a building trying to reach his dispatcher for assistance? Or the Amateur Radio operator trying work weak signals on UHF? There are serious issues to consider before we simply open up all of the spectrum for unlicensed operation, especially since the proposal permits any type of modulation including "pulse". That would mean that even with very restrictive power limits, a transmitter could be permitted to generate considerable instantaneous power.

What does all this mean for scanner owners? That depends on how you use your scanner and your installation. If you are trying to receive distant cities or low power "walkie-talkie" communications, this proposal could be a disaster. If your only interest is in listening to the dispatcher with a high power transmitter, it probably won't matter much.

The fact is that this proposal is not going through as quickly as the FCC intended. They originally said that years of work had gone into it and that it should be enacted quickly. But now they see that there are many serious objections to it. Our bet is that it will be modified considerably, probably with severe frequency restrictions.

Superpower KUSW Worldwide Radio –

America's Newest Shortwaver

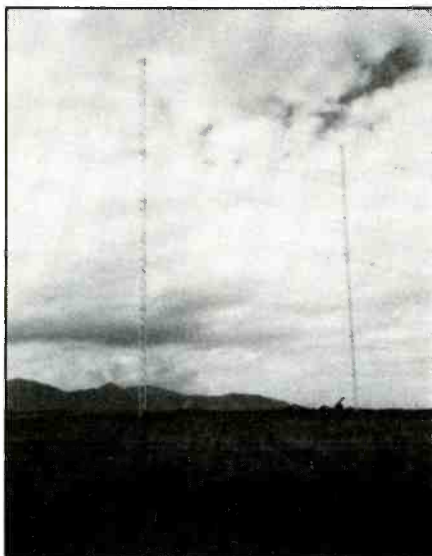
BY GERRY L. DEXTER

Last December, shortwave listeners around the world got a Christmas gift one day late, a bonus that wasn't in the stocking on Christmas morning. The gift was the newest U.S. shortwave broadcaster—KUSW in Salt Lake City. With the start of regular programming, KUSW joined one of the world's most exclusive clubs: FCC-licensed shortwave broadcasters.

The spark that eventually flared into KUSW was struck in New Orleans a few years ago, when station president Ralph J. Carlson attended a National Association of Broadcasters meeting. He then took a tour of WRNO Worldwide, the first privately owned shortwave broadcaster to come on the air in the U.S. in some twenty years. The idea of commercial shortwave broadcasting, and WRNO's growing success at it, got Carlson interested. Once the decision was made to go with shortwave from Salt Lake City, it was another four years before the station came on the air; only five months of that time was spent in actual construction.

The station is using a name somewhat longer than simply its call letters. "Superpower KUSW Worldwide Radio" is the full title. The call letters stand for "United States Short Wave" (the "S" does double duty). Although the station's Harris Corporation SW-100-B 100 kilowatt shortwave transmitter isn't as strong as the numerous 250 and 500 kilowatt transmitters in use on the shortwave bands today, 100 kilowatts is certainly super power compared to what most of the potential advertisers are used to hearing, and the effective radiated power of the station—at 2.5 million watts—certainly qualifies for super power status.

KUSW is owned by Carlson Communications International of Salt Lake City, Utah, which owns KRSP AM on 1016 kHz and KRSP-Rock 103 on 103.5 FM, both in Salt Lake City. Also in the Carlson group are KRJC FM on 95.3 in Elko, Nevada and KSMK FM on 94.9 in Cottonwood, Arizona. Ralph J. Carlson, a twenty year veteran of the broadcasting business, is President and General Manager of the station. Alan D. Hague is Executive Vice President for Sales, John Florence is the Program Director. Dan Bammes serves as News Director and Carlson's son, Rex, is the Chief Engi-



Two views of the KUSW antenna system.

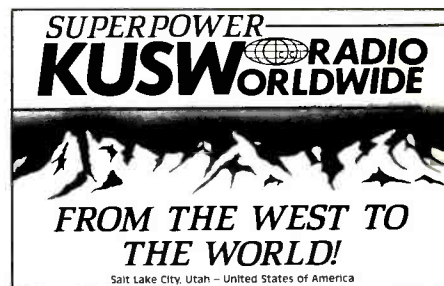


KUSW engineers Rex Carlson (1) and Ken Meyer.

neer. Two announcers—Faith Martin and Johnston Cook, along with Florence, pull airshifts. Most of the staffers also have shifts or other duties at KRSP. Florence, for example, has an airshift on KRSP and also serves as Music Director.

The target audience includes all of North America, Europe and parts of Africa and includes the two million Americans who live outside the country.

As a commercial shortwave broadcaster (only the second one in the country—WRNO is the other) KUSW hopes to entice



KUSW's attractive QSL card is showing up in a lot of DX'er mailboxes these days.

SUPERPOWER
KUSW  **RADIO**
WORLDWIDE

SALT LAKE CITY, UTAH-U.S.A.

KUSW SALT LAKE CITY, UTAH

PRIMARY COVERAGE CONTOUR: 44 DBU (500 UV/M)

SECONDARY COVERAGE CONTOUR: 49 DBU (250 UV/M)

MAXIMUM EFFECTIVE RADIATED POWER: 2.6 MILLION WATTS



Carlson Communications International

KUSW's coverage map for North America.

advertisers whose goods and services are marketed internationally—firms such as McDonalds, Coca Cola, Pizza Hut, Pepsi Cola and Levis. Advertising costs depend upon the time of day (and hence, the size of the potential audience.)

All programs are in English, and music makes up a very large part of the schedule. The format is designed so that only about 30% of the music is taken from the ranks of current hits. The rest of the selections are by artists as varied as the Beatles and Billy Holiday.

Besides music, KUSW carries news (international, national and regional), public affairs and a computerized weather service called Weatherbank, which provides worldwide weather conditions. Feature subjects will eventually run the gamut from travel to the environment, skiing, science, education, shortwave listening, medicine and health, new inventions and so on.

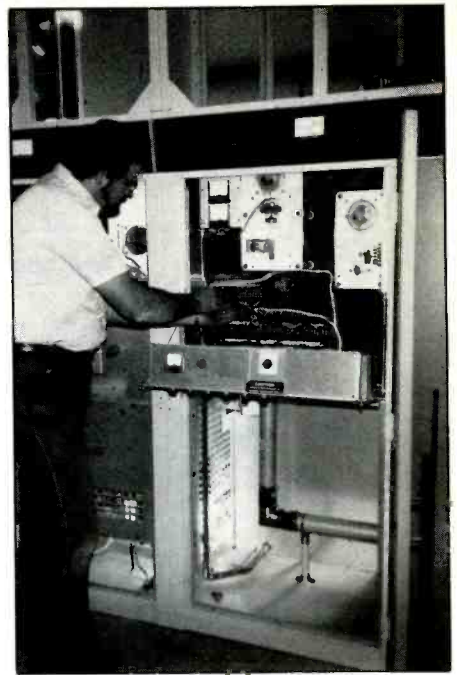
At present, news and features alternate airings at five minutes before the hour. Weatherbank is aired at :15 and :45 after the hour. A Mailbag feature, in which one letter from a listener is acknowledged each

hour, runs at half past. A half hour program, the "Spoken Word" is scheduled from Salt Lake City's Temple Square on Sundays at 0700 and 1700 UTC. A block of time will eventually be occupied by commercial religious programming and one night per week is scheduled to carry an international telephone call-in show.

KUSW's current schedule runs for 12 hours per day, except Saturday/Sunday which is 24 hours. At present, KUSW can be found on 15225 at 1800, 17715 at 1900, 15580 from 2200, 11680 at 0000 and 9755 from 0300 to 0600 sign off. Saturday/Sunday overnight broadcasts from 0600 on 6135, 1100 on 9850 and 1600 on 15225.

The entire shortwave operation (studios, transmitters, antennas) are located at 6475 West South, southwest of the city, in the Salt Lake Valley. A TCI log periodic antenna aimed at 70 degrees has a beam width of 45 degrees on either side. About 10% of KUSW's signal radiates off the back and sides of the antenna, which is supported by two—145 foot towers.

Shortly after it began regular program-



Working on the 100 kW transmitter.

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Ralph J. Carlson President of Carlson Communications Internationak, parent company of KUSW.

ming the station was already receiving twenty five to thirty letters per day. All correct reception reports are verified with a QSL card. The station would appreciate return postage, as well as information about what kind of receiver was used and some comments relative to your programming preferences. Reports can be sent to KUSW, P.O. Box 7040, Salt Lake City, Utah 84107.

In the months to come, KUSW will be airing contests and giving away prizes, further expanding its programming scope, including more commercial religious programming.

From all appearances it looks as though KUSW is off to a fast start and we at Pop-Comm offer Superpower KUSW World-wide Radio our best wishes for a long and successful run!

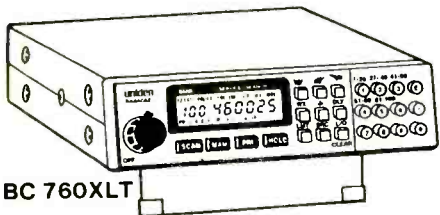
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uniden® CB Radios & Scanners

Communications Electronics,™ the world's largest distributor of radio scanners, introduces new models of CB, radar detectors and scanners.

NEW! Bearcat® 760XLT-SA

List price \$499.95/CE price \$294.95
12-Band, 100 Channel • Crystalless • AC/DC
Frequency range: 29-54, 118-174, 406-512, 806-956 MHz.
Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.
The Bearcat 760XLT has 100 programmable channels organized as five channel banks for easy use, and 12 bands of coverage including the 800 MHz. band. You also get automatic scanning of preprogrammed aircraft, police, marine, and emergency services. It also includes Weather Search, Priority, Squelch, Lockout and Delay. It has automatic and manual band search to find new active frequencies in other areas of the radio spectrum. The Bearcat 760XLT mounts neatly under the dash and connects directly to fuse block or battery. The unit also has an AC adaptor, flip down stand and telescopic antenna for desk top use. 6-5/16" W x 1-1/8" H x 7-3/8" D. Model BC 580XLT-SA is a similar version without the 800 MHz. band for only \$219.95.



BC 760XLT

Regency® TS2-SA

List price \$499.95/CE price \$309.95/SPECIAL
12-Band, 75 Channel • Crystalless • AC/DC
Frequency range: 29-54, 118-175, 406-512, 806-950 MHz.
The Regency TS2 scanner lets you monitor Military, Space Satellites, Government, Railroad, Justice Department, State Department, Fish & Game, Immigration, Marine, Police and Fire Departments, Aeronautical AM band, Paramedics, Amateur Radio, plus thousands of other radio frequencies most scanners can't pick up. The Regency TS2 features new 40 channel per second Turbo Scan™ so you won't miss any of the action. Model TS1-RA is a 35 channel version of this radio without the 800 MHz. band and costs only \$239.95.

Regency® RH256B-SA

List price \$799.95/CE price \$329.95/SPECIAL
16 Channel • 25 Watt Transceiver • Priority
The Regency RH256B is a sixteen-channel VHF land mobile transceiver designed to cover any frequency between 150 to 162 MHz. Since this radio is synthesized, no expensive crystals are needed to store up to 16 frequencies without battery backup. All radios come with CTCSS tone and scanning capabilities. A monitor and night/day switch is also standard. This transceiver even has a priority function. The RH256 makes an ideal radio for any police or fire department volunteer because of its low cost and high performance. A 60 Watt VHF 150-162 MHz. version called the RH606B-SA is available for \$429.95. A UHF 15 watt, 10 channel version of this radio called the RU150B-SA is also available and covers 450-482 MHz. but the cost is \$419.95

SALE Bearcat® 100XL-SA

List price \$349.95/CE price \$159.95/CLOSEOUT
9-Band, 16 Channel • Priority • Scan Delay Search • Limit • Hold • Lockout • AC/DC
Frequency range: 30-50, 118-174, 406-512 MHz.
Uniden has authorized CEI to closeout the famous Bearcat 100XL to make room for new models. This scanner has a full 16 channels with frequency coverage that includes all public service bands. Wow... what a scanner! Included in our low CE price is a sturdy carrying case, earphone, battery charger/AC adaptor, six AA Ni-cad batteries and flexible antenna. Since this is a special closeout price on our last 200 pieces, you must order your Bearcat today to take advantage of this excellent scanner opportunity.

Say You Saw It In CQ

★★★ Uniden CB Radios ★★★

The Uniden line of Citizens Band Radio transceivers is styled to compliment other mobile audio equipment. Uniden CB radios are so reliable that they have a two year limited warranty. From the feature packed PRO 540e to the 310e handheld, there is no better Citizens Band radio of the market today.

PRO310E-SA Uniden 40 Ch. Portable/Mobile CB... \$85.95
PRO330E-SA Uniden 40 Ch. Remotemount CB... \$109.95
NINJA-SA PRO310E with rechargeable battery pack...\$99.95
B-10-SA 1.2V AA Ni-cad batt. for Ninja (set of 10)... \$20.95
KARATE-SA Uniden 40 channel rescue radio... \$69.95
PRO520E-SA Uniden 40 channel CB Mobile... \$59.95
PRO540E-SA Uniden 40 channel CB Mobile... \$119.95
PRO640E-SA Uniden 40 channel SSB CB mobile... \$159.95
PRO710E-SA Uniden 40 channel CB Base... \$119.95
PRO810E-SA Uniden 40 channel SSB CB Base... \$179.95

★★★ Uniden Radar Detectors★★★

Buy the finest Uniden radar detectors from CEI today.
RD7-SA Uniden visor mount radar detector... \$109.95
RD9-SA Uniden "Passport" size radar detector... \$129.95
RD9XL-SA Uniden "micro" size radar detector... \$159.95
RD25-SA Uniden visor mount radar detector... \$59.95
RD500-SA Uniden visor mount radar detector... \$79.95

NEW! Bearcat® 200XLT-SA

New Product...Available May, 1988
List price \$509.95/CE price \$299.95
12-Band, 200 Channel • 800 MHz. Handheld Search • Limit • Hold • Priority • Lockout
Frequency range: 29-54, 118-174, 406-512, 806-956 MHz.
Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.
The Bearcat 200XLT sets a new standard for handheld scanners in performance and dependability. This full featured unit has 200 programmable channels with 20 scanning banks and 12 band coverage. If you want a very similar model without the 800 MHz. band and 100 channels, order the BC 100XLT-SA for only \$219.95. Includes antenna, carrying case with belt loop, Ni-cad battery pack, AC adaptor and earphone. Order your scanner now.

Bearcat® 800XLT-SA

List price \$499.95/CE price \$259.95/SPECIAL
12-Band, 40 Channel • No-crystal scanner Priority control • Search/Scan • AC/DC
Bands: 29-54, 118-174, 406-512, 806-912 MHz.
The Uniden 800XLT Receives 40 channels in two banks. Scans 15 channels per second. Size 9 1/4" x 4 1/4" x 1 1/2". If you do not need the 800 MHz. band, a similar model called the BC 210XLT-SA is available for \$196.95.

Bearcat® 145XL-SA

List price \$189.95/CE price \$98.95/SPECIAL
10-Band, 16 Channel • No-crystal scanner Priority control • Weather search • AC/DC
Bands: 29-54, 136-174, 406-512 MHz.
The Bearcat 145XL is a 16 channel, programmable scanner covering ten frequency bands. The unit features a built-in delay function that adds a three second delay on all channels to prevent missed transmissions.

Bearcat® 175XL-SA

List price \$279.95/CE price \$156.95/SPECIAL
11-Band, 16 Channel • Weather Search Priority control • Search/Scan • AC/DC
Bands: 29-54, 118-174, 406-512 MHz.
The Bearcat 175XL has an automatic search feature to locate new frequencies. Priority, lock out, delay and scan speed are all included.

Regency® Informant™ Scanners

Frequency coverage: 35-54, 136-174 406-512 MHz.
The new Regency Informant scanners cover virtually all the standard police, fire, emergency and weather frequencies. These special scanners are preprogrammed by state in the units memory. Just pick a state and a category. The Informant does the rest. All Informant radios have a feature called Turbo Scan™ to scan up to 40 channels per second. The INF1-SA is ideal for truckers and is only \$199.95. The new INF2-SA is a deluxe model and has ham radio, a weather alert and other exciting features built in for only \$239.95. For base station use, the INF5-SA is only \$149.95 and for those who can afford the best, the INF3-SA at \$209.95, is a state-of-the-art, receiver that spells out what service you're listening to such as Military, Airphone, Paging, State Police, Coast Guard or Press.

Regency® HX1500-SA

List price \$369.95/CE price \$179.95/SPECIAL
11-Band, 55 Channel • Handheld/Portable Search • Lockout • Priority • Bank Select Sidelit liquid crystal display • EAROM Memory Direct Channel Access Feature • Scan delay
Bands: 29-54, 118-136, 144-174, 406-420, 440-512 MHz.
The new handheld Regency HX1500 scanner is fully keyboard programmable for the ultimate in versatility. You can scan up to 55 channels at the same time including the AM aircraft band. The LCD display is even sidelit for night use. Includes belt clip, flexible antenna and earphone. Operates on 8 1.2 Volt rechargeable Ni-cad batteries (not included). Be sure to order batteries and battery charger from the accessory list in this ad.

CIRCLE 72 ON READER SERVICE CARD

★★★ Uniden Cordless Phones ★★★

A major consumer magazine did a comparison study on cordless phones. The check points included clarity, efficiency and price. Uniden was rated best buy.

XE300-SA Uniden Cordless Phone... \$69.95
XE500-SA Uniden Cordless Phone with paging... \$84.95
XE700-SA Uniden Cordless Phone with speaker... \$114.95

★★★ Extended Warranty Program ★★★

If you purchase a scanner, CB, radar detector or cordless phone from any store in the U.S. or Canada within the last 30 days, you can get up to three years of extended warranty service from Warrantech. This service extension plan begins after the manufacturer's warranty expires. Warrantech will perform all necessary labor and will not charge for return shipping. Extended warranties are non-refundable and apply only to the original purchaser. A two year extended warranty on a mobile or base scanner is \$29.99 and three years is \$39.99. For handheld scanners, 2 years is \$59.95 and 3 years is \$79.95. For radar detectors, two years is \$29.95. For CB radios, 2 years is \$39.99. For cordless phones, 3 years is \$34.99. Order your warranty for your merchandise today.

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NEW! BC 55XL-SA Bearcat 10 channel scanner... \$114.95
BC 70XLT-SA Bearcat 20 channel scanner... \$169.95
R1090-SA Regency 45 ch. scanner... CLOSEOUT \$119.95
Z60-SA Regency 60 ch. scanner... CLOSEOUT \$129.95
UC102-SA Regency VHF 2 ch. 1 Watt transceiver... \$117.95
BP55-SA Regency 16 amp reg. power supply... \$169.95
MA549-SA Drop-in charger for HX1200 & HX1500... \$84.95
MA518-SA Wall charger for HX1500 scanner... \$14.95
MA553-SA Carrying case for HX1500 scanner... \$19.95
MA257-SA Cigarette lighter cord for HX12/1500... \$19.95
MA917-SA Ni-Cad battery pack for HX1000/1200... \$34.95
BP205-Ni-Cad battery pack for BC200/800XLT... \$49.95
B-B-SA 1.2 V AA Ni-Cad batteries (set of eight)... \$17.95
FB-E-SA Frequency Directory for Eastern U.S.A... \$14.95
FB-W-SA Frequency Directory for Western U.S.A... \$14.95
ASD-SA Air Scan Directory... \$14.95
SRF-SA Survival Radio Frequency Directory... \$14.95
TSG-SA "Top Secret" Registry of U.S. Govt. Freq... \$14.95
TIC-SA Techniques for Intercepting Comm... \$14.95
RRF-SA Railroad frequency directory... \$14.95
EEC-SA Embassy & Espionage Communications... \$14.95
CIE-SA Covert/Intelligent, Elect. Eavesdropping... \$14.95
MFF-SA Midwest Federal Frequency directory... \$14.95
A60-SA Magnet mount mobile scanner antenna... \$35.95
A70-SA Base station scanner antenna... \$35.95
USAMM-SA Mag mount VHF ant. w/ 12' cable... \$39.95
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USAK450-SA 3/4" hole mount UHF ant. w/ 17' cable... \$35.95
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WMAF: Station of The World's Weirdest Family

***A Genuine 1920's Gem, Owned By The Playboy
Son of The Meanest & Richest Woman in The
World. Yet it Earned A Spot in History!***

BY TOM KNEITEL, K2AES, EDITOR

Even though Henrietta ("Hetty") Howland Robinson Green died more than seventy years ago, she has retained her own special niche in legend and lore as one of the great eccentrics of modern times. The *Guinness Book of World Records* lists her as the greatest miser who ever lived, also noting that she was also a champion when it came to meanness.

Born in 1835, by age thirty Hetty inherited about \$10-million from her father, a

devout Quaker who made his fortune in whaling and shipping. Fortified by several other large inheritances, Hetty decided to enter the world of high finance, specializing in gold, railroads, bonds, real estate, and private loans to businesses. She obviously had a talent for these endeavors, and within only two years she had become the wealthiest woman in America, and most likely the world. In one bank alone, she maintained a balance of well over \$31-million. Hetty's

business philosophy was simple: be persistent, be thrifty, be shrewd, buy at low prices, sell at high prices.

Her shrewdness quickly earned her the nickname, "Witch of Wall Street." But it was her obsession with thrift that was especially noteworthy, in view of her immense wealth. Hetty lived in the cheapest cold water tenement she could find in Hoboken, NJ, just across the river from New York City. At home she ate cold oatmeal in order to save on the cost of cooking. When she had to leave the house, to avoid having to eat at restaurants, she would carry a purse filled with broken biscuits purchased cheaply from a bakery.

Her wardrobe consisted mostly of tattered rags which were seldom washed—not that she was prone to washing herself, either. Every shopkeeper with whom she dealt hated her because she would invariably haggle with them over pennies. She would even bring her own empty bottles to the pharmacy when medicine was needed so as to save a few cents on the cost.

Despite her strange habits, Hetty married a millionaire named Edward H. Green. She and Green fled to London for a time when it appeared that she was on the verge of being taken to court by her cousins in connection with a forgery matter. While in London, she gave birth to her two children Edward H. ("Ned") and Sylvia.

Returning to the United States, she eventually split with her husband and, with the children, resumed her bizarre lifestyle, this time in a seedy furnished room in a run-down area of Brooklyn. Each day, after Hetty was finished reading her newspaper, she would send Ned down to the street to sell it and recoup her investment.

Hetty's daughter, Sylvia, grew into a meek and drab young lady who wore out-of-date styles and was constantly reminded by her mother that any suitors she might have would be interested only in the family millions.

A cameo of Hetty Green, the richest and meanest woman in America, and probably the entire world.





After her ex-husband died in 1902, Hetty dressed only in black, a factor that contributed to her nickname of "The Witch of Wall Street." She wore the same ragged and unwashed black dress so long that it eventually turned a strange shade of green.

Ned, at age fourteen, had a sledding accident that did a pretty good job on his knee. Rather than pay for medical attention, Hetty tried to treat the wound herself, despite the fact it had become badly infected. The knee finally caused Ned so much pain that there was no choice but to seek medical attention. Dressing Ned in his most ragged clothing, they showed up at the charity clinic of Bellevue Hospital. Hetty had become such a well known personality that she was quickly recognized and told that she would have to pay. Refusing to do so, she took Ned home and continued her own treatments. For several years, no further medical attention was sought. By that time it became necessary for the leg to be amputated. The doctors said that had the wound been properly attended to at the beginning, the amputation would never have been required.

When Hetty died in 1916, she left an estate worth at least \$100-million (some reports estimate \$200-million.) She had never given a single cent to charity, or a library, or hospital, or college, nor had she made any provisions in her last will and testament. The huge fortune was split between Ned and Sylvia.

After a childhood under the miserly influence of Hetty, Ned pulled out all the stops and wasted no time at all in systematically going through his inheritance at a rate of about \$3-million per year. By today's standards, a \$3-million annual lifestyle is opulent. Seventy years ago it was an amount that was beyond imagination.

Ned, who became known in the head-

lines as "Colonel Green," was famous for his lavish and often lurid excesses and purchases. He spent enormous amounts on homes, luxury yachts, diamond-studded chamberpots, and young girls. Although he often didn't have any money on his person, he became as famous a spendthrift as his mother was a miser. Therefore, it seemed only natural that when radio broadcasting became the rage in late 1921, Col. Green would surely want to add a broadcasting station to his collection of fabulous trinkets, especially since (thanks to Hetty) he was probably the largest single stockholder in AT&T.

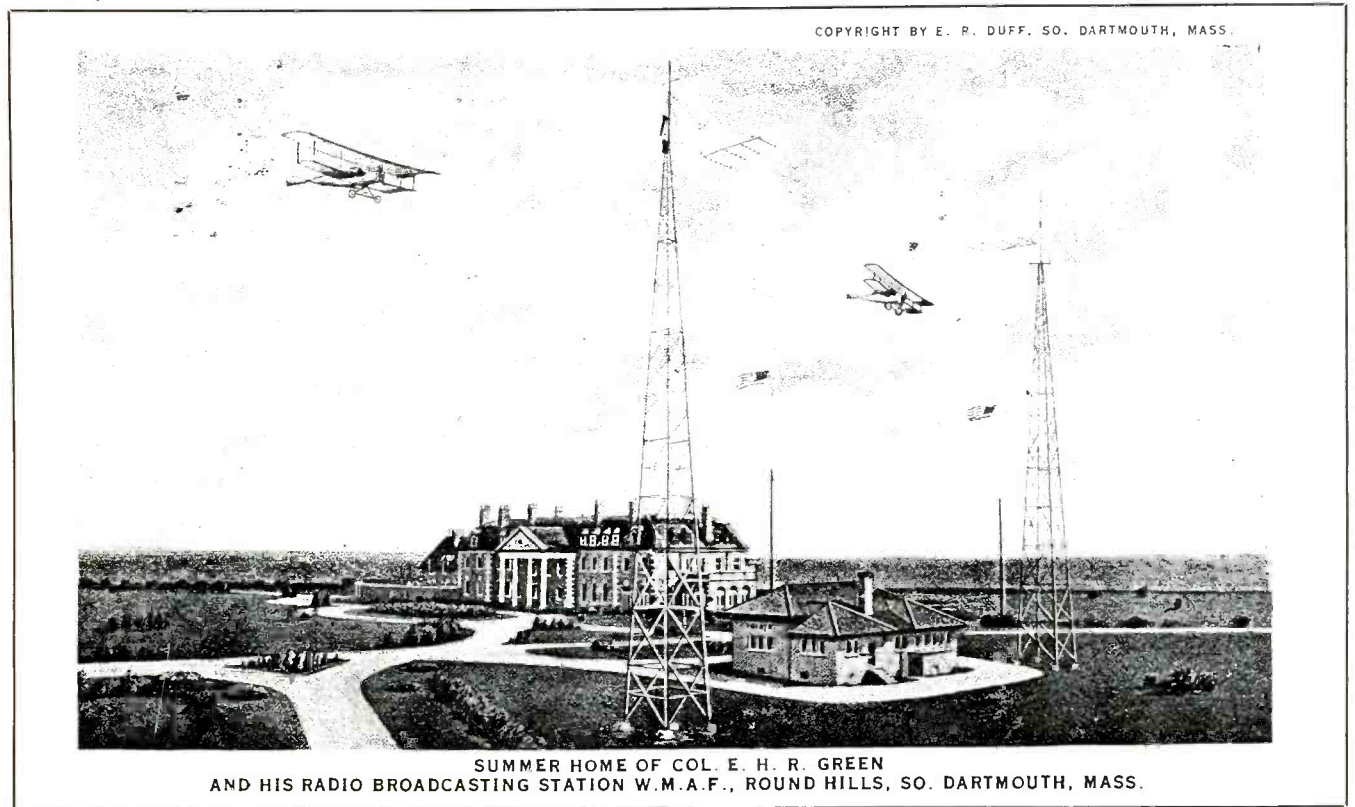
On September 16th, 1922 almost a year to the day after the government issued its first broadcasting license, a license for station WMAF was issued to Green. The location of WMAF was to be adjacent to Green's summer estate, Rolling Hills Farm, Salter's Point, South Dartmouth, MA. Rolling Hills Farm was the ancestral Howland family estate, inherited from Hetty. It was a large, secluded three-story home overlooking the Elizabeth Islands with a mile and a half of private beach.

WMAF's license was for 500 watts on 833 kHz. A new stucco and tile transmitting building was constructed on the estate property next to the manor house. The antenna system consisted of two 143-ft. steel lattice towers spaced 165 ft. apart, and supporting a 115 ft. wire antenna system.

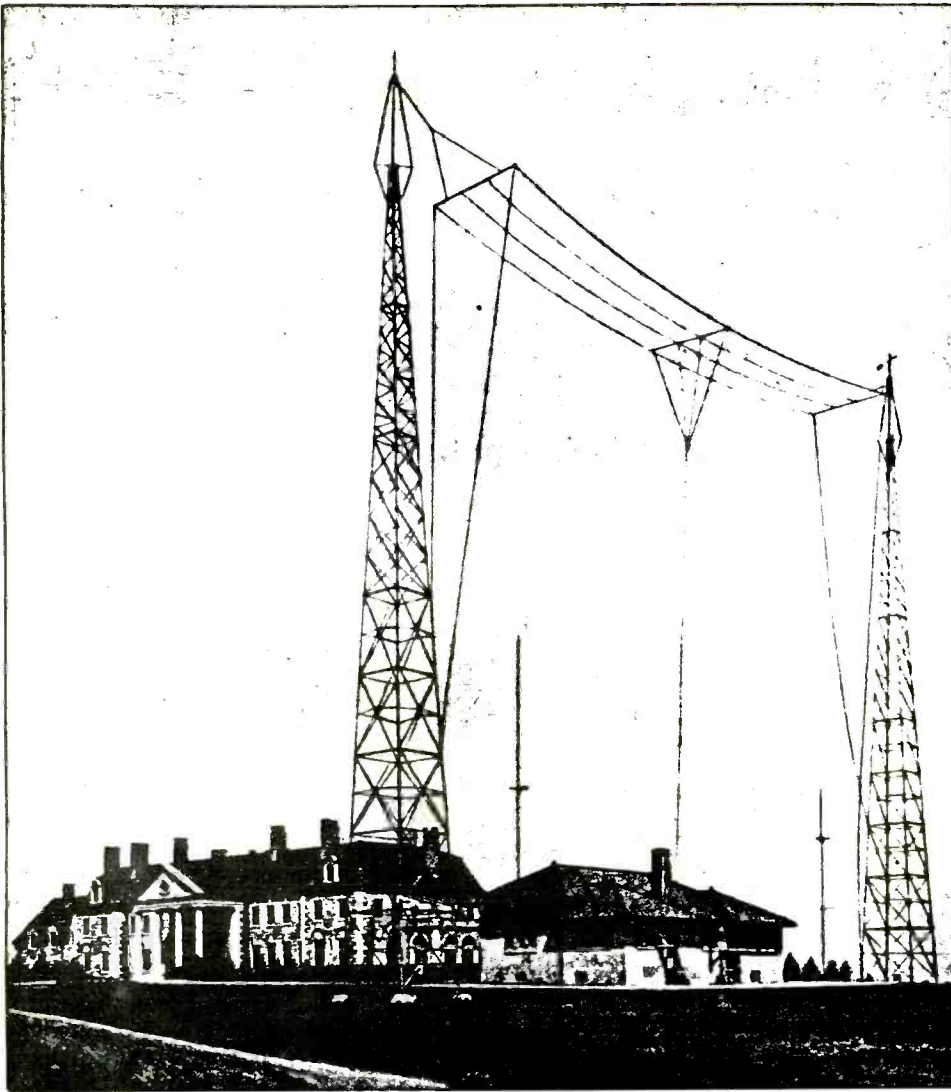
On The Air

The station commenced operation under

A view of Round Hills Farm, the WMAF transmitter building, two towers and antennas. This shows the station as it appeared in 1923.



SUMMER HOME OF COL. E. H. R. GREEN AND HIS RADIO BROADCASTING STATION W.M.A.F., ROUND HILLS, SO. DARTMOUTH, MASS.



A closer view of the WMAF facilities.

the direction of Col. Green, himself. Known as "The Voice From Way Down East," WMAF must have been such a great status symbol that Green even took out a license for a second broadcast station (WSAQ, 100 watts) to be situated at Round Hills Farm.

On July 1, 1923, Green began an innovative experiment. He had a dedicated wireline hookup run more than 125 miles between WEAJ (the AT&T station in New York City) and WMAF. This enabled WMAF to relay WEAJ's programs, a clever idea since it permitted Green to have the prestige of owning a broadcast station with a bare minimum of effort and attention. Moreover, he could present high quality New York City programming in a local area where many wealthy New York and Boston families owned mansions (being only fifteen miles from Newport, RI.)

In June of 1925, the original WMAF General Electric transmitter was sold to a station in Portland, ME and a new Western Electric 6A 500-watt transmitter was placed in service as the station switched to its new frequency assignment of 680 kHz. At this time, Green also strung up a new four-wire "T" antenna between the station's two exist-

ing towers. Although there was a small studio for local programs, most of the WMAF air time was taken by programs fed in from WEAJ in New York City.

Within months, WMAF was granted permission to increase its power to a full kW, but it seemed that the popularity of broadcasting was a double-edged blade. While it was true that the audience was getting larger, so were the number of broadcasters, many of whom were now beginning to find it necessary to change or timeshare frequencies, and/or reduce power in order to avoid causing interference to other stations on frequency. By 1926, many stations began to find that both their air time and transmitter power were being cut back by government edict. WMAF was no exception.

In July of 1926, WMAF was told to begin dividing time with WDFW/WLSI in Cranston, RI. Not long afterwards, WMAF was advised to cut its power back to 500 watts. By May of 1927, WMAF was ordered to shift frequency to 700 kHz. When the CBS network started in September of 1927, WMAF carried the first program (relaying WOR in Newark, the CBS flagship station.) Nevertheless, by March of 1928, WMAF

announced that it had "temporarily" left the air, although its license was still valid and the presumption was that it would go back into operation.

The Federal Radio Commission retained WMAF in its records, and in November, 1928 (while WMAF was still silent) the station was reassigned to 1360 kHz on a time-share basis with WBET in Boston. In February of 1930, this was changed to 1410 kHz, sharing time with Lexington's WLEX (ex-WBET in Boston), and Boston's WSSH. But all of these maneuvers were moot so far as WMAF was concerned because by 1930 WMAF was reported off the air "indefinitely" (although it was maintained in operable condition.)

In 1931, the Federal Radio Commission decided to review the status of the scores of broadcasters that held valid licenses but had gone silent. On April 30th, the FRC decided that the best interests of broadcasting would be served if WMAF was deleted. On June 5th of 1931, WMAF was officially stricken from the FRC roster of licensed stations.

Maybe, after operating WMAF from 1922 through 1928, Green felt that the novelty and prestige of owning a private broadcasting station in his backyard had worn off. Or possibly, by 1928 broadcasting itself had grown into such a major industry that there was no longer any place for a station casually operated as the plaything by an eccentric millionaire. For whatever reasons, Col. Green had abandoned the world of broadcasting to pursue other fads and amusements—without realizing that his 1923 experiment in importing big city programming for his local broadcasting station would go down in history as the first instance of broadcast networking. The idea of broadcasting networks, feeding the programs of one station to another continues today as a basic concept of AM, FM, and TV broadcasting.

For this, we can probably thank Hetty Green for causing her son to be an eccentric playboy. Had he been ambitious enough to program his radio station, he wouldn't have been the innovator who devised the first broadcast network.

Acknowledgement

The author wishes to thank Broadcast Pro-File of Hollywood, CA for providing much valuable research information in connection with WMAF.

Further Reading on Hetty Green & Family

The Day They Shook the Plum Tree, by Arthur H. Lewis.

The Witch of Wall Street.

The People's Almanac #2, David Wallachinsky and Irving Wallace, Bantam Books, 1978, New York, NY.

The People's Almanac #3, David Wallachinsky and Irving Wallace, Bantam Books, 1981, New York, NY.

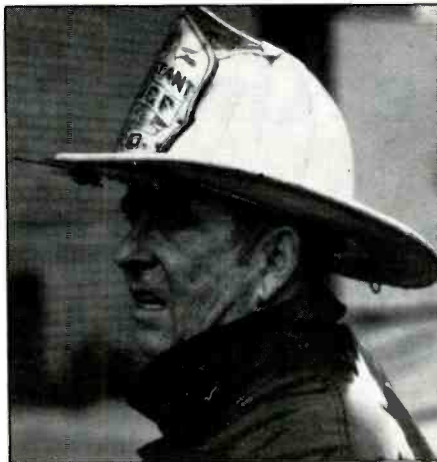
The World's Greatest Cranks & Crackpots, Margaret Nicholas, Bookthrift/Simon & Schuster, 1984, New York, NY. **PC**

Busy Firemen Save Three-Year-Old

It wasn't a good day for Yonkers firefighters. One apartment house fire had already claimed the life of an infant, and another apartment fire several miles away would require a special rescue.

That rescue was made by Deputy Fire Chief Edward Dunn, a 32-year fire department veteran. Usually, a deputy chief directs other firefighters from outside the building, but with two fires occurring in

SCAN PUBLIC SERVICE AWARD



Herald Statesman. "I bent down and held the bed up on my back, but I couldn't reach her. I called out for help.

"She looked like a little doll when I pulled her out. I felt her hand and she was still warm and I said, 'Get her out, get her out.'"

Another firefighter, Donald Salvato, carried Sujey Betancourt to safety while Dunn continued to search for a boy believed to be in the burning building. Firefighter Peter McCaffrey joined Dunn in his search by climbing in a first floor window before other firefighters began pouring water on the building.

After five minutes of "tearing the place apart," as Dunn said, the firefighters were told that the boy was safe at school.

"I'm very tired," Dunn said. "But I can rest easy now that I know the little girl is all right. That makes it all worthwhile."

Sujey was reported to be in good condition at the Westchester County Medical Center in Valhalla, New York, after being transferred from St. Joseph's hospital. Luis Betancourt was treated and released for minor burns and a cut on his right hand.

For his heroic rescue, Yonkers Deputy Fire Chief Edward Dunn will receive the SCAN Public Service Award, which consists of a commendation plaque and a cash prize. For making the nomination, James J. Mingst of Yonkers will also receive a commendation plaque. Congratulations to both of you.

quick succession, manpower was stretched to the limit and Dunn had to enter the burning building.

Jose Betancourt, 41, was in his kitchen when the lights, electric stove and television went out, according to his account of the incident in the *Yonkers Herald Statesman*. When smoke started to fill the apartment, Betancourt ran outside to look for his three-year-old daughter, Sujey.

"When he realized she was back inside he was hysterical and ran back in," Naomie Munoz, a neighbor, told the *Herald Statesman*. "He put his hand through the window to get in but had to get out because of the heat."

William Howard, working on a nearby building, ran to the fire when he smelled smoke. He connected a garden hose and ran inside the burning building, where he stayed until the heat and firefighters drove him away.

When Dunn arrived at the fire, he was told that two small children were trapped in the building. The 57-year-old firefighter ran into the three-story structure and started searching closets and under beds, frequent hiding places for children scared by a fire.

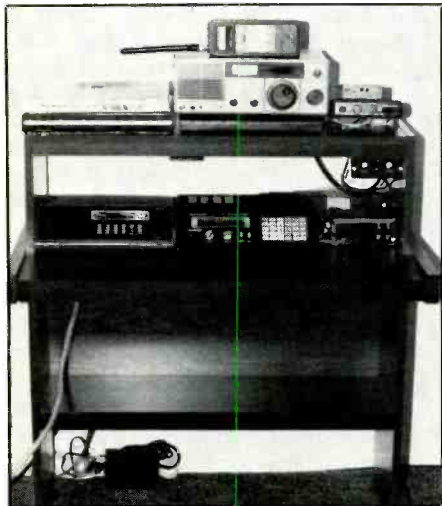
With a bed frame on his shoulders, Dunn finally reached a small child.

"I picked up the bed, frame and all, and I saw the little girl underneath," he told the

Best Appearing

Gary B. Hahnke of Venice, Florida, is the proud owner of this attractive listening post. Gary is an electronics technician who does most of his listening on VHF due to the high amount of electrical noise in his condominium.

Gary uses a Bearcat 220 and Bearcat 100XL scanners and a Realistic Pro-2004 for VHF/UHF, along with an attic-mounted



SCAN PHOTO CONTEST WINNERS

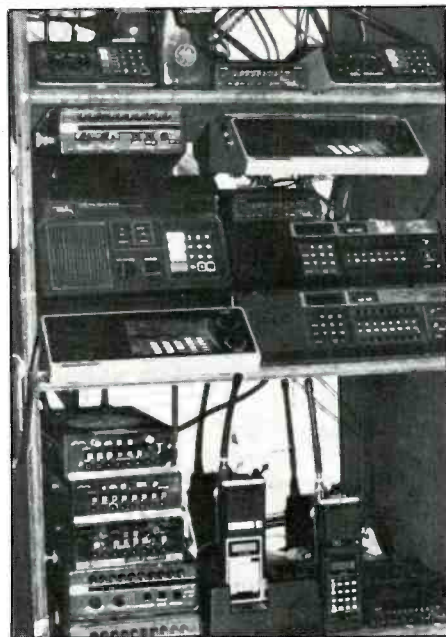
groundplane through an Archer in-line coaxial amplifier and splitter.

For HF reception, Gary has a Kenwood R-600 receiver and a Midland 77-145A citizens band transceiver with a shorting plug replacing the microphone to prevent accidentally transmitting into his Sony AN-1 active antenna. A Nicad battery pack and charging system is available for any of the receivers in the event of an AC power failure.

Best Equipped

Nat Whittemore of Wellesley, Massachusetts, is a staff photographer for WBZ-TV in Boston. He goes after "spot" news from his home and has this impressive array of scanners to help him keep up with what's happening.

Nat uses two Bearcat 250 scanners and one Bearcat 101, three 10-channel Sonar FR-2516s and one FR-2527. Nat's Regen-



cy equipment list includes two M-400s, three R-806s, and a D-300, HV-1200 and HX-1000. He also uses two Regency TMR-1s and a TMR-8. A Plectron scanner, Uni-metrics DigiScan and a GE two-way radio to

(Continued on page 73)

Anarchy on The Airwaves

**Those Who Deliberately Ignore FCC
Regulations Span Many Radio Services With
Their Violations. Many Will Shock You!**

BY HARRY CAUL, KIL9XL

Things are getting rough on the airwaves. The news media screams how this or that broadcast station is in hot water because of obscene or indecent language. The TV networks have all devoted coverage of how the FCC swooped down upon an offshore broadcasting station. While in the past, testing, re-interpreting, or blatantly ignoring the FCC's regulations was rare, in recent times such isn't the case. While you'll find out about major hassles affecting broadcasters by reading your daily paper or watching the evening's network TV news, chances are that you'll seldom find out about any of the FCC's other annoyances from mass media reports.

Like what about the time the FCC seized \$140,000 worth of bootleg CB linear amplifiers from a manufacturer in Shelby, NC or \$500,000 in unauthorized CB equipment from a dealer in Brooklyn, NY? You probably never saw a TV news report of the \$35,000 of illegal CB equipment confiscated from a Fairfield, NJ dealer. What became of all of these seized trinkets? The government took the 400 linear amplifiers confiscated in Shelby, NC and drove them over to Charlotte where they were demolished!

While this may seem like a rather harsh and final step, the FCC claimed that there was no legal use to which they might have been put. CB linears have long been high on the FCC's "most wanted" list. A few years ago, the FAA complained to the FCC that taxicabs serving the Washington National Airport were causing interference to aircraft communications. The FCC sent some inspectors to check out the radio equipment being used in the taxis. They ended up issuing \$300 "forfeitures" to the Capital Cab Co., the Autorama Cab Co., and the American Cab Co. for having linear amplifiers attached to the vehicles' CB transceivers.

This isn't to say that America's intrepid airmen should cast the first stone when it comes to playing free and easy with the FCC regulations. The FCC has had to issue

About the only FCC news covered in the national media relates to problems tied to broadcasters and federal efforts to censor their language.

Lessons in FCC Indecency Rules

THIS MORNING, a letter — the next step in what could be a precedent-setting case involving indecency on television and radio — is scheduled to be hand-delivered to the headquarters of the Federal Communications Commission at 1919 M Street N.W. in Washington, D.C.

The letter, from attorneys representing KZKC-TV, a UHF station in Kansas, is a response to an FCC notice that the station has violated the commission's rules on indecency. The station has been cited for having violated the commission's rules on indecency. The station has been cited for having violated the commission's rules on indecency.

KZKC faces a fine, a warning or, less likely, revocation of its broadcast license. Should the station object to the commission's finding, the case could ultimately make its way to the courts.

Whether or not the KZKC case results in litigation, however, the debate over the commission's indecency regulations will almost certainly be settled by a court. Last week, the National Association of Broadcasters, the Washington-based lobbying arm of the industry, filed a lawsuit in the U.S. District Court in Washington, D.C., challenging the FCC's indecency rules.

violation notices to several airlines because of "superfluous and unauthorized air to air communications" taking place on multi-com, flight tests, instructional, control tower and other VHF aero frequencies. The FCC has described the pilots' unauthorized chit-chat as a "serious widespread problem." What with airline safety and tardiness coming under much scrutiny of late, you'd think that this matter would have been brought out in the media, but it remains hidden. Listen to 123.45 MHz and monitor some of this traffic yourself.

There have even been instances of hoaxes and malicious interference on the VHF aero frequencies. In January of this year, more than 100 safety and law enforcement officials searched the mountains of New Hampshire as the result of a false distress call. The FBI said it was checking to see if the 28-year old suspect played any part in many other recent similar hoaxes throughout the northeast. While this made the local newspapers, the national media ignored the bizarre story.

Some limited media attention was paid to another communications prankster who began transmitting erroneous and misleading

air traffic control instructions on the tower frequency of Miami International Airport in Florida. The national *Associated Press* carried the story, mentioning that "the culprit was familiar enough with airline jargon to fool the pilots, and had access to a special transmitter that broadcasts on air controller frequencies." The AP writer seemingly didn't realize that every airline pilot, many private pilots, as well as thousands of present and (disgruntled) former air traffic controllers know this jargon. Moreover, every airline pilot and the majority of private aircraft have communications equipment that can operate Miami International Airport's control tower frequency!

All At Sea

The maritime crowd has also given the FCC its own share of headaches. A goodly part of the problem is that some current models of VHF marine radios come ready to operate on all authorized Maritime Radio Service channels, plus many other channels unauthorized for American maritime use that are assigned to and used by other U.S. radio services.

Federal Action Is Sought Against Jet Hoax Suspect

LACONIA — A federal grand jury will be asked to return an indictment against a 28-year-old Weirs Beach man who authorities believe staged the elaborate hoax about a crashed private jet aircraft last Friday night.

U.S. Attorney Richard Wiebusch said evidence gathered by the FBI and the U.S. Coast Guard has prompted his office to pursue the federal indictment against Blair.

of the townhouse apartment complex where Blair has resided since last November. Police allege Blair radioed the may-day call from his third-floor apartment. A neighbor told police he heard radio transmissions through Blair's open window and a man's voice saying, "I'm losing a lot of blood."

Weibusch said Blair is a federal

FCC investigates reports of phony tug radio calls

By John H. Gormley Jr.

The Federal Communications Commission is investigating charges of misuse of maritime radios, including a report that someone on a radio tried to change orders from a tugboat to the pilot of a tanker docking in Baltimore last week.

The investigation is focusing on members of the Seafarers International Union. The union is on strike against two tugboat companies, Curtis Bay Towing Co. and Baker-Whiteley Towing Co.

Donald W. Bogert, one of three FCC investigators probing the reports, said that the most serious in-

cident occurred on Oct. 15 at about 2:30 a.m., when a Curtis Bay tug was helping a tanker dock in Baltimore. "Some of the communications were countering actual instructions given by the tugboat," he said.

"We're sympathetic to the cause of these people," he said of the strikers, "but there are some things they just can't do."

Mike Hall, a spokesman for the union at its headquarters in Camp Spring, denied that union members were responsible. "We certainly don't condone anything of that sort."

See RADIO, SE, Col. 4

Blair has been a long-haul truck driver with United Parcel for the last several years.

Local newspapers such as the *Union Leader* (Manchester, NH) and *The Sun* (Baltimore, MD) carried these two fascinating stories about anarchy on the airwaves. Because such horror stories are usually ignored by the news media outside of their local areas, the public doesn't get the big picture of the problems on the airwaves.

In one action, the FCC told four Texas area boat skippers to fork over between \$600 and \$1,000 each for operating on VHF-FM Channel 3 (156.15 MHz), not available for vessels in American coastal waters. Their communications jammed police communications in Jefferson City, LA. Soon after that incident, eleven shrimp boat operators in Alabama and Louisiana were told by the FCC to shell out from \$100 to \$1,000 each for operating on unauthorized frequencies that brought about "numerous complaints of interference to Public Safety services, as well as business and military communications around the Corpus Christi, Texas area."

Yet, channels unauthorized for use in American coastal waters continue to be sup-

plied in various VHF-FM marine transceivers. A chart showing such unauthorized frequencies along with their channel numbers is given in Table I. Note that some of these channels (in either simplex or duplex modes) may be authorized for maritime use in areas other than the U.S. waters.

The marine frequencies have also had their share of pranksters. Like recently, during a labor strike against two Baltimore tugboat companies. While tugboats of the struck companies were communicating docking instructions to tankers, another station repeatedly kept coming on to the channel to issue conflicting instructions. The story made the pages of *The Sun*, a Baltimore newspaper. The national media didn't bother to cover the incident, even though it

had the potentials for loss of life and property, to say nothing of a major environmental disaster for Baltimore harbor.

Business and Municipal Agency Problems

The pleasures of operating with the sanctification of an FCC license have not always impressed businesses who desire communications. For instance, when the Santa Juana Gas Service in Puerto Rico set up communications on 159.355 MHz, they neglected to go through the formalities of obtaining a license. They were sent an FCC "Notice of Apparent Liability" for \$750.

Likewise, the Ferguson Electric Company, Houston, TX paid a \$750 fine for unlicensed operations on 151.925 MHz. A more complicated problem faced L & C Management, Inc., Dallas, TX. They set up a radio paging service that brought a complaint to the FCC that the station was jamming the FBI's primary channel. The FCC located the station and closed it down. The following day the station returned to the air and the FCC reacted by again closing it down and telling the operators of the unlicensed transmitter to come up with a hefty \$750 fine.

Another unlicensed paging operation was causing interference to Civil Defense communications in the Virgin Islands. When the FCC located the offending station they found it to be operated by the municipal government of Carolina, PR. Those who managed and operated the bootleg station admitted that they were aware their station needed a license. They were asked to send in their \$750.

The Private Sector

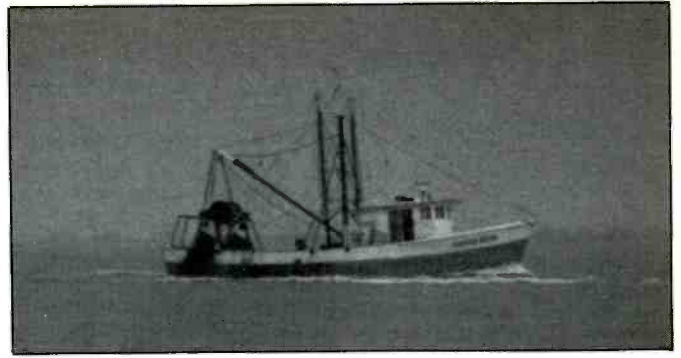
There has never been any significant shortage of private individuals who have decided to establish communications minus the FCC's necessary approval. This, for instance, would include one Dennis D. Skelton who ended up paying the FCC a \$500 fine for setting up shop on 27.595 MHz. Likewise, John A. Conley, of Golden, CO was sent a notice to come up with \$750 for the unlicensed station he was using on 27.615 MHz. From Portland, OR signals from the station that John T. Camp was operating on 27.605 MHz. That will be \$750, please!

After losing his ham license for station WB6JAC, Richard A. Burton was charged with still being on the air; to say nothing of using obscene language at the time. The FCC, assisted by U.S. Marshals, arrested Burton in short order.

An operator who received three CB violations in one year was William M. Rogers. The following year, Rogers obtained a ham license (WD5FPO), but later, he was again cited by the FCC for unauthorized operation on an FAA frequency. Since the FCC didn't know whether Rogers was using CB or ham equipment during the violation (and CB stations aren't licensed, anyway), the re-



Certain VHF aeronautical frequencies buzz away with idle chit-chat between pilots. The FCC has issued stern warnings, but the practice continues.



What with many VHF marine radios equipped for operation on more than fifty unauthorized channels, some skippers can't resist the temptation to communicate on their own (seemingly) private frequency. The FCC says such antics interfere with police and other vital communications.

sult was that the license for WD5FPO was revoked.

CB violations also cost Paul O. Overlock his ham ticket for station N6BHC. The FCC said that, as a ham licensee, Overlock should have known better than operate outside the authorized CB channels, shoot skip, and use unauthorized equipment. He was told he could reapply for a new license in ninety days.

There was, too, the little incident of the infamous bootleg *Oscar Group* that had staked out 6930 and 6933 kHz for its unlicensed activities. At least one member of this group, Clinton E. Berger of Ridgeway, TN was tracked down by the FCC and was issued a \$1,000 fine.

The *Oscar Group*, however, sounded rather primitive when matched up against the unlicensed network the FCC tracked down last year in the Los Angeles area. This complex network utilized a myriad of frequencies including those allocated for cordless 'phones, unallocated frequencies lying between the UHF GMRS channels, plus unauthorized frequencies in the portion of the spectrum between CB Channel 40 (27.405 MHz) and the 10 meter ham band (28 MHz). Sophisticated repeaters were supposedly in use during these operations. The FCC claimed that the network was run by Laszlo Hirsch, holder of a ham ticket with the callsign WA6SWG. Hirsch was fined.

The Ham Question

While the national news media has been most gracious in publicizing the many public service deeds performed by ham operators, it has generally not taken any note of the fact that not all of the nation's licensed operators have had an especially harmonious relationship with the FCC and its Amateur Radio Service regulations. True, these are the exception. It is perhaps this fact, and that hams generally react with hostility to rule violations, that makes these instances so interesting and unusual. Indeed, in many cases, it was hams who filed complaints against their brother operators.

Ham operators have, for example, run up against FCC regulations because of using

language deemed to be foul, obscene, or otherwise objectionable. Johnathan A. Banquer, WA1ZVS, had his station license revoked by the FCC for such activities in the 75 meter band. The license of David Hildebrand, N6BHU, had also been revoked for that same reason back in 1982, but in 1987, the Commission overturned its original ruling and reduced its sanction to an admonishment against such violators in the future.

Oddly enough, a ham received a \$2,000 FCC notice for "broadcasting." That was James Brantley, K6KPS. Hams complained to the FCC that Brantley was causing communications disruptions with his lengthy CQ calls and by calling nonexistent stations. The FCC monitors checked K6KPS and agreed with those who complained. The FCC felt that the transmissions were deliberately intended to be disruptive. Furthermore, the agency decided that they were in violation of the anti-broadcasting section of the ham regulations.

Eugene C. Sykes, W400, was cited by the FCC for running too much power. Not that 540+ watts would normally be a problem; the glitch was that he was accused of running that much power on a Novice Class frequency where the power limit was 250 watts. This was still less of an affront to the FCC's regulations than the one recently caused by Arthur Ford, Ellenwood, GA. The FCC claimed Ford was in possession of a 10 kW CB linear amplifier!

Causing deliberate or malicious interference, surprisingly, is cited by the FCC more often than other regulation infractions. That charge has been levelled against quite a few operators, including Kenneth L. Gilbert, KB6TG; David G. Ackley, W4UWH; Harold Claypoole, N6BII; Gary W. Kerr, WA6JY; Calvin C. Plageman, WD6DSV; James W. Smith, W6VCE; Anthony DiBona, K6PWX; Henry C. Armstrong, WA6CGI; Donald Gilbeau, N6OZ; Leonard R. Boucher, K4MME; Gerard J. Morin, W1GM; Armando M. Rogriquez, WD4FPY; Joseph Franowsky, KA9SKZ, and others. In fact, Franowsky was identified as being the source of deliberate interference to the communications of the Or-

land Park (Illinois) Police Department.

W. Reed Everhart, W3HUM, and James T. O'Rourke both had their licenses revoked because they supposedly had obtained the licenses "by fraudulent means . . . in willful violation of FCC rules."

Another ham, Raymond C. Bower, WA1NMC, was given a formal reprimand for "mailing an altered copy of his Amateur license document to the *Radio Amateur Callbook* in an attempt to cause the callbook to list him as an Extra Class licensee when he was entitled only to General Class privileges."

There does seem to be a far more blatant willingness by hams to violate the FCC regulations than there used to be. If you don't believe me, dial up the lower sideband of 3895 kHz some evening and get an earful of everything you wouldn't hope to find in the 75-meter band, including some very raunchy language.

Hardware Wars

Crazy Guys Stereo and Video, Chula Vista, CA, and Samhill Enterprises, of NY were both recently sent \$2,000 notices for unlawful marketing of uncertified "long range cordless telephones." FCC certified cordless 'phones generally have a range of less than 600 feet. The two companies were claimed to be openly offering cordless telephones having a range of 60 kilometers (that's more than 37 miles)!

A clever device called the *TV Genie* also aroused the FCC's ire. This device was a miniature transmitter that, when connected to a VCR or camcorder, would broadcast the signals to nearby TV receivers. The FCC said the device isn't permitted to be used, then sent a warning to the company that was importing the units, Orion Industries International, Las Vegas. When sales continued, a second warning notice was sent. The company had sold more than 27,000 units after the second notice was sent and so the FCC took Orion into court. Orion was found guilty of the charges.

You'll seldom encounter information about any of these violations of FCC regulations, at least not in the national news media.

Chan. #	MHz	Chan. #	MHz	Chan. #	MHz
00	156.00	43	158.15	94	157.725
02	156.10	44	158.20	95	157.775
03	156.15	45	158.25	96	157.825
04	156.20	46	158.30	97	157.875
29	157.45	47	158.35	98	157.925
30	157.50	48	158.40	99	157.975
31	157.55	49	158.45	100	158.025
32	157.60	50	158.50	101	158.075
33	157.65	51	158.55	102	158.125
34	157.70	60	156.025	103	158.175
35	157.75	61	156.075	104	158.225
36	157.80	62	156.125	105	158.275
37	157.85	64	156.225	106	158.325
38	157.90	89	157.475	107	158.375
39	157.95	90	157.525	108	158.425
40	158.00	91	157.575	109	158.475
41	158.05	92	157.625	110	158.525
42	158.10	93	157.675		

Table I: These simplex "channels" are operable in a number of marine two-way transceivers sold in this country. Problem is that none are authorized for use in U.S. coastal waters, and some are FCC-allocated for use in other radio services. The FCC has issued fines to vessels caught using these phantom frequencies, although all sorts of others from truckers to survivalists are there (without authorization) too.

Still, they're plentiful. Also, if you're interested in communications, they're relevant.

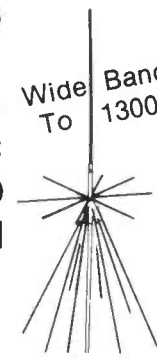
Just because you don't learn about such challenges to the FCC's regulations, it doesn't mean that they don't take place. The FCC wrestles with the problems within their manpower and budget limitations, but certainly there are countless violations and

violators who are never caught. What is surprising, is that there are so many individuals and companies that appear to be openly defying the FCC's authority and regulations. If it's a growing trend, then you can only wonder what the future holds for the FCC's ability to maintain effective control over the electromagnetic spectrum in this country. **PC**

antennas

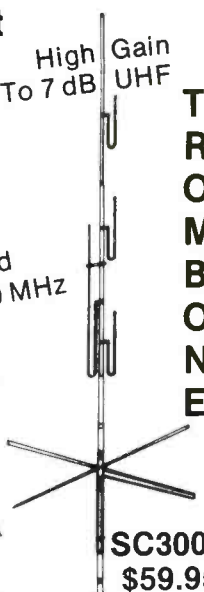
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Big Brother Is Listening

How The FCC Captures Pirates

BY HAROLD ORT

Big Brother is listening! Well, maybe not as much as you think and certainly not nearly as much as he would like to, but he's out there! With a 1988 fiscal year budget of nearly \$100 million, tracking down those illegal "pirate" broadcasters isn't the FCC's number one priority. According to Judah Mansbach, Electronics Engineer of the Enforcement Division in New York City, "Unlicensed operation of a radio transmitter is a very serious thing with us—that's what we're here for—you just can't operate without a license." At least not for long, if Mansbach and his counterparts have their way.

He was quick to point out that the seriousness of enforcement of the FCC rules depends a lot on the operators methods and frequency the pirate has chosen to use. For example, if the President comes to town and the illegal transmissions are interfering with White House communications, he said, "We don't care what it costs—we're going to put all of our manpower on it and shut it down, so the President's communications remain free from interference."

Sitting at one end of a conference table at the FCC's New York office with two FCC field representatives, one with a programmable walkie-talkie on his hip, Mansbach reminded me that I was dealing with a federal watchdog agency.

It wasn't necessary to ask many questions about pirate radio, as Mansbach, mostly from memory, emphasized point after point, the perils of operating an illegal broadcasting station. By far, the most often heard buzzword was "compliance." The main purpose of the FCC imposing a penalty on the pirate is compliance with the rules and regulations.

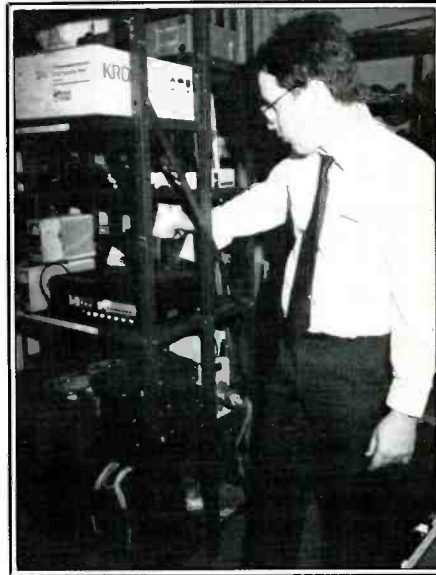
Field enforcement representatives are, according to Mansbach, looking at several things when it comes to illegal broadcasters. First, he looks at the quality of their signal. How clean is it? What frequency is being used? Once tracked down, either they produce a license or must be operating within the low power parameters of Part 15. "If not, we shut them down," he added.

Pirate broadcasters can be found virtually anywhere on shortwave, MW and even the FM band, but particularly at the upper end of the broadcast band. Mansbach emphasized that even there it can result in interference with navigation equipment.

Penalties imposed for illegal broadcasting



Judah Mansbach, an electronics engineer of the FCC's Enforcement Division in N. Y. C. at the controls of the N. Y. C. monitoring station.



Kevin McKeon, a field operations bureau specialist examines some of the recently confiscated equipment.

could be one year in prison, or a \$100,000 fine for the first offense, two years in prison, or \$100,000 for the second offense; but the penalty imposed always depends on certain conditions, and conviction isn't usually very difficult according to Kevin McKeon, an FCC field operations bureau specialist.

Mansbach provided this scenario of tracking down an illegal broadcaster. He said that before they even walk into the building we have already proven the station was operating. "Before I knock on the door," he said, "I have all the evidence I need—I've already established that the transmission is coming from that location, electronically." He proudly added, "I've also convinced federal magistrates of this fact—I don't need to see the smoking gun—the guy doesn't have to be seen sitting at the mike." Mansbach further explained that tracking down a pirate has a lot to do with who it is and how long the station has been on the air.

How It's Done

"My scenario could also go like this," he explained. "We may get a tip, or even hear the station ourselves. Could be a station that just doesn't belong there. For example, sup-

pose I'm listening to the FM band and hear a call letter I don't recognize; maybe it sounds like a pirate—after a while you get used to what they sound like. They sound much like college stations. Still others are quite sophisticated, getting most of their equipment from regular broadcast stations," he continued.

The worst possible case would have the FCC obtaining the necessary electronic evidence, proving the signal is actually coming from a specific location, that it's exceeding low power limits that the law allows without a license. It's always possible the suspected pirate has a license, so Mansbach says he would check the Washington office, or his own records in New York. If the operator isn't licensed, and Mansbach believes the pirate will give him a hard time, he'll go to the U. S. Attorney's office and get a search warrant. Mansbach added, "If I don't think the pirate will comply with a request to stop broadcasting, or if I think he's going to be a wiseguy, the warrant helps."

At this point, the pirate doesn't even know he's been nabbed. Now, along with the U.S. Marshal they go in and shut down the station and confiscate the equipment.



Mansbach shows off an old df loop antenna.

Mansbach added, when asked about what happens to the equipment, "At some point we smash it; the reason for this is that the law stipulates this method of disposal."

Mansbach said he rarely needs an arrest warrant, but has resorted to it in the past. Strangely enough, if the search warrant says to "confiscate all transmitters," the FCC can take the operator's legal equipment as well.

It's also possible the U.S. Marshal may arrest the operator on the spot for violation of Section 301 of the Communications Act. It doesn't usually happen, as it takes a lot of manpower. "Remember," said McKeon, "We have to show up in court. If we're simply trying to get compliance, we may not have to hit him quite that hard." When the standard two-man team knocks on the door, they inform the operator he's illegal. Hopefully, he promises to stop.

Mansbach says he would still levy a monetary fine even if the team walks in and the operator voluntarily pulls all the plugs, shuts down everything, yanks out the crystal, etc. "Given this possible scenario," Mansbach



Mansbach explains the use of an "rf sniffer."

emphasized, "I can't take his equipment, because I don't have a search warrant, but, IF he voluntarily surrenders anything, I'll probably take it with me." Even so, the representative is going to tell the operator there is a very strong possibility he's going to be fined. Mansbach continued, "If he voluntarily turns in his equipment, I may use that fact to reduce the fine." The normal fine is \$750, initially. The FCC will issue warning letters to the pirate on the spot. As Mansbach puts it, "The fine normally becomes a subjective matter, usually I'll reduce the fine, provided we feel we have compliance."

Both men felt that the reason anyone would get involved in pirate broadcasting is usually the "frustrated disc jockey syndrome." Mansbach also said he often hears parents tell him that their youngsters are doing a public service. "They don't consider it a crime," laughed McKeon. Apparently the rationalization is "they're not hurting anyone."

It's Simply A Violation

McKeon said that they don't realize they could be harming legal transmissions—besides, he said, "It's simply a violation of the law."

Despite the fact that pirating is illegal, the pair admitted that, in Mansbach's words, "There are things that are much more important to us than pirate radio. They usually transmit in the middle of the night, so we ask how critical is it to shut them down? Do we have the manpower available? Where is the station being heard? Is it a small area or across the country via skip? Remember, field officials don't have to actually get up and leave to track down the station, they have other field reps out there; in the N.Y. area they cover four states and they're in the field all the time, with communications between the offices and cars. Compared to other areas, the N.Y. office covers a relatively small area that extends from Schenectady, N.Y. to Trenton, N.J. and from Montauk, Long Island to the Delaware Water Gap, but they have monitoring stations all over the area. Initially the commission might receive a letter from someone trying to listen to a local broadcasting station that is receiving interference from a nearby illegal broadcaster. It's then that the FCC takes action.

FM Pirates, Too!

On FM, the pirates operate between legal stations. Mansbach told how the FCC closed down a station a few years ago. This station was being operated by computer. It was a two-hour ride from the FCC office to the station. "They were the most sophisticated pirate I had ever heard," Mansbach added, saying, "They also ran relatively high power." One of the worst cases he recalls was near a suburban airport. The operator received an 18-month suspended sentence.

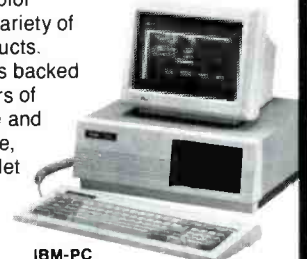
This one was called WPOT. It was before the commission had "administrative penalties," so the operator was arrested and fined. But now, according to Mansbach, the

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When asked where the largest concentration of pirates are, Mansbach replied, "As far as we know in this office, there are no pirates operating in our radio district." Of course this was before RNI, but even so, a copy of POPCOMM would reveal otherwise. He added, "By definition if there were pirates here, we'd shut them down." Mansbach continued, "Every now and then we get a report of someone operating illegally, we try to confirm the report and then shut them down." He added, "Actually we have a very good record. In fact it's excellent. Once we shut them down we move on to other problems." McKeon emphasized, "We have much more serious things we're required to do by law; being a regulatory agency, we don't worry a lot about pirate radio."

He recalled what many consider the most "famous" pirate, TV's *Captain Midnight*. It took the FCC three months and a national effort to find him. Mansbach said, "When a regular pirate broadcaster leaves the air, there's no way to track him down. But minutes after he left the air our work began. "Actually a couple of days later every field office went to work on this one," said Mansbach. A satellite transmission leaves a "footprint." According to Mansbach, "We had that footprint and knew there were thousands capable of doing this, but it still became our priority." He continued, "They (Pentagon officials) were really steamed there for a while—you can be sure it woke up a lot of people."

FCC Suggested Alternatives

Some time ago, fines for pirating went to

\$100,000, but potential broadcasters should remember that there are many other outlets for their talents than pirating. For example, the commission suggests college, or high school radio stations, cable FM stations, or even Part 15 use if the person can't break into the broadcasting industry. Unbelievably, some pirates when caught say, "Yeah, we'd like to operate legally, why don't you give us a license?" Mansbach laughed and added, "We always issue a penalty, but mitigate it depending upon circumstances. Crying doesn't work—compliance does!"

Speaking only about the Second Radio District, Mansbach said, "I feel we have the pirates under control, although we get a report of one now and then." When asked whether the use of higher power means more strict enforcement, McKeon replied that it could, but not necessarily. "The higher the power, the more damage can be done and the more likely we've heard the station," he said. He said that it's therefore natural that could become a priority, more so than the lower powered pirate. But, unlicensed operation is unlicensed operation, no matter what.

Mansbach estimates that during any one month possibly one, or two stations, elude shutdown. He says when the general public thinks of the FCC, they picture this truck driving around with a big loop on the top.

"I'll tell you this," said Mansbach, "we do have trucks, but we have cars too—they're unmarked. The trucks basically measure, while the cars have receivers capable of receiving anything from d.c. to 2 GHz." He was quick to point out that he can measure the frequency and power of the station, tape record it and do it all while driving the vehicle. McKeon added, "It's no longer a couple of guys with the old loop antenna."

In the metro-N.Y. area they have four vehicles, which I wasn't permitted to see or photograph. Mansbach says each is outfitted with \$100,000 of various equipment. "Picture this," he said, "I'm driving down the road and my auto direction finder (adf) tells me exactly where the signal is coming from—with the old loop system you didn't really know if it was in front or back of you, but this system knows!" So, coupled with the S-meters, as we get closer, the signal goes up and by simple judgement, we put everything together, and can tell how far away the station is and shut it down.

At one point during the interview, Mansbach received a phone call from a former pirate-turned tipster. After returning to the room he said, "A lot of them do that—this fellow has been off for years, but every so often he comes up with a good one for us!" Continuing his explanation, he said, "At this point, I'm in front of the pirates house and now I take out my FS meter. The cars do NOT stick out like sore thumb; they're not GSA cars, they do have state plates," he added. After proving the signal exceeds the Part 15 limit requirements, (which he says takes him less than five minutes; says he can do it in his sleep) they've bagged another pirate broadcaster.

In each FCC vehicle, at a minimum, you'll find an impressive set-up; a low frequency receiver, a VHF-UHF package, a display, counter and even a computer-operator adf all on a rack, with, as you might expect, a heavy duty alternator! He said, "If you look at one of our vehicles, you won't see a DF antenna, but one that looks just like a regular car radio antenna."

If you're thinking about tuning in one of their VHF frequencies, in the event you're running an illegal station and want to keep tabs on the FCC, go ahead—they're on 167.05 MHz. Of course if you hear them and you're illegal, it just might be too late!

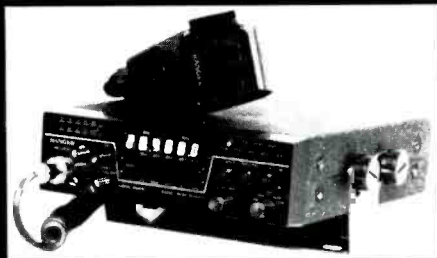
After talking with them for quite a while, we adjourned to a room in the back that would make any listener drool with envy. There on a large desk, extending up the wall was an impressive array of gear, including stacked receivers, counters, a 30-300 MHz rig, a 235 MHz to 1 GHz package and antenna patch panel that allows the operator to use any of several rooftop antennas. In a far corner of the room on several metal shelves were a couple of old black loops and across from that were several shelves of confiscated equipment awaiting disposal.

Throughout the hour-long interview, I got the distinct impression that pirate radio is a mere thorn in the FCC's side that warrants a low priority from the agency. Remember, this is the same agency responsible for a myriad of communications, the broadcasting spectrum in general, marine, aviation, amateur, CB, and the list goes on! Oh, by the way, they also chase pirate broadcasters. It's a bit like smokey arresting you for tossing a cigarette from the window while a speed drunken driver barrels down the highway; it just doesn't happen that often. **PC**

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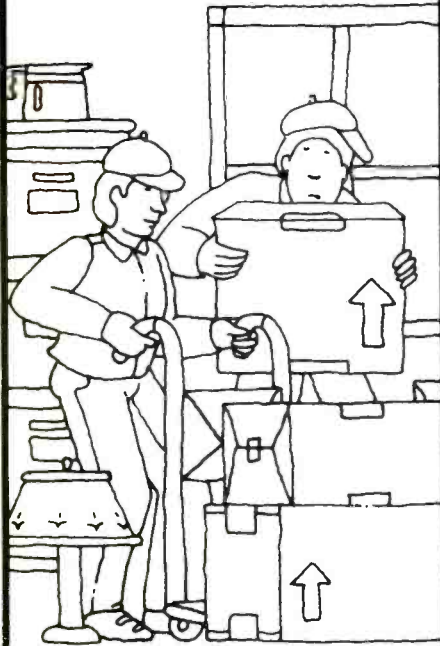
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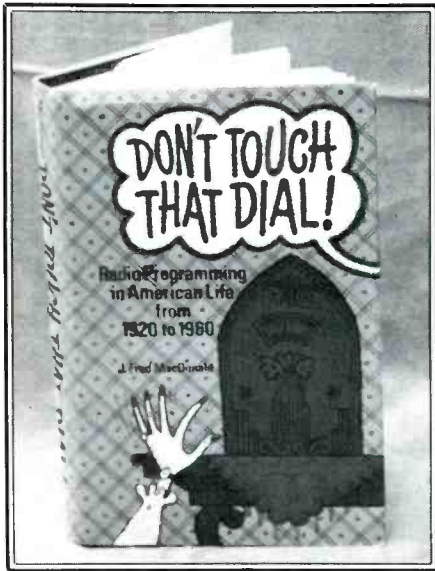
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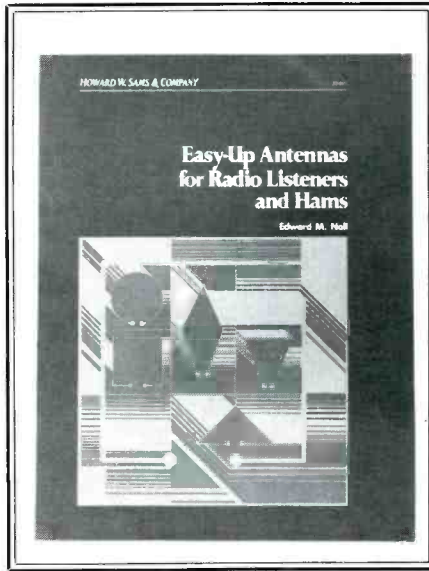
Don't Touch That Dial!

A most worthwhile addition to the bookshelf of anybody interested in the history and background of radio broadcasting is J. Fred MacDonald's book, *Don't Touch That Dial: Radio Programming on American Life from 1920 to 1960*. If that's a big title, it's because it's a big topic that is well treated in this 412-page hardcover book.

Whether you can remember Ellery Queen, *This Is Your FBI*, *Portia Faces Life*, *The Great Gildersleve*, *Boston Blackie* and others, or whether those programs were aired before "your time," this book will give you a probing look at such shows. You'll learn about how and when they got started, which stations and networks offered them their first "breaks," and the many people and "deals" it took to get them into production. We particularly liked the well done coverage of comedian Fred Allen, a truly brilliant radio talent. For some reason, his wry sense of humor didn't translate very well to the movies or TV. As a result, his talents are no longer recalled quite as vividly as those of Jack Benny, George Burns, George Jessel and others who were far more adaptable to the TV media, and can still be easily presented to the public at large. Allen, as well as many similar undeservedly forgotten radio personalities, are acknowledged here for their genuine contributions to radio broadcasting.

Supplementing the text are a number of excellent photos that help the book cover a wide scope of topics including comedy, detectives, westerns, soap operas, news, as well as black programming.

Don't Touch That Dial! is available at \$25.95 (or \$12.95 in softcover) from Nelson-Hall Publishers, 111 North Canal Street, Chicago, IL 60606.



Antennas Galore

POP'COMM's Ed Noll, W3FQJ, has come up with his new book, *Easy-Up Antennas for Radio Listeners and Hams*. This is a 150 page large 8½" by 11" format book offering plans and complete instructions for constructing simple and sophisticated antennas. The antennas included are suitable for FM broadcast, mediumwave, shortwave ute and broadcast, low frequencies, scanners, and the ham bands.

Some books on antenna are rather theoretical in that the authors have never actually built at least three quarters of the projects they are suggesting you put together. Not so with Ed Noll, who builds and tests extensively every project he suggests for his readers to use. There are several commercial antennas included in this new book, and each of those was purchased and heavily tested.

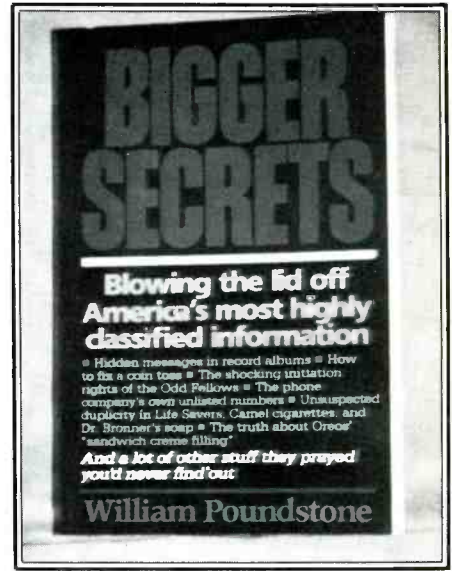
They're all here to suit your every need: verticals, dipoles, confined space antennas, special types, etc. There are also a large number of reference tables showing dimensions, plus a modicum of antenna theory written in a basic and straightforward style which isn't at all intimidating.

An appendix to the book provides data on sources, manufacturers, and other useful reference information. In all, a handy and welcome new addition to the array of information available to the monitor as well as the communicating ham.

This book comes from the Howard W. Sams Co., whose books are offered nationally through booksellers and many electronics and communications shops. Look for Ed's book!

Even Bigger Secrets

William Poundstone created a storm of controversy last year with his book, *Big Se-*



crets, which discussed secret radio frequencies, secret markings on playing cards, the secret ingredient in Coca Cola, etc. The book became so popular that it convinced Poundstone to release even more information from his closely guarded research files. This guy just can't keep a secret at all!

Poundstone's latest book, appropriately entitled *Bigger Secrets*, again blows the whistle on more than 125 other things they hoped and prayed you'd never find out. It's 244 pages of insider information about the telephone company's own unlisted numbers, the secret acoustical tone that made free long distance telephone calls possible, telephone "loop" numbers, something called *Remob* which turns out to be the ultimate in telephone snooping, the sinister "infinity microphone," movie star Marlon Brando's secret shortwave station (including call letters, etc.), backwards messages in rock music, video game secrets, Uncle Sam's secret nuclear shelter (with road directions), Soviet spy powder, the FBI's license plate code, code names for classifications above and beyond "Top Secret," passing psychological tests, beating the breathalyzer, department store secret messages, beating gambling casinos, subliminal messages hidden in movies and music videos, David Copperfield's and Doug Henning's best magic illusions revealed, and more.

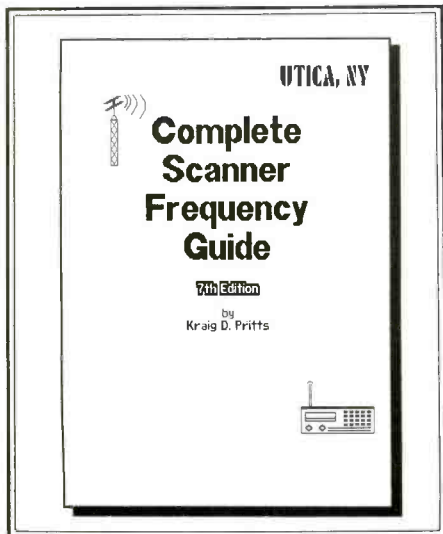
This information is all new and does not duplicate *anything* in Poundstone's earlier book. Poundstone seems determined to spread the word on all sorts of stuff that you aren't supposed to know. He does it in an entertaining way, and a most impressive degree of thoroughness.

Bigger Secrets, William Poundstone's new book, is available at \$7.95 (plus \$1 postage/handling to addresses in USA/

Canada/APO/FPO) from CRB Research, P.O. Box 56, Commack, NY 11725. (N.Y. residents add sales tax.)

Scanner Data

There's a new 7th Edition out of Kraig D. Pritts' *Utica Area Complete Scanner Frequency Guide*. This directory covers more than 900 listings in the area of Utica, NY

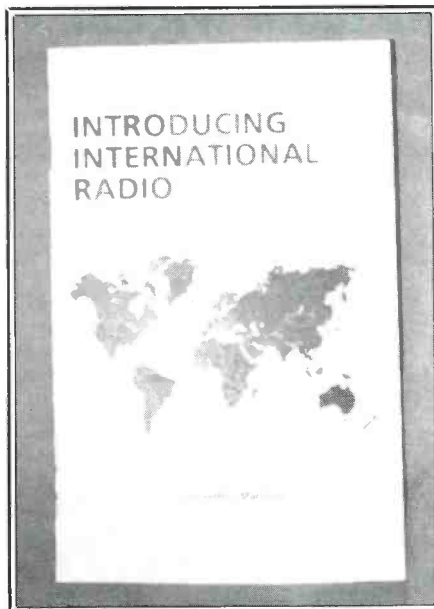


plus listings for Oneida, Madison, Herkimer, Otsego, Lewis and Chennango Counties. This new edition contains an almost 50% increase in the number of listings over the earlier edition.

Covering the high/low VHF bands, as well as the UHF band, Pritts' directory spans a wide assortment of public safety and other communications services. This publication is available from Kraig D. Pritts Data Services, Box 388, Chadwicks, NY 13319. The price is \$6.00, plus \$3 shipping/handling.

In Addition . . .

Introducing International Radio, by Kenneth D. MacHarg is a nifty 33-page booklet intended to get newcomers started on the path of monitoring shortwave broadcasts from around the world. Written in a most easy-to-follow style, MacHarg provides information in the world's leading shortwave broadcasters, offers a six-page listing of shortwave broadcasts, discusses basic equipment selection, simple antennas, and getting started in the hobby. The material is well prepared by veteran DX'er MacHarg, whom you'll probably recognize as the host of HCJB's *Saludos Amigos* weekly international friendship program. Ken's writing manages to be both interesting and informative without talking down to or intimidating the fledgling SWL. A neat little book, and it



even has some attractive photos to go along with the text.

This is available at \$3.95 plus \$1 postage from Global Village Press, P.O. Box 1345, Jeffersonville, IN 47131.

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Radio As It Was

Rummaging Through Radio's Dusty History To See What We Can Find

BY ALICE BRANNIGAN



The Nebraska Wesleyan University experimental station, 9YD with Prof. J.C. Jensen at the controls. This photo is from 1921. (Courtesy Will Jensby.)

"I can't remember seeing much about early college stations," writes Will Jensby, WOEOM/6, of Santa Clara, CA. With that, Will noted that he attended Nebraska Wesleyan University and that the institution once operated experimental transmitter 9YD, then early broadcast station WCAJ. They were run under the guidance of Prof. John C. Jensen, who was Will's professor in 1948.

Jensen began tinkering with wireless in 1904 while he was a high school physics teacher in Beaver City, NE. In 1906, Jensen set up his station as an exhibit at the Nebraska State Fair. It was so impressive, that Jensen was offered the opportunity to teach physics at Nebraska Wesleyan University in Lincoln.

That permitted Jensen, in 1914, to establish experimental station 9YD running a 1 kW spark transmitter. This station sent out regular news and weather transmissions until 1917 when all such stations were silenced by government edict because of the war. In 1918, 9YD returned to the air with synchronous and quenched gap transmitters. In October of 1920, a 20 watt phone transmitter was added. In October of 1921, market reports were added and soon after a commercial license, WCAJ, was secured for the 'phone portion of the station equipment.

In 1923, WCAJ put on one of the first attempts at remote control broadcasting that was made in the midwest. A man in Chicago spoke, via telephone lines, through

RADIO STATION WCAJ
NEBRASKA WESLEYAN UNIVERSITY
ESTABLISHED IN 1921

<p>J. C. JENSEN DIRECTOR AND ENGINEER ROBERT H. JENSEN LICENSED OPERATOR RICHARD SMITH CHIEF ANNOUNCER</p>	<p>FACULTY PROGRAM COMMITTEE P. A. ALABASTER PAUL WYB C. J. SMITH ALBERT BIERSON GLEN CALLEN JOHN CARTEL CLAUDE KENNEDY</p>
--	---

LINCOLN, NEBRASKA
October 23, 1931

Mr. C. Robert Powell
732 Bittersweet Place
Chicago, Ill.

Dear Radio Friend:

We thank you very much for the report of reception of the program from station WCAJ which you heard on October 17, 1931. This report is correct according to our station log.

Our regular schedules are: Daily except Friday and Sunday at 10 a.m., Daily except Saturday and Sunday at 3:30 p.m., Monday and Tuesday, 9 - 10 p.m.; Sunday, 8:30 and 11 a.m., and 6 p.m.; Friday DX at 11:30 p.m. Your special attention is called to the continuity, "Collegiate Fantasia," Tuesday at 9:00 p.m.

Reports from listeners on any of our programs are greatly appreciated and promptly acknowledged. May we hear from you often.

Sincerely yours,
J.C. Jensen

JCJ/kr

A QSL letter sent out by WCAJ in 1931.

WCAJ in Lincoln without any special additional equipment.

WCAJ had started out on 833 kHz, eventually using 500 watts there. In 1928, the station was required to shift to 860 kHz; then it shared time with KMMJ on 790 kHz. In 1928, the government moved WCAJ to 590 kHz where it was on a timeshare basis with WOW in Omaha. Unfortunately, WOW was allowed to use the frequency for twenty hours per day. Not only was WCAJ left with a mere four hour schedule, but WOW was asking the government to grant it full time use of 590 kHz.

Jensen was infuriated, writing to the FRC to say that requiring WCAJ to share time with WOW was a "technical blunder . . . neither sought, nor desired, by either party. WOW has always insisted on taking its six-sevenths of the bed in the middle, and now for a second time threatens to kill the smaller bedfellow. Rather than stand by while this murder is contemplated, cannot the Com-

mission make some needed changes in its room arrangements?"

The FRC held hearings. Jensen brought litigation, and made several trips to Washington on behalf of WCAJ until funds for the battle had run out and there seemed little reason to hang on. In July of 1933, the University sold WCAJ to WOW for a mere \$10,000. Although Jensen's career as WCAJ's Chief Engineer and (sometimes) announcer/writer ended, he continued to be active in many fields of science, teaching, and photography until his death in 1957 at age 77.

Will Jensby sent us a 1921 photo of Jensen of 9YD/WCAJ. We also have a QSL letter from WCAJ dated 1931. Note that on Friday nights there was a DX broadcast!

Another Old Time Station Fades Away

At the end of January, a colorful broad-



Harry Carman's ham station, 2EL (shown here in 1924) evolved into local broadcaster WGBB. Harry said the call letters meant "Where Good Broadcasting Begins." The rig shown here ran 50 watts. Receiver was a Grebe. At the end of January this year, WGBB sadly faded into history after 63 years of operation.

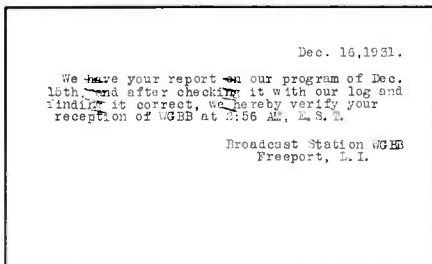
cast pioneer station faded into history. That was WGBB (1240 kHz, 1 kW days, 250 watts nights), Freeport, NY.

WGBB had evolved, in December 1924, from ham station 2EL operated by Harry H. Carman, from his home at 217 Bedell Street. Starting out on 1240 kHz with 100 watts, WGBB called itself *The Voice of Long Island* and *The Voice of The Sunrise Trail*. The station moved to 1230 kHz in 1925, then later to 1210 kHz, then just prior to WWII back again to 1240 kHz. The station sought only to serve its immediate community so, even after most 100 watt stations had gone up to 250 watts, WGBB remained at 100 watts. In 1948, it was one of the nation's few hundred-watt stations.

By the 1960's, WGBB had gone to 1 kW, and later (under new ownership) had dropped its "hometown" format and was playing rock music. The station valiantly continued to do battle in a market filled with more powerful signals, and in a community that seemed not to be very aware of WGBB. It then tried an all-talk format.

Ultimately, WGBB's present owners decided that henceforth, the station would replace its low-rated all-talk format with rock music originating at its popular sister station, WBAB-FM (102.3 FM), Babylon, NY. The station on 1240 kHz became known as WBAB-AM. On WGBB's last day of operation, January 30th, sixty former DJ's, news reporters, anchormen, and members of the audience gathered outside the station to protest and bid farewell to the old station. They were joined by about seventeen WGBB staff members who had just been fired. It was a sad day all around.

We found a rare 1924 photo showing



Pardon the pun, but WGBB's 1931 QSL was nothing to write home about. It was just a hand typed postal card. Still, it was a handy way of verifying by this local broadcaster. (Courtesy Joe Hueter.)

Harry Carman operating his station just before WGBB went on the air. By the way, one of the constant complaints of WGBB staff members, going back to the 1920's, was that the public always had trouble remembering the callsign. Most thought it was WGGB!

From Our Incoming Mail

Last February, we carried a mention of 1950's unlicensed station KDAD in Kansas. That brought in a fascinating and informative letter from professor David Dary of the William A. White School of Journalism and Mass Communications, University of Kansas at Lawrence. Prof. White, as a teenage hobbyist, was the 16 year old operator of KDAD.

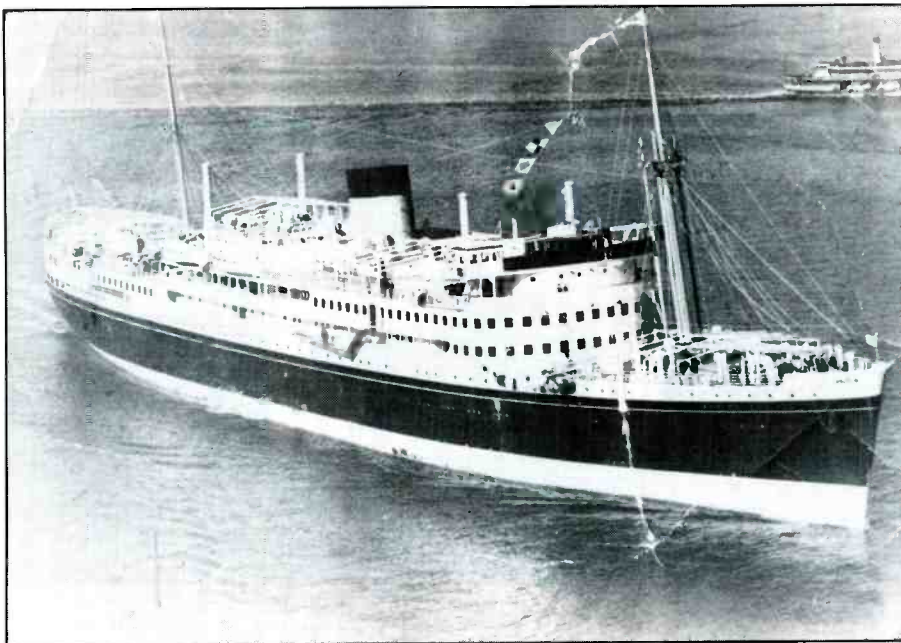
He recalls that the station was a \$6 1-watt phono oscillator purchased from an "Own Your Own Radio Station" ad in a magazine. He set up operations, attached an 18-inch wire for an antenna, and could play both records and voice into the unit. Eventually,

to increase his station range (per the instructions supplied) he hooked the oscillator to his 80-ft. SWL antenna. The instructions said nothing about the possibilities of illegal operation with such an antenna. It took only a few weeks for the FCC to show up, probably as a result of KDAD being reported to the FCC by a neighborhood resident. The FCC engineers told him to close down the station and get a ham ticket.

In 1954 he got that ham ticket. After college, he went into broadcast journalism in Kansas, Texas, and Washington, DC (where he was a reporter and editor with CBS News, later manager of local news for NBC in Washington). In 1967, he went to Kansas and helped build a TV station in Topeka. Then he went to graduate school, and afterwards became a journalism professor. He's also written many books on the American West. He's remained active in SWL'ing as well as ham radio, presently being licensed as W0QDG. Lastly, and most importantly, he likes our scribbles in POP'COMM.

A.J. Haley, K8UJW, of Columbus, OH said that our recent mention of high seas broadcasting in the 1930's on the Australian steamer *Kanimbla* brought back memories. He was on that ship when it was a troop carrier during WWII. Prior to being a troop carrier, the *Kanimbla* was in the Atlantic Ocean and was a heavily armed disguised freighter where it sank much enemy shipping. A.J. passed along a photo of the *Kanimbla*. A.J. wants to know if any of our readers has any information on G.J. Gill, a female DJ from San Francisco and her present whereabouts. Contact him at A.J. Haley, 304 Mashoba Ave., Columbus, OH 43223.

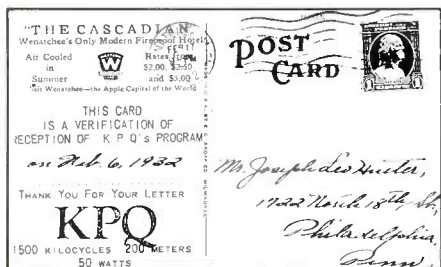
We continue to receive additional info on press station WCX which has been men-



The old "Kanimbla," which was a floating broadcaster prior to entering WWII in service to the Australian Navy. (Courtesy A.J. Haley.)



In Spanga, Sweden stood (or stands) this imposing station with the two large towers. Anybody know anything about what type of station it was (or is), and the details of its operation?



Here's a great catch, a 50 watt broadcaster. That would be KPQ, 1500 kHz from Wenatchee, WA. The station ran low power for a short time. (Courtesy Joe Hueter.)



Home of KPQ in 1932 was the Cascadian Hotel, "Wenatchee's Only Modern Fire-proof Hotel, Air Cooled In The Summer." (Courtesy Joe Hueter.)



The Scranton Police dispatcher at the controls of experimental police station W3XGC about 1937. It was an early user of the 30 to 40 MHz band.

ing further information on the "PW" net can contact Don deNeuf at 602-B Heritage Village, Southbury, CT 06488. Don passed along a highly detailed history of Press Wireless and we hope to dig into this historic company in a future issue.

Thanks to all who have been so helpful with info on WCX.

This Month's Mystery Photo

Next, we come to a photo that we'd like to get some information on from our readers. This shows two towers (about 250-ft. tall) supporting a dipole antenna. The lead-in from the dipole descends to a building located between the towers that seems to have several smaller mast-type towers on its roof.

This photo is on an undated postcard made in Stockholm, Sweden and identifies the photo as "Spanga Radiostationen," which probably roughly translates to "Radio stations in Spanga." Does anyone know where Spanga is located, or the frequency/power of this station, or when it existed? Spanga doesn't appear to be listed in current broadcast or coastal station lists. Each half of the dipole appears to be about 60 meters long.

Watts Watt?

Listeners in Wenatchee, WA know station KPQ as a 5 kW station on 560 kHz. What they probably don't know is that it was at one time a very low powered and rather rare DX catch.

KPQ first began operation in 1928 from 1107 2nd Ave. in Seattle under the ownership of Louis Wasmer and Archie Taft. It ran 100 watts on 1300 kHz in those days. By 1930, the station had moved to Wenatchee, WA under the ownership of the West-coast Broadcasting Company. It then was operating with 100 watts on 650 kHz from the Cascadian Hotel (rates from \$2, \$2.50, and \$3). Within a year, however, KPQ was operating on 1500 kHz with a mere 50 watts. By 1935 it was back to 100 watts

tioned here several times in the past. Bob Leech, W7LSO, notes that WCX used to supply news for American embassies around the globe. He wonders if Fred Becker, who wrote to us previously about WCX, is the same fellow he used to work with at RCA coastal station WCC. Bob spent 43 years as an operator at RCA coastal stations. Fred, or any of the other RCA ops may wish to contact Bob at 4201 E. Monte Vista Dr., Apr. L-107, Tucson, AZ 85712.

Bill Cooley, Hagerstown, MD notes that

complete WCX/WJS sked and frequency information was published in *QST Magazine*, issue of February, 1941.

Donald K. deNeuf, WA1SPM, points out that many of the old WCX press operators and engineers are still active hams and participate daily in a CW "PW" (Press Wireless) net on the 20 meter band. Included in the net are Dalt Bergstedt, W6AUH; Dick Hilferty, W5TOS; Bill Livingstone, N5LV; Forest Bartlett, W6OWP; Lloyd Nichols, W2LXT/4; and Don, himself. Those seek-

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LISBOA - Portugal

There were apparently two concurrent CT1AA's. This one operated as "Radio Cultural" with 2 kW on several shortwave frequencies. (Courtesy Howard Kemp.)

again, and by WWII it had shifted to 560 kHz and was permitted to up its power to a full kW. In later years this was again increased to 5 kW.

Joe Heuter of Philadelphia was lucky enough to snag KPQ in 1932 when it was running only 50 watts. A great DX catch, and we thank Joe for sharing with us the QSL that verified that feat.

Forward Thinking Police

During the 1930's most police communications took place between 1500 and 2500 kHz. Late in the 1930's, several experimental police frequencies were made available in the 31 to 41 MHz band for departments daring enough to try using VHF. One of those departments was that of Scranton, PA which was operating in this band with the experimental callsign W3XGC by about 1937. A photo of this station shows the Scranton Police Dept. dispatcher at his RCA transmitter.

Most police departments began moving to this new band just after WWII, but by that time the Scranton PD had moved into yet higher frequencies. By 1946, under the callsign WQTV, the agency was operating on 156.45 MHz. The callsign on that frequency was later changed to KGB254.

In line with the agency's quest to keep its comms updated, a totally new system is presently being installed in Scranton. This is a \$450,000 advanced General Electric system that is expected to be fully operational in early 1989. It will feature two police channels, two detective channels, an emergency management channel, a public works channel, and two additional frequencies. Each individual officer will carry a portable that can respond to selective calling tones. Portables and mobiles will also be able to communicate directly with one another by simplex on the repeater output channel. The entire system has the potential for installing scramblers at some point in the future.

Thanks to Tom Finnegan of Scranton for letting us know about this new system. We wonder what Motorola's reaction was to this sophisticated system being grabbed off by its rival, General Electric! Ho boy, what a coup!

Portuguese Shortwave Station

Howard Kemp, Laconia, NH sent in a 1930's QSL card from broadcaster CT1AA, Lisbon, Portugal. In the mid-1930's, CT1AA was widely reported with its 2 kW transmitters on 9600, 9650, and 15350 kHz. The station called itself *Radio Cultural* and it had an interval signal consisting of three cuckoos. The owner of this station was Abilio Nunes dos Santos, Jr.

Although it's somewhat unusual to have the same callsign assigned to two completely different stations simultaneously, CT1AA was also the callsign of a 20 kW medium-wave station calling itself *Emisora Nacional*. This station was also in Lisbon in the mid-1930's, but appears to be a completely different operation.

"The" DX Catch of Catches

Every generation of DX'ers reveres that one special legendary DX that somehow stands out from all of the others as "the" one to hear. I suppose that today, many might consider it to be the Falkland Islands Broadcasting Service (some might offer other suggestions). Going back to the earliest days of broadcasting, there was that one solitary station in Cuba that was "the" foreign DX catch of the era. It was station 6KW in the city of Tuinucu.

Station 6KW was owned and operated by an American who was a well-known ham operator. He was Frank H. Jones (his Cuban ham call in the 1930's was CO6OM, although he had other callsigns from other nations.) His broadcast station was operating in 1923 on 950 kHz. By 1926, it had hop-

CERTIFICATE
FOR
LONG DISTANCE
RADIOPHONE RECEPTION
OF STATION

6 K W
OF
FRANK H. JONES
TUINUCÚ
CUBA

YOUR REPORTED RECEPTION
OF TRANSMISSION FROM 6 K W
HAS BEEN CHECKED WITH OUR
LOG AND FOUND TO BE CORRECT,
FOR THE DATE OF.

Dec. 5 1924

(SIGNED) Frank H. Jones
OWNER AND OPERATOR

CERTIFICATE NUMBER

Front cover of the 1924 QSL from Cuban broadcaster 6KW, DX catch of catches for 1923-24.

ped over to 880 kHz and was pouring out a 4 kW signal. As broadcasting became more formalized in Cuba, 1931 saw the station down to 100 watts on 790 kHz and using the callsign CMHC. The station went silent in the early 1930's.

The slogan of 6KW was. "If you hear the koo of the cuckoo, you are in Tuinucu." That was followed by (you guessed it, a cuckoo). Jones went out of his way to endear the station to DX listeners, sending out certificate booklet QSL's with descriptive facts about 6KW and Cuba. It was filled with little gems of Jones' wit, such as the following poem: "When you hear the cuckoo-coo, it's 6KW; Means you've left the States and you are listening to Tuinucu. The cuckoo lives on Bacardi and somehow that appeals to me; And when feeling dry, I wish that I were cuckoo like he."

Indeed, 6KW's QSL was the hottest foreign DX anybody could hope to catch in 1923 and 1924. If you missed out on getting a 6KW veri, don't feel badly 'cause we have one on tap to share with you. A wonderful souvenir of the very roots of broadcasting and DX reception.

Well, I don't think I can top 6KW and so I won't even try. I'll just pull the master switch and look forward to receiving any old timey broadcasting and communications, photos, books, magazines, photocopies of QSL's, etc. But look for us again next issue, same time, same station.

PC

Secrets of Shortwave Espionage

An Update On Those Mystery Transmissions – Part II

BY DON SCHIMMEL



To lead-off this final part of the series, I would like to include some excerpts from "The FBI-KGB War, A Special Agent's Story," by Robert J. Lamphere and Tom Schachtman. In their book, the authors describe a numbers transmission called the "Allo" broadcasts.

"The 'Allo' broadcasts were known to originate in Russia on different frequencies and at various times during the week. An announcer would come on the air and say, in accented English, 'Allo, Allo,' and then recite groups of five-digit numbers. These broadcasts had been monitored by the NSA and other communications intelligence people for some time; the number-groups had never been deciphered."

Perhaps, many of you will recall the stories in the press, in 1957, of the arrest of Soviet agent, Rudolf Abel, and the subsequent information relating to the discovery by a newsboy of a hollowed-out nickel he had received in change from a customer. The nickel hid a piece of microfilm on which was an enciphered message of 207 five-figure coded groups.

In the hotel room occupied by Abel, a great deal of compromising material was found, including a 250 page OTP (One-time Cipher Pad) hidden in a block of wood,

descriptions of meeting procedures and places, mailing addresses, hollowed-out nuts, bolts and nails. Among the eighteen microfilms found in a hollowed-out pencil, was the 1957 schedule for transmissions for each month with Primary and Secondary broadcasts listed with dates, times and frequencies. This data provided confirmation that the "Allo" broadcasts were indeed intended for Abel.

The OTP, plus other materials and information obtained from Reino Hayhanen, an assistant to Colonel Abel, when he defected to the US Embassy in Paris, enabled the FBI to read the cipher message which was on the microfilm hidden in the now-famous hollow nickel.

For those interested, I can recommend two additional titles that have material pertaining to the Abel case. "The Code-Breakers" by David Kahn and "The Secret War" by Sanche de Gramont. The latter devotes an entire chapter to the subject. The account is both fascinating and enlightening. Going into great detail, it provides a vivid insight into the activities of this Soviet Master Spy.

The lists which follow present additional frequencies and schedules for various "Spy Numbers" transmissions.

English

There is a wide variety of the English announced numbers broadcasts. For some of them, sections of the transmission are separated through the use of tones or beeps. Here is an example of one where the callup has a two letter (phoneticized) indicator repeated followed by beeps or tones.

EXAMPLE: ALFA ROMEO
(Beeps)
179 179 74
ATTENTION 179 179 74
(TEXT)
END

As in other broadcast formats, the trinome 179 is thought to be an addressee designator, while the dinome 74 is the group count of the message.

In the EE/YL 3/2F transmissions there is a definite pause between the 3rd and 4th figures of each group.

The EE/YL 4F transmissions start out with a trinome followed by counting from 1 to 0 and then into the message.

Prior to a EE/YL 5F transmission, the letter N is sent in Morse code for 4-5 minutes followed by the text of 5F groups with the groups repeated twice. The sign off is usually the word END.

While these transmissions can be monitored in the AM mode, many of them are reduced carrier USB and can be heard much better in the USB position of your receiver.

The reports associated with these English language broadcast intercepts indicate the transmissions are originating at many different locations.

GERMAN

The formats for the German language numbers broadcasts are similar to those in use for the Spanish and English transmissions. Here again the modes seen are AM/USB.

The GG/YL 3/2F broadcasts start off with a trinome, counting 1-0, ten beeps, group count (Gruppen) and into the text.

The GG/YL 5F transmissions usually begin with chimes like those of a music box and then the following sequence:

ACHTUNG
(Trinome)
GRUPPEN ____
(TEXT)
ENDE

**English – Female Announcer
AM Mode 3/2F Groups**

FREQUENCY	SCHEDULE	DAY	ADDRESSEE(S)
5090	2300	TUE/SAT	545
5090	0000	TUE	853
5090	1600	SUN	259
6785	0100	FRI	130
6827	2200	WED	742
6840	1600	SUN	259
6840	2300	MON	783, 545
6875	0200	SAT	-
7588	0000	TUE	250
7588	0000	WED	243, 343
7588	0030	SUN	-
7588	0030	MON	-
7588	0100	SAT	329
7588	2300	TUE	336
7588	2300	THU	591

**English – Female Announcer
AM Mode 4F Groups**

FREQUENCY	SCHEDULE	DAY	ADDRESSEE(S)
5090	2300	WED	259
7588	2200	MON	591

**English – Female Announcer
AM Mode 5F Groups**

FREQUENCY	SCHEDULE	DAY	ADDRESSEE(S)
7511	1130	FRI	-
7520	1130	FRI	179
13844	1800	FRI	369
14440	1700	SUN	164
14440	1700	SAT	-
14766	1830	FRI	369

**English – Male Announcer
AM Mode 5F Groups**

FREQUENCY	SCHEDULE	DAY	ADDRESSEE(S)
7380	0200	SAT	-

**German – Female Announcer
AM Mode 3/2F Groups**

FREQUENCY	SCHEDULE	DAY	ADDRESSEE(S)
6708	0300	THU	996
10655	1900	THU	416

**German – Female Announcer
AM Mode 5F Groups**

FREQUENCY	SCHEDULE	DAY	ADDRESSEE(S)
7405	0000	SUN-THU	PAPA NOVEMBER
7405	1200	MON	PAPA NOVEMBER
11108	1800	SAT	PAPA NOVEMBER
11238	2100	MON	902
11618	1300	MON	-
12138	1400	TUE	-

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**Czech – Female Announcer
AM Mode 5F Groups**

FREQUENCY	SCHEDULE	DAY	ADDRESSEE(S)
6639	2200	SAT	-
6675	2200	TUE	-
6675	2300	WED, THU	-
6675	2300	MON	-
8067	2300	WED	-

**CW
4F Groups**

FREQUENCY	SCHEDULE	DAY
6840*	0330	DAILY
9958	1730	DAILY
11605	0330	DAILY
16310	2000	TUE, THU, SAT

* Dualing with 11605

**CW
5F Groups**

FREQUENCY	SCHEDULE	DAY
5090*	0000	TUE, THU
6840	0000	TUE, THU
6865	0200	TUE, SAT
8874	0200	SAT
8874	0500	MON

* Dualing with 6840



The Cuban government recently released this photo it claims to represent espionage equipment turned in by Cuban double agents. Note the all-band portable receiver at the right. The VCR cassettes are actually hollow cases.

Another version is where the callup is a two letter (phoneticized) indicator such as PAPA NOVEMBER. Sometimes you will observe flute notes being used to separate parts of the transmission. After the callup, a trinome indicator is sent followed by the text with the groups repeated twice.

Through the Radio Direction Finding ef-

forts of some individuals, the German language transmissions are reportedly coming from Nauen, East Germany.

CZECH

This Czech language broadcast starts off with military type drum and bugle music which lasts for about 5 minutes and then in-

to the 5F groups. The usual procedure is to send each group twice.

It is said that these transmissions are coming from transmitters located in Vratislawice, Czechoslovakia.

CW BROADCASTS

The 4F transmissions are usually sent on a pair of frequencies and commence with a callup of several 4-character groups. The traffic is sent utilizing characters from the following cut number system:

1 2 3 4 5 6 7 8 9 0
A U V 4 E 6 B D N T

A somewhat different cut number system is in use for the transmission of the messages in 5F groups. This system looks like this:

1 2 3 4 5 6 7 8 9 0
A N D U W R I G M T

These cut numbers are also used for the addressee designator and the group count. The latter would appear as in this example:

ADURT

This would break out to be the equivalent of 134 60 or in other words, the addressee is Identify 134 and the message contains 60 groups. After completing the message, the station goes down with AR AR AR VA.

The majority of the CW transmissions are suspected of coming from Cuba but some broadcasts have been reported as coming from the US Army installation in Virginia. **PC**

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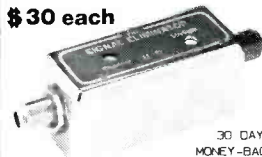
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INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

An Interview With Colonel Brian O'Conner

With any luck, the US Space Shuttle will soon be in operation. With the launch of the next Shuttle will come opportunities to monitor signals from not only the Shuttle, but support ships and aircraft, ground stations and even the satellites that the Shuttle crew will launch. In anticipation of the next Shuttle launch, Satellite View will be taking a close look at NASA's space communications for the next two months. We will begin by giving an overview of Shuttle communications from an astronaut's perspective. I talked with NASA pilot, Colonel Brian O'Conner. He piloted STS 61-B, the second night launch of Atlantis, in November of 1985. He was also an investigator during the Challenger accident review. He now serves as Chairman of NASA's newly formed Manned Space Flight Safety Panel. Colonel O'Conner, a Marine Pilot, joined NASA in June of 1980. During a recent conversation, I asked Colonel O'Conner the following questions about how communications were handled during a Shuttle mission.

Q: What were the last 60 seconds before lift-off like?

A: "This being my first flight, I found myself looking over at the Commander several times to see if things were going as planned. When I heard those familiar words coming over the communications loop, those we had heard so often during training, I began to realize that this was not a test, this was not a drill, but the real thing. I knew we were about to go, but it was still with a sense of surprise that I felt the solid rocket boosters ignite."

Q: During the launch, what type of communications are going on?

A: "Our primary communications are on the S-band (1,700 to 2,300 MHz downlink). During ascent, communications are UHF point-to-point. As we reach orbit, we pick-up an S-band satellite link through TDRS-A. This is done while over the Atlantic."

Q: How long does it take to reach orbit?

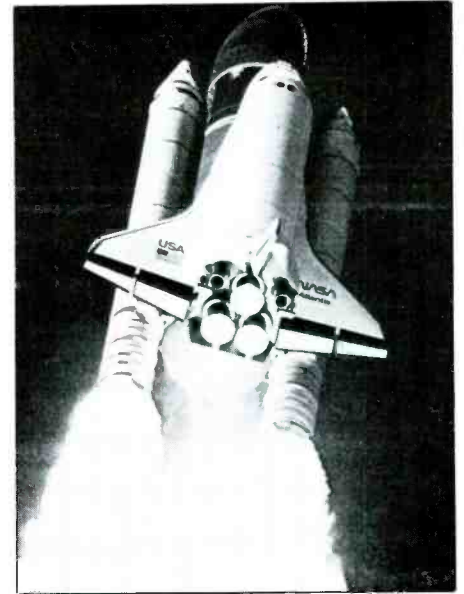
A: "About 8 minutes."

Q: What is the most unique thing that happened during your flight?

A: "I remember the feeling I had when flying in formation with a satellite we had just deployed. Flying around the earth at 17,000 mph and watching this small satellite staying beside you as you watch the Earth move beneath you is unique. As I flew maneuvered around the satellite, I began to realize the uniqueness of the moment. As a



Colonel Brian O'Connor.



Atlantis clears the tower.

Marine pilot, I'm used to flying in formation, but never like this before."

Q: Once you reach orbit, who controls radio communications?

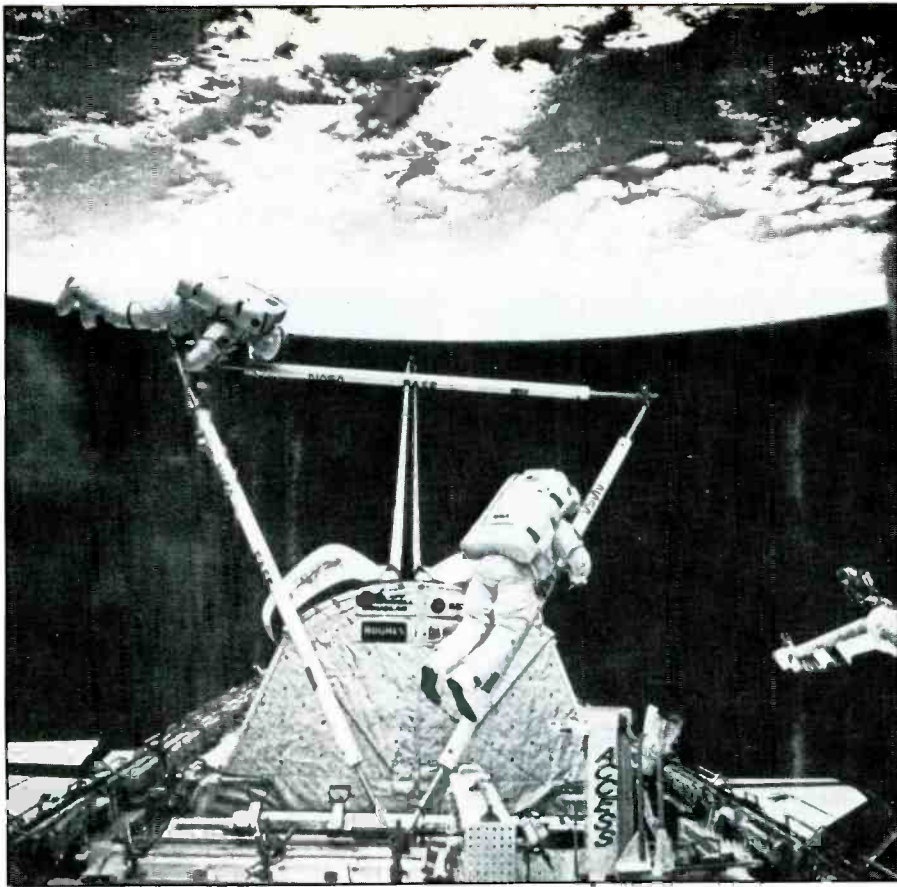
A: "The Pilot usually. We use the TDRS for about half the flight or half of each orbit. During that time TDRS is over our horizon. Our mission used all S-band communications as our Ku-band antenna was disabled on a previous mission and not repaired in time for our flight."

Q: How are communications routed when the Shuttle is in orbit?

A: "The Shuttle transmits signals to TDRS, which then sends it to White Sands, New Mexico. When out of range of the satellite, communications are point-to-point and are directed to various ground stations. It takes 90 minutes to complete an orbit. TDRS is over our horizon for approximately 45 minutes. The Atlantis carries four S-band antennas and at any moment one of these is

Military Satellite Frequency Allocations

Satellite Bands	Crosslink bands	Ground Station Ranging/ Command & Control TLM
235.0 - 322.0 MHz		1,435 - 1,535 MHz uplink
335.4 - 399.9 MHz	22.0 - 23.5 GHz	1,761 - 1,842 MHz uplink & downlink
	25.2 - 27.5 GHz	1,990 - 2,120 MHz uplink
1,350 - 1,400 MHz		
	31.8 - 32.3 GHz	2,025 - 2,110 MHz crosslink
7,250 - 7,750 MHz		
7,900 - 8,400 MHz		7,115 - 7,125 MHz uplink & downlink
		7,450 - 7,550 MHz uplink & downlink
20.2 - 21.1 GHz		
22.5 - 23.5 GHz		
30.0 - 31.0 GHz		
39.5 - 40.5 GHz		
43.5 - 45.5 GHz		
50.4 - 51.4 GHz		



Space shuttle mission 61-B onboard view — Atlantis.

pointed directly at TDRS regardless of the Shuttle's attitude. After the signals are sent to White Sands, they go to Goddard Space Flight Center through another satellite system (a classified system, SDS). The radio transmissions are then sent via commercial satellite link (SatComm F2) to Johnson Space Center. When out of range of TDRS, communications are routed back to Goddard from ground stations by yet another satellite system (again unnamed)."

Q: Does ground control monitor the crew's activity by TV?

A: "Only during special events. TV broadcast take special preparation at the tracking stations. TV is only broadcast on Ku-band, sometimes on S-band. Since we were using S-band only we would have to have line of sight on each ground station for TV."

Q: Who controls communications during re-entry?

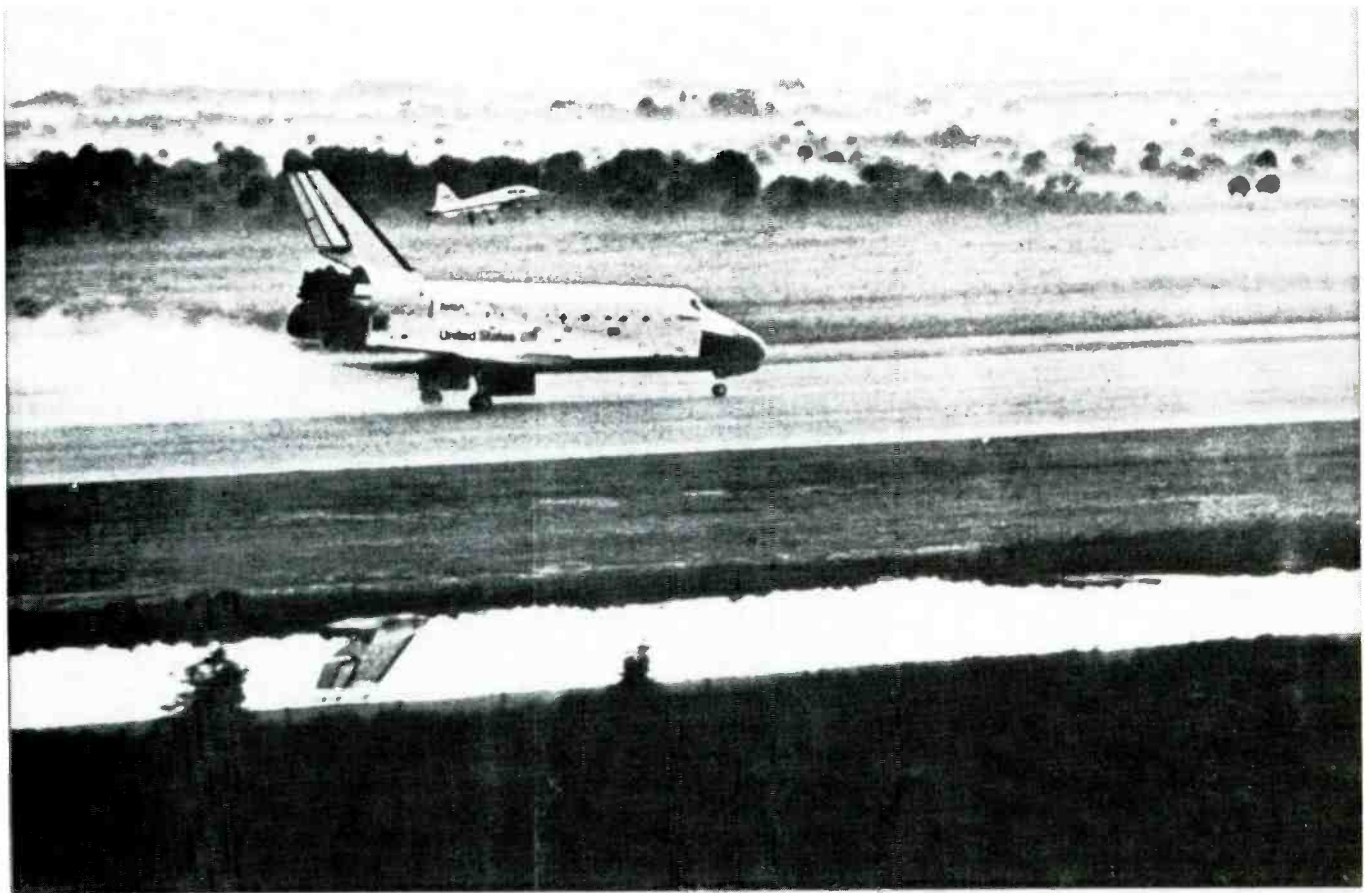
A: "That is usually split between the Commander and Pilot depending on the context of communications with ground control."

Q: Is the whole crew connected to the radio communications at this time?

A: "Yes, during re-entry all the crew is on line, but only the Pilot and Commander speak."

Q: As Chairman of NASA's new safety panel would you be willing to fly the next Shuttle?

A: "Yes, we are doing some important things with re-structuring management,





The crew of the space shuttle mission 61-B.

Colonel O'Conner, his wife Susan and their two sons, Thomas and Kevin, make their home in Houston, Texas. I would like to thank Colonel O'Conner for granting POP'COMM this exclusive interview.

Letters

Our first letter this month comes from Ken MacLeod, WDX1IEB, of Westboro, Massachusetts. Ken asks about voice communications he is hearing on a frequency of 135.535 and 135.600 MHz. This could be one of several satellites using the "Low band." It's most likely NASA's aging ATS (Advanced Technology Satellites). If any one else can confirm this intercept, I would like to know. Ken and his well equipped satellite station can be seen below. He would like to exchange information and frequency lists with other Satellite View readers. You can reach him at 14 Flanders Rd., Westboro, Mass., 01581.

Don Creame of Portland, Oregon wants to know why he cannot find the FANAS (Forecast for Ascending Node for Automatic Satellites) on any of the HF frequencies listed as FANAS. This is a service of the Russian weather weather satellites. I'm working on the FANAS mystery for you Don and will publish my findings in an upcoming article on weather satellites. The Frequencies Don listed are 3.33, 5.14, 7.68, 9.19 and 13.53 MHz. Any reader input is welcome.

From British Columbia Canada, Don Cameron, VE7FEVB, writes to ask for more technical pieces on TVRO. He would also remind Satellite View readers that TVRO equipment, especially on the used market, is becoming more affordable. A few hundred dollars and some luck and you can set up a well equipped station.

Send your comments and suggestions to Satellite View, Popular Communications, 76 North Broadway, Hicksville, New York 11801 . . . See you next month. **PC**

safety procedures and equipment, so once we start-up again we will be in better shape than we were before the accident."

Q: Do you expect to work on an American space station before the turn of the century?

A: "Yes, I expect to fly the Shuttle to a completed space station before I retire, perhaps as early as 1996.

Q: Do you think a joint US/USSR mission of any type is possible before the turn of the century?

A: "That is a political question. If the Presi-

dent decides to move in that direction, I'm sure we have the people to do the job."

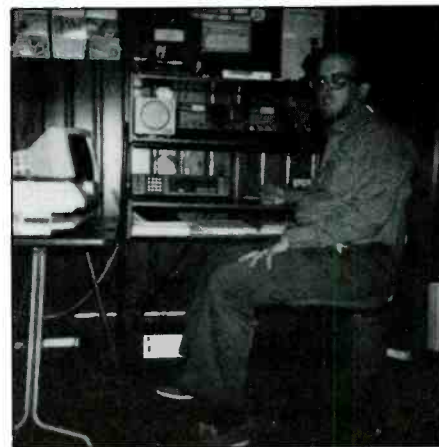
During the STS 61-B mission, the crew launched three communications satellites and practiced new construction techniques during EVA. These techniques will be used in the construction of a US space station. Atlantis was scheduled to carry the Galileo and Jupiter space probes as well as the Hubble Space telescope into orbit, before the Challenger accident.

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Westboro, Mass. 01581 U.S.A.
14 Flanders Road



Kenneth E. MacLeod



Ken MacLeod and his well-equipped satellite station.

PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Fanon Courier Introduces New VHF Handheld Transceivers

Tustin, CA . . . Fanon Courier Announced Its Entry Into The Land Mobile Market With The Introduction Of A New Professional Handheld VFM Transceiver, The Courier Procom.

The one watt-single channel COURIER PROCOM, with its range of up to 2 miles, is ideal for use by the professional—on construction sites, in factories, on fire or disaster sites by public safety personnel, and for sports and recreational activities by coaches and supervisors.

The COURIER PROCOM design specifications assures reliable performance with superior voice reproduction. PROCOM operates on business band frequencies and is available in three frequencies.

Frequency A 152.625 MHz
Frequency B 154.579 MHz
Frequency C 154.600 MHz

Each PROCOM comes with one set of installed crystals of one of the above frequencies. Also included is a rechargeable nickel cadmium battery pack, A.C. battery charger, flexible antenna and F.C.C. license application.

COURIER PROCOM features include an adjustable squelch control with tone squelch ON-OFF switch, volume control with power ON-OFF switch, jacks for A.C. charger and external antenna.

COURIER PROCOM is housed in a sturdy, high impact, plastic textured case and weighs about 1 lb. Its dimensions are 7"H x 2½"W x 1¾" deep. Suggested retail price \$189.95.

- Optional accessories available are:
- * PRIVA-COM-1 Plug-in adjustable CTCSS tone module to exclude unwanted conversations.
 - * CAT-12 All leather carry case with belt loop and plastic rain shield.
 - * AUC-12 Auto cigarette lighter charger adaptor.
 - * ANT-MI Magnets mount antenna.

The COURIER PROCOM will be marketed through Communications Equipment Specialists and Electronics Distributors. Fanon Courier also manufactures a broad range of Personal Communications and Commercial Sound Products, including CB Radios (Am and SSB), FM Scanning Monitor Receivers, P.A. Amplifier Systems, Intercoms and Megaphones.

For further information write Fanon-Courier, 14281 Chambers Rd., Tustin, California 92680, (714) 669-1081 or circle number 108 on our readers' service card.



New Scanner

Regency Electronics introduces the R2060, a new generation of home scanners featuring the most sophisticated technology available today.

Regency's patented "Turbo Scan" tops the list of R2060 features. "Turbo Scan" allows the R2060 to scan at a rate of up to 50 channels per second. A special Weather Alert key provides instant awareness of severe weather. At the touch of a button, the R2060 silently monitors the weather frequencies, broadcasting severe weather alerts in plenty of time to take safety precautions.

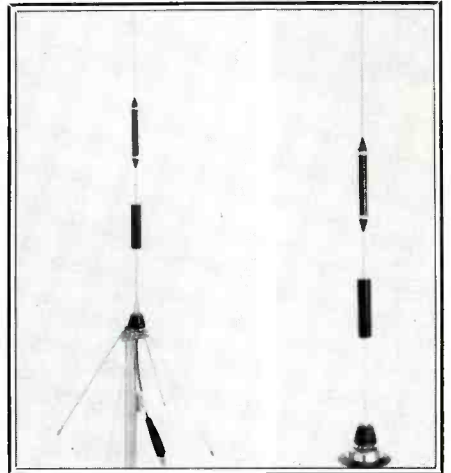
The R2060 incorporates seven of the most popular bands, including: VHF Low Band, 30-50 MHz; VHF Amateur, 144-148 MHz; VHF High band, 148-174 MHz; UHF Low Band, 406-440 MHz; UHF Amateur, 440-450 MHz; UHF Standard, 450-470 MHz; UHF Extended, 470-522 MHz.

60 Channel programmability provides instant access to favorite frequencies either directly or in the scan mode. Bank scanning provides easy access to four groups of consecutive channels. A separate set of non-

programmable channels provides exclusive scanning of NOAA weather frequencies in the U.S. and Canada. Additional features include Priority, Lockout, Delay and Hold.

The R2060 also sports a newly designed keypad with soft-touch controls that are easy to read and simple to operate. Both the volume and squelch are operated with sliding controls. A dual intensity vacuum fluorescent display provides all necessary information.

The R2060 has a suggested retail price of \$249.95. For more information about this sophisticated home scanner, contact Regency Electronics, 7707 Records St., Indianapolis, IN 46226, or circle number 105 on your readers' service card.



All-Band Scanner Antennas With Enhanced 800 MHz Performance

All-band scanner antennas that provide enhanced performance up to 1000 MHz are now available from The Antenna Specialists Company, Models MON-52 (mobile) and MON-58 (base station) feature MICRO-CHOKETM, an exclusive A/S development that provides pinpoint resonance at 800 MHz scanning frequencies and concentrated beam focus at low radiation angles for maximum range monitoring. The enhanced 800 MHz performance will allow scanners to pick up police, fire and other communications operating on those frequencies with much less distortion than conventional all-band antennas. The antennas offer coverage from 25-1000 MHz with excellent performance at low and high VHF ranges and the UHF bands, and are manufactured of professional-grade materials. The mobile version has a no holes, "Quick Grip" trunk lid mount for easy installation and includes coax cable with installed pin plug. The base station antenna offers easy

one-clamp installation. For more information contact: Marketing Department, The Antenna Specialists Co., 30500 Bruce Industrial Parkway, Cleveland, Oh 44139-3996, or circle number 104 on our readers' service card.



Revolutionary HF Base Station Transceiver

A highly advanced ham and SWL device is here with the introduction of ICOM's new IC-781 HF base station transceiver. Every feature imaginable and some you wouldn't even have dreamed of is included in the IC-781.

The IC-781 operates all modes and bands 160 to 10 meters with a band spectrum scope that displays signals in a 50/100/200 KHz range of your operating frequency. This is all indicated on the multi-function five inch CRT screen which displays frequencies, modes, memory contents, operating notes, RIT, two menu screens and includes subdisplays for Packet and RTTY.

The IC-781 also features:

- **Dual Band Watch.** Simultaneously receives two frequencies in the same band. A single button activates both VFO's for dual receive, and a "balance" control varies A/B levels.
- **Twin Passband Tuning** with separate controls for second and third IF stages. Increases selectivity and narrows bandwidth.
- **99 Tunable Memories.** Operates like 99 last frequency remembering VFO's! Re-program quickly or leave your permanent frequency selections in place and simply retune. All memories can be retuned, yet instantly return to the original memory channel selection. Even the original filter selections remain unchanged!
- **All Wide and Narrow Filters included.** Independent selection of four filters for super DX'ing flexibility!
- **Direct Keyboard Entry.** Don't feel like dialing in a frequency? Just program it in on the IC-781's user friendly front panel keyboard.
- **150 Watts Output.**
- **Built-In Power Supply.** 100% duty rated, AC Supply, with super silent cooling fan.
- **Dual Noise Blanker.** Includes MCF filter plus width and level controls.
- **Five Multi-Function Timers.** Three on/off modes and two sleep modes, have your IC-781 warmed up and ready to go when you get home from work!
- **Two Internal Clocks.** Display the local time and program in any time zone in the world for fast QSO reference.

The IC-781 comes standard with everything else you can think of:

Built-in high speed automatic antenna tuner, iambic keyer, semi-automatic or full QSK CW break-in to 60 wpm, Audio Peaking Filter, RF speech processor, multiscanning, 105 dB dynamic range receiver that continuously tunes 100 KHz to 30 MHz, plus exceptional frequency control. It's a total communications system in one package!

For more info, contact ICOM America, Inc., P.O. Box C-90029, Bellevue, WA 98009-9029, or circle 103 on our readers' service card.

New Technician Class Course

The amateur radio Technician class license is now more popular than ever. Thanks to Novice enhancement, the new Technician class license is just 25 questions away. Every Novice wants it!

"The FCC acted favorably on my petition comments about a shorter Tech test," comments Gordon West, well-known instructor and writer. "It's a natural for Novices to obtain the Technician class license to receive

2-meter privileges. With only 25 multiple-choice questions on the test, it's a snap in just two weeks," adds West.

The new Gordon West Technician class theory course consists of two audio theory cassettes plus the brand new West-written Technician class theory book. The book and tapes are housed in a white vinyl carrying case. The course also contains \$50 in equipment upgrade certificates plus colored world maps and the new colored worldwide and VHF spectrum charts.

"My new Technician class book is the only one on the market devoted exclusively to the Technician class license. The two audio cassettes parallel the book and also give the 'sounds' of RTTY, 1200 baud packet, plus fascinating recordings of skip and tropo propagation. It's an enjoyable way to listen and read for the Technician class license," adds West.

This course is available from Radio School dealers throughout the country for \$19.95. It may also be ordered direct from Radio School, Inc., 2414 College Drive, Costa Mesa, California 92626. Add \$2.00 for postage or circle number 102 on our readers service card.

PC

YOU AIN'T HEARD NOTHIN'...YET!

Since 1967, CRB Research has been the world's leading publisher and supplier of unique hobby and professional books and information including:

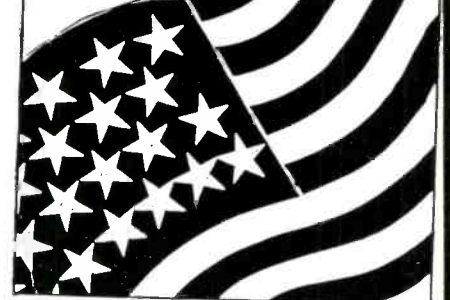
- Scanner Frequency Guides
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- Military/Federal Communications
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THE 'TOP SECRET' REGISTRY OF U.S. GOVERNMENT RADIO FREQUENCIES

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CRB RESEARCH

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CIRCLE 12 ON READER SERVICE CARD

27 MHz COMMUNICATIONS ACTIVITIES

Midland International introduced a limited edition Gold Power Max CB radio as part of its celebration of the 30th Anniversary of CB radio.

The professional class 40-channel CB transceiver, model 77-250G, has 24 KT gold covered knobs and special gold lettering and accents on both the radio and the microphone. The limited edition also features new high-intensity amber readouts and an all black, high-tech face.

In addition to its special features, the Gold Power Max offers advanced CB technology. An all new transmitter with high level modulation provides outstanding talk power. A tuned dual gate Mos Fet RF amplifier improves signal to noise ratio for excellent sensitivity. A highly selective dual conversion superheterodyne receiver with crystal and ceramic filtering offers superb adjacent channel rejection.

The unit also features ETR frequency control for pinpoint channel accuracy; switchable ANL to eliminate reception background noise; a switchable Dynamic Noise Filter to cut high level engine noise; seven-state, multi-colored S/RF/Modulation/SWR electronic metering; variable microphone gain control; variable RF gain control; an SWR calibration system to monitor antenna performance; instant Channel 9 and 19 memory access; and a slide-in, slide-out mounting system with 30° vertical and horizontal adjustment capability.

The special Gold Power Max is a limited edition for 1988. Suggested retail price is \$279.95. For more information about Midland's Model 77-250G, contact Midland International, Consumer Communications Division, 1690 North Topping, Kansas City, MO 64120.

Electron Processing, Inc. announced an addition to their line of receiver preamps. Dubbed "RFTR SIGNAL INTENSIFIER" this new model is specifically configured to improve the coverage of CB transceivers by amplifying the received signals to improve reception. The RFTR allows CB operators a LEGAL means of improving range. The FCC limits only the transmitter power but not the receive sensitivity. By making the CB receiver more sensitive with an RFTR it will appear as if all your friends were running illegal 100 watt linears!

The RFTR installs simply in the antenna cable of any (AM or SSB) CB transceiver and connects to the units 12 volt power supply. Received signals are increased a minimum of 13db. By means of an internal relay, the preamp is automatically bypassed when transmitting. Insertion loss and VSWR are negligible and the unit draws



Midland's limited edition Model 77-250G is sure to be a collectors' item in the future.

only 80 ma at 10-15 volts DC. Its priced at \$49.95.

For additional information contact the Sales Department, Electron Processing, Inc. at P.O. Box 708, Medford, NY 11763.

Licensed To Yak

Two CB'ers from Mountain Home, ID who prefer to be known as J.B. and B.A. cast their votes for the FCC to bring back CB licenses. They complain that in their operating area there's no shortage of CB truckers running 100 watt linears and stepping on everybody running legal rigs. Also, the channels are loaded with little kids and teenyboppers who seem to take delight at seeing how annoying they can be on the channels. The two operators who wrote to us say that licensing would let the FCC know how popular CB has again become, and charging a license fee might allow the FCC to use the money for CB enforcement purposes. Do our other readers have any opinions on this?

One observation on my behalf, if I may. License fees paid to the FCC aren't kept by that agency for its own use. They are tossed into the main federal kitty, along with all other payments made to various branches of the government. When the federal government prepares its annual budget, all agencies (including the FCC) are allocated operating expenses from the general fund.

Out of Bounds?

Richard E. Draper, Greer, SC monitors all frequencies between 150 kHz and 550 MHz. Says that when he tunes certain fre-

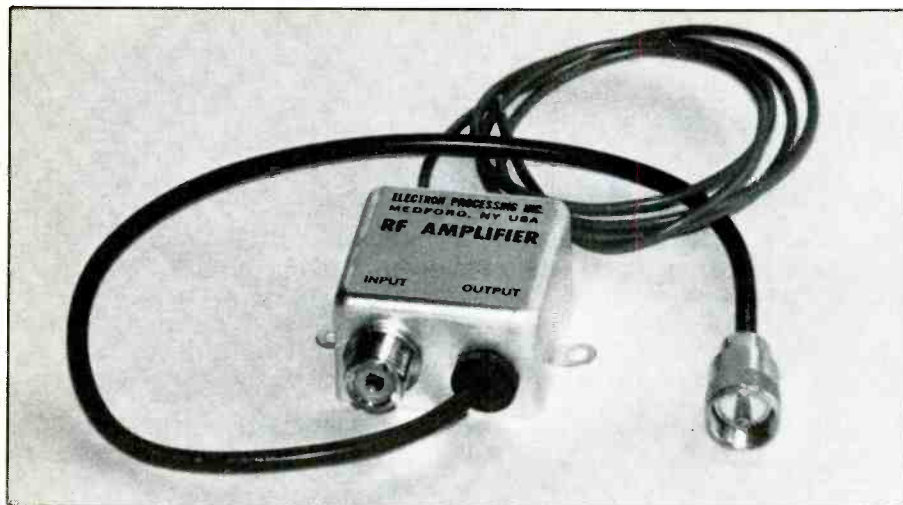
quencies below CB (for instance, 26.795, 26.855, 26.875, 26.885, 26.895, and 26.915 kHz), he hears lots of AM-mode two-way communications. Some stations said they were in rural areas near his hometown, other signals were arriving via skip propagation. Richard reports that although they sound like they're CB'ers, they are operating on frequencies below CB Channel 1 (26.965 MHz). Most of their discussions relate to technical matters.

The band running from about 26.600 to 26.960 MHz has been used since the mid-1960's for unlicensed AM-mode two-way communications. These operators (plus those using SSB in the 27.410 to 27.995 MHz band) are generally called *Freebanders* or *Outbanders*. The FCC has made many unsuccessful attempts to evict them from their airwaves. They are often referred to as "unlicensed CB'ers," probably because their communications are similar in style and substance to those operating on the authorized CB channels.

In fact, all CB'ers are unlicensed these days and the only things that makes them "CB'ers" is the fact that they operate on channels allocated to the CB service. Anybody not operating on those channels isn't any kind of a CB'er. Anybody without a license is just as much an "unlicensed ham" or an "unlicensed business band station" as anything else. Most *Outbanders* I've heard from say that they're using ham gear, anyway.

Card Swapper

John Jesse, SSB Network member SSB-3A32, of 727 Webster, Mexico, MO



This CB power booster is legal because it doesn't affect transmitter power.

65265 casts his vote for this column to regularly include a listing of operators who swap CB QSL cards. As you may have guessed, John is one who is anxious to swap those pasteboards with other CB'ers. Any readers who are into this aspect of CB'ing are invited to send a card along to John, and also one to us here at the column. If we receive a sufficient number of cards, we'll consider running such names on a regular basis. It's your column, it's up to you what the column is and will become!

Interference Blues

A reader with the CB handle of *Rocky IV* from Davis, CA passed along a newspaper clipping about TV interference. He noted that the article claims that CB rigs are the "biggest culprits" when it comes to causing TV interference. *Rocky IV* asks for some clarification of this claim.

We sent the clipping to Jim, SSB-9, at SSB Network HQ's and solicited his comments. Jim asks us to remember that TV interference (TVI) existed long before CB came along, and that all CB transceivers are certified by the FCC to meet acceptable

standards for TVI-free operation. CB equipment, with its 4-watts of AM (and 12-watts PEP on SSB) is relatively low powered communications equipment when matched up against the equipment used by most other two-way services. Stations operated with unmodified, legal CB gear are hardly the TVI generators that the general media often portrays them.

Problems, of course, are more prone to occur if a CB station is operating with transmitter modifications or an external transmitter power booster (linear amplifier). Also, don't forget that it takes two to tango; and the TV receiver and/or its associated antenna system, or the fact that the TV receiver is in a fringe reception area, is very often the reason that a TV viewer is receiving TVI.

Reasons that CB operation is often connected to TVI complaints, says SSB-9, is that there are so many more CB'ers located in residential areas sets than other types of transmitters located in residential areas. A 4-watt CB signal (especially when fed into a gain antenna) is going to create a stronger RF field within a block or two of its location than a signal from a 100 kW (ERP) broadcast TV signal from 25 miles away. Also, the

Monitor 27.295 AM 27.920 L 27.965 L 27.990 L		BUTI RUHONO KASMITO Jl. Mampang No. 30 Jakarta INDONESIA	IB-02 LUNAR 9620 4EC 9 USI 8222 VOICE OF ME 11 CBS 200 DH 50 TCV 896-C FREEDOM 34 UC 518 91 AT 444 BORN FREE 569 HILLBILLY 34 ALLIGATOR 383 PALM TREE 37 OLD BUZZARD 641 KIT 860 7 DGM 19
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Buti, SSB Network member SSB-02 (and a member of dozens of other groups), hails from Indonesia. His nifty card is our overseas QSL of the month.

27 MHz CB band bears a very disadvantageous second harmonic relationship to TV Channel 2, as well as a third harmonic relationship to TV Channel 5.

Jim suggests that extra TVI protection, when there is a problem, can be obtained by the use of special "low pass" TVI filters designed for use with CB rigs. These are available from virtually all communications shops. They are inexpensive and simple to connect at the signal output point any CB rig without any tools or expertise. You can also get "high pass" TVI filters for use at the antenna input connector (or, better yet, the tuner) of a TV receiver. The owner of a TV set should be responsible for maintaining his equipment in proper operating condition, therefore the CB'er should not be expected to pay for the purchase or installation of a filter on a neighbor's TV set.

Lastly, in *Tomcat's Big CB Handbook*, it's pointed out that when TVI occurs, it is almost always from AM-mode operation, which comes through on TV receivers loudly and clearly. SSB operations come through on TV sets very garbled and can't be understood. Forgetting all of the many other advantages of SSB, that one factor might well be reason enough to operate in SSB-mode!

Let's hear from our readers. How about a photo of you at the controls of your station? How about gracing us with your CB QSL card?

PC



We always liked the QSL cards printed by Runnin Bare (737 N. Adams, McMinnville, OR 97128). This fine example was sent in by J.A. Winn, SSB Network member SSB-166-B, of Prince Edward Island, Canada.



Here's a look at the station of John K. Pittman, Sr., SSB Network member SSB-2A268, of Texas.

NEW AND EXCITING TELEPHONE TECHNOLOGY

Gongs, Warbles And Chirps

Most telephones have ringers, usually a bell, attached somewhere in the belly of the device. These days, the bell is often not a bell, but a beeper, so the phone no longer rings, it chirps or warbles.

The simple telephone bell is actually quite a complex device. It has to respond to a ringing signal from the phone company, yet ignore random pulses and voltages that are also found on the line. Phones in foreign countries tend to respond to extensions going off hook or dial pulses. This odd ringing is known as "Bell Tap" in the US and "Bell Tinkle" in the rest of the world. The US system, which is designed to handle extensions, tackled the bell tap problem early and ensured that all bells fitted in the phone company phones did not bell tap. The US phones avoid bell tap by making the ringer electro-mechanically resonant.

In other parts of the world, Bell Tinkle is a way of life. It is fixed by disconnecting the ringer from the line when going off hook. Most overseas phone installations are a single unit with no extensions allowed, that usually solved the problem. In Britain, when they deregulated the phone system, subscribers were allowed to add their own instruments. British Telecom got around the Bell Tap problem by splitting the incoming pair into three wires, with the third wire carrying ringing voltage via a DC blocking capacitor. With the help of the hookswitch, this arrangement made sure that the ringers were disconnected when the phone was off hook. An expensive and complex solution to a problem caused by poor design in the first place.

The usual ringer voltage is about 90 Volts. It can vary between 40 and 150 Volts depending upon three factors; the voltage supplied by the phone company, the distance and hence resistance of the connection between the subscriber and the exchange (Central Office) and the number of phones connected to the line. The normal frequency of the signal is 20 Hz. Most U.S. phones use this frequency. Some small phone companies and most party lines use other frequencies. (See Table 1.) The normal voltages found on a phone line, 3 to 9 Volts off hook and 48 Volts DC on hook are relatively innocuous, but AC ringing voltage can be another matter. And don't forget, you never know when you are going to receive a call. For safety's sake, when working on the phone line, take the phone off hook, or short across the line to prevent ringing. The ringing voltage may not kill you, but can give you enough of a jolt to throw you off a ladder.

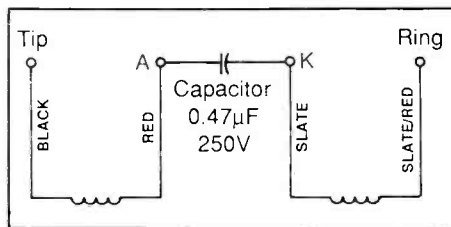


Fig. 1. Split winding gong ringer.

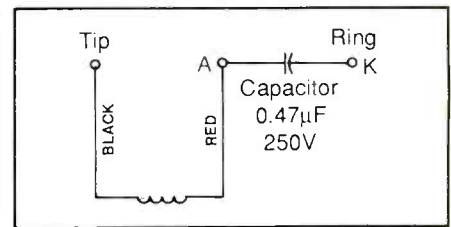


Fig. 2. Single winding gong ringer.

Because the ringer is across the line all the time, it would short the line to the DC Voltage unless something was done. The trick used is quite simple, a DC blocking capacitor. With a standard phone gong ringer, the capacitor is a 0.47 uF 250V Mylar device. In the old days, the capacitor used a paper dielectric. Most standard phones have the capacitor as part of the "Network". The network is the small can, or Printed Circuit Board, with all the wires connected to it, whose main purpose is to contain the speech circuitry. The capacitor is between a couple of screw terminals marked **A** and **K**. The ringer is connected across the capacitor. Most of the ringers found in phones will have four wires coming from them, see Fig. 1 to see how they are wired. Some ringers only have two wires, in these cases, check Fig. 2, to see how they would be wired. You can, if you wish to, short together the Slate, and Slate/Red wires, of a standard four wire ringer and then treat it like it was a two wire ringer with just a Red and Black wire.

If you want to, you could put a ringer on the garage wall, this would tell you what you need to know. Bells can be salvaged from phones that have seen better days, or purchased new from phone equipment distributors. Radio Shack now carries an outdoor bell for adding to a line (Part #43-174). This outdoor bell is also ideal for people who have trouble hearing the regular bell inside the phone.

Nearly every phone purchased in the US today will have an electronic ringer. These are the ringers that warble or chirp. Some people describe the sound as "crickets in heat" others call them "birds". Many people prefer the softer tones of electronic ringers, others miss the attention grabbing jangle of the gong ringer of old. There is one major reason why electronic ringers are so universal today . . . cost. A bell type ringer costs about \$4.50 and an electronic ringer costs \$2.50. This is a manufacturing cost, so if you multiply by four, you will get an idea of what it costs the consumer. Another thing in favor of the warble ringer is its small size compared to a double gong ringer. The other

side of the coin, is that an electronic ringer consists of a small IC, a brass disc with ceramic on it and a handful of resistors and capacitors—just a couple of ounces. This is far short of the substantial weight of a double gong ringer with all that brass, copper and iron. A modern phone tends to slide around the desk with greater ease as it is lighter.

The electronic ringers in use today are just about all IC's. They are made by all the big names in Telecommunications electronics: Motorola, Philips, SGS, Mitel, and AMI. Each manufacturer has a slightly different circuit, but they do have some things in common. Almost universally, the DC blocking capacitor at the input of the IC is a 1 uF 250 Volt Mylar type. In series with the capacitor there is usually a resistor with a value between 2.2 and 4.7 Kilo Ohms. The IC ringers are designed to drive a piezo ceramic resonator of the same type found in the familiar "Sonalert" type buzzer. Some phones may use a 4 Ohm loudspeaker via a transformer. The internal circuitry of the IC ringers contains an "Anti Bell Tap" circuit. This circuit is usually adjustable via a capacitor across a couple of the IC pins.

Motorola Ringer IC's contain a network of Zener diodes. These diodes make the elec-

TABLE 1		
Ringing	Frequency	Type Range Hz
A	20 ± 3	and 30 ± 3
B	15.3	to 68.0
C	15.3	to 17.4
D	19.3	to 20.7
E	24.3	to 25.7
F	29.3	to 30.7
G	32.6	to 34.0
H	39.2	to 40.9
J	41.0	to 43.0
K	49.0	to 51.0
L	52.9	to 55.1
M	58.8	to 61.2
N	65.4	to 68.0
P	15.3	to 34.0
Z	See NOTE 1	

tronic ringer appear like a gong ringer when telephone test voltages are applied to the line. One of the ways the phone company tests your line to make sure that everything is OK is use a signal that feeds through and detects the ringer. In the old days, they used this test to make sure you hadn't connected any "Bootleg" phones. If you knew about this, you disconnected the ringers of the bootlegged phones. They run this test by sending a low voltage, low frequency test signal down the line. This signal is returned via the ringer circuit of a gong ringer (0.47 uF cap in series with the ringer coil). Nowadays with all the electronic ringers, weird phones, answering machines and what have you, it can be difficult to get a picture of what a normal phone line looks like to the phone company test equipment. Motorola has made an attempt to handle this problem, the ringer IC part numbers are: MC34012 and MC34017.

In the deregulated phone market, with phones appearing in every room and on each side of the bed, ringer circuits can get overloaded. There are several symptoms of ringer overload. If your phones suffer from one or more of the following troubles, you have too many ringers on the line: Weak ringing, some phones not ringing, no phones ringing and some phones ringing sometimes. Another problem arising from too many ringers is phone answering machines can cease to pick up the line, or pick it up intermittently.

How many ringers can a phone line handle? The quick answer is five standard ringers. A standard Western Electric type desk phone consumes a certain amount of ringing current. A standard phone line can ring five of these standard ringers. So a standard gong ringer is assigned an arbitrary number, this number is one. If you have been wondering what R.E.N. is all about, it means Ringer Equivalence Number, or the equivalent power draw to a standard ringer. If you look at the FCC label for a standard desk phone you will see that it says: REN 1.0 A. The power consumed by any other ringer is measured against this standard. A ringer with an REN of 0.5 therefore uses half the power of a standard gong ringer. You could have ten REN 0.5 ringers on a line. It is simple to check whether the line is being overloaded by the ringers. Go round all the phones and add up the REN numbers from the bottom of the phones. Old telephone company phones may not have FCC stickers on them, consider them to have an REN of 1.0. If you have an REN of above five, you will need to disconnect some of the ringers, or the phones.

Disconnecting phone ringers requires opening the phone and using tools. You can not disconnect a ringer by turning a knob or flicking a switch at the bottom of the phone. All this will do is silence the output of the phone, not remove the load from the line. Silencing the ringer by flicking the switch on the base is like turning off the radio by disconnecting the loudspeaker. With a

gong ringer, open the phone and trace either the Red or Black wire from the ringer. These wires will be fixed under screw terminals marked L1 or L2. The smart thing to do is loosen the screw, remove the lead and attach a piece of tape to it. Write on the tape where it came from, i.e. FROM SCREW L2. Don't forget to tighten the screws you loosened. If the phone has an electronic warble ringer, a component will probably have to be lifted from the Printed Circuit Board. The easiest ringer component to find will be the 1.0 uF DC blocking capacitor leading to the ringer IC. This capacitor will have one leg connected to Tip or Ring of the phone line.

Gong ringers can have some of their shrillness removed by stuffing cotton wool inside the brass gong, you can also put vinyl electrical tape on the inside or outside of the gong to dampen it. A bit of tape round the clapper will muffle the bell. With one or more of the above tricks you can customize your gong ringer, either to make it less strident in the bedroom or give it a sound that stands apart from the others in the office.

If you look at Table 1, you will notice that most of the ringer types are quite narrow in their frequency response. The major exception is the B type ringer. Electronic warble ringers are all B type, even if the FCC label calls it an A, it will respond to frequencies between 15.3 and 68.0 Hz. This means it will work on any phone with ringing voltage applied across Tip and Ring. It will also ring in just about any country in the world that has phone service.

Some old phone systems and many party lines apply ringing signals between one leg of the phone line, Tip or Ring and Ground. By using frequency selective ringers (See

Table 1) and applying the ringing voltage between Tip and Ring, Ring and Ground or Tip and Ground many subscribers can be signaled on a single pair of wires. It is because of these odd ringing systems, that the FCC will not allow connection of any old registered phone to a party line. If you have a party line and wish to add another phone, you should contact your phone company. They will either supply a phone modified for your line or will tell you what the conditions are for a phone on your party line. If you bootleg a phone on a party line, it may not ring, or only ring when your neighbor has a call. It may also cause your phone bill to get mixed up with the other parties. The reason for this is that party line phones are modified so the Exchange can identify which party is originating a call.

Besides audible alert devices (Pentagonese for ringers), you can also have devices attached to the phone that will hoot a siren, flash a light or turn down the rock music on the stereo when the phone rings. Radio Shack has a couple of such devices (Part #43-177) which are handy for noisy areas such as workshops, teenager's bedrooms or Nouvelle Cuisine restaurants. They are also used in recording studios and film and TV sound stages. The deaf who use TTY keyboards on the phonelines depend on visual signaling that a call is coming in. Flashers are also carried by AT&T phone stores.

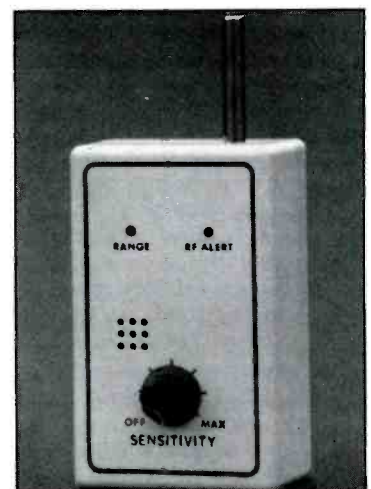
NOTE 1: Equipment which has on-hook characteristics that do not conform to the above requirements may be registered with a Z R.E.N. This does not mean that the Z type device may be connected without permission of the phone company. Before connecting a Z type device permission must be obtained from the phone company.

BUGGED ???

Find hidden radio transmitters (bugs) in your home, office or car. The TD-17 is designed to locate the most common type of electronic bug—the miniaturized radio transmitter—which can be planted by anyone, almost anywhere.

The TD-17 warns of the presence of nearby RF transmitters, within the frequency range of 1 MHz to 1,000 MHz, when the RF Alert LED turns on. The flashing Range LED and audio tone give an indication of the distance to the bug. The Sensitivity control, used in conjunction with the two LEDs, helps you quickly zero in on hidden bugs.

The hand-held TD-17 weighs less than 7 oz. and is housed in a high-impact plastic case. Furnished complete with battery, antenna, instruction manual and one year Limited Warranty. Save \$100 to \$200 and order at our factory direct price of only \$98. Satisfaction guaranteed or your money back. Catalog \$1 or FREE with order.



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Please send all reader inquiries directly.

BROADCAST TOPIK

BY MARK MANUCY, W3GMG

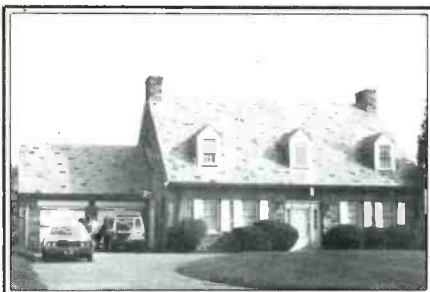
DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Some two years ago, I mentioned a couple of experimental antenna projects the NAB was planning to build in order to further its research on the "anti-skywave" antenna. Neither antenna has made it past the drawing board yet. One was to be built in Louden County, Virginia, which is a southwestern suburb of Washington. There seems to be no end to the zoning problems in that county, so the NAB has scrapped the plans for that site completely. The other site, in suburban Maryland, is located on the property of Howard University. It just reached the approval stage as of this past January. It looks as if both antennas will be built at this site, however, the "Biby antenna" is nothing more than a design idea at this time, and will, according to Mr. Biby, require several years of field work to perfect.

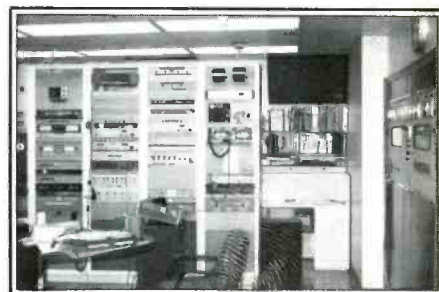
So the wheels of progress grind slowly ever on. Even our individual goals take time to achieve. I have been looking for a good AM wide-band stereo radio that was not out of sight cost-wise. After reading as much literature as I could find, and talking with several dealers, I settled on the Blaupunkt "Dallas", SQM-88. This is a microprocessor controlled radio, with the controls mounted on the top of a goose neck "stalk" in a box about 2½ inches by 4 inches. Removable, to prevent theft, the Dallas provides superb FM reception and AM reception that I have only heard in a few radios. The AM section in addition to C-Quam stereo also has wide and narrow bandwidth selection. The wide is *really* wide and allows true hi-fi AM reception. The wide-band position is surprisingly noise free, and is usable even at night, on the long distance 50 kW stations if they have a good signal.

When a station is getting clobbered by adjacent channels, switching to narrow-band brings the station back to life. I haven't had a chance to use the radio lately, so I haven't had a chance to try all the possible combinations to "trip" it up but so far it is doing well. I've had it near (¼ mile) a 50 kilowatt (WTOP) and it produced clean audio and did not seem to overload. Next month, I will be making a trip to Florida, so I will have more to say in the next couple of columns.

This is strictly a push button radio . . . no knobs to turn. Has LCD readout, loudness circuit which automatically turns on/off when the volume is raised or lowered. Four 20 watt amplifiers with external input for graphic equalization, CD players and cassette decks. Record output jacks and a clock which does not automatically display in place of the frequency. One has to push a button to display the clock. The bass, treble, front/rear speakers and volume are all VCA controlled and have a readout on the con-



Who would believe this lovely home contains two 50,000 watt transmitters!

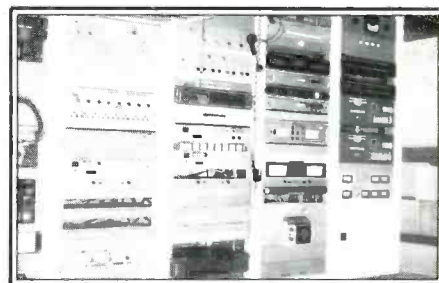


An interior look at KYW, 1060 in Philadelphia.

trol head to show their relative position. The control head makes it easy to operate the radio with one hand and it may be positioned to suit the driver. A real neat auto radio for under \$400, without speakers. I have yet to find decent speakers to fit the confines of a Trooper II when loaded with gear, but needless to say, I'll do so before any long trips!

Call Letters Again

Each month I've been getting comments about call letters, most always with a complaint about how a station is trying to make their letters appear to be something they are not. A recent letter from Thomas Yingling, Jr., echoes this again. He repeats the complaint about the Baltimore station, WWMX, which hides these letters in a weather forecast at the top of the hour, and then the rest of the hour says, "This is WMIX, Baltimore." All media advertising says WMIX and they now have jingles which sing, "WMIX". Tom recently found the Realistic TM-152 AM stereo tuner for \$20.00, a closeout! Keep looking folks . . . there still seem to be a few of these jewels out there hiding in the corners of the Radio Shack stores. With a certain kind of booster antenna, these tuners do a right nice job. The low end of the audio spectrum is a little weak but I hope in a few months to have a modification to strengthen the bass. Any loop antenna placed near a small portable or table top



The garage holds this diesel generator that can power the station if the electricity fails.

radio, such as the TM-152, will improve the reception of the set.

The U.S. AM clear channels are safe for the moment from low power stations but the FCC hasn't said no yet. The Mexican clears were just approved for daytimers to operate at night. There won't be any new daytimers on U.S. clears because the FCC has said no to any new daytime only stations on the AM band.

Super Radio

Many months ago, we talked about how a radio should be put together with ideas from several readers. The NAB has recently developed a proposal for a "high quality" multi-function AM-FM receiver. This is accord-

WPK
1420 AM

ROCK 'N' ROLL
Oldies
Cleveland

Station Update

Call	Location	Freq	Pwr	Ant
AM				
New	Dedham, MA	890	10/1	DA-2
WTXN	Pepperell, AL	910	1/0	NDA
WHYZ	Sans Souci, SC	1070	50/50	DA-2
FM				
New	Allen, KY	88.1	1.0	550'
New	Bay City, MI	89.1	16	664'
KRPS	Weir, KS	89.9	100	1000'
WOTL	Toledo, OH	90.3	1.07	377'
New	Miles City, MT	90.7	.5	502'
WCWS-FM	Wooster, OH	90.9	3.0	100'
New	Hot Springs, AR	91.9	1.0	282'
WEZF	Burlington, VT	92.9	46	2700'
New	Kerman, CA	94.3	3.0	328'
KZMO	California, MO	94.3	1.74	423'
WWHT-FM	Goose Creek, SC	94.3	1.43	479'
WDAC	Lancaster, PA	94.5	19	810'
WGGC	Glasgow, KY	95.1	100	988'
WHPE-FM	High Point, NC	95.5	100	520'
WAQX-FM	Manlius, NY	95.7	25	300'
WEYQ	Marietta, OH	95.7	11	492'
KAFR-FM	Walla Walla, WA	97.1	64.8	1360'
WOKK	Meridian, MS	97.1	100	1046'
New	Milton-Freewater, OR	97.9	.5	731'
KIOO	Porterville, CA	99.7	24	690'
New	Salamanca, NY	100.1	1.28	500'
New	Milledgeville, GA	100.7	3.0	328'
WJDQ-FM	Meridan, MS	101.3	100	1046'
WCXL	Vero Beach, FL	101.7	1.48	471'
WKNZ	Collins, MS	101.7	1.0	541'
KRKC-FM	King City, CA	102.1	2.6	1820'
KAVR-FM	Apple Valley, CA	102.3	3.0	328'
New	Nicholasville, KY	102.5	2.0	400'
New	Mc Farland, CA	102.9	3.0	328'
KEYI-FM	San Marcos, TX	103.5	95.5	1256'
New	Harbor Springs, MI	103.9	.69	682'
WGPC-FM	Albany, GA	104.5	92.6	1004'
New	Maljamar, NM	105.1	100	137'
KMYX	Oak View, CA	105.5	.11	1358'
KJJC	Osceola, IA	106.9	27	650'
WKXX	Birmingham, AL	106.9	100	1150'
KLBC	Durant, OK	107.1	2.0	354'
KUSN	Pueblo, CO	107.1	2.8	338'

Key: D = Daytime, N = Nighttime, DA = Directional Antenna, DA1 = Same Pattern Day and Night, DA2 = Different Pattern/Power Day/Night, NDA = Omni Antenna Day and/or Night, * = Special Operation or Critical Hours, N/C = No Change.

ing to Mike Rau the NAB UP of Science and Technology. This radio, to be designed by a consultant, and if feasible, would be marketed by the NAB through its member stations. It would include such features as a NRSC de-emphasis, for AM, and FMX decoding for FM. It would have continuous tuning from AM to FM as our readers had suggested. This would make a bandswitch unnecessary. In addition to FM and AM stereo, it might even have multi-mode AM stereo, although that may not be possible according to Rau. I would certainly hope they would include bandwidth selection for AM and put the tabletop radio into a decent baffled cabinet to enable decent tone.

One other neat innovation for AM radio would be some sort of noise reduction, or expansion system. Something that would take the audio peaks and expands them away from the noise. This would give the AM reception a much greater dynamic range and restore the sorely compressed audio present on so many stations. I recently restored a funeral service from a cassette tape that had been recorded on a cheap machine with the ALC. Seemed every noise was louder than the service itself . . . planes and traffic as well as wind noise. However, using downward expansion, I was able to restore the intelligence of the service. It would seem the same sort of gated expansion might be

used in an AM receiver detector and first audio stage to restore signal to noise, or expand upon that which is already there. To be able to increase the signal to noise as little as 6 db would be the equivalent of making a 1 kilowatt station sound like 4 kilowatts!

Last month, I mentioned a letter that I received from Leonard Kahn, of Kahn Communications, alleging patent infringement by Motorola on one of his stereo decoders. Kahn also accused Motorola of supposedly using the same patent to stop Sony from selling multi-mode receivers, such as the SRF-A100. However, after sending the information to the FCC, they saw no wrong doing, and returned the letter to Mr. Kahn. The patent office has not made any moves on these reports either.

Even though the letter from Motorola to Sony stopped production of multi-mode receivers and the FCC said Motorola had every right to send the letter, it was not a threat of any kind to Sony. Motorola was within their rights in trying to protect their interest in the C-Quam AM stereo. What this boils down to, is the Motorola chip can, and has been used, to decode the Kahn system of AM stereo. Motorola obviously would not want this to be used in a multi-mode radio, since it would encourage broadcasters to operate with the Kahn system, rather than the Motorola system, if the radio manufacturers were in fact, to use the chip in this multi-mode manner.

Can't say as I blame them, but I do wish we had more AM stereo stations across the dial. In the cities of Washington/Baltimore, with a combined population of over five million, there are five AM stations broadcasting in stereo. Three are daytimers, of which two are 50 kilowatts and religious in nature. One is a local channel, with the associated poor coverage, and the other, despite five kilowatts, does not have real great coverage either. Of the five, four are minority programming and the other is country. No majority programming in AM stereo within the two major markets! Hopefully, by the time you read this there will be others.

QSL'ing

Every so often I get requests on how to respond to a BC station so that one can receive a QSL. That is not as easy as it used to be, and here is why. Except for the larger ones, the staff of many stations have been reduced over the past few years to such a point that there is no one there to answer a QSL request. If a contract engineer only comes in when there is a problem, he certainly will not take the time to answer a QSL request. He may not even have access to the program logs that would enable him to check the accuracy of your report. In many instances, he may not even listen to the station enough to know the general type of programming done by a station. For instance, I have a report that is sitting on my desk that I have not answered because I have not had the time to do so. Because it is

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

Two or three times in the past I have reported that **KBFA** (Broadcasters of Free America) was announcing *Pop'Comm* as a place where its listeners should send their reception reports. Each time I've reminded readers that we *don't* forward or handle reports for stations of any kind. I have not heard this station myself so my comments were based upon what reporters told me in their letters.

I've had a letter from "The Archer" at **KBFA** AM 8000 who says the station is *not* announcing *Pop'Comm* as a maildrop. Instead, he says that the broadcasts encourage listeners to send reports of their reception of KBFA to this column since he believes that this column is "fueled" by such reports from readers. He's right!

The Archer also notes that he is the chief engineer of the station which he and some associates have run since the late 1970's, currently running 200 watts on 8000. They play a wide variety of music, using cassette, reel-to-reel, LP and compact disc. They also use "state of the art" audio processing equipment. **KBFA** does not have a mailing address.

More news from **New World Radio** and its operators Steve Lake and Mark Jarve. They now have an address of P.O. Box 45435, Seattle, WA 98145-0435. A broadcast quality stereo generator and a home-built stereo limiter-AGC amplifier are now in use to broadcast in stereo on 102.7 FM. They've added a reel-to-reel tape deck, an almost new 3-head cassette deck and continue to expand their CD library. Reception reports, accompanied by a self addressed stamped envelope will bring a QSL.

Mick Horsfield in Denton, Lancs, England sends along some tips on British pirates to try for during the every early hours on Sunday. He doesn't include any times, but I imagine 0900 onwards would be about right. His suggestions include **EDMS** on 6318, **RSI** also 6318, **SGR** also on 6318 (each at a different time, I assume), **Radio Orion** on 6290 and **WLR** on 7423. He also suggests **Riverside International** on 6240 which sometimes appears on Saturdays around 1300. That's probably too late for North American reception.

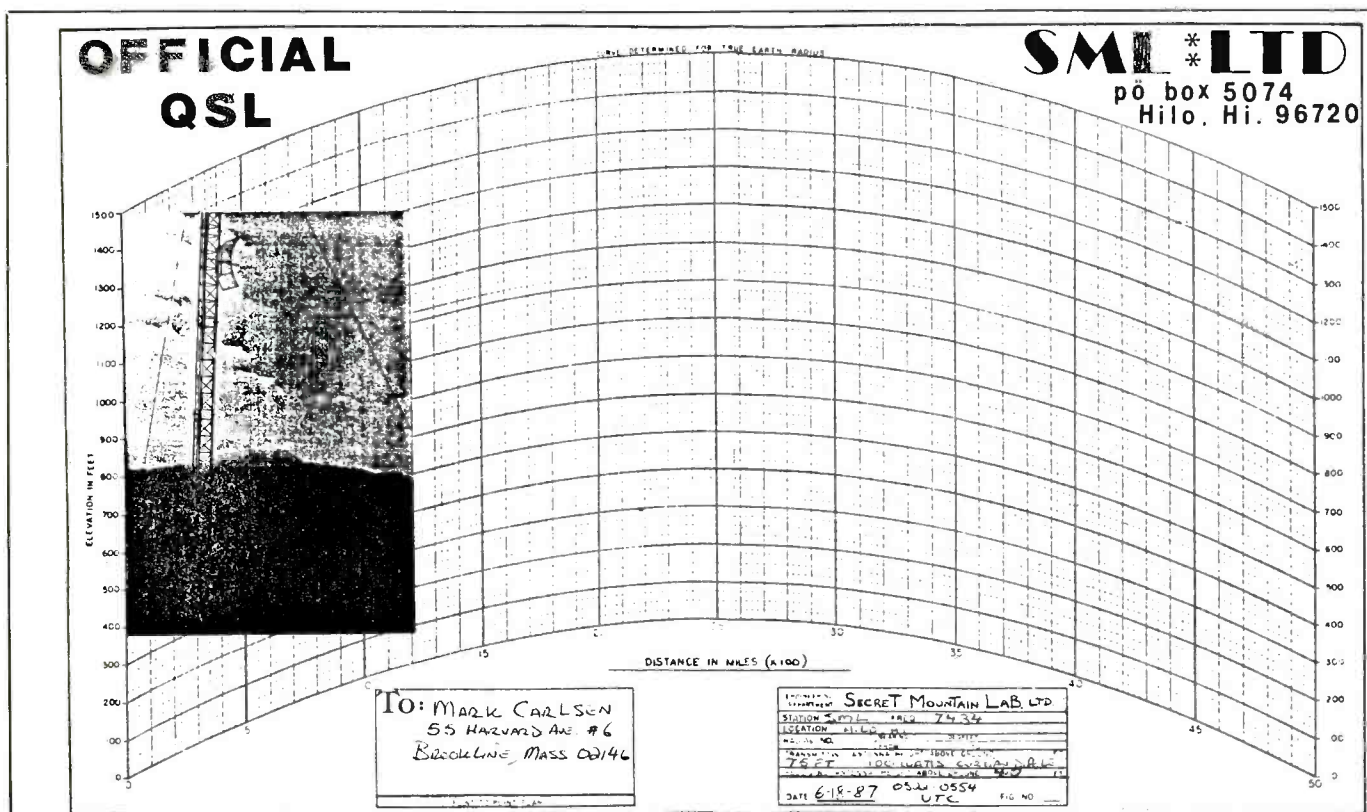
Mark Carlsen (55 Harvard Ave #6, Brookline, MA 02146) is interested in ex-

changing cassette tapes of pirate broadcasts and you can write him at the above address if you're interested. Mark sends along a QSL from the Secret Mountain Laboratory. He'd also like to know if it's too late to try to QSL a pirate after a year or two. If the pirate is still around or the maildrop is still working I would think it's OK. It's likely the operators know when they were on and when they weren't.

Radio Free Willy and its "international music service" represented the first pirate logging for Mike Adams in Panama City, Florida. He heard the station from 0835 to 0901 sign off on 7415-7416. At sign off the station mentioned it had a "nice QSL card" and said it was "broadcasting from somewhere in the North American continent." Heather Hall in Denton, Texas also caught this broadcast, noting that the announcer's name was Ned Bud or something like that. He promised to play "off the wall music" but said his selection was limited that night because of a broken cassette deck.

David Borenstein in Centereach, NY picked up **United World Radio** from 0400 on 9850. David says the station

(Continued on page 73)



Mark Carlsen received this nicely designed QSL from the Secret Mountain Laboratory.

ANTENNAS AND SIGNAL IMPROVING ACCESSORIES

The Active VHF/UHF Antenna

The active antenna has entered the VHF/UHF spectrum. Whether it is used indoors, or outdoors, it boosts the signal sensitivity and improves the signal-to-noise ratio S/N for scanner installations. In addition, it displays the same characteristics over a wide frequency band for those who roam the entire VHF/UHF spectrum with one of the new all-band all-mode VHF/UHF receivers.

Active antennas are small and can be hidden away upstairs, downstairs, or wherever. If you are troubled with electrical noise at your location, it is helpful to move it about to locate the best S/N position. An adequate length of cable is usually supplied to permit this option. It helps you to take better advantage of the good features of an active antenna.

An attic or crawlspace site often provides better isolation of the antenna from noise, and the added height permits the small antenna to pick up more signals and often more distant stations. Usually there is no problem to the addition of an extra section of coaxial cable to make this possible. At the same time, the unit is better protected from the outdoor weather. In some locations, the summer heat can be quite high, and it is advisable to find out the temperature tolerance of the active antenna you wish to purchase and mount in such a position.

Active antennas can be mounted outdoors, too. The higher location of the unit can extend the range substantially and, for nearer signals, improve the net S/N ratio. Also, an active antenna of this type is just right for the individual who considers a large antenna detrimental to the appearance of his house. As well as settlements, where there are antenna restrictions. Such an antenna can be positioned just above roof level and, in appearance, look much like a vent pipe or low chimney.

One must use good judgement when using an active antenna in close proximity to a transmitting antenna. For example, a radio ham needs to know how near he can place a ham transmitting antenna to the active antenna. A safe separation must be established based on the distance between the active antenna and the transmitting antenna as well as the amount of power radiated by the transmitting antenna. This information is even more significant when you intend to mount the two antennas on the same mast or tower. Be certain your operating situation is such that you cannot inadvertently connect a transmitter to the active antenna.



Fig. 1. Outdoor mounting of Dressler ARA500 active antenna.



Fig. 2. Convenient indoor mounting of active antenna atop filing cabinet using a ceramic piece for support.

The non-ham user need only be concerned when there is a high-powered commercial transmitter on top of you, such as an FM, or TV broadcast station, adjoining your mounting site. In most situations of this type, such a strong signal nearby would not damage the amplifier, but it could possibly overload the amplifier and make the system ineffective. Such precautions apply to only a very tiny minority of the potential users of active antennas.

The Dressler ARA 500 active antenna, available from Gilfer Shortwave, is housed in a weather-proof 3 1/2" diameter cylinder only 19" long. Over a frequency range extending from 50 MHz to 900 MHz it has a median gain of 15 DB falling off only slightly at the high frequency end. Its output signals fed to the receiver along the coaxial line. Both outdoor and indoor mountings are possible as shown in Figs. 1 and 2.

The DC power for the amplifier is generated near the receiver using a 110V AC to 12V DC adaptor, Fig. 3. The DC voltage is applied to the signal cable through an interference that permits the cable to be used as a path for the incoming signal picked up by

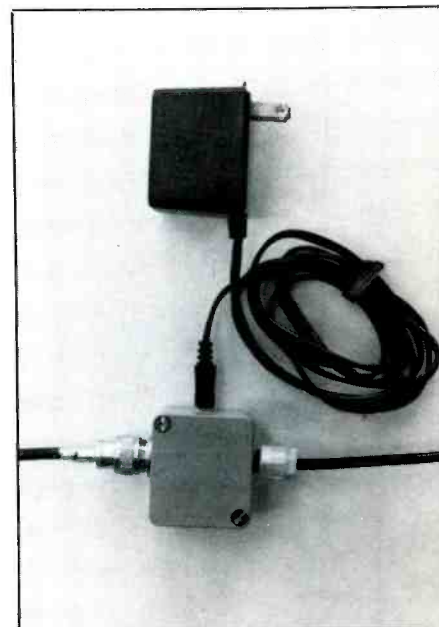


Fig. 3. AC-to-DC power supply, interface and cables provide internal components of active antenna system.

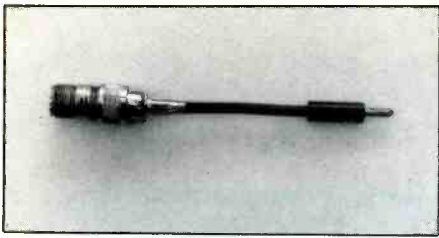


Fig. 4. PL-248 coupler, PL-259 plug and banana plug of coaxial line to single-wire feed fitting.

the amplifier, as well as the supply voltage needed to operate the amplifier mounted in the cylinder.

The ARA 500 active antenna mounted outdoors was exceptional. It is of course difficult to compare antennas that are quite similar in performance with a scanner, because of the characteristics of an FM reception system, and its signal limiting which keeps the audio output level constant when the squelch is broken. As I discussed in a previous column, you can do it with two rather weak signals by setting the squelch near the break-up point. Find out which signal breaks up the least, indicating a stronger received signal. In the reception of strong signals turn the squelch completely off (squelch control as far to the left as it will turn) and listen closely to the background noise level. The better the quieting, the stronger is the input signal level. In almost all situations, better test results are obtained by using the longer distance and/or weaker incoming signals.

In general, the active antenna at the same antenna height usually did better than a discone on the Aviation, VHF-HI, UHF-LO and UHF-T bands. The VHF-LO band results were fine. In fact, most scanner antennas are rather poor on this band because of their length limitations. Against such short antennas, it did well. The active antenna even held its own in the forbidden band region too.

Fortunately, all-band antenna system results can be checked out more thoroughly on the ham bands which occupy the same frequency spectra namely 6M, 2M, 70CM and 33CM. They provide an S-meter to give you some definite readings. On 2 me-

ters, I use a repeater located about 60 miles upstate to obtain antenna comparisons on a longer range basis. Also on 2 meters, I checked out the active antenna against a three-element 2 meter beam that was aimed at the repeater. The signal received on the active antenna averaged about 1.5 S-units higher than the beam despite the omnidirectional characteristic of the active antenna. Fortunately I could verify similar results in the same way using a 70CM repeater about 25 miles north of my location. Signals levels averaged 3 to 4 S-units higher than the discone. It does make a fine antenna for DXing on the VHF/UHF ham bands. However, it must be kept separated approximately 200' from any transmitting antenna.

Indoor signal levels were not as good as outdoor ones, but they were good. In fact, signal decline was really only noticeable in scanner reception on the really long haul signals. Even on these, the longer range signal results were considerably better than the pick up from the antennas supplied with the scanners. Not only that, you can move the antenna about to obtain a location that gives you the most favorable results.

My test active antenna did well sitting atop the filing cabinet in the radio room, Fig. 2. It is a neat package and not an eyesore. Also with the extra length of line you can even improve indoor antenna performance by locating a more favorable high spot for mounting in the house or, even attach it to the outside of a window or perhaps on the porch railing of an apartment or condominium. Certainly its small size and appearance are not objectionable.

VHF/UHF and Shortwave Installation

How about using the same outdoor active antenna installation for shortwave reception, too! You can do it. In my test, outdoor active antenna installation the coaxial line was 40' in length and long enough to serve as a reasonable single wire antenna for shortwave reception with most of the lengths of the cable being vertical. In the arrangement, a short 5" fitting was assembled, Fig. 4. A PL-259 coaxial plug was attached to one end and a banana plug to the other. The coaxial line at the banana plug

end was first dressed with both the inner conductor and the braid cleared of insulation. The braid and inner conductor were wound together and twisted tightly to form a short. They were then soldered together and attached to the banana plug. When this two-line to one-line assembly is connected into the circuit, the combined braid and inner conductor form a single largely vertical antenna. In operation the banana plug is inserted into the center hole of the SO-239 connector of the receiver. Consequently, the arrangement acted as a single-wire feed antenna connected to the receiver.

One thing you must not do is place any short circuit across the coaxial line when it is feeding power to the active amplifier. The coaxial switching arrangement of Fig. 5 avoided this possibility. Note that the DC voltage is only supplied to the active antenna when the coaxial switch is set for scanner operation. When fixed for shortwave reception the active antenna power system is disconnected by the coaxial switch and the antenna cable connects directly to the shortwave receiver input through the short coaxial-line-to-single-wire assembly. A quarter wavelength on the 31 meter band is approximately 24'. Consequently, if your coaxial line is shorter than 40' you will still obtain good results on the most active shortwave DX bands. Again be careful in assembling the arrangement and in operating it so you do not place a damaging short on the active antenna power supply.

PC

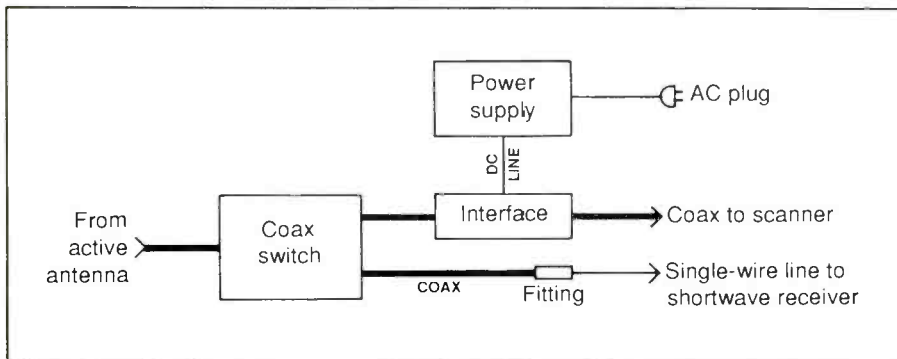


Fig. 5. Using active antenna outdoor installation for scanner and shortwave receiver.

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SCANNER SCENE

BY CHUCK GYSI, N2DUP

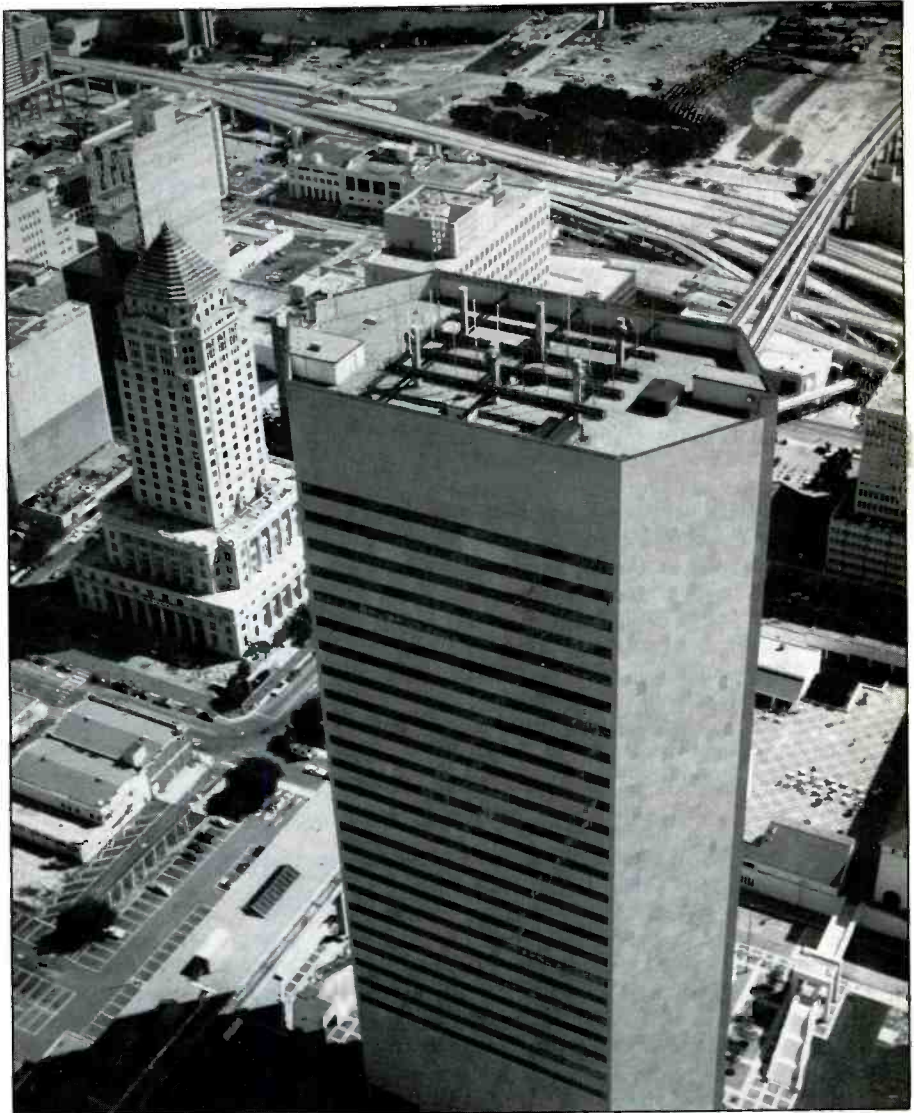
MONITORING THE 30 TO 900 MHz "ACTION" BANDS

The summer is about to make a full entrance. Time to do some scanning on the beach, in the park, or in the air-conditioned comfort of your own home. If you're looking to catch lifeguards on the air, scan the 155-MHz special emergency frequencies; check the 151- and 159-MHz forestry conservation channels for rangers at state and county parks, and scan the 151-, 154- and 464-MHz business band channels to catch amusement park security operations. If you find any frequencies, let us know. Now on to the mail.

From way Down Under, comes a post card from Peter Stirman of Melbourne, Victoria in Australia. He writes to say how much he enjoys Scanner Scene and would like to see an article on scanning DX, and possibly how scanners are viewed in other countries. Well, I know POP'COMM gets around this world of ours, so if some of you folks overseas can take a minute, let us know what you like to listen to and how your scanning hobby is viewed by the government in your country. As far as scanning DX, most skip occurs on low-band VHF, which is what the 30-50 MHz band usually is referred to here in the States. It's not unusual for U.S. listeners to hear Central and South America on their scanners if the skip conditions are right. In fact, low band isn't the only place skip can be heard. With the right conditions, such as atmospheric ducting, it also is possible to snag some DX cells on VHF high band (150-174 MHz) and UHF (450-512 MHz). In fact, over the past winter, from my listening post in New Jersey, I was able to hear UHF signals from Boston one morning and from southern Virginia another night. The DX is out there to snag, if you're willing to give a listen. Let us know what you hear. And a g'day to you too, Peter.

Emelio Mascuillo of Denville, New Jersey, wants to know the frequency used by the fire department at the Picatinny Arsenal operated by the Army in Dover, New Jersey. He says the police at the installation use 165.1875. I don't have any frequency notes on the facility, but (per Kneitel's *Top Secret Registry*, 6th Ed.) you might want to check the following frequencies assigned for use at the arsenal: 143.100, 149.600, 163.5125, 163.5375, 173.5125, 406.625 and 412.975 MHz. Don't overlook the obvious, too: They probably have radios on the Morris County fire frequencies, also to coordinate efforts with the local fire departments. Let us know what you hear, Emelio.

Neil Dawson of Walnut Creek, California, says he recently bought a used Bearcat 210 scanner and wanted to modify it so it could receive out of band and be capable of



One of our readers inquires this month about the new 800-MHz trunked public safety radio system being used by the city of Miami. Here is an aerial photograph of the Dade County Administration Building in Miami, showing the radio system's antenna site on the roof of the building. (Photo by Joe Leikhim)

holding additional channels in its memory. The Bearcat 210XL can be tricked into operating between 50 and 144 MHz if you follow these instructions: First, select a channel for the search. Press MANUAL, 50 LIMIT and 50 LIMIT. Next, press 144 LIMIT and 143 LIMIT (display will read ERROR). Press SEARCH and radio will search above 50 MHz. To enter and receive frequency in the radio's memory, just press MANUAL. Of course, this doesn't mean you will receive actual frequencies between 50 and 144 MHz, but it's fun to try! Sorry, but I don't know of any channel expansion techniques for this radio. One manufacturer marketed a device a few years ago that expanded the

capacity of the Bearcat 250's memory from 50 channels to 20 banks of 50 channels that could be scanned one bank at a time. It's the only expansion that I've heard to work with the Bearcats.

Neal also asks whether the Bearcat 100XL handheld scanner can be modified to hear the 800 MHz band. Sorry, again. Even if you could trick it to enter such frequencies into its memory, it wouldn't have the RF tracking devices to actually hear communications on that band. Go out and buy an 800 MHz handheld, if that's what you want. Most of the 800 MHz handhelds work quite well. Neal also asks about antennas and the apartment dweller. While you can't install a



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E. F. Miller, Registered Monitor KPA3HC, made up this attractive two-color station card.

ground plane, or a yagi up on your rooftop, there's nothing that says you can't set one up in a corner of your listening room. In fact, when I lived in an apartment, I had a beam, and two omni scanner antennas mounted on a mast on a railing in my radio room and it worked quite well. Your other option would be to look into an active antenna. However, they have a tendency to cost a little more because of the electronic gadgetry inside to amplify the signal to your radio. Check with POP'COMM advertisers for details on active antennas.

Paul Monnin checks in from Hialeah, Florida, and asks what happened to the Miami police, which he used to hear on 453 MHz frequencies. Well, they've moved to 800 MHz, like police and public safety agencies in many larger cities are doing. If you have an 800-MHz radio, my notes indicate Miami is operating a 20-channel trunked radio system on the following frequencies: 854.9625, 855.2125, 855.4625, 855.7125, 856.2125, 856.4625, 856.7125, 856.9625, 857.4625, 857.7125, 857.9625, 858.2125, 858.7125, 858.9625, 859.2125, 859.4625, 859.9625, 860.2125, 860.4625 and 860.7125. The city also is licensed on 800 MHz on 851.2875, 851.3125, 851.3375 and 851.3625; you might find some interesting activity there as well. Let me know what you hear.

Frank F. Orcutt, a self-described "radio-ophile" from Alameda, California, reports of reading a strange news release that stated Navy personnel at the Alameda Naval Air Station in California and Coast Guardsmen at Government Island in Alameda would be staging simulated anti-terrorist maneuvers. He said the news release was issued in case the news media or general public intercepted any of the maneuver-related communications. Probably not a bad idea by the Navy to warn listeners—wouldn't it be great if we had such advance warning all the time? In any event, Frank said he did some looking around on frequencies on his Kenwood

TH-21BT 2-meter handheld and found the operations on 148.980 MHz, an unlisted frequency as far as I can tell for the base. Frank said the operation lasted for about 2½ hours and consisted of a "hostage" taken by two terrorists with explosives, side arms and a bazooka! As Frank said, "It was interesting listening to say the least."

Wilbert R. Warke of Lebanon, Illinois, says that many local police departments are updating their radio systems in his area and seem to be switching to UHF. He wonders whether there is a universal nationwide police frequency on UHF that these departments could use. Currently, the only nationwide police emergency frequency is 155.475. Many police and law enforcement agencies are licensed on this frequency for coordination purposes. This frequency may have a nickname in your state; for instance, in New Jersey it is called SPEN 2, for Statewide Police Emergency Network Channel 2. Agencies from the FBI to Conrail police are licensed to use this frequency. Otherwise, there is no other nationwide police channel. When the new 800 MHz public safety channels become available through the FCC, there will be several additional nationwide coordination and emergency frequencies available to all governmental agencies for use on either a repeater or simplex basis. In fact, a standard CTCSS tone is being recommended for the new 800 MHz nationwide channels to ease interoperability.

Now it's your turn. We need your input here at POP'COMM. Send in your questions, comments and frequency lists. We love to get listening tips and modification tricks that are simple to perform. We also need some photographs to include with Scanner Scene. Go ahead and snap a shot of your shack and stuff it in an envelope and send it to us. We also like seeing photos of radio towers, dispatch consoles and mobile radio installations. So here's your chance to star. Write: Chuck Gysi, N2DUP, P.O. Box 544, New Hope, Pa. 18938-0544. **PC**

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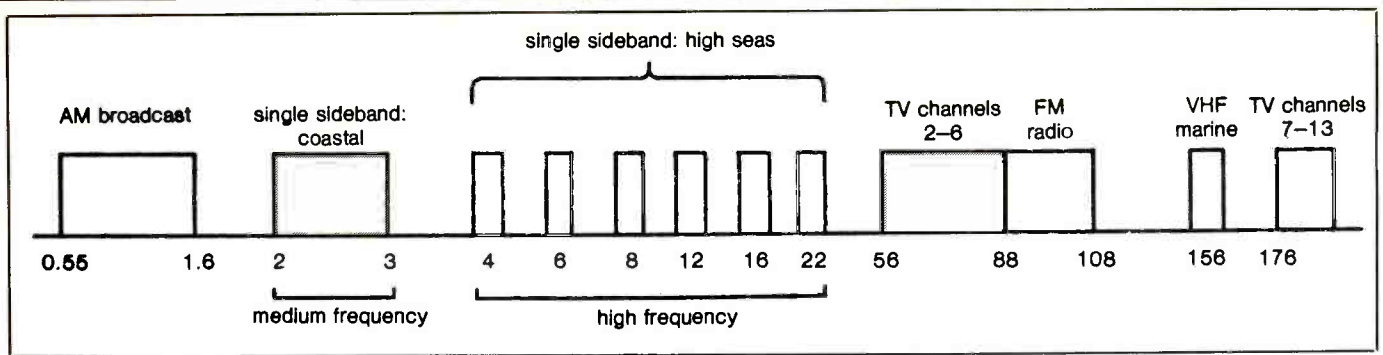
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4 MHz	Skywaves absorbed	1,500 miles			Little skywave reflection after sunset.
6 MHz	500 miles	2,000 miles			
8 MHz	700 miles	3,000 miles			
12 MHz	1,500 miles	Worldwide in the direction of the sun.	22 MHz	Worldwide	
16 MHz	3,000 miles	Worldwide in the			

cies, one or two channels per band may be authorized your station for shore-to-ship communications. One or two channels would be allocated within the following bands:

- 2 MHz
- 4 MHz
- 6 MHz
- 8 MHz
- 12 MHz
- 16 MHz
- 22 MHz

These worldwide bands allow single sideband communications for thousands of miles of range. Your communications must relate specifically to the marine traffic associated with that ship at sea. You can't use the frequencies just to chitchat.

When you have selected the frequencies, and completely filled out Form 503, a cashier's check for \$60 made payable to the Federal Communications Commission must be issued. The check, the original of your Form 503, and if necessary for Southern Califor-

nia operators, the local frequency coordination form, must all be sent to the Federal Communications Commission, Marine Coast Service, PO Box 371706M, Pittsburgh, Pennsylvania 15251-7706. They will process your application in sixty days.

When you receive the envelope from the FCC in the mail, don't expect it to be your license. They routinely deny the application the first time around. Most denials are attributed to not enough information about your marine business eligibility. They will only issue a license to those individuals or organizations actively involved in marine business that absolutely required shore-to-ship communications. They will flatly deny any application if they believe you want the license to merely stay in touch with a friend out at sea.

If you do qualify, you will be issued a Private Coast Station license that allows you to run up to 50 watts on marine VHF channels, and up to 1,000 watts of power on marine sideband channels. You operate the station at the location specified on the license. This could be your office, your home, or even in a moving vehicle within a specific geographic range. You are allowed only to communicate from shore to ship—you are not allowed to communicate from one shore station directly to another, unless it's an emergency.

It may take several tries to see this license through, but if you clearly state your eligibility the first time, you should make it. If you run a rescue squad or an emergency service that handles marine emergencies at sea, chances are you'll have no problem at all obtaining a land radio station license in the maritime service.

PC



CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

BY GERRY L. DEXTER

Slowly but surely, the collection of Korean clandestine stations keeps growing. The newest one calls itself *The Voice of the People* and is on operation at 0300 to 0400 on 6600, 0400 to 0500 on 4027 variable, 0900-1000 on 6600, 1300-1400 on 4027 variable, 1500 to 1600 on 3912 and 2000 to 2100 on 3912 and variable 4027. Of these, the 0900-1000 and 1300-1400 hours are the most likely times for reception in North America. The broadcasts are sometimes jammed, and the programming on 4027 is apparently separate from what's carried on the other frequencies. According to the Asian Broadcasting Institute, via NASWA's *Frendx* publication, the station pretends to be located in Pyongyang but is most likely coming from a transmitter in South Korea.

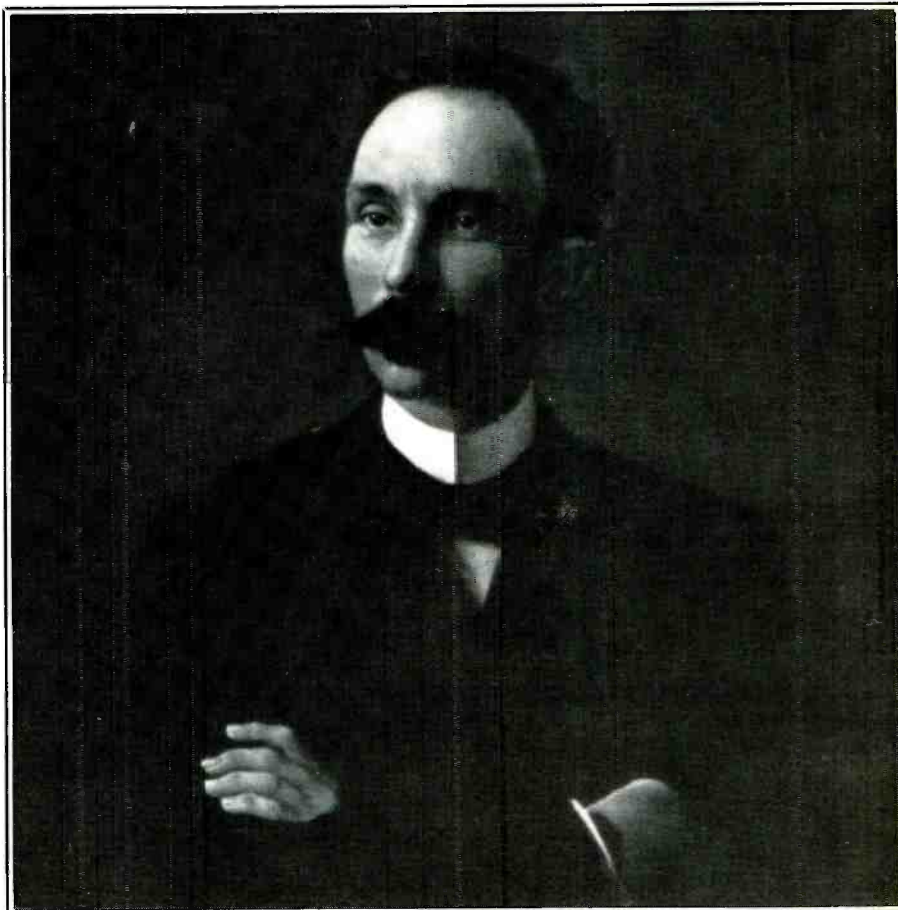
Meantime, *Echo of the Masses*, a northerner claiming to be in the south, has added 4160 in parallel with 5885 and now is on the air from 1000 to 1400.

The other North Korean clandestine claiming to be in the south is the *Voice of National Salvation* and is operating at 0300 to 0600 on 3480, 4450 and 4557; 1000 to 1630 on 3480, 4120, 4450 and 4557 and 2000 to 2300 on 3480, 4450 and 4557.

Radio Quince de Septiembre, for many years, the mainstay of the contra broadcasters, has undergone a name change recently. It now identifies itself as *Radio Liberacion*—SSRN (for *Sistema Radial de la Resistencia Nicaraguense*.) It continues to broadcast on or near 5929 and 6214 with programming in Spanish and some Miskito during morning and evening time periods. The other contra station, *Radio Liberacion*, now adds the phrase "Onda Corta" to its name, apparently to distinguish itself from the *Radio Liberacion* which the contras run on 1520 kHz on medium wave, since the two are separately programmed. *Radio Liberacion Onda Corta* is heard during the evening hours on 5889. Broadcast times seem to vary, but if you make a few checks during the evening, you should be able to pick up both stations.

Incidentally, DX'er Tom Gavaras of Minnesota tried a reception report to the Nicaraguan Resistance at their office on 104th Street in Miami, but his letter was returned by the post office with an indication that the address had changed to 801 Bricknell Ave. 1002, Miami, FL 33131, so you might try this address for reports on the two contra stations.

Will there be a "TV Marti" one day? The Associated Press reports there's talk of such a service beamed at Cuba. In fact, there was



The U.S. Government's radio service to Cuba is named after Cuban hero Jose Marti Perez. Now there's talk of putting a "TV Marti" on the air.

\$100,000 included in the federal spending bill designed for studying whether a TV service to Cuba was technically feasible, what it would cost and what legalities would be involved.

People such as Jorge Mas Canosa, chairman of the Radio Marti advisory board and of the Cuban American National thinks a TV service would be ten times more effective than Radio Marti. Radio Marti director, Ernesto Betancourt, says that people coming out of Cuba indicate there's a desire for a TV version of Radio Marti. Betancourt says it's believed that about one-quarter of Cuba's ten million people tune in Radio Marti. Thanks to Eason Jordan for sending along this information.

While we're in a speculative mood, will we one day hear a clandestine broadcaster beaming into, or operating within Peru? There are two extremely active rebel groups in Peru. The *Sendero Luminoso* (Shining

Path) which has a philosophy which mixes Marxism, Mao Tse-tung teachings and "Andean mysticism". Shining Path has about 5,000 members, according to a *Toronto Globe and Mail* story sent to us by Harold Sellers, chairman of the Ontario DX Association.

The other group, the *MRTA* (*Tupac Amaru Revolutionary Movement*) is a much younger organization—only around three years in operation and with only about 1,000 members. It's more a standard Marxist group and, apparently, is far more aware of the power of propaganda since the group is reported to have briefly taken over radio and TV stations in order to broadcast its message. (We would note here that, despite the implications of the story, Shining Path has done the same thing a number of times.)

Will a Peruvian clandestine go on the air sometime in the future? Perhaps. There are certainly enough transmitters floating

around the north of the country. The problem for the potential Peruvian clandestine broadcaster is that there's no sanctuary available. None of the neighboring governments would knowingly allow such a station to operate from their territories. There's also a chance that a clandestine program in support of one or both of the movements might one day appear over Radio Havana or Radio Moscow (Moscow already carries an anti-Chilean government program.) We can only listen for developments.

Sander J. Rabinowitz of Michigan supplies us with a tape of a clandestine he monitored on 22 January between 0208 and 0246, which included several frequency hops between 6575 and 6663. We monitored the tape but heard nothing in the way of a clue as to its identification. However, *Radio Venceremos* is the biggest practitioner of frequency hopping, so it might have been them—though *Radio Farabundo Marti* also does it, but to a lesser degree.

Remember, we very much need your informational input on the subject of clandestine broadcasting and the groups which operate these stations. If you have "inside stuff" we can keep your name confidential—as we already do for a couple of individuals. If you spot news stories, make loggings of clandestines, can supply us with material received from the stations or copies of QSL's sent by them, please help by forwarding any and all such information to this column. **PC**

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THE HAM COLUMN

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GETTING STARTED AS A RADIO AMATEUR

Field Day: The Biggest Ham-Watching Event Of The Year

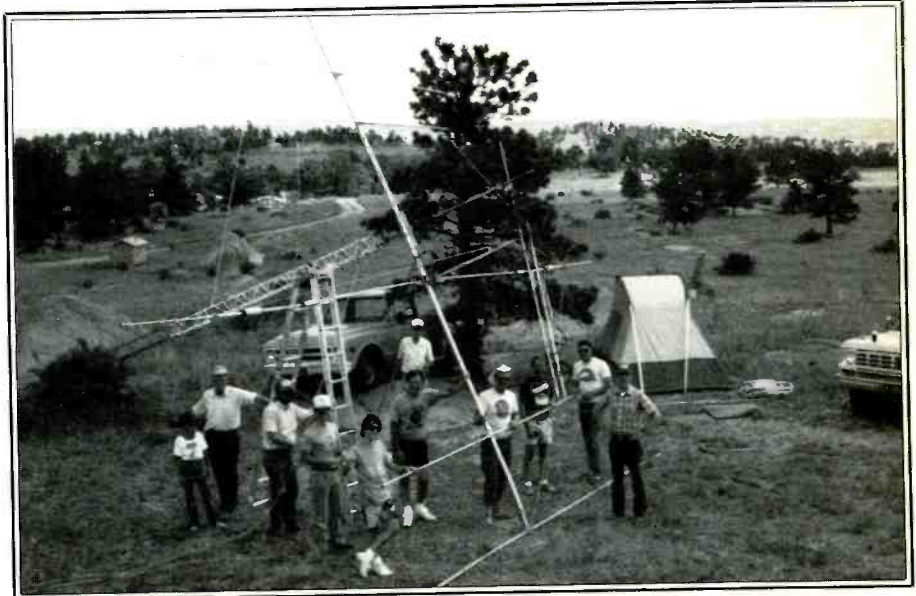
Ham-watching is something to consider if you're thinking about becoming a Ham yourself. Until you've seen Hams in their natural habitat, you may wonder why they make so much fuss about the fun they have and the communicating they do. Unlike arctic terns, Monarch butterflies, and the swallows of Capistrano, the various Ham species are not usually migratory. This means that your chances of spotting a Ham in action are good throughout the year, wherever you live. (The best news yet for Ham-watchers—and Hams themselves—is that FCC statistics show that Hams are increasing in number throughout the US. Long-time Ham-watchers point to the 28-MHz-SSB and 222-MHz-FM voice privileges of Novice Enhancement as a major reason for this.)

Listening to Hams on the air is one aspect of Ham-watching, of course, and it's easy to do: Just tune 'em in on a shortwave radio or scanner that covers the Ham bands. (You can find where to tune in Hams between 1.8 and 29.7 MHz in this year's February and March Ham Columns, and there'll be more about the VHF and UHF Ham bands in a future column.)

Reading about Hams is another way to learn about them. The growing popularity of Amateur Radio means more and better books about Hams and what they do. Most of these books are published and/or distributed by the folks responsible for the major Ham magazines: *QST*, *CQ*, *ham radio* and *73*. (Come to think of it, those magazines make darned good reading, too!)

Meeting and talking with Hams is an excellent way to find out what it's like to be one. Want to meet a Ham? Go to one of the hamfests or Ham conventions listed each month in Amateur Radio magazines. (If you have a handheld scanner, bring it along for some close-range Ham listening.) Here's another idea: Visit a Ham club meeting! There's probably a lively Ham club near you, and you'll be a welcome visitor. Many clubs offer Ham licensing courses several times a year, too. For a list of clubs and instructors in your area, contact the ARRL, Dept N, 225 Main St., Newington, CT 06111 (tel 203-666-1541).

If you're interested in Ham radio and Ham-watching, this is the time of year to visit your local Ham club. Reason: June is the month when Hams go out on *Field Day*, the most popular operating event of the year. If you hook up with a club right now,



Posing for a photo is the easiest part of Field Day. Here's the ARINC Radio Club crew at W7NE, Wyoming, just before that antenna went up for Field Day, 1987. Result: 955 contacts with two transmitters and emergency power.

you may be able to get in on the Field Day action yourself!

What is Field Day?

For US and Canadian Hams, the fun of Field Day (or FD, as it's called when you're in the thick of it) started back in 1933 with a short announcement in *QST*; "Clubs, 56-mc. operators, all hams with licenses for portable stations, attention! All U.S.A. and Canadian station owners are invited to schedule "field activities," excursions with concentrated operation of portable transmitters and receivers. . . Besides offering an opportunity to get out in the open in this fine spring weather, the real object of this contest is to test 'portables' wherever they may be available. If (Field Day) is successful, we want to make it an annual affair."

Successful? Was it ever! In 1933, "about 50" Field Day groups—that's about 400 individuals—reported their scores to ARRL HQ. More than half a century later—in Field Day, 1987—over 26,000 Hams at 1718 Field Day stations took to field, stream and glade for up to 27 hours of solid radio fun.

Field Day began as a test of the emergency preparedness of Hams with portable stations, and that tradition holds today. Hams

don't become skilled in emergency communication by magic; they practice! (If you're a Ham-watcher, you know that whenever there's a communications emergency—when tornadoes, hurricanes, and other disasters strike—you'll find Hams getting messages through when no one else can.) Field Day is part of the reason Hams can provide that service efficiently.

Because of the emergency-preparedness aspect of Field Day, most FD groups operate on emergency power (supplied by water, gas, oil, wind or person-driven generators, batteries, solar cells—you name it) at sites well removed from home stations. FD stations can be on land, on water, or in the air; FD groups may use anything from one to twenty-four (or more) transmitters. (Honest: The Silver Springs [Florida] Radio Club, K4GSO, was the sole entrant in the 24A class for Field Day 1987. That means 24 [25, if they had a Novice/Technician station going] emergency-powered transmitters on the air *simultaneously!*)

SSB is the most popular mode for Field Day contacts; CW is number two. FM is popular as well. Packet radio (used by Hams for high-accuracy, computer-to-computer communication) is increasingly important on the FD scene. Some FD



Sun, wind, feet and smiles powered the Chehalem Valley (Oregon) Amateur Radio Club's 1985 Field Day effort. Callsign: K7FM.

groups even make contact via Amateur Radio satellites!

Field Day is also a chance for Hams to test wild and crazy antenna ideas they don't have room for—or would be embarrassed to try—at home. You'll find Field Day antennas held aloft by everything from regular antenna masts and trees to extension ladders, bamboo poles, kites and balloons.

Radio fun and emergency preparedness aside, having a good time with other people is the icing on the FD cake. When you're not on the air, swatting mosquitoes, manning a generator or tightening guy wires, you can gobble good food, guzzle drinkables and just plain hang out with friends. That's why Field Day is the event for Hams and Ham-watchers alike: In their natural habitat, Hams have a good time as they get their radio job done.

From Ham-watcher to Ham

Field Day 1988 happens on June 25 and 26. The full FD rules appear in the May issue of QST. Ham-watchers: If you visit a Field Day site, drop me a line and tell me who you visited and what you saw. Your adventures may end up in the Ham Column. Next month: Meeting and talking with Hams is only the second-best way to find out what it's like to be one. The best way to find out what it's like to be a Ham is to become one yourself! We'll cover how to take your first

steps toward your Novice license in the next Ham Column.

A Field Guide to Field Day Hams

Range: Throughout the US and Canada. Particularly active from 1800 UTC (2 PM Eastern Daylight Time) on June 25th to 2100 UTC (5 PM Eastern Daylight Time) on the 26th.

Habitat: Fields, forests, hills, streams, shopping malls, backyards, cars, trucks, planes.

Field marks: Sun hats if it's sunny, raincoats if it's raining; often covered with mosquito repellent; always accompanied by radio equipment (including antennas), food and fun.

Song: On CW: CQ FD. On voice: "CQ Field Day!" Audible on just about any Ham band in the "particularly active" hours cited above; increasingly audible on satellites and packet radio.

Habits: Enjoy radio, efficient communication and friendship. Many Field Day Hams seem to have a good time even if rain falls or equipment breaks down. They tend to enjoy having the company of non-Ham visitors and having their pictures taken. At close of "particularly active" period, those still awake are given to utterances such as "Can't wait till next year!"

PC

HAM RADIO IS FUN!

It's even more fun for beginners now that they can operate voice and link computers just as soon as they obtain their Novice class license. You can talk to hams all over the world when conditions permit, then switch to a repeater for local coverage, perhaps using a transceiver in your car or handheld unit.



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CIRCLE 11 ON READER SERVICE CARD

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

The game of relay roulette continues to be played by some international broadcasters. Spanish Foreign Radio, which recently made arrangements to swap transmitter time with Radio Beijing, has also carried on negotiations with RAE in Argentina about a time exchange with that station, according to the bulletin of the Australian Radio DX Club. As we've mentioned before, Spain also plans to put a high power relay on the air from Costa Rica.

Meantime, Deutsche Welle, which recently conducted tests over the facilities of Radiobras in Brazil, now plans to incorporate regular use of the Brazilian transmitters. A month or two before this announcement, Deutsche Welle began experimental relay transmissions over Radio Veritas in the Philippines. Veritas is airing DW's Chinese service, fed via satellite from Cologne to Manila, where they are taped and then sent to the station by courier.

The other half of the Radio Japan—Radio Canada International swap should be active about now. RCI's use of the Radio Japan facilities was delayed by the need to rewrite some Japanese laws. The English portion of the schedule, via Japan, is 1200 to 1230 on 15290 and 17810 and 2200-2230 on 17885.

Thailand is still destined to become an easier target somewhere down the calendar. According to Radio Netherlands' Media Network program, Radio Thailand is undergoing a major expansion, covering both domestic and foreign services. That includes everything from new studio equipment to higher power transmitters. This is part of the agreement for an expanded VOA relay. Radio Thailand will get exclusive use of a 250 kW transmitter and part-time use of one of the six 500 kW units to be installed. There's no information on when this might be expected on the air.

If you are interested in catching some timely SWBC DX tips, tune in on the "SWL Net" on Sundays at 1500. A number of ham operators who are also SWL's get together each week on 7240 to exchange information and there are arrangements so listeners can get their tips on the air, too. The network is run by Bob, KW3F.

Radio Grenada's manager, George Grant, tells Jacob Racir of Roseville, Michigan that the station is not on shortwave (as we all know) but it *may* return one day. Mr. Grant has received a great number of reception reports covering broadcasts back when the station was replying only very infrequently. Mr. Grant is very kindly QSL'ing those older reports for listeners. The interest has been so strong that it's encouraged him

to take a look at returning to shortwave sometime in the future! If you logged this station when it was still on shortwave, but never got a QSL, you can send a report to Mr. George Grant, Manager, Radio Grenada, PO Box 34, St. George's, Grenada (West Indies). If your report is correct, chances are you'll get your QSL.

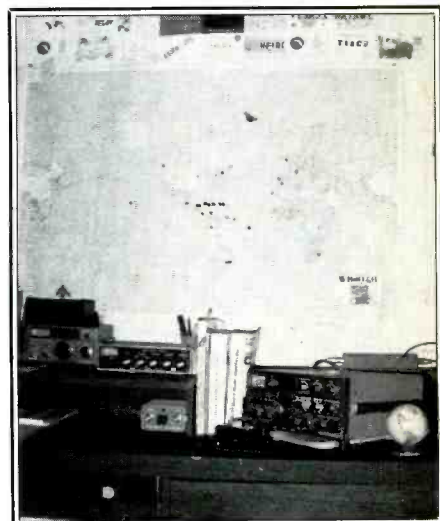
KSDA, the Adventist World Radio station in Guam, gave a tour to Gary Memory, who tells us that one of their 100 kW transmitters has been out of service for repairs. There's room in the transmitter building to handle two more transmitters and those are expected to be added within a year or two. Currently, two curtain array antennas are in use, and two more are being constructed. There are program studios at the station, although most of the programming is still provided by other AWR studios. Many thanks Gary! How about sending in a couple of those photos you took?

Other letters this month include one from Loy W. Lee of Eastern Kentucky University's WEKU-FM/WEKH, who reports that "the gang" of James McClure, Ed Shaw, Wayne Gregory, Eric Petty, Rod Miles, Dr. Joel Roitman and Dr. Steve Kramen, plus himself, have had another DX-pedition to the school's Maywoods environmental laboratory—1700 acres of virgin forest in central Kentucky. Good to know you fellows are still at it. Sorry though, your logging format just wasn't workable for us.

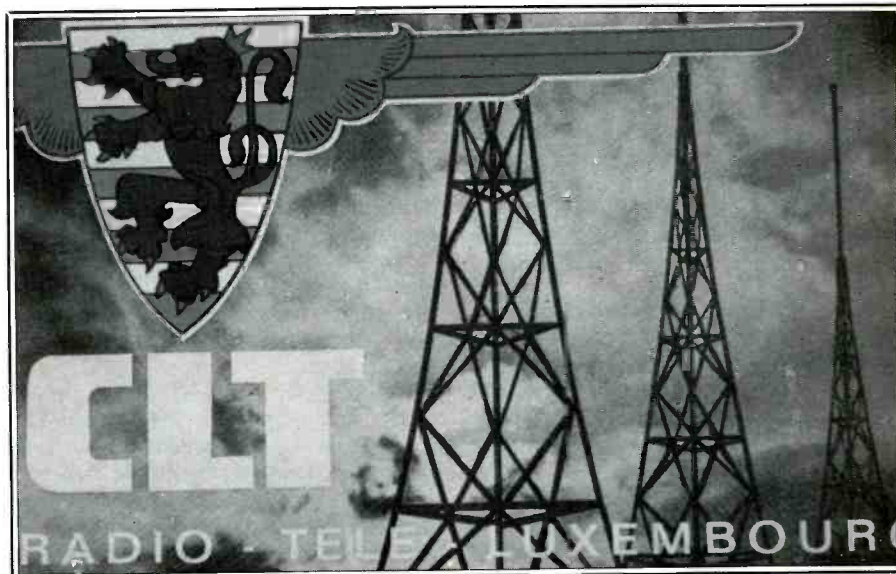
Bill Wolverton of Phoenix, Arizona would like to know if there are any listener clubs in this area. Dunno. Anybody?



W.L. McIn of Hillsboro, Ohio operates out of this multi-receiver shack.



Here's the listening post of Sean Kutzko in Urbana, Illinois . . . which does double duty as amateur station KA9NGH.



Gerard Van Dobben of Knoxville, TN supplies this QSL from Radio Luxembourg.

Dave O'Conner of Springfield, Oregon inquires whether the Cascade DX Club is still active and still doing a newsletter. We haven't heard anything from this group in a while but you might write to the club in care of Craig Parsley, 133-12th Ave., Kirkland, WA 98033. Enclose a double stamped SASE.

We are awash in logging reports this month. And in the "too much of a good thing department" one reporter sent some 300 logs in! That's about ten times more than the optimum figure. Give us twenty to thirty of your best each month, double space between them so they can be cut up, tag each with your last name and state abbreviation. Otherwise, we just can't guarantee to use your material. Your letters, comments, shack photos, station photos, clippings, schedules, QSL's you don't need returned and general shortwave broadcast news is always welcome, so make it a regular habit, OK?

Here are this month's reports. Remember, all times are UTC and broadcasts are in English except as noted otherwise.

That's it. Raise the banners in salute to: Tom Kneitel, NY; Sander J. Rabinowitz, Farmington Hills, MI; James Kline, Santa Monica, CA; Jim Ross, Vancouver, WA; Dave O'Conner, Springfield, OR; Mark A. Northrup, Danbury, CT; Michael Loran, Azusa, CA, Hollywood FL and Baton Rouge, LA; Bob Zirkelbach, Pleasant Hill,

CA; Gordon D. Benoit, Cape Cod, MA; Bruce R. Gilson, Silver Spring, MD; Willard Harrison, Decatur, AL; Tom Quinn, Ft. Lauderdale, FL; John F. Holterman, Laurel, MD; Bill Wolverton, Phoenix, AZ; Len Rotondaro, Newington, CT; Fernando Garcia, Baltimore, MD; David R. Kaiser, Seward, KS; Paul Johnson, Phoenix, AZ; Mike Yohnicki, London, ONT; Cliff Goodlet, Chattanooga, TN; Frank Mierzwinski, Reading, PA; Hank Lukas, Plainview, NY; Tom Vega-Byrnes, Chicago, IL; David Kammler, Ridgecrest, CA; Sean Kutzko, Urbana, IL.

Thanks to all and until next month, good listening!

SWBC Loggings

Alaska: KNLS, 6150 w/American Music Spotlight to 1100 when moved to 7365 (Watts, KY); 7365 at 1101 (Goodlet, TN).

Albania: R. Tirana, 6200 at 2330; 7065 at 2333 (Benoit, MA); 7300 at 0626 w/IS, ID, off, back on (Kutzko, IL); 9480 at 2239 (Johnson, AZ); 9500 at 1405 w/nx (Gilson, MD).

R. Gijrokafter home svc, 5057 in Albanian at 0650 (Vega-Byrnes, IL).

Antigua: DW relay, 17715 at 1350 in GG w/talk, mx, IS, ID & off at 1400 (Gilson, MD).

Argentina: RAE, 9690 at 0200 on a Thu w/DX pgm (Kline, CA); 0345 (Harrison, AL); 11710 at 0102 (Ross, WA); 0300 in SS (Zirkelbach, CA); 0445 in EE (Loran, CA).

Australia: R. Australia, 6060 at 1235 w/Weekend Magazine also at 1327 on 9710 (Gilson, MD); 9580/9655 at 1015 (Quinn, FL); 15320 at 0055 (Ross, WA); 15395 at 2130 (Loran, CA); 17795 at 0315 (Mierzwinski, PA); //17750 at 0000 (Zirkelbach).

ABC Perth, 9610 at 1441 (Gilson, MD); 1705 also 15425 at 0525 (Johnson, AZ).

Austria: R. Austria Int'l., 9550 at 0048 in GG, ID at 0100 (Johnson, AZ).

Bangladesh: R. Bangladesh, 17870 at 1233 w/talk by YL (Benoit, MA).

Belgium: BRT on 5910 at 2200 w/Brussels Calling but wiped out by Moscow QRM. Vy gud at 1330 on 15590 (Holterman, MD); 9925 at 2250 in un-ID lang (Johnson, AZ).

Benin: ORTB, Cotonou, 4870 at 0605 in FF (O'Conner, OR). Presumed SS-- Ed.

Bolivia: R. Illimani, 4945 at 0440 cross-fading w/Caracol-Neiva in Colombia (O'Conner, OR).

R. El Mundo, 6015 at 0400 w/annr & ID (O'Conner, OR). Presumed SS-- Ed.

Botswana: R. Botswana, 4820 at 0350 w/famed barnyard type IS, 0400 on in EE & Setswana, hvy QRM from HRVC (Vega-Byrnes, IL); 0400 w/QRM from Africa #1 on 4830 (Yohnicki, ONT).

Brazil: Radiodifusora do Amazonas, 4805 in PP at 0959, open carrier 1000-1005 (Goodlet, TN).

R. Dourados, 3375 in PP w/mx at 0232 (Lukas, NY).

R. Brazil Central, Goiania, 4985 in PP at 0750 (Vega-Byrnes, IL).

Radiodifusora Londrina, 4815 at 0500 in PP (Vega-Byrnes, IL). R. Nacional de Tabatinga is the sta usually hd here-- Ed.

R. Relogio Federal, 4905 at 0730 in PP, time anncs (Vega-Byrnes, IL).

R. Educacao Rural, Campo Grande, 4755 in PP at 0708 w/ID (Kammler, CA).

R. Bandeirantes, 11925 at 0040 in PP (Mierzwinski, PA).

R. Nacional Manaus, 4845 Portuguese w/mx, ID at 1002 (Goodlet, TN).

R. Globo, 6030 in PP at 0805 (Vega-Byrnes, IL).

R. Guaiaba, Porto Alegre, 6000 at 0700 in PP (Vega-Byrnes, IL).

R. Nacional/Radiobras, 11745 at 0230 (Harrison, AL); 11748 at 0157 off freq but back on 11745 3 days later (Johnson, AZ); 11750 at 0220 (Rabinowitz, MI); 0225 (Benoit, MA).

Bulgaria: R. Sofia, 6070 at 2230 (Loran, CA); 7115 at 2145 (Rabinowitz, MI); 0425 in EE (Johnson, AZ); SS on 9555 at 2330 (Garcia, MD); 2240 on 11720 (Goodlet, TN).

Burma: BBS (tentative), 4725 at 1420 (Loran, CA). Not in EE-- Ed.

Burkina Faso: R. Burkina, 4815 w/African mx at 0545 (O'Conner, OR); 0530 in FF (Vega-Byrnes, IL); 0651 (Goodlet, TN).

Canada: RCI, 5960 at 0116 (Benoit, MA); 0033 on 9755 (Ross, WA); 11945 at 2100 (Harrison, AL); 15320 at 2130 (Zirkelbach, CA); 17820 at 1928 (Ross, WA).

CBC Na. Quebec Svc., 11720 at 2054 in FF (Gilson, MD).

CHU time sigs, 3300 at 1800 (Harrison, AL).

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Chad: R. Nationale Chadienne, 4904 at 0503 in FF w/mx ID (Van Waarde, CT).
Chile: R. Nacional, 15140 at 1520 in SS (Ross, WA); 2331 (Garcia, MD).

China: R. Beijing (var sites) 0002 on 7420 in SS, 0019 on 9440 in CC (Johnson, AZ); 9665 at 0050 (Ross, WA); 9700 at 0930 (Haltermann, MD); 9770 at 0008 (Benoit, MA); 11650 at 0045 in SS (Van Waarde, CT); 11660//11685 at 0000 (Harrison, AL); 11715 at 0300, also 1215 on 7335 (Rabinowitz, MI); 17650 in SS at 0109 (Ross, WA).

CPBS, 5320//5860//5880 at 1430 in CC; 5030//5075 at 1405 in CC (Loran, CA); 15030 at 0110 in CC (Ross, WA).

Hunan PBS at 1213 in CC on 4990 (Ross, WA).
Colombia: Caracol Neiva, 4945 in SS at 0334 (Garcia, MD); 1140 in SS (Goodlet, TN).

R. Sutatenza, 5095 at 0237 w/FF language lesson (Van Waarde, CT).

Ondas del Meta, 4885 at 0957 in SS w/ID mentions of "Super Network" affiliation at 1000 (Goodlet, TN); 0320 (O'Conner, OR).

R. Matarena, 5972 at 0348 in SS w/ID & echo (O'Conner, OR).

R. Super de Medellin, 4780 at 0155 in SS w/ID (O'Conner, OR).

Cook Islands: R. Cook Islands, 11760 at 0548 w/easy paps, island mx & ID's, peaks to S9 (Johnson)

Costa Rica: R. Impacto, 5030 (new)//6150 at 0550 in SS, anthem 0557 & off 0600 (Loran, CA). Many readers have reported the new 5030 freq—Ed; 6150 wipes out KNLS at 1021. Moved or s/off 1041 (Watts, KY).

Radio for Peace, 7375 at 0104 in SS (Lukas, NY); 0315 (Kaiser, KS).

TIFC Foro del Caribe, 5055 at 0530 in SS (Mierzewski, PA); 0415 on 5055//9645 (Loran, CA).

AWR R. Lira, 9725 in SS & EE at 1415 w/test (Watts, KY); 1330 w/Voice of Prophecy & ID (Gilson, MD).

R. Reloj, 4832//6006 in SS at 0505 (O'Conner)

Cuba: R. Rebelde, 5025 in SS at 0416 (Garcia)
 R. Havana Cuba, 6140 at 0047, also 2055 on 15340 (Benoit, MA); 9525 at 0204 (Ross, WA); 9550

Abbreviations Used in Listening Post

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

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at 1422 (Gilson, MD).

Czechoslovakia: R. Prague, 5930 at 0400 in SS (Kutzko, IL); 0026 in un-ID lang (Johnson, AZ); 6055 at 0630 w/Interprogram in Czech, EE, FF, & GG (Haltermann, MD); 7345 at 0100 w/paps (Kline, CA); 11900 at 1624 w/ID (Ross, WA).

Dominican Rep.: R. Clarin, 11700 at 2310 in SS w/comedy routine (Harrison, AL).

East Germany: RBl, 6080 at 0020 (Rabinowitz, MI) EE??—Ed.; 9560//9730 at 0020 (Harrison, AL); 17880 at 1415 in possible GG, under Moscow (Johnson, AZ); 21540 at 1430 (Mierzewski, PA).

Ecuador: HCJB at 0109 on 9720, 0135 on 15155, 1210 on 17890 (Benoit, MA); 11740 at 1500 (Haltermann, MD); 11755 at 0045 (Harrison, AL); 11900 in un-ID lang at 2219 (Johnson, AZ); 11910 at 0106, in SS at 1622 on 15160 (Ross, WA); 17790 (altho anned 17780) at 2130 (Gilson, MD).

R. Quito, 4920 at 0351 in SS (Kutzko, IL).
 R. Jesus del Gran Pader, 5050 at 1059 w/ID, SS (Goodlet, TN).

La V. del Upano, 5040 at 0143 in SS w/mx, ID (Van Waarde, CT); 0227 (Goodlet, TN).

R. Popular, 4800 in SS var times 0100-0500, but no ID so tentative (O'Conner, OR); 0503 (Garcia).

R. Rio Amazonas, 4870 at 0010 in SS (Goodlet, TN); 0520 (O'Connor, OR).

HD210A time sigs on 7600 at 2333, pips w/SS anncts (Goodlet, TN).

Egypt: R. Caiza, 0303 on 9475 (Johnson, AZ); 9675 at 0315 (Harrison, AL); 9900 at 0103 in AA, 11975 in Urdu at 1628, 15155 in EE at 1631 (Ross).

England: BBC (var sites), 3955 at 0545 (Goodlet, TN); 0730 (Watts, KY); 6175 at 2303 (Gilson, MD); 7230 at 2155 s/off (Rabinowitz, MI); 7325 at 0304, 9515 at 2325 (Benoit, MA); 9590 at 0058 (Ross, WA); 9915 at 2246, 11820//17885 at 1632 (Johnson, AZ); 15400 at 1740 w/African svc (Rabinowitz, MI).

Equatorial Guinea: R. Nacional (presumed), Beta in SS at 0515 w/RITY QRM (Loran, CA).

Ethiopia: V. of Revolutionary Ethiopia, 9560 at 1500 but QRM'd (Kline, CA). Language??—Ed.

Falkland Islands: FIBS, 3958 at 0706 w/easy listening mx (Kammerler, CA), Same time, vy weak, tentative log, 0600-0615 top 10 countdown (Loran).

France: RFI, 9790 at 1115 (Quinn, FL); 21645 at 1156 in FF (Mierzewski, PA).

French Guiana: RFI relay, 9800 at 2259 in SS (Garcia, MD); 0032 (Ross, WA); 6055 at 0215 (Benoit, MA).

RFO Cayenne, 5055 in FF at 0848 w/mx, commercials, ID, nx (Van Waarde, CT).

Finland: R. Finland Int'l, 15400 at 1304 w/Compass North (Benoit, MA); 1400 (Yahnicki)

Gabon: Africa #1, in FF at 1645 on 15200 (Ross, WA); 1930 on 15475 in FF, mx, nx & drama pgm (Zirkelbach, CA).

RFI via Africa #1, 4890 at 0430 in FF, EE at 0440 (Watts, KY).

RTV Gabonaise, 4770 in FF at 0540 (O'Conner)

Ghana: CBC Radio 1, 4915 w/ID & s/an at 0530 (O'Conner, OR); ID, drums, EE nx at 0600 (Johnson, AZ); nx at 0700 & ID This is the CBC in Accra" at 0707 (Loran, CA).

Greece: V. of Greece, 7430 at 0141 in Greek (Ross, WA); 0630 s/on w/IS, anthem in Greek, 0003 in Greek at 9420 (Johnson, AZ); 15630 at 1549 in Greek (Garcia, MD).

Guatemala: TGNA R. Cultural, 3300 at 0415 w/rx pgm, npsy ID at 0420 & into SS (Vega-Byrnes, IL); 0606 in SS (Mierzewski, PA); 0135 w/SS light classical mx (Kneitel, NY).

R. Chortis, 3380 at 1121 in SS, ID Radio Chortis la emisora campesino (Goodlet, TN).


Guam: KTWR on 11805 at 0929, 'neath DW at 0950, 2101 w/ID on 11965 (Kline, CA).

Honduras: R. Luz y Vida, 3250 in SS w/rx pgms at 0230 (Kammler, CA).
HRVC, 4820 at 0158 w/ID & talk in SS (O'Conner, OR).
Hong Kong: BBC Relay, 11775 at 0830, strong but deep fading (Kline, CA).
Hungary: R. Budapest, 9835 at 0208 (Ross, WA).
India: AIR, 9910 at 0049, nx at 0100 (Johnson, AZ); 2130 w/listeners' mail, commentary, nx (Loran, CA); 2210 on 11620 (Goodlet, TN).
Iran: VOIRI at 1950 on 9022, v. poor level, but better copy in AA at 2030 (Loran, CA); 1120 on 15084 in Farsi (Garcia, MD).
Iraq: R. Baghdad, 0154 on 6113 w/mx & ID (Garcia, MD).
Israel: Kol Israel, 5885 in SS at 0243 (Garcia, MD); 7460 (ex-7465) at 0100 (Lukas, NY); 7462 at 0101 (Mierzwinski, PA); 7465 at 0100 (Zirkelbach, CA); 9435/9845 at 0100 (Quinn, FL); 9815 at 2010 (Harrison, AL).
Italy: RAI on 9575 at 0100 w/nx, pps, easy listening, jazz, tourism report (Harrison, AL).
Ivory Coast: R. Cote d'Ivoire, 6015 at 0600 in FF (Vega-Byrnes, IL); 11920 in FF at 2056 (Kutzko, IL); 0600 s/on on 6015 (O'Conner, OR); 6015//7245//14940 at 0647 (Kutzko, IL).
Japan: R. Japan (var sites), 5960 at 0325 (Zirkelbach, CA); 9505 at 1905 (Johnson, AZ); 11800 at 2245 in JJ, into EE at 2300 (Rabinowitz, MI); 15280 at 0115 (Ross, WA); 15300 at 2300 (Holterman, MD); 21700 at 1528 (Lukas, NY).
NSB/R. Tanpa, 6055//9595 at 0925 in JJ & EE (Zirkelbach, CA); 0740 in JJ (Kline, CA); 9760 at 0205, earliest ever noted here (Johnson, AZ).
Kuwait: R. Kuwait, in AA on 9840 at 1636 (Ross, WA); AA at 0433 (Johnson, AZ); 11655 at 1800 (Harrison, AL).
Liberia: ELBC on 6090 at 0658 w/nx, ID: This is the LBS from Monrovia (Yohnicki, ONT).
ELWA, 4760 at 0615 w/rx pgm (Vega-Byrnes, IL).
VOA relay, 11580 at 0500 in FF w/ID, nx, mx (Van Waarde, CT).
Libya: R. Jamahiriya, 7245 at 2200 s/on (Rabinowitz, MI); tentative on 15415 in AA at 1323 (Benoit, MA).
Lithuanian SSR: R. Vilnius (via R. Moscow), 6110 at 2322 w/language lessons (Harrison, AL); 6200//7165 at 2306 (Rabinowitz, MI); 13645 at 2320 (Ross, WA).
Mali: RTV Malienne, 4784 at 0658-0758 in FF & vernaculars, continued on 7295 post 0838 (Holterman, MD); 4783 & 4835 s/on in FF (O'Conner, OR). At 0600??-- Ed.
Malta: IBRA Radio, 6110 at 2045-2115 w/rx. Announced now using 5980 (Holterman, MD).
Marshall Islands: WSZO, 6070 at 0605 in un-ID lang, instrumental mx, slow steel guitars, poor vevel (Zirkelbach, CA); 4940 at 0620 in lang that sounded like pidgin (O'Conner, OR).
Mauritania: ORTM, 4845 at 0727 in AA, ID 0730, local mx (Kutzko, IL).
Mexico: R. Educacion, 6185 in SS at 0652 (Ross, WA); 0744 w/Program Folklorico, anthem & off 0800 (Van Waarde, CT).
R. Universidad, 6115 in SS at 0531 (Loran, CA).
Monaco: TWR, 7105 at 0824 w/rx pgm (Van Waarde, CT).
Mozambique: R. Mozambique (tentative logging) at 0338 on 3210 in PP (Kneitel, NY).
Netherlands: 15175 (from 15180 at 1830) in EE, also 13700 at 1828 in FF (Lukas, NY); 1918 on 15180, off at 1925 (Johnson, AZ); 6020 at 0127 in SS (Garcia, MD); via Madagascar relay on 15570 at 1650 (Harrison, AL); 17605 + 1953 in FF (Gilson, MD).
Netherlands Antilles: R. Netherlands via Bonaire, 6165 at 0200 (Benoit, MA); 21885 at 1917 (Johnson, AZ); TWR-Bonaire, 1600 on 15335 (Harrison, AL); 17890 at 1432 (Gilson, MD).
New Caledonia: RFO Noumea, 7170 at 0758, ID 0800, all FF (Kutzko, IL); FF & top 40 at 0635 (O'Conner, OR).
New Zealand: R. New Zealand, 11780 at 0305 (Garcia, MD); 15150 at 1815, wx report (Loran, CA); 17705 at 0540 (Johnson, AZ).
Nicaragua: V. of Nicaragua, 6100 at 1230 w/nx, mx, ID (Northrup, CT); 0600 w/nx (Loran, CA).
Niger: ORTN La Voix du Sahel, 5020 at 0645 w/African mx, vocals, YL drums (Vega-Byrnes, IL).
Nigeria: V. of Nigeria, 7255 in FF at 0640 (O'Conner, OR); into Hausa after talking drums at 0700 (Watts, KY); 0533 (Johnson, AZ).
R. Nigeria, Kaduna, 4770 at 0533 w/nx (Kutzko, IL); 2230 (Harrison, AL).
North Korea: R. Pyongyang, 9715 at 1212 (Garcia, MD); 9977 at 1700 (Zirkelbach, CA); 0000 on 11735 w/anthem, ID into SS (Johnson, AZ).
Northern Marianas: KFBS, Saipan, 11705 at 2157 in EE & possibly Indonesian ID's, then pgm in un-ID lang (Harrison, AL).
KYOI, 11900 at 1430 (Watts, KY); 1214 w/nx (Garcia, MD).
Norway: R. Norway Int'l., 1905 on 9590 w/nx (Loran, CA); 1608 on 11850 (Johnson, AZ); 1928 on 11865 (Garcia, MD).
Pakistan: R. Pakistan, 17760 at 1544 w/ID, nx in Hindu (Garcia, MD).
Papua New Guinea: NBC Port Moresby, 4890 at 0600 (O'Conner, OR); drama at 0902 (Kline, CA);

1318 country & pops (Goodlet, TN).
Paraguay: R. Nacional, 9735 in SS at 0100, folk mx (Harrison, AL); tentative at 0120 in SS (Rabinowitz, MI).
Peru: R. San Martin, 4810 in SS at 0415 w/ID & mx (O'Conner, OR).
R. Union, tentative at 0415 on 6115 (O'Conner) r. Andino, 4995 at 1047 in SS w/commercials, mx, ID's (Goodlet, TN).
R. Huanta, 4755 at 0037 in SS, mx, ID (Garcia) R. Ancash, 4991 at 0500 s/off in SS (O'Conner).
R. Tropical de Tarapota, 4935 at 1055 in SS, mx, ID, prima jingles (Goodlet, TN).
R. Atlantida, tentative at 0415 in SS on 4790 (O'Conner, OR).
Poland: R. Polonia, 7270 at 2300 w/multi-language s/on; night concerts pgm at 0100, EE at 0200 (Rabinowitz, MI); 0637 classical mx (Kutzko).
Portugal: RFE (via Gloria site), 21720 at 1145 in Czech (Mierzwinski, PA).
R. Portugal, 9680 at 2022 w/anthem, ID in PP (Johnson, AZ); 11870 at 1925 (Lukas, NY).
Romania: R. Bucharest, 5990 at 0420 (Loran, CA); 9570 at 0200 (Harrison, AL); 9630 at 1312 w/Radio Pictures pgm, s/off (Gilson, MD).
Senegal: ORTS, 4890 at 0630-0730 in African lang (Vega-Byrnes, IL).
Solomon Islands: SIBC, 5020 at 0630 mx & nx (O'Conner, OR); tentative at 0658 (Loran, CA).
South Africa, Rep. of: Radio RSA, 7295 at 0411, 9580 at 0108, 15125 at 0427 w/ID for FF svc, 1748 on 15185 in GG (Johnson, AZ); 9580//9615//11730 at 0200-0256 (Kline, CA); 4990 at 0320 (O'Conner, OR); 11900 at 0510 in FF, & 21590 at 1210 in FF (Mierzwinski, PA).
Radio 5, 4880 at 0320 W/nx, wx, breakfast show, commercials (Harrison, AL).
R. Oranje, 3215 at 0321 in Afrikaans w/mx, drama (Goodlet, TN).
SABC, 3320 at 0131 (Lukas, NY).
South Korea: R. Korea, 9750 at 1415 w/nx & comment (Loran, CA); 15575 w/listener contest & Korean lessons from 0000 (Harrison, AL).
Spain: Spanish Foreign R., 6125 at 0132, also 2315 in FF (Gilson, MD); 9630 at 0042 (Ross, WA); 15375 at 1834 (Benoit, MA).
Sweden: R. Sweden Int'l., 3985 at 0720 in II to EE at 0730 (Vega-Byrnes, IL); 0730 to Europe (Watts, KY); 6135 at 0203 (Benoit, MA); 9725 at 1235 in FF (Northrup, CT).
Syria: R. Damascus, 9950 at 2045 mx & IS, ID This is Radio Damascus the broadcasting service of the Syrian Arab Republic (Harrison, AL); 11625 at 2119 (Ross, WA).
Tahiti: R. Tahiti, 11825 at 1607 in FF, pps, commercials (Johnson, AZ).
Taiwan: (including WYFR relay) 7355 at 2230 (Harrison, AL); 9585 at 0224 (Garcia, MD); 11805 at 2256 (Benoit, MA); 15215 at 0113 (Ross, WA).
Togo: Lo V. de la Nouvelle Marche, 5047 at 0549 w/hi-life mx, ID, talk. Shait chime IS & ID at 0600 (Kutzko, IL); carrier on at 0515 then s/on in FF 0530 (O'Conner, OR).
Tunisia: RTT on 7310 in AA at 1630 (Ross, WA).
Turkey: V. of Turkey, 9445 at 2300 w/nx (Watts) **Ukrainian SSR:** R. Kiev (via R. Moscow), 6200//7165 w/Ukraine Today at 0300 (Rabinowitz,


MI); 7205 at 2344 (Garcia, MD); 11790 at 0050 (Benoit, MA); 13840 at 0033 (Johnson, AZ); 13445 at 0029 (Kline, CA).
United Arab Emirates: UAE Radio, Dubai, 9640 (Ross, WA); 21605 at 1201 in AA (Mierzwinski, PA).
United States: KUSW, Salt Lake City, 17715 at 1902 (Wolverton, AZ); 0030 on 11680 (Rotandara, CT); 15580 at 2200 (Kline, CA); 15225 at 1805 (Benoit, MA); 9755 at 0330 (Watts, KY).
VOA, 5995 at 0010, 9650 at 0123, 9760 at 0400, 11760//15410 at 1800, 17440 in FF at 2103, 17740 at 2035 in AA (Gilson, MD); 11695 at 0015 (Benoit).
KVOH, 9435 at 0007; 17775 at 2113 (Gilson, MD).
WRNO, 15420 at 1740 (Benoit, MA).
R. Maithi, 9525 in SS at 0207 (Garcia, MD); 11930 in SS at 1630 (Ross, WA).
WCNS, 9870 at 0430 (Quinn, IL); 21515 at 1955, 17740 at 2138 in AA, 15320 at 2014, 13760 at 1401 (Lukas, NY); 21515 at 1728 (Gilson, MD); 0140 on 9850 (Harrison, AL); 9465 at 1730 (Kaiser, KS).
WHRI, 15105 at 1823 (Benoit, MA).
WMLK, 9455 at 0407 (Van Waarde, CT).
WYFR, 9680 at 0043 (Benoit, MA); 13695 at 2037, 5950 at 1432 (Lukas, NY).
V. of the OAS, 11830 in SS at 2308 (Van Waarde, CT).
AFRTS, 15345 at 2321 (Ross, WA).
USSR: R. Moscow, 12050 at 1936 (Ross, WA); 5905 at 0004, also 6000 at 0000, 6130 in SS (time??-- Ed.); 6200 at 2235, 7485//7500 at 2300, 9490 at 2335 in SS, 17820 at 1411 (Gilson, MD); 11840 at 1705 (Benoit, MA).
Radiostansiya Atlantika, 4785 at 1222 in RR (Goodlet, TN).
R. Peace & Progress, 9790 at 1408 (Benoit, MA).
R. Moscow (via Khabarovsk site), 12050 at 0450-0500 (Mierzwinski, PA).
Kamchatka R., 4485 at 0720 in RR (Kammler).
Vatican City: Vatican R., 11780 at 0052 (Ross, WA); 6150 at 0102 (Benoit, MA).
Venezuela: YVTO time sigs, 6100 w/pips & time ancts in SS at 1120 (Goodlet, TN).
R. Tachira, 4830 at 0200 in SS (O'Conner, OR); Benoit, MA).
R. Rumbos, 4970 at 0355 in SS, nx w/2-tone chime after each item (Kutzko, IL).
R. Capital, 4850 at 0355 in SS (Loran, CA); Top 40 at 0600 (Yohnicki, ONT).
Ecos del Torbes, 4980 in Spanish at 0020 (Vega-Byrnes, IL); 0358 w/anthem at 0402, s/off 0404 (Loran, CA).
R. Valera, 4840 in SS at 1006, ID 1014 (Goodlet) **West Germany:** DW (var sites) 6040//6085 at 0100 (Gilson, MD); 0500 on 6120 (Harrison, AL); 0100 on 6145 (Kaiser, KS); 9545 at 0047 in GG (Johnson, AZ); 21600 in Amharic at 1435 (Mierzwinski, PA).
Suddeutscher Rundfunk, 6030 at 0739 in GG w/pop mx & call-in pgm, ID, nx (Van Waarde, CT).
Yemen PDR: Democratic Yemen BC Svc., 7190 w/AA & nx at 0430 (Watts, KY); 0300-0336 in AA (Holterman, MD).
Yugoslavia: R. Yugoslavia, 7240 at 0200 in SS (Garcia, MD); 6100 at 2220 w/nx (Harrison, AL); 15240 at 1500, but co-channel QRM from RBI (Yohnicki, ONT).

PC



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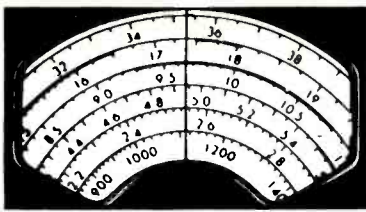
By Bob Grove WA4PYQ

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COMMUNICATIONS CONFIDENTIAL

BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

From the land of the windmills, the Netherlands, we hear from Teun Feldman who said in part, "because of my interest in naval communications, I like to eavesdrop on naval mobile frequencies. Since there are ships of many NATO countries in the Persian Gulf, I love to listen to them."

Teun also sent along some frequencies used by the Dutch minesweepers and they are: 16909, 11500, 10276.7 and 9945 kHz.

Here is another QSL address provided by Patrick O'Connor, NH who explained that Station WRF, Elizabeth, NJ plus the ships in the "Sea-Land" fleet can be verified through this address:

Sea-Land Service
PO Box 800
Iselin, NJ 08830

Gary Vendetti, NJ asked about a signal on 7930-7944 kHz which had a ringing sound to it making it very annoying to hear. I checked for this signal and believe what he actually heard consisted of two adjacent MPX signals. One was centered at approx 7934.8 and the other about 7940.2 kHz. The lower freq had some flutter to it and, consequently, if tuned to the point where the two blended together, the signal was quite unpleasant to listen to.

Eric Sanford, Alaska says "I'm a relatively new participant to the ranks of SWL'ing and have enjoyed getting my feet wet, so to speak. I've had fun looking for 'utility' stations and the column has helped me a great deal." Thanks Eric and we hope to see many contributions from you in the future.

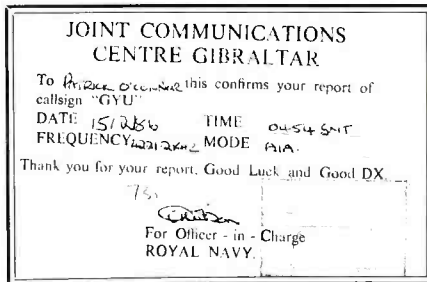
In addition to the list of MARS callsigns, Andy Gordon, CT also furnished some US Navy frequency information plus some meanings for abbreviated titles.

NAVCAMSLANT Naval Communications Area Master Station-Atlantic
Norfolk ICSB Inter Command Switchboard
San Diego CSS1 Command Switching System

Ships calling frequency is 4066.1 kHz
ICSB answers on 4360 kHz
CSS1 answers on 4360.5 kHz
Harbour common frequencies are 2714 & 2716 kHz USB

By the way, from the above, it would follow that NAVCAMSPAC would be Naval Communications Area Master Station—Pacific.

JM, KY replied to the question about CW Press frequencies which appeared in the



From Patrick O'Connor, NH we learn that British Naval Radio Station, Gibraltar (GYU) has started issuing its own QSL card and here is what it looks like.

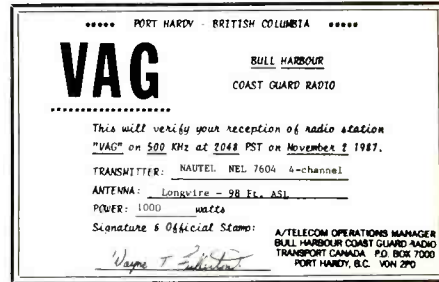
January 1988 column. "I've seen CFH, Halifax, NS, Canada occasionally sending nx items in English on 12726 kHz around 1810 UTC. I've also seen LSA2, Boca, Argentina with nx in Spanish on 17191 kHz at 0048 UTC." Ed.

Note: I just recently saw nx in German on 13364 kHz at 1630 UTC.

Dave White, ME sent in a logging he was unable to identify of a transmission on 6245 kHz where TRU was working ABA. The latter was giving group repeats of a previously sent message. There are many of these nets on the air displaying the same type of 3L callsigns and similar procedures. During East Coast evening hours, these nets can be heard on 2, 3, and 4 MHz. Some 5F traffic has been passed and other cipher traffic with 5-character groups also has been observed. This latter traffic uses letters A-Z, Spanish Nyeh (MW) and figures 2, 3, & 8 for a total of 30 characters. I noted that frequent cryptopart breaks are apparently utilized as shown by each message being 30 groups in length. I have not confirmed the identity of these nets but suspect they are Cuban, possibly Cuban Navy? The loggings this month include some of these nets.

Bob Landis, MD wrote asking for an assist with a QSL address for station 9MG in Malaysia. For other readers who have also had problems with the address here it is: Penang Marine Radio, Syarikat Telecom Malaysia, Kuala Muda, 13110 Penaga, Seberang Perai, Malaysia.

Referring to his loggings, H. Jones, Switzerland commented, "You will notice that most of my intercepts are in the Marine and Aviation bands. My special interest is easily explained. I spent fourteen years at



J. McDonald, British Columbia, Canada received this QSL card from the Bull Harbour CG Station. The accompanying letter he received indicated the station is due to close so another QSL will be lost to SWL'ers.

sea as a Ships Radio Officer and then worked as an Electronics Engineer and Instructor in Civil Aviation." His monitoring equipment includes a JRC NRD-525 and a Panasonic RF4900. Mr. Jones sent along the frequencies for the world-wide network (CW, RTTY & SSB phone) of the International Red Cross station HBC88 which is located in Versoix, Geneva, Switzerland. 6998.5, 13915, 13965, 13973, 13997, 20753, 20812, 20815, 20939, 20942, 20998, 27998, 29701 kHz.

Since early 1987, many monitors have reported hearing USB voice activity on various frequencies (some were 6593, 6565, 6620 kHz) where the stations exchanged short messages like this: "339SUGAR 718ROMEO 1666 1591 710ROMEO 5039 926SUGAR." Most recently the net was discovered operating on 8826 kHz at 0040 by Dave Kammler, CA.

Initially, someone had labeled this as a "mercenary net." However, I believe, after a concentrated coverage of the net, it is a fishing boat net which send encoded position and catch information. Some of the boats seem to be off the coast of California, in view of references to the Santa Ana winds, and comments about San Diego. At least one of the boats must be quite far north, because of frequent mention of it being cold, and that the crows nest was covered with ice. At times, the conversations became very crude, well laced with obscene expressions. Some of the conversations dealt with parts for the boats, sea and weather conditions and moving to other locations. The languages noted in use are English, some Spanish and possibly some Portuguese.

In response to queries regarding frequency sharing, such sharing does not necessarily imply that the users are related. Other factors also have to be considered in making a determination that two activities sharing a frequency are in fact sponsored by the same organization.

**Ute Station Intercepts
(All Times Are UTC)**

- 206: Beacon EF, Castlegor, BC at 0625 (J.M., KY); beacon QI, Yarmouth, NS at 0457 (Miller, WI).
- 230: Beacon VYS, Peru, IN at 0518 (J.M., KY).
- 239: Beacon SAR, Sporto, IL at 0716 (J.M., KY).
- 248: Beacon PQF, Mesquite, TX at 0403 (Miller).
- 308: Beacon HIL, Gr. Bend, KS at 0316 (Miller).
- 344: Beacon CL, Cleveland, OH w/voice wx bc at 0711 (J.M., KY).
- 348: Beacon VLX, Mtn. View, AR at 0450 (Miller, WI).
- 355: Beacon YWP, Webequic, ONT at 0615 (J.M., KY).
- 359: Beacon DUA, Durant, OK at 0457; beacon MLJ, Milledgeville, GA at 0425 (Miller, WI).
- 379: Beacon CM, Pt. aux Basques, NF at 0659 (Miller, WI).
- 382: Beacon UPA, Punta Alegre, Cuba at 0636 (J.M., KY).
- 385: Beacon AUC, Arauca, Colombia at 0445 (Pat O'Connor, NH).
- 387: Beacon SPP, San Andreas, Colombia at 0449 (O'Connor, NH).
- 400: Beacon BGA, Bucaramanga, Colombia at 0505 (O'Connor, NH).
- 410: Beacon PEL, Manaus, Brazil at 0422 (O'Connor, NH).
- 420: Beacon CEK, Crete, NE at 0449 (Miller).
- 432: Beacon IZN, Lincolnton, NC at 0311 (Miller, WI).
- 434: CLJ, un-ID sta in CW at 1512 w/coll marker (Ed.).
- 438: CFH, Halifax, NS in CW at 0200 w/sea condx rpt (Burns, NJ).
- 1620: Beacon OH, un-ID at 0516 (Ross, ONT).
- 2054: Victoria, BC CG sta w/navig wx in USB at 0713. Announced another bc for 0520 PST (Kammerler, CA).
- 2291: IDQ/2/4/6, Italian Navy, Rome, Italy w/coll marker in CW at 0145 (Tom Kneitel, NY).
- 2345: NBE, USN Dallas, TX in CW w/callsign marker at 1210 (Bob Margolis, IL).
- 2598: VFZ, Canadian CG, Goose Bay, NF in USB at 0052 w/wx bc (Margolis, IL).
- 2670: NMK, USCG Cape May, NJ in USB at 2324 wkg WTL7643; NFMK, USCG Seneca in USB at 2325 wkg fishing vessel (Ross, ONT).
- 2700: 5BA, Nicosia R., Cyprus Maritime Radiotelephone Svc., EE/OM in USB w/voice mirror at 0110. Asking for vessels to reply on 4182 at 5079 kHz (Kneitel, NY).
- 2714: NJLK, USS Kaufman (FFG-59) clg Portland Harbor Control in USB at 1000 (Gordon, CT).
- 2716: NGGD, USS Mississippi (CGN-40) clg Roosevelt Roads Port Cntrl at 0925; NRWS, USS Simpson (FFG-56) clg Norfolk Port Cntrl at 0930; NDXU, USS Santa Barbara (AE-28) clg Charleston Tug Cntrl at 1018; NGWU, USS Underwood (FFG-36) clg Navy Bermuda Cntrl at 1050; NLDL, USS Milwaukee (AOR-2) clg Roosevelt Roads Tug Cntrl at 1100; NREB, USS Exploit (MSO-440) wkg Newport Port Cntrl at 2245 re search for wreckage of downed a/c (Gordon, CT).
- 2740: FFO, St. Noazaire, France in USB at 0823, OM/FF in comms w/YL (Margolis, IL).
- 2832.7:GNKI, Norwich, England in CW at 0844 w/coll marker & ARQ phasing sig (Margolis, IL).
- 2850: ZSC, Cope Town R., RSA in CW at 0330 w/marker reading "ZSC Sitor SVC" (Kneitel, NY).

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identifier/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)

- 3088: 6ZVP, un-ID sta w/CW marker at 0343 (Kneitel, NY).
- 3107.2: Beacon P in CW at 0346 (Kneitel, NY).
- 3130.2: 10I, un-ID sta w/net in USB at 0513 (Kneitel, NY).
- 3223: YL in AM-mode at 2149 w/Czech #'s tfc (Skornia, England).
- 3245: AAT3USS wkg AAR3CO in USB at 0130. Army MARS tfc (Kneitel, NY).
- 3265: Prob. Rep. of Korea mil in USB at 1229. OM w/test counts in Korean 1.0 & 0.1 - phonetics in sequence (Saba, S. Korea).
- 3275: CW marker at 0357 reading "A 6DX" (Kneitel, NY).
- 3287: CKN, Vancouver, BC in CW at 0330 w/marker & freq list (Burns, NJ).
- 3370: YL/GG in USB at 2144 w/4F grps (Skornia, England).
- 3480: BAV, un-ID sta in CW at 0039 w/grps consisting of figs 2, 3, & 8 - letters with SS accent marks (Ed.).
- 4035: LAF, un-ID sta at 1805 in CW w/tfc similar to 3480 kHz intercept (Ed.).
- 4066 1: NAON, USS New Orleans (LPH-11) clg San Diego CSSI in USB at 0345 (Gordon, CT).
- 4075.3: Ship Anangel Peace in USB at 1814 w/patch via WLC (Margolis, IL).
- 4111: SXH, Spato Attikis Navrad, Greece w/numbers in CW at 1934 (Skornia, England).
- 4125: KDS, Blutworth Construction, Houston, TX in USB at 2332 wkg vessel The Texan (Margolis, IL).
- 4128.1: WJBG, Ship Overseas Ohio w/patch to WOO in USB at 0020 (Burns, NJ).
- 4231: A7D, Qatar in CW at 2135 w/coll marker (Vendetti, NJ).
- 4233: 71HGE clg 70LWQ, prob. Spanish Navrad units, CW at 0255 (George Osier, NY).
- 4238: 4XO, Haifa R., Israel in CW at 0234 w/marker (Osier, NY).
- 4250: XFL, Mazatlan, Mexico in CW at 0047 w/marker (Osier, NY).
- 4292.1: IAR24, Rome P.T. Radio, Italy in CW at 0300 w/marrit wx in EE (Osier, NY).
- 4304: LS04, Buenos Aires, Argentina in CW at 0307 w/marrit wx in SS (Osier, NY).
- 4363.2: Limer QE II in USB at 0902 w/high seas 'phone call (Wallace, CA).
- 4420: YL in USB at 2255 repeating Czech #'s 279, off by 2303 (Skornia, England).
- 4537: YL/SS clg stas w/numerical calls such as Treinta Cinco. clg is some type of course offered by an un-ID ministry. Course possib scheduled for Nicaragua. In LSB at 1612; see 5278 kHz listing (Ed.).
- 4544-4557: Large CW net included CXG & OBT - others, passing 5F grps at 2112. Very sloppy (Ed.).
- 4558.8: FDG7, French Air Force, Toulouse, France w/VVV marker in CW at 0532 (Kneitel, NY).
- 4563: JWT, Stavanger Navrad, Norway w/VVV marker in CW at 1218 (Skornia, England).
- 4608: 78LYQ clg 74DEL in CW at 2312, probably Spanish naval units (Ed.).
- 4634: KF4685, un-ID USB sta at 0308 along w/several other southern USA stas in net. Comms re calibration readings input data. Seems to be dealing w/geological matters so poss oil/gas exploration related ops (Hall, WA).
- 4652: JWT, Stavanger Navrad, Norway in CW w/VVV marker at 0149 (Vendetti, NJ).
- 4730: MKL, Pitreavie, England in USB at 0313. YL/EE w/aviation wx (Ross, ONT).
- 4746: AFE8, MacDill AFB, FL in USB at 0314 w/aviation wx (Osier, NY).
- 4801: A & N beacon in CW at 0520, series of each letter alternate like old time LF aera radio range (Sanford, AK).
- 4884: TVW clg PFB un-ID, also CZN, THL, MCG, PHN, & FYM. Sending 5 character grps similar to 3480 kHz intercepts (Ed.).
- 4930: OM/RR w/5F grps each sent X2 in AM-mode, 1211-1224. Preamble was rpts of 219 then 781-781-71-71 RAZHNYO RAZHNYO. Ended with those 2 words again - 781-71-000 (Saba, S).
- 4957.2: KKN39, State Dept., Washington, DC in CW at 0424 w/rospy CW net sending marker. Also at 0648 on 4956.7 kHz with rospy CW note (Harry Helms, AA6FW, CA).
- 4996: RWM, Moscow, USSR at 0541 in CW w/time pips (Kneitel, NY).
- 5000: MSF, British Bureau of Standards, Teddington, England w/CW time pips every 10 mins at 0350, 0400, 0410 (Osier, NY).
- 5154: Un-ID sta w/5 character grps in CW at 1605. See 3480 listing (Ed.).
- 5156: Un-ID sta in CW w/5F grps w/AA separator sent often (Ed.).
- 5174: Un-ID CW sta at 1610 sending varying series of dashes w/pauses between each series (Ed.).
- 5250: Un-ID sta sending 5 character grps in CW at 1955. See 3480 kHz (Ed.).
- 5261: Un-ID's KSD, OUW & MIR wkg one another in CW at 1621 (Ed.).
- 5262: Canadian fishing vessel net, USB at 0142. Prob off BC (Hall, WA).
- 5278: YL/SS in LSB at 1515. Appears to be net

- cntrl. Clg stas use #'s callsigns. See 4537 kHz (Ed.).
- 5330: YL/EE with 3/2F grps at 2125 (Ed.).
- 5340: Un-ID CW sta at 1505 sending similar to 5174 kHz intercept (Ed.).
- 5465: Un-ID CW sta at 1530 sent few 5F grps then paused, sent BT & into 5L grps. Sloppy fist (Ed.)
- 5466: Un-ID CW sta at 1543 w/figs but unusual format: NR 0836R537R295RRR43 BT, etc. (Ed.).
- 5500: Un-ID AM sta at 2149 w/mx stanza from opeto Tosca rtpd over/over (Vendetti, NJ).
- 5520: CLP1, MFA Havana, Cuba wkg CLP41, embassy in Georgetown, Guyana in CW at 2033. One op was asking the other if Vladimir & Yui were there. Good Cuban names, eh? (Ed.).
- 5549: DBV, un-ID sta in very slow CW at 0604 w/callsign marker (Kneitel, NY).
- 5600: YL in AM-mode at 2209 w/Serbo-Croat 5F grps. Prior to tfc there was marching music w/trumpets & snare drums (Vendetti, NJ).
- 5635.2: GTS & JLK, un-ID stas at 2104 exchanging sig reports w/CW (Ed.).
- 5643: KUA3, Honolulu Aeradio, HI asking for position reports from airliners, USB at 1300-1400 (Szalony, CA).
- 5670: YL/SS in AM-mode at 0543 w/5F grps (Kneitel, NY).
- 5676: USCG a/c 1708 clg NOJ, USCG Kodiak, AK re vessel in trouble, USB at 2254-2315 (Sanford, AK); NAVCAMSPAC, San Francisco in USB at 2222 wkg DOE-1, then shifted to 8984 kHz for comms check (Kammerler, CA); USCG Atlantic Rescue in USB at 0208 to CG a/c 1502 re ship in trouble. Also an scene was Canadian 103 (a P-3 type a/c) (Vendetti, NJ).
- 5740: Two YL's & an OM in EE, LSB at 1551 w/comms relating to availability of several a/c's, picking up pilot & passengers. Sounded like a small FL-based charter svc (Ed.).
- 5785: NGR, USN Kata Soli, Greece w/FAX at 2142 (Skornia, England).
- 5922: Beacon X in CW at 0400 (Margolis, IL).
- 6351.5: 3BM3, Bigora, Mauritius in CW at 0125 clg CQ (Ross, ONT).
- 6430: CFH, Canadian Forces R., Halifax, NS in CW at 0221 w/N. Atlantic info re ten 40-foot cargo containers overboard from a vessel (Ricks, PA)
- 6491.5: VCS, Canadian CG, Halifax, NS in CW at 0401 w/tfc list (A. Nonymous, MO).
- 6521.9: KSG, Zapata Marine Svc., High Island, TX in USB at 2056 wkg boiges (Margolis, IL).
- 6609: PAA Clipper 481 in USB at 0113 wkg Athens, Greece (Vendetti, NJ).
- 6753: New York R., w/aviation wx, USB at 0945 (Wallace, CA).
- 6761: Un-ID mil net in USB at 0150 (Wallace).
- 6784.4: YL/SS w/5F grps in AM-mode at 0307, audio problems (Stinnett, WV).
- 6790: FSB, INTERPOL Paris, France in CW at 0131 (Vendetti, NJ).
- 6795: Un-ID CW sta at 0539, poor fist. Seemed to be half EE & half SS. Ended 11 msg: "Connect Connect de Alfa DGI AR AR." Sto later passed QSY info but so badly I couldn't get a copy (Hall)
- 6995: ARAZDDX clg ARAXZO & ARATIN. Net hrd in CW nightly around 0000-0100 (Vendetti, NJ).
- 7463: Jammer SJ, presumed Soviet, at 0042 (Vendetti, NJ).
- 7534: Repeated 5-dot/1-dash sigs at 1958 (Skornia, England).
- 7625: KWS78, US embassy, Athens, Greece in CW at 0144 w/marker. New freq? Previously noted on 7620 kHz (Vendetti, NJ).
- 7680: YL/EE in AM-mode at 0316 sending 3/2F grps (Vendetti, NJ).
- 7705: CW sta w/5L grps at 0532 (Kneitel, NY).
- 7720: KNY23, Czech embassy, Washington, DC w/VVV marker in CW at 2028 (J.M., KY).
- 7725: YL/SS in AM-mode at 1029 w/4F grps (Margolis, IL).
- 7886.7: Un-ID sta w/CW marker "WWM T R" at 1232 (Kneitel, NY). See 8052 kHz - Ed.
- 8052: CW sta at 0033 sends cut # callup "WMW T A" repeated to 0035, then cut #'s "TA XW XXX" & into 5F grps w/cut #'s (Vendetti, NJ). Believe XW may be garble for NAW. In this particular cut # system that equates to 215 for the grp count. XXX is perhaps garble for "02 02 02." Note similarity to intercept on 7886.7 kHz (Ed.).
- 8063: OM/GG w/5F grps in USB at 0539 (Kneitel, NY).
- 8090.1: MNM, USCG Commsto Portsmouth, VA in CW at 2005 w/wx (Ricks, PA).
- 8146: IMB54, Italian AF, Rome, Italy w/FAX at 1949 (Skornia, England).
- 8148: OVG, Frederickshaven Navrad, Denmark in CW w/marker at 0324 (Osier, NY).
- 8294.2: WRF, Sea-Land Svc., Iselin, NJ in USB from 1807-1812 wkg: KHRH, Sea-Land Developer; KHRK, Sea-Land Voyager; KPGL, Panama; KSLB, Sea-Land Pacer; & WSNH, Sea-Land Leader (O'Connor, NH).
- 8437: 7TF, Algiers, Algeria in CW at 0030 clg CQ (Skornia, England).
- 8457: LSA4, Boca, Argentina in CW at 0030 w/nx in SS (Margolis, IL).
- 8484.5: HZG, Dammam, Saudi Arabia w/CW marker at 2354 (Ross, ONT).

8674.4: VVM, Madras, India in CW at 1205 clg CQ (Ross, ONT).
 8690: FJY4, St. Paul & Amsterdam Island, French Antarctic in CW at 1215 clg CQ (Ross, ONT). Show off! - Ed.; also CLQ, Havana, Cuba in CW at 0247 w/tfc in SS (Margolis, IL).
 8698.3: CFH, Halifax, NS w/CW marker at 0341 (Burns, NJ).
 8703: UFN, Novorossiysk, USSR w/CW marker at 2040 (Skornia, England).
 8737.5: ZLW, Wellington, New Zealand in USB at 0449 w/patch from M/V Hyacinth (Margolis, IL).
 8765.4: NMN, USCG Commsta, Portsmouth, VA in USB at 1403-1438 wkg NCRP, USNS Mohawk (TATF 170) - an ocean-going tug - 700 miles E of FL. Both in comms w/3EFK3, M/V Explorer involved in collision w/Kuwaiti tanker Mohawk (Ricks, PA).
 8826.8: Un-ID CW sta wkg sta at 0011 & giving grp rpts. Used cut #'s & was having trouble reconciling grps for lengthy 400-grps msg (Ed.).
 8861: Roberts Field, Monrovia, Liberia in USB at 2340 wkg a/c's & Nauvachott, Mauritania, also Dakar (Ross, ONT).
 8984: NAVCAMSPAC, San Francisco, CA in USB asking flight ops reports every hour from "DOE" (Kammier, CA).
 8989: USMC Comp Pendleton, CA in USB at 2144 making comms checks w/McClellan AFB, CA (Kammier, CA); USN o/c TY 672 wkg Elmendorf AFB w/coded t/c at 2019 in USB (Sanford, AK).
 8992.6: 6WW, Dakar Navrad, Senegal w/CW marker at 0415 (Burns, NJ).
 9023: Drognet Tango in USB at 1946 clg another NORAD sta (A. Nonymous, MO).
 9027: Skyking t/c in USB at 1318 w/Leftfoot Out at end of msg. Usual 2-tone beeps at end (Fernandez, MA).
 9032: Architect, RAF sta, Upavon, England in USB. Daily sked: On the hou (H-00) sends QNH

settings for RAF bases in England - Keflovik & Ascension Island; H-30 sends coded wx for some basis "Yellow," "Black," "Yellow Blue," etc. (meaning not known to me). Other times conducts 2-way comms with RAF transport o/c w/collsign consisting of Ascot - 4 digits (Jones, Switzerland).
 9035: Several OM/SS in mil USB net. Used phonetic alphabet. Net control was "The Captain." Called "Tiger" & asked him to contact "Yuakd." NCS said that the window was open on the freq for net. Hrd at 0043 (Vendetti, NJ).
 9296: D5, un-ID sta w/mixed grps of letters in CW at 1643. Msg heading was: "Transmitter message QRA de D5 P.T 081630 GR 10 BT." There was a short pause after every 10 grps (J.M.).
 9419: CUA48, Lisbon, Portugal in CW at 1835 passing t/c in PP (Margolis, IL).
 9705: Jammert KV, presumed Soviet, at 0036 (Vendetti, NJ).
 10452: Sundae wlg Brewmaster, USB at 1442 (Margolis, IL); At 1132 & after, logged sig checks on "Oscar" freq by Beer Mug, Oyster Shell, Beef Bone, Surname, Afiacid, Surprise, Meatball, & Standbar. At 1136 Surprise asked Standbar to QSY to Sierra for sig check. At 1137 hrd Beer Bone, Beer Mug & Oyster Pearl running sig checks on other freqs. All were USB (Saba, S. Korea).
 10832: Complex voice scrambling in LSB at 2225, masked by high pitched USB tone (Vendetti).
 10891: WWJ40, Federal Highway Administration (FHWA), location unknown, w/net recall at 1923. Other FHWA stas in the quarterly national net test included WWJ41, -45 (Chicago), -46 to -51, -74 & -75, -77, -82 (Lincoln, NE), & -96. Other DOT stas included KWB406, 407, & KCP63 (Longmont, CO). All used USB. Watch this freq for activity this month & also in September. Specific dates not known but prior intercepts have been on Wed & Thurs. Other freqs confirmed as 5255 & 9197 kHz. See this column in July '86 issue (J.M., KY).
 11108: YL w/Hebrew #'s in USB at 1837. Sent

3/2 format (Margolis, IL).
 11155: Beacon K in CW at 0130 (Sanford, AK).
 11243: McClellan AFB wkg Golf Victor 2 in USB at 0100. Same coded t/c as on 8989; hour earlier (Sanford, AK).
 11282: San Francisco ATC wkg outliners in USB around 2330 (Sanford, AK).
 11387: Bangkok, Thailand ATISsent aviation wx bc by OM in USB 1012-1015 (Sabo, S. Korea).
 11396: Darwin ATC wkg MAC 59423 & others, USB (Sabo, S. Korea). Time not stated - Ed.
 11430: YL/CC w/4F grps each sent X2, AM-made at 0040 (Sabo, S. Korea).
 12185.6: Beacon U in CW at 1316 (Kneitel, NY).
 12429.2: WHV580, Seaward Services, Inc., Miami Beach, FL in USB at 1525 wkg vessel Seaward Explorer (Margolis, IL). Also WV9748, tug Orion in USB at 1442 wkg KMD263, Old River Towing Co., Friendswood, TX (O'Connor, NH).
 12710.3: XSZ, Darien, PRC in CW at 2331 clg CQ (Ross, ONT).
 12784: X5X, Keelung, Taiwan in CW at 2337 w/CQ (Ross, ONT).
 12809: VTG7, Bomboy Navrad, India in CW at 1522 w/wx (Jones, Switzerland).
 12843: HKO, Seoul, S. Korea at 2339 clg CQ in CW (Ross, ONT).
 12856: XSG, Shanghai, PRC in CW at 1518 clg CQ (Jones, Switzerland).
 12879: W5C, West Creek, NJ in CW clg CQ at 1759 (Vendetti, NJ).
 12981: PKR6, Semarang, Indonesia in CW at 1505 clg CQ (Jones, Switzerland).
 12988: 3BM, Port St. Louis, Mauritius clg CQ in CW at 1634 (Jones, Switzerland).
 13011: AQP2, Karachi, Pakistan clg CQ in CW at 1641 (Jones, Switzerland).
 13378: CW #'s at 1734 using cut #'s ANDUWRIGMT = 1-0. In the past, a YL/SS w/5F t/c has been on this freq (Margolis, IL).
 13535: Un-ID CW sta at 1822 w/2L & 3L grps mixed together (Hall, WA). Believed to be a Vietnamese diplo circuit. Similar intercepts noted on 4193, 4204, 13240, 13248, 13251, 13729, 13281, 13870, 13909, 13954.5, 16447, 16457, 18947, & 18950 kHz - Ed.
 13556: L7B, un-ID w/5L CW t/c at 1942 (Margolis, IL).
 13626: FAA Emergency Office, Washington, DC in USB at 2140 wkg a sta in San Francisco area re Air Canada hijacking with o/c on ground in San Francisco. Some RTTY also noted here in this net (Hall, WA).
 13873: Complex USB scrambling here at 2108 (Vendetti, NJ).
 14362: SOO236 Warsaw, Poland in CW at 1439 w/nx in Polish (Margolis, IL).
 14368: CME383, Swedish embassy, Havana, Cuba in USB at 1702; YL & OM comms in Swedish after RTTY t/c on 14369.5 kHz (Margolis, IL).
 14402: AEMIKFD, Army MARS Darmstadt, FRG in USB at 1411 w/patches thru AAV4KB (O'Connor, NH).
 14440: YL/EE in USB at 1700 w/5F t/c (Margolis, IL).
 14477: NNNOCMR, USNS Mohawk (TATF 170) wkg USN MARS sta NNNOUK-X, Beaver Dam, WI at 2050. Comms & patches regarding Captain & crew of Kuwaiti freighter aboard after collision at sea (Gordon, CT). See 8765.4 kHz entry - Ed.
 14485: ABM2US, Army MARS Zukeron, Okinawa in USB at 2250 trying to contact any stateside MARS sta for patches (Hall, WA).
 14520: Un-ID CW sta at 1430 w/5F grps, cut zero as letter T (Ed.).
 14607: JPA23, INTERPOL Tokyo, Japan in CW at 0110; EE t/c. Bad QRM from woodpecker. T/c was relay of bulletin from Denmark re bunco swindlers (Hall, WA).
 14614: CLP1, Mintex Havana, Cuba wkg CLP5, Embacuba Algiers in CW at 2215. Havana advised to QSY to 13370 kHz (Ed.).
 14760: NNNONRT, USN MARS Port Hueneme, CA w/tfc in USB at 1950 (J.M., KY).
 15620: CW sta at 1930 w/SS t/c re amount of ammunition expended. Possibly Mexican AF (Hall).
 15705: Beacon U in CW at 1340 (Kneitel, NY).
 16068: Multi-channel voice comms at 2050. Was using both sides of a non-suppressed carrier. Some comms in EE, others in RR. Hrd over several days. No ID used (Hall, WA).
 16457.6: NMO, USCG Commsta Honolulu, HI in CW at 2216 w/maritime warnings re restricted area due to missile firings (A. Nonymous, MO).
 16560.2: USB tactical net at 1649. Sta B-E-D clg L-E-O. BED then calls A-N-C but used ID of K-C (Margolis, IL).
 16912: SUH5, Alexandria, Egypt in CW at 1649 w/VVW marker (Ross, ONT).
 16975: VVM, Madras Military R., India in CW at 1347 clg CQ (Jones, Switzerland).
 16998.5: JDC, Choshi, Japan in CW at 2329 clg CQ (Ross, ONT).
 22390: FUF, Fort de France, Martinique clg CQ in CW at 1446 (Jones, Switzerland).
 22566: HEC, Berne, Switzerland in CW w/VVW marker at 1539 (Vendetti, NJ).
 28274: WBBUP, ham beacon in CW at 2030 (Hall, WA).



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THE EXCITING WORLD OF RADIOTELETYPE MONITORING

Does one of the Spanish-speaking women who recites four-digit grouped messages over the HF-radio bands double as a teleprinter operator? One day recently, I was listening to a female announcer delivering her monotone message on 10665 kHz AM from 2003 to 2040 UTC, and then leave the air. Two minutes later, on the same frequency, an RTTY station came on sending continuous RY's without any ID at 50/425R.

The station's signal, however, became covered at 2102 by a very loud carrier signal, of nearly 20dB strength. This remained on until 2209, when the same woman returned to the air with another coded message. By this time, the RTTY station was gone.

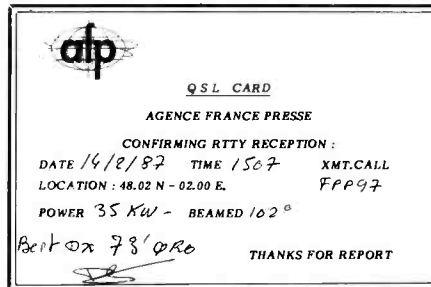
Soviet container ship, Tikhon Kiselev, callsign UEIU, was spotted sending telegrams to Leningrad Radio, USSR in English! After the ship established contact with the coastal station, it sent several telegrams of which the first two were in English, and the rest were in Russian. This was logged on 4171.5 at 2245 UTC, 50/170N.

"J.M." of Kentucky reports intercepting a Federal Highway Administration transmission in ASCII mode on 10893 kHz at 1808 UTC. WWJ82 from Lincoln, Neb and WWJ45, Chicago, saw an "EBS" test message, 850/300R ASCII. WWJ45, location unknown, then sent a test message, 850/110R ASCII, consisting of local weather and a Radio Australia propagation report. The stations then went to frequency "F34" for additional teleprinter training, J.M. added. (See this month's *Communications Confidential* loggings.)

In January's column, I asked for information about a RTTY news station that used JPS as its logo in its broadcasts on 14547.9 and 18460 kHz. Rick Matthew, VE7BFB, of Vancouver, BC, Canada, says it is the Japan Press Service, and it uses the transmitters of the Kyodo news agency. News is in English from 0850 to 0950 UTC, with articles from the Japanese Communist Party daily newspaper, Akahata.

A ribbon of Teletype tape to Rick for providing this information and thirty lashes with a 10-foot length of wet Teletype tape to the employees at the Japanese embassy in Washington, DC, and the Japanese consulate in Chicago, who told me that *JPS did not exist!*

Nearly 500 RTTY loggings were sent to us during the month this column was being prepared. *This is a record amount!* Also, several new contributors joined our ranks. This is due to the growing popularity of RTTY monitoring. Please continue to flood the mailroom here with your RTTY log-



Tom Hartley of Chillicothe, Ohio received this QSL card for his RTTY monitoring efforts.

gings. One of the mailroom clerks is a physical fitness nut who is into pumping iron. He loves to lift the heavier mailbags.

Let's welcome these first-time contributors: J.C.B. of England, Michael Ricks of Pennsylvania, Dr. Gary Zaid of Wisconsin, Harold Manthey of New York, David Rutter of California, Ronald Seymour of Missouri, and David Ford of Tennessee.

RTTY Intercepts (Times Are UTC)

(Loggings- Hz/Baud/Polarity)

- 518: NMG, USCG Commsta, New Orleans, LA in FEC at 0605 w/Navtex bc (Tom Kneitel, NY).
- 1670: GKR, Portlissheed R., England in ARQ at 2109 (J.C.B., England). My listings show callsign GKR as Wick R.-- Ed.
- 2070.5: Following Great Lks. ships w/kg WLC in ARQ 1034 1200: WE4805, Arthur M. Anderson, WA5307, George A. Sloan, WE4879, Cason J. Callo ay, WXQ4511, Edwin H. Gott, WB4520, Calcite II. These carry iron ore or limestone (Ed.).
- 2325: 781JU, Spanish Navrad unit w/RURY to 75FDP at 2330, 850/75N (Fied Hetherington, FL).
- 2743/2811: Un-ID w/foxes, 75 baud at 1945 (J.C.B., England).
- 3176: Prague Meteo, Czechoslovakia, w/coded wx at 0518, 425/50R (Kneitel, NY).
- 3209.5: NMA, USCG Commsta Miami, FL w/msg to NODY at 0228, 75R (A. Nonymous). NODY is the callsign of USCGC Acacia (WLB-406). Ed.
- 3253: LZFB, Sofia Meteo, Bulgaria w/coded wx at 0351, 425/50R (Kneitel, NY).
- 3274: AAR10N, Army MARS sta, calling AARICE/C, AAR3PU, AAA1MA at 1202, 170/45N (Kneitel, NY).
- 3655: OST, Oostende R., Belgium w/kg ships in ARQ at 0140 (Hetherington, FL).
- 4242.5: Y5M, Rugen R., GDR w/nx in GG at 0142, 170/50R (Kneitel, NY).
- 4271: CFH, Canadian Forces Meteo Center, Halifax, NS w/coded wx at 0200, 850/75R (Mike Ricks, PA).
- 4352: WLC, Rogers City, MI w/wx for Great Lakes wx, FEC at 2204 (Darrell Lingenfield, PA).
- 4364: 71XBP, a Spanish Navrad unit somewhere w/RURY at 0519, 850/75N (Kneitel, NY).
- 4489: GFL26, Bracknell Meteo, England w/coded wx at 0152, 425/50R (Kneitel, NY).
- 4583: DDK2, Hamburg Meteo, FRG w/coded wx at 0251, 425/50R (Dallas Williams, CO); same at 0536, announced was //7646//11638 (Kneitel, NY).
- 4605: OST, Oostende R., Belgium w/tfc at 0110, ARQ (Dave Agnew, DE).
- 4793.4: OUIJ22, Aarhus Navrad, Denmark w/RURY & foxes at 0047, 850/50N (Harold Manthey, NY).
- 5118: TYE, ASECNA Cotonou, Benin w/RURY at 2350, 4525/50N (N.R., IL).
- 5140: RWW73, Moscow Meteo, USSR w/coded wx at 0209, 900/50R (Kneitel, NY).
- 5203.7: Un-ID sta w/o any ID running RURY, WYWW, & FYFY in unusual 425/57N mode at 0237 (Kneitel, NY).

- 5208: ONA20, INTERPOL Brussels, Belgium in ARQ at 0551 w/"IPBX" marker (Kneitel, NY).
- 5422.5: NMG, USCG Commsta New Orleans, LA w/kg NODW, USCGC Sundew (WLB-404), & NRDC, USCG Campbell (WMEC-909) around 0558, 170/75R. All sorts of enforcement, boarding, sighting, & other t/c exchanged, mentions of "Cogard Intelcoorden Det, Suitland MD." Quite an active and interesting freq most nites (Kneitel, NY).
- 5731: YRRI, Bucharest Meteo, Rumania w/RURY & CQ at 0600, 425/50N. Announced was //YOG37 on 5400 kHz (Kneitel, NY).
- 5737: 9GC, Accra Aero, Ghana w/RURY at 0000, 425/50R, 850/50N (B.R., IL).
- 5740.3: HZN, Jeddah Meteo, Saudi Arabia w/coded wx at 2257, 850/50N (Ed.).
- 5758: Un-ID sta w/one nx item in SS then s/off at 2355, 850/50R (B.R., IL).
- 5832.8: RFQP, French Navrad, Djibouti w/"Contrôle de voie" at 0218, TDM 425/96A (Ed.).
- 5848: TUH, ASECNA Abidjan, Ivory Coast w/RURY at 0401, 425/50R (Ed.).
- 5887: IMB32, Rome Meteo, Italy, w/coded wx at 2126, 850/50N (Lingenfield, PA).
- 5907.4: RPFN, Lisbon Navrad, Portugal w/foxes at 0316, 850/50R (Agnew, DE).
- 5940: Un-ID w/continuous foxes at 1100, 850/75 (J.C.B., England).
- 6288.4: 71HGE, Spanish Navrad unit w/RURY/SGSG at 0545, 850/50R (Dr. Gary Zaid, WI)
- 6467: NODW, USCGC Sundew (WLB-404) w/tfc to NMG at 0328, 170/75R (Ed.).
- 6522: 71XBP, a Spanish Navrad unit w/RURY & SGSG at 0518, 750/75N (J.M., KY). Is //4364 kHz-- Ed.
- 6758: 5TX, ASECNA Nouadhibou, Mauritania w/RURY at 0313, 850/75R (J.M., KY).
- 6775.1: XTU, ASECNA Ouagadougou, Burkina Faso w/coded wx at 0225, TDM 425/96A (Ed.).
- 6792: FSB, INTERPOL, Paris, France idling in ARQ at 2258, got ID from CW marker (Ed.).
- 6794: DFZG, MFA Belgrade, Yugoslavia w/RURY & crypto at 0530, 425/75N (J.M., KY).
- 6795: LZM7, Sofia Meteo, Bulgaria w/coded wx at 0130, 425/50R (Manthey, NY).
- 6817: VOA nx in EE at 0009, 425/75R (Kneitel).
- 6820: OLW2, PTT Prague, Czechoslovakia w/RURY & t/c, 425/50R at 0702 (J.M., KY).
- 6835: GFL22, Bracknell Meteo, England w/RURY & coded wx at 2358, 425/50R (Ricks, PA).
- 6866.2: D4B, Sal Aero, Cape Verde w/RURY at 0021, 850/50N (Manthey, NY).
- 6920: RGC70, Kiev Meteo, USSR w/coded wx at 0705, 1100/50R (Ed.).
- 6941.5: TRK, ASECNA Libreville, Gabon w/coded a/c wx at 0548, TDM 96/425 A&B, RURY at 2357, 425/50N (Ed.).
- 7307.5: KUP Jamba, Angola w/nx in PP, FF & EE at 2323, 250/50R (Ed.).
- 7310: K2P nx item in FF & EE, 170/45N (David Rutter, CA). Time?-- Ed.
- 7407: CML5, PTT Havana, Cuba w/RURY & foxes to ITT New York, 850/50R at 0135 (Ricks, PA).
- 7428.6: TELAM Buenos Aires, Argentina w/nx in SS at 0225, 850/50R (Ed.).

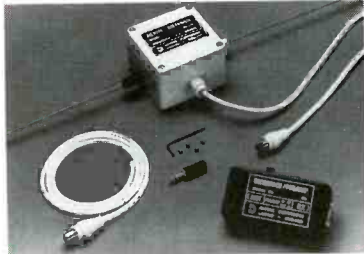
Abbreviations Used In The RTTY Column

AA	Arabic
ARQ	SITOR mode
BC	Broadcast
EE	English
FEC	Forward Error Correction
FF	French
foxes	"Quick brown fox. ..." test tape
GG	German
ID	Identification/led
MFA	Ministry of Foreign Affairs
nx	news
PP	Portuguese
RURY	"RURY. ..." test tape
SS	Spanish
tfc	traffic
w/	with
wx	weather

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7555: Y2V34, ADN Berlin, GDR w/RURY at 2153, 425/50N (Ed.).
7584.7: 6VY41, Dakar Meteo, Senegal w/coded wx at 0442, 500/50R (Ed.).
7592: Un-ID sta w/RURY at 0030, 170/75R, no ID given (Kneitel, NY).
7658: Y2D, TANJUG Belgrade, Yugoslavia w/nx in EE at 0024, 425/50R (Mathney, NY).
7695.5: RMD51, TASS Moscow, USSR w/nx in AA at 2139, 425/50R (Ed.).
7708.8: Tfc in ARQ (time not given) said from Boostan, Ottawa to Khargia, Cairo, via Washington. 5L grps then into an ID lang (Agnew, DE). This is KNY29, Egyptian embassy, Washington, DC relaying tfc in AA from embassy in Canada-- Ed.
7850.2: ZAA, ATA Tirana, Albania w/nx in FF at 1906, 425/50N (Ed.).
7868.2: Un-ID w/gorbled tfc at 1945, TDM 425/96A. Part of tfc mentioned "4 billion dollars" being transferred from the "southern oilfield" to a Mediterranean port (Ed.).
7890: ROQ3, Novosibirsk Meteo, USSR w/coded wx at 1848, 500/50N (Williams, CO).
7954.5: LRN85, DyN Buenos Aires, Argentina w/nx in SS at 0036, 850/75N (Kneitel, NY).
7960: IRNA Tehran, Iran w/nx in EE at 1922, 425/50R (Ed.).
7975: SOH297, PAP Warsaw w/nx in presumed RR at 0342, 425/50N (Kneitel, NY).
7990: 5HD, Dar-es-Salaam Aero, Tanzania w/RURY at 0407, 850/50R (Williams, CO).
8003.1: Un-ID w/RURY at 1930, 425/50N, but severe gabbling prevented ID'ing (Ed.).
8008: Y7A35, MFA Berlin, GDR w/RURY at 2151, 500/50N (Williams, CO).
8020: HME46, KCNA Pyongyang, N. Korea w/nx in EE at 1855, 275/50R (Williams, CO).
8052.5: AYA, INTERPOL Buenos Aires, Argentina w/tfc in SS to Rome at 0058, ARQ (Ed.).
8107.8: RFQP, French Naviad, Djibouti w/"Controle de voie" at 2205, TDM 425/96 A&B (Ed).
8122.8: TNL, ASECNA, Brazzaville, Congo w/RURY at 0145, 50R (Ronald Seymour, MO). Glad we could help you ID this one, Ron-- Ed.
8137: 7QZ32, Lilongwe Aero, Malawi w/RURY at 0415, 400/50R (Williams, CO).
8298: EKMH, a Soviet ship, clg UAH at 0040, 170/50N (Kneitel, NY).
8300: EWL7, a ship from Byelorussian SSR clg URB2 at 0041, 170/50N (Kneitel, NY).
8344: UTHJ, a Soviet floating fish factory called the **Maria Polivanova** w/RURY to URL at 0055, 170/50N (Seymour, MO).
8565: Un-ID w/nx in GG in ARQ at 1900 (J.C.B., England).
8608: Y5M, Ruegen R., GDR w/tfc to ships & nx in GG at 2136, 170/50 (J.C.B., England).
9052: YAV23, Kabul Aero, Afghanistan w/coded wx at 0339, 500/50N (Williams, CO).
9070: 6VU, Dakar Aero, Senegal w/RURY at 0054, 425/50R (Ed.).
9082.2: Un-ID sta idling in ARQ at 1330 (Ed.).
9096.5: RGE37, PTT Moscow, USSR w/telegrams in RR & EE(!) to Kabul at 1308, TDM 425/96B (Ed.).
9145: RDZ76, TASS Moscow, USSR w/nx in EE at 2117, 425/50R (Williams, CO).
13530: RVW53, Moscow Meteo, USSR w/coded wx at 1415, 1000/50R (Ed.).
13540: Y7A54, MFA Berlin, GDR w/5L tfc at 1806, 425/75R (Catal Kirik, CT); also LR081, TEL-AM Buenos Aires, Argentina w/nx in SS at 2115, 850/50R (Ed.).
13571: HBD20, MFA Berne, Switzerland w/diplo nx in GG, ARQ at 1440 (Ed); w/FF tfc at 1329 (Kneitel, NY).
13585.2: HBD20, MFA Berne, Switzerland w/5L tfc at 1803, ARQ (Ed.).
13719: 9RB336, AZAP Kinshasa, Zaire w/nx in FF at 1540, 425/50N (Williams, CO).
13921: RNK39, APN Moscow, USSR w/nx in RR at 2113, 425/75R (Lingenfield, PA). Only one directory shows RNK39 here, & APN usually runs nx in RR 0500-1400. It's possible that this logging may actually be another sta-- Ed.
13985: 5LA, VOA Manrovia, Liberia w/nx in EE at 2330, 425/75R (Ricks, PA).
13467: BZP54, XINHUA Beijing, PRC w/nx in EE at 0853, 425/50R (Wolfgang Palmberger, FRG).
14373: YIL73, INA Baghdad, Iraq w/nx in EE at 1338, 225/50R (Palmberger, FRG).
14393: AGA72W, USAF MARS sta w/telegrams to AIR at 1300, 350/75R (Kneitel, NY).
14418: 9KT321, KUNA Safat, Kuwait w/nx in EE at 1400, 425/50N (Ed.).
14508: D4B, Amilcar Cabral Air, Cape Verde w/RURY at 1312, 200/50R (Kneitel, NY).
14543.5: Un-ID diplo sta (Egyptian?) w/tfc in AA at 1444, ARQ (Ed.).
14573.1: JANA Tripoli, Libya w/nx in AA at 1643, 425/50R (Ed.).
14574.4: CNM59X9, MAP Rabat, Morocco w/nx in AA at 1646, 425/50R (Ed.).
14600.5: CAK, Santiago Aero, Chile w/RURY, 850/50 (Zoid, WI). Time-- Ed.
14619: Y7A59, MFA Berlin, GDR w/5L tfc at 1322, 425/50N (Palmberger, FRG).
14632: YZCZ, TANJUG Belgrade, Yugoslavia

w/nx in EE at 1459, 425/50R (Ed); same at 1318 (Kneitel, NY).
14733: NMO, USCG Honolulu, HI w/tfc for NRUO, USCGC Polar Sea (WAGB-10) at 1743, 170/75R (J.M., KY).
14800.4: RFV1, French Navrad, LePort, Reunion w/"Controle de voie" at 1354, TDM 850/96B (Ed.).
14901: CLN451, TASS Havana, Cuba w/nx in EE at 1614, then PL nx in EE at 2000, 425/50, w//CLN530 on 16348 (Ricks, PA); noted w/TASS nx in EE at 1315 //14797//15005 kHz but was 170/50R (Kneitel, NY).
15481: APS Algiers, Algeria w/nx in SS at 1502, 170/50N (Ed.), nx in EE at 1330 (Kneitel, NY).
15633: HMF26, KCNA Pyongyang, N. Korea w/nx in EE at 1000, 170/50R (A. Nonymous, CA).
15647.2: PCW1, MFA The Hague, Holland w/telexes in EE & Dutch to Athens, ARQ at 1405. Bad QRM from 9KT331, KUNA Safat, Kuwait which was xmitting nx on 200 Hz lower in freq. Could copy PCW1 only when KUNA was idling between nx items. PCW s/off 1545 (Ed.).
15710: RED52, TASS Moscow, USSR w/nx in FF at 1457, 425/50R (Ed.).
15845: SUA289, MENA Cairo, Egypt w/nx in AA at 1640, 425/50R (J.M., KY).
15930.1: RB178, TASS Moscow, USSR w/nx in FF at 1526, 425/50R (Ed.).
15939.9: ELE25, Firestone Plantation, Harbel, Liberia w/tfc to HQ in Akron. Was ARQ at 1722 (Ed.).
15977: FPP97G, AFP Paris, France w/nx in EE at 1558, 425/50 (Ricks, PA).
15992: Un-ID sta w/instructions for financial transactions, 425/75R at 1635 (J.M., KY). Xmsn typical of 4UZ, Un-ID in Geneva-- Ed.
16000: CNM69 1X, MAP Rabat, Morocco at 1337 w/nx in EE, 425/50R (Kneitel, NY).
16011: CLP1, MFA Havana, Cuba at 1338, 425/50N w/crypto to Conakry, Guinea (Kneitel, NY).
16031.4: RB175, PTT Moscow, USSR w/tfc to Kabul, Afghanistan at 1315, TDM 425/96A (Hetherington, FL).
16090: Un-ID sta w/MARS-type informal tfc at 1344, 850/75R. In EE, no ID given (Kneitel, NY).
16117: 6VK317, PANA Dakar, Senegal w/sports nx in FF at 1157, 425/50R (Mathney, NY).
16194: NBA, USN Balboa, Panama w/tfc (time??), 850/75R (Ricks, PA); hand typed SS tfc at 1357 (Kneitel, NY).
16379.5: FTQ39, DIPLO Paris, France w/nx in FF at 1538, 425/50 (Ricks, PA).
16458: Un-ID sta w/numerous 5L grps at 2210, 75R (A. Nonymous). A favorite fren of GDR embassy in Havana-- Ed.
9197: A9M41, Manama, Bahrain w/nx in AA at 1310, 325/75R (Williams, CO).
9208.7: KNY29, Egyptian embassy, Washington, DC w/USA nx items to MFA Cairo in ARQ at 2321 (Ed.).
9395: HMK21, KCNA Pyongyang, N. Korea w/nx in FF at 1838 & 2122, 275/50R (Williams, CO).
9402.5: OST, Ostende R., Belgium w/info to ships on how to call into their "mailbox," ARQ at 1402. See 19013.5 kHz intercept-- Ed.
9788: FTJ78, DIPLO Paris, France w/nx in FF at 1015, 425/50R (Tom Sundstrom, NJ).
9886.6: GFL23, Blacknell Meteo, England w/RURY at 1141, 425/50R (Ed.).
9923: AUS, UN Nicosia Cyprus w/RURY at 1838, 170/75R (J.M., KY).
10244: SOK224, PAP Warsaw, Poland w/RURY & nx in EE at 2100, 425/50R (B.R., IL).
10260.5: Un-ID w/"quick brown fox" xmsn, 425/75N at 1530, 1630 & 1930. Similar xmsn on 14938 kHz (David Ford, TN). These are probably from a USN station base somewhere-- Ed.
10270: REA25, TASS Moscow, USSR w/nx in EE at 1305, 425/50N (Kneitel, NY).
10298: HSW62, Bangkok Meteo, Thailand w/coded wx at 1318 & 1746, 325/50N (Williams).
10380: RBW43, SAM Murmansk, USSR w/msgs in Cyrillic at 1050, 500/50N (Hetherington, FL).
10551: GFL, Brocknell Meteo, England w/coded wx at 1533. A few freq s/off 1800 was 425/50R (Ed.).
10595: CNM36X9, MAP Rabat, Morocco w/nx in FF at 1523, 425/50R (Ed.).
10597: KAC, un-ID sta, w/RURY & 5L grps at 2101, 425/50R (J.M., KY). KAC is the NOAA at Woods Hole, MA-- Ed.
10600: VNA25, VNA Hanoi, Vietnam w/RURY at 1510 then nx in EE to fade at 1536, 1000/50. They sent a call sign that printed as XVN2 but I wonder if it should have been XVM (Williams, CO). One listing shows this sta as XVN37-- Ed.
10688.2: Un-ID w/RURY between several crypto msgs of 1533, TDM 425/96B (Ed.).
11013.3: DyN Buenos Aires, Argentina w/nx in SS at 0224, 850/75R (Ed.).
11028: Un-ID sta w/crypto tfc after DDDDD at 1953, 425/75N; also 9PL, Kinshasa Aero, Zaire w/coded wx at 2200, 425/50N (J.M., KY).
11096.5: Un-ID sta idling at 1542 in ARQ. Many Mexican stas listed here, but not for RTTY (Ed.).
11100: RHH74, Kuibyshev Meteo, USSR w/coded wx at 0435, 850/50N (Lingenfield, PA). While the ITU and several lists show this as RHH74,

it's also listed elsewhere as CAK, Santiago Aero, Chile. Suppose someone would have to trace down the sta index #'s listed in the meteo codes to know which one for certain-- Ed.

11423.5: SPW, Warsaw R. Poland w/info in Polish, ARQ at 1613 (Ed.).

11459: Y7A49, MFA Berlin, GDR w/RURY at 1329, 425/100N (Kneitel, NY).

11578: 9K T29, KUNA Safat, Kuwait w/nx in AA at 1411, 325/50N (Williams, CO).

12074: RURY DE WAPPYFYX at 2311, 170/50R. Have no idea what that one was (Williams, CO). Maybe WAPPYFYX is what you ask for at the hardware store when your wappy goes on the fritz-- Ed.

12131.7: Un-ID sta (possibly Mexico) w/telexes in EE & SS, 170/57N at 2244 (Kenneth Roberts, FL). You're right, it's the Mexican Federales-- Ed.

12146.7: MKK, RAF London, England w/foxes, 170/50R (Sundstrom, NJ).

12186: 5AQ62, JANA Tripoli, Libya w/nx in FF at 1416, 425/50R (Williams, CO).

12190: YZ07, TANJUG, Belgrade, Yugoslavia w/RURY at 0354, nx in EE at 0404, 700/50R (Williams, CO).

12505.5: HJNR, Colombian freighter: Cartagena de Indias w/telex via WCC to HJN2 at 1742, ARQ (Ed.).

12520: UFOM, un-ID Soviet ship, clg ROT, Moscow Navrad, USSR at 2004, 170/50N (Lingenfield, PA). UFOM is a vessel called the **Nikalai Kouropatkine** but have no info on what it is-- Ed.

13098: WLO, Mobile R., AL wkg 3EYK3, M/V Hokoy in ARQ at 2211 (Roberts, FL).

13405.5: MAP Robot, Morocco w/nx in FF at 1559, 425/50R (Ed.); nx in EE at 1321 (Kneitel)

13419.4: A. N. Korean diplo mission w/tfc in Korean at 1950, 1000/50N (Ed.).

13527.2: Un-ID sta w/NA PONAD 20 R VN CL in ARQ after lengthy idling after 1811 (Ed.).

16662.6: DHWL, FRG merchant ship **Cape Hatteras** w/telex at 1517, ARQ (Ed.).

16669: Y5BU, w/telex in GG at 1626, ARQ (Zaid, WI). It was the GDR passenger liner **Schwedt**-- Ed.

16696: LYHU, a Lithuanian SSR ship, w/RURY & clg UJY at 1349, 170/50N (Kneitel, NY).

16705.5: Soviet space control & monitoring ship **Akademik Sergei Korolyov** w/telegrams via Odessa at 1559, 170/50R (Ed.).

17108: FUF4/8/12/17/22 RFLICF FFJ was the ID used for RURY/SGSG xmsn from French Navrad, Fort de France, Martinique, 850/75N at 1356. At 1358 sent "Hotel Alfa 14#002" 4 times & then went into crypto tfc at 1400 (Kneitel, NY).

17154: XVB54, PTT Hanoi, Vietnam w/RURY to PTT Beijing, PRC at 0051, 425/50R (A. Nonymous).

17181: UDH, Riga, Latvian SSR w/RURY & telegrams, 170/50N or 1418 (Ed.).

17365: Y7L36, GDR embassy in Havana w/RURY at 1440 then nx in GG, 425/100N. A 5L msg at 1639, 425/50N (J.M., KY).

17390: 3VA74, TAP Tunis, Tunisia w/nx in FF at 1615, 850/50R (Zaid, WI).

17472.3: RPFN, Lisbon, Portugal w/RURY & foxes at 1502, 850/50R. Was clg RPT1, Navrad at Ponta Delgada, Azores, at 1511. Switched to 850/75R at 1515 w/RURY & foxes till 1524 s/off (Ed.).

17525.2: OLV3, CTK Prague, Czechoslovakia w/nx sked & list of freqs at 1626, 425/50N (Roberts, FL).

17570: RBX42, TASS Moscow, USSR w/nx in FF at 1219, 425/50R (Manthey, NY).

17623: 9KT344, KUNA Safat, Kuwait w/nx in EE at 1500, 425/50 (Ricks, PA).

18040: TCY4, AA Ankara, Turkey w/nx in AA, FF & EE, 1120-1215, 850/50N (Sundstrom, NJ).

18052.5: HDN, Quito Navrad, Ecuador w/RURY & SGSG - tfc in SS to CXR at 1536, 850/75N (Ed.).

18057: MFA Belgrade, Yugoslavia w/crypto after XYXYXY or XPXPXP - 3F grps, 425/75N at 1516 (Ed.).

18120-18122: MKK, RAF London, England w/RURY & foxes on several freqs, 170/50N & R at 147 (Ed.).

18164.6: STK, Khartoum Aero, Sudan w/coded tfc at 1715, 425/50R (Ed.).

18230.1: GFL25, Bracknell Meteo, England w/coded wx at 1711, 425/50R (Ed.).

18232: ARP, un-ID sta, w/coded tfc at 1452, 425/50R (Kirk, CT).

18270.5: HBD34, an un-ID Swiss embassy, idling in ARQ at 1622, then s/off at 1636 using this collsign (Ed.).

18362.8: CME329, Czech embassy, Havana w/nx in Czech at 1500, 425/75N (Ed.).

18385: RRQ20, TASS Moscow, USSR w/nx in EE at 0509, 425/50R (A. Nonymous, CA).

18410.5-18412: GXQ, British Army, London, England w/RURY's & foxes at 1455 on 4 freqs here, 170/50N & R (Ed.).

18502.3: RFQP, French Navrad, Djibouti w/"Controle de voie" & crypto at 1511, TDM 950/96A (Ed.).

18644.5: 9KT356, KUNA Safat, Kuwait w/nx in AA at 1521, 425/50N (Ed.).

18697.7: DFS70H1, DPA Hamburg, FRG w/nx in EE at 1325, 425/50N (Kneitel, NY).

19014: OST68, Oostende R., Belgium w/tfc & freq list at 1820 (Lingenfield, PA). ARQ mode?-- Ed.; in FEC mode at 1329 w/instructions for using their "mailbox" (Kneitel, NY).

19143.5: TUH, ASECA, Abidjan, Ivory Coast w/RURY at 0228, 425/50R (Sundstrom, NJ).

19151: GDR embassy in Havana w/tfc in 5L & 5F, 1340-1351, 425/75R (Ed.).

19227: DFZG, un-ID German sta w/RURY & coded wx at 1500, 425/75N (Manthey, NY). Here's an example of how some RTTY tfc can be deceptive. DFZG is a tactical ID used by MFA Belgrade, Yugoslavia. What looked like coded meteo was in reality a 5F coded msg-- Ed.

19837: RWW76, TASS Moscow, USSR w/nx in EE at 1954, 425/50N (Lingenfield, PA).

19980: EPJ2, IRNA Tehran, Iran w/nx in EE at 1557, 425/50 (Williams, CO).

20020: Y7A80, MFA Berlin, GDR w/nx in GG at 1415, 425/50N (Manthey, NY).

20033: CLP1, MFA Havana, Cuba w/crypto tfc for Zambia at 1418, 425/75N (Kneitel, NY).

20204: YZJ, TANJUG Belgrade, Yugoslavia w/nx in EE at 1336, 425/50R.

20430: IRS24, ANSA Rome, Italy w/nx in FF at 1612, 425/50N (Manthey, NY).

20560: JANA Tripoli, Libya w/RURY at 1617, 425/50R (Manthey, NY).

20724: Tuned in at 1335 to RURY w/a ID then went into crypto tfc after ZZZZ at 1340, was 425/50R, was probably CLP1, MFA Havana (Kneitel, NY).

21970: CLP1, MFA Havana w/circulars to embacuos at 1940, 425/50N (J.M., CA).

22568: KPH, San Francisco, CA w/tfc list in FEC at 1905 (J.M., KY).

22778: Coded wx at 1439, 425/50N, off at 1442. Listed here is GHF, Jamestown, St. Helena Island-- would be great to think this was that sta! (Kneitel).

22811: NBA, USN Balboa, Panama w/RURY & SGSG at 1905, 850/75R (J.M., KY).

22914.8: FTW91, DIPLO Paris, France w/nx in FF at 1529, 425/50 (Ricks, PA).

22975.5: British embassy, Buenos Aires, Argentina w/tfc to London, ARQ at 1310-1340. All

tfc was coded ex the final one (Hetherington, FL).

23392: LOL, Buenos Aires Navrad, Argentina w/unclass tfc at 1951, 425/75N (J.M., KY).

23405: SOK224, PAP Warsaw, Poland w/nx in Polish ending at 1445, FEC (Hetherington, FL).

23722: 4UA, UN Rawalpindi, Pakistan w/tfc in FF that seemed to mostly be a list of names, 425/75R at 1945 (Kirk, CT).

24236: Un-ID sta sent: RPQ 43 43 43 C/P C/X C/C RPQ RPQ RPQ OK OK OK???. Was 850/75 at 2013 (Kirk, CT).

24999.7: French mil in Paris w/meteo tfc to Djibouti at 1635, TDM 425/96B (Hetherington, FL).

25530-25533.1: MKD, RAF Akrotiri, Cyprus w/RURY's & foxes on several chans here, 170/50 at 1410 (Hetherington, FL).

27938: Un-ID sta idling here at 1653, TDM 425/96 (J.C.B., England). Nearest RTTY sta I could find listed was on 27940, RDJ71, Kubychev Meteo, USSR. But could be some other sta you hrd-- Ed.

FAX Intercepts

125: SLZ, Kristinehamn Meteo, Sweden w/wx charts at 1958, 90/576 (J.C.B., England).

132: DCF54, Offenbach Meteo, FRG w/wx charts at 1745, 120/576 (J.C.B., England).

138: AFP Paris, France w/press pix at 1828, 120/576 (J.C.B., England). This is a DPA xmttr in Frankfurt, FRG w/collsign DCF39-- Ed.

3365: JMJ, Tokyo Meteo, Japan w/wx charts, 120/576 (Bill Smith, TX). Time not supplied-- Ed.

4704: AOK, USN Rota, Spain w/wx charts at 0315, 120/576 (Ed.).

7535: AXI33, Darwin Meteo, Australia w/wx charts, 120/576 (Bill Smith, TX). Time not reported.

7710: Frofisher Bay, NWT w/wx chart of 1812 & at 2130, 120/576 (Ed.).

9459: ZKLF, Auckland Meteo, New Zealand w/wx charts, 120/576 (Smith, TX). Time not given-- Ed.

10980: RDD79, Moscow Meteo, USSR w/wx charts at 1425, 60/576 (J.C.B., England).

11476.5: HMY23, KCNA Pyongyang, N. Korea w/press pix or 0000-0030, 60/228 (Ed.).

18261: GFE24, Bracknell Meteo, England w/wx charts at 1447, 120/576 (Ed.).

20736: LQA22, DyN Buenos Aires, Argentina w/press pix at 1910, 60/228 (Ed.).

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Beaming In (from page 4)

The story was so well done and enticing, that it wouldn't surprise me to learn that many who read the piece decided that spending an evening monitoring CMT was better than watching *Miami Vice*, *Dynasty*, and *Spenser For Hire*, combined with maybe even *The David Letterman Show*, too. Car telephones existed quietly for years without such attention by the press.

Indeed, Michael Prah, K9MP, of North Hollywood, CA sent me an insert that was included with his *Pacific Bell* telephone bill. Entitled "A Word About Privacy," the sheet advises that "it's a crime under state and federal law to eavesdrop on telephone conversations," and that people normally don't have to worry about the privacy of conversations over home or business 'phones. Still, *Pac-Bell* points out, that because CMT calls go out over "public radio frequencies," there is "a chance that calls on cellular phones may not be completely private." They then go on to say that the California Public Utilities Commission has asked *Pac-Bell* to notify its customers that "those placing calls on cellular telephone calls on cellular telephones to advise the people they are calling about the privacy issue at the begin-

ning of each conversation." So much for the CPUC's opinion of the efficacy of the ECPA to offer even the slightest bit of privacy. Again, car telephones existed quietly for years without the need for such warnings to users.

On a more grisly note, Howard G. Kraus of Amherst, NY sent me an item from the *Buffalo News* that tells how some simp got so engrossed in talking on his CMT that he drove his car through a red light, hit another car broadside, and shoved that car into two other cars. The driver of the first car hit was taken to the hospital with a possible broken leg. Kraus wonders if the CMT industry could spend less time crowing about privacy and devote some effort to informing their customers about the safe use of their products and services, or at least offer more hands-free operating options.

From Mt. Dora, FL comes a letter sent by M.J. Woodhull, Jr. who points out that a large portion of court decisions are based upon precedent, which means that judgments that have been rendered in the past are freely used in deciding the present case. That causes him to recall that even in matters of the highest governmental secrecy, individuals have never been held at fault for innocently hearing or seeing classified material when it was openly revealed before them. It has always been the purveyor of

such material who is responsible for maintaining its confidentiality.

So then, asks Woodhull, are we all now expected to wear earplugs in order to avoid encountering any communications covered by the ECPA? He feels that since the entire electromagnetic and audible spectrums are common public property, no portion of either can be declared the exclusive property of one person or group. He understands that the licenses given to broadcasters are local franchises, but the public is invited to listen to those stations. Woodhull concludes that if someone wishes to propagate information into the public's airwaves, it is *their* responsibility to take whatever steps may be necessary to insure any privacy or security they feel is warranted.

Relative to this point, James J. Hooper, N8INQ, of Tipp City, OH provided several pages of a publication called *The United States Law Week* (issue of 22 December 87). These pages contained a summary of a court case designated as "CA 5; Edwards v. State Farm Insurance Co., No. 86-3686, 12/7/87." from what I can make out of the legal terminology, someone with a scanner monitored a car telephone conversation that appeared to concerned with criminal activity. The scanner owner tape recorded the conversation and turned it over to the U.S. Attorney. The car telephone owner then brought suit against the scanner owner claiming violation of the Wiretap Act (18 USC 2510-2520) and also (later) under the Communications Act. The claims were considered separately, and the district court dismissed both cases. The plaintiff is now appealing that dismissal.

Since the problem seems to have taken place prior to the passage of the ECPA, that law wasn't part of the cases. The cases revolved around other laws, plus a 1982 case decided by the First District Court (U.S. v. Rose, 669 F2d 23). Essentially, the question to be resolved was centered around whether or not the dude with the car telephone "possessed a subjective expectation of privacy that was also objectively reasonable." This matter would seem to point up the rather shaky ground one is on when attempting to pursue a federal court's indulgence in claiming the sanctity of telephone calls sent out over the airwaves, unscrambled, from car 'phones.

If the California Public Utilities Commission isn't impressed with such laws, *plus* the ECPA—and suggests that those wishing CMT privacy should purchase scramblers to assure privacy—then why should the courts be impressed? If federal agencies have already stated that they have no plans to enforce the ECPA, then how impressed should anybody be?

From a practical standpoint, the CMT industry appears to be sufficiently content to wave around their preposterous ECPA law in order to impress gullible members of the general public. That it appears that the ECPA may be backfiring, is truly funny. Couldn't happen to a nicer law!

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SCAN Photo Winners

(from page 17)

communicate with WBZ-TV round out the equipment shown here.

External antennas are on the roof of Nat's house, and speakers are located at different places in the house. He says that some of this scanners are very old, but they work well when properly cared for. With these scanners, new and old, he can receive signals from southern New Hampshire, Rhode Island, and most of Massachusetts.



Winners in the Photo Contest this month receive the BMI "NiteLogger" tape recorder activator. Plugged into a cassette recorder and a scanner, it gives a complete record of all communications with no "dead time" on the tape. If you would like to enter the contest, just send a sharp black/white print to SCAN Photo Contest, P.O. Box 414, Western Springs, IL 60558.

Pirate's Den

(from page 51)

claimed to be broadcasting in independent sideband, which David says he was able to confirm by checking on two radios. He monitored the station for an hour but heard no mention of an address.

Gator Radio (WGAT) was found by Paul Johnson of Phoenix at 0137 to 0215 using 7415 and announcing as part of the "rebel radio network". DJ was "Doctor Klystron" who claimed that their transmitter was thirty six years old. No address was heard.

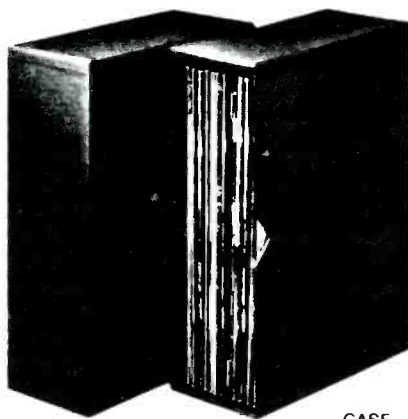
WYMN was another pirate Paul spotted 0246 to 0305 on 7418. The signal was weak and there was country western and Irish music, ID was sound effects and possible mention of the Hilo, Hawaii address.

Paul also had an unidentified from 0238-0300 on 7418, playing a couple of Elvis songs. Can anyone help with an ID?

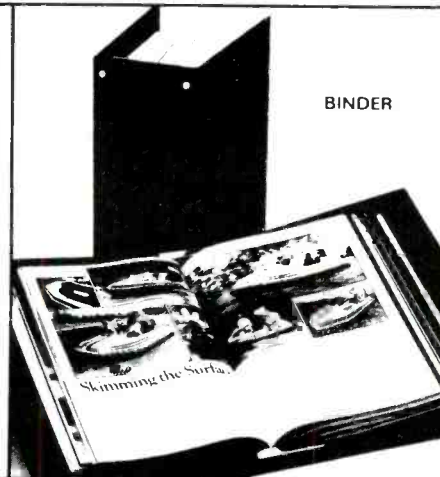
Rene Burciaga of Chicago hasn't been able to hear any pirates, despite two years of trying with a Sony 2001. As you hint, an outside antenna would help, Rene. But luck and persistence play the largest roles. Keep checking 7300-7500 weekends and on and near major holidays.

That brings us back to port for this month. Remember to send in your pirate logs and station information, news clippings, and other information. That includes you, too, operators. Please keep me up to date on your plans.

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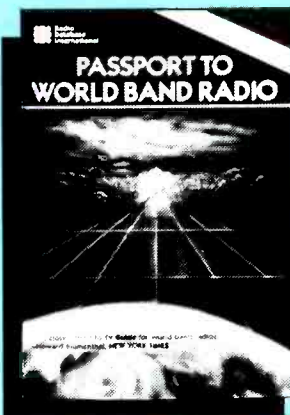
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