Scanning the Skies—Are We Alone?
SETI Researchers Look for Extraterrestrial Civilizations

- Product Spotlight Reviews Uniden's BCT-10 Scanner
- Alice Recalls Forgotten One-Lung Stations
- Check Out Your Pop'Comm Horoscope!
"I've been on top of the receiver market for over 20 years. My AR5000 blows away everything else, even those $15,000 units."

-Bill

- Surface mount technology makes possible the world's most advanced wide band receiver, half the size of the competition. 8.6 x 4 x 10.3", 7.5Lbs.
- An amazing 77 controllable functions using dual function keys or RS232. Provides the user with flexibility to tailor the unit to best meet their specific needs.
- The AR5000 actually tunes to "DC" and can be used as a sub-carrier demodulator, especially for satellite, SCA broadcast and other frequency multiplex signals.
- Unprecedented sensitivity across the entire tuning range. Typical sensitivity in the 1600 to 2600MHz range is an amazing .2nV with 6kHz filter for 12dB SINAD.
- Most filters ever offered. Six filters in 10.7MHz & 455kHz I.F. (3, 6, 15, 30, 110, 220kHz) are supplied, optional 500Hz, 455kHz Collins filter. This cascading produces excellent shape factors, slicing through interference and suppressing unwanted adjacent channels.
- Tuning - Main tuning knob has adjustable drag control lever to control the "feel" of the tuning from easy spinning above 30MHz and more drag for cutting through crowded IF bands in CW and SSB.
- 17 factory pre-set tuning steps can be user changed to suit listener. Second tuning knob for fast or slow tuning at pre set steps of .1, 1, 10, 100, 1000kHz or 10X
- 1000 memories (10 banks of 100) plus 2100 pass frequencies for maximum lockouts without using any memory ch.
- CyberScan high speed scan locks on to a signal at 45 ch/sec.
- Large Backlit Display has 8 alpha - text characters for comments - mode, filter, step, VFO, etc. Tunes and displays down to 1Hz!
- User preferred front panel audio output with AOR's patented speaker baffle design, produces excellent audio.
- The first to offer user selection of FM de-emphasis in 4 steps plus no de-emphasis which is important in digital communication. In addition 4 low pass and 4 high pass filters can be selected to fit the audio contour for the best reception.
- Five VFO's like having 5 separate receivers. Preset Freq., Mode, Filter, Ant., Tune step, Attn., and more in each of 5 VFO. Select the VFO set up which best satisfies your needs.
- A unique AR5000 feature is the ability to front panel or RS232 select between antenna inputs A & B at any frequency. With the optional AS5000, a 1 x 4 antenna switch can be added to either or both ports providing a total of 8 antenna ports...all operator selectable at any freq. and in memory.
- Most filters ever offered. Six filters in 10.7MHz & 455kHz I.F. Input and Output. This allows the use of the 10.7MHz filter to reduce the I.F. bandwidth when looking at smaller band segments. The AR5000 is fully SDU5000 digitally compatible. Giving the user the most powerful intercept system ever offered to the public.
- External 10MHz standard input - never offered in a receiver of this class. Run from external freq STD for 1Hz accuracy, required for antenna diversity, direction findings and other multi receiver systems. Be ready for the future!
- Tunable Front End BandPass Filter - 12 auto/manual RF pass band filters allows user "peaking" of signal between 5 and 1000MHz. Once peaked, the setting can be stored for next use of that memory or frequency. This feature is one of the many reasons the AR5000 has unprecedented sensitivity across it's entire tuning range.
- BOTTOM LINE - The AR5000 is the most advanced receiver on today's market. It covers portions of the spectrum not covered by other receivers. It's more flexible with 77 user controlled functions. Get set for the next century with this advanced receiver.

**Get ALL the details, then make your own decision. You deserve the best! Call, FAX, or phone today for a detailed 4 page flyer.**

Electronic Distributors
325 Mill Street, N.E.
Vienna, VA. 22180
703.938.8105
FAX: 703.938.4525
AOR AR5000

NOTHING LIKE IT IN IT’s CLASS
- 10 kHz - 2600 MHz
- Superior Sensitivity
- Cascade I.F. filtering
- 6 Filter B.W. + 1 Opt.
- Memory 1000 + 2100 pass
- Scan/Search 258 & 45 ch/sec.
- $232.50 of all functions
- Built-in decoder DTMF
- Option CTSS and Voice Inversion
- 2 Ant. ports, Opt. to 8 ports
- Price class $2000

NEW

Low cost Night Vision Scopes are available!
Bright, Clear images thru large 100mm, f.4 lens.
See what you’re looking. $199

EEB $329.95

DAVIS Weather Wizard III
It’s that time of year again when everyone needs a weather station. The DAVIS WEATHER WIZARD III provides the WX information you need.

SALE $169.95

ICF W7600C

Our Bigger Seller!
All SWL, Synchronous detection. SSB. 40 memory.
Upright AC not included! FREE Radio stand now $179

EEB $329.95

SANGEAN ATS818

1-30MHZ, 88-100MHz. AM, CW, SSB. FM. SAV.
FREE Radio stand with purchase.
SALE $179.95

SALE $149.95

SALE $279

DRAKE SW11

Same Drake Quality! 1-30MHz AM mode, 32 memories, great beginning radio. 2nd set list $299

GE SUPERADIO II

Past the fan back in the AM/FM DXing. Larger format for antenna. 4 TIP stages. Every one needs this great sounding radio.

SALE $59

SALE $279

SALE $149.95

DRAKE R8A Time to Upgrade
4 Start/Stop, over 12 improvements over R8.
Now Just $1069

SALE $149.95

SALE $279

SALE $249

Midland 79-290

- 5 watts to SSB/AM
- Walkie talkie
- Rugged Metal Cabinet
- 7 Channel VHF Alert
- Inst. Ch 9 - Mic. Mounts
- LIST $399.95

SALE $249

Cobra HH-70

LIST $109.95

SALE $97

SALE $28

SALE $349.95

SONY ICF2010

32 mem, direct access keypad, scan and manual tuning, check, AM, FM, SW. $399.95

SALE $344

NEW low price $339.95

XECAT BCT-12

Programmable by state, punch in your state and hear police hands, alert with meter, instant DOT, WX.
List $299.95

EEB $349.95

BEARCAT BCT-12

NEW

SALE $199.95

20 MHz - 1000 MHz All mode with SIG. 10000 memory. 100.100KHz. RS232, Dip. Software.
List $799

SALE $588

SALE $588

GRUNDIG YB400

Covers ALL SW bands, plus local AM and FM stations with 40 memories. clock and alarm in a compact package.
FREE Radio stand with purchase.
SALE $179.95

SALE $149.95

SALE $279

SALE $149.95

NEW!

ICOM R10

- 5-1300MHz
- 1000 mem
- AM, FM, SSB
- Computer
- 4 AA Ni-Cads included
- Cell blocked

Price $2000

EEB $549.95

SALE $1149.00

SALE $1149.00

SALE $179.95

SALE $149.95

SALE $279

SALE $249

Midland 79-290

- 5 watts to SSB/AM
- Walkie talkie
- Rugged Metal Cabinet
- 7 Channel VHF Alert
- Inst. Ch 9 - Mic. Mounts
- LIST $399.95

SALE $249

Cobra HH-70

LIST $109.95

SALE $97

SALE $28

SALE $349.95

SONY ICF2010

32 mem, direct access keypad, scan and manual tuning, check, AM, FM, SW. $399.95

SALE $344

NEW low price $339.95

FAX: 703 938 6911

22180

NEW

SALE $199.95

BADGERS COUNTERS

- 112 pages
- Best in the industry
- You should now have your copy. If NOT CALL/FAX/WWW/WRITE today!

SALE $199.95

NEW

SALE $29.95

WAXMAN

- All Speed 20002000 Deco Center
- All Speed 3000 decos
- Leads for sale
- AC Adapter included
- MODEL #102C24
- Range: 1-2600MHz
- 50W Power
- Sensitivity: 100MHz <1nV

Compare @ $749 - SALE $250

SALE $199.95

NEW

ICOM R8500

IT’s NEW. IT’s FANTASTIC
- 10 kHz - 2000 MHz
- Improved Audio
- 4 Filter B.W.
- Memory 900 + 100 pass
- 8K and C-V Control
- (2) HF Antenna ports (1) VHF/UHF
- Auto Freq. control
- Audio Peak Filter
- Pass Band Tuning
- Price Class $2000

NEW

CALL FOR QUOTE
ON THE COVER: If an extraterrestrial signal is ever detected by SETI researchers, this Very Large Array in Socorro, New Mexico, along with the Hubble Space Telescope, may be called upon to produce detailed images of the region of space where the radio signal was discovered. (Photo by Larry Mulvehill.)

FEATURES

The Galactic Gamble
Find out how many of the top scientific minds are answering the profound question: Are we alone in the universe?

Forgotten One-Lung Stations
Join Alice once again as she recalls the days when bigger didn’t always mean better for broadcast stations.

Product Spotlight
Steve Adams reviews Uniden’s BearTracker BCT-10 scanner. Find out how it rates and what it can offer you!

The Loose Connection
Bill Price takes an amusing look at our horoscopes for the coming year. See how scanners, CBs, etc. figure into your future!

COLUMNS

The Radio Connection .................................................. 18
The Pirate’s Den ......................................................... 24
Radio Resources ......................................................... 28
CB Scene ................................................................. 31
The Old CB Shack ...................................................... 34
World Band Tuning Tips .............................................. 40
Product Parade .......................................................... 42
Broadcast DXing .......................................................... 44
The Listening Post ....................................................... 50
The Ham Column ......................................................... 62
Scanning The Globe .................................................... 64
Communications Confidential ....................................... 67
Antennas & Things ..................................................... 74

DEPARTMENTS

Tuning In ................................................................. 4
Pop’Comm P.O. ............................................................ 6
Reader Survey ............................................................. 27
How I Got Started ....................................................... 49
Reader’s Market ........................................................... 78
QUALITY COMMUNICATIONS EQUIPMENT SINCE 1942

RTTY AND FAX DECODERS

Universal M-8000v7 Decoder
Designed primarily for the military or commercial user, the M-8000 can be used by the hobbyist who requires professional capability. The color VGA output includes a spectral display & simulated tuning scope. Modes include: CW, Baudot, FAX, SITOR, ARQ-M/2, ARQ-E/E3, ARQ-2C, ARQ-S, SWED-ARQ, FEC-A, FEC-S, POL-ARQ, GMDS, ASCII, Packet, Packet, VTC, Tasker, GMDSS, ASCII, SWED-ARQ, Weather FAX (to the printer port), ACARS, ACARS & GOLAY. Monitor & printer options. #0007 $1399.00 (+$11)

Universal M-450 Reader
The self-contained Universal M-450 reader decodes: Baudot, ASCII, SWED-ARQ, Weather FAX (to the printer port), ACARS aviation teletype, plus GOLAY and POCSAG (512/1200/2400) digital pager modes. Even off-the-air decoding of DTMF CTSS and DCS. Big two-line, 20 character LCD and bi-dir. parallel printer port. The M-450 runs from 12VDC or with the supplied AC adapter. No computer or monitor is required. Now with serial port #0002 $19.95 (+$2)

SPECIALTY

BayGen Freeplay radio combines the ingenious BayGen generator with the latest in radio technology. Winding the crank handle for only 20 seconds provides 30 minutes of listening. Here is assured radio performance, day or night without the cost (and expense!) of batteries. Great for emergencies. The analog dial covers AM, FM and shortwave from 3000 to 12000 kHz. Made in South Africa. #3123 $99.95 (+$5)

HUGE FREE CATALOG

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

Universal Radio, Inc.
6830 Americana Pkwy.
Reynoldsburg, Ohio
43068-4113

800 431-3939 Orders & Prices
614 866-4267 Information
614 866-2339 FAX Line
dx@universal-radio.com

VISIT UNIVERSAL RADIO ON THE INTERNET
http://www.universal-radio.com

COMMUNICATIONS RECEIVERS

Universal Radio carries an excellent selection of new and used communications receivers. JRC NRDO-535D shown.

COMMERCIAL RECEIVERS

The Watkins-Johnson HF-1000 is the ultimate receiver! Advanced D.S.P. technology, 58 bandwidths, 1 Hz display. Under $4000. Please contact us to receive a spec. sheet.

PORTABLE RECEIVERS

Universal offers over 40 portable receivers from $50 to over $500. Our free catalog fully describes & prices all models.

COMMUNICATIONS BOOKS

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

World Radio TV Handbook 1997
All shortwave broadcast stations organized by country with schedules, addresses, power, etc. #2000 $24.95 (+$2)

Worldwide Aeronautical Frequency Dr. By R. Evans
The definitive guide to commercial and military, HF and VHF-UHF aeronautical communications including ACARS. Huge second edition 260 p. #0042 $19.95 (+$2)

Guide to Utility Stations By J. Klingennuss
Clearly the best guide to non-broadcast HF stations. With 13,800 current frequencies. 585 p. #2019 $9.95 (+$2)

Discover DXing! By J. Zondio
An introduction to DXing AM, FM & TV. #2008 $19.95 (+$2)

Understanding ACARS By E. Flynn
Learn the ACARS aviation format. #0012 $9.95 (+$2)

Be sure to include $2 per title for shipping.

SPECIALS

Grundig YB-400 LW/MW/SW/FM Digital Receiver
Rated "Best performance for price/size category" in Passport. Features: full coverage, keypad, wide/narrow selectivity, clocks, SSB and 40 memories. $169.95 (+$2)

Get 3 FREE BONUS items: Universal Radio Stand, DX Tips for Beginners, Radio Propagation for Beginners

Drake SW-1 LW/MW/SW Digital Receiver
This great sounding set has keypad entry and 32 memories. New optional car bracket. Call for a great price!

SPECIALS

Grundig YB-400 LW/MW/SW/FM Digital Receiver
Rated "Best performance for price/size category" in Passport. Features: full coverage, keypad, wide/narrow selectivity, clocks, SSB and 40 memories. $169.95 (+$2)

Get 3 FREE BONUS items: Universal Radio Stand, DX Tips for Beginners, Radio Propagation for Beginners

Drake SW-1 LW/MW/SW Digital Receiver
This great sounding set has keypad entry and 32 memories. New optional car bracket. Call for a great price!
Making Your Radio Life Easier AND More Fun!

BY HAROLD ORT, N2RL, SSB-596

OK, I’ll admit it, I’m a computer neophyte. A few years ago I was the type of person who would rather clean the ball on an IBM Selectric than replace the cartridges on a new inkjet printer. So after at least a thousand ribbon changes on nearly every imaginable type of printing machine-electric and manual, I’ve finally learned that using the computer isn’t quite as baffling as I first thought. Strange isn’t it, how some of us proudly think we’re right at the cutting edge of technology with our brand new mega-buck rigs, scanners and receivers, only to use Post-It notes to record on-air contacts and station information. Well, there’ll be no more Post-It notes for me—goodbye paper notes, hello hard drive and floppies!

Interestingly, every time something new comes along, it’s a good bet that most of us are right there in line getting one. For radio enthusiasts, it’s just the natural thing to do, especially when we’re talking about new scanners, receivers and ham rigs. Many times dealers can’t keep up with the orders! But why are we always so quick to embrace the latest high-tech wizardry from 35-in-one TV remotes, CD players, camcorders, satellite systems, and multi-thousand dollar rigs, but when it comes to a computer we have to think? What’s to think about? Tomorrow the darned thing will be nearly obsolete anyway!

In the case of computers it seems, according to what I’m hearing, many radio hobbyists are still in the wordprocessor, Internet chat room, and game-playing mode. Don’t get me wrong, there’s nothing wrong with using the computer for word processing and surfing the Internet, but as radio enthusiasts shouldn’t we be embracing the computer as another resource to further our enjoyment of our hobby? Shouldn’t we be putting the pen back in the drawer, saving it for writing a letter to Great Grandma? Heck, today even she has a computer to shop for her needlepoint goodies (and her radio gear!).

There are, believe it or not, folks who hang on to the past so tightly they’re turning blue! If you’re thinking “Who needs a computer?” or “What can it do for me that I can’t already do?”, think again. Today you can now upload frequencies; download frequencies; print your loggings; log your contacts/stations; instantly tune, scan, write to memory, switch modes, antennas and filters on your radio; call up station data by time, location, frequency, mode and a zillion other ways; see when the space shuttle will be overhead; and 15 million other time-saving and receiver/rig-enhancing things—and all at the click of your mouse or touch of your keyboard.

Receiver Control and Logging

Keep in mind that I’ve only scratched the surface of what you can do with a computer in the shack. Even so, one of the most powerful and useful tools I’ve found is receiver control and logging. Take my R-8 for example. I’ve had this super radio for quite a while, but recently discovered a very easy-to-use software program called FirstRate by Spectrum Systems, Inc. <Mark.Chalkley@ibm.net>. Now remember, I’m just beginning to use this program. With one eye shut and the other eye covered, I installed the disk and hooked a cable between the receiver and a computer on the network. It comes with TRS Consultant’s English-language SW station database which simply allows me to “click on” a particular highlighted station, and like magic, it’s there with all the settings I’ve prescribed. I can add new stations to the records and tell the computer to sort my findings by time, location, frequency, etc.—all in a

(Continued on page 77)
WORLD ENTERTAINMENT KNOWS NO BOUNDARIES

Fortunately Neither Does The Drake SW1.

Radio Moscow, Voice of America, Radio Beijing, Radio France...The finest in news, music, sports and entertainment the world has to offer. It's all at your fingertips with the SW1 Shortwave Receiver. Get a balance of news with an international flair. The Drake SW1 Shortwave Receiver can bring you news and information from a variety of sources, each with a different view of events as they unfold. Something lighter? Turn to Australian sports, or the island music of the Bahamas. Or try for the dozens of other countries on the air, all for under $300.

In fact, Drake is so sure the SW1 will bring the sounds of the world to you, that it's backed with a 15 day money back trial on factory direct purchases. That's two whole weeks of boundless opportunities to enjoy worldwide broadcasts. If you are not satisfied with the SW1 Shortwave Receiver for any reason, return the unit and Drake will refund your money less shipping and handling.* Call Drake today at 1-800-937-2531 to order your SW1 and begin your worldwide listening adventure.

* Independent retailers establish their own return policies.
LETTERS TO THE EDITOR

Each month we select representative reader letters for our Pop'Comm P.O. column. We reserve the right to condense lengthy letters for space reasons and to edit to conform to style. All letters submitted must be signed and show a return mailing address or valid e-mail address. Upon request, we will withhold a sender’s name if the letter is used in Pop'Comm P.O. Address letters to: Harold Ort, N2RLJ, SSB-596, Editor, Popular Communications, 76 N. Broadway, Hicksville, NY 11801-2909, or send e-mail via the Internet to <popularcom@aol.com>.

Congrats to Hurricane Watch Net Operators

Dear Editor:
I would like to congratulate the Ham Net, especially K5SIV, and all those who spent so many hours operating under the more severe conditions during Hurricane Fran. I was monitoring 14325 kHz (Hurricane Net Watch) and passing on the information to our local radio station, WMBG. Although I do not know these individuals on the Net, I only wish I was part of such a great communication team! I missed her call, but there was also a lady named Judy.

Debbie at the radio station, who is the announcer and DJ, was more than eager to get the information out on the airwaves. The news about Hurricane Fran was far more current than watching the weather channel or listening to other radio stations. Though it was not important to our area at that time, they kept local residents aware of worsening conditions.

I only wish REACT had a net we could operate under such conditions. I have a license for GMRS (KAF4988) and monitor via scanners all national and Coast Guard frequencies, so in a way I feel compensated for helping out. This really gives me the incentive to get my ham ticket! Again, congratulations to all on the Hurricane Watch Net!

Don Aspinall
Peninsula REACT #56

Give CB Back?

Dear Editor:
One alternative is to switch CB to a higher band using FM (900 MHz for example) and return the 11 meter band to the amateur service, from whence it was taken to these many years ago.
Don Turner
Vacaville, CA
(via e-mail)

We’ve Got Jim Hoppin’

Dear Editor:
Only a person of little wit can excuse Pop'Comm writer J.T. Ward’s comment, “Few folks have a legitimate need to own a rifle, shotgun or handgun.” Perhaps “private gun ownership is controversial” in the Democratic Peoples’ Republic of New York, but that’s a better reason to avoid New York than to impose such totalitarian views on the rest of an ostensibly free country.

The framers of the U.S. Constitution enacted the Second Amendment to protect the inalienable right of Americans to own firearms for their own defense and as a means to resist tyranny in government. Our forefathers refused to adopt the original Constitution until this protection was codified in the Bill of Rights. Evidently you and Mr. Ward do not understand what “inalienable” means. According to my Webster’s dictionary, it’s defined as “that which cannot be taken away.” Nowhere in the Constitution, or in the two years of debates preceding the Bill of Rights, is there any remote suggestion of any “legitimate need” requirement for private gun ownership in the United States of America.

Mr. Ward refers to what he calls “reasonable gun regulation.” My copy of the Second Amendment states in pertinent part, “the right of the people to keep and bear arms shall not be infringed.” What part of “shall not be infringed” do you fail to understand? Years ago, gun owners in Australia were duped into “reasonable gun regulation.” At this very moment, Australian police are confiscating all privately-owned semiautomatic firearms (including .22 rimfires) and pump-action shotguns using gun registration lists. Australian gun owners (who committed no criminal act in their lives) face death or years of imprisonment if they refuse to surrender their firearms.

I find Mr. Ward’s remarks to be contemptible. Rest assured I have purchased my last copy of your magazine.

James L. Waller
Sioux Falls, SD

Dear Mr. Waller:
OK.

“Hello, Philadelphia?”

Dear Editor:
I would like to say that I love your magazine. Although I do not subscribe (I am a college student who moves back and forth between school, internships and home), I buy it at the newsstand price. I read it every month I can find it in the stores. In fact once I drove 20 minutes to a mall bookstore to find that they didn’t have any in stock.

I was wondering if you ever publish news about radio groups or clubs. I am very interested in scanning and have been for many years. I would like to join a local club. It would be a good idea to have an issue devoted to clubs on all of the spectrums. Do you know of any groups in the Philadelphia area that are devoted to scanning and emergency communications? I can be reached at <priority@FreeMark.com>.

David Donohue
PA

Dear David:
While we don’t know of any club that specifically covers the Philadelphia, PA area, you might want to contact our friend Les Matson, editor of “The Scanner Club”, a fine TV Guide size publication that puts a lot of scanner-only material in a small package. Tons of frequencies and tips are in each bi-monthly issue. Contact Les at P.O. Box 62, Gibbstown, NJ 08027 and tell him you read it in Pop’Comm!

Let’s Get Technical

Dear Editor:
I just received my January issue of Pop’Comm and have noticed a change in the direction of this fine publication. And, in my opinion, a change for the better. The addition of the new “Radio Connection”

(Continued on page 48)
THE SRX100 RECEIVER

The new LOWE SRX100 is an economy communications receiver intended for the newcomer to shortwave listening, or as a second receiver for the more experienced enthusiast. It sells for well under half the cost of our most popular receiver, the HF150, but nevertheless has an excellent specification for the price.

The SRX100 is extremely simple to operate, and can receive AM, CW and SSB signals. Some of the key features are shown below:

- Frequency range 30kHz to 30MHz
- 1 kHz tuning steps
- Clarifier for SSB tuning ±800Hz
- 1µ sensitivity
- 2 watt audio output
- Modes available: USB, LSB, AM
- Liquid crystal display
- Built in speaker
- Dual conversion superhet design
- Signal frequency readout to 1kHz
- Digital frequency readout to 1kHz
- British made
- 12VDC power adapter supplied
- Dimensions: 7.3"W x 7.5"D x 2.5"H

HF150 RECEIVER

A proven performer, the HF-150 offers superb audio and simplicity of design, it has come to be synonymous with the LOWE name. A compact, rugged features and ease of operation make this receiver a welcome addition to any listening post. Can also be fitted with batteries for mobile use, or controlled via computer (with optional IF150 interface.)

Specifications:
- Frequency coverage: 30kHz to 30MHz continuous coverage
- Reception modes: LSB, USB, AM, Synchronous AM (USB, LSB, DSB)
- Receiver system: Microprocessor controlled PLL tuning, dual conversion superheterodyne receiver.
- Tuning steps: 8Hz in LSB, USB, and AMS modes; 60Hz in AM mode. Step size increases with rapid spin-wheel rotation.
- Memories: 60 memories holding frequency and mode.
- Aerial Inputs: 50Ω input via SO-239 socket; 600Ω input and earth connection on press terminals.
- RF attenuator: 20dB
- IF Filters: Wide: 7kHz, Narrow: 2.5kHz
- Power Supply: 12V dc (AC adaptor included)
- Internal batteries: 8 AA size cells.
- Nicad charging system included in main receiver.

For more information see your favorite dealer.
The Galactic Gamble

SETI Researchers Boldly Comb the Cosmos for Steller Radio Stations . . .

By Michael Mechanic

It was 3 a.m. in Green Bank, West Virginia, when Frank Drake's alarm clock sounded, but the 29 year-old radio astronomer had no trouble waking. Drake and two student assistants at the National Radio Astronomy Observatory—a facility then under construction—were about to make history. The date was April 8, 1960, and the team was going to take humankind's first-ever crack at interstellar communication. For the first time, human beings would turn an ear to the cosmos in an attempt to intercept radio signals transmitted from far-off planetary systems by intelligent, though probably quite non-human beings.

Dubbed "Ozma," after a princess from L. Frank Baum's fictitious land of Oz, the experiment relied on the observatory's recently completed 85-foot diameter radio telescope. The scope's receiving device was located in a cylinder at the reflector's focal point, more than five stories off the ground. Before proceeding on that cold morning, Drake had to spend nearly an hour tuning an amplifier inside this "glorified garbage can." By 5 a.m. he was back in the control room, ready to listen. It was a verifiable radio signal he sought—one that would stand out from the cosmic background noise in a distinctly artificial way. Drake's search would, in time, unite some of the world's leading scientific minds, escort the emerging field of radio astronomy into prominence, engage NASA, Congress and roughly $75 million in private and federal funds, and, ultimately make a legitimate scientific pursuit of one of the most profound questions in human history: Are we alone in the universe?

Today, more than 36 years later, despite exponential leaps in technology and numerous cosmic eavesdropping projects worldwide, the listeners have cov-

The National Science Foundation's 1000-foot diameter radio telescope near Arecibo, Puerto Rico listens to tiny segments of the universe for signals from advanced civilizations.
If there's an abundance of life in the cosmos, could it be in one of these distant galaxies photographed by the Hubble Space Telescope?

"Drake and others have bet their careers and a lot of private and federal dollars on this hunch."

Ten days later, the signal appeared again, long enough for the scientists to determine its origin: Earth. Only much later did a military source confirm that the signal was a military jamming device.

We’re Listening, Is Anyone There?

By the early 1980s, some 42 searches had been conducted worldwide, three by Drake and colleagues, and others by the likes of Stuart Bowyer at Berkeley and Paul Horowitz at Harvard. NASA entered the game, circa 1971, hosting a summer-long brainstorming session of SETI experts that was dubbed “Cyclops.” The resulting “Cyclops Report” inspired many scientists, including Bowyer and Tarter to embark on their own SETI projects, and NASA began including SETI into its budget on a regular basis.

Despite the excitement, SETI fielded much criticism from skeptical scientists and politicians. “I finally changed my mind after hearing some good arguments on the, ‘They’re not there’ side,” says UCLA Radio Astronomer Ben Zuckerman, who early in his career searched 600 stars in an unsuccessful follow-up to the Ozma experiments. Zuckerman was swayed by “the Fermi Paradox,” an argu-
WE HAVE IT ALL!
Surveillance
Infinity Transmitters
FM Wireless Transmitter Kits
Vehicle Tracking Systems
Bug Detectors
Caller I.D.
Wired Mikes
Telephone Register with Printer
Long-play Recorders
Shotgun Mikes
Telephone Recording Adapters
Alcohol Testers
Telephone Scramblers
Hidden Video Cameras
Telephone Tap Detectors
Drug Testers
MUCH, MUCH, MUCH MORE.

Our 27th Year!
Small catalog FREE.
Larger catalog send $5.
Mail Order only. Visa, MasterCard and
C.O.D. accepted for equipment only.
Inquire for dealers’ prices.
A.M.C. SALES, INC.
193 Vaquero Dr. • Boulder, CO 80303
Mon.-Fri. 8 a.m.-5 p.m. Mtn. Time.
800-926-2488
(303) 499-5405 • Fax (303) 494-4924
Internet: http://www.siteleader.com/
catalogdepot/AMCSC-home.html
E-mail: amc-sales@siteleader.com

THE MONITORING MAGAZINE
March 1997

May think we’re the only intelligent life
microbial life on Mars. “[Some scientists]”
recent evidence pointing to possible
discoveries of new planets by several
have been bolstered considerably by recent
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
two teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by
discoveries of new planets by several
teams, most notably UC Berkeley’s
Geoffrey Marcy and Paul Butler, and by

If in 100 years we haven’t found any-
thing, then I’ll be a hell of a lot more pes-
simistic.” Tarter concurs. “Our chances
of success are zero if we don’t do it and
greater than zero if we do, and that’s a big
distinction,” she says. “I mean, you don’t
spend your life doing something you
know can’t work.”

After coming under political attack in
the early 1990s, the SETI Institute and
smaller searches, like Bowyer’s “SER-
ENDIP” projects, were dumped from the
NASA budget. Although the smaller pro-
jects have struggled to stay afloat, the
SETI Institute’s latest effort, Project
Phoenix, has attracted more than $7.3
million in private donations. From Febru-
ary through June of 1995, Phoenix re-
searchers took up residence at the Parkes
radio astronomy observatory in New
South Wales, Australia. Using the facili-
ty’s 64-meter radio telescope, they lis-
ten to about 200 southern hemisphere
stars—some of the 1000 originally slat-
ed for attention—at frequencies from
1200–3000 MHz. The new equipment
scanned 28 million channels simultane-
ously at single-Hertz resolution, and, for
the first time, researchers had a follow-
up telescope, located 120 miles away,
allowing them to distinguish immediate-
ly between terrestrial and potential
extraterrestrial signals by the presence or
absence of Doppler shift.

The extraterrestrials remained elusive,
however. Promising signals turned out to
be satellites, military radar and TV sta-
tions. “It’s disappointing, but it doesn’t
discourage us. The equipment all worked
pretty well and that was a technical tri-
umph,” says SETI scientist Seth Sho-

“...NASA has spent between
$60 million and $70 million on
SETI since 1971.”

stack. “You never give up. If you look at
1000 stars and don’t find anything, can
you conclude we’re alone? No you can’t.”

Phoenix’s now plans to focus on 900
northern hemisphere stars, all within 150
light years of Earth. Drake naturally
believes federal funding of SETI research
serves the public interest. He notes that
NASA has spent between $60 million and
$70 million on SETI since 1971. “That’s
less than the cost of one fighter plane, but
the potential payoff for Earth is much
greater,” says the astronomer. “It’s a high-
stakes gamble where the payoff is enor-
mously large and, if you succeed, the ben-
efit per dollar spent will be greater than
for any project in history.” That payoff,
Drake says, includes knowledge of tech-
nology of other worlds, learning whether
space colonization is practical and how it
might be done, and whether nuclear
fusion is feasible as a clean energy source.

“We will learn just what the limits of
growth and the quality of life are for other
civilizations and this will give us great
guidance in planning for our own world,”

Drake says.

Some scientists question the wisdom of communicating with technologically
superior, potentially hostile beings. But
most SETI researchers consider the
chance of direct contact to be infinitesimi-
ally small. “Our existing spacecraft, at
the maximum speed they go, would take
about 100,000 years to go to the nearest
star, and this is not a feasible travel time
for a colony or a mini-planet or anything
else,” Drake says. “At the speeds you
must travel, a small pebble striking you
releases as much energy as a hydrogen
bomb, and that’s going to be the end of
your mission.”

“Travel would be boring and expen-
sive,” concurs Horowitz. “Energetically,
it’s just a stupid thing to do.”

But some avid SETI proponents, like
Shostak and Carl Sagan, never ruled out
the many possibilities. We simply don’t
yet know enough about what is or isn’t
possible in the universe, they say. All we
can do is go about our small terrestrial
lives, make our scientific discoveries in
time, and, every so often, on quiet star-
filled nights, turn our ears to the heavens,
and listen patiently.
Sangean ATS909-A Shortwave Receiver
Mfg. suggested list price $399.95/Special $249.95
Size: 8-1/4'' Wide x 11-1/2'' Deep x 5'' High
Frequency Coverage LW: 153-515 KHz.; MW: 520-1710 KHz.; SW: 1711-2999 KHz.; FM: 87.5-108.0 KHz.
Now monitor the world on the most advanced shortwave receiver available from CEI. The Sangean ATS909-A has a 10KHz step tuning, 10 World Receiver Bands. 60 Custom memories. Features 304 alerts. Includes earphone, 10'' Antenna and AC adapter. Order today.

Beatrice Scanners
Monitor fire, police, weather, marine, medical, aircraft and other transmissions with your Beatrice scanner.

Save up to $204.00
It pays to clip this coupon and save. Order any scanner or transceiver from CEI. See the scanner or transceiver with bar code from the front cover of this magazine and save.

CB/Ham Radios
Have fun and use our CB, GMRS, commercial and amateur radio equipment to keep in touch with your friends. For even bigger savings, clip and use the coupon on this page.

Weather Stations
The Weather Monitor II (7410) comes complete with anemometer with 40 feet (12.2 m) of cable, external temperature sensor with 25 feet (7.6 m) of cable, junction box with 25 feet (7.6 m) of cable, external temperature/humidity sensor with 25 feet (7.6 m) of cable, power supply cord, instruction booklet and one year limited factory warranty.

Save 39.95 if you order a Bearcat 3000XLT. Offer expires 3/31/97.

CB/Scanners Weather Stations

For credit card orders call 1-800-USA-SCAN
Communications Electronics Inc.
Emergency Operations Center
P.O. Box 1045, Ann Arbor, Michigan 48106-1045 USA
For information call 313-996-8888 or FAX 313-663-8888

CIRCLE 28 ON READER SERVICE CARD
Six Steps For Building The Perfect Monitoring Station

The Scout®
Optoelectronics pioneered the frequency recorder with its introduction of the Scout. The Scout is ideal for any serious monitoring station. After a day of capturing frequencies in the field, you can download the Scout’s 400 frequencies into your PC and create scanning band plans, or match up recorded data with the Spectrum FCC database (Optional).

- 10MHz - 14.0GHz frequency range
- 10 Digit LCD Display with EL back light and 16 segment signal strength bargraph
- Deeper and vibrator mode to alert you when a frequency has been logged
- Reaction Tune AOR AR8000/2700
- ICOM R10, R7000, R7100, R8500, R9000, and Radio Shack Pro 2005/6
  (w/ 05456 / Lite installed) and Radio Shack Pro 2035/42 (w/ 05535 installed)

*Download recorded data to PC using optional OptoLinx interface

What they’re saying about the new Xplorer
“...We weren’t disappointed. Within a second, the Xplorer latched onto near-field signals”......Bob Grove, Monitoring Times Magazine

“I just tell them that it’s a radio James Bond would be proud to use”..............Ed Griffin, Popular Communications Magazine

“I was able to replace three test instruments and carry just the Xplorer”..........Luis Libin, Director of Technology, NBC Network

The Xplorer
For the ultimate in Nearfield detection the Optoelectronics Xplorer stands alone. If you are looking for an all in one hand-held Receiver, Decoder and Frequency Recorder, look no further than the Optoelectronics Xplorer. Fitted with the maximum sensitivity available in a Near-field device, the Xplorer takes monitoring to a new level.

Whether it’s two way communication testing, security/surveillance applications, or just plain fun, the Xplorer is ideal. Packed with a 500 frequency memory, all data is stored with time and date. See it, Hear it, Decode it, Map it. The Xplorer locks onto any frequency from 30MHz-2GHz in less than 1 second, displays the frequency, numerical deviation, or signal strength, demodulates the audio, and will decode any CTCSS, DCS, or DTMF data.

Let the Xplorer soar you to new heights.
- 30MHz-2GHz in less than 1 second
- Two line LCD display. First line displays frequency, second line switches between CTCSS, DCS, DTMF, Deviation or Signal Strength
- GPS interface (NMEA-0183 GPS required)
- Auto Hold, 1000 Lockouts, Skip, Auto or Manual Store
- Real-Time Clock/Calendar with battery back-up
- Rotary Encoder for easy selection of menus for setup
- Internal Speaker, Audio earphone/headphone jack
- Built-in PC interface with interface cable and download software included
- Includes Built-in Rapid Charge NiCad batteries and Rapid Charger

The OptoLinx
The OptoLinx is all you need—Whether it’s computer control of your AOR AR8000, ICOM CI-V receivers, or downloading Scout data to your PC. The versatility of the OptoLinx also allows for datalogging of frequencies with the Optoelectronics M1, or datalogging CTCSS tones and DCS codes with the Optoelectronics DC440.

- Use with any ICOM CI-V receiver for computer control
- Download recorded Scout frequencies into your PC
- Computer control for the AOR AR8000 scanner
- Easy Flat Flexible cable connection for the AR8000
- Data Slicer Circuit-converts FSK to RS232. Works with popular decoding PC software for ACARS, POCSAG, etc.
- Includes Radio Manager for Windows computer control software, POCSAG decoding software, and download utility software

Price Includes:
- DB-32, CC-30 And Spectrum CD Rom

$449

$129

$899
The OS456LITE Computer Control Scanning Modification

Remember the days of staring at your scanner while monitoring the local police, sitting around looking at the same old display? That's all changed! Drop in the OS456LITE and take your Radio Shack Pro2005/6 to new heights with the OS456LITE. Now you can scan remarkably faster and import DBase files from the Spectrum FCC database, all with the ease of PC control. The OS456LITE continues in the tradition of the original OptoScan 456 with all the same functions, but without the CTCSS, DC5, and DTMF decoding features. Every good monitoring post should be equipped with a good receiver. The OS456LITE installed in your Pro 2005/6 is the scanner / computer enthusiast's dream.

More Great OptoScan Products:
- OS456 (Decoding included for the Pro 2005/6) ... $199.
- OS5535 (Decoding included for the Pro 2035/2042) ............... $199.

The DC440

No receiver or monitoring station is complete without a DC440 Decoder. See what you are missing when you connect the DC440 with any scanner or receiver and instantly decode all the standard CTCSS, DC5, and DTMF data. Connect the DC440 to your OptoLinx and PC for datalogging all tones and codes with time and date stamp. The DC440's easy operation contains six modes; All Mode Decode, CTCSS Decode, CTCSS Period, DC5 Decode, DTMF Decode, and DTMF Recall. Automatically decode 50 CTCSS tones, 106 DC5 codes, along with 106 DTMF characters. The serial interface on the DC440 conforms to the CI-V interface standard, allowing it to be connected to a PC for remote control with the optional OptoLinx.

Optoelectronics, Can I help you?

Contact Opto Direct

Factory Direct Order Line 800-327-5912

Optoelectronics, Innovative Products for a Modern Planet

5821 NE 14th Avenue • Ft Lauderdale, FL 33334
Telephone (954) 771-2050 Fax (954) 771-2052
Visa • MasterCard • C.O.D. Prices and Specifications are subject to change without notice or obligation
Email: opto@igc.net Internet: www.optoelectronics.com
Forgotten One-Lung Stations

We Recall The Days When Bigger Didn't Always Mean Better

By Alice Brannigan

W e are a nation that has gotten used to the idea of constant increases in taxes, salaries, horsepower, the height of tall structures, and even the power of broadcasting stations. Had the FCC not put a 50 kW cap on AM station power output, who knows what power level they would have crept up to by now. Don't forget that in the mid-1930s, Cincinnati's WLW was authorized to temporarily test broadcast with 500 kW, and other stations were begging to do the same.

It is all too easily forgotten, that before 1930, the AM band was packed with stations running from 10 to 50 watts. Scores of 50 and 100 watt stations existed into the late 1940s. Such stations were the very core of community broadcasting. They prevailed in remote areas as well as metropolitan cities. In an era when "service" meant more than big profits, some stations were two or three person operations running from the static and interference from higher-powered stations, were prized DX trophies because they took real effort to pull them out from the static and interference from higher-powered stations. One-lung AM stations are history now. Today the FCC won't license a station with less than 250 watts, and even those are getting rare.

Let's glance back at a representative sampling of flea-powered stations that kept our dads, grandpas, and great-grandpas glued to their receivers into the wee small hours.

For instance, in late January, 1931, the newspaper in Reno, Nevada carried an item about the Yale Alumni Assn. being upset about a little pirate station "WRIGHT" being operated by a student in the Yale University dorms in New Haven, Conn. According to the story, the operator of the station was selling commercial time to local merchants. He announced his name as "Graham Cracker." That was a good natured rib at Graham McNamee, NBC's top announcer.

That item was sent to us by historian John Faulkner, Reno, Nevada. John reminds us that at one time you could buy small two or three-tube oscillators tended to broadcast record players through household radios. They sent a signal out for about a block, but with a roof antenna you could extend the range. Add a mic, and you had a mini-station. The FCC used to shut down such stations regularly. Thanks, John.

Another pirate was TJW, which ran 7.5 kW in the late 1940s. Such stations were the peak of 50 and 100 watt stations existed into the mid-1930s, Cincinnati's WLW was authorized to temporarily test broadcast with 500 kW, and other stations were begging to do the same.

It is all too easily forgotten, that before 1930, the AM band was packed with stations running from 10 to 50 watts. Scores of 50 and 100 watt stations existed into the late 1940s. Such stations were the very core of community broadcasting. They prevailed in remote areas as well as metropolitan cities. In an era when "service" meant more than big profits, some stations were two or three person operations running from the static and interference from higher-powered stations, were prized DX trophies because they took real effort to pull them out from the static and interference from higher-powered stations. One-lung AM stations are history now. Today the FCC won't license a station with less than 250 watts, and even those are getting rare.

Let's glance back at a representative sampling of flea-powered stations that kept our dads, grandpas, and great-grandpas glued to their receivers into the wee small hours.

For instance, in late January, 1931, the newspaper in Reno, Nevada carried an item about the Yale Alumni Assn. being upset about a little pirate station "WRIGHT" being operated by a student in the Yale University dorms in New Haven, Conn. According to the story, the operator of the station was selling commercial time to local merchants. He announced his name as "Graham Cracker." That was a good natured rib at Graham McNamee, NBC's top announcer.

That item was sent to us by historian John Faulkner, Reno, Nevada. John reminds us that at one time you could buy small two or three-tube oscillators tended to broadcast record players through household radios. They sent a signal out for about a block, but with a roof antenna you could extend the range. Add a mic, and you had a mini-station. The FCC used to shut down such stations regularly. Thanks, John.

Another pirate was TJW, which ran 7.5 kW in the late 1940s. Such stations were the peak of 50 and 100 watt stations existed into the mid-1930s, Cincinnati's WLW was authorized to temporarily test broadcast with 500 kW, and other stations were begging to do the same.

It is all too easily forgotten, that before 1930, the AM band was packed with stations running from 10 to 50 watts. Scores of 50 and 100 watt stations existed into the late 1940s. Such stations were the very core of community broadcasting. They prevailed in remote areas as well as metropolitan cities. In an era when "service" meant more than big profits, some stations were two or three person operations running from the static and interference from higher-powered stations, were prized DX trophies because they took real effort to pull them out from the static and interference from higher-powered stations. One-lung AM stations are history now. Today the FCC won't license a station with less than 250 watts, and even those are getting rare.
watts on 1490 kHz during 1930–31. It was located in Hamilton, Bermuda, but could be heard nearly 1,000 miles away along the eastern U.S. coast. The call letters stood for Thomas J. Wadson, and it appeared to be a rather well run operation with a regular staff. TJW operated on a regular sked four days per week and sent out veri letters. They also ran DX tests. Programs included hotel orchestra performances and live talent.

TJW was primarily intended for local reception in Bermuda during the summer when reception from the U.S. and Canada was poor.

**Other Tiny Ones in the U.S.**

Decorah, Iowa was the site of KGCA, licensed for 20 watts on 1070 kHz in 1926 to Charles W. Greenley, of 201 Waters St. Decorah, on the Upper Iowa River, was settled largely by Norwegians who made it their chief center west of the Mississippi. It was the site of Luther College (est. 1861), the Koren Library of Norwegian-American literature, and the Norwegian-American Museum. It’s a very picturesque area known as the “Little Switzerland” of Iowa.

In 1927, KGCA shifted to 1210 kHz and reduced its power to 10 watts. Later that year the frequency was changed to 1270 kHz. In 1930, KGCA increased power to 50 watts, and by 1936 had expanded to 100 watts. But, by October of 1939 the station had gone dark and it was finally stricken from the FCC’s records in March of 1941.

Moorhead, MN, on the Red River, was a leading agricultural distribution center when station KGFK was opened with 50 watts on 1340 kHz (then moved to 1200 kHz) in 1927, but KGFK didn’t actually start there. It was first licensed to the Kittson County Enterprise in nearby Hallock, but in 1930 it was moved to Moorhead when it was purchased by Lautzenheizer and Mitchell. They operated KGFK as the Red River Broadcasting Co., Inc. on 1500 kHz. In 1936 the station was doing so well that it was running 100 watts. By February, KGFK was moved to Duluth and its call letters were changed to KDAL.

Battle Creek, MI, is where the breakfast cereal comes from, also where station WKBW was licensed to the Battle Creek Enquirer and News, 7 N. McCamly, in 1927. Their license authorized 50 watt operation on 1410 kHz, changed to 1420 kHz a year later. In 1930, the station changed its call letters to WELL. As of the mid-1930s, it was running 100 watts. In 1941 it moved to 1400 kHz and increased its power to 250 watts. The station went dark and out of business around 1970. It is apparently unrelated to Battle Creek’s present station WELL on 1600 kHz, which first went on in 1993.

When Brooklyn, NY was the place where The Dodgers played baseball, one of the New York City borough’s local broadcasters was WMBQ, “The Home Sweet Home Station.” WMBQ was licensed in 1927 to Paul J. Gollhofer for 100 watts on 1470 kHz, and was operated from 95 Leonard Street, at the intersection of Montrose Avenue, in the Williamsburg section. In 1928, the station was forced to shift to 1500 kHz.

In 1936, WMBQ was operated by the Metropolitan Broadcasting Corp., and soon after was shifted to 1310 kHz. When the FCC decided to reshuffle frequency assignments in early 1941, it appeared that little WMBQ might be shifted to 1600 kHz to share time with Arthur Faske’s Brooklyn neighborhood station WCNW, and also station WWRL located in the Woodside area of Queens, New York City. Ultimately, the FCC decided to cancel both WMBQ and WCNW in order to cancel both WMBQ and WCNW in order...
Radio Station KGCA  
DEORAH, IOWA  

Date  12/7/32  

We wish to advise that your report of reception from  
KGCA with our station log.  

We thank you for the report and comments and  
assume you are appreciated.  

RADIO STATION KGCA.  
By  C. Greenley  
Manager  

Station KGCA sent this QSL out in 1932 when it was running 50 watts. The card is signed by C. Greenley, the station's owner.

Radio Station KGFK  
MOORHEAD, MINNESOTA  

HELLO DXer:-  

Was glad to hear from you and to learn that you picked us up the other night. We have checked your report with our log and use this method of verifying your reception of this station. These special DX programs are broadcast every other Friday morning between 1 and 3 o'clock CST and the next one will be broadcast on January 8, 1932. We operate on 1500 keys, 50 Watts.  

Very truly yours,  
Red River Broadcasting Co., Inc.

KGFK, in Moorhead, MN was another 50 watt wonder station when this card was sent out in early 1932. Soon enough it went off to Duluth and received new call letters.

Dear Listener  

THIS IS TO VERIFY YOUR RECEIPTION OF  
STATION WELL  
1420 K.  
BATTLE CREEK, MICH.  

DATE  Dec. 7, 1934  
TIME  3:30 AM  
REMARKS:  

This WELL from Battle Creek is the 50 watt one from 1934. It appears to be unrelated to the present-day station in Battle Creek with the identical call letters.

RADIO STATION KGFK  
MOORHEAD, MINNESOTA  

HELLO DXer:-  

Was glad to hear from you and to learn that you picked us up the other night. We have checked your report with our log and use this method of verifying your reception of this station. These special DX programs are broadcast every other Friday morning between 1 and 3 o'clock CST and the next one will be broadcast on January 8, 1932. We operate on 1500 keys, 50 Watts.  

Very truly yours,  
Red River Broadcasting Co., Inc.

KGFK, in Moorhead, MN was another 50 watt wonder station when this card was sent out in early 1932. Soon enough it went off to Duluth and received new call letters.

Your verification of  

Thank You!  

1500 K. C.  
WMBQ  
100 WATTS  

“The Home Sweet Home Station”  
95 Leonard Street  
Brooklyn, N. Y.  

Remarks:  

Brooklyn, NY even had 100 watt stations. WMBQ was forced off by the FCC in 1941 when its air time was awarded to another local co-channel station. This 1935 QSL is signed by the station's owner.

“Some appeared to be little more than ham stations and, indeed, most had started that way.”

In order to allow WWRL to have full time local use of 1600 kHz in New York City, these are merely a few of those wonderful one-lung broadcasters, gone but (we hope) not forgotten. The QSLs in our column from KGCA, KGFA, WELL, and WMBQ are courtesy of Tom Buckley, Washington, D.C. Tom recently purchased an enormous collection of great 1930s and 1940s QSLs and was kind enough to make copies of the cards and letters so that we could use them here. Really appreciated, Tom!

Rare Photos

Oil City, PA was the site of station WLBW when it opened for business on December 10, 1926 under the auspices of the Petroleum Telephone Company. WLBW was on 930 kHz with 250 watts from the Veach Building, 1 Sycamore Street. This building was later to become the home office of the Quaker State Oil Company, and by 1970 was known as the Fred H. Chambers Building. Within its first year of operation, WLBW shifted over to 1020 kHz and was licensed for 500 watts, although it was running 1 kW. In early 1929, the WLBW transmitter was relocated to the top of Hogback Mountain. Soon after, the studios and offices were moved to the “beautiful and spacious” Col. Drake Theatre Building on Seneca Street.

Another move took place in 1932 when the station’s part-owner, The Erie Telephone Company, relocated WLBW to Erie, PA. In 1934, the station was purchased for its wavelength by Gov. James M. Cox of Ohio. Presumably the old equipment was scrapped as WLBW was completely reborn on February 9, 1935 in Dayton, Ohio as “new station” WHIO. Today, Oil City, Pennsylvania’s WLBW is one of America’s long-lost stations.

We are lucky to have rare never-before-seen WLBW photos from the 1926–27 era. The photos were taken by Lambert F. “Bill” Pope, who was an engineer and announcer in WLBW’s early days. He even played the role of “Uncle Limber” on a kiddie program. In 1931, Mr. Pope became WLBW’s manager. The original negatives were passed down to his son, a former TV network engineer. Jan D. Lowry, of Broadcast Pro-File, was permitted to run several prints from those negatives, and has shared them with us.

Broadcast Pro-File is a professional research company that prepares highly detailed historic profiles of past and present...
sent American AM/FM/TV stations. A reasonable fee is charged. For a complete catalog of fees and services, send $1 to Broadcast Pro-File, 28243 Royal Road, Castaic, CA 91384-3028.

**Sail On**

An e-mail from a reader signing <Me Cthulhu@aol.com> notes that TV commercials in the New York area have been plugging the big Broadway musical “Titanic,” based upon the famous ship that sank in 1912. He reports that the commercials are accompanied by the CW letters “SOS” repeated over and over, but he questions if the [RMS Titanic] actually transmitted an SOS.

Very astute. As it turns out, the ship never sent an SOS, so the commercials are in error! When the vessel sank, the international distress signal was the old CQD, and that was the distress signal sent out from the [Titanic]. In 1912, SOS had not yet been adopted as the international distress signal.

Based on the e-mail name, we assume that <Me Cthulhu@aol.com>, is a fan of fantasy author H.P. Lovecraft. Either that, or we heard directly from Cthulhu, in “person.” Let’s hope it’s the former.

Hope to meet you here again next time. Always looking forward to receiving old-time radio and wireless-related picture postcards, QSL cards and letters (good copies are fine), station lists and directories, newspaper clippings, memories, questions, suggestions, and so on. See you on the road to Radioville.
A LOOK BEHIND THE DIALS

Digging Deeper Into the Emerson

Longtime Popular Communications reader Charlie Warfield, Jr., KA9OFN writes about his “ideal” electronic workshop, saying “My workshop is a tiny operation on the second floor of a building my dad owns near historic downtown Naperville, Illinois. The workbench is pushed against one wall. My scope and signal generator are on a shelf—tipped forward ever so slightly for a perfect viewing angle. On the bench is a parts cabinet with about 60 different values in it. To my right is a upright tool chest containing many years accumulation of pliers, screwdrivers, knives, more test equipment and doo-dads—all hand-picked to make my life easier. Some of these doo-dads were handmade to do a specific job. My favorite is a right angle Phillips screwdriver, heated with a torch and bent for the sole purpose of installing the output transformer in a homebrew tube radio I made as gift to my parents. My radio projects are stored on shelves, and I have a place for my tube tester and growing stock of tubes. I need more storage area for my radios! (Don’t we all?—Ed.) In the outside hallway, I’ve made a bed for my dog Jake. I’m his best buddy, and he prides himself on being my shop dog. So, that’s my little world.”

Let’s hear it everybody, what about you? Tell us about your “shop” or radio collection and send a photo along to me at The Radio Connection, Popular Communications, 76 North Broadway, Hicksville, NY 11801.

Tying the Knot—The Right Way

Few of us have given this one much thought: What is the correct way to secure a lamp cord where it enters a radio chassis or lamp base? I have seen every knot imaginable used for this simple task. There is an Underwriter’s Knot just for this purpose. There is an Underwriter’s Knot just for this purpose.

Examine the power cord entry hole in the radio chassis. Most sets use a smooth metal grommet to avoid chaffing the wire insulation. Otherwise, you should use a rubber grommet or cord restrainer to protect the cord. Sources for inexpensive polarized lamp cords are listed at the end of this column.

Fusing the Chassis

The Riders manual for the Emerson radio shows it draws about 40 watts. I like to fuse my sets—the added cost is minimal. Using some simple math and the common power equations gives us the correct fuse value.

\[ P = IE \]
\[ P \text{ is power in watts, or 40. } I \text{ is the unknown, the value of the fuse in amps. } E \text{ is voltage, or about 120 Vac.} \]
\[ 40 \text{ watts } = 1120 \]
\[ P = IE \text{ or } I = P/E \]
\[ I = 40/120, \text{ or } I \text{ is equal to .33 amps. } \]

In this case, a good value fuse to use is .5 or 1/2 amp. The radio will initially draw a bit of extra current when it is first turned on. The tube filaments draw a lot of power when cold; their resistance is very low until they reach operating temperature. This is why tubes and pilot lamps are most likely to fail when the radio is first turned on; the current surge may blow the weakest point of the filament.

Fuses are sold with different time-delay ratings. A regular fuse may withstand a small overload for several minutes. Fuses are also made with MDL (Medium Delay), and these are intended to tolerate moderate overloads for a period of time. In our case, the extra 200 mA rating provided by a 1/2 amp fuse will suffice. Inexpensive fuse holders can be purchased from the vendors listed at the end of this column.

Replace Defective Wiring

I noticed the Emerson radio’s IF transformers had rubber insulated wiring that had become very brittle with age. The first IF transformer secondary grid lead goes to the IF tube grid-cap connection.
Charlie shares the limelight with his pal, Jake the Coon Hound.

This lead is subjected to handling when replacing the IF tube, thus the rubber insulation had flaked away leaving exposed bare wire. I replace wires with defective insulation as a matter of practice.

Antique Electronic Supply carries cloth-covered wire in several popular colors. They also carry the old style “push-back” insulated wire. To use this wire, you first cut the wire to length, and then “push-back” the insulation to expose bare wire to make your connection.

It’s a good idea to follow the color code used by the IF transformer manufacturer—usually coded red, blue, green and black. You might get away with transposing the B-plus and plate lead terminations, or the grid and ground return terminations—most of the time. I learned a hard lesson when I did my first restoration on a Zenith 12-tube console radio. I had to replace all of the rubber insulated wire used in the set—and it was considerable work! Even the tube filament wiring was rubber insulated and crumbling. Both Zenith IF transformers had rubber insulated wiring that was in bad shape. To compound matters, these IF transformers were dual-frequency—the set also covered the early Armstrong FM band. The FM section used a much higher IF frequency than the AM and SW bands. There were quite a few wires emerging from those IF cans! I made a bad assumption that the 455 kHz sec-

ondary windings could be transposed without adversely affecting the sets operation. The restored radio didn’t play right; the tone was poor and the sensitivity was lacking. It took me a while to figure what was causing the problem. Zenith had installed the 100 pF IF bypass capacitor, which removes the residual IF RF energy from the detected audio signal and AGC line, inside the last IF transformer. With the secondary winding transposed, the capacitor was shunting the detector diode instead of the audio and AGC path signal path! I guess there is a lesson to be learned here.

Going a bit off topic, I often find crumbling insulation on wires emerging from power transformers in early AC sets. This seems to be a rather common problem in many early AK (Atwater Kent) radios that used 2.5 volt filament tubes. This is a judgement call. Sometimes the leads are heavy enough, and the insulation, although cracked, is unlikely to be dis-

The ZEIT by ARCRON RADIO-CONTROLLED CLOCK
-All World Time Zones with Precise Time
-Tell Time by the Atomic Clock that governs time for radio stations and space flights
-Sets Self By The NIST Radio Waves - WWVB Signal
-YOU’LL NEVER HAVE TO SET THE TIME AGAIN

Keeping Exact Time HASN’T BEEN EASIER!!
Automatically sets accurate time, date and adjusts for the start and end of daylight savings time
- Receives Radio Signal from US Atomic Clock
- Superior Signal Sensitivity (Below 20µV/m)
- Continuous Oscillator Calibration
- Internal Quartz Oscillator
- Integrated Internal Ferrite Omnidirectional Antenna

Battery Operated with Low Battery Indicator
High Tech Design
Warranted
2.60" x 5.30" x 4.45"

ORDER YOURS DIRECT FROM ARCRON ZEIT
CALL TOLL FREE 24 HOURS 1-800-985-TIME (8463)
630-472-9999 International
$149.95
S&H $4.95
M/C • VISA • DISCOVER • AMEX 2ND DAY DELIVERY AVAILABLE

THE MONITORING MAGAZINE
turbed when the chassis is bolted in place. But if insulation is missing, especially where the transformer leads enter the transformer shell, action is needed. I start by putting heatshrink tubing over those leads, and adding a second layer of insulation provided by large diameter spaghetti tubing. This work must be done carefully to avoid further damaging whatever original insulation remains inside of the transformer shell. The wires must not be disturbed any more than needed. The larger diameter spaghetti is available in assortment packages from AES. Sliding insulating spaghetti back over IF transformer leads that have bad insulation often works. Be sure the spaghetti enters the IF transformer can and covers the entire wire length!

The Emerson Electrolytic Capacitor

This Emerson uses a dual-section paper electrolytic capacitor; each section is rated at 20 mF at 150 Vdc. Normally, I would simply remove the old capacitor, and install a terminal strip with two new replacement caps. For the purists, there is a much better way. Frontier Electronics offers new replacement caps in various values to replace the vintage capacitors in early AC/DC sets. This keeps the under chassis appearance close to original, and the prices are very reasonable. Antique Electronic Supply carries the Frontier capacitor line. Frontier Electronics will also rebuild those old can electrolytic capacitors from larger radios for a nominal fee. They replace the internal workings with new components, and return them good as new! Drop them or a line or call them for pricing information.

Electrodynamic Speaker

AC/DC radios use halfwave voltage rectification. The drawback is poor voltage regulation, and higher ripple levels (hum). AC/DC sets typically use RC filtering in the power supply; following the input filter capacitor is a series dropping...
resistor and output filter capacitor. Better quality, and more expensive to make, suppliers use filter chokes in place of the series resistor.

Many beginning restorers assume the more capacitance the better when it comes to filter capacitors. While this may be true to a small degree in many sets, those employing filter chokes rely on choke and capacitor values that are best determined by established formulas rather than by random experimentation on the part of the restorer! If the set has hum in the audio, you should look for the cause of the problem rather than attempting to mask the symptom. The Emerson radio we have been working on for the past few months uses an electrodynamic speaker. Modern speakers use a Permanent Magnet (PM Speakers), while older electrodynamic speakers use a field coil winding to produce the strong magnetic field for the voice coil. The very first horn speakers used magnet-based drivers resembling the construction of a single earphone piece. Some early drum shaped speakers used horseshoe-shaped magnets.

The field coil commonly serves as the filter choke in the power supply sections of these radios. The current drawn by the radio through the winding creates the magnetic field for the speaker to operate. There are exceptions. Some sets placed the field coil directly across the B-plus supply, rather than in series with it, to generate the electromagnetic field. Other set designers placed the field coil in the “cold,” or negative return side of the power supply. We will discuss this in more detail when we look at how early sets developed negative bias voltages for the audio stages.

Luck has it that most of these field windings in our radio have survived over the years! I like these old-style speakers, they add a bit of class to the sets! Field coils can vary from a few hundred ohms to many thousand ohms resistance. Had the Emerson’s field coil been defective, the choices would be either to find a NOS

---

“It’s a good idea to follow the color code used by the IF transformer manufacturer . . .”
or used replacement electrodynamic speaker of similar size and field coil resistance, or to substitute a more modern PM speaker. If a PM replacement speaker has to be used, a power resistor of equal value is substituted for the field coil winding. In this particular Emerson, the speaker field coil has a value of 450 ohms. To find the resistor wattage, we need to know the B-plus supply current. In radios using single-ended class A audio amplifiers (the 50L6 tube in Emerson), the bulk of the current is used by the audio stage. That's why I would bother to fuse a chassis as simple as this Emerson. A shorted B-plus line could cause enough current to flow to burn out the field winding.

My GE receiving tube manual shows the typical plate current for a 50L6 in class A audio service is about 50 mA. Figure about 10 mA for each of the remaining three stages. Using the power formulas we find:

\[ P = IE \]

where \( I \) is 80 mA, or 0.08 amps.

\( E \) is 140 volts.

\[ P = 0.08 \times 140, \text{ or 11.2 watts.} \]

### Equipment Sources

**Replica electrolytics and rebuilding services:**

- **Frontier Electronics**
  Box 38
  403 South McIntosh Street
  Lehr, ND 58460
  701-378-2341

  (see also Antique Electronic Supply)

**Chassis-mount fuse holders**

- **Hosfelt Electronics**
  2700 Sunset Blvd.
  Steubenville, OH 43952-1158
  800-524-6464

**AC line cords with polarized plugs**

- **Hosfelt Electronics**
  MECI
  340 East First Street
  Dayton, OH 45402
  800-344-4465

**Early-style cloth-covered wire, NOS push-back insulated wire and many other restoration supplies**

- **Antique Electronic Supply**
  6221 South Maple Avenue
  Tempe, AZ 85283
  602-820-5411

"Many beginning restorers assume the more capacitance the better when it comes to filter capacitors."

To be conservative, use a 450 ohm, 25 watt wirewound resistor to replace the field coil. At the same time, I would at least the double the capacity value of the filter capacitors to compensate for the loss of filtering previously provided by the field coil inductance. Where the Emerson originally used 10 mFD caps, 22 mFD replacements would yield better filtering. The 450 ohm resistor will get quite hot, so it must be mounted where its heat will not damage nearby wiring or components. It should be well clear of the cabinet with the chassis back in place.

Next month's column wraps up the Emerson saga. I will show how to do a quick alignment of the set's RF and IF stages, and give a few hints on polishing the bakelite cabinet!
Virginia Judge Rules That Radar Detectors Equipped with Safety Warning System Are Legal

We've just been informed by RADAR, The Radio Association Defending Air-wave Rights that on October 30, 1996 The Honorable Robert Phillips, Judge of the Accomack County (Virginia) General District Court, Traffic Division, has ruled that radar detectors equipped with the SWS are not subject to Virginia's longstanding detector ban. The Virginia law has been in effect since 1962.

The Safety Warning System uses technology similar to that found in motion detectors, automatic door openers and radar detectors to alert motorists about to encounter abnormal driving situations. A radar-based transmitter operating on pre-approved radio frequencies sends an audible tone to radar receivers or detectors. New “smart” detectors already on the market also have the capability to display a text message which scrolls across a small screen on a portable, dashboard-mounted unit. One of more than 60 standardized messages, such as “Work Zone,” “Emergency Vehicle Approaching,” “Accident Ahead” and “Train At Crossing,” can be activated by officials at any given time.

The ruling by Judge Phillips was handed down in a hearing on a detector violation issued to retired Cape Charles, Virginia Police Chief Bill Lewis. A proponent of safety radar devices, Chief Lewis was testing three radar detectors on the dash of his vehicle at the time he was stopped and cited for violating Virginia's radar detector ban. Virginia's law also includes an exemption for devices "used for a lawful purpose" and transmitting on licensed frequencies. In the rear of his car Lewis also had a safety radar transmitter which he was testing for possible interference from a nearby airport. Even though Chief Lewis told the trooper what the devices were and why he was using them, he was ticketed and told to "tell it to the judge" according to RADAR.

In court, Chief Lewis argued that the Virginia radar detector statute exempts any receiver of radio waves used for lawful purposes and received on a frequency lawfully licensed by state or federal agencies. Chief Lewis produced evidence proving that the transmitter was broadcasting on a frequency band licensed by the Federal Communications Commission; the band being identical to that on which a K-band radar gun transmits. At no time during the course of the hearing did the Commonwealth of Virginia contradict this evidence. Judge Phillips then found Chief Lewis not guilty of violating the state's anti-detector statute.

Legislation is pending in the Virginia General Assembly to repeal the state's radar detector ban. If passed, Virginia motorists will join millions of other drivers across the nation who are free to receive the warning alerts and traffic-related messages being broadcast by a growing number of Safety Warning System transmitters. Currently the only other area in the United States that bans radar detectors in passenger vehicles is the District of Columbia.
The Pirate's Den

FOCUS ON FREE RADIO BROADCASTING

Close Encounters of the Weird and Wild

There continues to be plenty of pirate action going on, as usual, most of it taking place on or near 6955. Here's what we have in our pirate folder this time.

KGDR was heard by Jerry Coatsworth in Ontario on 6955 USB from 0113 to 0130 sign-off, mentioning that they were using 100 watts and giving the Providence, Rhode Island address for reception reports.

Radio Three, was heard by Coatsworth on 6955 USB from 0130 to 0200, with music by the Bee-Gees and Boy George. He also had this one on a different date on 9653 USB from 2202 with an announcer using “disgusting language” so Jerry says he soon tuned away.

Pat Murphy in Virginia had Up Your Radio Shortwave on 6955 USB at 1410 to 1434 sign-off, featuring an interview with Bill Bennett, host “Woody B. Serious” with his top 10 list of “undeniable truths,” a Phyllis Schaflly speech and a “Hail to Fat Person” song. Unfortunately, says Pat, the audio kept cutting in and out throughout the broadcast.

Hitch Hikers Guide to the Galaxy Electromagnetic Emissions was another Murphy catch, at 1601 to 1615 on 6955. The host “Arthur Dent,” had an end of the universe skit, mentioned that earth was a computer, “42 is the answer to life, the universe and everything,” “restaurant at the end of the universe” and so on. Gave the Blue Ridge Summit mail drop.

S.J. Fink (state unknown) heard WREC on 6955 at 1414 with a skit about Shimmer Floor wax dessert topping, Hatfields vs. McCoy’s, ID for “Radio East Coast,” “Spud Beer,” “The Homecoming Queen’s got a gun.” They announced both Blue Ridge and Wellsville addresses.

Pirate Radio Boston was heard by Fink on 6955 at 1724 with two males hosting a show that featured the song “Keep Your Head Toward the Sun” and a list of pirates which do not QSL (WJOR, Vox America, WKRK.) They closed at 1731.

Brandon Artman in Pennsylvania heard KAT—Kitty-Kat Radio (the initials stand for Kappa Alpha Tao—a fraternity house at the University of Wisconsin, Madison) on 6949 at 0030. The broadcast featured lots of IDs as well as songs about cats and education. They claim to be running 200 watts “from a half wave dipole suspended one-quarter wavelength above the litter box.” QSLs via the Blue Ridge address.

Radio Anonymous on 6955 USB, hosted by “John Doe” who played rock and gave a fake address (P.O. Box 123, Anytown, USA) and told his listeners “you didn’t hear this” and not to report hearing him to any of the various pirate bulletins or magazines.

Radio Fusion Radio was picked up by Coatsworth on 6955 USB from 0225 to 0236 with rap music and oldies tunes.

Jerry also found Radio Tellus on 6955 USB at 0245 with a very clear ID followed by the musical notes from “Close Encounters of the Third Kind,” after which the signal faded out. He heard them again from 0125 to 0140 broadcasting an old radio episode of “The Shadow.”

Radio Free Speech was logged by
Coatsworth on 6955 USB at 2246 to 2306 featuring a mailbag segment. S.J. Fink had this one at 1735 airing such items as The Dominatrix “Exercise,” Butterball Wizzard, a Who parody, offered a QSL and bumper sticker for a “detailed signal report” “Chernobyl Farms Mutant Turkeys.” Rowanda Beach Boys, Radio Porno School, a Dire Straits parody, alternative national anthem to sign off around 1800. Pat Murphy found this at 1340 to 1410 close.

Jack Sheldon in Michigan picked up All Average Music Radio on 6955 at 1434 with various singers and an ID that went something like “You’re listening to All Average Music Radio,” followed by other selections.

Jack also found Mystery Radio on 6955 USB at 0402 with all kinds of sound effects and electronic or space music, apparently intended to be spooky, and one mention of itself as “the more music pirate station.”

Pat Murphy also had WDRR on 6955 USB from 1601 to 1615 sign off with “lean and beefy chunks,” and what Pat terms “a strange and rambling commentary,” Wild One Song, ID as “WDRR—Demented Rock-n-roll radio” and then lost to interference.

Happy Hanukkah Radio was another Murphy pick up, on 6955 at 1559 to 1620. This had a “high-voiced” man with a commentary about the history of Hanukkah, and festive Jewish music. Pat says it may have been a repeat of the show this station presented last year.

Coatsworth found WMPR on 6955 at 1436 just repeating their call letters over and over.

Murphy had Radio Azteca on 6955 USB between 1815 and 1855 with host Bam Stoker hosting what Pat says sounded like a new show, featuring a mailbag program with a mention of Chris Smolinski, a record segment by a stand-up comic and another on the “Top Ten DXer Pick-up Lines.” “I’ll bet those were good—and I assume they were about picking someone up in a bar or wherever as opposed to “picking up” a station!—Ed”

Sheldon had the ever-popular WLIS on 6955 USB at 0303 carrying interval signals from other pirate stations such as Azteca, Radio Blandex and others. That covers things for this time, gang. Remember to send me your pirate loggings and copies of QSLs. If it’s more convenient you can e-mail them to my attention at <Popularcom@aol.com>. Thanks! See you again next month with more pirate radio goodies!

Coatsworth on 6955 USB at 2246 to 2306 featuring a mailbag segment. S.J. Fink had this one at 1735 airing such items as The Dominatrix “Exercise,” Butterball Wizzard, a Who parody, offered a QSL and bumper sticker for a “detailed signal report” “Chernobyl Farms Mutant Turkeys.” Rowanda Beach Boys, Radio Porno School, a Dire Straits parody, alternative national anthem to sign off around 1800. Pat Murphy found this at 1340 to 1410 close.

Jack Sheldon in Michigan picked up All Average Music Radio on 6955 at 1434 with various singers and an ID that went something like “You’re listening to All Average Music Radio,” followed by other selections.

Jack also found Mystery Radio on 6955 USB at 0402 with all kinds of sound effects and electronic or space music, apparently intended to be spooky, and one mention of itself as “the more music pirate station.”

Pat Murphy also had WDRR on 6955 USB from 1601 to 1615 sign off with “lean and beefy chunks,” and what Pat terms “a strange and rambling commentary,” Wild One Song, ID as “WDRR—Demented Rock-n-roll radio” and then lost to interference.

Happy Hanukkah Radio was another Murphy pick up, on 6955 at 1559 to 1620. This had a “high-voiced” man with a commentary about the history of Hanukkah, and festive Jewish music. Pat says it may have been a repeat of the show this station presented last year.

Coatsworth found WMPR on 6955 at 1436 just repeating their call letters over and over.

Murphy had Radio Azteca on 6955 USB between 1815 and 1855 with host Bam Stoker hosting what Pat says sounded like a new show, featuring a mailbag program with a mention of Chris Smolinski, a record segment by a stand-up comic and another on the “Top Ten DXer Pick-up Lines.” “I’ll bet those were good—and I assume they were about picking someone up in a bar or wherever as opposed to “picking up” a station!—Ed”

Sheldon had the ever-popular WLIS on 6955 USB at 0303 carrying interval signals from other pirate stations such as Azteca, Radio Blandex and others. That covers things for this time, gang. Remember to send me your pirate loggings and copies of QSLs. If it’s more convenient you can e-mail them to my attention at <Popularcom@aol.com>. Thanks! See you again next month with more pirate radio goodies!

Congratulations to Philip Roberts, of Machias, ME. He wins a one-year subscription to Popular Communications. Be sure you send in your Reader Service Card, circling the appropriate numbers corresponding with your survey answers in order to be eligible for our random monthly drawing. You could be our next winner!

We’re still compiling the many hundreds of responses to our questions. And as we move along with our reader survey, each month we’ll be giving you an inside look at our Pop’Comm family and how we view your radio hobby. Thanks for your participation!

In December we asked you what you’d like to see more coverage of in Pop’Comm. Several categories stand out; frequency schedules, DXing, antenna construction/theory, general and military/federal scanning and product spotlights were all high scoring items. By far most respondents indicated a desire for more frequencies. We’ll be doing our best to provide both more station schedules/frequencies, and on the scanning side of the house, more VHF/UHF frequencies from regional areas will be coming in the next few months.

The majority of you reported that you’ve been loyal Pop’Comm readers for more than 10 years. That says a lot about your confidence in our magazine, and we sincerely appreciate it!

One of the most interesting responses was to our December question about how many hamfests you’ve attended during the past three years. By a whopping two-to-one margin most readers have never been to a hamfest, and only about two percent of you reported having been to the Dayton Hamvention. Nearly the same number of you who reported attending all local/regional hamfests also attended three hamfests during the past few years.

In the coming months we’ll be talking about hamfests, how they work and what you can expect from dealers and manufacturers at these one-of-a-kind radio events.

Stay tuned, next month we’ll have more survey results from our January issue, and of course another winner in our random drawing. Don’t forget to send in your card today!

Here are this month’s questions.

1. My friends rely on me for advice about radio, TV and other electronics subjects:
   - Frequently ........................................ 30
   - Once in a while ................................ 31
   - Seldom ............................................ 32

2. For my shortwave listening/DXing I use the following type of antenna:
   - End-fed random-length longwire .......... 33
   - End-fed random-length longwire with tuner ........................................ 34
   - Dipole cut to specific HF band ........... 35
   - Commercially-made trap dipole ........... 36
   - Homebrew Windom .................................. 37
   - Homebrew vertical .................................. 38
   - Wideband Dipole .................................... 39
   - Phased vertical array ................................ 40
   - Commercially-made sloper ................. 41
   - Homebrew sloper .................................. 42
   - Other ............................................... 43

3. Getting information and frequencies from the Internet is important to me.
   - Yes ............................................... 44
   - No ............................................... 45

4. In addition to reading Pop’Comm, I belong to/subscribe to the following other monitoring clubs and magazines:
   - More than six .................................... 46
   - Five ............................................... 47
   - Four ............................................... 48
   - Three ............................................. 49
   - Two ................................................. 50
   - One ............................................... 51
   - None .............................................. 52

5. If I were able to, I’d do the following with the CW (Morse Code) requirement for certain amateur licenses:
   - Keep it in its present form ................. 53
   - Completely eliminate it ...................... 54
   - Eliminate it, replacing it with a hands-on operating procedures test ..................... 55
   - Lower the word-per-minute standards in each category ..................... 56
   - Have a single 10 wpm requirement for HF operation ..................... 57
   - No opinion ........................................ 58
Radio and criminal law enforcement have gone hand-in-hand for as long as most people can remember. Today, many people use a scanner primarily to monitor local police calls. As electronics and consumer use expanded over the years, the manufacturers and electronics dealers have greatly expanded the variety of items offered to the general public and to law enforcement. Radar detectors, scanners, and CB radios continue to be big sellers.

In my early years in law enforcement, I can remember dragging the rubber tubes of the old Speed Watch across the highway and nailing them in place. When the hollow tubes were crossed by a motor vehicle, air pressure inside the tube activated a switch inside a mercury box at the end of the tube. The air-activated switch of the speed clocking device would start and stop a speed clocking watch. Using a known distance between the rubber tubes would give the traffic officer an accurate speed reading of the passing car on the Speed Watch display. The traffic officer would then quickly throw the Speed Watch quick-disconnect cable out of the patrol car window and chase down the violator. It worked quite well, especially at night when the motoring public could not see the rubber tubes as they lay in the roadway ahead. This was the dawn of electronic speed detection.

The countermeasure used by the motoring public was to flash their headlights to oncoming drivers, warning them of a speed clocking device ahead. This was also the dawn of electronic warnings related to a speed detection device in use on the highway.

Next, radar entered the picture. Early speed clocking radar units which were set up along side the road were not all that accurate, and again, headlight flashing usually slowed traffic to the point of police objectives. Early radar was on the X band. As radar improved, someone saw the chance to make a dollar, and the early model radar detector was invented. The initial radar detectors were not taken kindly by most traffic enforcement police. Many traffic officers of the early days felt strongly that the radar detectors were used by motorists so they could exceed the posted speed limit and not get caught. In many cases, this was true. Truckers talked openly about “smokey with a picture taker” on the CB radios that were also becoming popular. Most police officers these days, although concerned about speeding, seem to have less negative feelings about detectors.

The Detection Evolution

Over the years, speed clocking radar added many improvements to the new radar units. In addition to X band, the K band and KA bands were added. Although the X band was thought of as having the greatest range, K band offered more accuracy and was also more difficult to detect, especially considering early radar detectors offered only X band warnings. The KA band, the latest to be added, offers several different frequencies of use within the band, and is the primary band of the new photo-radar stationary clocking units. With the marked increase in speeding today, you can expect to see KA band photo radar to expand greatly in the years just ahead. There are just not enough police officers or troopers to control the number of speeding violations. KA band radar is also planned for detecting and catching those who run red lights, taking a photo for proof.

There was a market for improved radar detectors as these new bands were added. Manufacturers responded. Escort was one of the first to produce a multi-band detector with good range. Bel, Whistler, Uniden, and others quickly followed with improved models. Range was increased, beeping sounds, warning lights, remote antennas, and most recently, a synthesized voice have been added to produce more sales. Yearly articles in automotive magazines rate the units on range, coverage, and overall performance.

The Laser Difference

Laser speed detection, often referred to as “laser radar”, is now joining the inventory of the traffic enforcement officer. The innovation of this industry has truly been interesting to watch. Laser speed
guns work much the same as the standard radar units with a few exceptions. When you think of a normal traffic radar unit, think of it as a spotlight in darkness. The radar beam starts out from the unit, and as it gets further and further out, the beam becomes wider and weaker. When a moving object enters the radar beam, a signal is bounced off the moving object and back to the radar unit. Using an electronic doppler formula, the radar unit can calculate the speed of the object. This has advantages and disadvantages. If the object is not clocked "head on", a doppler angle error can occur. The true speed is not displayed on the radar. Generally speaking, this error shows a lower speed and is in the violators favor. Also, radar has a tendency to "lock onto" and clock the largest moving object in the field of view. This means that a small speeding car passing a larger truck will probably not be clocked in most cases.

Laser offers some distinct improvement advantages, and yet there are also clearly some disadvantages too. Laser speed detection units use a single beam of laser light. It works much the same as a the radar beam except it does not become wider with distance. Although range is very limited, the laser gun can be very selective in selecting the target. Take the situation mentioned above with the speeding car passing the larger truck. Using the aiming site on the laser speed detection gun, the officer can aim directly at the car and read the speed without having to be concerned about the truck, since it is not the selected target. It works quite well in that situation.

But what about laser's disadvantages? Laser guns are considerably more expensive than radar units. They can not be used in a moving configuration. You can not clock from a moving patrol car as you can certainly do with a moving radar gun. And, the officer and the violator have to be within sight of each other. Although many departments are testing and using laser speed detection units, it is doubtful that laser will replace radar as the primary speed detection device.

Police officers and the speed detection devices they use must be frequently certified by a state approved method in order for the speeding case to be valid in most states these days. Laser guns are no exception to this rule.

Keep in mind if you are using a combination radar and laser detector that the laser beam will have to be aimed at your detector for it to be picked up. If a traffic officer is clocking traffic ahead with a laser gun, you will have no warning until you are within line of sight of the laser, and it must be pointed at your detector in order to get a valid warning. Warnings often come after you have been clocked, because speed readings are not delayed as they can be in radar situations.

What About "Jammers?"

Readers of electronics magazines have always asked about the effectiveness of jammers. Initially, the radar jammers of the early days just transmitted an interference signal on the X band frequency. In many cases, when the signal was strong enough, it would jam and confuse the speed radar unit. But, in addition to emitting an unhealthy radiation signal, they would sometimes mix with the radar beam and give a false speed reading on the radar. I can remember stopping a trucker many years ago who had such a unit. It transmitted a mixed signal, most certainly, but when mixed with the signals of the radar gun we were using, it always showed his speed as 82 Mph. The posted limit was 70. You can just guess
what happened. These more powerful jammers are actually unlicensed transmitters and violate FCC rules. Long exposure to such radiation could cause health problems and perhaps cancer, according to some in the medical profession. Police officers who have used radar units from inside patrol cars for years during long careers are now showing signs of cancer, mixed with eye and hearing-related health problems. If you are considering purchasing such a device, I would like to offer these views: Most do not work as advertised. Many do not work at all. And consider the possible health risks of long exposure to such a device. Your money would be better spent on a high-quality radar detector and on a CB radio.

I reviewed some recent jamming tests on one of the new “laser jammers” with some interesting results. Laser is very difficult to jam. You must override the “power of light” in a head-on situation. The laser jammer we used did not have any effect until we were so close to the laser gun that we had been clocked and were within 30 feet of the gun. We did jam a laser gun at a slightly greater distance. However it took the laser jammer, both truck headlights on high beam, and the addition of four off-road driving lights turned on high to accomplish the feat. All were pointed directly at the laser gun. How high profile do you want to be if you are speeding? Keep this in mind. When your laser detector goes off, 98 percent of the time you are being clocked, and it’s too late. It is that simple. If you are speeding, go ahead and pull over and get out your license.

Detector “Detectors” and the New SWS

Is there a “radar detector detector” in use? Yes, and it works quite well. To be “undetected” you have to purchase one of the latest “undetectable detectors”. So far, there is nothing that will detect an undetectable radar detector—unless you have it on your dash in plain view.

With all of my years in traffic enforcement, I have to state my opinion on this controversial subject. Radar detectors do not generally encourage speeding. If anything, they make the user more aware of his speed and also have the tendency to keep the driver more alert. States that have outlawed radar detectors such as Virginia, Connecticut, and DC may have to re-think their position. The new radar/laser detectors incorporate the new SWS, Safety Warning System alert capability. This new motorist warning system approved and encouraged by the Department of Transportation will allow radar detectors to receive safety warning messages which will be transmitted to the new preprogrammed radar detectors. SWS messages are uniquely coded into five categories. Category 1 currently has 13 preprogrammed messages related to highway construction. Category 2 has 18 messages related to traffic delays. Category 3 has nine messages related to weather hazards. Category 4 has 17 messages related to travel information and convenience. This is the one that will tell you there is a “30 minute traffic delay ahead” or how far to the next rest stop, for example. Category 5 will offer you warnings about fast or slow moving vehicles that are close to you. One example of a Category 5 message is—“police in pursuit!” If you had been speeding and had banked on that “jammer” to keep you from being clocked, check your rear view mirror and remember this article.

Just when you think you have it all figured out and think you are safe to exceed the speed limit, you take a trip to Ohio or Florida and discover that your speed has just been checked by the trooper in the airplane. The airplane has radioed your speed to waiting trooper just ahead. Whoops! In addition to the radar detector, the laser detector, the CB, and the jammer, maybe you should have brought along the scanner and monitored the speed detection frequency used by the troopers in the airplane. (Whoops again! Mobile scanners are illegal in Florida unless you are a licensed radio amateur operator!) If it makes you a bit more cautious and aware, perhaps I should mention that in Florida, for example, the Florida Highway Patrol has 17 speed-clocking high wing Cessna airplanes, and they check your speed from 2,500 feet, where you’ll never see them as you cross over the frequently painted white lines on the highway.

My advice? Drive safely and obey the law. Enjoy the electronics and “be careful out there!”
Last month, we started to examine a part of SSB/CB operation commonly referred to as Freebanding. We saw that the Freebanding is a worldwide phenomenon. It uses a segment of radio spectrum (and an operating style) between the CB and amateur bands. We also saw that, even though it is illegal to operate there, the Freeband is very popular. It’s so popular in fact, it is one of the main reasons that it’s so hard to maintain an active population of operators on the CB SSB setaside. At times, it seems like everyone has gone “upstairs”. Now, with the preliminaries out of the way, it’s time to meet a few Freebanders, see why they do it, what kind of equipment they run and what dangers they face.

What’s The Big Attraction?

What is the big attraction in operating Freeband? In a word, space. There is a lot of it, at least three or four times more available space than on the legal CB band. The Freeband, which starts at 27.415 MHz (just above channel 40) runs to 27.995 MHz (just below the beginning of the 10 meter amateur band). That is about 60 conventional channels worth of additional radio space. However, because the dominant mode of operations is SSB, plus the fact that navigation of the band is by frequency—not channels, the actual space available is far in excess of 60 channels. Depending how you figure it, there are probably 200 or more usable frequencies (or channels, if you insist) available at any given time.

Contrast this with the legal CB band. In heavily populated areas, especially when the skip is in, it is often full to capacity—and beyond. With such extreme overcrowding, it can be impossible to get a word in edgewise, let alone carry on any meaningful conversation. Is it any wonder why so many SSB CBers see the Freeband as their way to escape the deplorably overcrowded conditions on the legal 40.

Extra operating space is not the only attraction in the Freeband. The freedom afforded by that space, combined with some of the more advanced radio equipment employed, opens the door to a variety of methods and modes of communications. In addition to SSB voice, you can also find some fairly exotic modes in use. For example FM (Frequency Modulation), is occasionally heard. Packet, a digital mode similar to a computer BBS or Internet IRC, is becoming increasingly popular. Using packet networks, Freebanders can send e-mail style messages, share computer files and “chat” with other operators across town or around the world. Some of the more progressive operators are even starting to work with Slow Scan TV!

Then There’s Distance

Last, but certainly not least, is distance. On any given day, whenever the skip is in, you can hear Freebanders talking to their counterparts across the country and, occasionally around the world. What red-blooded CB operator hasn’t thrilled at the chance contact with some distant domestic, let alone an international, station? Who among us hasn’t dreamed of carrying on a conversation with someone several states or continents away? Because of the efficiencies of SSB, the relatively uncongested space available, superb equipment and highly polished technique, Freebanders can do this on a regular basis.
"Who among us hasn't dreamed of carrying on a conversation with someone several states or continents away?"

ers run 12 watt P.E.P stations and do just fine. Take for example Mike, a new SSB'er from Miami. Even with the current lull in skip conditions, Mike boasts some fairly impressive contacts. They include Ranger 44 from Yuma AZ, 709 Garden State, New Jersey, 954 Penuelas, and Q Fajardo from Puerto Rico. He has also talked with many others from South and Central America and he has done it all using a Uniden Grant XL with a Modulator II antenna.

I asked Englebert in England, who is working on his Ph.D. in Electronics and Electrical Engineering, why he ventured into the SSB Freebands. "The easy answer to that question," he replied, "is that one can talk all over the world in a common language, using a common mode. Although I have spoken to both the U.S. and Australia on FM, it's a heck of a lot easier to do it on SSB. I have been at it about 10 years, on and off, and have spoken with over 150 countries. I'm active on CB radio from 27.410 to 27.800 USB (LSB not much), especially active in USB at 27.555 to 27.615 MHz when propagation coming up and it is very good for making QSO in USB. I run a Cobra 148 GTL DX Mk III. (26.065—28.405 inclusive, low-low to high-high, 15 Watts all modes), standard mic, Zetagi B130P amplifier (150 W) and several antennas including a 2 element cubical Quad (PDL II both Vert. & Horiz.). I've run various amplifiers over the years, even up to 2.5 kW, but that was a bit excessive."

Some Are Licensed Amateurs (Oops!)

I have even heard from Freebanders who are licensed amateurs. Surprisingly, they say they enjoy or even prefer the Freeband to the amateur bands. Why? Well, as one gentleman put it, "I hold an advanced class license, but find that I'm going back to CB (Freeband). I find the people there to be more interested in other facets of life rather than how much power I run, antennas and contests." Another quips "I had a ham ticket long ago and found the hum-drum repeater and constant ID crap irritating. I'll keep my CB any day, thank you very much!"

Still another says "You know I'm a ham too, but truthfully I enjoy CB much more. It just seems more real." A number of others observed that it is easier to develop good conversations on the Freeband. Why? One common reason seems to be that on the amateur bands you are constantly interrupted by contesters trying to accumulate call signs, contacts and locations for points.

Illegal Does Not Translate Into Lawless

Just because Freebanding is illegal, don't assume that it is lawless. It is not! "Sure, there are a few bozos who have dirty signals." says Carl from California. "They will transmit above 28 MHz (in the 10 meter amateur band), or below 26.400 MHz, where there are legal broadcast 'backfeeds'. (Our local TV station sometimes uses 26.150 to provide broadcast audio to remotes in the field.)." However, as Ollie from the Ozarks puts it, "I think you'll find that most serious Freebanders are responsible and respectful radio operators. After all, you are all there to enjoy the same thing—radio."

If you have been shooting skip at all, you might have talked to Ollie (not his real name) somewhere between 27.365 and 27.685. He stands by on 27.615 LSB and scans .555/.365/.375/ and .615 for any incoming. His bragging rights include contacts in France (3), Germany (1), Australia (30+), Brazil (5, including 2 while mobile), Mexico (8), New
Truth and consequences—common knowledge and the FCC, alright? So if the Freeband is so wonderful, why then isn’t everybody there? Simple, it is illegal! When you operate in the Freeband you run the risk of attracting the attention of the FCC. That attention can translate into fines or other punishment, such as confiscation of your equipment.

So, what are the chances that the average Freebander will be caught and prosecuted? Pretty slim. I have only been able to find a few operators who have actually been contacted by the FCC—none of them recently. Only one says that the visit was prompted directly by their activity on the Freeband and he readily admits it was his own fault. He was absent-mindedly using his amateur call sign there. The rest were accused of causing RFI and TVI. Most of these were “years” ago and the worst that happened to any of them was that they received stern warnings and, in one case, restricted hours of operation.

Is the Commission still actively interested in Freeband operation? You bet. As recently as May 13, 1996, the FCC issued a notice to radio manufacturers and importers “to clarify Commission’s Rules regarding equipment intended to operate in various radio services in the high frequency radio spectrum.” These are the radios that are extremely popular with Freeband operators. While the notice, and rumored investigation, is aimed primarily at suppliers, users can reasonably assume that the Commission is thinking about them as well.

In practice, however, it is a matter of practicality. Unnamed officials at the FCC admit, off the record, that they are not overly concerned with Freeband operation—as such. While they have in the past, and will no doubt in the future, run “sweeps” of the Freeband, the majority of their investigations, by far, are “complaint” driven; and do they ever get complaints! They are being inundated by complaints of radio interference to home electronic equipment. Further, they know that there are a number (they guess 20 percent) of CB operators, Freeband and otherwise, who are aggravating the problem with dirty, overpowered equipment. Operators who generate complaints, as well as their on-air companions, should expect a visit.

While this should in no way be interpreted as a “green light” to operate in the Freeband, it would seem to indicate that individual operators, who run clean stations and carefully choose the company they keep, have little to fear. Hans from Holland expresses that view for Freebanders here and abroad when he says “Yes, operating in the Freeband is illegal. But, as long as we don’t bother anybody (cause interference like TVI) the authorities leave us alone.”

The Real Danger

The biggest threat Freebanders face is NOT from the FCC. The FCC, after all, is after the same thing that Freebanders are—reasonably hassle-free communications for everybody! The less they hear about the Freeband, the better. Freebanders here and abroad when they say “Yes, operating in the Freeband is illegal. But, as long as we don’t bother anybody (cause interference like TVI) the authorities leave us alone.”

Send Us Your Comments

Well, that’s it for now. I look forward to hearing from you. Please send your comments, questions and suggestions to me in care of the magazine. I can also be reached on the internet where my address is <edbarnat@global2000.net>. Better yet, if you can, catch me on the radio. Well, that’s it for now. I look forward to hearing from you.
Continuing to Work on the Polycom CB

In the January issue, we left off at the point where we were about to apply power to the radio we are rebuilding. A number of readers have asked if we are going to rebuild an old CB like "they" own. We probably won't as there are hundreds of models and brands and it would take many years to cover even a part of them. However, if you use this series as a guide, many of the old units can be rebuilt and restored to like new performance. The service information you get on a different brand will cover the variations in parts, voltages, and tuning, but the basics remain the same from one unit to another!

The Polycom series of tube units all used the same power cord. The set end of the cord used a Cinch brand Female type 10 pin plug. It's model number S310CCT and is available at most electronic radio and TV supply houses for less than five dollars. The six-foot line cord was just standard lamp cord. The critical part is the plug that goes into the wall socket. It was made by ELMENCO and was a double fused plug. There was a fuse on each side of the line. This was in the days before wall outlets and plugs were polarized, and the hot side could be on either wire depending on how you turned the plug. I doubt that they are even made any longer. It is very important that you find one or make other arrangements for fusing the power cord, as this is the only protection you have for the house and/or radio. Without a fused cord, you can turn a simple parts failure into one that destroys the radio.

If a fused plug can't be found, you can use a polarized plug (three pin) and put an in-line fuse in series with the hot side of the cord. Be sure the wire on the fuse holder is rated for 110 volts or wrap the wire with scotch No. 33 tape after soldering it into place. Use heat shrink over the two solder connections and then tape from up on the lamp cord all the way to the plastic fuse holder. Do this on both sides of the fuse holder. Be sure to unplug the cord from the wall before checking or changing the fuse. If you don't, you could get a deadly shock! The original connector and fused plug are shown in the picture, with one of the two fuses partially removed. The jumper between pins can be bare wire (No. 18 or larger), but be sure they don't touch any other pin than the ones they are supposed to. The hot side of the lamp cord solders to pin No. 3, the neutral side to pin No. 4. Then you jumper pin No. 1 to No. 2, pin No. 7 to No. 9. Next connect pin No. 5 to No. 6 and lastly, jumper pin No. 8 to No. 10. Double check your wiring and solder jobs, and put the cover back into place.

Look on the back of the set and you will see an 8 pin test socket J-4 (see drawing). This plug will be very useful in your tune-up procedure. The drawing shows the pins from an inside view. The key way is between pins No. 1 and 8 and they are numbered on the inside of the unit. Note that pin No. 8 goes directly to ground, which will help you count them correctly. Connect your power cord to the set, BUT not the wall plug yet. Set the radio up on its end. If you set it on the other end, it will be unstable and try to tip over and when you grab to catch it, you most likely will also get a handful of high voltage too! Remember that the cover is still off of the high-voltage rectifier section, plus most of the tubes and other exposed connectors or terminals have from a –110 volts to +300 volts open to the careless touch!

Let's Under-Fuse the Set

You need a voltmeter of 20,000 ohms/volt or better yet a VTVM, along with a watt meter, a signal generator, a frequency meter and a couple of tuning tools. The volt meter, watt meter and tuning tools are cheap to buy, but the other two meters are not. So after you have checked to see if the voltages are within normal range, that it makes noise and not too much smoke, it may be time to take the unit to someone else that does have the necessary equipment and training.

Before you plug the set into the wall outlet, I want you to under-fuse it. Normal for 117 volt use you should use a 3AG-1 amp fuse. But that is to handle the transmit drain and a bit more to keep the fuse from fatiguing. Instead of using a 1 amp fuse, put a 6/10 or 7/10 amp fuse in the holder. This will provide for quicker blowing of the fuse in case of excessive current. If it comes on and stays on with-
THE NEW HANDHELD PACESETTER IS HERE!

ICOM R-10

Only $499.95

PLUS $9.00 UPS

2nd Day Shipping and Handling

Be one of the first to get this marvel of technology, available now from Grove at a truly marvelous price!

This incredible, new scanner is light years ahead of the competition. Features continuous 500 kHz-1300 MHz (less cellular) frequency coverage, multimode (AM/WFM/NFM/SSB) reception, rotary tuning control, programmable tuning steps from 100 Hz-1 MHz, on-screen "band scope" (200 kHz span), 1000 channel non-volatile memory, computer control, and second-radio cloning—and these are just the beginning!

The sleek, compact, lightweight R-10 has large, easy-to-read—and touch—keys. Its revolutionary zero-wait-state scanning seeks and holds in readiness the next active frequency while you are listening to another signal! Wide-dynamic-range, triple conversion, tunable bandpass filters, and sharp selectivity assure dramatic improvement in interference-free reception.

Eight alphanumeric characters can be entered to identify any channel, and ten characters can be used to identify banks. Voice scan control skips unmodulated carriers. Scan memory channels by bank, mode, or program. High-contrast display and powerful, dual-function keyboard provide incredible options to suit your listening requirements. Noise blanker and automatic noise limiter provide double noise reduction. Sleep timer and programmable attenuator are additional advantages.

ACCESSORIES

<table>
<thead>
<tr>
<th>ACCESSORY</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC 74 CT-17</td>
<td>Interface</td>
<td>$134.95</td>
</tr>
<tr>
<td>ACC 03 OPC-478</td>
<td>Computer interface cable</td>
<td>$45.95</td>
</tr>
<tr>
<td>ACC 04 OPC-479</td>
<td>Cloning cable (R10 to R10)</td>
<td>$17.95</td>
</tr>
<tr>
<td>DCC 05 CP-12</td>
<td>Cigarette lighter cable w/noise filter</td>
<td>$29.95</td>
</tr>
<tr>
<td>CAS 01 LC-140</td>
<td>Carrying case</td>
<td>$29.95</td>
</tr>
<tr>
<td>SFT 01 CS-R10</td>
<td>Cloning software (use with ACC 04)</td>
<td>$29.95</td>
</tr>
<tr>
<td>HDP 03 Lightweight Comm. Headphones</td>
<td></td>
<td>$22.95</td>
</tr>
</tbody>
</table>

GROVE ENTERPRISES, INC.
1-800-438-8155 US and Canada;
704-837-9200; FAX 704-837-2216
7540 Highway 64 West
Brasstown, NC 28902

E-mail: order@grove.net; World Wide Web: www.grove.net

CIRCLE 172 ON READER SERVICE CARD
out any visible sign of trouble (such as smoke), turn it off and change the fuse back to a one amp rating and turn it back on and let the unit warm up for a minute. Turn the squelch control counterclockwise and the volume to about 11 o’clock and you should hear noise. If you don’t, turn it back off and set your volt-meter to 550MHz transceiver. If it’s still too low, you will have to trouble out any visible sign of trouble (such as smoke), turn it off and change the fuse back to a one amp rating and turn it back on and let the unit warm up for a minute. Turn the squelch control counterclockwise and the volume to about 11 o’clock and you should hear noise. If you don’t, turn it back off and set your volt-meter to 550MHz transceiver. If it’s still too low, you will have to trouble

Got the Right Crystals Installed?

We assume that you have a set of crystals installed and they are proper crystals. Just because a crystal is the same size and with the same size pins and marked for some channel, does not mean that it will work in your set or any other set other than the one it was cut for when manufactured. It’s not going to go into all the differences from one crystal to another, but while there are only a few sizes and pin types,
there are many (dozens) of different cuts regarding frequency (fundamental, 1/2 frequency, 3rd overtone) and parallel or series resonate circuits and more. If you need crystals for the Polycom, or any other brand and model CB, you can get them from any number of manufacturers. One of the best is International Crystal in Oklahoma City, at 1-800-725-1426. They have a very extensive data bank giving all the correlation data so your crystal will work correctly in your set.

With a proper receive crystal in your unit, hook the negative meter lead of your volt meter to pin No. 2 of the test socket. It should read some -5 to -8 volts. While you are there, adjust L1 for peak then detune about 1 1/2 turns counterclockwise. Now move your meter lead to pin No. 1 of the test socket, set to measure a -1 to -2 volts, connect a signal generator to the SO-239 (antenna connector on the rear of the set) and adjust to the highest channel you have crystals for. Set the level to give you no more than a -2 volt reading. If it gets too high during receive tuning, lower the generator output.

Now tune both the top and bottom slugs of T9, T8, T7, T6, T5 and T4 in that order for peak reading. If your set has been badly mis-tuned by some prior owner, it will inject 6 MHz at the grid of V2, pin No. 2 and tune to T5 and T4. After that, you should feed an on-channel signal at the grid of V3, pin No. 2. Then you would inject 455 KC signal at the grid of V3, pin No. 2. Then you would inject 6 MHz at the grid of V2, pin No. 2 and tune to T5 and T4. After that, you should feed an on-channel signal at the antenna jack and retune T9 through T4 for a peak reading. Now, with the same on-channel signal, tune the single slugs of T3 and T2. This completes the receiver portion of the tuning. If you don't have a great working receiver, the radio will have to be checked for the problem or problems. Special notes: Some Polycom

"Without a fused cord, you can turn a simple parts failure into one that destroys the radio."

---

**World’s Most Powerful CB and Amateur Mobile Antenna**

**Lockheed Corp. Test Shows**

**Wilson 1000 CB Antenna Has**

58% More Gain Than The K40 Antenna (on channel 40).

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

**Guaranteed To Transmit and Receive Farther Than Any Other Mobile CB Antenna or Your Money Back**

**New Design**

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

**Why Wilson 1000 Performs Better**

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

We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it. In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

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

**The Best You Can Buy**

So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel; the whip is tapered 17-7 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will outperform any CB antenna (K40, Formula I, you name it) or your money back!
units had a squelch range control which you could adjust by removing the squelch knob and using a small screwdriver through the shaft. Also, most Poly units had an IF gain control which can be reached through the chassis on the transformer end of the radio. There is an electrolytic can right behind it and then the speaker magnet.

Tuning the Transmitter

For this, you will need a frequency meter, a dummy load and your voltmeter. First, be sure that you have a proper crystal installed. Then check to see that you have a good No. 49 bulb installed in the socket just above the microphone plug on the front panel. This bulb will glow dimly when transmitting and change brightness with modulation. You can make the final adjustments matching to the antenna by adjusting for maximum brightness. Key the microphone and check your frequency. If it is off more than 1000 CPS, adjust the trimmer beside the crystal to set the frequency. Failure to adjust to less than 1000 CPS off center indicates a bad crystal or a wrong one. Once the frequency is correct, hook your meter’s negative lead to the test socket pin No. 5. In the receive position, it will read some ~90 volts. But in transmit, it will read about a ~20 to ~25 volts. Adjust L3 for maximum while transmitting. Then adjust T1 through the front panel for maximum wattage or maximum brightness on the bulb II on the front panel, the No. 49 bulb. With the power turned off, re-install the power supply cover. This should complete the tune-up of your Polycom. If you have any problems such as low power, poor receive, low or distorted modulation or audio, the problem could be from anywhere and anything. But a good service tech could trace any problem quickly and restore the unit to specification, now that you have it this far along.

Got Any Questions?

If you send me a letter with your particular questions on any model CB, I will do my best to send you a prompt reply. Enclose an SASE for your answer. Mail them to Don Patrick, 3701 Old Jenny Lind, Fort Smith, AR 72901.

In the May issue, we will discuss what you can do to restore transistor type units to full performance. See you then.

Old Timer
Tap into secret Shortwave Signals

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

Plug this self-contained MFJ MultiReader™ into your shortwave receiver's earphone jack. Then watch mysterious chirps, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR (transmitting key messages that are set up in advance) as they scroll across your easy-to-read LCD display. You'll read interesting commercial, military, diplomatic, weather, aeronautical, maritime and amateur traffic...traffic your friends can't read--unless they have a decoder.

Eavesdrop on the World

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

Super Active Antenna

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

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

Receive strong, clear signals from all over the world. 20dB attenuator, gain control, ON/LED. Switch two receivers and an internal or external antenna. 6x3x5 inch, remote has 5 inch whip, 50 ft. coax, 3x2x4 in. 12 VDC or 10 VAC with MFJ-1312, $129.

High-Gain Preselector

"World Radio TV Handbook" says MFJ-1035B is a "fine value...fair price...best offering to amateurs who can peak, notch, low or high pass circuits. Pushbuttons let you select 2 antennas or receivers. Dual coax and phono connectors. Use 9-18VDC or 110 VAC with MFJ-1312, $129.

Dual Tunable Audio Filter

Two separately tunable high-pass preselector covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Pushbuttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18VDC or 110 VAC with MFJ-1312, $129.

Easy Up Antennas

How to build MFJ-38 and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before. Covers receiving antennas from 100 KHz to almost 1000 KHz. Includes antennas for long, medium and shortwave, utility, marine and VHF/UHF services.

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

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

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

Printer Monitors 24 Hours a Day

MFJ's exclusive TelePrinterPort™ lets you monitor any station 24 hours a day by printing their transmissions for later reading and review.

High Performance Modem

MFJ's high performance phase-lock loop modem consistently gives you solid copy--even with weak signals--up to 200 MHz--including low, medium and shortwave, utility, marine and VHF bands. New threshold control minimizes noise interference--greatly improves copy on CW and other modes.

Easy to use, tune and read

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

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

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

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

Use 12 VDC or use with MFJ-312B AC adapter, $12.95. 5Vx2x2.5x inches.

No Matter What Guarantee

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

Try it for 30 Days

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

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

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

Free MFJ Catalog

Write or Call tollfree ... 800-647-1800

Nearest Dealer/Orders: 800-647-1800

Technical Help: 800-647-TECH(8324)

1 year unconditional guarantee $30 day money back guarantee (less s/h) on orders from MFJ FREE catalog...

MFJ ENTERPRISES, INC.
800-647-1800

Box 494, Miss. State, MS 39762

(601) 323-6551; Add s/h

(601) 323-5869;

MFJ ENTERPRISES, INC.
800-647-1800

Box 494, Miss. State, MS 39762

(601) 323-6551; Add s/h

(601) 323-5869;

MFJ ENTERPRISES, INC.
800-647-1800

Box 494, Miss. State, MS 39762

(601) 323-6551; Add s/h

(601) 323-5869;

MFJ ENTERPRISES, INC.
800-647-1800

Box 494, Miss. State, MS 39762

(601) 323-6551; Add s/h

(601) 323-5869;

MFJ ENTERPRISES, INC.
800-647-1800

Box 494, Miss. State, MS 39762

(601) 323-6551; Add s/h

(601) 323-5869;

MFJ ENTERPRISES, INC.
800-647-1800

Box 494, Miss. State, MS 39762

(601) 323-6551; Add s/h

(601) 323-5869;

MFJ ENTERPRISES, INC.
800-647-1800

Box 494, Miss. State, MS 39762

(601) 323-6551; Add s/h

(601) 323-5869;
This listing is designed to help you hear more shortwave broadcasting stations. The list includes a variety of stations including international broadcasters beaming programs to North America, others to other parts of the world, as well as local and regional shortwave stations. Many of the transmissions listed here are not in English. Your ability to receive these stations will depend on time of day, time of year, your geographic location, highly variable propagation conditions and the receiving equipment used.

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

<table>
<thead>
<tr>
<th>UTC</th>
<th>Freq.</th>
<th>Station/Country</th>
<th>Notes</th>
<th>UTC</th>
<th>Freq.</th>
<th>Station/Country</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000</td>
<td>5012</td>
<td>Radio Cristal, Dominican Republic</td>
<td>SS/EE</td>
<td>0200</td>
<td>5950</td>
<td>Voice of Free China via USA</td>
<td></td>
</tr>
<tr>
<td>0000</td>
<td>5995</td>
<td>Voice of America</td>
<td></td>
<td>0200</td>
<td>6000</td>
<td>Radio Havana Cuba</td>
<td>EE</td>
</tr>
<tr>
<td>0000</td>
<td>6020</td>
<td>R. Netherlands via Bonaire</td>
<td></td>
<td>0200</td>
<td>6045</td>
<td>Deutsche Welle, Germany</td>
<td></td>
</tr>
<tr>
<td>0000</td>
<td>7150</td>
<td>Radio Ukraine</td>
<td></td>
<td>0200</td>
<td>6095</td>
<td>R. Portugal</td>
<td></td>
</tr>
<tr>
<td>0000</td>
<td>9580</td>
<td>R. Yugoslavia</td>
<td>EE</td>
<td>0200</td>
<td>6150</td>
<td>Adventist World Radio, Costa Rica</td>
<td>SS</td>
</tr>
<tr>
<td>0030</td>
<td>4980</td>
<td>Ecos del Torbes, Venezuela</td>
<td>SS</td>
<td>0230</td>
<td>6895</td>
<td>R. Cairo, Egypt</td>
<td>SS</td>
</tr>
<tr>
<td>0030</td>
<td>5965</td>
<td>R. Havana Cuba</td>
<td>SS</td>
<td>0230</td>
<td>9475</td>
<td>R. Nacional Paraguay</td>
<td>SS</td>
</tr>
<tr>
<td>0030</td>
<td>6065</td>
<td>R. Sweden</td>
<td></td>
<td>0230</td>
<td>9735</td>
<td>R. National Paraguay</td>
<td>SS</td>
</tr>
<tr>
<td>0030</td>
<td>6120</td>
<td>Radio Vilnius, Lithuania (via Germany)</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td>Voice of Hope, Lebanon</td>
<td>AA</td>
</tr>
<tr>
<td>0030</td>
<td>9540</td>
<td>Radio Exterior Espana, Spain</td>
<td></td>
<td>0230</td>
<td>9700</td>
<td>Radio Bulgaria</td>
<td></td>
</tr>
<tr>
<td>0030</td>
<td>9990</td>
<td>Voice of Hope, Lebanon</td>
<td>AA</td>
<td>0230</td>
<td>9745</td>
<td>HCJB, Ecuador</td>
<td></td>
</tr>
<tr>
<td>0050</td>
<td>11800</td>
<td>RAI, Italy</td>
<td></td>
<td>0230</td>
<td>9750</td>
<td>R. Internacional, Honduras</td>
<td>SS/EE</td>
</tr>
<tr>
<td>0100</td>
<td>3290</td>
<td>Radio Centro, Ecuador</td>
<td>SS</td>
<td>0230</td>
<td>9790</td>
<td>Radio France International</td>
<td>GG</td>
</tr>
<tr>
<td>0100</td>
<td>3324</td>
<td>Radio Maya de Barillas, Guatemala</td>
<td></td>
<td>0230</td>
<td>9835</td>
<td>R. Cora, Peru</td>
<td>SS</td>
</tr>
<tr>
<td>0100</td>
<td>4835</td>
<td>R. Tezulutan, Guatemala</td>
<td>Quechua</td>
<td>0230</td>
<td>9955</td>
<td>Zambia National Broadcasting Corp.</td>
<td>FF</td>
</tr>
<tr>
<td>0100</td>
<td>4875</td>
<td>Rdf. Roraima, Brazil</td>
<td>PP</td>
<td>0230</td>
<td>9990</td>
<td>CRTV, Yaounde, Cameroon</td>
<td>FF</td>
</tr>
<tr>
<td>0100</td>
<td>6020</td>
<td>Radio Gaucha, Brazil</td>
<td>PP</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>6135</td>
<td>Swiss Radio Int'l</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>6190</td>
<td>Radio Budapest, Hungary</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>6803</td>
<td>Ondas del Rio Mayo, Peru</td>
<td>SS</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>7250</td>
<td>V of Vietnam, via Russia</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>7305</td>
<td>Slovak Radio, Slovakia</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>7345</td>
<td>R. Prague, Czech Republic</td>
<td>EE</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>9545</td>
<td>Deutsche Welle, Germany</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>9560</td>
<td>R. Norway</td>
<td>EE Sun</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>9745</td>
<td>HCJ, Ecuador</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>9835</td>
<td>Radio Budapest, Hungary</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0100</td>
<td>9955</td>
<td>WRMI, Miami</td>
<td>EE/SS</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0130</td>
<td>5960</td>
<td>R. Japan, via Canada</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0130</td>
<td>5981</td>
<td>AWR/Union Radio, Guatemala</td>
<td>SS</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0130</td>
<td>7290</td>
<td>Radio Sweden</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0130</td>
<td>7448</td>
<td>Voice of Greece</td>
<td>GG/EE</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0145</td>
<td>6140</td>
<td>Radio Tirana, Albania</td>
<td></td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0200</td>
<td>3250</td>
<td>Radio Luz y Vida, Honduras</td>
<td>SS</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0200</td>
<td>4790</td>
<td>Radio Atlantida, Peru</td>
<td>SS</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0200</td>
<td>4885</td>
<td>Ondas del Meta, Colombia</td>
<td>SS</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0200</td>
<td>4985</td>
<td>Radio Brazil Central, Brazil</td>
<td>PP</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0200</td>
<td>5077</td>
<td>Caracol Colombia</td>
<td>SS</td>
<td>0230</td>
<td>9990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UTC</td>
<td>Freq.</td>
<td>Station/Country</td>
<td>Notes</td>
<td>UTC</td>
<td>Freq.</td>
<td>Station/Country</td>
<td>Notes</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td>-----------------</td>
<td>-------</td>
<td>------</td>
<td>-------</td>
<td>-----------------</td>
<td>-------</td>
</tr>
<tr>
<td>0500</td>
<td>4990</td>
<td>Radio Nigeria, Lagos</td>
<td></td>
<td>1330</td>
<td>15340</td>
<td>Radio Denmark, via Norway</td>
<td>DD</td>
</tr>
<tr>
<td>0500</td>
<td>5286</td>
<td>Radio Moundou, Chad</td>
<td>FF</td>
<td>1400</td>
<td>9355</td>
<td>Monitor Radio - KHBI, No. Marinas</td>
<td></td>
</tr>
<tr>
<td>0500</td>
<td>6110</td>
<td>Radio Japan</td>
<td>EE</td>
<td>1400</td>
<td>11705</td>
<td>Radio Japan via Canada</td>
<td></td>
</tr>
<tr>
<td>0500</td>
<td>6185</td>
<td>R. Educação, Mexico</td>
<td>SS/EE</td>
<td>1400</td>
<td>11720</td>
<td>R. Norway</td>
<td></td>
</tr>
<tr>
<td>0500</td>
<td>6250</td>
<td>Radio Nacional, Eq. Guinea</td>
<td>SS</td>
<td>1400</td>
<td>11800</td>
<td>Radio Australia</td>
<td></td>
</tr>
<tr>
<td>0500</td>
<td>7480</td>
<td>R. Bulgaria</td>
<td></td>
<td>1400</td>
<td>11895</td>
<td>R. Japan, via French Guiana</td>
<td></td>
</tr>
<tr>
<td>0500</td>
<td>9675</td>
<td>Channel Africa, South Africa</td>
<td></td>
<td>1400</td>
<td>12077</td>
<td>Kol Israel</td>
<td></td>
</tr>
<tr>
<td>0530</td>
<td>4750</td>
<td>CRTV, Bertoua, Cameroon</td>
<td>FF</td>
<td>1400</td>
<td>12300</td>
<td>Radio Pakistan</td>
<td></td>
</tr>
<tr>
<td>0600</td>
<td>4870</td>
<td>ORTB, Benin</td>
<td>FF</td>
<td>1400</td>
<td>12301</td>
<td>RAI, Italy</td>
<td></td>
</tr>
<tr>
<td>0600</td>
<td>5055</td>
<td>RFO, French Guyana</td>
<td>FF</td>
<td>1400</td>
<td>12301</td>
<td>Qatar Broadcasting Service</td>
<td>AA</td>
</tr>
<tr>
<td>0600</td>
<td>6155</td>
<td>RDP International, Portugal</td>
<td>PP</td>
<td>1430</td>
<td>12080</td>
<td>Radio Australia</td>
<td></td>
</tr>
<tr>
<td>0600</td>
<td>6165</td>
<td>Swiss Radio Int'l</td>
<td></td>
<td>1430</td>
<td>13710</td>
<td>All India Radio</td>
<td></td>
</tr>
<tr>
<td>0600</td>
<td>9425</td>
<td>Voice of Greece</td>
<td></td>
<td>1430</td>
<td>21515</td>
<td>Radio Portugal Int'l</td>
<td></td>
</tr>
<tr>
<td>0600</td>
<td>9675</td>
<td>VOA via South Africa</td>
<td>FF</td>
<td>1500</td>
<td>11785</td>
<td>Radio Republik Indonesia</td>
<td>II</td>
</tr>
<tr>
<td>0630</td>
<td>5047</td>
<td>RTT, Togo</td>
<td>FF</td>
<td>1500</td>
<td>11890</td>
<td>Radio Oman</td>
<td>AA</td>
</tr>
<tr>
<td>0630</td>
<td>6015</td>
<td>R. Austria Int'l, via Canada</td>
<td></td>
<td>1500</td>
<td>13625</td>
<td>Swiss Radio Int'l</td>
<td></td>
</tr>
<tr>
<td>0630</td>
<td>9645</td>
<td>Vatican Radio</td>
<td></td>
<td>1500</td>
<td>13785</td>
<td>Radio Pyongyang, North Korea</td>
<td></td>
</tr>
<tr>
<td>0700</td>
<td>5025</td>
<td>Radio Rebelde, Cuba</td>
<td>SS</td>
<td>1500</td>
<td>17545</td>
<td>Reshet Bet, Israel</td>
<td>Hebrew</td>
</tr>
<tr>
<td>0700</td>
<td>6070</td>
<td>CFRX relay CFRB, Canada</td>
<td></td>
<td>1600</td>
<td>21560</td>
<td>Deutsche Welle, Germany</td>
<td>GG</td>
</tr>
<tr>
<td>0700</td>
<td>11615</td>
<td>HCJB, Ecuador</td>
<td></td>
<td>1630</td>
<td>15395</td>
<td>UAE Radio, Dubai</td>
<td>EE</td>
</tr>
<tr>
<td>0730</td>
<td>5985</td>
<td>Radio Vlaanderen Int'l, Belgium</td>
<td>FF</td>
<td>1630</td>
<td>21700</td>
<td>R. Japan</td>
<td>JJ</td>
</tr>
<tr>
<td>0800</td>
<td>3945</td>
<td>Radio Tampa, Japan</td>
<td>JJ</td>
<td>1700</td>
<td>9610</td>
<td>VOIRI, Iran</td>
<td></td>
</tr>
<tr>
<td>0800</td>
<td>6090</td>
<td>Radio Bandeirantes, Brazil</td>
<td>PP</td>
<td>1700</td>
<td>15265</td>
<td>VOA via Morocco C203</td>
<td></td>
</tr>
<tr>
<td>0800</td>
<td>6100</td>
<td>R. New Zealand Int'l</td>
<td>FF</td>
<td>1700</td>
<td>15300</td>
<td>Radio France International</td>
<td>FF</td>
</tr>
<tr>
<td>0800</td>
<td>9445</td>
<td>HCJB, Ecuador</td>
<td>EE</td>
<td>1730</td>
<td>11970</td>
<td>R. Jordan</td>
<td>AA</td>
</tr>
<tr>
<td>0900</td>
<td>6030</td>
<td>Radio Marti, USA</td>
<td>SS</td>
<td>1800</td>
<td>15160</td>
<td>Radio Algiers Int'l, Algeria</td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>21605</td>
<td>UAE Radio, Dubai</td>
<td></td>
<td>1800</td>
<td>15244</td>
<td>Voix du Zaïre</td>
<td>FF</td>
</tr>
<tr>
<td>1030</td>
<td>4950</td>
<td>Radio Baha'i, Ecuador</td>
<td>SS/local</td>
<td>1800</td>
<td>15265</td>
<td>Radio Bras/Radio Naçional, Brazil</td>
<td>AA</td>
</tr>
<tr>
<td>1100</td>
<td>3360</td>
<td>La Voz de Nahuala, Guatemala</td>
<td>SS</td>
<td>1800</td>
<td>15450</td>
<td>RTT Tunisia</td>
<td></td>
</tr>
<tr>
<td>1100</td>
<td>4780</td>
<td>Radio Cultura Coatan, Guatemala</td>
<td>SS s/on</td>
<td>1830</td>
<td>16145</td>
<td>Voice of Greece</td>
<td></td>
</tr>
<tr>
<td>1100</td>
<td>6175</td>
<td>Faro del Caribe, Costa Rica</td>
<td>SS</td>
<td>1830</td>
<td>19900</td>
<td>Radio Kuwait</td>
<td></td>
</tr>
<tr>
<td>1100</td>
<td>7270</td>
<td>Radio Malaysia, Sarawak local</td>
<td></td>
<td>1900</td>
<td>15345</td>
<td>RAIE, Argentina</td>
<td></td>
</tr>
<tr>
<td>1100</td>
<td>9580</td>
<td>R. Australia</td>
<td></td>
<td>1900</td>
<td>15540</td>
<td>HCBJ, Ecuador</td>
<td></td>
</tr>
<tr>
<td>1130</td>
<td>6120</td>
<td>R. Japan via Canada</td>
<td>PP</td>
<td>1900</td>
<td>17785</td>
<td>VOA via Morocco</td>
<td></td>
</tr>
<tr>
<td>1130</td>
<td>7160</td>
<td>All India Radio</td>
<td>PP</td>
<td>1930</td>
<td>15505</td>
<td>Radio Kuwait</td>
<td>AA</td>
</tr>
<tr>
<td>1130</td>
<td>9650</td>
<td>R. Korea, S. Korea, via Canada</td>
<td>various</td>
<td>2000</td>
<td>12085</td>
<td>Radio Damascus, Syria</td>
<td></td>
</tr>
<tr>
<td>1130</td>
<td>11650</td>
<td>PEB/C/KBBS, No. Marianas</td>
<td>BB</td>
<td>2100</td>
<td>9550</td>
<td>R. Havana Cuba</td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td>4725</td>
<td>Voice of Myanmar (Burma)</td>
<td>BB</td>
<td>2100</td>
<td>9910</td>
<td>All India Radio</td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td>6400</td>
<td>Radio Pyongyang, North Korea</td>
<td>KK</td>
<td>2100</td>
<td>9935</td>
<td>RS Makedonias, Greece</td>
<td>Greek</td>
</tr>
<tr>
<td>1200</td>
<td>7260</td>
<td>Radio Thailand</td>
<td></td>
<td>2100</td>
<td>15415</td>
<td>R. Jamahiriya, Libya</td>
<td>AA</td>
</tr>
<tr>
<td>1200</td>
<td>9510</td>
<td>R. Australia</td>
<td></td>
<td>2130</td>
<td>11760</td>
<td>R. Havana Cuba</td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td>12005</td>
<td>HCJB, Ecuador</td>
<td></td>
<td>2145</td>
<td>11860</td>
<td>Republic of Sudan Radio</td>
<td>AA</td>
</tr>
<tr>
<td>1200</td>
<td>13790</td>
<td>R. Bulgaria</td>
<td></td>
<td>2200</td>
<td>9200</td>
<td>Kol Israel</td>
<td>Hebrew</td>
</tr>
<tr>
<td>1200</td>
<td>13800</td>
<td>Radio Norway</td>
<td></td>
<td>2200</td>
<td>9388</td>
<td>R. Portugal</td>
<td>PP</td>
</tr>
<tr>
<td>1200</td>
<td>15400</td>
<td>R. Finland Int'l</td>
<td>Finnish</td>
<td>2200</td>
<td>9570</td>
<td>Kol Israel</td>
<td>Hebrew</td>
</tr>
<tr>
<td>1200</td>
<td>15445</td>
<td>FEBA, Seychelles or 15480</td>
<td>CC</td>
<td>2200</td>
<td>11935</td>
<td>Radio Clube Paranaense, Brazil</td>
<td>PP</td>
</tr>
<tr>
<td>1215</td>
<td>15295</td>
<td>R. Tashkent, Uzbek</td>
<td></td>
<td>2200</td>
<td>17795</td>
<td>Radio Australia</td>
<td></td>
</tr>
<tr>
<td>1230</td>
<td>9370</td>
<td>KSDA, Guam</td>
<td></td>
<td>2200</td>
<td>5000</td>
<td>Radio Liberia</td>
<td>EE/FF</td>
</tr>
<tr>
<td>1230</td>
<td>11900</td>
<td>Radio Finland Int'l</td>
<td></td>
<td>2230</td>
<td>5945</td>
<td>Radio Austria Int'l</td>
<td></td>
</tr>
<tr>
<td>1230</td>
<td>12085</td>
<td>R. Ulaan Batar, Mongolia</td>
<td></td>
<td>2230</td>
<td>6090</td>
<td>Radio Nigeria, Kaduna</td>
<td>Haua</td>
</tr>
<tr>
<td>1230</td>
<td>13610</td>
<td>R. Vlaanderen Int'l, Belgium</td>
<td></td>
<td>2230</td>
<td>7210</td>
<td>ORTB, Benin</td>
<td>FF</td>
</tr>
<tr>
<td>1230</td>
<td>13740</td>
<td>Radio Sweden</td>
<td></td>
<td>2230</td>
<td>9430</td>
<td>Radio Prague, Czech Republic</td>
<td></td>
</tr>
<tr>
<td>1230</td>
<td>15640</td>
<td>Radio Bulgaria</td>
<td></td>
<td>2230</td>
<td>9505</td>
<td>R. Havana Cuba</td>
<td></td>
</tr>
<tr>
<td>1230</td>
<td>17630</td>
<td>Africa No. One, Gabon</td>
<td></td>
<td>2230</td>
<td>9855</td>
<td>Radio Kuwait</td>
<td>AA</td>
</tr>
<tr>
<td>1300</td>
<td>7405</td>
<td>China Radio International</td>
<td></td>
<td>2230</td>
<td>11600</td>
<td>R. Prague, Czech Republic</td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td>9590</td>
<td>R. Norway</td>
<td>NN</td>
<td>2300</td>
<td>5100</td>
<td>Radio Liberia</td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td>9625</td>
<td>CBC Northern Service, Canada</td>
<td></td>
<td>2300</td>
<td>9720</td>
<td>Radio Yugoslavia</td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td>11850</td>
<td>R. Thailand</td>
<td>NN</td>
<td>2300</td>
<td>11915</td>
<td>R. Gaucha, Brazil</td>
<td>PP</td>
</tr>
<tr>
<td>1300</td>
<td>17745</td>
<td>R. Romania Int'l</td>
<td></td>
<td>2330</td>
<td>7105</td>
<td>Radio Romania Int'l</td>
<td></td>
</tr>
<tr>
<td>1320</td>
<td>21520</td>
<td>RAI, Italy</td>
<td>sign on; Sun.</td>
<td>2330</td>
<td>7125</td>
<td>Voice of Russia</td>
<td></td>
</tr>
<tr>
<td>1330</td>
<td>9830</td>
<td>Radio Sweden</td>
<td></td>
<td>2330</td>
<td>7215</td>
<td>RTV1, Cote D'Ivoire (Ivory Coast)</td>
<td>FF</td>
</tr>
<tr>
<td>1330</td>
<td>11650</td>
<td>R. Sweden</td>
<td></td>
<td>2330</td>
<td>9485</td>
<td>Radio Denmark, via Norway</td>
<td></td>
</tr>
<tr>
<td>1330</td>
<td>15060</td>
<td>BSKSA, Saudi Arabia</td>
<td>AA</td>
<td>2355</td>
<td>9925</td>
<td>R. Vlaanderen Int'l, Belgium</td>
<td>GG</td>
</tr>
</tbody>
</table>
Product Parade

REVIEW OF NEW, INTERESTING AND USEFUL PRODUCTS

Cherokee Enters Amateur Market with Revolutionary 6-Meter Radio

The Wireless Marketing Corporation, with its new line of Cherokee communications equipment, has introduced its first entry into the expanding 6-meter amateur market with its model AH-50 handheld. Incorporating a unique product design and style, Wireless says it's the "smallest 6-meter HT in the world."

With its sealed NiCd battery pack that comes standard, the AH-50 is 5 1/2" tall, which is small enough to fit in a shirt pocket. Its advanced circuitry offers the user the ability to maximize battery life, along with giving a full five-digit read-out of the frequency in use on the display.

Doug Morrison, President of Wireless Marketing Corporation stated, "We are very excited about the opportunities that exist both now and in the future for the 6-meter band."

AH-50 features include CTCSS capability, selectable frequency offset, five watt power output, five memory locations for complete storage of repeater access information, auto-frequency scan and auto-memory scan, dual watch, key lock for removing access to the keypad, and battery life enhancement circuitry which dramatically extends the overall usable time on the radio.

Cherokee will also supply as options a complete set of accessories such as additional battery packs, antennas, carrying cases, and battery chargers which make this radio a complete communications package. The AH-50 has a suggested retail price of $349.95 and will be available in March from radio communications dealers around the country.

For more information contact Wireless Marketing at 947-839-0015.

The ONLY Commercially Available Computer Control Program for the Universal M-7000 & M-8000.

ARÉA's PK-232 and the MFJ-1278...

JUST GO!

Dedicated to the Scanning and Shortwave Enthusiast

COPYCAT-PRO

INCREASED!

“THE STANDARD AGAINST WHICH ALL FUTURE DECODERS WILL BE COMPARED”

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

Here is something that will make it easy once you see CODE-3. CODE-3 has an exclusive auto-classification module that tells YOU what you’re listening to AND automatically sets you up to start decoding. No other decoder can do this on ALL the signals you can hear but not identify on the Short Wave Bands? A few of them... Just got arrived!

ZUST ARRIVED!

HOKA CODE-3 USA Version

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

There are some well known CW/RTTY Decoders but then there is CODE-3. It is up to you to make the choice, but it will be easy once you see CODE-3. CODE-3 has an exclusive auto-classification module that tells YOU what you’re listening to AND automatically sets you up to start decoding. No other decoder can do this on ALL the signals you can hear but not identify on the Short Wave Bands? A few of them...

Now be sure to order our serial adapter for $24.95)...

INTERNET WEB ADDRESS: http://www.scancat.com WEB E-MAIL: scancat@scancat.com

Codomain Computerized Technologies P.O. Box 18295 Shreveport, LA 71138 Phone: (318) 687-4444 FAX: (318) 686-0449

Live Tech Support (318) 687-2555 (9 am - 1 pm Central M-F) Nitelime BBS (SCANCAT File Area) (318) 631-3082 (7 pm - 6 am CDT)

THE MONITORING MAGAZINE

42 / POPULAR COMMUNICATIONS / March 1997
New Receiver Control Software

Spectrum Systems has announced version 3.0 of FirstRate, their receiver control software aimed at the SWL market. The software targets program listeners as well as DXers with its heavy emphasis on database integration using a point-and-click approach to receiver tuning and control. A variety of modes offer features to enhance SWLing for a wide range of users—from stand-alone receiver operation with database frequency lookup for dedicated "dial spinners" to "push a button to tune a station" automation, and almost anything in between.

To view version 3.0 are user-customizable database layouts and screens, new fields, logging features, gray-line mapping, as well as LUF/MUF graphing for up to 20 user-customizable locations. Version 3.0 also ships with a single copy of TRS Consultants' ShortWave Broadcast Schedule database for up-to-date station frequency information.

FirstRate is available for the Drake R8 and R8A, the Japan Radio Corporation NRD-535, and the Lowe HF-150, and the AOR AR7030. The software is available for Windows 3.1, Windows 95, and Macintosh computers and is priced at $99, plus $5 shipping and handling. Limited-use demo versions of FirstRate are available from the Internet at <http://www.inf.net/~dhurvey>.

Orders or requests for additional information may be directed to Spectrum Systems, Box 1177, Saluda, VA 23149-1177, or by calling 1-804-561-2166 or 1-800-296-2178; or e-mail them at Mark.Chalkley@ibm.net.

New MFJ-212 Matchmaker™

The new MFJ-212 MatchMaker™ from MFJ Enterprises, Inc., will let you tune your antenna tuner without transmitting a milliwatt. It enables you to precisely tune your antenna tuner for a 1:1 SWR. There’s no additional "tweaking" needed.

The MFJ-212 helps protect your transceiver and antenna tuner; and helps avoid dangerous overheating and arcing that is caused by high SWR and long tune-ups. The MatchMaker connects between your transceiver and antenna tuner, allowing you to adjust your tuner for a null in receiver noise. Tuning noise is modulated so it will be easy to recognize. If you accidentally transmit, MFJ’s RF Guard™ automatically bypasses your unit to prevent damage.

The MFJ-212 MatchMaker will work with all transceivers from 160 to 6 meters. It is powered with a 12 Vdc, 300 mA power supply or a 9 Volt alkaline battery.

The MatchMaker connects to the antenna "out" jack of your transceiver. Then your antenna tuner plugs into the MFJ-212’s ANT jack.

For more information or to order, contact any MFJ dealer or MFJ Enterprises, Inc., PO. Box 494, Mississippi State, MS 39762; or call 601-323-5869; fax 601-323-6551; or order from their toll-free number 1-800-647-1800.

DEDICATED TO THE SCANNING AND SHORTWAVE ENTHUSIAST, WE OFFER MORE THAN JUST SOFTWARE!

INTRODUCING... SCANCAT GOLD FOR WINDOWS

SCANCAT supports almost ALL computer controlled radios by AOR, DRAKE, KENWOOD, ICOM, YAESU and JRC (NRD) Plus PRO -2005/6/35/42 (with OS/456/535), Lowe HF-150, and Watkins...

SCANCAT’S BASIC FEATURES

- Search between any 2 frequencies.
- Search by ANY increment.
- Create Disk files.
- Import from most text formats to a working SCANCAT file.
- Unattended logging of frequencies to Yes while scanning.
- Scan Disk files.
- Spectrum Analysis to Screen OR Printer.
- Supports PerCon & Mr. Scanner Card ROMs.
- LINK up to 15 Disk files.
- Scan VHF & HF Icom’s Simultaneously.
- Print to ANY printer or Disk files.
- MULTIPLE search filters for DiskFile Scanning.

POWERFUL COMMERCIAL FEATURES SUCH AS...

- NO MORE CONVERSION! DIRECT scanning of most DBASE, FOXPRO, ACCESS, 8FILE formats WITHOUT "importing". Our Exclusive AUTO-PLA-RX, even sets the mode and increment on the fly!
- UNIQUE database management system with moveable columns. Even SPLIT columns into doubles or moveable database layouts and screens, new fields, logging features, gray-line mapping, as well as LUF/MUF graphing for up to 20 user-customizable locations.
- VERSATILE "Function" spectrum analysis. NOT just a "pretty face-. Spectrum is held in memory for long term accumulation. Simply "mouse over" to read frequency of spectrum location "CLICK" to immediately tune your receiver. You can even accumulate a spectrum from scanning DISKFILES of A Complete Modem/Terminal with support for most current modems. Full X-Y-Z modem download upload support up to 28,800.
- DEMOGRAPHIC search for frequency coordination and 2-way Usage Analysis. Exclusive "MACRO" control by frequency of Dwell, Hang, Resume.
- Command line options for TIMED ON/OFF (Unattended) logging/searches.

SCANCAT IS NOT COPY PROTECTED--USE ON AS MANY COMPUTERS AS YOU NEED  SCANCAT (DOS) will run on virtually ANY 640K computer, EVEN HP-100XLT PALMTOP, TRS...

EXCLUSIVE WINDOWS FEATURES...

- All the features you EXPECT from a true Windows application such as:
  - Exclusive "SLIDE RULE" tuner. Click or scroll your mouse over our Slide-Tuner to change frequencies effortlessly! OR use our graphical tuning knob.
  - INTERACTIVELY have database. MAPS or Scanning functions on screen simultaneously.
  - MAPS - Load virtually ANY map or GB/PH/FA map in "BMP" format (several included with Scancat Program) "hot spots" with your favorite frequencies. Up to 1000 frequencies per map. Click on Hotspot to immediately tune your receiver.
  - A Complete Modern/Terminal with support for most current modems. Full X-Y-Zmodem download upload support up to 28,800.

SCANCAT GOLD FOR DOS......$94.95 + S & H +

CAT-WISHER

TIRED OF YOUR HANDHELD SCANNER ALWAYS FALLING OVER JUST TO KEEP THE ANTENNA "VERTICAL!"

Try our unique, swivel base, telescopic scanner antenna. Our new CAT-WISHER lets you lay your handheld scanner on its back and still keep the antenna vertical. Simply "mouse over" to read frequency of spectrum location "CLICK" to immediately tune your receiver. You can even accumulate a spectrum from scanning DISKFILES of A Complete Modem/Terminal with support for most current modems. Full X-Y-Zmodem download upload support up to 28,800.

CAT-WISHER #1 (5 to 23 inches).$19.95

CAT-WISHER #2 (6 to 36 inches).$24.95

*S/U.S. 57.50 FOREIGN

DEALER INQUIRIES INVITED

INTERNET WEB ADDRESS - http://www.scancat.com
WEB E-MAIL - scancat@scancat.com

THE MONITORING MAGAZINE
March 1997 / POPULAR COMMUNICATIONS / 43
In a bold move that marks the debut of a new method of broadcasting and a new band, eight Toronto broadcasters and the Canadian Broadcasting Corp. have committed to begin digital audio broadcasting (DAB) in the L band by the end of 1997.

Master FM, a consortium of some of Canada’s biggest broadcasting companies, including the CBC, CHUM Group, Rogers Broadcasting and Standard Broadcasting will put simulcasts of about 18 Toronto AM and FM stations on the air in the new broadcast band from 1452 to 1492 MHz. The goal, Master FM president Kirk Nesbitt told the industry newspaper Radio World, “is to construct a DAB system to accommodate as many of the Toronto broadcasters as possible.”

The CBC also expects to start DAB broadcasts in Montreal by the end of 1997. The plan, according to a press release, will bring DAB broadcasts of the CBC’s four English and French-language radio services to 75 percent of Canadians over the next five years. Guylaine Sauvier, chair of the CBC Board of Directors, said the board’s decision demonstrated its commitment to remain in the forefront of new communications technology.

The announcements follow the release last fall of the Digital Radio Broadcasting Plan, authorizing use of DAB and the L band and setting the stage for the eventual migration of all AM and FM stations in Canada to the new band. Under the plan, up to five stations are grouped together in a single transmitter “pod.” In the case of Master FM, antennas would be located on the CN Tower, and with a power of a few hundred watts, coverage is expected to be about 25 miles, or much of metropolitan Toronto.

Over the Top

With the third, revised allotment plan for the expanded AM band set at press time to go before the FCC commissioners for review, DXers can warm up by tuning in two new stations that have set up shop above 1600 kHz.

KWJC, based, at least according to the station, in Greenacres, WA, is running unlicensed on 1640 kHz with a reported 250 watts. In the open spaces of the top end, that’s enough for it to be heard throughout much of the Northwest, including at the Sacramento QTH of Gary Jackson. Programming consists mainly of instrumental music, and is frequently simulcast on KWIC’s 100-watt sister station, KWCK, operating on 105.2 MHz. Reception reports may be sent to P.O. Box 267, Greenacres, WA 99016-0267.

Another top-ender is WUSB, operating on 1630 kHz from the Stony Brook, Long Island, campus of the State University of New York. Although it runs only a few watts, its been heard by DXers across much of New England, including Mark Mandello, KA1KXT, in Trumbull, CT. Word is WUSB is actually a traveler-information station, KNNV688, that has gone from airing campus-related advisories to broadcasting original programming and even promos for WUSB-FM, the campus station.

But the new kids on the block will probably have to move once the expanded band starts filling up. That could come sometime late this year. A draft order, consisting of a revised allotment plan and...
### Seeking Permits to Construct New FM Stations

<table>
<thead>
<tr>
<th>State</th>
<th>City</th>
<th>Frequency</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ</td>
<td>Red Mesa</td>
<td>89.7 MHz</td>
<td>4.5 kW</td>
</tr>
<tr>
<td>CA</td>
<td>Livingston</td>
<td>88.3 MHz</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>Ft. Collins</td>
<td>88.9 MHz</td>
<td>4 kW</td>
</tr>
<tr>
<td>CO</td>
<td>Ignacio</td>
<td>90.1 MHz</td>
<td>3 kW</td>
</tr>
<tr>
<td>GA</td>
<td>Folkston</td>
<td>91.3 MHz</td>
<td></td>
</tr>
<tr>
<td>GA</td>
<td>Gibson</td>
<td>94.3 MHz</td>
<td></td>
</tr>
<tr>
<td>IN</td>
<td>Greensburg</td>
<td>89.1 MHz</td>
<td></td>
</tr>
<tr>
<td>NV</td>
<td>Sun Valley</td>
<td>94.5 MHz</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>Forest Acres</td>
<td>94.3 MHz</td>
<td></td>
</tr>
<tr>
<td>TX</td>
<td>Markham</td>
<td>92.5 MHz</td>
<td></td>
</tr>
<tr>
<td>TX</td>
<td>Pearsall</td>
<td>104.1 MHz</td>
<td></td>
</tr>
<tr>
<td>UT</td>
<td>Roosevelt</td>
<td>94.3 MHz</td>
<td></td>
</tr>
<tr>
<td>WI</td>
<td>Sister Bay</td>
<td>91.9 MHz</td>
<td></td>
</tr>
<tr>
<td>WY</td>
<td>Albin</td>
<td>107.3 MHz</td>
<td></td>
</tr>
<tr>
<td>WY</td>
<td>Gillette</td>
<td>90.9 MHz</td>
<td>450 watts</td>
</tr>
<tr>
<td>WY</td>
<td>Green River</td>
<td>101.5 MHz</td>
<td></td>
</tr>
</tbody>
</table>

### Permit Granted to Construct New AM Station

<table>
<thead>
<tr>
<th>State</th>
<th>City</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>MI</td>
<td>Petoskey</td>
<td>750 kHz</td>
</tr>
</tbody>
</table>

### Permits Granted to Construct New FM Stations

<table>
<thead>
<tr>
<th>State</th>
<th>City</th>
<th>Frequency</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td>Addison</td>
<td>105.7 MHz</td>
<td>6 kW</td>
</tr>
<tr>
<td>AL</td>
<td>Selma</td>
<td>91.1 MHz</td>
<td></td>
</tr>
<tr>
<td>AZ</td>
<td>Phoenix</td>
<td>105.5 MHz</td>
<td>43 kW (KKER booster)</td>
</tr>
<tr>
<td>CO</td>
<td>Estes Park</td>
<td>102.1 MHz</td>
<td>6 kW</td>
</tr>
<tr>
<td>GA</td>
<td>Dahlonega</td>
<td>89.5 MHz</td>
<td>3 kW</td>
</tr>
<tr>
<td>IL</td>
<td>Mount Vernon</td>
<td>89.7 MHz</td>
<td>6 kW</td>
</tr>
<tr>
<td>KS</td>
<td>Ottawa</td>
<td>90.5 MHz</td>
<td>250 watts</td>
</tr>
<tr>
<td>LA</td>
<td>Lake Arthur</td>
<td>107.3 MHz</td>
<td>25 kW</td>
</tr>
<tr>
<td>MI</td>
<td>Pentwater</td>
<td>103.1 MHz</td>
<td>3 kW</td>
</tr>
<tr>
<td>MO</td>
<td>Kirksville</td>
<td>909.7 MHz</td>
<td></td>
</tr>
<tr>
<td>MS</td>
<td>Natchez</td>
<td>91.1 MHz</td>
<td></td>
</tr>
<tr>
<td>MT</td>
<td>Missoula</td>
<td>91.1 MHz</td>
<td>1 kW</td>
</tr>
<tr>
<td>NC</td>
<td>Nashville</td>
<td>99.7 MHz</td>
<td>6 kW</td>
</tr>
<tr>
<td>NY</td>
<td>Center Moriches</td>
<td>96.1 MHz</td>
<td>3 kW</td>
</tr>
<tr>
<td>OH</td>
<td>Athens</td>
<td>95.9 MHz</td>
<td>6 kW</td>
</tr>
<tr>
<td>TX</td>
<td>Linden</td>
<td>99.3 MHz</td>
<td>10 kW</td>
</tr>
<tr>
<td>TX</td>
<td>Olney</td>
<td>97.5 MHz</td>
<td>50 kW</td>
</tr>
<tr>
<td>TX</td>
<td>Palacios</td>
<td>99.7 MHz</td>
<td>50 kW</td>
</tr>
<tr>
<td>TX</td>
<td>Pecos</td>
<td>97.3 MHz</td>
<td>100 kW</td>
</tr>
<tr>
<td>WA</td>
<td>Mahtom</td>
<td>98.7 MHz</td>
<td>6 kW</td>
</tr>
<tr>
<td>WA</td>
<td>Tunwater</td>
<td>99.3 MHz</td>
<td>1 kW (KAYO-FM booster)</td>
</tr>
<tr>
<td>WI</td>
<td>Madison</td>
<td>91.7 MHz</td>
<td></td>
</tr>
</tbody>
</table>

### Pending AM Call Letter Change

<table>
<thead>
<tr>
<th>New</th>
<th>Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>WJNA</td>
<td>WYFX</td>
</tr>
</tbody>
</table>

### Changed AM Call Letters

<table>
<thead>
<tr>
<th>New</th>
<th>Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBNB</td>
<td>KHYM</td>
</tr>
<tr>
<td>KCHT</td>
<td>KUTI</td>
</tr>
<tr>
<td>KJAZ</td>
<td>KORV</td>
</tr>
<tr>
<td>KPKX</td>
<td>KOOL</td>
</tr>
<tr>
<td>KRVM</td>
<td>KDUK</td>
</tr>
<tr>
<td>KTBL</td>
<td>KASY</td>
</tr>
<tr>
<td>KUPL</td>
<td>KBBT</td>
</tr>
<tr>
<td>WAVN</td>
<td>WBLZ</td>
</tr>
<tr>
<td>WAYY</td>
<td>WEAQ</td>
</tr>
<tr>
<td>WDEO</td>
<td>WAXM</td>
</tr>
<tr>
<td>WEAO</td>
<td>WAYY</td>
</tr>
<tr>
<td>WHEW</td>
<td>WIZO</td>
</tr>
<tr>
<td>WHOZ</td>
<td>WBLX</td>
</tr>
<tr>
<td>WNFT</td>
<td>WOR</td>
</tr>
<tr>
<td>WSNR</td>
<td>WLLS</td>
</tr>
<tr>
<td>WTLQ</td>
<td>WDCQ</td>
</tr>
<tr>
<td>WXFN</td>
<td>WLBC</td>
</tr>
<tr>
<td>WZZU</td>
<td>WGLI</td>
</tr>
</tbody>
</table>

### Pending FM Call Letter Changes

<table>
<thead>
<tr>
<th>New</th>
<th>Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>KVGO</td>
<td>KNFX-FM</td>
</tr>
<tr>
<td>WCNK</td>
<td>WGBK</td>
</tr>
<tr>
<td>WRFM</td>
<td>WUUU</td>
</tr>
</tbody>
</table>

### Canceled

| 103.7 MHz 3 kW |
| 980 kHz Canc. 110 watt nite ops. |
| 540 kHz Canc. power increase. |
| 89.9 MHz |
| 1140 kHz 10 kW |
| 750 kHz |
| 1540 kHz Canc. move to Bala Cynwyd & 500 watt nite ops. |

### Asked to Show Cause Why Station License Should Not Be Revoked

| KEZJ | Twin Falls, ID | Silent since 12/16/93 |
| KFPS | Salem, MO | Silent since 3/1/93 |
| WAUB | Auburn, NY | Silent since 6/30/95 |
Sent Notice of Liability for Apparent Monetary Forfeiture

<table>
<thead>
<tr>
<th>Callsign</th>
<th>Location</th>
<th>Monetary Forfeiture</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIXA</td>
<td>Victorville, CA</td>
<td>$2,000 for unauth. transfer of control of sta. ops. to programmer.</td>
</tr>
<tr>
<td>WBZI</td>
<td>Richmond, VA</td>
<td>$10,000 for transm. of unsuitable material.</td>
</tr>
<tr>
<td>WVIC</td>
<td>E. Lansing, MI</td>
<td>$8,000 for transm. of unsuitable material.</td>
</tr>
</tbody>
</table>

Requesting Changes to AM Facilities

<table>
<thead>
<tr>
<th>Callsign</th>
<th>Location</th>
<th>Request</th>
</tr>
</thead>
<tbody>
<tr>
<td>KABI</td>
<td>Abilene, KS</td>
<td>1560 kHz Seeks to add nite service.</td>
</tr>
<tr>
<td>KICY</td>
<td>Nome, AK</td>
<td>850 kHz Seeks increase to 50/10 kW.</td>
</tr>
<tr>
<td>KNOB</td>
<td>San Rafael, CA</td>
<td>1510 kHz Seeks increase to 8 kW.</td>
</tr>
<tr>
<td>KNOM</td>
<td>Nome, AK</td>
<td>780 kHz Seeks increase to 25/14 kW.</td>
</tr>
<tr>
<td>KTMG</td>
<td>Deer Trail, CO</td>
<td>1370 kHz Seeks drop to 700 watts.</td>
</tr>
<tr>
<td>WBIV</td>
<td>Natick, MA</td>
<td>1060 kHz Seeks move to 40 kW.</td>
</tr>
<tr>
<td>WDGY</td>
<td>St. Paul, MN</td>
<td>630 kHz Seeks move to Hudson, W1 9 kW/130 watts.</td>
</tr>
<tr>
<td>WLBA</td>
<td>Gainesville, GA</td>
<td>1130 kHz Seeks move to Powder Spgs., 10.7/2.2 kW.</td>
</tr>
<tr>
<td>WREF</td>
<td>Ridgefield, CT</td>
<td>850 kHz Seeks increase to 10 kW/500 watts.</td>
</tr>
<tr>
<td>WWCS</td>
<td>Canonsburg, PA</td>
<td>540 kHz Seeks to change day power.</td>
</tr>
<tr>
<td>WWRL</td>
<td>Woodside, NY</td>
<td>1600 kHz Seeks increase days to 25 kW.</td>
</tr>
<tr>
<td>WYAM</td>
<td>Hartselle, AL</td>
<td>890 kHz Seeks increase to 2.5 kW.</td>
</tr>
</tbody>
</table>

Changed AM Facilities

<table>
<thead>
<tr>
<th>Callsign</th>
<th>Location</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPLS</td>
<td>Orange, CA</td>
<td>830 kHz Now Orange/Huntington Beach, 50/23 kW.</td>
</tr>
<tr>
<td>KPXW</td>
<td>Liberty, TX</td>
<td>1050 kHz Moved to Brookshire.</td>
</tr>
<tr>
<td>WBUL</td>
<td>Fort Knox, KY</td>
<td>1470 kHz Moved to Shepherdsville.</td>
</tr>
<tr>
<td>WBTX</td>
<td>De Funiak Spgs., FL</td>
<td>1280 kHz Changed city of license and power.</td>
</tr>
<tr>
<td>WPIN</td>
<td>Deblin, VA</td>
<td>810 kHz Changed power.</td>
</tr>
<tr>
<td>WQXI</td>
<td>Atlanta, GA</td>
<td>7909 kHz Changed day power.</td>
</tr>
</tbody>
</table>

Requesting Changed FM Frequencies

<table>
<thead>
<tr>
<th>Callsign</th>
<th>Location</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>KZCD</td>
<td>Lawton, OK</td>
<td>94.1 MHz</td>
</tr>
<tr>
<td>WJOI</td>
<td>Germantown, TN</td>
<td>107.5 MHz</td>
</tr>
</tbody>
</table>

Changed FM Call Letters

<table>
<thead>
<tr>
<th>Old Call Letters</th>
<th>New Call Letters</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDBX Banks, OR</td>
<td>WDBX Banks, OR</td>
</tr>
<tr>
<td>KKCQ-FM Boston, MA</td>
<td>BOSTON, MA</td>
</tr>
<tr>
<td>KQSC Dinnigan, CA</td>
<td>Dinnigan, CA</td>
</tr>
<tr>
<td>KKKX Lowry, SD</td>
<td>Lowry, SD</td>
</tr>
<tr>
<td>KRGO Roy, UT</td>
<td>Roy, UT</td>
</tr>
<tr>
<td>KRM Eugene, OR</td>
<td>Eugene, OR</td>
</tr>
<tr>
<td>KHII Security, CO</td>
<td>Security, CO</td>
</tr>
</tbody>
</table>

action on the nine petitions for reconsideration that led to the scrapping of the second station list last year, was at press time set to go before the commissioners for review. About 88 stations are expected to be offered slots in the 10 new channels from 1605 to 1705 kHz.

The Mouse That Roared

Walt Disney is no stranger to the entertainment business, and with its $19 billion purchase of Capital Cities/ABC last year, it extended its reach by adding 21 radio stations and a raft of radio networks serving more than 3,400 stations.

All that came together on Nov. 18 when ABC Radio rolled out Radio Disney, a new format aimed at the 12-and-under set. The 24-hour network debuted on Minneapolis’ KQRS-AM (now KDIZ).
Atlanta's WKHX-AM, Birmingham, AL's WYDE-AM and Salt Lake City's KCNR-AM.

But not everyone is happy with Mickey & Co.'s foray into kids radio. Children's Broadcasting Corp., whose Radio Aahs format is syndicated to 32 stations, including expanded AM band pioneer WJDM, is raising questions about the fact that the new format comes only a year after ABC and CBC ended an agreement where ABC provided affiliate sales and marketing support. And instead of trying to build a better mousetrap, CBC is suing ABC and Disney in federal court, charging that ABC used confidential information to develop the format, according to a Chicago Tribune article sent in by Elmer Wallesen, of La Grange Park, Ill.

It Was a Very Good Year

CFRB, that gray lady of Canadian broadcast journalism, marked seven decades on the air on February 19, evolving from the broadcasting arm of Rogers Batteries to earn its current reputation as Canada's most-respected and most-listened-to radio station.

When CFRB first signed on in 1927, it ran approximately 15 kW from a homebrew transmitter located in Aurora, Ontario. In 1946, new transmitters and antennas were erected at the current site in Clarkson, running 50 kW into four 250-foot antennas, according to a station history sent in by Trevor Fletcher, of Calgary. The present transmitter, including a Continental Electronics 317C-2, went on-line on April 6, 1981. CFRB currently broadcasts in C-QUAM AM stereo.

CFRB programming is simulcast on shortwave CFRX, which signed on in 1937 at its current 1 kW. The original antenna system, also located in Aurora, consisted of two 50-foot towers, running a directional pattern to the northwest. The current set-up, located in Clarkson, is a...
Pop’Comm P.O. 

(restoration/electronics) column by Peter Bertini represents a real nice addition to the magazine. Add to that the “Old CB Shack” and you have really got me interested! I am sure you will get some flak from some readers for going technical, but we all need to know something about what goes on behind the front panel of our radio gear. Hopefully we will soon see some articles describing some articles describing the circuits used in modern radios too.

With respect to the article “Citizens Band Radio—Heading for 2001” I believe that the problems on 27 MHz lie with the people, not the radios. Changing to FM will not change people’s operating practices.

Edward Engelken
Canyon Lake, TX

Michael Has Us Covered!

Dear Editor:
Hello! I really enjoy reading your magazine. I buy every issue and usually read it cover to cover. My favorite columns are “How I Got Started,” “The Pirate’s Den,” “The Listening Post,” “Broadcast DXing,” and of course the reader’s letters. I also enjoy the articles on radio history.

I collect radio station bumper stickers and QSL cards. I am sending a few that I have accumulated. Keep up all of your good work!

Michael Tucker
Cullman, AL

His Number One, Favorite Magazine

Dear Editor:
Congratulations for being the new editor of Popular Communications magazine which is well read worldwide. It is my number one favorite magazine.

My comment is why the column “How I Got Started” was eliminated in your magazine last October. That is the most interesting column of your magazine that attracts readers and SWLs around the world. It gives the opportunity to write their story on how they got involved in the world of communications. My suggestion: Would it be possible to return the column in the magazine because readers like me would really appreciate it very much. Good luck.

Jacob Lozada
Quezon City, Philippines

Thanks

A special thanks goes out to R. C. Watts, of Louisville, KY, for his photos this month of the WCFM, WSEH, WBFC and WSKV studios. Your shack photos, news clippings, bumper stickers and QSLs are always welcome, as are your questions and comments. Send ‘em to “Broadcast DXing” in care of Pop’Comm at 76 North Broadway, Hicksville, NY 11801. Until next month,

In Brief

Massachusetts’ Cape should have a public radio station of its own by the end of 1997, thanks to a federal grant and the determination of NPR and “Nightline” reporter Jay Allison. Cape and Islands Community Public Radio Inc., headed by Allison, has applied to the FCC for two unspecified frequencies, according to a Boston Globe article sent in by Bob Gilbert, of Portland, Maine.

Newmarket, Ontario’s CXDX-FM has cut its power from 700 watts to 500 watts in order to maintain its coverage area as it raises the height of its antenna. Calgary, Alberta’s CKUA-FM-1, meanwhile, has boosted its power from 16 kW to 100 kW to improve signal quality and extend its coverage area.

Taylor, Michigan’s WCHB-AM received a nice present from the FCC on its 40th birthday—permission to double its daytime power to 50 kW and triple its nighttime power to 2.1 kW. Nashville’s WNQM-AM also received FCC approval to boost its daytime power to 50 kW, and facilities changes are underway, according to a station press release. WNQM is the sister station of shortwaver WWC.

The ‘70s are passe . . . again. Or at least that’s what the management at Tulsa’s KRAV apparently thinks. They’ve dropped all ’70s music from their playlist to bring listeners “the best mix of the ’80s and ’90s,” reports Luke Steele, of Vinita, Oklahoma. Luke, by the way, seeks both a manual for a National NC -60 (circa 1957) and news about the southern Mississippi radio market. You can reach him at <RSteele 323@aol.com>. 

Thanks

A special thanks goes out to R. C. Watts, of Louisville, KY, for his photos this month of the WCFM, WSEH, WBFC and WSKV studios. Your shack photos, news clippings, bumper stickers and QSLs are always welcome, as are your questions and comments. Send ‘em to “Broadcast DXing” in care of Pop’Comm at 76 North Broadway, Hicksville, NY 11801. Until next month,
How I Got Started

Morse Code Meals

The staff of Popular Communications invites readers to submit in about 150 words how they got started in the communications hobby. Entries should be typewritten, or otherwise easily readable. If possible, please try to include your photograph (no Polaroids, please).

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

"I encourage joining the fellowship of "hams." It's educational and more dependable than cellular phones."

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

Our March Winner

This month we've chosen Susie Carlton, NSGKX, from Ft. Worth, Texas as our How I Got Started winner. Susie wrote in to tell us about her experiences in amateur radio and her hopes for the future of the communications hobby.

She wrote: My husband, Alan was radio-active when we met. My interest sparked during our tour of duty in the Air Force. Alan's Ground Radio tech-school found me involved with his electronics homework. We later found ourselves communicating across the table in Morse code, and finally at the federal building for amateur radio license testing. FCC test offices were antiquated to say the least. Personnel were as cold as their chairs, and the headphones appeared to be on loan from Fred Flintstone!

I aced the theory part of the exam, but I started crying during the 13 WPM Morse code test. I embarrassed Alan, but he passed. (DARN!) I had to make a second trip to earn my General class.

"I had to make a second trip to earn my General class."

Volunteer Examining has since created more of a kitchen table atmosphere. I encourage joining the fellowship of "hams." It's educational and more dependable than cellular phones. Considering that our government dictates what frequencies hobbyists may legally monitor, I must endorse the importance of strength in numbers (We the People). I hope to continue enjoying my right to "Freedom of Speech" through amateur communications for as long as the freedom exists.

Look for both Susie and Alan on 40 meters at 7.253 MHz. Susie also wanted us to let SWLers know that both she and her husband QSL 100%.

Here's Susie and her shack. Her gear includes a Yaesu FT 980, a pair of 3S00Zs in a HL2200 2 kW amplifier, and one of the last Heath Kit HF Amplifier kits.

It's time you found out... What over 185,000 people already know.

NOW YOU'RE TALKING!

was written with you, the reader, in mind.

There's never been a more exciting time to get your Ham license. You can use Amateur Radio as a fun, friendly method of local communication, an invaluable tool in emergencies, or even experience the thrill of talking to Astronauts and Cosmonauts in orbit. Whether you want to enter Amateur Radio as a Technician and choose to skip the code, or as a Novice licensee, Now You're Talking will provide you with the information you need in bite-sized, easy-to-understand diagrams, photos and sketches, you'll be familiar with all the questions used to make up the FCC test...and you'll be ready for it. In addition to study material that won't let you down, you'll find invaluable operating hints and tips you'll use once you pass your test. Now You're Talking: All You Need to Get Your First Ham License is the book you'll use even after you've passed your exam. You can shop around for bargains, or you can join the thousands of licensed amateurs who have used Now You're Talking to pass their exam. Order your copy today:

Enclosed is $19 plus $4 for shipping (a total of $23) or charge $23 to my ( ) Discover ( ) American Express
( ) Mastercard ( ) VISA

For more Information Call 1-800-326-3942

Signature

Acct. No

Expiration Date

Name

Address

City State Zip
Radio Canada International Saved!

For a few tense days it seemed like deja vu! The decision had been made to close down RCI completely at the end of March, but a last minute search for the necessary money apparently has paid off.

Canadian Minister of Foreign Affairs, Lloyd Axworthy, in news broadcasts heard on Radio Canada International in mid-December made the announcement stressing the need for Canada to have an effective worldwide voice, saying “RCI has been an important asset for Canada . . . it would have been a great loss to see it disappear at the very moment we are undertaking the development of the Canadian International Information Strategy to plan how we can best use new technologies to deliver our messages, transmit our values and support both our trade and development assistance programs abroad.”

Initially the CBC said it couldn’t continue to provide the $16 million per year it takes to run RCI, especially when the CBC is having to deal with heavy slashes in its own budget. The game of “on again,” “off again” was played when, according to RCI “All 125 employees at Radio Canada International were issued layoff notices.” But Heritage Minister Sheila Copps has told the House of Commons that the government was looking for the money to keep RCI afloat. RCI’s one-year funding will be covered by the Department of Foreign Affairs and International Trade and the Department of Canadian Heritage. The balance, ac-
Martin Spina has logged over 100 stations in the three years he has been active at his New Jersey shack.

according to the news release from the Canadian government “will come from the Canadian International Development Agency and the Department of National Defence.” If RCI had closed, it would have ended 52 years of overseas shortwave broadcasting from Canada making it one of the few major countries without an international voice on shortwave.

We’ve been through this with RCI and the Canadian government before, of course. There was a close call a year ago, but RCI was saved thanks to a huge, worldwide outcry which produced thousands of letters, faxes and phone calls protesting the shutdown. That time the government found enough money to keep RCI going. In the year since then, nothing was done to fund the station on a more permanent basis.

The protests are being heard again, so let’s all hope for long-term continuous funding for RCI! Remember, your voice counts. Contact the Canadian Prime Minister, The Right Honorable Jean Chretien, Ottawa, Canada K1A 0A6, or e-mail him at <pm@pm.gc.ca> and The Honorable Sheila Copps, Minister of Canadian Heritage, Ottawa, Canada K1A 0A6, or e-mail her at <min_copps@pch.gc.ca>.

In a strange sidebar, for what is probably the first time in the 14-year history of this column, we received no loggings of RCI this month!

Channel Africa
In Trouble Again

Meantime, half a world away, the South African government’s international station—Channel Africa is also reported to be in trouble, again, due to severe funding problems. The staff has been severely reduced, and no one seems to know where any future funding will come from. Like Canada, South Africa’s inter-

Get A New Image

PC SSTV $149.95

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

PC HF Fax Plus $129

PC HF Fax Plus is a simple, yet comprehensive HF system that receives Fax, RTTY, CW, and AMTOR on an IBM PC or compatible. It includes an FSK demodulator, advanced signal processing software, tutorial audio cassette, and complete reference manual. Just plug the demodulator into a serial port, install the software and get text and vivid images on your PC.

Have It All For Only $199.95

For a limited time we are offering both software packages with a single FSK modem for under $200. This combination offer will let you send and receive the popular HF image and text transmission modes.

Call or write for our free catalog. Visa and Mastercard welcomed.

Software Systems Consulting
615 S. El Camino Real, San Clemente, CA 92672
Tel. (714) 498-5784 Fax. (714) 498-0568

HEAR Clear

SGC’s new PowerClear™ uses the power of advanced digital signal processing to clear noisy interference-plagued audio.

Eliminates noise from virtually any audio source—transceiver, SW receiver, scanner, CB radio, cellular and conventional telephones. Uses advanced DSP algorithms to let user tailor passband response to individual taste.

Factory preset filters optimize common voice, CW, and data modes. User presets store up to seven of your favorite combinations. You can see the clarity improve on the LED scale as you adjust and select settings.

“No Compromise Communications”

SGC Inc., SGC Building, 3737 S.E. 26th St. Bellevue, WA 98005 USA
P.O. Box 3726, 98009 Fax: 206-746-6384 or 746-7173 Tel: 206-746-6310 or 1-800-259-7331 E-mail: SGCMKTG@aol.com World Wide Web: sgeworld.com

CIRCLE 87 ON READER SERVICE CARD

CIRCLE 83 ON READER SERVICE CARD
national voice is a part of the national radio operation, in this case, the South African Broadcasting Corporation. This crisis will likely have been resolved for better or worse by the time you read this. We'll let you know what happens. Let's hope Channel Africa will survive! It's an important voice for Africa and the rest of the world.

Also from South Africa, but unrelated to the above, the predicted loss of Radio Oranje is now a reality. This domestic service which aired on 60 and 90 meter band channels is no longer on shortwave.

**Nigerian News**

On the plus side of things, Nigeria is working to get its international service in better shape. It recently reactivated 15120—a channel it used years ago when it had a well-received overseas service which could be heard in North American daytime hours. The Voice of Nigeria is again a reality. This domestic service which aired on 60 and 90 meter band channels is no longer on shortwave.

**Several Cameroon Stations Back Again!**

Cameroon has reactivated its outlet on 4850 from Yaounde. At one time there were a half dozen or so Cameroon regions which eventually fell into disrepair and left the air. Now several of them are active again, including 4850. Check for this one around 0500 in English and French. If you live in the eastern part of North America you should also be able to hear them in mid to late afternoons, except during the summer months.

A couple of months ago we told you that the Argentine Antarctic station Radio Nacional Archangel San Gabriel was back on the air. Well, now they’re gone again! It seems this one is active only during the time the Argentine Antarctic installation is staffed. When the staff goes back to Argentina for the winter, the station also goes off duty. It will return sometime in March, so you can start looking for them again pretty soon. They use 15476. During their last period of activity the schedule only ran until around 2000 which made them more difficult to log. In earlier years the schedule ran until around 2330.

Watch for the appearance of a new station from the Dominican Republic. Radio Monumental International is due to come on the air at some point down the road, running 1 kilowatt. They are likely to use 60 meters but 49 meters is also a possibility. No exact frequency or air date is known yet.

The US religious broadcaster WVHA is said to be in severe financial trouble and barely able to continue broadcasting. WVHA is the former WCSSN, which was established and formerly owned by Herald Broadcasting/Christian Science Monitor. It seems better than even money that WVHA will be gone (or close to it) by the time you read this.

Italy is in the process of upgrading their overseas service. When finished, RAI will be operating out of a new broadcast center and its signals will reach out to the world over new 500 kw transmitters and new, rotatable antennas.

**New Country On SW**

There is a new "country" on the air. The North American Shortwave Association recently added Abkhazia to its country list. Abkhazia is part of the former Soviet Republic of Georgia (Georgian SSR). Abkhazia broke away from Georgia in 1992 and, in 1994, its legislature adopted a new constitution making Abkhazia an independent republic. Once there was proof that Abkhaz Radio actually transmits from within that country (it operates from the capital Sukhumi with 5 kilowatts on 9495, scheduled from 0330 to 0900) the NASWA Country List Committee added Abkhazia to the list.

Incidentally, if you'd like to have a copy of the NASWA Country List you can get one by sending $2 to the NASWA Company Store, 705 Gregory Drive, Orsham, PA 19044. The NASWA list has become the standard for most serious shortwave broadcast DXers, at least in North America.

A reminder that the 10th annual SWL Fest will be held in Kulpsville, PA on March 13-15. The site, as it has for the past nine years, will be the Holiday Inn, right on the Sunnytike Pike, Kulpsville, (exit 31 of the PA Turnpike Northeast Extension-Lansdale Exchange)—about 40 minutes west of the Philadelphia airport. The weekend always features a number of very useful seminars on SWLing, scanning and other radio hobby subjects, a fun-filled banquet and other events. You can get more information by calling (215) 672-4398 (evenings).

Here's the usual reminder that your log reports and other input are needed and always welcome! Loggings should be double-spaced (at a minimum), listed by country and should include your last name and state abbreviation after each item. We also seek spare QSL cards, photos of shortwave broadcasters, photos of you and your shack, general news of shortwave station activities, station schedules and anything else you think would be of interest or that you want to pass along just to get rid of!

Here are this month's logs. All times are UTC which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 5 p.m. MST, 4 p.m. PST. Abbreviations such as SS, PP, FF, AA indicate the language of the broadcast (Spanish, Portuguese, French, Arabic, etc.) If no language notation is indicated, the broadcast was in, or is assumed to have been in English.

ALBANIA—Radio Tirana, 6140 at 0246 with classical music and ID. (Jeffery, NY) 6270, parallel 7270 and 9740 at 1930 with IS, unidentified language with talk by a woman, new, rotatable antennas.

ANGOLA—Radio Nacional, 9535 at 1754 in unidentified language with talk by a woman, ID. Co-channel interference from Radio France Int'l from 1759. (Jeffery, WA)

ANTIGUA—Deutsche Welle relay on 11795 in GG at 2209. (Barton, AZ)

BBC Relay to the Americas on 17840 at 1635. (Jeffery, NY)

ARGENTINA—RAE, 15345 at 2240 in GG with talk by a woman. (Jeffery, NY)

ASCENSION ISLAND—BBC to Africa, 6005 at 0307 with news. Also 17830 at 2014. (Jeffery, NY)
Another three year veteran is Barry Ephraim in Massachusetts who uses a Radio Shack DX-394 and a 75 foot longwire.

AUSTRALIA—Radio Australia, 5995 at 1330. (Northrup, MO) 5995 and 6060 at 1419 with Australian musicians. (Miller, WA) 6020 at 0850. (Hornstein, MI) 9860 at 1110 with news and sports. (Turnwald, FL) 11855 at 2200 with news. (Banner, FL) 17860/17795 at 2230 with "Network Asia." (Yohnicki, ON)

AUSTRIA—Radio Austria Int'l, 6015 (via Canada) at 0501 with news. (Miller, WA) 6155 at 0643 in GG. (Foss, AK) 1328 with song in Croatian, disco type music. (Northrup, MO) 1328 with song and news. (Northrup, MO) 1328 with song and news in EE. (Northrup, MO) 1328 with song in Croatian. (Northrup, MO) 1328 with song and news in EE and Croatian. (Northrup, MO) 1328 with song in Croatian. (Northrup, MO) 1328 with song and news in EE and Croatian. (Northrup, MO)

AUSTRIA—Radio Austria Int'l, 6015 (via Canada) at 0501 with news. (Miller, WA) 6155 at 0643 in GG. (Foss, AK) 1328 with song in Croatian, disco type music. (Northrup, MO) 1328 with song and news. (Northrup, MO) 1328 with song and news in EE. (Northrup, MO) 1328 with song in Croatian. (Northrup, MO) 1328 with song and news in EE and Croatian. (Northrup, MO)

BANGLADESH—Radio Bangladesh Int'l, 9795 at 0345 with commentary and music ID at 0400. (Rausch, NJ) VOA relay, 9785 at 0417 with shortwave program. (Foss, AK) RFPI, 7385 at 0415. (Turnwald, FL) 1103 in EE. (Jeffery, NY) Adventist World Radio, 5030 at 0441 in SS. (Foss, AK)

BELGIUM—Radio Vlaanderen Int'l, 9925 at 0840 with "Cabinet" type song. (Foss, AK) BENIN—ORTB, 4870 at 2228 in FF with romantic music. (Ephraim, MA)

BOTSWANA—Radio Botswana, 9640 at 0505 in SS with music and talk, Ids. (Yohnicki, ON) 0505 in SS with music and talk, Ids. (Yohnicki, ON)

BRAZIL—Radio Nacional Amazonia, 11780 in PP at 0224. (Miller, WA)

Radio Gaucha, Porto Alegre, 11915 at 2342 in PP with Brazilian pops. (Miller, WA) Radio Nacional, Macapa and Radio Anhanguera, Goiania simultaneously on 4915 at 2312 in PP with Brazilian pops and commercials. (Miller, WA)

Radio Brazil Central, Goiania, 4985 at 2315 with man in PP, Brazilian pops. (Miller, WA) Radiodifusora Roraima, 4875 in PP at 0235 with talk, music. (Jeffery, NY)

Radio Caracol Colombia, Bogota, 5075 at 2321 with Latin music, news, commercials in SS. (Miller, WA) 0400 with soccer. (Pedraza, OH) Ecos del Atrato, Quibdo, 5019 at 0115 in SS with talk about soccer. (Pedraza, OH)

Radio Brazil Central, Goiania, 4985 at 2315 with man in PP, Brazilian pops. (Miller, WA) Radio Nacional Amazonia, 11780 in PP at 0224. (Miller, WA)

BRAZIL—Radio Nacional Amazonia, 11780 in PP at 0224. (Miller, WA)

Radio Gaucha, Porto Alegre, 11915 at 2342 in PP with Brazilian pops. (Miller, WA) Radio Nacional, Macapa and Radio Anhanguera, Goiania simultaneously on 4915 at 2312 in PP with Brazilian pops and commercials. (Miller, WA)

Radio Brazil Central, Goiania, 4985 at 2315 with man in PP, Brazilian pops. (Miller, WA) Radiodifusora Roraima, 4875 in PP at 0235 with talk, music. (Jeffery, NY)

Radio Caracol Colombia, Bogota, 5075 at 2321 with Latin music, news, commercials in SS. (Miller, WA) 0400 with soccer. (Pedraza, OH) Ecos del Atrato, Quibdo, 5019 at 0115 in SS with talk about soccer. (Pedraza, OH)

Radio Brazil Central, Goiania, 4985 at 2315 with man in PP, Brazilian pops. (Miller, WA) Radio Nacional Amazonia, 11780 in PP at 0224. (Miller, WA)

BRAZIL—Radio Nacional Amazonia, 11780 in PP at 0224. (Miller, WA)

Radio Gaucha, Porto Alegre, 11915 at 2342 in PP with Brazilian pops. (Miller, WA) Radio Nacional, Macapa and Radio Anhanguera, Goiania simultaneously on 4915 at 2312 in PP with Brazilian pops and commercials. (Miller, WA)

Radio Brazil Central, Goiania, 4985 at 2315 with man in PP, Brazilian pops. (Miller, WA) Radiodifusora Roraima, 4875 in PP at 0235 with talk, music. (Jeffery, NY)

Radio Caracol Colombia, Bogota, 5075 at 2321 with Latin music, news, commercials in SS. (Miller, WA) 0400 with soccer. (Pedraza, OH) Ecos del Atrato, Quibdo, 5019 at 0115 in SS with talk about soccer. (Pedraza, OH)

Radio Brazil Central, Goiania, 4985 at 2315 with man in PP, Brazilian pops. (Miller, WA) Radio Nacional Amazonia, 11780 in PP at 0224. (Miller, WA)

BRAZIL—Radio Nacional Amazonia, 11780 in PP at 0224. (Miller, WA)

Radio Gaucha, Porto Alegre, 11915 at 2342 in PP with Brazilian pops. (Miller, WA) Radio Nacional, Macapa and Radio Anhanguera, Goiania simultaneously on 4915 at 2312 in PP with Brazilian pops and commercials. (Miller, WA)

Radio Brazil Central, Goiania, 4985 at 2315 with man in PP, Brazilian pops. (Miller, WA) Radiodifusora Roraima, 4875 in PP at 0235 with talk, music. (Jeffery, NY)

Radio Caracol Colombia, Bogota, 5075 at 2321 with Latin music, news, commercials in SS. (Miller, WA) 0400 with soccer. (Pedraza, OH) Ecos del Atrato, Quibdo, 5019 at 0115 in SS with talk about soccer. (Pedraza, OH)
at 2152 in EE with music program, ID, off at 2200. (Bannor, FL)

ENGLAND—BBC, 5990 at 1421 and 6100 via Antigua at 0234. (Miller) 7150 at 0524 with news. (Foss, AK) 12095 at 1335. (Northrup, MO) 17715 via Greenville at 2125. (Jeffery, NY)

EQUATORIAL GUINEA—Radio Naçional, 5004 at 0540 with hillife music. The signal was strong enough to cause QRM to WWV. (Paszkiewicz, WI)

FINLAND—Radio Finland Int'l, 11755 at 0845 with news and interviews in Finnish. (Foss, AK) 15400 at 1340 with “Compass North.” (Pedraza, OH)

FRANCE—Radio France Int'l, 13625 at 1325 in FF and 13640 at 1255 in FF. (Northrup, MO)

FRENCH GUIANA—RFO, 5055 in FF at 0400 with music and news; some interference. (Yohnicki, ON)

GABON—Radio France Int'l via Gabon, 4890 at 0530 in FF to Africa. (Silvi, OH)

RTV Gabonaise, Libreville, 4777 at 2111 with West African music, hyper man announcer in FF. (Quaglieri, NY) 2202 in FF, lots of classical music. (Silvi, OH)

Africa Number One, 9580 at 2200 in FF. (Ziegner, MA) 17630 at 1400 in FF with news, ID, music. (Yohnicki, ON)

GERMANY—Deutsche Welle, 6075 in GG at 0327. (Foss, AK) 6185 (via Antigua, Ed.) at 0501 with news. (Horton, AR) 11785 at 2008 with news. (Miller, WA) 13780 at 1325 in GG. (Northrup, MO)

GREECE—Voice of Greece, 7448 at 0330 with news in EE. (Wellesen, IL)

GUAM—Trans World Radio/KTWR, 11580 with ID and EE sign off at 1629. (Barton, AZ)

Adventist World Radio, 9370 at 1545 in Vietnamese to 1558 when EE ID and address. (Rausch, NJ)

GUATEMALA—Radio Mam, 4825 in SS at 2325 with marimbas, saludos and sign off announcement at 0000 "TGMMN, Radio Mam, cuatro mil ochenta cinco kilohertzx banda internacional de sesenta metros. Desde Caribian de Quetzaltenango Guatemala en la America Central." (Rausch, NJ)

Radio Tuzulutan, 4836 at 0200 in presumed Quechua, announcements and typical music. (Pedraza, OH) 4835 at 0250 in SS with talk, mention of Guatemala, music. (Jeffery, NY)

Radio Cultural, 5955 at 0430 with music, IDs and talk in SS. (Horton, AR)

Radio Buenas Nuevas, 4798.9 at 0130 in SS. (Hornstein, MI)

HONDURAS—Radio Internacional, 4930 at 0210 in SS with sports talk show. (Pedraza, OH) 0410 with music, IDs. (Horton, AR)

HUNGARY—Radio Budapest, 5905 at 0225 with DX program. (Paszkiewicz, WI) 6195 at 0337 with “Hungary Today.” (Foss, AK)

INDIA—All India Radio, 11620 at 1612 with woman announcer in Hindi, music. (Miller, WA) 13700 at 0232 with man in unidentified language, stringed music. (Foss, AK)

ISRAEL—Reshet Bet, 9388 at 2355 with music, commercials and news in Hebrew. (Ephraim, MA)

ITALY—RAI, 9675 at 2240 with discussion in II. (Ziegner, MA)

IRRS—Italian Radio Relay Service, 7125 USB at 0854 with UN Radio “Scope” program, light pops, ID at 0900. (Quaglieri, NY)

IVORY COAST—Radio Cote D’Ivoire, 7215 at 2250 in FF with blues and news. (Ephraim, MA) (it’s hard to tell the difference sometimes! Ed.) 2257 with African pops in FF. (Miller, WA)

JAPAN—Radio Tampa, 3925 at 0604 in J. (Foss, AK)

Radio Japan, 6120 (via Canada) at 1112. (Turnwald, FL) 9610 with news recap at 1129. (Barton, AZ) 11705 at 1430 on the art of Japanese barbering. (Wallesen, IL)

JORDAN—Radio Jordan, 13630 at 1800 in AA with music, talk. Many mentions of “Amman” at 1830. (Moser, IL)

KAZAKSTAN—Kazak Radio, 7143 at 0000, 0100, 0200 in Kazak, with world news, music. (Ziegner, MA)


MEXICO—Radio Mil, 6010 at 0430 with music, IDs, all in SS. (Horton, AR)

MONGOLIA—Radio Ulaanbaatar, presumed, on 4850 at 0929 with female-orange pops in CC punctuated by casual music. 9745 at 1945 in EE with Mongolian folk music and mailbag program, ID schedule and address before 2000 sign off. (Rausch, NJ)

MOROCCO—Voice of America relay, 17895 at 1627 with “Nightline Africa.” (Jeffery, NY)

NETHERLANDS—Radio Netherlands, 5995 (via Bonaire) at 0501 with news. (Miller, WA) 9845 (via Bonaire) at 2235 with news, weather, “Newsline.” (Pedraza, OH) 9895 at 0830 with news in Dutch. (Foss, AK)

NICARAGUA—Radio Miskut, 5770 in SS with ballads, announcements, ID to anthem and off at 2344. (Paszkiewicz, WI)

NIGER—La Voix du Sahel, presumed, 5021.44 with exotic African music, chatty male announcer in unidentified language. 2201 news and back to music at 2204. (Quaglieri, NY)

NIGERIA—Radio Nigeria, Kaduna, 4770 at 0500 with station ID preceded by about two minutes of drum. (Hornstein, MI) 0502 news. (Ephraim, MA) 0600. (Silvi, OH)

NEW ZEALAND—Radio New Zealand Int’l, 6100 at 0800 with weather and “Just a Minute” game show. (Pedraza, OH) 15115 at 2248 with a feature on the workings of the New Zealand legislature. (Jeffery, NY)

NORTH KOREA—Radio Pyongyang, 7115 heard at 2300 with ID, news, features. 11705 at 2315 with propaganda talk, music. (Pedraza, OH) 2256-2347 with news, music, IDs. (Bannor, FL)

Korean Central Broadcasting Station, 6100 at 0727 in KK. 9665 at 0205 with an impassioned speech. (Foss, AK)

NORWAY—Radio Norway Int’l, 7465 (weak) //5905 (very strong) at 2300 with...
weekly EK broadcast. The Fredrikstad transmi- tter site (7465 in this case) was scheduled to have closed by now. (Silvi, OH) (Radio Norway will continue transmitting from its other site. Ed)

PAKISTAN—Radio Pakistan, on new 6565 at 1220 in Hindi with sub-continental music, ID by woman at 1230 and news. (Rausch, NJ)

PAKISTAN—Radio Jang, 6150 now in this time slot.

PAPUA NEW GUINEA—NBC Port Morseby, 4890 at 0757 with soft rock, ID by woman at 0800 and local news. (Foss, AK)

PARAGUAY—Radio Nacional, 9735 in SS heard at 0227 with talk by man and woman. (Jeffery, NY)

PERU—Radio Tarma, 4775 in SS at 2219 with music. (Ephraim, MA) 0224 in SS.

PORTUGAL—Radio Portugal, 9570 in Asian language with discussion of US

PHILIPPINES—Voice of America relay, (Jeffery, NY) in SS with lively music, man announcer, IDs. and talk by a man. (Jeffery, NY)

Radio Atlantida, 4790 at 0229 in SS with ID music and woman announcer. (Jeffery, NY)

Radio Galeão, 5020 at 1054 in SS with lively music, man announcer, IDs. (Jeffery, NY)

PHILIPPINES—Voice of America relay, 7150 in Asian language with discussion of US politics. (Barton, AZ)

PORTUGAL—Radio Portugal, 9570 at 0430; also parallel 6150 now in this time slot. (Paszkiewicz, W2) 15200 at 1800 in PP, seemingly news and live reports. (Moser, IL)

ROMANIA—Radio Romania Int'l, 15250 in FF heard at 1854 with sports coverage, ID. (Jeffery, NY)

RUSSIA—Golos Rossi, 7300 in RR at 0445. (Barton, AZ)

Voice of Russia, 4920 at 1942 with children's stories; //5940. (Quaglieri, NY) 5930 at 0452 with a Russian folk song. Also 7330 at 0531 with "Music At Your Request." (Foss, AK)

6150 at 0449 with IS, 1812 Overture. (Miller, WA) 9545 at 0449 with "Music At Your Request." (Foss, AK)

TUNISIA—RTV Tunisienne, 11730 at 0852 in AA with phone interview. (Foss, AK)

UNITED ARAB EMIRATES—UAE Radio, Dubai, 15395 at 0751 in AA. (Foss, AK) 1330 with EE news, Lessons from the Holy Koran. (Pedraza, OH)


VATICAN—Vatican Radio, 7360 at 0430 in FF to Africa with African-type music. Also 9500 at 0828 in unidentified language. (Foss, AK) 9600 at 2248 with features about abortion and crime. (Jeffery, NY)

VENEZUELA—Ecos del Torbes, 4980 at 0245 in SS with music. (Jeffery, NY)

Radio Tachira, 4830 in SS at 0244 with talks, music, ID. (Jeffery, NY)

YUGOSLAVIA—Radio Yugoslavia, 7115 at 0125 music, ID, frequencies. (Pedraza, OH) 2358 with IS, news in EE. (Miller, WA) 9500 at 2213 in presume Serbian with talk, ID, music. (Jeffery, NY)

ZANZIBAR (TANZANIA) Radio Tanzania, Zanzibar. 11734 at 1912 with talk in Swahili, mention of Zanzibar, flute music. (Paszkie- wicz, WI)

That's it! A mighty cheer for the following who did the good thing this month: Al Quaglieri, Albany, NY; Lee Silvi, Mentor, OH; Rick Barton, Phoenix, AZ; Miguel A. Pedraza, Jr., Springfield, OH; Don Davis, Pittsfield, ME; Barry S. Ephraim, Worcester, MA; Howard Moser, Lincolnshire, IL; Marty Foss, Talkeetna, AK; Hugh A. Hornstein, Muskegon, MI; Elmer W. Wallesen, LaGrange Park, IL; Ed Rausch, Cedar Grove, NJ; David Bannar, Ormond Beach, FL; Dave Jeffery, Niagara Falls, NY; Tom Turnwood, Brandenton, FL; Larry Horton, Bentonville, AR; Tricia Ziegner, Westfield, MA; Sheryl Paszkiewicz, Manitowoc, WI; Michael Yohnicki, London, ON; Mark Northrup, Gladstone, MO and Michael J. Miller, Issaquah, WA. Thanks to each of you for some great logs.

Until next month, good listening!
Bill as the “World's Smallest, Mobile Highway Information System,” the BearTracker BCT-10 packs potent performance in a small, easy-to-use package. The BearTracker comes in a durable, hard plastic case and is designed to be operated in a vehicle, with readouts and controls mounted in a logical manner for a driver to see and use. For this review I used the BCT-10 indoors as well to compare it to my other scanners. I found it to be a worthy receiver.

The BCT-10 operates from 12 Vdc negative ground only, so an inexpensive 115 Vac to 12 Vdc adapter must be used to power it indoors. These adapters are available at most electronics retailers as well as RadioShack (part number 273-1652).

**Features**

The BCT-10 scanner has police, highway patrol and NOAA weather frequencies pre-programmed at the factory. It has several operating modes that allow you to receive all or some of these frequencies. You can select a particular U.S. state or Canadian province to scan or you can select all frequencies. When a particular state or province is selected, there is an alarm feature which triggers a visual and audio alarm to indicate that highway patrol mobile extenders are in use nearby. The audio portion of this alarm can be muted. The alarm feature does not work when all frequencies are selected.

You can also select highway patrol frequencies only or local police frequencies as well as highway patrol by pressing the mode key. Small LEDs indicate the current operating mode.

**Accessories**

Included with the BCT-10 are:
- Comprehensive owner’s manual/operating guide written in English and Spanish, with easy to read and understand sections on each aspect of use and performance.
- Windshield mounting bracket with hardware.
- Visor clip mounting bracket which slips over the unit and has a strong spring clip for secure attachment to visors.
- BCT-10 rubber duck type antenna.
- Cigarette adapter power cord to power the unit from your vehicle’s battery.
- Flexible mobile antenna.
- Straight (fused) power cord for connecting to your vehicle’s fusebox.

**Ease of Use**

The BearTracker BCT-10 is designed to be clipped to your vehicle’s visor, plugged into the cigarette lighter receptacle and turned on for immediate use. You can do exactly that. It is as simple-to-operate as any scanning receiver I’ve seen. The owner’s manual/operating guide has step-by-step instructions for mounting the BCT-10, mounting the mobile flexible antenna and for using the various modes, features and functions of the unit. The owner’s manual/operating guide has excellent illustrations and is written in lay terms that should enable anyone to fully appreciate and use all the features and functions.

**Performance**

In order to fairly judge the BearTracker’s performance, I used my venerable RadioShack PRO-2004 and Bearcat...
XLT200 scanners as comparison yardsticks. I used an antenna splitter so I could simultaneously monitor the BearTracker and one of my other scanners from the same antenna. And I also used different antennas under varying conditions to test the full range of the BearTracker.

The BearTracker BCT-10 performed admirably in all frequency ranges when compared to my base station PRO-2004 and handheld Bearcat XLT200. The BCT-10 and my other scanners would find the same frequency, start scanning again and find the same frequency again. The BCT-10’s built-in two second delay allowed both sides of most conversations to be heard.

Police frequencies in my area cover the spectrum, including the 42, 155 and 460 MHz bands. The BCT-10 easily shifted between bands, finding everything my other scanners found. The BCT-10 has an alarm feature that indicates highway patrol activity nearby.

Mobile extenders make highway patrol vehicles a mini broadcast station by allowing the officer to transmit and receive from the radio he or she is carrying, back to equipment mounted in the vehicle which then retransmits over the normal radio frequency. Mobile extender frequencies in my state (California) are 154.905 MHz. When this frequency is detected by the BCT-10, indicating highway patrol activity nearby, the alarm function is activated. There is also a handy signal strength meter indicating the proximity of the mobile extender activity. The owner’s manual/operating guide explains this in detail with excellent illustrations.

The BCT-10 comes with two antennas; a five inch “rubber duck” type antenna with a 90 degree BNC connector and a flexible mobile antenna, also with a BNC connector. As expected, I found the flexible mobile antenna supplied with the BCT-10 to be a better performer than the rubber duck. The duck worked well, but missed some of the weaker signals and generally lacked the sensitivity of the longer antenna. The flexible mobile antenna is approximately 10 feet long and uses shielded coax type cable. It has two small, clear suction cups attached for mounting to glass. You can route this antenna around the windshield or interior of a vehicle and adjust it for maximum performance. I found this antenna to be quite useful and functional. It also performed well with my other scanners.

I found the BCT-10 to be reasonably free of electrical interference. Signals in the 39–46 MHz range were somewhat affected by ambient noise from the vehicle’s electrical system and close proximity to electrical devices indoors, but all other bands worked well. The solution to this is to adjust the squelch level, reducing the sensitivity of the receiver. Weaker signals may be lost however. Unfortunately many state highway patrol agencies use the 39–46 MHz band. This interference is not unique to the BCT-10, as I have experienced this same interference with other scanners using other antennas and in different vehicles.

The BCT-10 uses the industry-standard BNC connector which makes adding accessory antennas and coaxial cables easy. Troublesome or unwanted frequencies or open carriers (static with no signal) can be locked out by pushing the lockout key. Frequencies can be restored by simply holding down the lockout key until two beeps are heard.

A frequency of interest can be monitored continuously by simply pushing the hold button. To resume scanning, simply push the hold button again.

Local NOAA (National Oceanographic and Atmospheric Administration) weather conditions and forecasts are a push of a button away.

“Local NOAA (National Oceanographic and Atmospheric Administration) weather conditions and forecasts are a push of a button away.”

"The installed speaker provides crisp, clear audio that can be heard over most wind and road noise. There is an external speaker jack that accepts standard 1/8 inch plugs. The BCT-10 has enough power to drive an external speaker for adequate volume.

The BCT-10 Warranty

The BearTracker BCT-10 comes with a one-year limited warranty covering defects in materials and craftsmanship. Details are in the owner’s manual. There is even a toll-free customer service number available (800-297-1023) for assistance.

Bearcat Scanner Club

The Bearcat scanner club can be found at <http://www.bearcatl.com/bearcat/> or it can be accessed from the Uniden Homepage at <http://www.uniden.com>. We are not endorsing this scanner club, but merely bringing it to your attention as part of Uniden’s service and affiliations.

Impressions

I like it! The BCT-10 performs the tasks it was designed for quite well. It has limitations, such as no 800 MHz capability and no means to program frequencies in, however many people only want to scan police and highway patrol—the BearTracker does that quite well. The BearTracker BCT-10 could easily be someone’s first or only scanner. You can literally take it out of the box, slip on the rubber duck antenna, plug it in to your vehicle’s cigarette lighter and have an “instant scanner” with no programming necessary and no knowledge of scanning. Many of the frequencies that people monitor are already pre-programmed.

Having no frequency readout to identify agencies takes a little getting used to, but after a time, you find yourself listening closely to the broadcasts and looking for familiar street names or highway numbers to identify the agency. I didn’t find this to be particularly troublesome.

I consider myself an advanced scanner enthusiast, used to programming frequencies in and searching for new ones, yet there were enough modes, features and functions available with the BCT-10 to keep me interested. For the traveler, trucker, novice or experienced scanner enthusiast, the BearTracker BCT-10 provides real time information on police and highway patrol activity and weather conditions in a rugged and easy-to-use package. The comprehensive owner’s manual/operating guide provides clear, easy-to-understand explanations and instructions with excellent illustrations.
AR8000
All Mode Wide-Band World Band Radio Receiver

The Ultimate Handheld Receiver! "WELCOME TO THE WORLD OF THE AR8000".
It incorporates the latest PLL technology and offers a multitude of features including true carrier re-insertion SSB (CW) demodulation with 50Hz frequency steps. 4 level alpha numeric LCD indicates the frequency, signal strength, band scope and more. Selectable squelch system, auto-mode, auto-band-plan, serial communication port are all standard. Internal ferrite antenna offers high performance reception below 2MHz.

When frequencies are entered, ALPHANUMERIC comments may be stored along with frequency, mode & attenuator status simplifying the job of recalling and identifying memory channels. There are a variety of scan/search commands to link banks, scan by mode, programmable delay scan, priority, auto memory store, step offset and a programmable power save circuit to increase the duration of operation from the NiCads. Keypad illumination extends to the side panel keys and may be switched in a number of ways. Illumination "Permanently On" for mobile operation is possible, a specially selected heavy duty regulator has been fitted to ensure the receiver will continue to operate reliably even with the illumination permanently On.

Main Features
- Frequency Coverage 500 kHz - 1900 MHz
- All mode reception AM, NFM, WFM, USB, LSB & CW
- True carrier reinsertion and specific SSB filter with non-offset frequency readout
- 1000 memory channels
- 20 search banks
- Priority channel
- Frequency pass
- Rotary tuning dial
- Step sizes programmable between 50 Hz & 999.995 kHz in 51 Hz increments
- Scan & search speed up to 30 increments per second
- Signal strength meter
- Band scope
- Backlit LCD, Keypad & Side panel
- Battery save facility
- Separate controls for volume, squelch & dial
- Attenuator
- Keypad beep on/off
- Keypad lock
- Top panel 3.5mm earphone socket
- Monitor switch
- Password protected banks
- Programmable scan & search including free, delay, audio, level & mode
- Select scan list
- Computer control
- EEprom memory backup (no battery required)
- Two users modes: Beginner and Expert

Supplied with: NiCads, AC Charger, Hand strap, Belt Clip, Semi-flexible antenna, DC lead with cigar plug, Comprehensive operating manual with over 50 LCD illustrations.

Options: SC8000 Soft Case, AR8000 INF interface, SAC8000 (Scout Adaptor Cable), Desk stand, DS8000 (Speech inversion descrambling chip), MA500 antenna, ScanCat GOLD Software, RCS8000 Software, RCSI-SoftControl 2.0, LA320 active loop antenna, QS200 Mobile bracket

SAC8000 Adapter Cable
Once the SAC8000 is installed, the AR8000 can easily be connected to the OptoElectronics Scout™. Any frequency captured by the Scout™ instantly tunes the AR8000 receiver.

Purchase an AR8000 and buy a SAC8000 for just $9.95...save $20!

AR7000 • COMING SOON TO A DEALER NEAR YOU!

100kHz - 2GHz, DSP Receiver

SSE PSU101 Adjustable Desk Charger/ Power Supply
12VDC Version
This quality, custom-designed combination desk charger and regulated power supply unit is perfect for convenient 'Base Station' use of your handheld scanner at home or office!!
- Securely holds scanner in proper position
- Charges radio's internal NiCad w/out overcharging
- Powers radio from standard 117VAC house current

For: FIARMATE HP1000E/200E/HP2000
AOR AR1000NU/1500/AR2000
YUPITERU MV7700/MV7100
UNIDEN BEARCAT BC50XLT/BC55XLT/BC70XLT/BC100XLT/BC200XLT/BC205XLT
ALINCO DJX1
ICOM ICR1 Handheld
REALISTIC-TANDY-RADIO SHACK
PRO35/PRO38/PRO41

SSE PSU101TA Desk Charger/Power Supply
9VDC Version
- 9 volt version for popular REALISTIC (RADIO SHACK) handheld scanners and others that require a 9 volt DC supply
- All the same quality & features of the PSU101 12 volt version above!
For: REALISTIC - TANDY - RADIO SHACK
PRO34/PRO37/PRO43 and others.
NEW from LOWE!!!
The Professional Earphone LEP300

This earphone is designed to fit comfortably to one ear, the band behind the ear holding it securely in place. This design permits very low fatigue levels over long periods of use. The frequency response is optimized for communications use.

Impedance: 8 ohms
Response: 400Hz to 9kHz
Sensitivity: 85dB
Power Rating: 250mW Max.
The Ham Column

GETTING STARTED AS A RADIO AMATEUR

QRP: Ham Radio's Destiny?

Is high-power (QRO) operating becoming politically incorrect? And if it is, should you join the ranks of die-hard QRPers (low-power aficionados) today so you’ll be an old hand when the FCC reduces the maximum amateur power output level to 25 watts?

Sound impossible? Maybe, but examined over time, the evidence seems to be mounting. At a ham club meeting the other day, some ham friends and I were discussing the latest FCC mandate that hams who run more than 50 watts output must measure their station’s RF field density at various distances from the antenna.

This rule, mandated by Congress, may not have been intended to apply to hams. Now the ARRL is leading an effort to discuss the latest FCC mandate that hams who run more than 50 watts output must measure their station’s RF field density at various distances from the antenna.

This rule, mandated by Congress, may not have been intended to apply to hams. Now the ARRL is leading an effort to change the rule or exempt ham operators. But until things are squared away, the rule remains in effect. And because most hams run 100 watts output or more, most of us are affected. Add to this the problem of an increasing number of threats to our amateur bands (especially at UHF and microwave frequencies), restrictive antenna covenants, RF-safety crusaders, lawsuit-happy neighbors from hell, zoning boards, the dramatic increase in wireless data and satellite data/phone systems—you name it! It’s not inconceivable that some future FCC may significantly reduce amateur power output levels from its lofty 1500 watt PEP to something more futuristically conservative.

Anyway, today’s crop of avid QRPers aren’t waiting around—they’re running “flea power” right now, all day long, surfing the bands among the medium and high-power players. If you’re like minded—or if you simply want to prepare for a possible QRP amateur future, this month’s column will point you toward a variety of resources.

Getting the Gear

Finding a rig for QRP work is pretty easy. There are many QRP-only rigs available, new and used. Look for Heathkit’s long-popular “HW” series and Ten-Tec’s Argonaut line-up. MFJ makes several single-band QRP CW transceivers, and if you’re into kit building, check out Wilderness Radio’s Sierra and the kits from S&S Engineering, Oak Hills Research and Ten-Tec. There are many others. Collectively, the ham magazines have published hundreds of home-brew “QRP stuff” in the past 10 years, so if you want to delve into “homemade radio,” QRP is a good place to start.

If you don’t want to invest in a dedicated QRP rig, it’s relatively easy to reduce the power output of most modern solid-state rigs. The drive control can usually be used to reduce the RF output...
to within acceptable QRP limits. Your rig’s instruction manual will probably have more information.

Whether you’re running 1.5 or 1500 watts, use the best antenna available. If you don’t have a beam antenna, a dipole or loop will do just fine. Whatever the antenna, make sure it’s in good shape electrically, and use good-quality feed line. Many serious QRPers use open-wire line because of its low-loss characteristics.

**QRP Clubs and Awards Galore!**

Many clubs exist to serve the interests of QRPers, and new ones seem to sprout weekly! One of the oldest and most prominent is the QRP Amateur Radio Club International (QRP ARCI). For information about QRP ARCI and a sample copy of its publication, *QRP Quarterly*, write to Mike Bryce, WB8VGE, P.O. Box 508, Massillon, OH 44648-0508. Other clubs include the Michigan QRP Club, the Colorado QRP Club and the G-QRP Club, based in England.

Awards are very popular among QRP clubs and QRPers. QRP ARCI issues QRP versions of many popular awards (as does the ARRL) and several exclusive awards such as the 1000-mile-per-watt award. Contests are also popular among low-power enthusiasts. About a dozen QRP-only contests are held throughout the year, and many mainstream contests such as Sweepstakes, ARRL International DX, CQ Worldwide, and others have QRP classifications.

There are also many books on the subject. You need look no further than the ARRL Publications Catalog (or your favorite amateur radio products dealer)—it’s loaded with books on QRP operating and QRP gear/construction. Check out *QRP Power, QRP Classics, Doug DeMaw’s QRP Notebook*, and *Your QRP Operating Companion*, for starters.

**QRP on the Web**

When it comes to QRP information and resources, the internet is second to none. The following URLs will send you to hundreds of QRP-related pages: <http://qrp.cc.nd.edu/qrp-l/> and <http://www.fix.net/~jparke/website1.html>.

Whether you’re a veteran QRPer or you’re trying it for the first time, why not share your thoughts (and a photo of you at your QRP station)? Write to me at the ARRL, Department PCN, 225 Main Street, Newington, CT 06111. In the meantime, even if the FCC doesn’t mandate reduced ham power levels, the QRPers will be listening for your flea-power amateur signal.

**QRP Hardware/Kit Sources**

<table>
<thead>
<tr>
<th>Ten-Tec</th>
<th>1185 Dolly Parton Pkwy, Sevierville, TN 37862</th>
<th>615-453-7172</th>
</tr>
</thead>
<tbody>
<tr>
<td>624 Kits</td>
<td>171 Springlake Drive, Spartanburg, NC 29302</td>
<td></td>
</tr>
<tr>
<td>MFJ Enterprises</td>
<td>P.O. Box 494, Mississippi State, MS 39762</td>
<td>601-323-5869</td>
</tr>
<tr>
<td>Oak Hills Research</td>
<td>P.O. Box 734, Los Altos, CA 94023</td>
<td>415-494-3806</td>
</tr>
</tbody>
</table>

**For More Information on these radios and where you can purchase them, call us a 1-800-259-0959, or visit us on the web at http://www.wirelessmarketing.com**
Scanning The Globe

MONITORING THE 30 TO 900 MHZ "ACTION" BANDS

The Rule of Antenna Height

One of the most important rules in VHF and UHF listening is that the higher your antenna, the more you will hear. While things such as antenna gain and cable length may have a factor in the formula, it is best to get it up as high as practical. Towers aren't cheap, but they do an excellent job in getting the antenna up high—and safely. An inexpensive option would be to erect a mast, guying it sufficiently for adequate height, that is if you are putting only one or two antennas on it.

Most scanner antennas are erected on rooftops and that's a good place for them. However, if you live on the outskirts of a city and you want to listen primarily to services in that city, you may want to put up a directional yagi antenna pointed at the city to hear the bulk of the action. The yagi (rhymes with "foggy") antenna is a directional antenna that points at its target; they also are known as beam antennas. You might even want to consider mounting a yagi antenna on a TV-type antenna rotor so you can rotate the antenna, pointing it at various cities if they are within range of your listening post. If the signals you want to hear are all around you, forget the yagis and stick with the usual omni-directional scanner antennas.

Another consideration is whether the bulk of your monitoring is on one band. If most of your listening is on VHF high band (138-174 MHz), you may want to scrap the all-band scanner antenna and buy an antenna designed for that band. You could trot off to your local radio shop and see what professional antennas they have in stock, but you will pay "professional prices" for the privilege. You'll make out much better heading off to the local ham radio shop and checking out a ham antenna. For instance, a 2-meter VHF ham antenna designed for 144-148 MHz will work fine in the 138-174 MHz band and a 440-450 MHz ham antenna will be perfect for 450-512 MHz monitoring. And you'll be paying ham prices, too, not "professional" prices.

If your antenna is mounted on a five-foot mast, consider raising it on a 10-foot mast, or adding a 10-foot mast to the 15-foot mast to get it up a bit higher. It may just make a difference in the signals you are trying to hear. But don't use cheap coaxial cable because all what you would gain in antenna height will be lost in a lossy cable as the signal is lost even before it reaches the radio. Spending a little bit more for better cable will pay off with better signals.

Antenna Checkup

In most areas of the country, it's starting to thaw out about now. Spring isn't too far away. And that means it's a good time to check out your antenna farm before the active months of spring, summer and fall come along with lots of radio activity.

Exposed connectors and damaged elements won't help your listening when you need to be tuned in. If there are connectors on the end of your coaxial cable where they attach to your antenna, they should be covered to keep out rain. Commercially available sealer is excellent stuff—it wraps around your connector like putty to keep the elements away. Most radio stores stock this item for a few dollars. In the absence of such a sealer, try at least to wrap a good (not cheap) electrical tape around the connector. It won't be as good, but it will help some. By keeping out the elements, you will enhance not only your listening, but also the life of your antenna system as you ward off corrosion.

You also should inspect your antennas for damage. Some antennas seem to attract overweight birds and the elements either bend under their weight or break off entirely, especially during winter months. Wind also can cause stress on antennas and their mounts. Ensure that your antenna is still securely attached to its mast or tower by giving it a little shake. If needed, tighten the mounts.

If you have a tower or a ground-up mast for your antenna farm, visually inspect it in case winter and the effects of ice or wind caused damage. Be sure the tower is tightly bolted between sections and the ground base is in good condition. If guy wires are attached, be sure everything is snug.

If you take these precautions now, your antenna farm should give you lots of listening pleasure throughout the active scanning months in warmer weather, not to mention for years to come with the same regular preventative maintenance.

FBI Ops

Tuning in federal government frequencies is a favorite scanning target for many. I know I have spent many hours listening to feds. Often I receive requests for specific FBI frequencies, especially the new FBI frequencies. I'd love to comply, but as the FBI has implemented a digitally-encrypted system nationwide, new frequencies popped up all over the VHF high band segment for federal government users.

At one time, FBI radio systems generally were restricted to the upper end of the 163 MHz segment, as well as the lower and middle portions of the 167 MHz segment. When digital encryption was implemented, it wasn't uncommon to find testing pop up in areas such as 170 MHz. Now with the FBI's desire to keep their operations secure, they are spreading to the high end of the 167 MHz segment, where they are much less likely to be picked up.
the FBI might pop up there. There is an available frequency in the creet frequencies in ranges such as 162, MHz. Now, you can find the FBI on dis-

162-174 MHz federal band, it's possible 163, 165, 167, 168, 172 and 173 MHz. If there is an available frequency in the 162-174 MHz federal band, it's possible the FBI might pop up there.

The FBI also used to have a vast sys-
tem of UHF links in the 406-420 MHz band to tie together repeaters on VHF. It seems as though they have gradually phased out those transmitters in favor of other technology.

Their use of available frequencies ranges widely from one area to another it seems, so it is impractical to list certain frequencies that would be in use anywhere in the United States. It should be noted, however, that no matter where you live, it is possible to hear FBI communications on 167.5625, which is a nationwide mutual-aid type of channel for FBI units. It typically is referred to as channel 4 in most regional systems. While a lot of FBI communications are digitally en- crypted these days, there still is some clear voice if you look around. And if you have a CTCSS decoder, if a 167.9 Hz tone shows up on a VHF high band frequency, there is a very good chance that it is the FBI that you are hearing.

On Your Tows

Tow trucks can be fun to monitor, especially during bad weather conditions. However, if you punch into your scanners all the frequencies allocated to the automobile emergency radio service (which is for tow trucks and auto clubs), you may be missing half the action!

Here are the frequencies reserved for privately operated tow trucks: 150.815, 150.830, 150.845, 150.860, 150.875, 150.890, 157.470, 157.485, 157.500 and 157.515. In addition, the following fre-
cuencies can be used by auto clubs providing emergency road service for members: 150.905, 150.920, 150.935, 150.950, 150.965, 452.525, 452.550, 452.575 and 452.600. The four UHF frequencies are simplex only—without repeaters—meaning the base stations and mobiles operate on the same frequency, unlike most wide-
area UHF radio services. Tow operators also are eligible for automobile emergency frequency in the 851-866 and 935-940 MHz bands. However, the place you’ll find most tow trucks aren’t generally on automobile emergency radio service frequencies. Most use business band fre-
frequencies because it’s easier for radio shops to set up their customers this way. Because any profit-making enterprise can use busi-
ness radio service frequencies, tow truck operators are included in this group. While some tow trucks may use frequencies in

POPULAR COMMUNICATIONS
FREE READER SERVICE CARD
ENTER MONTH AND YEAR OF THIS ISSUE

Month | Year
--- | ---
1 | 11
2 | 12
3 | 1
4 | 10
5 | 9
6 | 8
7 | 7
8 | 6
9 | 5
10 | 4
11 | 3
12 | 2
13 | 1

Was this issue of Pop' Comm addressed to you? 
Yes ☐ No ☐
Do you own a CB radio? 
Yes ☐ No ☐

Name ___________________________
Company Name _______________________
Address ___________________________
City __________________ State __ Zip ___

(please note: This card expires 3 months from cover date.)

Mail to: Popular Communications, Reader Service Dept., P.O. Box 5115, Pittsfield, MA 01203-5935

WE DON'T MAKE SCANNERS OR THE ICOM IC-R8500 RECEIVER
WE MAKE THEM BETTER -

DELTACOMM I-8500 Communication Manager for the ICOM IC-R8500 communication receiver. With speed as a design goal DELTACOMM’S QUICK LOG function will log signal level, frequency, mode, date and time. DELTACOMM’S ACTIVITY LOG function automatically records and calculates total spectrum usage time.

Quick unique operation stores all frequencies found active and then automatically skips those frequencies during the remaining search cycles. This feature eliminates redundant logging.

Visit our Internet Web Page or Phone/FAX us for program features, new product releases and pricing schedule. DELTACOMM’S ACTIVITY LOG provides for ICOM R9000, R7100, R7000, R71, R72, IC-735 (features vary with type of radio). Also check out our DELTATONE 2.0 repeater programmer.

http://www.execpc.com/~deltacom

Delta Research
Box 13677 - Wauwatosa, WI 53213 - FAX/Phone (414) 353-4567

CIRCLE 69 ON READER SERVICE CARD
March 1997 / POPULAR COMMUNICATIONS / 65
the VHF low band range between 30 and 50 MHz, as well as those frequencies available for businesses in the 151 and 154 MHz ranges, many operate on wide-area repeater systems in the 461-465 MHz band. In larger metro areas, you will find tow trucks using the 470-512 MHz T band, the 851-856 repeater band, the 856-866 MHz trunked band, or the 935-940 MHz trunked band.

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

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

Write On

What questions do you have about scanning the VHF and UHF bands? How about sending in a list of your favorite frequencies? And while you are at it, let’s see a picture of your listening post. Write to: Chuck Gysi, N2DUP, Scanning the Globe, Popular Communications, 76 N. Broadway, Hicksville, N.Y. 11801-2909, fax to (516) 681-2926, or e-mail to <SCAN911@aol.com>.

NEWS FLASH!

Uniden Announces TrunkTracker BC235 XLT Scanner

Uniden America Corporation has announced breakthrough technology in scanning systems with their new TrunkTracker BC235 XLT scanner, the world’s first scanner capable of identifying selected trunk control channels and tracking channel changes. Uniden’s 300-channel, programmable handheld scanner provides users with uninterrupted monitoring capabilities.

One of the biggest obstacles in the scanner industry has been the increasing use of trunking radio systems in business and public service throughout the U.S. making it nearly impossible to track a conversation as it moves within a trunked system from repeater to repeater. “Uniden’s breakthrough technology takes scanning radios to a whole new level,” Tony Mirabelli, Uniden’s vice president of marketing said. “Instead of having to initiate a new search each time conversation breaks and switches channels, TrunkTracker seamlessly follows the conversation from channel to channel.”

Uniden applied years of experience in developing and manufacturing scanners to identifying the technologies necessary to make a substantial difference in the scanner market. “This full-featured scanner with its unique trunk tracking capabilities has raised the standard for scanners in the industry,” Mirabelli said.

TrunkTracker will be available in retail outlets in March with a suggested retail price of $429.95. The TrunkTracker technology will also come in a base unit scanners at the BC895 XLT. It will be available in June with a price of $499.95. Additional features of this product include:

- Twelve bands, 10 banks—includes 12 bands with aircraft and 800 MHz plus service scan, as well as 10 banks of 30 channels useful for grouping similar frequencies and selectively scanning these groups.

- Preprogrammed Service Search—Provides users capability to goggle through police, fire, emergency, aircraft, marine and weather frequencies.

- Trunk Scan and Scan List—Makes it possible to scan for activity on one trunk group or creating a list of multiple groups to scan.

- Trunk Search—Allows users to search for and monitor all groups within a trunked system.

- Trunk Lockout—Enables users more selective monitoring giving them the option to lockout selected groups from the trunking system.

- Trunk Delay—Applies a five second delay to trunking groups so that both sides of a conversation can be heard even if the trunking frequencies change between replies.

- CRX120 Battery Charger—Allows users to keep the spare battery charged at all times.

- Ten Priority Channels—Enables users to keep track of activity on top priority channels while monitoring other transmissions.

- Manual Channel Access—Lets users go directly to any channel without stepping through other channels.

- Memory Backup—Retains entered frequencies more than three days in the event of power loss.

- Programmable Search—Allows users to find new frequencies in any of the scanner’s bands.

- Channel Lockout Key—Enables users to skip over channels they don’t currently want to hear.

- Battery Packs—Includes two rechargeable NiCd packs.

Uniden America Corporation, the North American subsidiary of Uniden Corporation, Japan, manufactures and markets wireless consumer electronics products, including cordless and cellular phones, internet appliances, pagers, business telecommunications systems, satellite receivers and other personal communications devices. Based in Fort Worth, TX, Uniden America sells its products through dealers and distributors throughout North, Central and South America.
More Maritime Changes

Globe Wireless (formerly KFS World Communications) based in Half Moon Bay, CA, is a maritime communications service provider. Already operating through an extensive network of HF coastal stations all over the world known as Global Radio Network, Globe has recently added additional coastal stations to its network. Perth Radio, Australia, call sign VIP, is in full operation now. Central Radio & Telegraph Co., known as “Rogers City Radio,” call sign WLC, on the Great Lakes, has recently made an agreement with Globe Wireless to join the Global Radio Network, according to a release by Globe Wireless. Rogers City Radio is located in the Northeast corner of the lower peninsula of Michigan and offers coverage of the US and Canadian Great Lakes and St. Lawrence Seaway areas. Existing radio equipment reportedly is to be used by WLC for Globe Wireless services, so their existing sitor frequencies should be in use.

Telkom SA, the South African telephone company, and Barbados External Telecom (BET), the Barbados telephone company, have also recently signed an agreement with Globe Wireless. Cape Town Radio, call sign ZSC, and Barbados Radio, call sign 8PO, will also join the Global Radio Network. Cape Town Radio is located near the Cape of Good Hope at the southern end of the African continent and offers coverage of the Indian and the South Atlantic Oceans. Barbados Radio, located in the Eastern Caribbean, will offer coverage of both the Caribbean Sea and the central Atlantic Ocean. ZSC should now be in operation and 8PO will be up and running soon, if not already, according to Globe Wireless releases. These join coast stations Awanui Radio/ZLA (New Zealand); Bahrain Radio/A9M (Arabian Gulf); Chatham Radio/WCC (pending FCC approval); Göteborg Radio/SAB (Sweden); Hawaii Radio/KEJ (Kahalelani, Hi, USA); Palo Alto Radio/KFS (San Francisco); San Francisco Radio/KPH (pending FCC approval); Slidell Radio/WNU (New Orleans); and St. John’s Radio/VCT (Newfoundland, Canada). KEJ was originally known as Kahalelani Radio while VCT came in as Grand Banks Radio and has also been listed as Tors Cove Radio.

Globe Wireless also is very “SWL friendly” and encourages reception reports from utility listeners. They send out a nice QSL card for correct reception reports which should contain the following information:

- Date and Time (UTC) of your reception.
- Call Sign (QRA) of the Globe Wireless network station heard; Either the actual frequency (QRG), or ITU channel number; Mode of transmission heard (SITOR, CW, etc.); Signal strength (QSA) and quality; Any interference (QRM) heard on frequency, or on adjacent channels; Did you hear traffic or idle signals? If traffic, whom were they working?; Model number of receiver and type of antenna used; and Location (QTH) of your receiving station.

Send your reception reports for all Global Radio Network stations to: Globe Wireless, Attn.: Engineering Department, One Meyn Road, Half Moon Bay, CA 94019 USA.

Globe Wireless SITOR transmitters can be easily recognized. They broadcast a unique “sitor free signal” pattern, followed by the station’s call sign, when the frequency is not in use. A new user of the Globe Radio Network recently observed is Crowley Maritime with their extensive fleet of tugs.

More News

The U.S. Air Force returned to Entebbe, Uganda in central Africa to support humanitarian efforts in Rwanda, according to a release by the Air Force News Service. The 615th TALCE (Tanker Airlift Control Element), this one near the airfield at Prince Sultan Air Base, Saudi Arabia. (U.S. Air Force Photo by Staff Sgt. Angela Stafford)

Exterior of a Tanker Airlift Control Element (TALCE), this one near the airfield at Prince Sultan Air Base, Saudi Arabia. (U.S. Air Force Photo by Staff Sgt. Angela Stafford)
Wendell Benson (NY) copied the final HF CW broadcast from VCS (top) and the farewell CW MARS broadcast (bottom), within 5 minutes of each other."

York Air National Guard, at Niagara Falls, NY (call sign SKIER xx), from here to the ice. The ANG has been gradually assuming the air transport mission from the U.S. Navy Support Force Antarctica providing logistic support to the U.S. Antarctic Program operated by the National Science Foundation's Office of Polar Programs. These ski-equipped aircraft fly DEW Radar & Operation DEEP FREEZE (the annual Antarctic summer re-supply of McMurdo Station, Antarctica) support missions. They can be heard working "MAC Center" (McMurdo) on 8998.0 and 13251.0 USB, as well as on the USAF Global High Frequency System (GHFS). Those in the northern hemisphere should remember the seasons are reversed there, and as we head into spring, Antarctica is preparing for winter.

By this time sellers of hobby related books should have several updated Klingenfuss Publications offerings; the combined broadcast/utility book Shortwave Frequency List, the 1997 Guide To Utility Radio Stations, and the 1997 Super Frequency List on CD-ROM.

In last months column was a picture courtesy the U.S. Coast Guard Navigation Center internet web site. Due to space restrictions I didn't get the URL on with the picture. This site is at: <http://www.navcen.uscg.mil/marcomms/cgcomms/cgimages/>, they have a lot more of NMF here.

Reader Mail

Wendell Benson (NY), caught final CW transmissions sent Sept. 30th, 1996, from VCS, Halifax CG Radio and five minutes after it's conclusion, the final MARS (Military Affiliated Radio System) CW transmission. Wendell notes the elimination at VCS affected their HF capability on September 30th, so the final message to all stations was sent. VCS had never worked that vessel before, and so it was the vessel's first and last QSO with VCS. In addition to the closure of CW, VCS 'moved' from where it had been located at the Ketch Harbour station that same morning. They are now collocated with the Vessel Traffic Services center at the Shannon Hill site in Dartmouth, Nova Scotia. Robert reports what is left at VCS is MF SSB on 2182 kHz, 2514/2118 kHz, 2582/2206 kHz, 2103.5 kHz, and broadcast frequency 2749 kHz; and VHF FM R/T. A further loss to maritime utility fans occurred when VCS lost their HF capability on September 30th, so did CGF, Ice Halifax, as they were using VCS's transmitters. CGF use to be heard working icebreakers in season on 6504.0 USB. Ice Halifax no longer has any radio equipment whatsoever.

Perry F. Crabill (VA) has been logging beacons since 1990. His log currently stands at an impressive 1,234 stations with his 'best catches' being Easter Island and Hao Atoll in the Pacific using a Drake R-8 receiver, an inverted 100 foot inverted "L" antenna, and a RSM model 105C three-foot LW loop.

Al Hemmalin (RI) is another beacon fan. After two days of recent activity he had 242 repeat calls, five new calls and two unidentified. Al reports he usually has at least 300 calls a month except for July which has the poorest propagation and most atmospheres. Al uses a Drake R-8A receiver with a LF Engineering L-400B active antenna.

UTE Logging's SSB/CW/RTTY (BAUDOT/ARG/etc All Times in UTC

200: HXF, NDB Hartford, WI at 0400. (BU)
201: AFB, NDB Naples FL at 0555. (WP)
206: VNC, NDB Venice FL at 1950. (WP)
208: YSK, NDB Sandilands, NWT, Canada at 0636, 1,094 miles. (AH)
209: HOE, NDB Homerville GA at 1440. (WP)
212: UCF, NDB Cienfuegos, Cuba at 0840, 1,443 miles. (AH)
Abbreviations Used for Intercepts

AM  Amplitude Modulation mode  ann  Announcement  BC  Broadcast  CW  Morse Code mode  EE  English language  FF  French language  GG  German language  ID  Identification  LSB  Lower Side Band mode  OM  Male Operator  pp  Phone Patch  RR  Russian language  SS  Spanish language  tfc  Traffic  USB  Upper Side Band mode  w/  With  wkg  Working  wx  Weather  YL  Female Operator  4FG  4-Figure coded groups (i.e. 2951)  5FG  5-Figure coded groups (i.e. 29517)  5LG  5-Letter coded groups (i.e. IGRXJ)  //  Parallel  

219: AY, NDB Waycross, GA at 0557. (PC)  521: TVX, NDB Greencastle, IN heard at 0420. (BU)  2932: Tokyo Radio wkg Singapore 4 w/radio check in USB heard at 1308. Moved down here from 6655, adv this freq primary, 6655 secondary. (DS)  3208: P: Russian Navy Kaliningrad, RUS at 2130 in CW w/channel marker. (AB)  3365: JMJ, Tokyo Radio, Japan in 120/576 Fax at 1043 w/wx map. (EW)  3485: New York Radio at 0200 w/aviation wx in USB /6604/10051. (BU)  4043: FDF8, French Air Force, Nice, F at 2157 in CW w/VVV de FDF8. (AB)  4232: FUF, French Navy, Fort de France, at 0130 in 75 baud RTTY w/RY’s. (BU)  4271: CHP, Halifax, Canada, at 0140 in 75 baud RTTY w/wx. (BU)  4279.5: Unid station sends “V 8L6S 8L6S DE 2RC8” in CW at 1114. Strong. (DS)  4283: XSV, Tianjin Radio, PRC, sends “CQ CQ DE XSV XSV XSV QRU IMI QXQ 4 8 AND 12 MHZ BK K” in CW at 1306. (DS)  4295: SXA34: Greek Navy, Piraeus, GRC at 2339 in CW w/VVV de SXA34. (AB)  4328: JOS, Nagasaki Radio, Japan, sends “CQ CQ DE JOS JOS QXQ 4 MHZ K” in CW at 1321, fast. (DS)  4331: 4XZ: Israeli Navy, Haifa, ISR at 2243 in CW w/VVV mkr. (AB)  4343: WLO, Mobile Radio, at 0140 in FEC w/traffic list. (BU)  4350: TBB5, Turkish Navy, Ankara, TUR at 2331 in CW cgl TBDB (collective callsign for all Turkish warships) (AB)  4570: HZN46, Jeddah Meteo, Saudi Arabia at 0145 in 100 baud RTTY w/wx. (BU)  4577: Unid CW station sends “V ABZY ABZY DE 6PXJ 6PXJ” at 1110, w/a rate of 4 times per minute. Still strong at 1327, nil hrd on 6785 where this same station hrd the night before. (DS)  4665: Various MOSSAD transmissions over 2 days, at 0345 YL w/“Sierra Yankee November Romeo 161800’, later at 2245 ‘SYN 729180500’, next day at 2245 ‘SYN 9180500’. (SM)  4666: Tokyo Radio wkg Japan Air 50 in USB at 1125, advises of ATC clearance to climb & maintain flt lvl 370. (DS)  4770: Korean spy numbers station, strong carrier noted up in AM at 1344, then at 1400 into Radio Pyongyang interval signal for about a minute, then instrumental music until 1406, fol by YL ann message #1570 w/group count of 77. Then passed 5FG msg in 3/2F format. Was /5870. (DS)  5026: NIGHTWATCH 01: 0620 USB cgl uncld callword on ‘Z140’, no joy, QRM from broadcast station. (Ed.)  5100: Melbourne Meteo, AUS, AXM32, in 120/576 Fax at 0940 w/wx map. (EW)  5142.6: NMB: UN Group Charleston at 0014 cgl Y9V, B4U comes up, adv re tcf Y9V passed earlier (app in the ‘green’), confirms 7,000 on the fuel. NVY: USCG Grp Mayport, Fl at 0517 wkg “cutter” req they advise when
their boarding team is back on board & they are enrt to SAR, adv Air Sta Miami has a Falcon on-scene. Both in USB. (Ed.)

5320: Unid at 2200 in CW w/id 197, 5FG's, ended w/pos 000. Short zero's. (AB)

5339: Unusual MOSSAD transmission heard at 1900 UTC repeating ‘Tango Mike Sierra 2 2’. (SM)

5395: Various snts heard at 0253 in USB w/SS comms between ‘Monterey,’ “Mazatlan” & various others. Mexican Police/Army? (DW)

5405: JM12, Tokyo Meteo, J, at 0856 in 120/576 Fax w/good quality wx chart. (DW)

5425: FOXTROT at 0035 in USB wkg 1/2 re intercepting CANYON (?) 401/403 -were to conduct Level 1 query on track, next air contact was at 3138N 6255W, altitude 24500, course 180. FOXTROT assumed control 102/103 Homplate at 0040, finally ID’d track as P-3 w/engs clean. (TB) (USN Link-11 coordination net -Ed.)

5493: SJM 6212 at 0609 in USB wkg Brazzaville, departed JNB 0238, ETA Lagos 0751, passed ARAKI 0557 est STM 0647 F350 (747F reg N741SJ). (TO)

5517: KLM 568 at 0043 wkg Tripoli, was told to contact Benghazi Control on 126.3. then Tripoli cig Cairo w/no reply. Tripoli ATC at 2345 wkg several a/c here, also, Tripoli calling Nairobi & Addis Ababa w/no reply. Not listed in any of the normal sources. All in USB. (TB) (great snag. This is probably AFI-RDARA, formerly listed on 5519. -Ed.)

5529: IBERIA 3103 at 0037 in USB wkg Santo Domingo in SS. (TB)

5538: GULF OPS at 0039 in USB wkg unit flt enrt Muscat from Bahrain. (TB)

5541: GDR 1 wkg Stockholm Radio at 0235 in USB, pp to Polar Air Cargo Dispatch regarding Ramstein Wx (probably Boeing 747-100F w/pos). (KW)

5604: EL AL 811 at 0350 in USB wkg Rainbow Radio, CAN w/phone patch to El Al, Tel Aviv, who then patched him to Maintenance for talk in Hebrew. (TB)

5643: Brisbane Control, AUS at 0731 in USB advising Air Force 1 w/U.S President on board, to descend to 25000 ft. (EW)

5673: Beijing Volmet in USB at 1257. was YL computer generated voice. (DS)

5690: At 0055 63ALPHA reports to CAM-SLANT that they had acquired the target & he was over the boat & it’s course of 360 degrees at 30 knots. 63A gave him posn & adv boat was now dead in the water. At 0215 63A was 12NM from Kilo 6 & asked PANTHER to notify local authorities that it looked like the boat was heading to Kilo 6. 63A adv boat still DIW & they thought that they had been spotted by someone on the shore with a searchlight. At 0310, 63A reported that he was on the ground at Kilo 6, boat was abandoned in the harbor, subjects had fled the area, local authorities & 63A's DELTA team was chasing them. At 0325 63A reported that the DELTA team was back on board with one of the members having been hit by a rock and possibly suffering a broken collarbone. Req

37C ck area for the bales possibly dumped, but that whatever he did, he shouldn’t land due to ‘hostiles’. (TB) CG 6040 & ComSta New Orleans at 2200, w/posn report as 25,47N 81,55W & flt ops normal. (KW) SHARK 03, USCGC Harriet Lane (WMEC-303) at 0206 wkg 32C w/posn. At 0833, Culdrose Op’s, Royal Navy Air Station Culdrose, UK wkg unid a/c w/ck's. (Ed.) All in USB mode.

5700:4: Magic Carpet Sierra at 0200 in USB “supporting” data comms w/A5C. Also heard in the net: HABITAT (now NAS Whidbey Is.) M8, E8M, and ERJ. (JU)

6282.5: ELRL9: M/V Bornes at 2357 in ARQ, a 88,950 DWT Libyan-flagged oil tanker, w/ships status report via CUL after sending selcall KPCV (3560 for CUL, Lisbon Radio, Portugal). (Ed.)

6339: Unid rpt IGJ41, KIGJ42, NIGJ43 in 100 baud RTTY at 0150. (BU) (this is Italian Navy Augusta w/CARB, -Channel Availability system, list availablity, should read: IGJ41 / IGJ42 / IGJ43, normally on 6335.5.Ed.)

6348: LOR, Argentine Navy in 100 baud RTTY at 0150. (BU)

6415: 7TF4, Boufarik Radio, Algeria at 0026 w/CW marker. (WP)

6637: IFO97 at 0506 wkg Houston LDC. departed 7PB (0455/57, ETA YQX 0754, pax 92, fuel 53.7. Fine Air 434 at 0543 wkg Miami, LDC, dep BOG 0545/0551, ETA MIA 0834, dep fuel 58.5, selcal DK-GJ. Both USB. (TO)

6640: New York Arine (NA-CC-LDOC) at 2233 in USB wkg DHL 541 w/pp to “Sunshine Ftl ctrl” re 10,000 lb oil drilling bit & property loading. At 2238, w/kg United 952 w/selcal ckt AG-JS (767 N654UA); at 2312 w/American 54 on the ground at Miami for selcal ck AH-KQ (MD-11 reg N1755). All in USB. (Ed.)


6655: Honolulu in USB at 1309 wkg Korean Air 018, United 852, and Korean Air 020. At 1310 Tokyo (booming) selcal’ed Japan Air 838, but no joy. At 1311, Honolulu back again wkg Japan Air 60. (DS)

6660: YL repeating ‘CI02’, new frequency. (SM) (for those new to these stations they are widely believed to be Israeli Intelligence (MOSSAD), this b/cast is also known as the Phonetic Alphabet numbers station, they feature a YL/FM & a true phonetic call sign plus a “1” or “2”, 1 = Message follows, 2 = Message follows; CIO w/2 means msg follows -Ed.)

6679: Tokyo Volmet in USB at 2012. (DS)

6699: Yuzhno-Sakhalinsk: ATCC, Russian Far East at 0546 in USB wkg Khabarovsk ATCC & “Sov Gavan” (Sovetskaya Gavan) in RR w/flight info on unid a/c. (DW)

6750: Foxtrot Tango at 0243 in USB wkg Kilo/Gulf w/reports of poor ping pong. (TB)

6785: SS 5FG at 0400 in AM. (WBS)

6815.6: Cutter Hamilton (sounded like) posn 17.19N 65.19W (sounded like) wkg commns, both voice & ANDVT w/various unids, later hrds: SHARK 39 elg SHARK 67. No joy. (JJ)

if you enjoy radio communications you'll love...
7880: DDK3, Hamburg Meteo at 0812 in tones, at 2135 YL w/5FG’s for 740. (SM)
7858: At 2130 YL/GG repeating ‘Golf Kilo’ range safety net, but has also been used for
8446: UFM3, Nevelsk Radio, CIS in CW at Globe Wireless. (Ed.)
8395: WBN5981, ‘Monitor’ (tug) at 0619 in topol rdo., no joy here. (Ed.)
8392: UWBS, Ukrainian fishing trawler/ARQ, a 157,696 DWT tanker w/msg ck. (Ed.)
8383: SWWQ, M/T Argonaftis at 2226 in Festival. (Ed.)
clg/wkg WOM for R/T traf, this is the former
8267: C6KP, T/SS Island Breeze heard at music box at 0900, at 0905 YL/GG w/5FG’s audio. (PS)
8187: SS/f W/5LG’s at 0210 in AM, poor peake here in the past. (TB)
ably be faster. Have hrd CAMSLANT Chesa-

7890: SS 5FG at 0300 in AM. (WBS)

7843: HAS, Bangkok Radio, Thailand in USB at 1230, gives EE wx info at 1235. (EW)
7852: CNT: Chilean Navy, Magallanes at 0120 in 100/425 RTTY w/"MIKID MIKID DE CNT". (Ed.)
828: Tokyo Volmet, YL, heard at 1243; Honolulu Volmet (OM) at 1101, both USB mode. (DS)
840: Bombay Radio, India in USB at 1257, Bombay Control clg Air India fl to Bangalore. (EW)
8433: Holololu: (CEP-1/2 MWARA) at 0225 in USB wkg Air Trans 610 w/2242 posn, adv contact SFO on 5574; at 0226 wkg Delta 1562 w/2262 posn, req for FL 340, contact SFO on 5574. (Ed.)
855: Transbrasil flt. 794 heard at 0537 in USB wkg Manaus w/ARP F350 & selcal ck JK-DS. (TO)
861: Russian Volmet channel, YL/RR hrd signing off w/"Khabarovsk Mitoyor" at 1219 in USB. (DS)
9294: West Indian 424 at 2330 in USB wkg BWIA Operations reporting that they’re hav-
ing problems getting in contact w/Piarco ATC. Ops reported that Piarco had lost complete power. (TB).
8933: Charin 808 wkg Cedar Rapids hrd at 0208 in USB, departed SBSV 0120 eta SBGR 0323. (KW)
8939: Varig 855 at 0333 in USB wkg VARIG LDOC, Belem, w/ARF at P310, ETA GRU, also GRU actual wx report. (TO)
8983: USCC CAMSLANT Chesapeake at 2030 in USB w/hurricane info to CSB. (BU)
9003: Royal Jordanian 054 at 2030 in USB w/call to Alia Ops—no reply (TB)
9007: QE 898 wkg Trenton Military at 2203 in USB, req wx for Greenwood & Halifax ETA 2230. (KW)
9023: SAM 417 at 2122 in USB wkg Andrews VIP w/pp to Andrews meteo. (Ed.)
10075: Gulfstream Air 800p wkg Houston Radio at 2209 in USB, ppto Island Air & SEL-AL check “BG-OR”. (KW)
10262: YL/EE w/3/FG’s in AM at 1129, “repeat count 215, count 215” at 1130. (DS)
10551.3: GFL23, Bracknell meteo, England at 2010 in 75 baud RTTY w+wx. (BU)
10780: CLEARANCE-1 at 1735 in USB wkg “Fisher” (Cape Radio) for rdo ck, was in support of STS-80. (Ed)
10798: French Forces Fort De France, Martinique, RFLI in ARQ-E3 at 1103 idle in 912/425. (KW)
11080: YKP28, SANA Damascus, Syria at 1545 in 50 baud RTTY w/wx in AA. (BU)
11112.2: Unid, Possibly Middle East or North Africa at 0447 in USB, Arabic comms between 3 stations, weak but readable. (PS)
11175: Teal 19 wkg Ascension at 0056 in USB, phone patch to Miami Monitor, passed coded wx observation #2 report. (KW) (TEAL xx calls signs are WC-130E/H aircraft from 53rd Weather Reconnaissance Squadron (AFRES), Kessler AFB; Ms; Miami Monitor is National Hurricane Center (NHC), Corral Gables, Fl.-Ed.)
11181: Hickam wkg McClellan at 0130 in

THE MONITORING MAGAZINE
March 1997 / POPULAR COMMUNICATIONS / 71
Stations, ITU NBDP Channels and Frequencies Used by Globe Radio Network

<table>
<thead>
<tr>
<th>ITU Channel No.</th>
<th>Shore Xmit</th>
<th>Ship Xmit</th>
<th>Call Sign</th>
<th>ITU Channel No.</th>
<th>Shore Xmit</th>
<th>Ship Xmit</th>
<th>Call Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>401</td>
<td>4210.5</td>
<td>4172.5</td>
<td>WNU/A9M</td>
<td>1203</td>
<td>12580.5</td>
<td>12478.0</td>
<td>KFS</td>
</tr>
<tr>
<td>402</td>
<td>4211.0</td>
<td>4173.0</td>
<td>ZLA</td>
<td>1206</td>
<td>12582.0</td>
<td>12479.5</td>
<td>VIP</td>
</tr>
<tr>
<td>403</td>
<td>4210.5</td>
<td>4172.5</td>
<td>WNU</td>
<td>1210</td>
<td>12584.0</td>
<td>12481.5</td>
<td>VIP</td>
</tr>
<tr>
<td>404</td>
<td>4212.0</td>
<td>4174.0</td>
<td>WLC</td>
<td>1219</td>
<td>12588.5</td>
<td>12486.0</td>
<td>WNU</td>
</tr>
<tr>
<td>406</td>
<td>4213.0</td>
<td>4175.0</td>
<td>VIP</td>
<td>1231</td>
<td>12594.0</td>
<td>12492.0</td>
<td>A9M</td>
</tr>
<tr>
<td>416</td>
<td>4217.5</td>
<td>4180.0</td>
<td>VCT</td>
<td>1244</td>
<td>12601.0</td>
<td>12498.5</td>
<td>ZSC</td>
</tr>
<tr>
<td>408</td>
<td>4214.0</td>
<td>4176.0</td>
<td>ZSC</td>
<td>1257</td>
<td>12607.5</td>
<td>12505.0</td>
<td>WNU</td>
</tr>
<tr>
<td>418</td>
<td>4218.5</td>
<td>4181.0</td>
<td>ZLA</td>
<td>1260</td>
<td>12610.5</td>
<td>12508.0</td>
<td>VCT</td>
</tr>
<tr>
<td>N/A</td>
<td>4300.4</td>
<td>4154.5</td>
<td>KEJ</td>
<td>1265</td>
<td>12611.5</td>
<td>12509.0</td>
<td>KEJ</td>
</tr>
<tr>
<td>602</td>
<td>6315.0</td>
<td>6263.5</td>
<td>ZLA/WLC</td>
<td>1291</td>
<td>12624.0</td>
<td>12522.0</td>
<td>SAB</td>
</tr>
<tr>
<td>603</td>
<td>6315.5</td>
<td>6264.0</td>
<td>KFS</td>
<td>1347</td>
<td>12652.0</td>
<td>12555.0</td>
<td>SAB</td>
</tr>
<tr>
<td>625</td>
<td>6326.0</td>
<td>6275.0</td>
<td>KEJ</td>
<td>1602</td>
<td>16807.5</td>
<td>16684.0</td>
<td>ZLA</td>
</tr>
<tr>
<td>626</td>
<td>6326.5</td>
<td>6275.5</td>
<td>SAB</td>
<td>1606</td>
<td>16809.5</td>
<td>16686.0</td>
<td>VIP</td>
</tr>
<tr>
<td>627</td>
<td>6327.0</td>
<td>6276.0</td>
<td>WNU</td>
<td>1610</td>
<td>16811.5</td>
<td>16688.0</td>
<td>V/H/A9M</td>
</tr>
<tr>
<td>632</td>
<td>6329.5</td>
<td>6283.5</td>
<td>VCT</td>
<td>1619</td>
<td>16816.0</td>
<td>16692.5</td>
<td>ZSC</td>
</tr>
<tr>
<td>802</td>
<td>8417.0</td>
<td>8377.0</td>
<td>ZLA</td>
<td>1620</td>
<td>16816.5</td>
<td>16693.0</td>
<td>A9M</td>
</tr>
<tr>
<td>803</td>
<td>8417.5</td>
<td>8377.5</td>
<td>KFS</td>
<td>1647</td>
<td>16829.5</td>
<td>16706.5</td>
<td>KFS</td>
</tr>
<tr>
<td>819</td>
<td>8425.5</td>
<td>8385.5</td>
<td>VIP</td>
<td>1657</td>
<td>16834.5</td>
<td>16711.5</td>
<td>WNU</td>
</tr>
<tr>
<td>825</td>
<td>8428.5</td>
<td>8388.5</td>
<td>WNU</td>
<td>1673</td>
<td>16842.5</td>
<td>16719.5</td>
<td>KEJ</td>
</tr>
<tr>
<td>830</td>
<td>8431.0</td>
<td>8391.0</td>
<td>ZSC</td>
<td>1676</td>
<td>16844.0</td>
<td>16721.0</td>
<td>SAB</td>
</tr>
<tr>
<td>837</td>
<td>8434.5</td>
<td>8394.5</td>
<td>KEJ</td>
<td>2203</td>
<td>22377.5</td>
<td>22285.5</td>
<td>KFS</td>
</tr>
<tr>
<td>838</td>
<td>8435.0</td>
<td>8395.0</td>
<td>SAB</td>
<td>2246</td>
<td>22399.0</td>
<td>22307.0</td>
<td>A9M</td>
</tr>
<tr>
<td>1202</td>
<td>12580.0</td>
<td>12477.5</td>
<td>VCT</td>
<td>2264</td>
<td>22408.0</td>
<td>22316.0</td>
<td>ZSC</td>
</tr>
</tbody>
</table>

Please note the channels are not yet known for 8PO

USB, passed data traffic to each other. (KW)

11214: Andrews VIP wkg CASEY 01 (KC-135 CINSTRAT) on F-064 for a signal ck., and current pos.: 55N 80W, heading: SW at 1640 in USB. (JJ) Bandaes Hotel Art (E-3WACS) at 1625 in USB (ART = Aerial Radar Technician) wkg Trenton Military w/pp RAYMOND 24 (Tinker AFB) 'Radar Maint', after, Bandaes Hotel MCC (Mission Crew Commander/Coordinator) wkg same re mission options. (Ed.)

11217: Bayonne Global, Military Traffic Management Center, Command Emergency Comms Center, Bayonne, NJ at 1704 in USB wkg RAIDER 48 w/apt pp to Dobbins AFB CP, QSY 15016. (Ed.)

11224: UMBRELLA at 1511 in USB wkg Thule w/request for primary/secondary frequencies for NIGHTWATCH (TB)

11281: United 190 wkg Honolulu heard at 0142 in USB, posn report & Selcal ck “AF-DH”. (KW)

11327:9: OZUS, MFA Copenhagen, Denmark in TWINPLEX at 1214 w/SLG’s, 200/400. (EW)

11342: San Francisco AReic (CPE-CC-LDOC) at 2123 in USB selcall’ing & clg Polar Tiger 89, no joy. (Ed.)

11460: SAM 26000 (VC-137B) wkg. Andrews VIP on F-295 for Hickam AFB wx at 0200z at 2315 in USB. (JJ)

11480: SHAZAM wkg ROADRUNNER w/ARP at 1700 in AM! (PS)

11518: "RFFA", MOD Paris, F at 1742 in ARQ-M2 200/340 relaying tlc for "RFFVAY" French AF, Bosnia to "RFFBYYM" French Army, Bosnia Herzegovina, Communications Division (NATO). Circuit FDX. (PS)

11634: Ascension GHFS: Ascension Island at 0238 in USB att to work U9J, no joy, QSY 8964. (Ed.)

12193: KUL MFA w/crypto tlc rptd on 10584 in 75 baud RTTY at 1410. (BU) (Russian Brotherhood/SOUD station on link 00142 w/tlc to KUL-Ed.)

12196: WFO MFA w/crypto tlc to MIG in 75 baud RTTY at 1445, MIG answers on 13382 in CW, WFO sometimes on 14736. (BU) (thought to be the Brotherhood regional relay station at Havana, WFO reportedly is Managua -Ed.)

12314: YL/EE w/Mike Delta” repeating from 0900-0905, then ‘attention, 241, 248 groups, 296, 79 groups, then into 5FG’s. (SM) (believed to be a German BND-German intelligence service), numbers station, usually in USB -Ed.)

12700: Guangzhou Radio, China, XSO, in CW at 1052 w/mkr. (EW)

12747: Mossad, YL repeats “CIO2” in phonetics in USB at 1448. (DS)

12748: IRM, unid in CW at 0001 w/marker fol by “free radio medical advice service and members service on 8/12/16/22 Mhz common k. (WP) (CIRM, Rome, Italy who provide free medical advice to seamen -Ed.)

12830:7: XFM, Manzanillo Radio, Mexico at 0020 w/CW marker; at 2350 w/what apps to be hand sent wx. (WP)

12864: Kaoshuang Radio, Taiwan, SSW in CW at 1153 w/mkr. (EW)

12923: HLW2, Seoul, S. Korea at 0015 w/CW marker, (WP)

13008: JOR, Nagasaki Radio, Japan at 0013 w/CW marker. (WP)

13054: Kaliningrad Radio, CIS, UIW in 50/170 RTTY at 1013 msrs in RR. (EW)

13067:5: UAI3, unid (prob Russian) at 0006 w/CW marker, (WP) (Nakhodka Radio, Russia -Ed.)

13264: Shannon Volmet, Ireland in USB w/forecast for Santa Maria, Lisbon hrd at 1239. (EW)

13306: New York: (NAT-A MWARA) at 1803 in USB wkg Artia Italia 6584 w/postrep, 1802 33N/40W, FL370, est 33N/50W 1913, 33N/60W next. (Ed.)

13366: SYD, Kenya 1900 in 30 baud RTTY w/aero tlc. (BU)

13375: Lincolnshire Poacher at 1901 in USB, YL/5FG. (Ed.)

13376:5: Spanish Guardia Civil, unid location, at 1818 in ARQ w/weak SS tlc. (Ed.)
Ship heard working WLC with wx observations. Vessel was in Lake Michigan. PFC is from Steve McDonald, Canada.

13463: Unid w/5LG’s in ARQ at 1330. (BU)
13570.9: DFN57L1, PIAB Bonn, Germany in 96/425 FEC-A at 1010 w/German nx. (EW)
13927: CLP, MFA Havana, Cuba at 1050 w/msgs to ships in RR RTTY 50/170. (EW)
13972.2: CLP, MFA Havana, Cuba at 1050 w/msg in SS 75/400 RTTY. (EW)
14011.6: 'KRN' Loc Unk 1736 RTTY 75/535 suspected Russian Dipto/Intel station with 1 message of 140 5LG’s for recipient ‘KRN’ +20dB signal. (PS) (B’hood link 00135 to YBU -Ed.)
14115: HWN, French Navy, Paris at 1315 in 75 baud RTTY w/RY’s. (BU)
14181: CLP, MFA Havana, Cuba at 1050 w/miscellaneous in SS 75/400 RTTY. (EW)
14266.5: CNM78, Morocco, w/MAP nx/AA in 75 baud RTTY at 1600, signal had spurs up/dn 10 kHz. (BU)
14388.5: SAF, Tripoli, Libya w/RY in 50 baud RTTY at 1300. (BU)
14870: P6Z, MFA Paris, F at 1500 in FEC-A 192/4000 op chat, DE P6Z. (Ed.)
20034.1: CLP, MFA Havana, Cuba at 1050 w/circulars in SS 75/400 RTTY. (EW)
20140: YBU MFA w/crypto tcf rptd on 17480 in 75 baud RTTY at 2230. (BU) (B’hood link 00148 to YBU -Ed.)
20556.5: RFGW, MFA Paris, F in FEC-A at 1226 w/5LG’s & idling 192/425. (EW)
20560: SAQ88, JANA Tripoli, Libya w/EE, 50 baud RTTY at 1645. (BU)
22461.3: FUJ, Noumea Radio, New Caledonia at 0554 in 75/850 RTTY w/RY line count. (EW)
22575.5: PKX, Jakarta Radio, Indonesia in CW at 0641 w/mkr. (EW)
26150: Unid, Holland, at 2147, pagers, also on 26250 & 26850. (AB)

Contributors

(AB) Ary Boender, Netherlands; (AH) Al Hemmalin, RI; (BU) “Bunky”, IL; (DS) Dave Sabo, South Korea; (DW) Dave Wright, TX; (Ed.) Ye editor, OH; (EW) Eddy Waters, Australia; (JJ) Jeff Jones, CA; (KW) Ken Windyka, MA; (PC) Perry Crabbil, VA; (PS) Paul Scalzo, Quebec, Canada; (SM) SM in the UK; (TB) Tim Braun VA; (TO) Tony Orr, VA; (WBS) W. Browder Swetnam, PA; (WP) Walt Petersen, FL.

Thanks to all for some great logs!
"Doublet" antennas form a class of two-pole radiators, of which the half wavelength horizontal dipole is probably the most famous member. These antennas offer a good compromise between performance and cost, and are low in cost to boot. Some of them even offer gain, so are doubly-good doublets.

Most people are well aware of the structure of the half wavelength horizontal dipole (Figure 1). The dipole is half wavelength long (dimension "B" in Figure 1), and is fed in the center. As a result, the two halves of the antenna ("A" in Figure 1) are each quarter wavelength, or if you prefer, A = B/2.

The length of these elements is dependent on the frequency of operation. The frequency is usually specified as the center of the band of interest. For example, if you are interested in the 31 meter shortwave band (9.5-10 MHz), then select 9.75 MHz as the best compromise (unless, of course, you favor one end of the other). The textbook length in feet would be B = 492/FMHz, but that is not practical because of end effects and the velocity factor of the wire used to make the antenna. As a result, a modified version B = 468/FMHz is normally used. Of course, we can also write A = 234/FMHz to obtain the correct length of each half.

The dipole has a "figure-8" radiation and reception pattern, with the main lobes (i.e. greatest sensitivity) perpendicular to the wire in the horizontal direction. There are nulls—minimum sensitivity, off the ends of the wire.

Antenna gains are measured by comparing them with a known source. A theoretical construct called an isotropic radiator is used by antenna engineers. The 0 dB (or dBi when isotropic) point is the radiation of the isotropic source. All other antennas are measured with respect to this 0 dB source. A dipole provides about 2.1 dBi gain. In some cases, antennas are measured against dipoles, in which 0 dBd = 2.1 dBi.

The Big-D Doublet

The Big-D antenna provides about 3 dBd, or 5 dBi. It has the advantage of being useful on both the high frequency shortwave bands (HF) as well as the VHF/UHF scanner bands. When used in the HF spectrum, it's probably a good idea to build the antenna from No. 14 antenna wire.

In VHF/UHF configurations you can use lightweight, small diameter aluminum tubing. In either band, however, check the VSWR to assure proper cut (a VSWR analyzer such as the low cost MFJ units work well). Also, at VHF/UHF frequencies, reduce the spacing of the phase reversal stubs from 2-3 inches to about 0.75-1 inch.

Figure 2 shows the Big-D antenna
"It has the advantage of being useful on both the high frequency shortwave bands (HF) as well as the VHF/UHF scanner bands."

mounted horizontally, as is true for most HF versions. It can also be mounted vertically, which is the preferred mounting when the antenna is used on the VHF/UHF scanner bands.

**Collinear Phased Array Dimensions**

<table>
<thead>
<tr>
<th>Freq. (MHz)</th>
<th>&quot;A&quot; (Feet)</th>
<th>&quot;B&quot; (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>156</td>
<td>78</td>
</tr>
<tr>
<td>4</td>
<td>117.00</td>
<td>58.50</td>
</tr>
<tr>
<td>5</td>
<td>93.60</td>
<td>46.80</td>
</tr>
<tr>
<td>6</td>
<td>78.00</td>
<td>39.00</td>
</tr>
<tr>
<td>7</td>
<td>66.86</td>
<td>33.43</td>
</tr>
<tr>
<td>8</td>
<td>58.50</td>
<td>29.25</td>
</tr>
<tr>
<td>9</td>
<td>52.00</td>
<td>26.00</td>
</tr>
<tr>
<td>10</td>
<td>46.80</td>
<td>23.40</td>
</tr>
<tr>
<td>11</td>
<td>42.55</td>
<td>21.27</td>
</tr>
<tr>
<td>12</td>
<td>30.00</td>
<td>19.50</td>
</tr>
<tr>
<td>13</td>
<td>36.00</td>
<td>18.00</td>
</tr>
<tr>
<td>14</td>
<td>33.43</td>
<td>16.71</td>
</tr>
<tr>
<td>15</td>
<td>31.20</td>
<td>15.60</td>
</tr>
<tr>
<td>16</td>
<td>29.25</td>
<td>14.63</td>
</tr>
<tr>
<td>17</td>
<td>27.53</td>
<td>13.76</td>
</tr>
<tr>
<td>18</td>
<td>26.00</td>
<td>13.00</td>
</tr>
<tr>
<td>19</td>
<td>24.63</td>
<td>12.32</td>
</tr>
<tr>
<td>20</td>
<td>23.40</td>
<td>11.70</td>
</tr>
<tr>
<td>21</td>
<td>22.29</td>
<td>11.14</td>
</tr>
<tr>
<td>22</td>
<td>21.27</td>
<td>10.64</td>
</tr>
<tr>
<td>23</td>
<td>20.35</td>
<td>10.17</td>
</tr>
<tr>
<td>24</td>
<td>19.50</td>
<td>9.75</td>
</tr>
<tr>
<td>25</td>
<td>18.72</td>
<td>9.36</td>
</tr>
<tr>
<td>26</td>
<td>18.00</td>
<td>9.00</td>
</tr>
<tr>
<td>27</td>
<td>17.33</td>
<td>8.67</td>
</tr>
<tr>
<td>28</td>
<td>16.71</td>
<td>8.36</td>
</tr>
<tr>
<td>29</td>
<td>16.14</td>
<td>8.07</td>
</tr>
<tr>
<td>30</td>
<td>15.60</td>
<td>7.80</td>
</tr>
</tbody>
</table>

Where Did the "Awe" Go? / Still Have It!

Recently I read a letter to the editor in one of the radio magazines that the reason for the declining popularity of some of the radio hobbies was that the awe had gone out of it. With satellite TV relays and cellular phones that allow you to talk to someone in Tokyo or London while walking across the mall parking lot as easily as making a call to your house, many people today are not as awed by scanning and shortwave listening as might have been the case before.

I disagree. I still have a sense of awe when listening to a rare DX station. And I note that the local ham/SWL/scanner equipment business supports three major dealers within a 50 mile diameter circle.

And how about the abundance of high performance scanners and HF shortwave receivers on the market. Those manufacturers are not nuts... they wouldn't throw money away designing and producing receivers for which they had no market.

Perhaps it's a perception thing. I suggest that we may need to introduce some of our younger members of the community to radio at an early age. Perhaps you could arrange to set up demonstrations of shortwave and scanner receivers in local classrooms (I suspect grades 6 through 9 would be most productive).

Local ham clubs can be of use. Although ham and SWL/scanner interests are different, they overlap considerably. It is often the case that hams are recruited from the ranks of listeners, and most hams had to be listeners before getting their "ticket" from the FCC. Besides, there are also lots of us who do both (like me, for example). You might want to contact the American Radio Relay League (ARRL), 225 Main Street, Newington, CT, 06111 for info on ham radio and the clubs in your area. ARRL can be reached via their web site at <http://WWW.ARL.ORG>, or via e-mail at <HQ@ARRL.ORG>. Also, type in key word "amateur radio" on your web crawler and you will find the <radio.rec> newsgroups. They are a source of information on various phases of the radio hobbies.

You can also provide some assistance to science teachers as a way of introducing radio hobbies to kids. For one thing, propagation phenomenon are easily seen by nearly all receiver owners (especially shortwave). But there are also other possibilities: whistlers and spherics (natural VLF radio signals), sudden ionospheric disturbance hunting (VLF monitoring), solar eclipse events and monitoring natural radio signals (18-30 MHz) from the planet Jupiter.

Connections

I can be reached at P.O. Box 1099, Falls Church, VA, 22041, or via E-mail at <CARRJ@AOL.COM>. Don't forget to send in your photos of antenna installations and letters to me today!
Loose Connection (from page 80)

problem (though it's been hard to start in winter and tough to change the oil). You're best match is a Sagittarius.
Avoid archery contests.

AQUARIUS FAVORITES:
SW STATION: Radio Fungus—featuring the Sump-Pump Hour, Tuesdays and Thursdays, 2100 UTC.
SCANNER FREQ: 145.67—the water co. meter-cheater hotline dispatcher.
FOOD: Watercress, Water Chestnuts, and Water Buffalo.
MUSIC: Swan Lake.
VACATION SPOT: Cambodia—during the monsoons.

VIRGO
Yeah, sure . . . On your birthday, Venus was leaning on one arm. With practice, you may yet copy RTTY signals with a pencil (and by the year 2022, you might get a whole world). Marry a Taurus or a Sable, but nothing older than a '73 Fairmont. Avoid long drives.

VIRGO FAVORITES:
SW STATION: R. Baffin Bay—The Tuesday Night Personals (Wednesdays, 1700 UTC).
SCANNER FREQ: 38.68 Gus, the security guy at the Pine Acres Drive-In Theater.
FOOD: Raw Oysters.
MUSIC: The Hoosier Hot-Shots Play the Best of Jerry Vale.
VACATION SPOT: Akbar’s Pocono Trout Farm and Hot Spring.

LIBRA
The Personal Injury Attorney—Habeas in the cusp of your corpus. You’ve spent 15 years building an “existing structure” that looks remarkably like a broadcast tower, and you’ve convinced two out of three neighbors that you have a guy-wire easement by virtue of your CB license. Marry a bail-bondsman—quickly!

LIBRA FAVORITES:
SW STATION: Radio Pro Bono—The PRB1 hour.
SCANNER FREQ: 156.78 Mutual Aid Ambulance Dispatch.
FOOD: Baloney.
MUSIC: Sioux City Sue.
VACATION SPOT: That really bad turn, just outside of town.

GEMINI
Just a couple of wise guys—Jupiter was jumping as you graced the Earth for the first time. Your friends don’t know you don’t have an echo-box; they wonder why you say “Roger, Roger.” The best SWR you can ever hope for is 2:1 ’cause you use twin-lead. Marry those chewing gum girls.

SW STATION: Radio Pago Pago.
SCANNER FREQ: 222.22 The Minnesota Twins Groundskeepers.
FOOD: Couscous and Goo Goo Bars.
MUSIC: Tico Tico, Boola-Boola.
VACATION SPOT: Bora Bora.

SAGITTARIUS
The Survivalist—The dog-star was drooling in your cuspidor when you were born. Foes and small, furry animals “quiver” at the sight of you. That bow sure can launch an antenna, but in a city lot? Marry an Aquarius—they’re the most tolerant.

SAGITTARIUS FAVORITES:
SW STATION: A survivalist pirate station in Yorba Linda, California.
SCANNER FREQ: Can’t tell you ‘til you give the secret handshake.
FOOD: Grubs, bark, nuts and berries.
MUSIC: Wagner—anything by Wagner.
VACATION SPOT: Toad Suck, AR.

CAPRICORN
The Old Goat—Hostility has been rising since you were born. You get on the local channel just to annoy people. They don’t realize that you were there first. Marry a Crab, or anyone who’ll put up with you.

CAPRICORN FAVORITES:
SW STATION: The Voice of Authority—the Curmudgeon Hour, weekdays at 1000 UTC.
SCANNER FREQ: The neighbor’s cordless phones.
FOOD: Prunes and Bran Flakes.
MUSIC: None—there hasn’t been any good music since 19 and 39!
VACATION SPOT: Wapwallopen, PA.

PIECES
The Flounder—The moon didn’t rise on your birthday. You connected that microphone to your shortwave receiver, but no one answers! Something fishy in there. Your kids always told you that you had eyes in the back of your head. Marry a Leo—Cats love fish!

PIECES FAVORITES:
SW STATION: Tuna Radio—Fish Harmony with First Tuna, Second Tuna, Barracuda & Bass—Just for the Halibut.
SCANNER FREQ: VHF channel 16, the Coast Guard.
FOOD: Anything that’ll stay on a hook
MUSIC: Porgy and Bass.
VACATION SPOT: Fishkill, NY.

TAURUS
The Bull. With Capricorn getting your goat, friends have always questioned your stories. Did you really work all countries in Europe on Channel 19? Mobile? Your friends often wear boots. Marry a Libra—they can get you out of trouble.

TAURUS FAVORITES:
SW STATION: R. Madrid.
SCANNER FREQ: 167.53—the torero’s dressing room.
MUSIC: Anything by Herb Alpert.
VACATION SPOT: Pamplona, Spain—just for the exercise!

SCORPIO
The Bug—Equally at home in spy stories and hotel kitchens—and universally unwelcome. Now more readily detectable, you find life ever challenging. Consider a spouse who loves Morse code. Ix-nay the exterminator!

SCORPIO FAVORITES:
SW STATION: Any of those numbers stations—English or Spanish!
SCANNER FREQ: any of the “Bugging” freqs (but you knew that already, didn’t you?)
FOOD: Yes.
MUSIC: Flight of the Bumblebee; La Cucaracha.
VACATION SPOT: Suncook, New Hampshire, for the Bean Hole Supper.
Tuning In
(from page 4)

split second. Computer geeks probably have a very precise word for how long this takes—certainly it isn’t a "split second," but you get the idea. The best news is that so far I haven't been plagued by any interference from the computer or monitor—and they’re right next to the receiver! The FirstRate program has become the most indispensable tool in my radio shack. I've been using for a few weeks now, and frankly, I can't help wondering why I waited so long to get with the program.

The point is, if you've been waiting, wait no longer. Our new Computer Corner columnist, Bonnie Zygmunt and Ed Griffin are on board to give us all a helping hand in what can be an intimidating and yes, confusing medium. Take the time to read their bi-monthly column and send your questions and comments to them in care of Pop'Comm.

Since I've been reading the books and spending lots of time talking to the tech support folks, I've learned a few computer buzz words that make my life whole lot easier. I've even got about 100 of them written down in my spiral notebook for easy recall.

RCI Wins a Battle

With its 240-plus hours of programming per week and worldwide audience of nine to 16 million regular listeners, Radio Canada International reaches a phenomenal audience, even in the U.S., where a quarter million people tune to RCI at least once a week. But in this unusual time, where down is up and wrong is often right, it should come as no surprise that after a half century on shortwave, RCI has been subject to the budget scalpel once again.

For the time being though, it appears the government has "found" the necessary money to keep the transmitters running for another year, but that's not enough. According to a news release from the Canadian government, "...this one-year funding arrangement takes effect April 1..." The same day the government gave RCI a new lease on life, Wojtek Gwiazda, a spokesperson for the Coalition to Restore Full RCI Funding told me "While this is an amazing turnaround in the space of one week, and obviously everyone is very happy that the politicians have finally listened to people around the world, there is no clear commitment that we have anything long term—that is essential." He continued, "Have the politicians reacted politically or to the fact that if you turn off RCI, there is no alternative?" Even the news release from the government noted, "The new funding arrangement for RCI will help us deal with the immediate future while we work on the broader framework." Like MASH's old Colonel Potter would say, "Horsefeathers!" Politics in action! Seems to me they're really saying, "We knew this was train was coming and got out of the way just in time. Whew! We've bought 'em another year and certainly a lot can happen in that time."

Sure, anybody can put out a news release, but when it comes to fielding questions from the media, that's another matter entirely. Over the course of nearly a week, I made several attempts to reach Canadian Minister of Heritage Sheila Copps, to no avail. Some say she's staunchly behind RCI, while other sources indicate otherwise. Politics. I can't help wondering who's running things.

Even if funding has been restored to RCI, many other international voices face an uncertain future. Certainly as governments grapple with tremendous cutbacks and are forced to do more with less, these threats are more real than ever. So as an information-hungry public that supposedly thrives on the news, information, and cultural programs that are a mainstay of international shortwave, we radio monitors can sit back and let someone else worry about it, or we can take the high road and let our views be heard.

It's time to keep the pressure on the legislators and decision makers. Remember, this isn't just about Canadians deciding through their government how their country talks to the world, it's, as Gwiazda says, "...a wonderful obligation and responsibility. It (shortwave) has worked (for RCI) for 50-plus years, showing the good and bad side of what's going on here...shortwave has proven itself and will continue to do so over the years."

You can send a letter or email urging continuous, full funding for RCI to The Right Honorable Jean Chretien, Prime Minister of Canada, Ottawa, Canada K1A 0A6 <prime@pm.gc.ca> and The Minister of Canadian Heritage, The Honorable Sheila Copps, Ottawa, Canada K1A 0A6 <min_copps@pch.gc.ca>. If you don't do it, who will?  ■
Advertising Rates: Non-commercial ads are 30 cents per word, including abbreviations and addresses; minimum charge $6.00 per issue. Ads from firms offering commercial products or services are $1.00 per word; minimum charge $20.00 per issue. Boldface words are $1.20 each (specify which words). Leading key words set in all caps at no additional charge. All ads must be prepaid in full at time of insertion; a 5% discount is offered for prepaid 6 time insertions. All ads must be typewritten double spaced.

Approval: All ad copy is subject to Publisher's approval and may be modified to eliminate references to equipment and practices which are either illegal or otherwise not within the spirit or coverage scope of the magazine.

Closing Date: The 10th day in the third month preceding date of publication. Because intake references to equipment and practices which are either illegal or otherwise not within the spirit or coverage scope of the magazine, the Publisher of Popular Communications cannot vouch for the merchandise listed therein. Direct all correspondence and ad copy to: PC Readers' Market, 76 N. Broadway, Hicksville, NY 11801, Attn: Nancy Barry.


RADIO MONITORS NEWSLETTER OF MARYLAND FOR THE SERIOUS SHORTWAVE AND SCANNER LISTENERS. P.O. Box 394, Hampstead, MD 21774. For a one year subscription: $15.00. Sample copy: one dollar.

NEW AWARDS PROGRAM! For SWL's, DX'ers, Scanner Buffs! Self-addressed stamped envelope brings details! ISWAC, Box 66, Hanover, MI 49241.


CABLE DESCRLAMBERS FROM $99.00. TEST DEVICES FROM $15.00. CALL US WITH YOUR QUESTIONS. 1-800-449-9189. NO FLORIDA SALES. ANYONE IMPLYING THEFT OF SERVICE WILL BE DENIED ASSISTANCE.


"FORBIDDEN SECRETS OF THE LEGION OF DOOM HACKERS" Big 224-page handicraft. The infamous LOD's condemned programs and amazing techniques, from the LOD's now shut down down in BBS. Hacking, phreaking, and more! Hard to locate information, now in this Limited Edition. For reference and informational purposes only, $20.95, plus $5 s/h (Canada $25). Residents add $2.21 tax. VISA/MC okay. CRB Research Books Inc., Commack, NY 11725. Phone orders: (516) 543-9169.

MORSE CODE Got You Down? Why let a mental block stand between you and upgrading? Use Alternative's new CW Mental-Block Buster to blast through those barriers. Just follow the instructions for 30 days—Results Guaranteed! Based on 40 years of research, the CW Mental-Block Buster uses guided meditation, dynamic visualizations, and powerful affirmations to blast through mental blocks. You can do code! That means new bands, more contacts, more fun! (This is not a CW practice tape.) The CW Mental-Block Buster audio cassette and practice booklet are only $25.95 ppd. in the US. Alternative Arts, 4601 Rosemarine Rd., Parkersburg, WV 26101. (304) 422-2767. MC/VISA/COD. Mail orders include signature. Office hours after 4:30 Eastern.

MILITARY MONITORING GUIDE. New book covers all phases of Military Monitoring. Military Frequencies all services: U.S. Military Bases, Military Black Projects, Major Air Force Installations, Monitoring Equipment and Systems, Navy/Coast Guard, and more. $19.95, plus $4 Priority Mail. UNIVERSAL ELECTRONICS, 4555 Groves Road, #12, Columbus, OH 43232. (614) 866-4605.

VHF AERO SCANNER GUIDE! Knetel's Air-Scan, sixth edition. Great new edition of the comprehensive and popular USA/Canada VHF aero band directory ever published: Civilian, Military, Private Airports, Helicopters & Seaplane Bases. Control Towers, ARTCC, Weather, Approach/Departure, FSS, Ground Control, ATIS, Unicom's, National & Air National Guard freqs., etc. Many listings for airport security, fire/rescue, airline ground services & more beyond the aero band. One "must have" guide to tens of thousands of aero related monitor frequencies! Only $18.95, plus $5 s/h ($6 to Canada) from CRB Research, P.O. Box 56, Commack, NY 11725. VISA/MC acceptable. Phone orders: (516) 543-9169. (NYS res. add $2.04 tax.)

SECRET CABLE DESCRLAMBER! ANYONE CAN BUILD IN SEVEN EASY STEPS WITH RADIOSHACK PARTS COSTING UNDER $12! PLANS, $5. 1-800-818-9103.

FM MICRO BROADCASTING: Transmit many miles. PLL mono/stereo. 88-108 MHz. Kit or assembled. 1-100 W.R.F. amps. Call (250) 642-2859. R. Scott Communications.

THE SCANNER CLUB. The nationwide, bi-monthly, all-scanner news-magazine. Packed with 64+ pages of frequencies, codes and CTCSS tones. Formerly Northeast Scanning News. One year membership is $24.95. Please check or money orders payable to LES MATTSON and send to The Scanner Club, P.O. Box 62A, Gibbstown, NJ 08027.

CB RADIO HACKER'S GUIDE! Big 151 page book; pictorials, diagrams, text. Complete guide to new and old cb radios. The book gives cbers for enhanced performance & more features. Which screws to turn, which wires to cut, AM & SSB radios: Cobra, Courier, GE, Midland, Radio Shack Realistic, SBE, Sears, Uniden/President. Get the most from your CB radio & operations. Only $19.95, plus $3.00 shipping ($6.00 to Canada). NY State residents add $2.12 tax. Order from CRB Research Books, Inc., PO Box 56, Commack, NY 11725. Visa/MC OK. Tel: (516) 543-9169.

CABLE DESCRLAMBERS FROM $99.00. TEST DEVICES FROM $15.00. CALL US WITH YOUR QUESTIONS. 1-800-449-9189. NO FLORIDA SALES. ANYONE IMPLYING THEFT OF SERVICE WILL BE DENIED ASSISTANCE.

MILITARY RADIOS: Easily made battery adapters 9169. Books, P.O. Box 56, Commack, NY 11725. NYS residents add $1.78 sales tax. Visa/MC orders call: (516) 543-9169.

DX TOOLS for the serious radio listener. Quantum Loops, Q-Sticks, more. Stamp for catalog. Radio Plus Electronics, 3635 Chastain Way, Pensacola, FL 32504. (904) 434-3635.

WORLD'S MOST UNUSUAL Communications Books! A large selection of outstanding titles covering scanners, "confidential" frequency registries, bugging, wire tapping, electronic surveillance, covert communications, computers, espionage, monitoring, and more! New titles being added constantly! Ask for our big FREE catalog. CRB Research, Box 56-PC, Commack, NY 11725.


MILITARY RADIOS: Easily made battery adapters for military radios & other electronics. Get POWER UP! Big new 96-page manual of instructions, diagrams. Use readily available commercial batteries in PRC-6, AN/PRT-4, RT-77, URC-68, more; also mine detectors, night scopes, radiacs, field telephones, etc. Only $19.95, AN/PRT-4, RT-77, AN/PRC-9, AN/PRT-4, RT-77, URC-68, more; also mine detectors, night scopes, radars, field telephones, etc. Only $14.95, plus $5 s/h ($6 Canada). NYS residents add $1.78 sales tax. Visa/MC orders call: (516) 543-9169.

FREE PHONE CARD! 19 cents per minute anytime, anywhere in the U.S. including Alaska/Hawaii. No surcharges or penalties. Limited offer. Call Now 1-800-378-6854.

WANTED: CB RADIO EQUIPMENT— I'm looking for all types of old/vintage CB radios, amps, manuals, magazines, mics, etc. PLEASE CALL anytime. WALTER 818-297-7249.


GE SUPERADIO III with up to four SCS bands is the DX'er choice. AM modification included. Low as $85. 800-944-0630.


USED AND NEW CB radios, misc. radios, and accessories. For list, send $1.00 to: 10 Cedarwood Ct., St. Peters, MO 63376.

LARGE ASSORTMENT of used test equipment for sale. Most instruments are priced at 10% of original cost or less. Request list. Jim Stevenson, 3401 Sunny Slope Road, Bridgewater, NJ 08807. Phone: 908-722-6157; fax: 908-722-6261.

MILITARY TECHNICAL MANUALS for sale. Basic Electricity, Basic Electronics, Antenna Theory and mechanical books. Write or call for list: ART'S BOOK WORLD, INC., 6822 22nd Ave. N., Ste. 175, St. Petersburg, FL 33710; phone 813-525-4880; or TOLL-FREE 1-888-414-BOOK. http://www.hackerscatalog.com.

FREEPHONECARD! 19 cents per minute anywhere, anywhere in the U.S. including Alaska/Hawaii. No surcharges or penalties. Limited offer. Call Now 1-800-378-6854.


WANTED: Used Realistic Pro-2006 Scanners. (Restorable Models only.) List price and condition. James Maksym, P.O. Box 8052, Saddle Brook, NJ 07663.

WANTED: Radio Shack Realistic "NAVAGO-PRO" Model TRC-40 CB base station! This 23 channel has a rotary mechanical clock. Also wanted old Radio Shack and Lafayette catalogs from 1960's and early 70's. Mark Wisniewski, 7150 Lakeshore Road, Cicero, NY 13039; (315) 699-0291.

CABLE TV DESCRAMBLERS! ANYONE CAN BUILD IN SEVEN EASY STEPS WITH RADIO SHACK PARTS. PLANS/KITS FROM $5.00 PLUS FREE BONUS: 1-800-818-9103.


ATTENTION low power FMers, carrier current AMers, cable TV local access users, and free radio operators. MICROCOMM is the newsletter covering the exploding personal broadcasting field. Get a FREE sample! MICROCOMM, P.O. Box 5354, High Point, NC 27262.

This month I'm doing something a bit different; an amusing look at our horoscopes. Let's face it, there's something here for everyone.

**ARIES**

The Basic Car—Born with the barometer falling in your greenhouse, your scanner locks up on a highway work crew planning their next coffee break. Afraid to miss something, you constantly adjust your radio's squelch—you've worn out three pots so far. Your compatible sign is Gemini, but judges in some localities consider marrying a Gemini to be prima facie bigamy.

**ARIES FAVORITES:**
- **SW STATION:** Radio Pierre—South Dakota's 24-hour Easy Listening and Militia Drill station.
- **SCANNER FREQ:** 123.45 Where pilots and airline baggage handlers describe the contents of popped-open luggage.
- **FOOD:** Corn Dogs with grape jelly.
- **MUSIC:** The Schmenge Brothers, "LIVE."
- **VACATION SPOT:** Hell, Michigan (for the annual "freeze-over" festival.)

**CANCER**

The Maine Fender—On your birthday, Pluto rose and bit Mickey, ending the cartoon segment prematurely. Your antenna seems to attract ice build-up. It's an annoying trait, particularly in Tucson. You're always torn between a concealed indoor SW antenna and the classic, mile-long end-fed Marlinfetzer. Your decision to tape a Marlinfetzer around and around your dining room has been a source of irritation to your family. You're most compatible with a goat... er... a Capricorn.

**CANCER FAVORITES:**
- **SW STATION:** Radio Latvia (for the great recipes).
- **SCANNER FREQ:** 234.56 Statewide Tollbooth-to-Tollbooth.
- **FOOD:** Tuna-Lime Jell-O Surprise.
- **MUSIC:** Freddie Fender Takes Five.
- **VACATION SPOT:** Gilroy, California, for the Garlic Festival.

**LEO**

The Bayonne Street Vendor—When you first cried out, the Animals were in the House of the Rising Sun. Your spouse and your antenna are mismatched. A tuner will fix one of them; your antenna will have to be replaced. Tracking down Pirate Broadcasters is an interesting part of communications, but the phrase, "Open up, it's the FCC" is only going to get you in trouble. You should have married a Pisces.

**LEO FAVORITES:**
- **SW STATION:** The Voice of Kenya.
- **SCANNER FREQ:** 45.67 Used by Marlin Perkins and Jim, while Jim drifts down the crocodile-infested river and Marlin watches from the Land Rover.
- **FOOD:** Wildebeest Tartar.
- **MUSIC:** The Lion Sleeps Tonight.
- **VACATION SPOT:** The Serengeti—during migration.

**AQUARIUS**

The Wet CoAx—Born with SWR rising in your transmission line, you spend all days asking for a radio check. Since you got the first gasoline-powered antenna rotator, ice is no longer a problem. But...
Ultra Compact Dual Band Handheld FT-50R

One tough little dual bander!

Features
- Frequency Coverage
  - Wide Band Receive
  - RX: 76-200 MHz, 300-540 MHz, 590-999 MHz*
  - TX: 144-148 MHz, 430-450 MHz
- AM Aircraft Receive
- MIL-STD 810 Rating
- Digital Coded Squelch (DCS)
- 112 Memory Channels
- 12V DC Direct Input
- High Speed Scanning
- Alphanumeric Display
- CTCSS Encode (Decode w/FT-12)
- Auto Range Transpond System™ (ARTS™)
- Dual Watch
- Direct FM
- High Audio Output
- ADMS-1C Windows™ Programmable
- Four Battery Savers: Automatic Power-Off (APO), Receive Battery Saver (RBS), Selectable Power Output (SP0), Transmit Battery Saver (TBS)
- Time Out Timer (TOT)
- 2.5 and 5 Watt Versions Available
- Optional Digital Voice Recording System (DVRS)
- Full line of accessories

For the foremost in top-performing, durable, dual band handhelds there is one choice. The FT-50R. Manufactured to rigid commercial grade standards, the FT-50R is the only amateur dual band HT to achieve a MIL-STD 810 rating. Water-resistant construction uses weather-proof gaskets to seal major internal components against the corrosive action of dust and moisture. And, the rugged FT-50R withstands shock and vibration, so throw it in with your gear! Dynamic and exclusive features set the FT-50R apart, too. Wide Band Receive includes 76-200 MHz (VHF), 300-540 (UHF), and 590-999 MHz*. Dual Watch checks sub-band activity while receiving on another frequency, then when a signal is detected, shifts operation to that frequency. Digital Battery Voltage displays current operating battery voltage. Digital Coded Squelch (DCS) silently monitors busy channels. Auto Range Transpond System™ (ARTS™) uses DCS to allow two radios to track one another. And, the FT-50R is ADMS-1C Windows™ PC programming compatible, too. To round out the FT-50R, it has four battery savers, and super loud audio—remarkable in an HT this size. A reliable companion where ever you go, the FT-50R is one tough little dual bander with all the features you want!

YAESU...leading the way.

© 1996 Yaesu USA, 17210 Edwards Road, Cerritos, CA 90703 (310) 404-2700
Specifications subject to change without notice. Specifications guaranteed only within amateur bands. Some accessories and/or options are standard in certain areas. Check with your local Yaesu dealer for specific details. *Cellular blocked
The New Xplorer Test Receiver. Ideal for any two-way communications testing or monitoring. The Xplorer is a value packed performer integrating the functions of a CTCSS, DCS, and DTMF Decoder, Frequency Recorder, Nearfield Receiver and more into one hand-held unit. No more guessing when programming a frequency for monitoring-the Xplorer captures nearfield frequencies off the air from 30MHz - 2GHz in less than 1 second. The New Xplorer, providing the power of handheld portability with state of the art functionality and performance.

Features & Specifications

- Frequency Lock Out, Manual Skip, and Auto or Manual Hold
- Internal Speaker, Audio Earphone/Headphone Jack
- Built-in PC Interface, PC Connection Cable and Download Software included
- Relative ten segment Signal Strength Bargraph
- Optimum Maximized Sensitivity for increased nearfield distance reception
- Tape Control Output with Tape Recorder Pause control relay and DTMF Encoder for audio data recording
- High speed FM Communications Nearfield Receiver, sweeps 30MHz - 2GHz in less than 1 second
- Two line LCD displays Frequency and either CTCSS, DCS, DTMF, Deviation or Signal Strength
- NMEA-0183 GPS Interface provides tagging data with location for mapping applications
- Frequency Recording Memory Register logs 500 frequencies with Time, Date, Number of Hits and Latitude/Longitude. (Latitude & Longitude coordinates are only displayed in memory when used with GPS)
- Real-Time Clock/Calendar with lithium battery back-up
- Built-in Rapid Charge NiCad Batteries with 5 hour discharge time and Power Supply included
- Numerical Deviation Display with 1-10kHz and 10-100kHz ranges
- Telescoping Whip full range Antenna included

*Easy touch control pad. F1 & F2 keys control all Xplorer functions. Hold, Skip, Store and Lockout all enabled through the keypad.

Introductory Price: **$899**

**FACTORY DIRECT ORDER LINE 800-327-5912**

**OPTOELECTRONICS**

5821 NE 14th Avenue • Ft Lauderdale, FL 33334 • Tel: 954-771-2050 • Fax: 954-771-2052

Visa • MasterCard • C.O.D. Prices and Specifications are subject to change without notice or obligation

Contact Optoelectronics for mapping software availability

CIRCLE 152 ON READER SERVICE CARD

NMEA-0183 GPS Interface—Connect your GPS to the Xplorer for Mapping applications. (GPS and Mapping Software not included)

and the last instrument you will ever NEED.

NEW Xplorer

It's a receiver, a counter, a recorder, a decoder...