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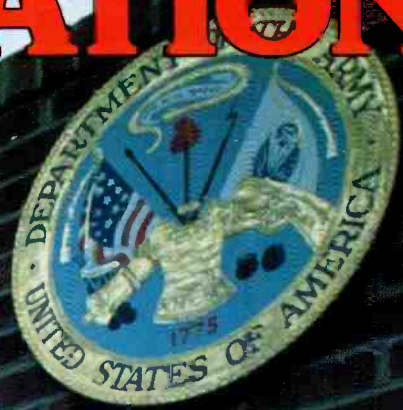


Magazine

The Official Publication of the
Scanner Association of North America

Diplomatic Communications: A Close-Up Look

- Time For TV DXing
- Scanning America's Steam Railroads
- Low Frequency Maritime Monitoring
- Selected English Language Broadcasts:
Summer 1986
- Scanning The U.S. Postal Service
- Portrait Of A Pirate
- Statue Of Liberty Radio Station



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VINTHILL



ICOM HF Receiver

IC-R71A



The World Class World Receiver

ICOM introduces the IC-R71A 100kHz to 30MHz superior-grade general coverage HF receiver with innovative features including keyboard frequency entry and wireless remote control (optional).

This easy-to-use and versatile receiver is ideal for anyone wanting to listen in to worldwide communications. With 32 programmable memory channels, SSB/AM/RTTY/CW/FM (opt.), dual VFO's, scanning, selectable AGC and noise blanker, the IC-R71A's versatility is unmatched by any other commercial grade unit in its price range.



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32 Tunable Memories. Thirty-two tunable memories, more than any other general coverage receiver on the market, offer instant recall of your favorite frequencies. Each memory stores frequency, VFO and operating mode, and is

backed by an internal lithium memory battery.

Options. FM, RC-11 wireless remote controller, synthesized voice frequency readout, IC-CK 70 DC adapter for 12 volt operation, MB-12 mobile mounting bracket, two CW filters, FL32-500Hz and FL63-250Hz, and high-grade 455KHz crystal filter, FL44A.



First in Communications

CIRCLE 17 ON READER SERVICE CARD

ICOM America, Inc., 2380-116th Ave NE, Bellevue, WA 98004 / 3331 Towerwood Drive, Suite 307, Dallas, TX 75234
All stated specifications are approximate and subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions. R71A1004

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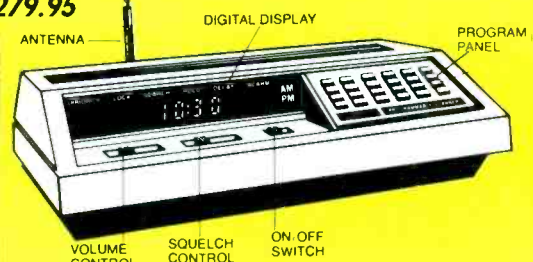
Suggested Factory List Price \$279.95

Scanner World Special
REGENCY Z30
\$129.99

(plus \$5.50 shipping each)

Optional Accessories:

- Cigarette Lighter Plug RGMPC . \$4.95
- Z Mobile Bracket — Special . . . \$5.99



The Regency Z30 is a compact, programmable 30 channel, multi band, FM monitor receiver for use at home or on the road. It is double conversion, super heterodyne used to receive the narrow band FM communications in the amateur, public safety and business bands: 30-50, 144-174, and 440-512 MHz. Size 10 3/4" W x 2 7/8" H x 8 3/8" D.

Sophisticated microprocess-controlled circuitry eliminates the need for crystals, instead, the frequency for each channel is programmed through the numbered keyboard similar to the one used on a telephone. A "beep" acknowledges contact each time a key is touched. The Z30 scans approximately 15 channels per second.

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

Other features include scan delay, priority and a bright/dim switch to control the brightness of the 9-digit Vacuum-Fluorescent display. The Z30 can be operated on either 120 VAC or 12 VDC. Includes one year warranty from Regency Electronics (optional 3 yr extended warranty only \$35, gives you a total of 4 yrs complete warranty or 2 yr extended warranty only \$25, gives you a total of 3 yrs complete warranty.)

REGENCY HX1200

Digital programmable 45 channel hand-held Scanner. Frequency coverage 30-50MHz, 118-136MHz, 144-174MHz, 406-420MHz, 440-512MHz. Covers public service bands plus Aircraft. Has priority, search, lockout, scan plus much more. Package includes HX1200, AC charger adapter, ni-cad battery, carry case, rubber antenna and 90 day factory warranty.
***\$216.99** (6.50 shipping)
(3 year extended warranty only \$35.00, 2 year \$25.00)



EXTENDED WARRANTY PROGRAM 2 EXTRA YEARS — ONLY \$25.00

Scanner World is pleased to offer extended warranty protection on your scanner purchases. For a one time charge of only \$35.00, we will provide you with 3 additional years of warranty protection after your original warranty expires. Extended warranty program is available for all types of electronics such as two-way radios, scanners, TVs, VCR, 35mm cameras, personal computers, CBs, radar detectors, stereo equipment, etc. Scanner World can offer this program to all customers, even if product was not purchased from Scanner World. All we need is a copy of your invoice showing purchase within last 30 days. For more information and rates, refer to our latest Catalogue or drop us a note.

Bearcat® 300



Special \$239.99 (7.00 shipping)

35 Channels — Mobile/Base

Features include simple raised button keyboard programming of the following frequency ranges: 32-50 MHz, 118-136 MHz, 144-174 MHz, 421-512 MHz. Vacuum fluorescent display, dim control, priority, count transmissions, non-volatile memory retains memory without power back-up, automatic search, scan speed control, automatic search, scan delay, lockout, service search, automatic squelch, crystalless, digital clock, external speaker & tape jack, auxiliary equipment control, plus much more. Built inside the rugged metal cabinet. Includes AC & DC cords, telescopic antenna, mobile mounting kit, and one year factory warranty on the Bearcat 300 for only \$239.00 and \$7.00 shipping. (Optional extended warranty: 3 years \$35, or 2 years \$25.

Bearcat 100 XL

\$199.99 (6.50 shipping) Handheld digital programmable, no crystal portable scanner. 16 channels, search feature, plus more! Frequency range: 30-50, 118-174, 406-512 MHz. Included in the package is a flexible rubber antenna, earphone, battery charger/AC adapter, 6 AA Ni-Cad rechargeable batteries and a heavy duty carry case. All for the low price of:

\$199.99 (6.50 shipping)

(3 year extended warranty only \$35.00, 2 year \$25.00)

REGENCY RH-256 B

PROGRAMMABLE TRANSCEIVER

RH-256B Transceiver, 16 channel 12 VDC 2-way Radio fully programmable in transmit and receive mode. Includes built-in CTCSS tones for encode/decode, time-out timer, scan delay, 25 watts transmit power, priority, plus more. Frequency spread as shipped 152-158 MHz. Package includes mobile mike, bracket, mobile antenna, and all cables and instructions for installation. **Special package deal only: \$399.99** (7.75 shipping)
(2 year extended warranty \$49.00 — 3 year \$69.00)

ORDERING INFORMATION

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

SHIPPING CHARGES

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

Scanner World, USA

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CIRCLE 28 ON READER SERVICE CARD

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POPULAR COMMUNICATIONS

Now Incorporating
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NOW HEAR THIS



TEN-TEC'S NEW **RX-325** SHORT WAVE RECEIVER

TEN-TEC, America's premier producer of high quality amateur radio equipment, now brings the ultimate in design to short wave listening.

With continuous frequency coverage from 100 kHz to 30MHz the RX-325 receives short wave, medium wave, and long wave frequencies, and detects AM, SSB, and CW signals.

The latest advances in low-noise circuitry, quality ceramic filters, phase-locked loop technology and microprocessor controls insure high sensitivity and freedom from adjacent channel interference. The RF stage employs a low noise bi-polar amplifier for excellent sensitivity and a diode quad first mixer for improved dynamic range.

Although this new receiver is highly sophisticated, all controls are user-friendly. Favorite frequencies, such as BBC, VOA, WWV plus local AM stations, are easily stored in a 25 memory bank for recall at the touch of a button. Memories not only store the frequencies, but the modes and the tuning rates. The tuning knob allows you to change tuning speed automatically — in 100 Hz, 500 Hz, 1kHz or 5kHz steps.

The TEN-TEC RX-325 combines ultimate performance and ease of operation for a lifetime of listening pleasure.

Consider these features. We think you'll agree the RX-325 incorporates every worthwhile feature for maximum short wave listening pleasure.

- Keyboard or tuning knob frequency entry.
- 25 high capacity memories.
- Mode switches select AM, LSB (cw), or USB (cw).
- Blue vacuum fluorescent display.
- "S" Meter with SINPO S-scale.
- Built-in quartz digital clock with timer.
- Communications type noise blanker.

- RF attenuator.
 - Programmable band scan and memory scan.
 - Two built-in ceramic i-f filters.
 - Hi and Lo impedance antenna terminals.
 - Switchable AGC, built-in speaker.
- Audio output is 2 watts at 10% distortion.
Striking high-tech appearance finished in black.
Durable, high quality epoxy-glass circuit boards.
Dimensions (HWD) 3¼" x 9½" x 7". Weight 5 lbs. 5 oz.
115 VAC adapter included, also 13.8 VDC capability.

Introductory factory price \$549.

CIFCLE 68 ON READER SERVICE CARD

See your TEN-TEC dealer or write

TEN-TEC, INC.
SEVIERVILLE, TENNESSEE 37862

BEAMING IN

AN EDITORIAL

And The Dream Goes On, And On, And On . . .



In this 1977 photo, John M. Mulligan displays the short-range 465 MHz transceiver he designed and built 30 years earlier for a radio service that the FCC appears to be still trying to develop.

Citizens Radio Service had two basic aspects, Class A and Class B. The Class A stations were medium powered units and appeared to be primarily intended for use by industrial interests that didn't fit well into other two-way radio services. It was the Class B stations that contained the kernel of Jett's dream for personal short-distance two-way communications.

Soon thereafter, there were experiments taking place to bring the service to the public. By 1947, both John M. Mulligan and Al Gross were independently experimenting with equipment designed for the service, and on December 1, 1947, Gross' company, The Citizens Radio Corporation, received the first FCC certificate of type approval. Soon, additional approvals were granted to the Vocaline and Stewart-Warner companies for Class B transceivers. Class B units all operated on 465.00 MHz with very low power. Weighing in at about 2½ lbs., they had regenerative receivers and were intended for short-range communications.

Only slight public interest was ever aroused in Class B; perhaps a few hundred transceivers were actually sold. You could shout further than you could communicate via these sets. Some people tried to convert WWII military surplus gear (such as the BC-645 airborne IFF transceiver designed for 470 to 495 MHz use) for this band, but it wasn't worth the trouble.

The technology for Class B just wasn't there during that era. Class A did see a bit of

(Continued on page 74)

RECEIVE RTTY/ASCII/CW on your Personal Computer



**RTTY/ASCII/CW
SWL COMPUTER INTERFACE** MFJ-1225
\$ **69.95**

FREE MFJ RTTY/ASCII/CW Software
TAPE AND CABLE FOR VIC-20 OR C-64. ORDER MFJ-1225/
MFJ-1264 FOR VIC-20 OR MFJ-1225/MFJ-1265 FOR C-64.

Receives commercial, military, and amateur RTTY/ASCII/CW using your personal computer. The MFJ-1225 Computer Interface plugs between your receiver and VIC-20, Apple, TRS-80C, Atari, TI-99, Commodore 64 and most other personal computers. Requires appropriate software.

Copies all shifts (850, 425, 170 Hz shift and all others) and all speeds. Automatic noise limiter suppresses static crashes for better copy. 2 LED tuning indicator makes tuning fast, easy, positive. 4½ x 1¼ x 4¼ in. 12-15 VDC or 110 VAC with optional adapter, MFJ-1312. \$9.95.

INDOOR TUNED ACTIVE ANTENNA

MFJ-1020
\$ **79.95**



MFJ-1020 New Indoor Active Antenna sits on your desk ready to listen to the world. Rivals, often exceeds, reception of outside long wire. Unique Tuned Active Antenna minimizes intermode, provides RF selectivity, reduces noise outside tuned band. Also use as preselector for external antenna. Covers 300 KHz to 30 MHz in 5 bands. Adjustable telescoping antenna. Controls: Tune, Band Selector, Gain, ON-Off/Bypass. LED. FET, bipolar circuitry. Phone jack for external ant. 6x2x6 in. 9-18 VDC or 9V battery. 110 VAC with adapter, MFJ-1312, \$9.95.

REMOTE ACTIVE ANTENNA

54 inch remote active antenna mounts outdoor away from electrical noise for maximum signal and minimum noise pickup. Often outperforms longwire hundreds of feet long. Mount anywhere atop houses, buildings, balconies, apartments, mobile homes, on board ship.

Use with any radio to receive strong clear signals from all over the world. 50 KHz to 30 MHz.

High dynamic range eliminates intermodulation. Inside control unit has 20 dB attenuator, gain control. Switch 2 receivers and auxiliary or active antenna. "On" LED. 6x2x5 in. 50 ft. coax. 12 VDC or 110 VAC with MFJ-1312, \$9.95.



MFJ-1024
\$ **129.95**

Order from MFJ and try it. If not delighted, return within 30 days for refund (less shipping).

One year unconditional guarantee.

Order yours today. Call toll free 800-647-1800. Charge VISA, MC. Or mail check, money order. Add \$4.00 each for shipping and handling.

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CIRCLE 20 ON READER SERVICE CARD

NEW! Lower Price Scanners

Communications Electronics™, the world's largest distributor of radio scanners, introduces new lower prices to celebrate our 15th anniversary.

Regency® MX7000-EA

List price \$699.95/CE price \$399.95/SPECIAL
10-Band, 20 Channel • Crystalline • AC/DC
Frequency range: 25-550 MHz, continuous coverage and 800 MHz, to 1.3 GHz, continuous coverage. The Regency MX7000 scanner lets you monitor military, F.B.I., Space Satellites, Police and Fire Departments, Drug Enforcement Agencies, Defense Department, Aeronautical AM band, Aero Navigation Band, Fish & Game, Immigration, Paramedics, Amateur Radio, Justice Department, State Department, plus thousands of other radio frequencies most scanners can't pick up. The Regency MX7000 is the perfect scanner for intelligence agencies that need to monitor the new 800 MHz, cellular telephone band. The MX7000, now at a special price from CE.

Regency® Z60-EA

List price \$299.95/CE price \$179.95/SPECIAL
8-Band, 60 Channel • No-crystal scanner
Bands: 30-50, 88-108, 118-136, 144-174, 440-512 MHz. The Regency Z60 covers all the public service bands plus aircraft and FM music for a total of eight bands. The Z60 also features an alarm clock and priority control as well as AC/DC operation. Order today.

Regency® Z45-EA

List price \$259.95/CE price \$159.95/SPECIAL
7-Band, 45 Channel • No-crystal scanner
Bands: 30-50, 118-136, 144-174, 440-512 MHz. The Regency Z45 is very similar to the Z60 model listed above however it does not have the commercial FM broadcast band. The Z45, now at a special price from Communications Electronics.

Regency® RH250B-EA

List price \$613.00/CE price \$329.95/SPECIAL
10 Channel • 25 Watt Transceiver • Priority
The Regency RH250B is a ten-channel VHF land mobile transceiver designed to cover any frequency between 150 to 162 MHz. Since this radio is synthesized, no expensive crystals are needed to store up to ten frequencies without battery backup. All radios come with CTCSS tone and scanning capabilities. A monitor and night/day switch is also standard. This transceiver even has a priority function. The RH250 makes an ideal radio for any police or fire department volunteer because of its low cost and high performance. A UHF version of the same radio called the RU150B covers 450-482 MHz, but the cost is \$449.95. To get technician programming instructions, order a service manual from CE with your radio system.

NEW! Bearcat® 50XL-EA

List price \$199.95/CE price \$114.95/SPECIAL
10-Band, 10 Channel • Handheld scanner
Bands: 29-54, 136-174, 406-512 MHz. The Uniden Bearcat 50XL is an economical, hand-held scanner with 10 channels covering ten frequency bands. It features a keyboard lock switch to prevent accidental entry and more. Also order part # BP50 which is a rechargeable battery pack for \$14.95, a plug-in wall charger, part # AD100 for \$14.95, a carrying case part # VC001 for \$14.95 and also order optional cigarette lighter cable part # PS001 for \$14.95.

NEW! Regency® XL156-EA

List price \$239.95/CE price \$129.95/SPECIAL
6-Band, 10 Channel • No-crystal Scanner
Search • Lockout • Priority • AC/DC
Bands: 30-50, 144-174, 440-512 MHz. Cover your choice of over 15,000 frequencies on 10 channels at the touch of your finger. Display messages. External speaker jack. Telescoping antenna. External antenna jack. AC/DC.

NEW! Regency® R1060-EA

List price \$149.95/CE price \$92.95/SPECIAL
6-Band, 10 Channel • Crystalline • AC only
Bands: 30-50, 144-174, 440-512 MHz. Now you can enjoy computerized scanner versatility at a price that's less than some crystal units. The Regency R1060 lets you in on all the action of police, fire, weather, and emergency calls. You'll even hear mobile telephones.

Bearcat® DX1000-EA

List price \$649.95/CE price \$349.95/SPECIAL
Frequency range 10 KHz. to 30 MHz. The Bearcat DX1000 shortwave radio makes tuning in London as easy as dialing a phone. It features PLL synthesized accuracy, two time zone 24-hour digital quartz clock and a built-in timer to wake you to your favorite shortwave station. It can be programmed to activate peripheral equipment like a tape recorder to record up to five different broadcasts, any frequency, any mode, while you are asleep or at work. It will receive AM, LSB, USB, CW and FM broadcasts.

There's never been an easier way to hear what the world has to say. With the Bearcat DX1000 shortwave receiver, you now have direct access to the world.

NEW! Regency® HX1200-EA

List price \$369.95/CE price \$214.95/SPECIAL
8-Band, 45 Channel • No Crystal scanner
Search • Lockout • Priority • Scan delay
Sidelit liquid crystal display • EAROM Memory
New Direct Channel Access Feature
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Search • Limit • Hold • Lockout • AC/DC
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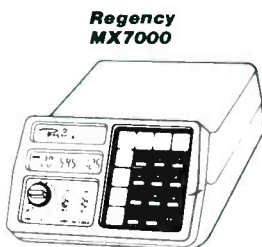
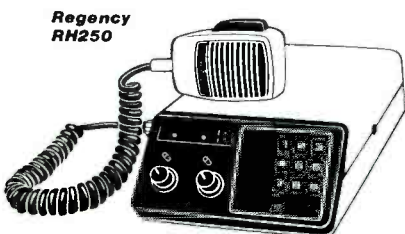
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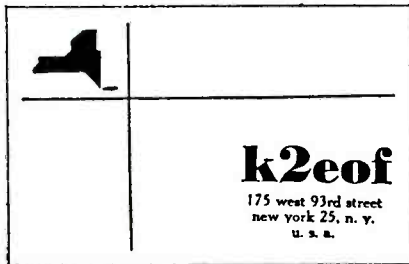
MAILBAG LETTERS TO THE EDITOR

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

Is Your Past Showing?

Our high school radio club maintains a large reference library of radio magazines. While browsing through some old copies of POP'COMM's sister magazine, CQ, I came across a picture of a QSL card (March '57 edition). This card was from K2EOF, and what caught my eye was that the address on the card was 175 West 93rd Street in New York City. This is the same address shown on the "ute" QSL's sent to you in those years, as often run in POP'COMM's pages. What's with your "secret" K2EOF callsign?

Jimmy O'Rourke
Brooklyn, NY



You're very observant, but while it's the same address, K2EOF was never my callsign. The building was an apartment house. One of the other teenagers in the building was Steven Aug, a friend of mine. He held the callsign K2EOF. While I went wrong in life and ended up in the publishing business, Steve opted for a more traditional lifestyle. You can flip on your TV and see him several nights a week on the ABC World News Tonight with Peter Jennings. Steve (presently licensed as W3DEF) is an ABC News financial correspondent. — Editor

Alice Well in POP'COMM — Well, Maybe!

I'm an avid reader of Popular Communications and enjoy your editorials and features. How did you find Alice Brannigan?

Jack Althouse, K6NY
Palomar Engineers
Escondido, CA

Thank Alice Brannigan for providing some very enjoyable and enlightening reading. Other than that, all I want to say is that this is one of the few times I've cut a photo out of a magazine. I'm in love.

Steve Polowichak
Tallahassee, FL

The radio history material features presented by Miss Brannigan are accurate, interesting, and very cleverly prepared. My

congratulations to POP'COMM for presenting the most well-rounded communications periodical I have ever had the pleasure of reading. By the way, Alice Brannigan's April issue response to the reader who thought that only a man could write with knowledge and authority was a classic.

Arthur Bartholomew, Ph.D.
Houston, TX

You can renew my subscription when you've given the boot to that boorish, brash, and bigoted Brannigan who had to use the April issue for a sexist shot at Bob Sheaffer. I believe she writes the material, because it has most of the characteristics of oh-so-fashionable sexist sarcasm and arrogance. She should be writing for one of those female rags that take such great delight in this brand of vituperation. But their subscribers are mostly women. Yours are mostly men, and we get enough of this female piggyism from elsewhere. We don't need it in your magazine.

Russell G. Sheley
Phoenix, AZ

I've enjoyed Alice Brannigan's historic information, she does a very fine job!

Richard Clark
Apartado 273

La Vega, Dominican Republic

Alice Brannigan's writings bring in a huge amount of mail, most of it favorable. Reader Sheley didn't say how he became so familiar with the contents of magazines directed at a female audience (don't let me catch you reading Cosmopolitan again, Russell!) — Editor

A Ceiling Point?

While shopping for a powerboat, the salesman told me that I can order it with a built-in CMT (cellular mobile telephone). Is this a worthwhile boating accessory and does it take the place of a VHF marine radio? Also, the salesman was vague as to the cost of owning a CMT, other than the fact that it would run up the price of the boat by more than \$2,000.

George Politakos
San Luis Obispo, CA

Like the man once said, if you're worried about \$2K one way or the other, then boating isn't for you. CMT's have become as much a status symbol as they are communications tools; a powerboat salesman recently said that nearly every new powerboat sold gets equipped with a CMT. One of the deciding factors is if you have a need for the landline telephone call service they provide; another factor is if CMT base stations are operational (or soon will be) in your primary cruising area.

Also consider the cost of having one. The CMT's sold by most boat dealers run between \$1,600 and \$3,000, depending upon the frills. I have a CMT aboard my own

boat and find that the basic service charge is \$15 per month plus 25 cents per minute "air time" for off-peak calls and 75 cents per minute in peak periods (7 a.m. to 7 p.m. weekdays). Landline and toll charges are additional, and CMT owners pay for incoming calls as well as outgoing calls. Cheap, it isn't.

Furthermore, a CMT is not in any way a substitute for a VHF/FM radio when an emergency arises. If you intend cruising away from the immediate shoreline, your CMT will quickly go out of communications range of the cellular base and you'll find your CMT to be a wholly useless accessory. Given the fact that a VHF/FM marine radio can also be used for sending/receiving landline telephone calls, while also being useful for contacting other vessels and the Coast Guard in areas where a CMT is useless, I'd say that a CMT aboard a boat should be regarded only as a luxurious "extra" to a VHF/FM, HF/SSB, or even CB communications capability.

CMT's on boats might turn out to be a passing fancy or they could become a standard piece of boating electronics. I remember when the Omni aircraft navigation system became popular with the boating crowd—but faded away when Loran came along. Before that, RDF units were the rage. — Editor

Cable Ready?

The cable TV system in my area provides service that is frequently interrupted by disruptions of varying lengths. If a broadcast station was as unreliable as this cable TV system, the Federal Communications Commission would probably remove the station from the airwaves. It's very annoying.

Cal Westin
Central Islip, NY

Some cable systems seem to have more trouble than others when it comes to service interruptions. The CATV system that serves my own area, for instance, provides low quality or no service every time it gets windy or there's heavy rain or lightning. There doesn't seem to be much value in complaining to anybody and you might want to do what many other CATV customers have done—put an antenna on your roof or get a pair of "rabbit ears" (and possibly a TV pre-amp to boost the signal level) and then connect the antenna lead to one side of a two position switch to which the incoming cable is also attached. This way, when the cable konks out, you can switch over to the antenna system with ease. Of course, you will see only the regular TV stations and none of the cable broadcasters with your antenna, but you may nevertheless find it all a little less annoying and inconvenient than watching a screen full of TV "snow" while waiting for service to be restored. — Editor

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CIRCLE 67 ON READER SERVICE CARD

The "Packet Racket"

If you've been hearing some strange sounds on your scanner recently on channels that normally have voice communications, chances are that it is digital communications. Ham radio operators have been leading the way with radioteletype (RTTY) and now Packet communications. But many other services including police departments are jumping on the digital bandwagon. What does this mean for the scanner listener? Are we all doomed to listening to meaningless chirps? Not at all! Fortunately there are some very simple and relatively inexpensive ways to put yourself into the digital scene. If your scanner has an audio output (external speaker) jack, as almost all do, there is no internal modification to your equipment needed. You just plug an adapter into the audio output jack and your personal computer and you're in business. Then an entire new world opens up . . .

Like the tape recorder and activator I use while I'm away from home, the computer will store messages even when I'm not there. Hooked up to a printer, the computer can give you unlimited message storage. There is a totally different experience with data communications monitoring. For one thing, you can be listening to a TV or another scanner radio and still see the data communications coming across the computer video screen. You can monitor in total silence if you wish; get "hard copy" from the printer for future reference; receive communications news bulletins from Westlink and the ARRL. It is fascinating to come home from work and see the information that's been left on the "machine." Scanning is certainly changing. I don't have a crystal ball that tells me when or if voice communications will largely disappear from the airwaves, but there are a great many advantages for radio users. For one thing, police in patrol cars can make license inquiries almost automatically and receive typed replies. Amateur Radio operators using automatic systems can have contacts with friends who are storage. And digital communications installations—especially mobile ones; it appears that it is the wave of the future. Now is the time to put a toe in the water and find out a little more about it.

Summer—From A Firefighter's Perspective

We all love summer. Baseball weather! Time for vacations. Time to put up that new antenna. But firefighters in the northern part of our country have another reason to be glad it's summer. Reprinted here is a column recently sent us from *The Sounder*, the official bulletin of the Chicago Firefighters Union . . .

"Well another winter is gone. No more fires at 3:00 A.M. with minus wind chill factors. No more cold bodies and sore joints or sleeping in the whole next day, while coughing up soot or smelling like you've been cooking in a Weber grill for four or five hours."

Happy summer!

One Person's Response To The Electronic Privacy Act . . .

Reprinted here is a letter that C. Randy Engholm, Vice President and General Counsel for Creative Solutions, Inc. wrote to his U.S. Representative and Senators. Since Mr. Engholm is in the computer data industry, an industry that this legislation is supposed to protect, we thought you might be interested in his response. Clearly

Mr. Engholm recognizes, as we do, a distinction between wiretap laws protecting data communications and open radio signals dispersed widely through the airwaves . . .

Dear Senator Levin,

It is not often that I take the time to write to my senator on a legislative matter that concerns me, so I trust that you will bear with me for a moment or two. In principle, I suppose, everyone is "for" privacy of communications after hearing stories in the press about computerized invasion of privacy. As a lawyer who also happens to be an executive in the computer software industry, computerized security and privacy issues probably concern me more than most. The desire to protect the privacy of electronic mail and various types of computerized data banks spawned S-1667, and to the extent that S-1667 achieves these goals, I support it. Unfortunately, S-1667 as drafted also contains undesirable side effects.

S-1667 contains provisions that would prohibit persons from accessing material broadcast on the public airwaves—provisions that have no place in legislation dealing with the protection of computer data transmitted over telephone wires or leased lines.

U.S. Justice Department Supports Us . . . Then Reverses Field Under Pressure!

In the final House Judiciary Committee hearing on the Communications Privacy Act, the U.S. Justice Department testified that they did not believe that hobby listening to the radio spectrum should be criminalized. In fact they argued "the cellular transmission conceivably should be entitled to no more reasonable expectation of privacy than the cordless (phone) transmission unless it has been encrypted in some way." The Justice Department's position was that criminal penalties should come into play only if a person intercepted and divulged for tortious or criminal gain.

The testimony brought an angry response from Bill sponsor Representative Carlos Moorhead of California. In attacking the Justice Department position he said, among other things, "It's very clear that there's all kinds of mischievous things that you can do if you've got one of these scanners." Unfortunately, it appears that a lot of pressure has been put on the U.S. Justice Department by Moorhead and others. There are other parts of the Bill (that have nothing to do with scanner monitoring) that the Justice Department wants changed. It now appears that they are willing to agree to criminalizing mere interception of open radio communications on some frequencies in order to get the other compromises they seek. Too bad; their original position was the only one with logic behind it and the only type of law that can possibly be enforced. I would like to ask Representative Moorhead and the U.S. Justice Department who will be assigned the task of making sure that my neighbor Mary Smith isn't secretly listening to a scanner in her closet. Let's tell everyone just how ridiculous this law is going to be!

"The Best Thing You Ever Did!"

That's a quote from one charter SCAN member who wrote to us about the incorporation of *SCAN Magazine* into *Popular Communications*. It echos the comments of the many letters we have received. And judging from the number of entries we are receiving for the photo contest and public service award, *Popular Communications* subscribers are finding the SCAN features interesting, too. We welcome all your comments and suggestions. Just send them to SCAN, P.O. Box 414, Western Springs, IL 60558.

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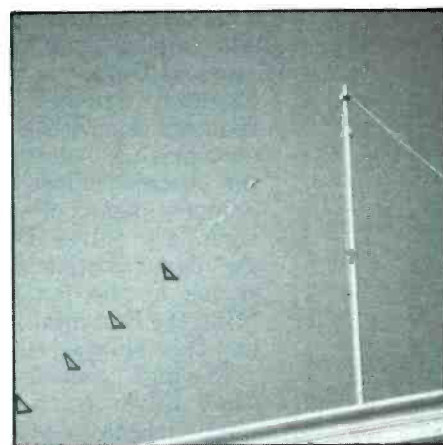
The Enigma Of “Diplomatic” Shortwave Stations

***The Stations Nobody Discusses! Are They
Terrorist And Spy Stations, Or What?***

BY TOM KNEITEL, K2AES, EDITOR



In December of 1982, without warning nor building permit, antennas began appearing on the roof of the Soviet Consulate in San Francisco. This view is from Baker Street. (Photo by Bill Schworger, KA6TOL)



A closer look at the bird-cage dipole atop the Soviet consulate in San Francisco. The antenna looks like one that would be used for transmitting as well as for receiving. (Photo by Bill Schworger, KA6TOL)

It has been said that only 10% of international diplomacy takes place out in the open, where the news media (and the public) can be reassured that the nations of the world are making at least some attempt to smooth over the ripples and wrinkles in their relations with one another. That means that the remaining 90% of international diplomacy takes place away from the eyes and ears of the press and the public and is anything but diplomatic—being a shadowy and intrigue-filled world of secret alliances, plots, schemes, tactics, deals, buy outs, payoffs, threats, promises, espionage, and pressure politics.

Far be it from me to give a blanket endorsement to such a cynical observation, but it is a fact that the world's nations are constantly accusing one another of substituting

terrorists or espionage agents as ringers for legitimate diplomatic personnel. Only this past April, for example, six European nations expelled many Libyan diplomats for what they said were acts of plotting terrorist attacks against Americans. As such incidents become more commonly reported in the media, it would certainly seem that some of the “hidden” (90%) part of diplomacy has started to boil over into the 10% segment normally assigned to treaty signings, VIP visits, and the overall “H&S” (handshakes and smiles) or public relations areas of international diplomacy.

Color It Immune

The international diplomatic scene is a world unto itself, existing beyond the pale.

Diplomats have special passports that provide them with virtual immunity from the civil and criminal laws of the nations they visit. The many thousands of members of this exclusive and elite circle are concerned with the operation of the United Nations, and with embassies, consulates, missions, commissions, and all manner of delegations and persons accompanying visiting dignitaries from the nations of the world.

Written correspondence between residents of this unique world usually avoids normal international postal channels, instead being transported by means of special high-priority sealed diplomatic pouches, often escorted by couriers. The letters, documents, and parcels contained in the pouches are exempt from import duties and fees, and from inspection from Customs, law enforcement, and postal authorities. They aren't any enforceable restrictions as to what they may contain. Theoretically they could contain firearms, narcotics, explosives, diamonds, cash, precious metals, stolen artworks, illegally ob-

tained archaeological artifacts, rare coins and stamps, industrial espionage materials, terrorist information, and national defense information obtained by espionage operatives. Indeed, over the years, incoming and outgoing diplomatic pouches have been suspected of being the means of international transport for such items under the protocol and mutual *laissez faire* courtesies nations extend to the world's diplomatic corps.

If you've always marvelled at James ("007") Bond's so-called "license to kill," note that Jimmy had nothing on some diplomats who have actually been involved in murders. Their "punishment" has consisted of being asked to return to their country of origin.

The embassies and other diplomatic buildings throughout the world are considered to be sovereign territory of the nations that operate within their premises. The laws of the host nation don't apply within the walls of such structures. Local police, nor members of any other local, state, or federal agency are permitted to enter without an invitation. That includes firefighters!

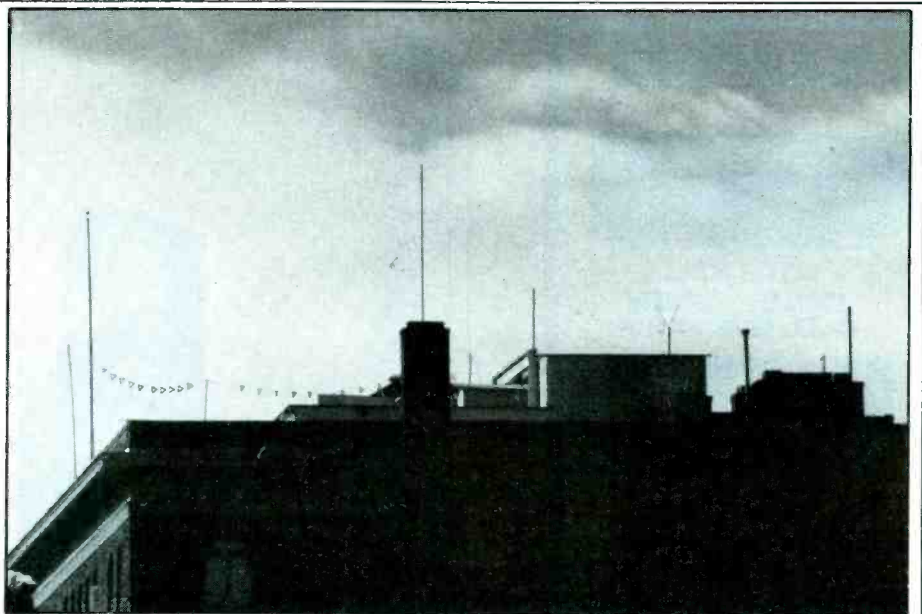
Enter Communications

As you might imagine, with electronic communications being such an integral part of our life and times, it was only natural that it would come to pass that diplomats would wish to use radio for their own purposes. Given their rather unusual status, communications stations operated by diplomats posed unique problems.

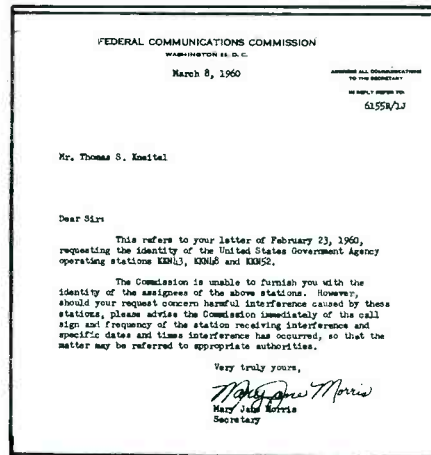
Radio receivers (in most areas of the world) aren't normally regulated or licensed, other than equipment owners having to pay a usage fee. Transmitters, on the other hand, have long been subject to licensing and regulation touching upon assignment of call signs and frequencies, operator qualifications, antenna height and lighting, technical and power standards, permissible communications, and interference. In light of the agreement to regard diplomatic operations on a hands-off basis, all of this posed an entirely new set of circumstances that weren't in the various agreed-upon courtesies—circumstances fraught with questions about motives and regulatory matters.

For instance, would diplomats of one nation be welcome to establish their own private communications networks in order to talk with one another and with their head offices in their home nation? Would such stations be licensed or regulated, and by what agency of which nation? Would (or could) there be any restrictions as to the content or nature of the transmissions? Who would assign the frequencies? Was there a way to police such stations, and any way to effectively enforce any agreed-upon regulations? What would be the status of such a station under conditions of a revolution or war in the home or host nation?

What would happen if one nation decided to establish a shortwave communications station within its embassy *without* the consent of the host nation, or even against that nation's expressed wishes. Was there anything or anybody that could stop them?



The Soviet's San Francisco antenna farm sits amidst companies producing computer chips and other high technology items. (Photo by Bill Schworcker, KA6TOL)

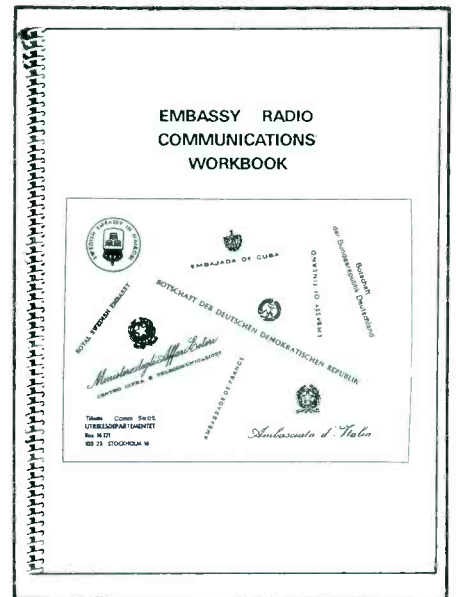


In 1960, I wrote to the FCC to try to get a line on which federal agency was operating several mystery stations. This reply gave the cold shoulder, but actually (without meaning to) gave more information that it intended.

With receiving-only installations, there seemed no question as to regulation or licensing. For several years now the American and Canadian news media have been unhappily pointing out that diplomatic buildings (including residences) owned by certain eastern European nations look to be loaded with wall-to-wall electronics monitoring equipment established for the purposes of monitoring everything from VHF two-way communications to microwave frequencies used for relaying long-distance telephone calls. Other than calling attention to such monitoring installations, nothing can be done to discontinue them. Even the proposed Electronics Privacy Act of 1985, intended (if it is passed) to stop Americans from much shortwave and VHF monitoring, would have no effect on diplomatic monitors!

The Transmitting Scene

While today, much diplomatic traffic is sent



Schaay's embassy station directory doesn't have the full story, but it's still the first and most ambitious compilation yet attempted.

over wirelines or via secure satellite links, a surprisingly large number of nations maintain substantial private shortwave communications networks capable of operating on many frequencies. Ostensibly, these networks are for the exchange of what can only be vaguely termed as diplomatic messages. While some observers feel that such systems are being phased out of existence (because of increased reliance upon satellite communications), others say that they are back-up systems or used for rapid delivery of low-priority traffic. Despite such speculation, the activity level from these stations hasn't diminished, and one might note that shortwave communications are far more suitable for getting messages through to terrorists or espionage agents in the field than are satellite



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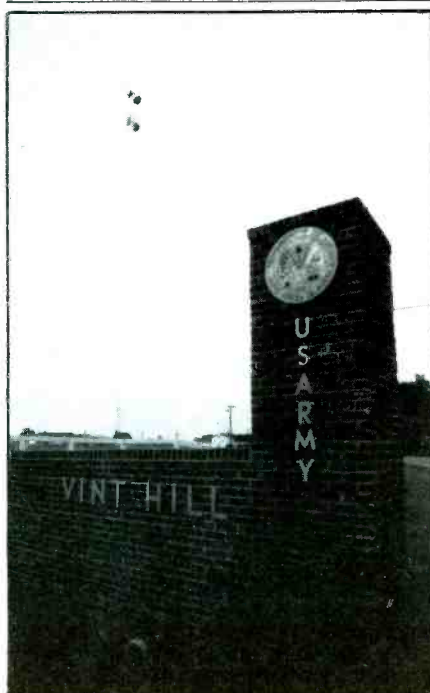
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City _____ State _____ Zip _____

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The main gate at Vint Hill Farms. Part of the antenna farm can be seen in the background.

transmissions. The fact is that these stations have the capacity to send messages far more insidious than invitation lists for embassy teas.

On March 26, U.S. and western European intelligence agencies intercepted a radio message from Tripoli to Libyan embassies in Paris, Belgrade, and Geneva advising agents to "prepare and carry out the plan." Similar messages flashed to Libyan agents in Madrid, Berlin, and Rome. Shortly thereafter, a rash of terrorist bombings took place aboard a U.S. airliner, in Berlin and elsewhere in Europe, followed by congratulatory communications traffic over Libya's embassy radio network. Yes, the messages that have been known to pass through diplomatic radio channels can be far more insidious than invitation lists to social events and teas!

Without going overboard with speculations about the potentials and motives of all diplomatic stations (since this probably varies widely from nation-to-nation, anyway), obviously at some point in time the governments of the world came to a meeting of the minds that gave the green light for the establishment of a diplomatic category of stations in embassies and consulates. Once the basics were agreed upon, there seemed to be a rather wide leeway in the actual usage and operation of these stations as practiced by various diplomatic legations.

The United Nations uses its special "4U" prefix for all of its own stations, worldwide. Most individual nations, too, prefer to issue their own callsigns whenever and wherever possible. This underlines the fact that the embassy stations are located on the nations own sovereign territory—the Swedish callsign SAM38 turns out to be located inside the Swedish Embassy in Moscow, and the station signing the Dutch callsign PCW2 is at the Netherlands' Embassy in Jerusalem.

Interestingly, diplomatic stations operated at foreign embassies situated within the U.S. are required to use American callsigns. Thusfar, these have been issued from the special callsign block KNY20 through KNY40. Such stations are all "officially" located at Washington, DC; run 1,000 watts; and may be authorized for SSB, CW, and RTTY operation. None are licensed or regulated by the FCC; that's because their diplomatic immunity supercedes the FCC's scope of authority. Instead, these stations are "sanctioned" by the U.S. Department of State and are operated under that agency's aegis and indulgence.

Although their "official" locations are in Washington, these stations are actually operating not only from Washington, but also from New York, Chicago, San Francisco, and several other larger cities. Although the news media frequently reports with alarm that various Warsaw Pact nations are operating shortwave communications stations from embassies and consulates, they never seem to point out that such stations exist with the full consent of our own Department of State. Perhaps this factor hasn't been realized by the news media, and maybe our Department of State hadn't wished to clarify matters and thereby voluntarily walk into the hornet's nest of controversy surrounding such stations.

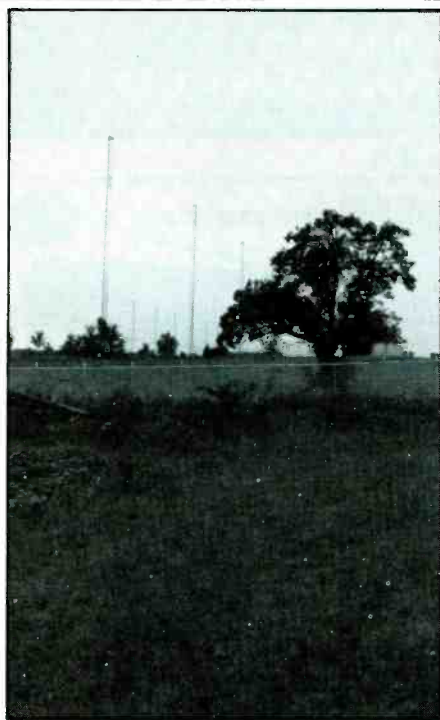
Nevertheless, these stations are quite active and regularly reported in our RTTY and Communications Confidential columns by our readers. Of course, their communications are in their native language or are encrypted, or both.

The American-Operated Stations

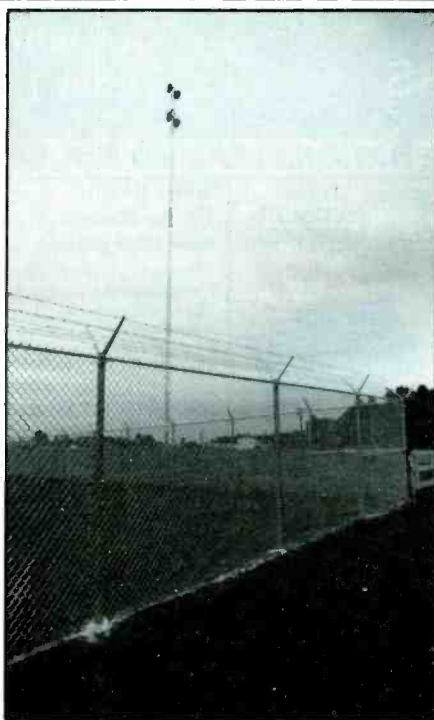
The U.S. Department of State, it would appear, has its own network of shortwave stations here and overseas. Even though many of these stations have been reported for decades, they have always been shrouded in mystery and government evasiveness. Who has tuned the CW or RTTY bands and not heard stations identifying as KWS78, KKN44, KRH50, KKN50 and other ID's used by some of these stations?

The checkered careers of the American stations has never been fully understood or explained. Ultimately, they perhaps have more to do with "intelligence" operations than with anything that could be remotely described as "diplomatic functions." One source reports that these stations are registered with the International Telecommunications Union (ITU) as stations of the CIA. Recent station listings produced by our own government indicate operation by the Department of State, although some say that it is the Department of State's Intelligence Service rather than the diplomatic end of the agency that's the salient factor here. One monitor states that the Department of State operates the stations on behalf of the Central Intelligence Agency! You'll have to make your own guesses.

These stations began appearing in about



We believe that this is the first published close-in view of some of the Vint Hill Farms antennas used for diplomatic (and other) communications.



A sturdy chain link fence topped with barbed wire tells visitors that they are not welcome down on the farm — Vint Hill Farms, that is! It is a high security installation.

1952, arousing immediate curiosity as to whether they were a commercial or federal operation. Records of the ITU at that time contained vague information. Locations for the stations in the U.S. were given as Washington, DC with geographic coordinates of 77-03W and 38-52N—sufficiently nebulous to signify the U.S. Capitol Building, the Pentagon, or the District of Columbia in general. Their points of communication were indicated as Swan Island, the Canal Zone, Brazil, and Peru.

When the stations first went on the air they were using callsigns from the block KGA59 to KGA71. A couple of years later, those calls were phased out and replaced with callsigns beginning with the letters "KKN." Also, they were joined on the air by other stations with varying callsigns that were operating from overseas locations. Speculation and curiosity from within the monitoring community significantly increased, and that's when (in early 1960) I decided to see what would happen if I wrote to the FCC to see what information they'd be willing to offer.

When I wrote to the FCC, I said that I was aware that these stations were government operations, but that I wanted to contact the agency responsible for their operation. The FCC's reply was evasive to the point of being a complete brush-off. Nevertheless, they did

U.S. Department of State

KGO58	Unknown location	11474 kHz		(CW)	3186 4910 5271 5426
KKN32	Washington, DC (CW)	6928 7470 10365 10470 kHz			7434 7627 7645 7652 10255
KKN33	Washington, DC				10285 14360 18351
KKN35	Washington, DC (CW)	15492 kHz			18460 kHz
KKN36	Washington, DC (CW)	15540 16355 16363 kHz		(RTTY)	4463 4468 5113 7816
KKN39	Washington, DC (CW)	17390 17605 18460 18467			7821 11170 11220 12261
		18700 kHz			12268 12272 13776 15711
KKN41	Washington, DC (CW)	10640 kHz			18148 18152 18545
KKN42	Washington, DC (ex-KGA61) (CW)	11095 kHz			23642 kHz
KKN43	Washington, DC (ex-KGA59) (CW)	12023 12112 13646 14880 kHz		(other freqs.)	3822 3830 4600 6978 7620
KKN44	Monrovia, Liberia (CW)	4886 5110 7635 7652 7830			7640 7812 8127 10310
		11434 11474 11520 11635			11255 11653 15704 15780
		11995 15917 16158 17426			18143 18400 18480
		18043 18348 20353 20929			19571 kHz
		20950 21300 23425 kHz			4548 4808 4903 5110 5732
KKN45	Washington, DC (ex-KGA60/KGA65) (CW)	18467 18525 18700 kHz	ONN31	Brussels, Belgium (RTTY)	7727 10523 10680 11474
KKN46	Washington, DC ("Universal" collsign noted at times on any Washington, DC frequency when RTTY mode is used.)	18972 kHz			12126 13718 14367 14548
KKN47	Washington, DC (CW)	20365 20720 23863 kHz	9GV	Accra, Ghana (CW)	14824 16150 16420 17426
KKN48	Washington, DC (ex-KGA67) (RTTY)	23975 23983 kHz			18348 20929 kHz
KKN49	Washington, DC (ex-KGA68)(CW)	23975 23983 kHz			14360 kHz
KKN50	Washington, DC (CW) ("Universal" collsign noted at times on any Washington, DC frequency when CW mode is used; collsign also noted in use at all times when certain other frequencies are used.)	4880 11106 14355 16255			
		16275 17570 18169 19146			
		20920 21764 23995 kHz			
		(ex-KGA66 18670 kHz)			
KKN51	Washington, DC (RTTY)	23863 kHz	KNY20	Polish Embassy (CW)	15804 19458 kHz
KKN52	Washington, DC (ex-KGA71) (CW)	23983 26760 kHz	KNY21	Yugoslavian Embassy (RTTY)	7719 11304 13378 14649
KLA24	La Paz, Bolivia (may also be using collsign KWR86 at times)	5270 6925 7517 8035			14875 15704 18430 19223
		14945 20123 kHz			20011 20149 kHz
KRH50	London, England (CW)	3310 4589 4626 5379 5427	KNY22	Ghanian Embassy (CW/RTTY)	17580 20021 kHz
		6789 7520 7724 7727 7865	KNY23	Czechoslovakian Embassy (RTTY)	7719 13378 14649 15704
		7875 10627 10580 10770			15804 18430 19458 kHz
		11070 11142 13813 14450	KNY24	Thai Embassy (SSB/RTTY)	12205 15542 19015
		16150 16349 16458 20569			21773 kHz
		20571 kHz	KNY25	Rumanian Embassy (CW/RTTY)	9041 11090 16065 16392
KRH51	London, England (RTTY)	7315 7570 7867 9147 9437			19950 kHz
		9463 9785 9973 10740	KNY26	Hungarian Embassy (CW/RTTY)	9040 10643 11090 15728
		11070 11635 13673 13783			16065 16392 17573 20011 kHz
		13842 13942 14655 14930			13605 18250 22960 kHz
		15595 17512 19443 19945	KNY27	Swiss Embassy (CW/RTTY)	10101 14989 16395 18310 kHz
		23446 kHz	KNY28	Algerian Embassy (CW/RTTY)	18249 19900 21812 kHz
KRH70	Unknown location (CW)	17426 kHz	KNY29	British Embassy (CW/RTTY)	9297 14373 18964 kHz
KRM32	Unknown location (RTTY)	4596 kHz	KNY30	British Embassy (SSB/CW/RTTY)	5856 9863 10923 12068
KRZ66	Unknown location (CW)	14360 kHz	KNY31	Soviet Embassy (CW/RTTY)	14913 16242 16392 20528 kHz
KWK94	Unknown location (RTTY)	14748 kHz			13607 18055 21064 22997 kHz
KWK95	Cairo, Egypt (CW)	11142 kHz	KNY32	Bulgarian Embassy (CW/RTTY)	11105 14913 18810 kHz
KWK97	Warsaw, Poland	9229 10621 11142 12105	KNY33	Swedish Embassy (SSB/RTTY)	11106 14354 18808 20958 kHz
		14173 15664 kHz	KNY35	Algerian Embassy (SSB/RTTY)	17368 kHz
KWL90	Tokyo, Japan (CW)	4048 5443 5823 6867 7662	KNY36	Nigerian Embassy (SSB/RTTY)	8135 11166 19210 kHz
		9224 10464 10900 12210	KNY37	German Democratic Republic Embassy (CW/RTTY)	11448 17625 kHz
		13210 13485 13700 14616	KNY38	Saudi Embassy (CW/RTTY)	14500 17450 kHz
		14782 16623 17552 kHz	KNY39	British Embassy (CW/RTTY)	9440 15519 kHz
		19270 kHz	KNY40	Tunisian Embassy (CW/RTTY)	14410 16125 17375 kHz
KWM24	Unknown location (RTTY)	14360 kHz			
KWN90	Unknown location (CW)	18531 kHz			
KWR94	Unknown location (CW)				
KWS78	Athens, Greece (believed formerly at Nicosia, Cyprus)				

Miscellaneous Diplo Communications Outside The U.S.A.
 Government of Angola CW on 9942 kHz; RTTY on 17458 & 22848 kHz
 Government of Cuba CW on 13961 14730 16168 18184 19065 19254 19295 19560 & others; RTTY on 10622 13936 13955 13986 14462 14730 14818 14946 14960 16175 16324 16359 16370 18425 19165 19250 19417 19430 19818 19882 kHz & others.
 Government of Ethiopia CW on 20458 kHz
 Government of Iran SSB on 12239 16109; RTTY on 12240 kHz
 Government of Libya SSB/RTTY on 4500 11125 11508 11985 14387 18298 20683 20733 20933 kHz
 Government of Vietnam CW on 13850 kHz

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provide tacit confirmation that it was a federal operation. Moreover, their refusal to level with me as to which agency was involved perhaps indicated that we were looking at a heavy-duty outfit that was hoping to maintain anonymity. This was at least more information, such as it was, than had previously been available!

More recent federal records indicate the Department of State as the agency in charge of these stations, although only a few of the frequencies and none of the callsigns are given. The locations of the American-based stations are still given as Washington, DC. It does, however, appear that this announced location is a fudged and very liberal interpretation of the actual location.

In actuality, the American station signals are coming from the U.S. Army Garrison, Vint Hill Farm Station, U.S. Army Electronics Material Readiness Activity (an element of the Army's Intelligence and Security Command).

Vint Hill Farms is nine miles from Warrenton, Virginia and 43 miles west of Washington, DC. Perhaps (or perhaps not) it is only coincidence that Vint Hill Farms is also the site from which many of the 4-digit so-called "spy-numbers" mystery transmissions are sent. This only serves to bring up additional questions concerning these stations.

While encrypted transmissions have been noted from these stations, often they are noted simply holding down a frequency with a callsign marker tape. Although specific KKN-type callsigns are assigned for use on most frequencies, at times the callsign KKN50 turns up on just about any of the "Washington" frequencies instead of the callsign that would seem to belong there. Could this, in itself, be a hidden message?

Inasmuch as the "spy numbers" voice transmissions began appearing within the same general time frame as these CW/RTTY stations took upon their new "KKN" identities, and since they are all operating from the

same high-security military transmitting site, it doesn't seem unreasonable to believe that these stations are all more than distant cousins. None seem to have any tie-in to the 10% of international diplomacy that gets trotted out on TV every evening by Dan Rather, Tom Brokaw, Ted Koppel, and Peter Jennings.

Are these diplomatic stations? Yes, but probably from the more sinister area of such matters—a far cry from the embassy cocktail parties and formal receptions with everybody wearing morning suits and white gloves!

Hear Here!

Data on the American and foreign governmental diplomatic stations has appeared, to one extent or another, in several publications available to the general public. Ferrell's *Confidential Frequency List* (6th Edition, 2nd Printing) contains lots of good diplomatic station information. Michiel Schaay, a Dutch monitor, produced an interesting original overview of these stations on a worldwide basis although (by this own admission) it contains information gaps. His book, *Embassy Radio Communications Workbook*, is the first and most ambitious effort of its kind; it is available from some dealers in communications books and frequency registries.

Harry Helms book *How To Tune The Secret Shortwave Spectrum* (also available from dealers) contains fine insights along with some listings.

Essentially, the whole story has yet to be revealed, and the complete worldwide station roster has yet to be compiled. In my own files, I have collected a considerable amount of data (far more than anybody has yet published) on diplomatic stations operated by our Department of State and also by foreign governments with embassies and consulates in the U.S.

This information accompanies this report. Also included are some of the frequencies used by several nations that do not have stations within the U.S. You never know what you might hear in the way of activity on these frequencies. Interesting, too, to note that a flurry of activity in the diplomatic networks often heralds an international "incident" (usually of the terrorist kind), even though you can't figure out exactly what they're saying. All frequencies shown are ± 1 kHz.

In 1929, U.S. Secretary of State Henry Stimson abolished the only cryptanalytic office within our government and thereupon uttered the now-famous observation that, "Gentlemen do not read each other's mail." It was a remark that has inspired codebreakers and communications intelligence (COMINT) types for the past 57 years. Time has proven that the other fellow's mail usually does contain interesting and useful information, especially if it is exchanged under the seemingly innocuous category of being "diplomatic" in nature.

The fact is that gentlemen do read each other's mail, so have no fear that you'll be alone in monitoring these signals. You'll be in the company of gentlemen!

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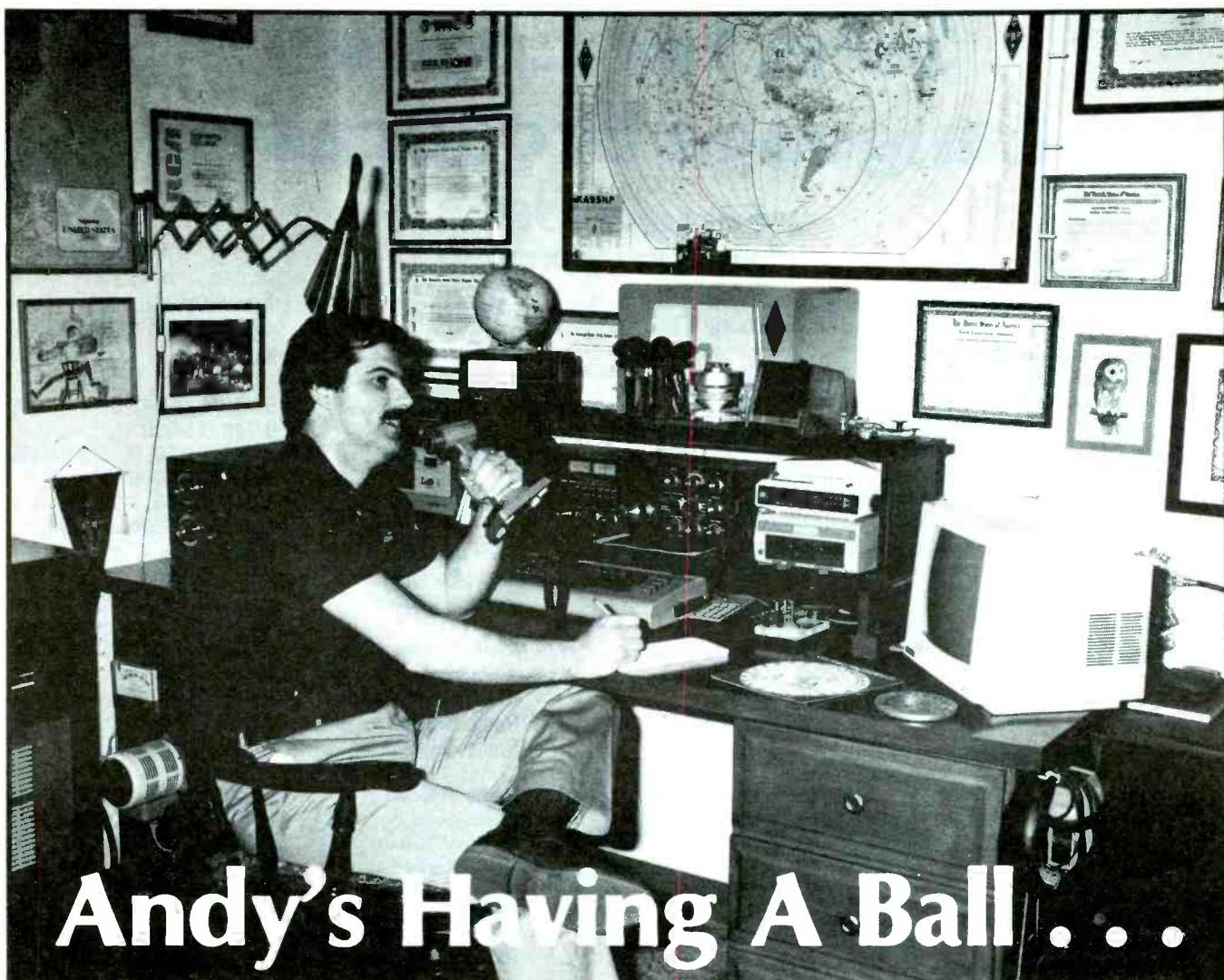
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Selected English Language Broadcasts

Summer 1986

BY GERRY L. DEXTER

Note: This list of English language broadcasts was accurate at the time of compilation, but stations often make changes in the hours and frequencies of their broadcasts with little advance warning. Hundreds of broadcasts are aired in English every day on the shortwave radio bands, many of them directed to an audience in North America. This is a representative sampling and not intended as a complete reference. Some broadcasters air only a part of their program in English during a given hour or may run the English segment into the next hour. Many stations, such as the BBC, VOA, Radio Moscow operate in English around the clock and only representative times and frequencies are listed for these. All times are in UTC. () indicates a start time so many minutes past the hour. Frequencies are in MHz.

Time	Country	Frequencies	Time	Country	Frequencies
	Radio Sofia	6.070, 11.770		Radio Netherlands (30)	6.165, 9.590
	Radio Havana	6.100, 9.740		Radio Belize	3.285
	R. Kiev (3)	7.165, 7.205, 9.520, 11.790, 11.860, 15.100	0300	Radio Prague	5.930, 6.055, 7.345, 9.630, 9.740, 11.990
	Radio Thailand	9.655, 11.905		Radio Budapest	6.025, 6.110, 9.520, 9.835, 11.910, 12.000
	Voice of Turkey	9.560		Radio Kiev	6.020, 7.165, 7.215, 11.790, 11.860, 15.180
	BBC	6.120, 7.125, 9.590, 11.750		TWR Bonaire	9.535
	Voice of Israel	5.885, 7.410, 9.435		Radio Portugal	6.075, 9.565
	Radio Canada	5.960, 9.755		Voice of Greece	6.010, 6.085, 9.545, 9.565, 9.640
	Radio Tirana	7.065, 9.760		Radio Moscow	6.000, 6.070, 6.130, 7.115, 7.150, 7.335
	Radio Beijing	9.820, 11.685, 11.970		RFI France (15, 45)	6.055, 9.800
	Spanish Foreign Radio	6.055, 9.630		Radio Austria	6.000
	Radio Japan	11.870		Radio Zambia (35)	4.910
	BRT Belgium (30)	5.910	0400	Radio Sweden	9.695
	Radio Portugal (3)	6.095, 9.680		Radio Sofia	7.115
	Voice of Greece	7.430, 9.470, 9.935		Voice of Turkey	9.560
0100	Radio Prague	5.930, 6.055, 7.345, 9.630, 9.740, 11.990		Radio Korea	9.570, 11.820, 15.575
	HCJB	9.870, 15.155		SRI Switzerland	6.135, 9.725
	Radio Vatican (5)	6.015, 9.605, 11.845		Voice of Nicaragua	6.015
	RAI, Italy	9.575, 11.800		RFI France (15, 45)	6.055, 7.135, 9.535, 9.550
	RBI, E. German	6.080, 9.730		Radio Botswana	4.820, 7.255
	Voice of Germany	6.040, 6.085, 6.145, 9.545, 9.565		RBI, E. Germany	6.080, 9.560
	RAE Argentina	9.690, 11.710		TGNA Guatemala	3.300, 5.955
	Voice of Nicaragua	6.015		HRVC Honduras	4.820
	Voice of Greece (3)	7.430, 9.420, 9.905	0500	Radio Havana	6.090, 6.100, 6.140, 9.740
	Radio Netherlands	6.020, 9.895		BBC	5.975, 9.570
0200	Radio Havana	6.100, 6.140, 9.740		FBIS Falklands	3.958
	Radio Budapest	6.025, 6.110, 9.530, 9.835, 11.910, 12.000		Radio Nigeria	7.255
	Radio Polonia	6.095, 6.135, 7.145, 7.270, 9.525, 11.815, 15.120		Radio Lesotho	4.800
	BBC	5.975, 6.075, 6.120, 7.125, 9.515, 11.750		Voice of Israel	7.410, 9.435
	Radio Korea	7.275, 11.810, 15.575		Voice of Germany	5.960, 6.120, 6.130, 9.545, 9.690, 11.705
	SRI Switzerland	6.135, 9.725, 9.885		HCJB	6.230, 9.870, 11.910
	Radiobras, Brazil	11.745		Radio New Zealand	15.150, 17.705
	Radio Bucharest	5.990, 9.510, 9.570	0600	GBS Ghana	3.366, 4.915
	Radio RSA,			Radio Dublin	
	South Africa	5.980, 6.010, 9.615		Int'l, Ireland	6.910
	Radio Cairo	9.475		Radio Havana	9.525
	VOFC Taiwan	5.985, 6.065		TWR Swaziland	9.735
				Radio Polonia (30)	6.135, 7.270, 9.675
			0700	Radio Sofia	9.700
				Radio Havana	9.525
				BBC	9.510
				SIBS Solomon Islands	5.020, 9.545
				Radio Cook Islands	11.760
				Radio New Zealand	11.780
				HCJB	6.130, 6.205, 9.860, 11.835
				SRI Switzerland (30)	6.165, 9.535, 11.775, 11.890

Time	Country	Frequencies	Time	Country	Frequencies
0800	BRT Belgium BBC CRFX Canada Radio Austria (3) Radio Japan (45)	9.890 9.410, 9.510 6.070 6.000, 6.155, 9.625 11.875	1600	UAE Radio BBC RFI France Radio Pakistan BSKSA Saudi Arabia Voice of Vietnam Radio Australia Voice of Nigeria	7.195, 11.955, 15.300, 15.320 9.515, 15.260 15.425, 17.620 9.885, 11.675, 12.005, 15.515, 15.595 9.705, 9.720, 9.740 10.040, 12.020 9.580 11.770
0900	GBS Guyana Radio Australia Radio Japan Radio Afghanistan Radio New Zealand Voice of Germany	5.950 6.060, 9.580 9.505, 15.195 4.485, 6.085 9.600, 11.780 9.505, 9.640, 9.715	1700	Radio Prague (30) Radio Norway (Sunday) Radio Moscow BBC Voice of Nigeria	5.930, 7.345, 9.605, 11.990, 13.605, 15.110 9.655, 15.220, 15.305 9.765, 11.705, 11.840 9.410, 9.515, 9.750, 11.750, 15.070, 15.260 11.770
1000	Radio Netherlands (3) Voice of Vietnam AIR India Radio Austria (3) Radio Budapest SLBC Sri Lanka (30)	6.020, 9.650 9.840, 12.035 11.795 9.625, 12.025 9.835, 11.910 11.835, 15.120	1800	Radio Canada Radio Surinam (15) Radio Netherlands SRI Switzerland AIR India	15.260, 17.820 17.755 9.540, 17.605, 21.685 9.895, 11.955 9.665, 11.620, 11.845, 15.265
1100	Radio Pyongyang Radio Polonia (30) BBC TWR Bonaire (15) Radio Moscow Radio Beijing Radio Australia Radio Pakistan	9.750, 9.977 9.525, 9.675, 11.840, 15.120 5.965, 6.195, 11.775 11.815 9.500, 11.750, 13.705 9.820 6.060, 9.580 15.606, 17.660	1900	Radio Sofia (3) VOIRI Iran (30) BSKSA Saudi Arabia Radio Afghanistan Radio Canada Radio Kuwait	6.070, 7.100, 11.720 9.022, 9.770 9.705, 9.720, 9.740 9.665 15.325, 17.875 11.675
1200	Radio Ulan Bator, Mongolia Radio Bangladesh TWR Bonaire (3) Radio Beijing HCJB Voice of Greece (35) Radio Finland VOPK Kampuchea	9.615, 12.015 15.525, 17.653 11.815 9.535, 9.640, 9.820 11.740, 15.115, 17.890 11.645, 15.630, 17.565 11.945, 15.400 9.695, 11.938	2000	Radio Havana (50) BBC Radio Norway (Sunday) Voice of Israel Radio Damascus Radio Algiers Voice of Nigeria Radio Bangladesh (30)	11.725, 15.300 6.175, 15.260 6.015, 9.590, 11.865 7.410, 9.435, 9.815 7.455, 9.635 9.610, 15.160, 17.745 11.770 9.610
1300	UAE Radio BBC Radio Norway (Sunday) Radio Canada BRT Belgium Radio Korea Radio Australia Radio Japan AIR India	7.195, 17.775, 17.830, 21.605 9.510, 9.740, 11.750 6.040, 9.590, 15.305, 17.840, 21.700 9.650, 11.945 15.590 6.135 5.955, 6.045, 6.060, 9.580, 9.770 9.505, 9.605, 11.840 11.810, 15.335	2100	Radio Sofia (30) Radio Havana BRT Belgium Radio Nacional Angola Radio Cairo Voice of Nigeria Radio Yugoslavia	6.070, 7.100, 7.115 17.885 11.980 9.535 15.375 15.120 6.100, 9.620
1400	Radio Sweden Radio Pyongyang Radio Korea Radio Norway (Sunday) Radio Australia Radio Moscow	11.705, 15.345 7.230, 11.880 9.570, 15.575 15.245, 15.300, 15.305 6.060, 9.580 9.655, 11.710, 11.840, 15.100, 15.150, 15.455	2200	Radio Sofia (30) BBC Voice of Israel (30) AIR India Radio Canada Spanish Foreign Radio Voice of Free China, Taiwan Radio Polonia Radio Vilnius, Lithuania	6.070, 11.770 5.975, 9.915 4.710, 9.435, 9.815 9.910, 11.620 6.170, 11.960, 15.325 9.780 9.600 5.995, 6.135, 7.125, 7.270 11.720, 11.960, 13.605, 15.180
1500	Radio Tanzania (30) Radio Norway (Sunday) Radio Japan BBC HCJB Radio Yugoslavia (30) Voice of Indonesia	6.105, 15.435 9.655, 11.850, 11.925, 15.305 5.990 9.515, 9.750, 11.750, 15.260 11.740, 15.115, 17.890 9.620, 15.240 11.790, 15.150	2300	Radio Sweden Voice of Turkey Radio Canada RBI E. Germany (15) Voice of Israel Radio Pyongyang Voice of Vietnam	9.695, 11.705 9.560 9.755, 11.710 6.125, 6.165 9.435, 9.815, 11.655 9.745, 15.230 9.840, 12.035

PC

TV DXing: E-Skip

There's More On TV Than "Dynasty"!

BY JEFF PLOTKIN

When one thinks of TV DXing, a picture of a huge TV antenna on a rotator mounted atop a tower or tall building comes to mind. This article will paint another picture . . .

There are various types of "skip." Skip is a term that refers to the propagation of radio signals over considerable distances due to their reflection back to earth by the ionosphere. The type of skip that will be discussed in this article is E-skip. E-skip—which, to me is the most interesting form of skip—occurs when the E layer of the ionosphere becomes highly ionized. TV signals are then reflected at a different angle than usual, causing the signals to travel farther distances than usual.

When an E-skip opening occurs, reception of television signal from as far as 1200 to 1500 miles is possible.

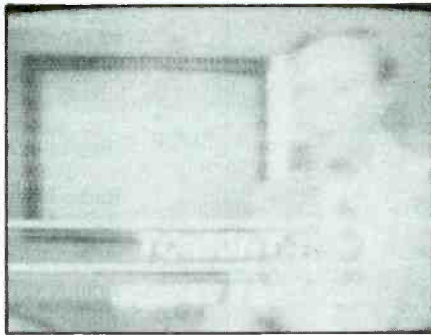
First, let's discuss the equipment needed to get started in TV DXing. Most obvious, you need a TV. A newer model with very good adjacent channel rejection is recommended. I prefer Sony televisions, since they have a very good tuner with a hot front end.

The most controversial area of TV DXing is the antenna. I use the rabbit ears (yes, the rabbit ears!), which are standard equipment on my Sony receiver. I do make a slight modification, though: I remove the rabbit ears from the back of the television and mount them on a camera tripod. This allows me to rotate the antenna through 360°, tilt it up and down, and make various adjustments to the antenna's angle.

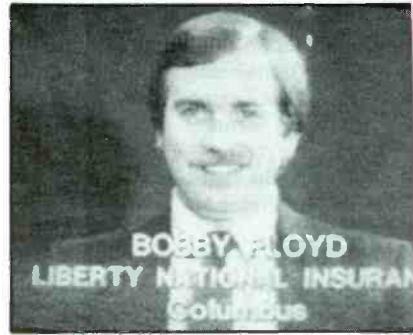
I also insert a pre-amp between the antenna and the TV. I find that the type that normally mounts on a roof pole or mast with the power supply in the house works best. I also use a medium-gain pre-amplifier, since a high-gain unit tends to overload the receiver.

I should point out that I live in the metropolitan New York area—Brooklyn, to be exact. My house is approximately 20 miles from the World Trade Center, the origination point of TV signals for the New York City area. I am on the ground floor of a two-story building, in a neighborhood filled with six-story brick apartment houses—a DXer's nightmare!

Now let us discuss the technique. Knowing when there is an E-skip opening can be a little tricky, since E-skip openings are not affected by temperature or the time of day or night. My own experience shows that peak E-skip openings are most likely to occur from June through the beginning of August. The key to spotting an opening is to watch the lowest local channel in your area. In my case, that channel is Channel 2, WCBS-TV in New York City. E-skip will cause a horizontal rip or tear to appear in the picture. When this type



In June of 1982, the author snapped this photo of WSAV in Savannah, Georgia.



A slightly grainy image of a commercial snapped while DXing WRBL of Columbus, Georgia.

of interference occurs, tune to the next open channel (the next channel for which there is no local TV station—Channel 3 in New York City) and see if there is a signal coming through. The antenna will have to be adjusted to obtain the best reception.

There may be times when you get this type of interference on your lowest channel, but when you tune to the next open channel you find no skip. Don't give up; you might have to watch snow for a while, but the wait will be worth it when you finally catch an opening.

E-skip openings vary in duration. They can last from only a few seconds to as long as 30 to 60 minutes. Signal quality can also vary from poor to excellent. Most of the openings I have received had excellent picture and sound quality, and a number of the signals have even been in color!

My first experience with E-skip occurred in the second week of June, 1982. I noticed the interference on Channel 2 and switched to Channel 3, where I saw and heard signal that I determined was not a local one. The station was televising a used car commercial at the time, and when the announcer gave the address and location of the dealership as Main Street in Pensacola, I realized I had tuned in Channel 3, WEAR-TV from Pensacola, Florida. I had experienced my first E-skip—using rabbit ears in Brooklyn, New York!

That same day, I logged four other distant stations—two in Florida and two in Georgia. Among the stations I have logged are:

WEAR-TV, Pensacola, FL
 WEDU-TV, Tampa, FL
 WRBL-TV, Columbus, GA
 WSAV-TV, Savannah, GA
 KIMT-TV, Mason City, IA
 WJMN-TV, Escanaba, MI
 WLBT-TV, Jackson, MS
 KYTV, Springfield, MO

Just to repeat, all of these loggings occurred in Brooklyn, New York, using rabbit



Another photo taken of the WRBL signal.



WEDU in Tampa, Florida came through a little worse for the trip, but still good enough to count for the logging.

ears, on Channel 3. On rare occasions, E-skip can affect channels as high as Channel 6. I have only experienced this type of signal once, when I logged the color signal of WCIX-TV, Miami, Florida.

E-skip can be a lot of fun, and, as you can see, you don't need any expensive equipment or an elaborate antenna system. It might also mean watching a lot of snow on Channel 3 (which, incidentally, I recommend you don't do in front of your wife or in-laws). Be patient, and hang in there. You, too, can experience E-skip TV DXing. **PC**

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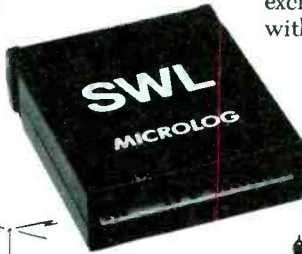
The "SWL" contains the program in ROM as well as radio interface circuit to copy

Morse code and all speeds/shifts of radioteletype. It comes with a cable to connect to your radio's speaker/earphone jack, demo cassette, and an excellent manual that contains a wealth of information on how to get the most out of short-wave digital DXing, even if you're brand new at it.

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Radio . . . The Good Old Days!

The Statue Of Liberty And Other Historic Stations Are Discussed

BY ALICE BRANNIGAN

What would July of 1986 be without a mention of the Statue of Liberty and its connection with communications? You got it! The little island in New York's busy harbor played its part in Miss Liberty's past.

It wasn't easy digging this information out, but I was able to piece together some tidbits. For instance, I couldn't find out when communications equipment was first installed on Bedloes Island (presently known as Liberty Island), although it was certainly there at least by 1917. The transmitting masts can be plainly seen in Charlie Chaplin's film, *The Immigrant*, released in June of that year. In 1917, the station was listed as WUM, with the official location as Ft. Wood on Governors Island, also in New York Harbor and two miles east of Bedloes Island.

In actuality, Ft. Wood was too large to fit in its entirety on Governors Island, so parts of it were built two miles away on Bedloes Island, thus creating a very high profile military presence in the upper harbor area so that all incoming vessels would have to pass between the two islands. I also suspect that WUM's two radio masts, located directly adjacent to Miss Liberty, were a symbol in their own right that projected a sort of high-tech image to new arrivals to the U. S. A.

By 1922, the callsign of the station had been changed from WUM to WVP. The station was transmitting on 208 and 223 kHz. By 1931 the frequencies at WVP had been expanded to: 159, 212, 223, 232, 4255, 6990, 8510, 12765, and 17020 kHz.

In the early 1930's it was decided to move the station's control point from Bedloes Island to Governors Island. The WVP receivers "through necessity" (as it was stated in 1933) were also to be relocated to Governors Island.

Speaking of necessity, that arrangement created one of major proportions! Controlling distant (remote) transmitters had traditionally been accomplished by means of landline or other "hard wire" direct connections. In the case of "The Voice of Miss Liberty" (as WVP became known), this arrangement was impractical.

A two mile cable would have been expensive, moreover it would have been vulnerable to intermittent damage from dragging ship anchors. The solution to the problem



In this aerial view of Bedloes Island in 1922, two radio towers are on the scene. One is to the left-rear of the Statue of Liberty, midway between the Statue and the island's shore. The other tower is located at the upper left shoreline and is just about impossible to see (even on the original photo).

was the creation of one of the very first "UHF" (as it was regarded in 1933) remote control links.

The four transmitters at the Statue of Liberty were operated by a 55 MHz control link; a 1500 Hz tone turned the power on and off in each of WVP's four transmitters. A 600 Hz tone keyed the transmitters. The four WVP transmitters were operating on 159, 223, 7010 and 8510 kHz.

While none of this may sound particularly exotic relative to current practice and technology, in 1933 it was nothing short of dazzling in view of the 55 MHz frequency combined with the control circuit itself. I don't know how long the WVP transmitters remained on Bedloes Island in the shadow of Miss Liberty, but it's fitting that the station should be recalled at this time of tribute to our national symbol of freedom.

It's The "Most"

In past features, we've looked at materials issued by broadcasters claiming to have the tallest transmitting towers, the highest locations, the biggest . . . the largest . . . the most *this or best that*. But there's no getting away from the fact that station WSLM wasn't bashful about getting in on some of those good claims.

Located in Salem, Indiana, and with neither an especially tall tower nor heavy-weight transmitter (it was running 1 kW), it still managed to come up with an accurate superlative on an early promotional picture card; WSLM was the "most powerful radio station in south-central Indiana."

WSLM (1220 kHz) eventually went up in power to its present 5 kW rating. The station's founder, Don Martin, put WSLM on the air for the first time on St. Valentine's Day in 1953, thus dubbing the station "The Sweetheart of Southern Indiana."

Our (undated) card shows a neat one-story building with lawn furniture in front and a tower in the backyard. The location, known as "Radio Ridge," is located at the east edge of Salem on Highway 56. For the uninitiated, Salem, Indiana is about 27 miles northwest of Louisville, Kentucky.

Double The Pleasure

Only rarely do we get a chance to see a card hosting two different stations—that is, broadcasters not sharing the same transmitter, time, or frequency. We do have one on hand, however, and it turns out that when this QSL was sent out (in 1931), the only things that Los Angeles broadcasters KFI and KECA had in common was their studio



This picture postcard from WSLM shows the Indiana station in a homey setting.



Reading the meters on the 5 kW transmitter used by KFI. This photo was taken in early 1926. The meter reader is none other than Sol Lesser, a well-known motion picture producer of the era.

and the fact that they were both owned by Earle C. Anthony, the California distributor for Packard cars. These days, a single license isn't permitted to own more than a single broadcasting station (within the same category—AM, or FM, or TV) in the same area.

KFI, of course, was (and is) a well-known powerhouse station in Los Angeles. The station commenced broadcasting on April 16, 1922 on 640 kHz (500 watts).

In 1925, the installation of a new 5 kW transmitter on the roof of the Packard Motor Car Building, California had the first station of its type to go on the air. With station KGO in Oakland, the state of California had the two most powerful stations in the U.S.

This transmitter was initially licensed to operate at 1 kW, with an authorization to test at 1.5 kW. Depending upon the results of those tests, KFI would then seek to run its full 5 kW. When the new transmitter was installed, the stations two towers were raised an additional 75-ft. for a total height above street level of 225 ft. (making them the highest structures in Los Angeles).

Eventually the station went into 5 kW operation, but by 1931 they had discarded the 5 kW rig and zoomed up to 50 kW and claimed to have the most powerful transmitter west of Chicago. KFI really made no bones about its status, and *Radio Station Treasury* notes that as early as 1926 KFI was calling itself "The Radio Central Super-Station. A national institution." The KFI studios were at 1000 South Hope Street in Los Angeles, with the transmitting site at Buena Park, 21 miles to the southeast.

Seeing that KFI is still on 640 kHz, and running 50 kW, maybe nobody could argue with the claim to being a national institution that the station first made more than 60 years ago!

KECA, the other station on the QSL card, came along its own route. It all began on April 15, 1925 as station KFVF (10 watts on 1440 kHz), licensed to Clarence B. Juneau, 8091 Santa Monica St. in Hollywood. In 1929, Juneau sold KFVF and it became KECA on 1430 kHz with 1 kW. Official records of 1931 show the new owner as the Pacific Development Radio Co. (Bertram O. Heller and Alexander Hursh), although later records indicate that the owner was Earle C. Anthony, Inc. (as claimed on the QSL card).

KFI and KECA had both been NBC affiliates, one with the "NBC Red Network," and the other with "NBC's Blue Network." When NBC's two components were split into separate and competing companies, one called NBC and the other called ABC, Anthony was forced to divest his holdings of one station. That meant KECA went to ABC ownership, and by the end of WWII (what with all of these changes, plus the effects of FCC frequency shuffling), the station was running 5 kW on 790 kHz from studios at 1440 N. Highland, and a trans-

Dear Radio Friend:

This card, with stamp attached, verifies your reception of KFI..... KECA..... We are happy to number you in our audience.

You may be interested in the following facts about KFI-KECA:

KFI

640 kilocycles—468.5 meters—50,000 watts

Operates daily from 6:45 A. M. (Pacific Standard Time) until midnight. Transmitter (most powerful West of Chicago) located at Buena Park, 21 miles southeast of Los Angeles. Studios at 1000 South Hope St., Los Angeles.

KFI has been in operation since April, 1922. Its daily programs include variety reviews, exclusive news dispatches by leased wire, finance, health and home economic talks, symphony, chamber and popular dance music.

KECA

1430 kilocycles—210 meters—1000 watts

Operated daily from 9:00 A. M. to 11:00 P. M. (Pacific Standard Time). Transmitter at Eighth and Beacon Streets, studios at 1000 South Hope Street, Los Angeles.

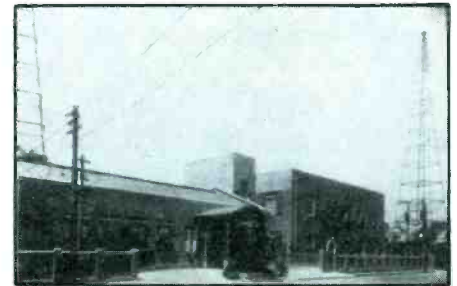
KECA has operated since November, 1929. Its daily programs correspond in quality and character to those of KFI.

BOTH KFI AND KECA ARE OWNED AND OPERATED BY EARLE C. ANTHONY, INC., CALIFORNIA DISTRIBUTOR OF PACKARD MOTOR CARS, AND ARE ASSOCIATE STATIONS OF THE NATIONAL BROADCASTING COMPANY.

The two stations sharing this 1931 QSL card were an odd couple.

mitter at 2951 S. Fairfax. The callsign was later changed to KABC and, of course, this station is still operating and is the most popular AM station in Los Angeles!

The combo KFI/KECA QSL card carries a space for an EKKO stamp, although none was supplied with the QSL we have. That's what was missing then; now we'd like to see one of these good stations put missing Robert W. Morgan behind the microphone (local joke).



A 1927 view of the exterior of Japanese broadcaster JOCK in Nagoya.

Trans-Pacific

A popular form of DX'ing in the early days of broadcasting, as it has remained throughout the decades, is pursuing the European, Asian, South American, and African broadcast band stations. One of the first major Asians to become a TP (Trans-Pacific) DX delight was station JOCK in Nagoya, Japan.

JOCK was one of Japan's pioneer stations and its career began on 832.8 kHz, the common frequency assigned to the first American broadcasters. In 1927, however, long after American stations had increased in number and been shifted to different frequencies, JOCK remained on this frequency and running 6 kW. Thus its operation on a split frequency gave North American listeners a clear shot at hearing the station. This dream wasn't to last forever; by 1931 the station had moved to 810 kHz where North American listeners had to try for it through the 5 kW signal of WCCO in Minneapolis, Minnesota.

By 1936, JOCK was running 10 kW, but

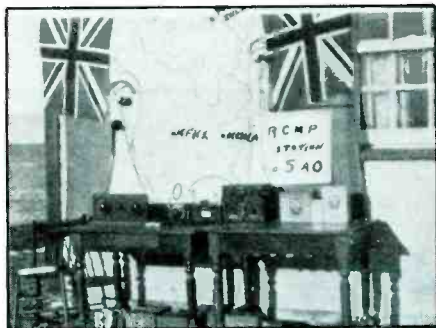
WCCO had gone to 50 kW. Shortly thereafter, JOCK called it quits on 810 kHz and went to 730 kHz. Although this move was probably inspired by reasons that had nothing whatsoever to do with the status of North American stations on their frequency, it is worth noting that the only activity on 730 kHz hereabouts consisted of four stations. One was in Cuba, three were in Canada (and none ran more than 5 kW).

Our photo of JOCK was taken in early 1927 and shows an impressive western-style building flanked by two towers.

Today, JOCK is owned by the Japan Broadcasting Corp. (better known as NHK). It operates with 50 kW on 729 kHz; an FM outlet is on 82.5 MHz.

Dudley Doright's Daddy

The sweltering month of July seemed a good time to introduce you to one of the northernmost communications stations they had "way back when." That would be RCMP station C5AO, located at Pond's Inlet, Baffin Island, NWT, Canada. C5AO's location was north of the Arctic Circle and a place with four months of darkness!



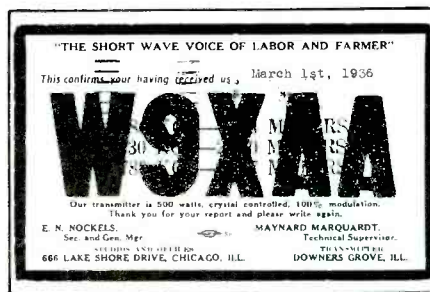
Station C5AO was the RCMP's man at a lonely outpost above the Arctic Circle. This station operated on 7596 kHz, but that was 60 years ago!

The two-way communications station was, in 1926, manned by Constable Tinsbury of the Royal Canadian Mounted Police, although it cannot be recalled which VIP's car he ticketed in Ottawa in order to be assigned to this desolate outpost.

This station operated in the RCMP net on 7596 kHz. The transmitter was designed by a former Canadian Coast Guard operator. A map crudely drawn on the wall shows the location of the two broadcast stations Constable Tinsbury could rely upon for entertainment—KDKA in Pittsburgh and KFKX in Hastings (Nebraska).

Shortwave Relays

It seemed like a good idea at the time, and it still does! One of the first approaches to shortwave broadcasting in the U.S. was to have commercial broadcast band stations take out (experimental) licenses for shortwave transmitters to relay their programming. In the mid-1930's, this was definitely the way to go.



W9XAA, operated by Chicago's WCFL, was a 1930's shortwave relay broadcast station.

Several stations took advantage of this concept, one of them being station WCFL in Chicago. They were assigned the call sign W9XAA for 500 watt operations as "The Shortwave Voice of Labor and Farmer" on 6080, 11830, and 17780 kHz. One of their 1936 QSL cards was submitted to this column by reader Howard Kemp of Laconia, New Hampshire.

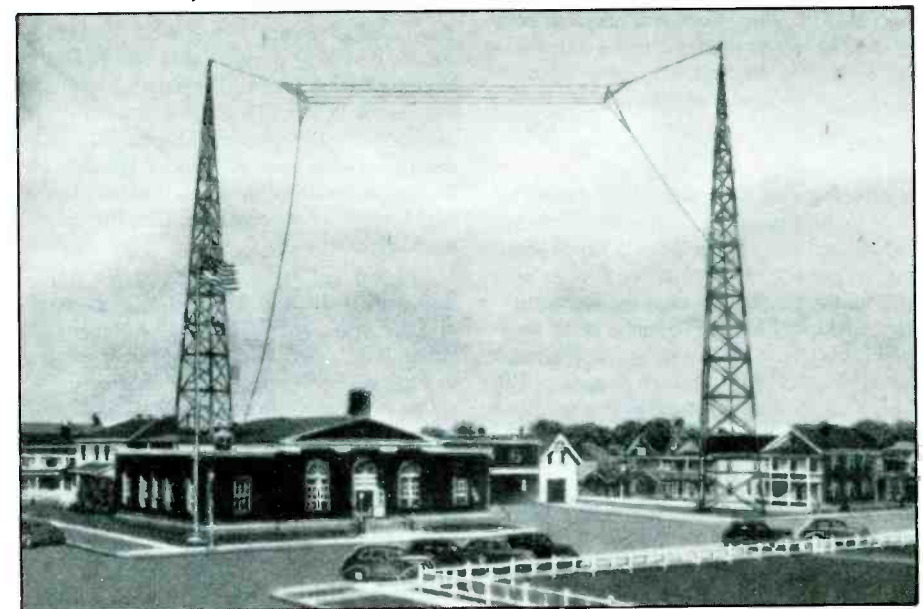
When the shortwave relay experiments ended, WWII was on the scene and there was a long period when the only shortwave broadcasting permitted/encouraged was that which was done by the government itself, plus major corporations such as RCA, CBS, Crosley, GE, and a few others. However, in Canada, the idea of local stations having their own shortwave relays remained popular.

Private ownership of shortwave broadcasting stations, however, has been making a comeback of late and that's good news!

Mystery Station

Here's one that has caused me to scratch my head in wonder at what it could be. It's a picture postcard showing what is described as "U.S. Post Office and wireless towers, Virginia Beach, Va."

This view of Virginia Beach, Virginia, shows an impressive antenna system. Could it be that of station NCZ on 375 kHz? If not, then what station is it?

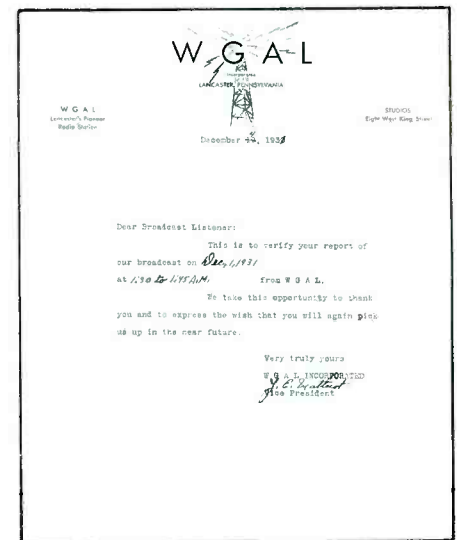


Although the card isn't dated, the vehicles shown are all of mid-1930's vintage. There were no broadcasting stations in Virginia Beach during the 1930's and 1940's, and (other than the U.S.C.G. station, which this station isn't) there really isn't any station I can assign to this photo.

Possibly it's not a broadcasting station at all, but a maritime or police station. The Post Office location would suggest some sort of federal or other "official" station. If any reader has a notion about this station, please step forward. It seems like the wrong kind of antenna system to be USN radio compass station NCZ (375 kHz) in Virginia Beach. Or is it? I dunno!

Lancaster's Broadcasters

Station WDBC on 1163 kHz, Lancaster (Pennsylvania), went on the air in 1922 with the big wave of early broadcasters that fol-



An odd 1931 QSL letter from broadcaster WGAL in Lancaster, Pennsylvania.

lowed the initial trickle of pioneer broadcasters in 1921. Within a year, WDBC was joined by another local broadcaster, WGAL (1210 kHz), operated by the Lancaster Electric Supply and Construction Co. WDBC ran 50 watts, while WGAL had a mighty 10 watts!

By 1930, WDBC had become known as WKJC and was running 100 watts on 1200 kHz; WGAL (which had shifted to 1310 kHz) had caught up with a 100 watt transmitter of its own from 8 King Street. The year 1935 saw WKJC in status quo, but WGAL had again moved its frequency to 1500 kHz. It must have been a great piece of strategy, because within a year WGAL was Lancaster's only broadcasting station!

In 1946 WGAL was on 1490 kHz with 250 watts. The early 1960's had WGAL operating with 1 kW on 1490 kHz, but joined by 5 kW station WLAN on 1390 kHz. Eventually WGAL's call sign was changed to WLPA. These two stations continue to operate—WLPA with 1 kW (days) and 250 watts (nights); WLAN with 5 kW days and 1 kW nights.

Our WGAL verification letter is curious. It's a form letter apparently made up on December 19, 1930. The details of the verification of reception almost a year later are entered in the blanks and the printed date has been hand-corrected. This was submitted by Jack Hotchkiss of Florida.

Looks like a wrap for this time! See you next month. **PC**

Historic Ham QSL's

You won't find a listing for the Principality of Liechtenstein in your copy of the *World Radio TV Handbook*; nor is the nation in any listings of "ute" stations. This is because Liechtenstein is so small that there isn't room to do very much there except accommodate the many tourists and business people who flock to the European mini-nation.

PRINCIPALITY OF LIECHTENSTEIN	
HE9LAC	
Radio:	T. Viking II 400 W. R. 75A3
ctm Qto on 23.1.37 on 23.1.37 HB1	Ant. ground plane
on 23.1.37 on 23.1.37 R. 5.5.7.1.3	Rene E. Madin, Schaan FL
Pre Qth CM 101	Eudemirio 125
	73s R. Madin

About equal to our District of Columbia in size, and with a population of 27,000 (same as Hopkinsville, Kentucky; Colton, California; or Gloucester, Massachusetts), the nation lies between Switzerland and Austria. Because of its liberal tax regulations, Liechtenstein is home to the headquarters of a wide range of international corporations.

Switzerland has administered the nation's postal and communications needs since 1921, and Liechtenstein is united

with Switzerland in a monetary and customs union. For this reason, Liechtenstein doesn't even have a callsign bloc of its own assigned by the ITU (not that it needs very many callsigns). That's left poor little Liechtenstein somewhat of an orphan in respect to such matters. Mostly, it's had to make-do with callsign handouts from Switzerland.

Official ARRL callsign prefix listings for 1938 and 1939 show no prefix for Liechtenstein's Ham stations, although the 1947 listing indicated that the prefix HE1 (from the Swiss bloc) was assigned to the nation (Swiss operators use an HB9 prefix).

The current Ham prefix for Liechtenstein is HB0, but no matter what prefix is used, it's a nation that's high on almost everybody's list of places they'd like to see active and verified. The card we show here is from station HE9LAC back in 1958. The operator was running 100 watts with a Johnson Viking II. He was on 20 Meters. Nice catch!

In response to readers who have asked if they might submit Historic Ham QSL's from their own collections for use here, the answer is "yes!" Please don't send the original cards; good quality prints from an office copier will be suitable.

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The Hallicrafters HT32 transmitter.



The principal facilities of Tangerine Radio.



Close-up of Tangerine Radio's equipment.

Portrait Of A Pirate – Anarchy On The Airwaves

The Story Of Tangerine Radio

BY JOHN SANTOSUOSSO

On a recent trip I found myself traveling down “the dark, deserted streets of a city destroyed by time.” It was an opportunity to visit the “Voice of Revolutionary Anarchism in North America,” or as it is better known, Tangerine Radio. “Raunchy Rick,” the station’s operator, gave me a warm welcome, and we settled down to discuss what is one of the country’s most unusual and most philosophical radio stations.

Raunchy Rick claims he received that name because he does not hesitate to speak what is on his mind. It is easy to understand why many would find his thoughts unsettling. He openly and without apology rejects much of what most of us have been taught to believe all our lives. Yet, in some ways the name, if catchy, is unfortunate. Rick can be disturbing but also refreshing. Here is a rare honesty and a mind that at least forces you to rethink your own values if you intend to reject his. You soon realize that in this modest apartment, which serves as both home and studio, lives a philosopher as well as an expert in the field of radio electronics.

How does one become an advocate of the abolishment of taxation, most kinds of work, landlords, government, organized religion, capitalism, communism, and even clocks? Rick’s background in some ways is rather typical. His origins are middle class, and he feels his family would still fit that description. However, he discovered rather

early that he could not conform to that mold. Rick left high school and spent two years on the street. It was the street that taught him anarchism, and he met several avowed anarchists during this period of his life. He also learned first hand of the harassment that street people sometimes experience from the authorities, but there was the reality of human kindness as well. Street people help each other. One, “Joe the Bug Man,” bought him a meal at a time when he badly needed it. Later he would lose this good friend when he died a tragic and preventable death.

Now the time on the streets is over. In his mid-twenties, Rick works as an unskilled laborer at work he feels is meaningless but necessary for his present survival. He no longer learns anarchism on the streets but from those who share his views, as well as from music and books. Music from as far back as the turbulent 1960’s has had an impact on him, and he has devoured certain classics in political philosophy. Among these are the works of the famous Russian anarchist Prince Peter Kropotkin. To hear Rick speak is to sometimes catch the echo of Kropotkin’s words in such books as *The Conquest of Bread* and *Mutual Aid*. He gives praise to the Englishman John Stuart Mill’s profound statement on individual freedom, the *Essay on Liberty*, and also reads current anarchist magazines pub-

lished here and in Europe. Included in his favorites are *The Match*, *Black Flag*, and *Resistance*.

Raunchy Rick’s philosophy is featured on Tangerine Radio broadcasts, along with appropriate music to help emphasize the points he wishes to make. In addition the station publishes a quarterly paper entitled *The Wave*, which is a vehicle for anarchism plus pirate radio, technical articles about radio, and listeners’ letters.

It is not surprising that Rick chose radio as the chief method for expressing his views. He admits to being interested in it at an early age, and he worked briefly at both a commercial and college radio station. The apartment studio is well equipped with items carefully acquired, mostly at Ham fests. In addition to the Hallicrafters HT32 transmitter, there is a tape deck for editing, a Phillips turntable, a digital delay for special effects, a Radio Shack mixer, two stereo cassette decks, and several other pieces of equipment. Two strands of wire thrown into some convenient trees serve as the antenna. Several sympathetic pirates supplement the Tangerine Radio 25-watt (100 SSB) signal by relaying programs. Rick keeps up with what other pirates are doing through personal contacts, monitoring broadcasts, and reading various publications.

By now it should be clear that Tangerine Radio is not just another run-of-the-mill pi-



Raunchy Rick's broadcasting chair, microphone, and headphones.



Another view of the equipment and apartment studio.



Studio wall showing QSLs from other pirates plus anarchist "no government" logo.

rate radio station. Tangerine Radio and Raunchy Rick have a cause. Since plans for the station began in 1982, and its initial broadcast in March 1984, that cause has been the proclamation of revolutionary anarchism, a philosophy that calls for the overthrow and abolishment of all forms of government.

Rick does not feel that this is some sort of impossible dream. The country did go through a revolution in the 1770's. Several revolutionary movements were at work in the 1870's, and there is the more recent situation in the 1960's, when many of society's previously accepted values were seriously challenged. Revolution can happen, and it can be peaceful.

In addition, Rick hopes and feels that our present conservative society really contains many latent anarchists, people who express elements of the anarchist philosophy without realizing it. Among these, he would include persons who identify with the seemingly conservative Libertarian party. Interestingly enough, several years ago while doing research on the views of various pirate operators, this writer discovered that a number of them claimed to be Libertarians.

The actual message transmitted by Tangerine Radio can be divided into two parts. Programs are very specific as to what should be abolished in today's world. However, the emphasis is not strictly on the negative. Alternatives to the present situation are also presented.

Among the things rejected by Tangerine Radio is work in its present form. "Work is a prison of measured time. Work is not necessary. All forms of work stink," declares Rick. He believes that the profit system and most work must be abolished. Although some have advocated a reform policy, reform of work is not really possible. Much work is useless and turns out unnecessary products. In order to illustrate this point, one program features such products as Mr. Cardboard Tube and a gene splicer.

Workers lose many of the rights they have elsewhere in society, such as trial by jury and the freedom to choose leaders. In addition some, including miners, work in very unsafe conditions. Rick remarks, "Work is a very dangerous and deadly experience. Work kills." All of this is to benefit the capitalistic ruling class. On the other hand, the Soviet system is just a variation that could be called centralized capitalism.

What could be done to change things? Some work could be automated away. Much of the rest could be made more pleasant as people work for each other and produce only the things they really need instead of missiles, cordless telephones, whoope cushions, and electric can openers. There is a real need to raise agricultural products that are safe and contribute to a healthy diet.

Also earning the wrath of Tangerine Radio are landlords. The station says they can be paid forever for doing nothing productive and that they should have no rights. Rick claims they receive "a profit which arises through no creative or productive effort whatsoever." Thus, he adds, "No one has the right to extort rent."

Instead of paying rent Tangerine Radio suggests that shelter for all could be built by a cooperative society. It points to the example of Amish barn raisings, where the structure can be built in a single day and not a cent paid for labor. Other possibilities include "squatting" in empty buildings, a practice now quite popular in several European countries. Further alternatives are to leave the city to live in the woods or swamps. In fact Rick himself hopes to eventually leave the city.

Tangerine Radio states that the environment must be protected. The station plays a song that warns, "If man is allowed to destroy all he needs, he will soon have to pay with his life for his greed." The balance in nature is considered to be the great example of anarchy in nature, but government and capitalism destroy it. "Just about every atro-

city committed against the environment can be chalked up to one of two wonderful institutions in our society—government and capitalism," says Rick.

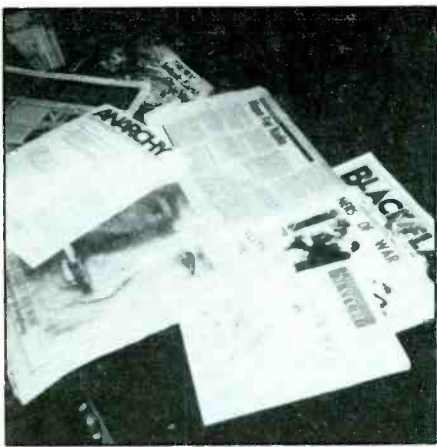
Again alternatives are advocated. Instead of expensive, environmentally destructive power companies, Rick calls for decentralized solar and wind power. People can often substitute natural substances for some of the dangerous chemicals that are so commonly used today. For example, citrus oil can be used to kill fleas, and many herbs have various useful purposes.

Organized religion and the police come in for their share of criticism. Rick believes both have been used to keep the working class in line. He would argue that "the police segregate working-class and poor and minority people into certain neighborhoods. That is why so much crime is poor person on poor person. The police are not there to protect everybody. They are there to protect the ruling class."

Instead of relying on such institutions he says we must realize, "This is the only life there is. Make this a world worth living in." Sometimes direct action may help bring this about. It can include such noncontroversial things as growing gardens to more hostile activities as foiling computers and deliberately overpaying bills by a slight amount.

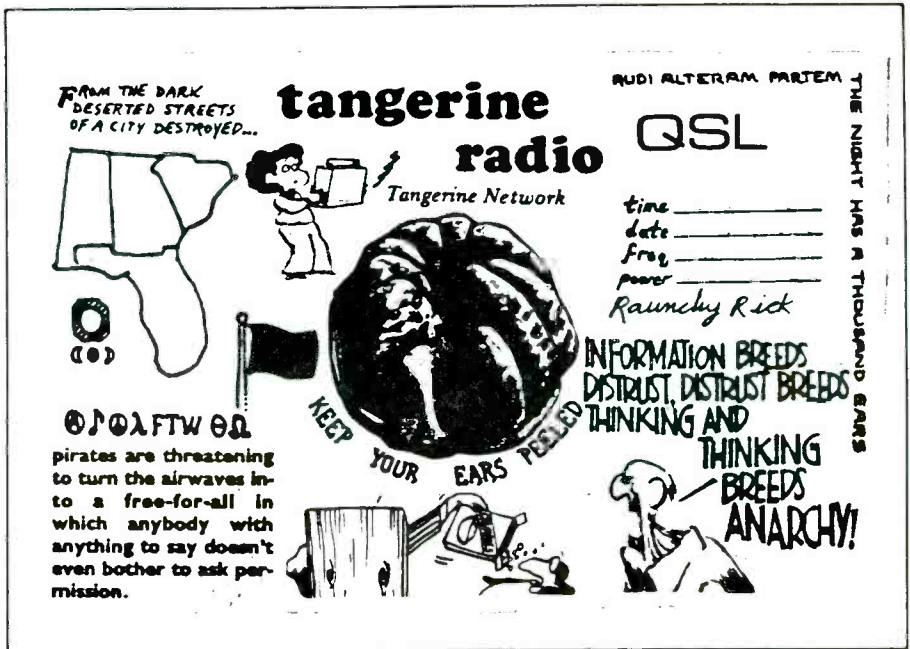
The ultimate goal is a voluntary society with no hierarchy. Decisions would be made by consensus with no compulsion. Is this just some sort of hallucination? Tangerine Radio claims that such a society existed in certain rural areas of Spain in 1936 and 1937 and included eight million people who freely organized themselves into over 400 collective farms and organizations.

If that is the dream, is anybody listening? Certainly a shortwave pirate does not reach the vast numbers that commercial and government media do. However, for now, Rick is content with the modest audience he does have. During his first year of broadcasting he issued 56 QSLs in response to reception



Display of anarchist magazines.

reports, and several additional letters were received. He also thinks the shortwave audience is more sophisticated than the general population and thus better able to appreciate his message. He can point to some specific responses as well, including one thoughtful letter from a listener who obviously did not share his religious perspective but did agree with many of his positions on work. To be sure, there have been opponents, such as one writer from Georgia who felt that all of the Tangerine Radio philosophy had been said before and was useless anyway. Still, Rick thinks that most who listen and write are at least partially sympathetic.



A Tangerine Radio QSL card.

What about the future? Raunchy Rick hopes that the Tangerine Radio of tomorrow will be bigger and better. He would like to involve more people in the production of programs and, if possible, eventually move the station to what he believes would be a more healthy location in a rural environment. The station magazine, *The Wave*, will

continue, and it helps to finance the work through subscriptions along with advertisements for Tangerine Radio tapes, T-shirts, and other merchandise. In size Tangerine Radio hardly compares with commercial stations, but it would be a mistake to question its dedication or sincerity.

If you seek to hear the sounds from "the streets of a city destroyed by time," remember it will not be easy. Broadcasts, like those of other pirates, must be made on an irregular basis. Probably your best opportunity would be to search the 41-meter shortwave band (although others have been used) some weekend. You might also try around the night of the full moon. Should you be successful and wish to send a reception report, or wish to inquire about Tangerine Radio publications and products, you can try sending your letter to last known address of Tangerine Radio, Post Office Box 5074, Hilo, HI 96720. Be sure to enclose three mint first-class stamps for the forwarding of your letter.

I left Tangerine Radio's facilities with some reluctance. I could not agree with everything that had been said. However, I remembered the words of a dear friend who once told me that "if two people agree on everything one of them is not necessary." What really made me hesitate to go was the realization that this place forced one to think. You may reject Raunchy Rick's philosophy, but in one way or another you are required to react to it. Encounter it once and you no longer automatically accept the status quo. If you do not like his alternative future then you are encouraged to explore what you would want and why. If we have to do this sort of thing often enough, then somehow we may just arrive at a better world. I drove back down "the dark, deserted streets of a city destroyed by time," grateful for the time I had spent there. **PC**

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Essex County Police Officer Plunges Into Icy Waters To Save Man

Quick thinking and quick action are required whenever a rescue from a river or lake is attempted. A lake that is partially frozen and an out-of-control automobile can make a potentially dangerous situation even worse.

Officer Kevin Greener of the Essex County (New Jersey) Police was able to think and act quickly—and rescue a Newark, New Jersey man whose car had plunged into Weequahic Park Lake one cold February day.

SCAN PUBLIC SERVICE AWARD

Phoas Wells Jr., the operator of the car, was listed in good condition at University Hospital, where he was suffering from exposure after Greener had pulled him from the water, according to an account of the incident in the *Newark Star-Ledger*.

Greener and his partner, Sabino Zarro, had been driving through the park when they were flagged down by several people who had seen the car go into the lake. The two officers drove toward the accident site and began a rescue immediately.

Zarro remained on the shore with a rope while Greener waded and swam toward the vehicle, still dressed in his uniform, accord-



While medical crews work with the rescued man, a half-frozen Officer Kevin Greener makes his way back onto dry land. (Photo by New Jersey Newsphoto. Used with permission.)

ing to Sgt. Frank Schafer of the Essex County police scuba team. Greener also had to push aside chunks of ice in the six-foot-deep lake, and contend with the lake's muddy bottom. Schafer said that there may have been five feet of mud on the bottom of the man-made lake.

"The car was still above water, but it was

pretty close to being submerged. There was about three inches of ice on the surface, which of course, couldn't hold it," Schafer told the *Star-Ledger*.

Greener was successful in getting to Wells and bringing the man to shore. Greener was also taken to University Hospital after the incident, where he was treated for exposure and released. Members of the county scuba team removed the car from the lake shortly after the rescue was completed. Police had not determined a cause for the accident.

Schafer told the *Star-Ledger* that this type of accident was not that unusual. "For almost any reason, people lose control (of their vehicles) and plunge into water," he said. "Most of them, however, are very lucky as far as survival goes."

As far as Phoas Wells Jr.'s survival is concerned, he was lucky that someone like Kevin Greener was nearby when his not-so-unusual accident occurred.

The 30-year-old Greener has been a member of the Essex County Police force for four years. He receives a special commendation plaque and a \$100 cash prize for his efforts. SCAN member Joseph De Luisi of Newark also receives a special plaque for making the nomination. Congratulations to both of you.

Send all SCAN Public Service Award nominations to SCAN Public Service Award, P.O. Box 414, Western Springs, IL 60558. Please send a letter along with background information, such as a newspaper clipping.



Best Appearing

At first glance, it would appear from this photo that Joe Allison of Wytheville, Virginia, is as much an aficionado of maps as he is of scanners, but that is not the case.

Joe's interest in scanning started when he joined the Wythe County Rescue Squad five years ago. He has since left that service to devote more time to college, but reports that he is still an avid scanner enthusiast. Joe also remains a certified EMT-A and Red Cross Multimedia first aid instructor, although he is no longer a member of the rescue squad.



SCAN PHOTO CONTEST WINNERS

The equipment here includes a Bearcat 175XL scanner, Bearcat Two/Four, and a Regency HX-1000 scanner. A Realistic DX-66 AM/FM/SW monitor is also used, along with a Heathkit 24-hour clock and telephone amplifier.

We hope that your NiteLogger Tape Recorder Activator will be a welcome addition to your shack, Joe!

Best Equipped

Our winners in this category usually have a lot of equipment or have it arranged in some special way. John J. McConnell of Concord, New Hampshire, qualifies as this issue's winner on both counts.

Equipment in his radio room includes a



Regency ACT-E-10-HLU scanner; Bearcat 210XL scanner; Regency MRC-33 monitor radio; Sharp VHF-hi/lo pocket scanner; Sharp 40-channel CB; Realistic DX-66 shortwave receiver; Realistic six-channel portable CB; Realistic TRC-431 base station with D-104 microphone; Pearce Simpson 40-channel CB; and two RCA remote receivers. John also uses various remote control switch boxes for speakers and antennas.

If all that sounds like a mess to you, look closely at this photo of John's shack and you'll see everything is really organized and easy to get to.

Congratulations, John!



BY RON STECKX, KIA0NK

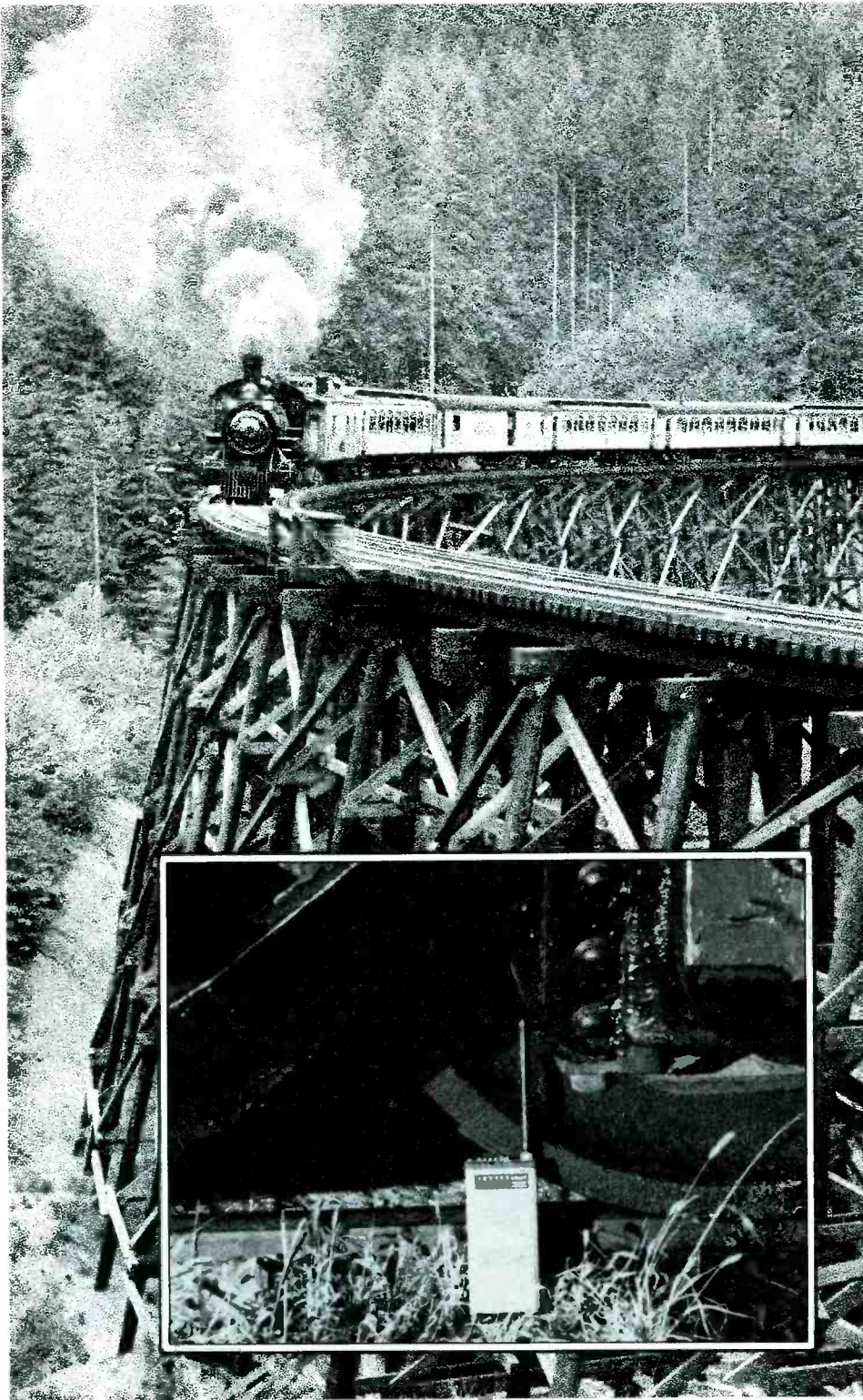
There was a time, decades ago, that steam locomotives were a common sight in the American countryside. As has been told so often, the venerable "iron horse" opened the western states to trade with the east coast and Europe. To be sure, the steam locomotive was responsible for at least 80% of the romantic image of railroading that many people still cherish; the fancy parlor cars and little red cabooses count for the remaining nostalgia.

But railroading has changed; electric and diesel replaced the steamers altogether about 30 years ago. That event heralded a general decline in the romantic image of railroading and its links to our nation's pioneering history. Probably just because it was coincidental to the rise of inexpensive air travel and truck shipping of cargo, when the iron horse was put out to pasture, American railroads began to decline and slide into a financial morass. Many historic railroad lines merged with others and lost their separate identities; others completely folded up and sold their cars and trackage for scrap, their routes having become worthless.

But the iron horse was a tough old nag and wasn't quite ready for the glue factory. Although the majority of antique steam locomotives did turn into rust or were demolished in scrap metal yards, some (relatively) few have survived and have been lovingly restored to their original running condition. What's more, these are in regular use throughout America on short routes, offering a wonderful chance for the public to ride in antique passenger cars being pulled by a wonderful, noisy, smoky, smelly, soot and steam spouting miracle called a steam locomotive.

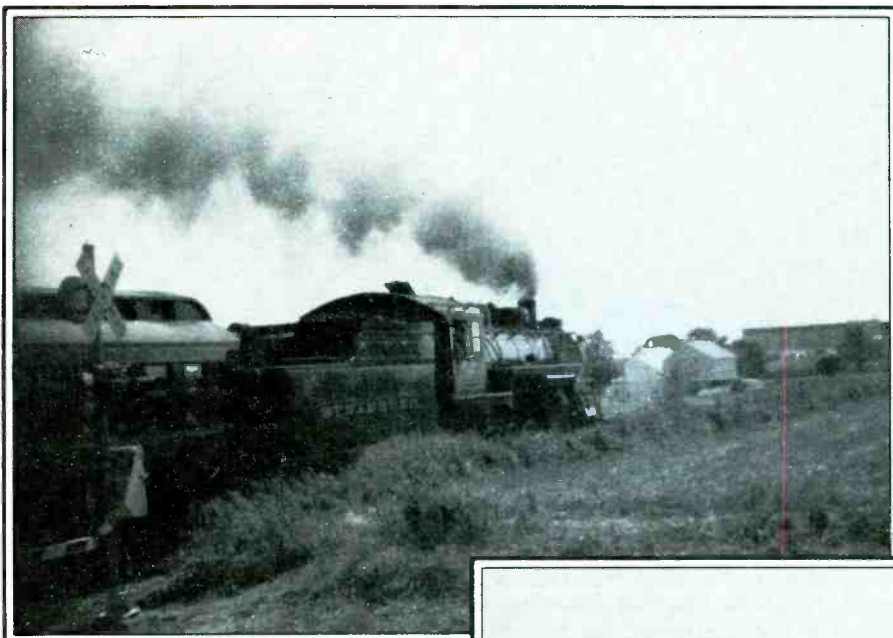
What's best, while there are perhaps about 130 of these tourist or excursion railroads in operation, some of them operate with the modern convenience of two-way radio. And, if you know where to look for them on your scanner, you can take your scanner with you this summer and tune in on the most unique transportation communications you'll ever hear, anywhere. And while steam trains always attract photographers, you'll probably be the only one on board or at trackside with a scanner!

By the way, these unique railroads are frequently used by movie and TV show production companies; you may be lucky enough to



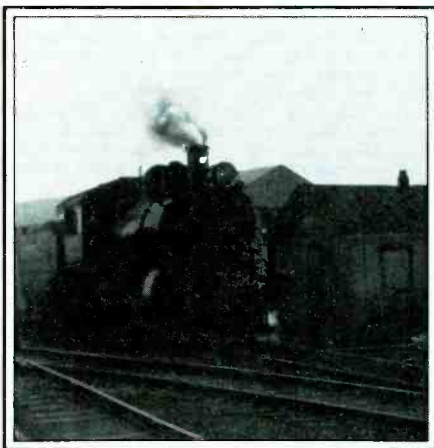
Scanning The Steamers

Vacation Time Means That You Can Listen To the Communications of Steam, Excursion, Tourist, and Movie Railroads! Here's How!

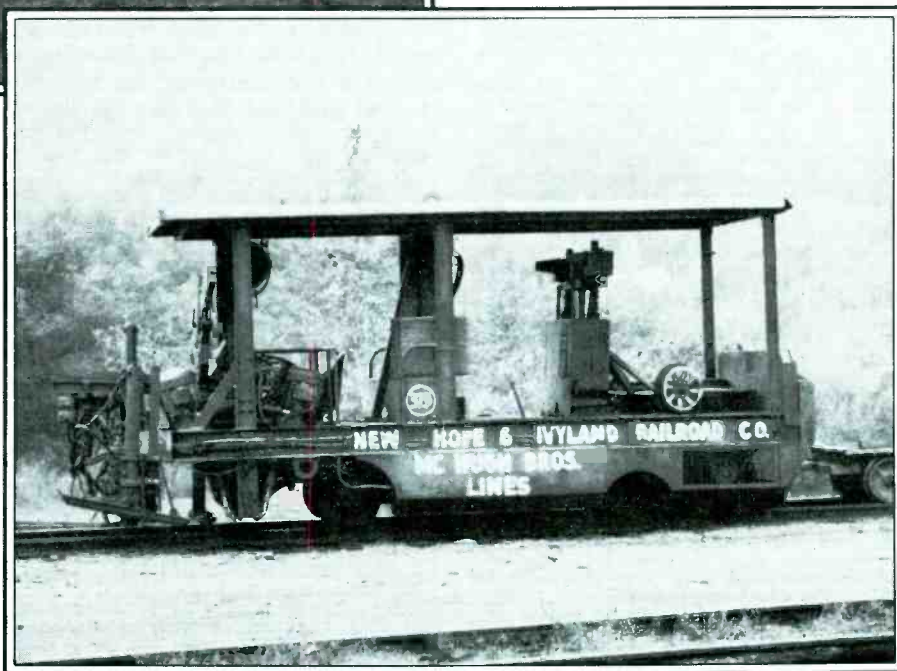


A noble steam veteran huffs and puffs its way down the tracks of the Strasburg Railroad. Did you know that this type of railroading can be monitored on your scanner?

This quaint looking self-propelled work train nails from the New Hope and Ivyland Railroad Co., a steam-powered excursion line using VHF radio gear.



A VHF-equipped steamer chugs its way into the yards.



tune in on the action while filming is in progress! The TV show *Petticoat Junction* made heavy use of the rolling stock of the Sierra Railroad for eight years. All of the railroading sequences for the TV film *The Gambler*, starring Kenny Rogers, also used a Sierra locomotive.

While some of the steam railroads operate in the regular VHF high band on Railroad Radio Service frequencies, many are rather eclectic and turn up on oddball frequencies from the Business Radio Service. You've really got to know where to root them out, and we have done just that for you here.

In the event of movie and TV programs being filmed, in addition to the frequencies listed here, also monitor the following for chatter between the production crews: 173.225, 173.275, 173.325, and 173.375 MHz.

Our roster of steam tourist and excursion railroads also (for good measure) includes frequencies used by scaled down replica antique railroads operated at several theme parks. A few steam lines operate year-round; most are seasonal.

So get out those scanners, don your best railroading coveralls and cap, and get ready to scan the steamers!

Additional Reference And Reading

Steam Passenger Service Directory, Empire State Railway Museum, Middletown, NY.

Great American Scenic Railroads, by Terry Berger and Robert Reid, E.P. Dutton, New York, NY.

The Movie Railroads, by Larry Jensen, Darwin Publications, Burbank, CA.

Rail-Scan Directory of Railroad Scanner Frequencies, by Tom Kneitel, CRB Research, Commack, NY.

Steam/Excursion/Movie Railroads

Bay Area Electric Railroad Association, operated by the California Railway museum near Fairfield and Rio Vista (Colano County), CA. Antique trolley rides and occasional steam train excursions. Listen on 161.355 MHz.

Boothbay Railway Village/Museum, Boothbay, ME. A narrow-gauge steam line ("Boothbay Central Railroad") runs excursion trips over a 1.5 mile route. Monitor 151.715 MHz.

Busch Gardens theme parks operate several trains. The scenic railway at The Dark Continent (Tampa, FL) offers monitoring on 153.05 and 154.515 MHz. The Old World (Williamsburg, VA) has an Alpine train; listen 153.26, 154.57, 463.425, 463.575, 463.775 MHz.

Castro Point Railway, operated by the Pacific Locomotive Association of Richmond and Sonoma, CA, is a steam excursion train offering a 3-mile route along the shores of San Francisco Bay. Communications are on 160.59 and 160.695 MHz.

Chelatchie Prairie Train Rides, Inc., of Woodland, WA, operates on 464.225 MHz.

Conway Scenic Railroad, North Conway, NH, runs old time steam locomotives on excursion trips over an 11-mile route. This line operates on 161.25 MHz.

Cumbres & Toltec Scenic R.R., Chama, NM, and Antonita, CO, is a famous narrow-gauge steam line built in 1880. Plenty of TV and movie exposure in western films such as *The Lone Ranger*, *Missouri Breaks*, *Bite the Bullet*, etc. Monitor 160.305 and 161.505 MHz.

Disneyland, of Anaheim, CA, has steam trains operating on 154.60 MHz.

Durango & Silverton Narrow Gauge Railroad, of Durango, CO, was constructed in the 1880's to service the area's many silver mines. Today, the 90-mile route is a favorite tourist attraction. Base stations at Durango and Silverton communicate with the steam locomotives on 160.86 and 161.295 MHz.

East Broad Top R.R., of Rockhill Furnace near Orbisona, PA, is a narrow-gauge steam line built in 1873. Abandoned in 1956, it went back into operation for excursions over a 10-mile route in 1976. Possible operation on 461.95 MHz.

Eureka Springs & North Arkansas Railway, of Eureka Springs, AR, runs antique wood-burning steam locomotives over a 4-mile route. They operate on 160.275 MHz.

Fort Wayne Railroad Historical Society, Ft. Wayne, IN, runs occasional steam-powered excursion trains between various Ohio cities. These trains operate on 151.625 and 151.925 MHz.

Gettysburg R.R., in historic Gettysburg, PA, operates several steam trains over 16 and 50-mile excursion routes to Biglerville and Mt. Holly. Monitor 160.80 MHz for their communications.

Great Adventure, a large theme park in Jackson, NJ, runs a small excursion railroad during the warm weather months. Park operations are on 154.54, 154.60 and 464.675 MHz.

Historic Towne of Smithville R.R., of Smithville, NJ, runs a scaled-down reproduction of an antique steam train. Operations are on 468.525 MHz.

Huckleberry R.R., operated in Flint, MI, by the Genesee County Parks & Recreation Commission, is a narrow-gauge steam powered excursion train operating over a 10-mile route. Possible operation on 155.04 and/or 155.745 MHz.

Illinois Railway Museum, Union, IL, runs a 4-mile route for excursions. While steam power is used, so are electric and diesel engines. Listen on 154.54, 154.57, and 154.60 MHz; possibly also 154.515 MHz.

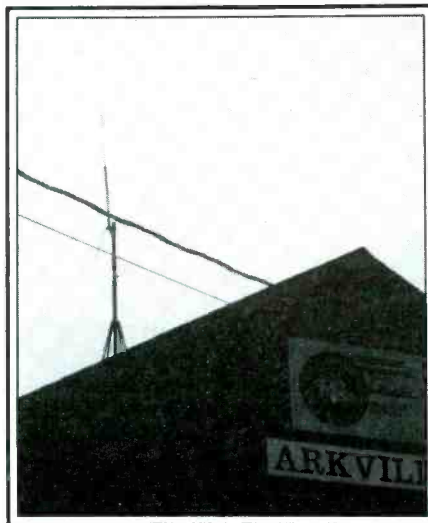
J.E. Henry Woodburner R.R., is a scaled-down replica of an old time railway. It's located in New Hampshire's Loon Mountain Recreation area and carries passengers during the summer months. Operation is on 154.54 MHz.

Mad River & NKP Railroad Museum, at Bellevue, OH, isn't a working railroad. It's a large display of locomotives and other rolling stock. Operations take place on 154.57 MHz.

Magma Arizona Railroad. Although it's not an excursion railroad, it has appeared in numerous films since 1960, beginning with the Twenty-Six Men TV series. In 1962 it was in How The West Was Won. Later it turned up in Young Billy Young, The Great White Hope, Powderkeg, The Life & Times of Judge Roy Bean, and others. Fully dieselized in 1968, in 1979 it was used in the film Used Cars. This railroad is basically a copper-hauling line with operations in Oracle, Mammoth and San Manuel, AZ. Most communications are on 457.9 MHz, possible additionally using 151.55, 152.46, 152.48, 152.74, 152.945, and 153.035 MHz.

Monitou & Pikes Peak Cog Railway, of Colorado Springs, CO, has been carrying passengers up and down the sides of Pikes Peak since 1891; an 18-mile round-trip. These days it's all dieselized, but still counts as a tourist line. Set your scanner to 161.55 MHz for their operations.

Mendocino Coast Railroad (formerly the California Western Railroad), operates between Ft. Bragg and Willits, CA; a 40-mile distance. In addition to its regular passenger/freight services, the line is famous for its "Super Skunk" self-propelled



This UHF antenna is mounted on the terminal building of the Delaware and Ulster in Arkville, New York. Obviously this excursion railroad is radio equipped, but hobbyists haven't (yet) discovered their frequency!

diesel excursion trains featuring open observation cars. Listen on 160.65, 161.01, and 161.085 MHz.

Mid-Continent Railway Museum, of North Freedom, WI, runs a wonderfully restored historic steam excursion train over a 9-mile route. Monitor 154.515 for their communications.

Minnesota Transportation Museum, Hopkins, MN, runs an antique steam train on an irregular schedule over a 2-mile stretch of track between Lakes Harriet and Calhoun. Operations are on 163.355 MHz; possibly also 151.625 MHz.

Miromar Hotel & Southern California Railroad Passenger Corp., of Santa Barbara, CA, operates on 154.625 MHz.

Morris County Central Steam Railroad, of Newfoundland, NJ, runs communications on 160.875 MHz.

Mount Washington Cog Railway, of Mt. Washington, NH, uses a fleet of eight picturesque steam-powered pufferbelly locomotives (mostly built between 1870 and 1908) to move excursion trains up and down the side of NH's scenic 6,288-ft. mountain. Listen on 160.41 MHz; possible additional operations on 151.655 and 151.925 MHz.

New Hope & Lyndland Railroad (also known as the New Hope Steam Railroad), of New Hope and Pennell, PA, operates a steam excursion train between New Hope and Lahaska, PA (an 8.5 mile trip). Monitor 160.425 and 161.475

MHz; possible additional communications on 152.96 MHz.

Oregon Pacific & Eastern Railway, of Cottage Grove, OR, has a 35-mile route through dense forests. The steamer pulling the train has been on the job for more than 70 years! More than "just" an excursion train, "The Goose" (as locals call it), actually serves many area industries! Listen on 160.98 MHz.

Pine Creek Railroad, operated by the New Jersey Museum of Transportation at Allaire State Park in Farmingdale (Wall Township), runs an old timey train of 3-ft. gauge. The 1.5 mile ride attracts many passengers. Listen on 159.375 and 159.465 MHz for park operations.

Puget Sound Railway Historical Association, of Seattle, WA, may possibly be operating on 161.355 MHz.

Roaring Camp & Big Trees Narrow Gauge R.R., is a 3-ft. gauge steam excursion railroad that provides a 6-mile route through the redwoods around Felton, CA. Listen on 151.925 MHz.

Sierra Railway, located at California's Railtown 1897 State Historic Park in Sonora, runs a 12-mile passenger excursion route through the "gold rush" country. It has appeared in many films including High Noon, My Little Chickadee, The Great Northfield Minnesota Raid, The Apple Dumpling Gang Rides Again, The Great Race, and dozens of others. Listen on 453.05, 453.85, 458.85, and 458.875; possible communications on 160.59 and 160.74 MHz.

Six Flags theme parks all have railroads. The park in Mableton, GA, operates on 462.05 and 462.10 MHz. The park in Eureka, MO, uses 154.57 and 154.60 MHz. At Arlington, TX, the communications turn up on 457.55 and 461.575 MHz.

South Branch Valley Railroad, of Moorefield, WV, runs excursion trains over a 45-mile route. Diesel engines tote WWII-era coaches through highly scenic areas. Listen on 31.24 MHz.

Stone Mountain Scenic Railroad is located in Stone Mountain Park (near Atlanta), GA. Locomotives (sixty or more) years old take excursion trains over a 5-mile route through this beautiful area. Listen on 160.845 MHz.

Strasburg Railroad, of Strasburg, PA, has a 9-mile steam train trip to Paradise, PA, and return. This is probably the most popular excursion line operating. A large railroad museum and display is nearby, so is a motel consisting of several antique red cabooses! The railroad operates on 161.235 MHz.

Tennessee Valley Railroad, of Chattanooga, TN, has several steam and older diesel engines taking excursion trains over a 6-mile route. Listen on 160.425 and 463.225 MHz.

Texas State Railroad, is a steam excursion line running a 25-mile route between Rusk and Palestine, TX. It's turned up in a number of films, including The Lang Riders. Originally built in 1909 to haul iron ore, it stated in operation long after the prison-operated smelters shut down in 1913. It finally shut down in 1969 but in 1972 the Texas Parks & Wildlife Dept. took it over and restored it as a tourist attraction. Listen on 151.34 and 151.415 MHz.

Valley Railroad Co., of Essex, CT, operates two restored antique locomotives that take excursion trains over a 10-mile route through the countryside. Listen on 152.36 MHz.

Walt Disney World, Lake Buena Vista, FL, has a monorail in operation. Listen on 462.55 and 462.575 MHz.

Washington Park Zoo & Railway, in Portland, OR, has a narrow-gauge old-fashioned steam train and also an ultra-modern "Zoaliner" running over 4-miles of track. Monitor 462.10 MHz.

Whitewater Valley Railroad, of Connorsville, IN, runs a 34-mile route for its excursion trains pulled by antique steam locomotives. Monitor 160.65 MHz.

Wilmington & Western Railroad, of Wilmington, DE, has an 8-mile steam train trip that leaves from Greenbank Station (a few miles southwest of Wilmington). The communications are on 160.92 MHz.

Winchester & Western Railroad, of Winchester, VA, operates a tourist excursion train over an 18-mile route. Listen on 160.92 MHz.

Wolfeboro Railroad, runs a 24-mile route through dazzling New Hampshire woodlands between Wolfeboro and north Sanbornville and Wakefield. Steam locomotives haul antique wooden coaches on the journey. Listen 160.575 MHz for the action.

Readers having additional information on any of the foregoing railroads, or on communications frequencies used by steam or tourist excursion railroads not shown above, are invited to furnish the information to the author in care of Popular Communications, 76 North Broadway, Hicksville, NY 11801. If a sufficient amount of additional information is received, a revised roster will be published in a future issue of POP'COMM. **PC**

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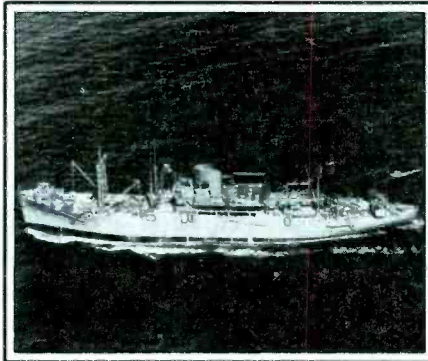
Pioneer Japanese Intercept Operations

Here's The Story Of A Team Of WWII Monitors Who Broke Japanese Codes

BY GRAYDON A. LEWIS, N7FCO,
Naval Cryptologic Veterans Association



Jim Pearson, pioneer Japanese Intercept Operator and "Dean" of the original group of operators. (Tom Warren Photo)



S.S. President Jackson, one of the American President Lines ships. In this 1943 photograph she is U.S.S. President Jackson (AP 37), all dressed up in Navy grey. (National Archives photo)

Jimmy Pearson (W4FAA) is "Dean" of the most exclusive club in the world. Pearson is the senior surviving member of the "On-The-Roof" gang—those Navy Radiomen trained to copy Japanese Morse code (Kana) in a very secret room located on the roof of "Main Navy," the old World War I Munitions Building on Constitution Ave., in Washington, DC.

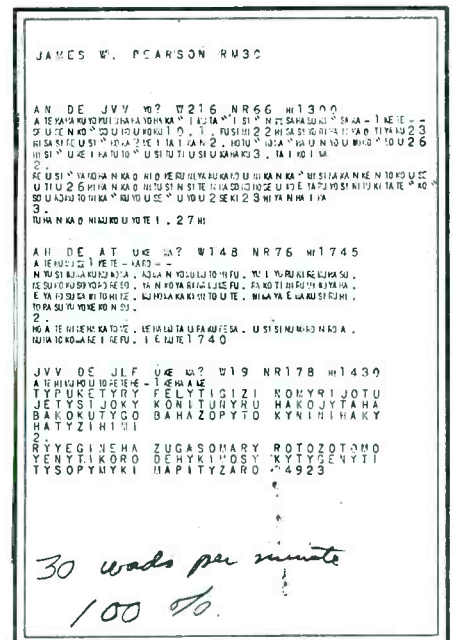
In late August, 1930, on a hot and humid D.C. summer day, Jimmy Pearson, then Radioman Third Class, was asked to copy a special code run for demonstration purposes. His Japanese code run was used in a report to the Secretary of the Navy, which was so secret that the Secretary of the Navy was asked to return it to the originator for disposition.

A copy of this report has been recently declassified and is now in the Military History Division of the National Archives and Record Service (NARS). Jimmy Pearson's code run, Kana at 30 wpm stick, and 30 wpm on a RIP-5 Underwood typewriter with Kana keys, indicates solid copy!

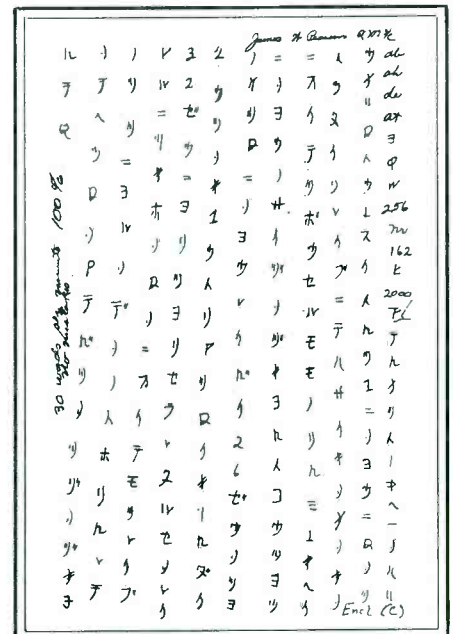
After some field experience, Jimmy

Pearson was chosen for individual duty aboard ship—not a Navy ship, though! Pearson and a few other Kana intercept operators were assigned to ride "first cabin" on various Dollar (later known as American President Lines) ships, which made runs to the Far East, including Japan. Arrangements were made with the company for "payment in kind" for those operators to ride the ships, along with a U.S. Weather Bureau Aerographer who would make weather observations. Each intercept operator obtained permission from his ship's Master to string an antenna near the outboard rail of the weather deck, clear of all ships gear. The antenna lead-in trailed over the side and entered the porthole of the radioman's cabin, one deck below. Each radioman brought along an RCA receiver, which was band switched to accommodate frequencies from 80 to 480 kHz. When not in use, the receiver was stowed under the radioman's bunk. When in range of Japanese targets, and with his cabin door securely locked, the operator would copy Japanese target transmitters until the ship was no longer in range.

Although it might have sounded like fantastic duty for a navy sailor, it was not all the best duty. In late October, 1933, S.S. *President Cleveland* fought a 12-hour battle with a nasty typhoon in the East China Sea between Nagasaki and Shanghai. Three life



Pearson's 1930 code run, copied on a modified Underwood typewriter. (NCVA photo)



Pearson's Kana code run, 30 wpm, by "stick." (NCVA photo)

boats were ripped from the davits and swept to sea. On the return leg of the same voyage, about four days out of Seattle, S.S. *Cleveland* went dead in the water for several hours due to engine breakdown, wallowing sickeningly in a majestic westerly swell.

After the 44-day round trip, the ships laid over in Seattle, and the Navy Intercept Operators bunked down at the Seattle "Y" until the ship departed once more. This welcome break also allowed Jimmy Pearson and other operators time for mail and pay at the Thirteenth Naval District Headquarters, and to mail the intercepted traffic back "home" to Washington. **PC**

This article was reprinted courtesy of Naval Cryptologic Veterans Association.

PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Announcing RX325 Scanning Receiver

TEN-TEC, Inc. of Sevierville, Tennessee, longtime American manufacturer of radio equipment, is introducing a high quality, moderately priced scanning receiver to the shortwave listener market. An attractive, "high tech" appearance compliments a full range of needed standard features and available options in this new product.

Twenty-five high capacity memories will store not only frequency and mode but also the tuning rate selected. The memories can be scanned or tuned using the rotary knob. Memory lockout provides temporary removal of any number of memorized frequencies from the scan operation, yet retains them for later recall. Scan rate is front panel adjustable for both memory and program (band) scan. A "scratch pad" is even available for temporary, single entry memory.

Frequency coverage of RX325 is 100 kHz to 30 MHz. Three mode switches select AM, LSB (CW), or USB (CW). Standard features include blue vacuum fluorescent display, 6 kHz and 2.7 kHz filters, noise blanker, front end attenuator, lighted S meter, switchable AGC, clock/timer, built-in speaker, and AC adapter.

Literature can be obtained from TEN-TEC, INC., Hwy. 411 E., Sevierville, TN 37862.

Wireless Tour Guide System For Manufacturing Plants And Museums

Sennheiser Electronic Corporation introduced the Infoport™, an innovative wireless tour guide system designed to provide corporations, manufacturing plants, and museums with enhanced portable high-frequency cordless communication capabilities. Utilizing Sennheiser's SK 1010-7 100 mW single-channel narrowband transmitter and HDE 300-6 stethoscope headphone receiver, the Infoport™ system combines excellent transmission quality, recording capabilities, and listener comfort in a package unmatched for economy and compactness.

"With the ever-increasing importance for



rapid and uninterrupted communication, we are pleased to provide America's manufacturing, corporate, and private institutions with a technologically superior wireless communication system that is portable, flexible, affordable, and designed to grow with their needs," Andrew Brakhan, President of Sennheiser Electronic Corporation, stated.

"Due to a number of advances in our radio wireless technology, Sennheiser's new Infoport™ provides unparalleled communications capabilities for the business manager, manufacturing representative, museum staff, and visitor requiring uninterrupted and private wireless communication in a crowded or noisy environment," Mr. Brakhan continued.

The SK 1010-7 transmitter accommodates a variety of Sennheiser microphones, including the MKE 10 omnidirectional lavalier, the MKE 2010 omnidirectional microphone, and the MKE 4010 cardioid microphone.

According to Sennheiser Product Manager Anthony Cafiero, the Infoport™ system allows the individual guide distortion-free communication with listeners up to between 100 and 150 feet away. For shorter distances, the SK 1010-6 economical 10 mW transmitter is available. Both the SK 1010-7 and SK 1010-6 are otherwise identical. Each is powered by a single 9 volt alkaline battery. Typical periods for the SK 1010-7 and SK 1010-6 are six and 20 hours, respectively.

Sennheiser's Infoport™ system operates on a 37.16 MHz fixed operating carrier frequency. It is also available for operation on optional carrier frequencies ranging from 30 to 45 MHz.

The standard Infoport™ system consists of ten HDE 300-6 receivers, one SK 1010-7 transmitter, one microphone, and one Sennheiser GZL 406 recharger column for easy recharging. Additional features include an out-

put jack that can be connected to a portable recorder or dictating machine and a single rechargeable accumulator for the HDE 300-6 headphone that provides more than 10 hours of continuous use. Optional accessories include Sennheiser's EZL 300-20 carrying case with lock and key enclosure, a molded insert for 20 HDE 300-6 receivers, and either a SK 1010-6 or 1010-7 transmitter in one compact attache case.

For more information on Sennheiser's new Infoport™ system, contact Sennheiser Electronic Corporation, 48 West 38th Street, New York, NY 10018-6297.

Ham Upgrade Cassettes And Books

Gordon West's Radio School, the nation's largest producer of Morse code stereo training tapes, has now produced a 4-cassette stereo theory course entitled "Tapes 'N Books Theory Course." Each course contains four long-play, stereo theory tapes plus a fully illustrated textbook and the ARRL FCC Rule Book. Theory cassette courses are available for all grades of amateur radio licensing—Novice, Technician, Advanced, and Extra.

The 4-set theory course not only contains the precise questions and answers to be found on any amateur radio examination, but also the "sounds" of amateur radio. You can actually hear the difference between a properly adjusted speech processor, and the effects of overmodulation. You can hear the difference between AMTOR, ASCII, and Baudot. You will tune into actual Ham radio transmissions, and actually hear the difference between long-path and short-path communications.

The stereo tapes will play equally well on monaural tape cassette players. The spark-



ling sound of stereo will also enhance the learning process. The 4-tape cassettes are housed in a red vinyl cassette holder, and the entire course is packaged within a heavy plastic enclosure.

Included with the theory cassettes are code test preparation sample QSO's. These sample CW QSO's will also assist you in preparation for any code test that may be part of your theory upgrade. Also included with this course is the FCC test questions syllabus, with updates; the new Form 610; a sample VEC-type theory examination; and all FCC and VEC forms for the test.

All course material has been upgraded to reflect the newly revised questions and answers. Each course lists a cut-off date for the questions and answers contained within the course. Free question and answer updates are available in case of a delay in taking the examination.

All courses are \$19.95 plus \$5.00 for First Class, same-day, postage, handling, and mailing.

For more information or orders, write Gordon West Radio School, 2414 College Drive, Costa Mesa, California 92626; or phone Monday through Friday, 10:00 a.m. to 4:00 p.m. PST 714/549-5000.

800 MHz FM Two-Way Radio

Offering broad-banded, full frequency coverage, the TK-901S 800 MHz Synthesized FM Two-Way Radio is designed for those systems requiring a conventional 800 MHz radio. The unit's RX frequency range runs from 851 to 870 MHz while the TX frequency range runs from 806 to 825 MHz and 851 to 870 MHz. The TK-901S comes with a 16 (semi-duplex) channel switch for maximum flexibility.

The unit also provides for a convenient "Talk-Around" switch. When activated, this switch allows the user to transmit and receive on the same frequency by reverting the transmit frequency to the receive frequency. The user can then bypass the repeater during two-way conversation.



The TK-901S has die-cast construction; high-impact molded case front and cover; glass epoxy circuit boards; front mounted heavy-duty speaker; rugged microphone; and a Temperature Compensated Crystal Oscillator (TCXO) that provides for frequency accuracy and stability.

A control station system, external speakers, various microphones, and tone signalling boards are all offered as options. The TK-901S carries a one-year warranty on parts and labor. For further details in the unit, contact Donald L. Phipps, marketing manager, Trio-Kenwood Communications, 1111 West Walnut Street, Compton, California 90220.

CW Made Easier

This manual and tape is a complete guide to assist you in passing the 5, 13, and 20 wpm code exams. This is not a learning the Morse code or speed building kit, but rather a program of successfully applied ideas, hints, and exercises to help you understand and deal with problem areas.

How To Read What You Writ! contains all of the following topics plus more:

- Why students do not pass the code exam — how to avoid the common errors
- Setting goals in your code practice
- Reading the material and finding answers once you've copied the code
- Dealing with code opposites and letters and numbers that are easily confused
- Word and sentence techniques
- Overcoming plateaus
- What to do when its test day

Lorraine McCarthy, N6CIO, Code Programs Manager for Radio School, Inc., shares with you the experience and information gained from six years of working with students on the code. Learning to recognize and deal with the types of problems you are having with the code will give you new confidence in pursuing your upgrade.

How To Read What You Writ! is available directly from Lorraine McCarthy, Code Programs Manager, 315½ Ruby, Balboa Island, CA 92662. The price is \$14.95 and all orders are shipped First Class mail the same day. Add \$2.00 postage and handling.

IC-751A HF Base Station Transceiver

ICOM announces the new IC-751A 100 watt HF base station transceiver with general coverage receiver (100 kHz-30 MHz). The IC-751A incorporates the high performance features of the IC-751, plus new and improved features requested by amateur radio operators worldwide. The IC-751A top-of-the-line HF transceiver is new designed and has the following outstanding features:

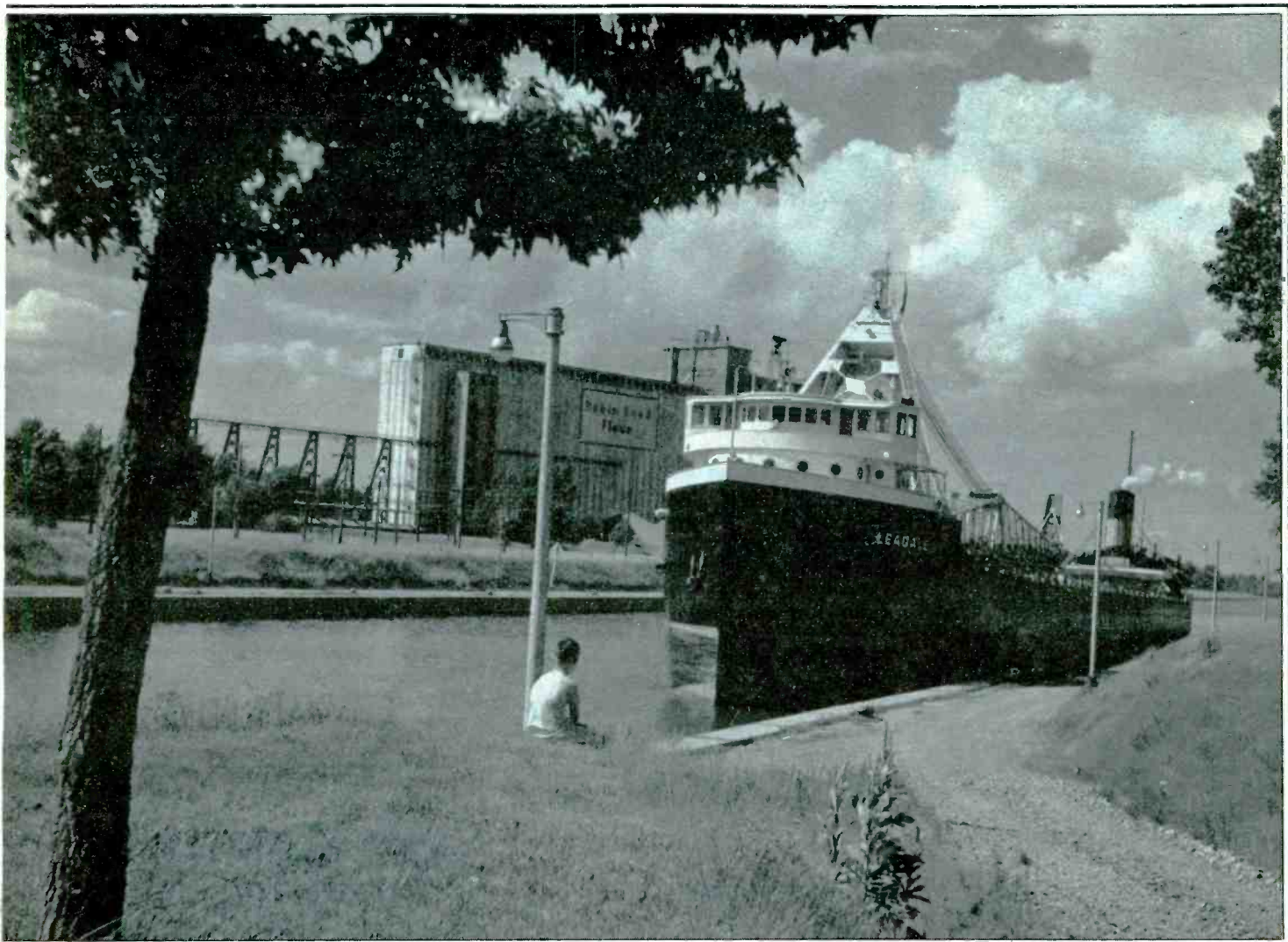


- All modes built-in (USB, LSB, AM, FM, CW, RTTY)
- 100% duty cycle transmitter
- 105 dB dynamic range*
- 12 volt operation
- Electronic keyer unit included*
- FL-32A 9 MHz at 500 Hz CW factory-installed filter*
- QSK up to 40 WPM*
- New LED annunciator*
- 32 memories
- Thermo-sensor for improved stability*
- New 9 MHz notch filter*
- New AGC and improved noise blanker*
- CW sidetone for code practice*
- Low noise receiver*

Optional filters include the FL-52A CW 455 kHz at 500 Hz, FL-53A CW-N 455 kHz at 250 Hz, FL-63A CW-N 9.0106 MHz at 250 Hz, FL-33 AM 9.010 MHz at 6000 Hz, and CR-64 high stability 30.72 MHz crystal filters.

For more information, contact ICOM America, Inc., 2380 116th Avenue NE, Bellevue, WA 98004.

*Improved or new features over the IC-751.



Large vessels of all kinds and sizes, even those on the Great Lakes (such as this one), make use of LF radio.

L.F. Maritime Log

Overlooked By Many "Ute" Monitors, Maritime Communications Below 535 kHz Offer Some New Aspects To The Hobby

BY V.K. ALJUWANI

Maritime stations operating on low frequencies (that is, below 535 kHz) are plentiful and consist of radiobeacons and communications facilities. Those that fit into the radiobeacon category are well accounted for and appear in Ken Stryker's *Beacon Guide*. The problem is that those that aren't radiobeacons are bluntly overlooked and ignored by all of the popularly available frequency directories and logs. And yet, these are full-blown two-way communications,

same as you'll find in the CW portions of the shortwave bands dedicated to maritime communication!

The problem seems to be that these stations are similar to what Dorothy saw in *The Wizard of Oz*—horses of a different color. They just don't seem to fit comfortably in anybody's registry. Since they aren't radiobeacons, they obviously don't belong in a listing of those stations. Neither are they broadcasting stations, so forget about looking for them in *White's Radio Log*, the *Vane Jones Log* or even the *WRTVH*. Not being shortwave stations, they aren't in the *Confidential Frequency List* or other utility station data sources, either.

The purpose here is to offer the listener a listing of these stations, including those located in North America, Central America, and the Caribbean. This covers virtually all stations operating within this geographic area and on frequencies lying between 125 and 535 kHz, and dedicated to maritime communications (except, of course, radiobeacons).

With the exception of operations on 518 kHz, stations shown here use CW, although some RTTY has been heard. Some have regularly scheduled transmissions usually consisting of traffic lists, weather, or navigational warnings (or a combination of these elements).

Our listing indicates the frequencies, call-

signs, locations, power (in kW), and (probable) schedule of broadcasts as described above. Remember that schedules do change from time to time and some of those listed here may have been modified.

Naturally, some stations don't have regularly scheduled transmissions and all stations may come on at any time to communicate with ships or transmit unscheduled broadcasts.

One of the more interesting curiosities of monitoring these frequencies is that these communications often share operating frequencies with radiobeacons. Inasmuch as radiobeacons often operate continuously, you'd think that frequency assignments would have been established to keep the two types of stations well separated.

While most of the radiobeacons here run only about 25 watts, several operate with far more power and you might well find a strange

blend of both at times on some of these frequencies!

One thing you'll find unusual in the 485 to 515 kHz segment of this band is that normal (non-emergency) communications must cease for three minutes twice each hour. This takes place at 15 and 45 minutes past the hour. The purpose of the "silent periods" is to avoid any possibility of causing interference to distress calls from ships on 500 kHz. Possibly, this custom (actually, a regulation more than a mere custom) dates back to the old days of broadly tuned spark gap transmitters and regenerative receivers that were popular in the maritime radio service.

In general, 500 kHz is a good frequency to guard. You probably won't hear very many distress calls, but it's the frequency used by ship and coastal stations attempting to make contact with one another. Moreover, many coastal stations transmit an announcement

on 500 kHz just before a scheduled traffic list or other broadcast elsewhere in this band. In other words, if you stay tuned to 500 kHz (and can copy CW), you'll get a fine overview of the action in the entire band.

The best reception between 400 and 500 kHz is at night. At sunset and sunrise, especially, you can sometimes find unusual DX openings. What with the hefty transmitter power used by most of the coastal stations, combined with the range-stretching CW mode employed, plus the propagation characteristics of these frequencies, you should be able to drag in those DX stations at night with no more than a decent receiver and a longwire antenna.

Too bad these stations remain "unlisted" in monitoring registries. In actuality, this band is active throughout the world, although our listing here covers only the areas in and around our own continent.

kHz	Call	Location	kW	Sked/Remarks	kHz	Call	Location	kW	Sked/Remarks
126.15	KPH	San Francisco CA	10	Secondary Freq	441	XFC	Cozumel, Mexico	.5	Secondary Freq
130.35	WCC	Chatham MA	15	Secondary Freq	XFF	Coatzacoalcos, Mexico	.5	Secondary Freq	
143	KPH	San Francisco CA	10	Secondary Freq	XFM	Manzanillo, Mexico	.5		
	WCC	Chatham MA	20	Secondary Freq	XFN	Progreso, Mexico	.5	Secondary Freq	
147.50	WCC	Chatham MA	15	Secondary Freq	XFP	Chetumal, Mexico	.5	Secondary Freq	
147.85	KPH	San Francisco CA	10	Secondary Freq	XFQ	Salina Cruz, Mexico	.5	Secondary Freq	
410		ships		Direction Finding Freq	XFS	Tampico, Mexico	.5	Secondary Freq	
416	VFU	Coral Harbour NWT	.4	Odd H+40	XFU	Veracruz, Mexico	.5	Secondary Freq	
	VFZ	Goose Bay, Nfld	2	Odd H+51	442	WKM	West Haven CT		H+35
	VOJ	Stephenville, Nfld	.4		443	TXU	St. Pierre Island	1	
	VOK	Cartwright, Nfld	.3	Odd H+30	444		ships		To USCG Shore Stations
	WPA	Port Arthur TX	10	0018 0218 0418 0618 0818 1218 1618 1718 1818 2018 2218	446	CLK	Neuvitas, Cuba	.25	
419.50	FFQ	Destrellan, Guadeloupe	2	Odd H+00	448	VCF	Mont Joli PQ	.4	Even H+30
420	OXF	Julianehaab, Greenl.	1	0000 0400 0800 1200 1600 2000	VCS	Halifax N S	.4	Secondary Freq	
	OYS	Holsteinsborg, Greenl.	1			ships			
	OZM	Godhavn, Greenland	2	0125 0525 0925 1325 1725 2125	NMW	Astoria OR	2		
	NMC	San Francisco CA	2		VCM	St. Anthony, Nfld.	.4		
	VAI	Vancouver BC	1	Odd H+10	XFA2	Acapulco, Mexico	.5		
	VAJ	Prince Rupert BC	.4	Even H+30	XFB2	Campeche, Mexico	.5		
	VAP	Churchill, Man	.4	Even H+10	XFB3	Cd. del Carmen, Mexico	.5		
	VCK	Sept. Iles PQ	.4	Even H+50	XFF2	Coatzacoalcos, Mexico	.5		
	VFN	Montreal PQ	.4	Even H+10	XFF3	Minatitlan, Mexico	.5		
	WPD	Tampa FL	1.5	1320 1520 1720 2120	XFK2	La Paz, Mexico	.5		
	XFK	La Paz, Mexico	.5		XFL2	Mazatlan, Mexico	.5		
	XFN	Progreso, Mexico	.5		XFM2	Manzanillo, Mexico	.5		
424	OYS	Holsteinsborg, Greenl.	1		XFQ2	Frontera, Mexico	.5		
425		ships			XFQ3	Salina Cruz, Mexico	.5		
426	C6N	Nassau, Bahamas	1		XFR2	S. Rosalia, Mexico	.5		
	KPH	San Francisco CA	10	0100 1500 1700 1900 2100 2300	XFS3	Tampico, Mexico	.5		
	VRT	Bermuda	.5	Every 4th Hr H+03	XFS4	Tecolutla, Mexico	.5		
428	NMG	New Orleans LA	2		XFS5	Tuxpan, Mexico	.5		
	WMH	Baltimore MD	1.5	Odd H+30	XFS2	Cd. Madero, Mexico	.5		
430	NMV	Jacksonville FL	1		XFU2	Veracruz, Mexico	.5		
	VAK	Victoria BC	.5	Odd H+20	XFY2	Guaymas, Mexico	.5		
	VFF	Frobisher Bay NWT	.4	Odd H+00	NOX	Adak AK	2		
	VOO	Comfort Cove, Nfld	.4	Odd H+50	451	OXM	Cape Tobin, Greenl.	1	
432	XFF	Coatzacoalcos, Mex.	.5		XFB	Cd. del Carmen, Mexico	.5		
434	VCC	Quebec PQ	.4	Even H+20	XFC	Cozumel, Mexico	.5	Secondary Freq	
	VCG	Riviere au Renard PQ	.4	Even H+40	XFF	Coatzacoalcos, Mexico	.5	Secondary Freq	
435	CLQ	Havana, Cuba	1.5		XFL	Mazatlan, Mexico	.5		
	FFP	Ft. de France, Martinique	2	Even H+30	XFN	Progreso, Mexico	.5	Secondary Freq	
436	KFS	San Francisco CA	30	Even H+50	XFP	Chetumal, Mexico	.5	Secondary Freq	
	WCC	Chatham MA	30	0050 0450 0850 1250 1650 2050	XFQ	Salina Cruz, Mexico	.5	Secondary Freq	
438	KJT	Squaw Harbor AK	.4		XFS	Tampico, Mexico	.5	Secondary Freq	
	PJC	Curacao, Neth. Antilles	2.5	0000 0400 1200 1600 2000	XFU	Veracruz, Mexico	.5	Secondary Freq	
440	WLO	Mobile AL	1	Even H+00	452	WKN	Ketchikan AK	.5	0215 0515 1525
	NMA	Miami FL	2		45		ships		
	NMO	Honolulu HI	2		455	XFA	Acapulco, Mexico	.5	Secondary Freq
	OVC	Groennedal Flaade, Greenl.			XFB	Cd. del Carmen, Mexico	.5	Secondary Freq	
	VCN	Grindstone I., N S	.4	Even H+30	XFC	Cozumel, Mexico	.5		
					XFE	Ensenada, Mexico	.5	Secondary Freq	
					XFK	La Paz, Mexico	.5	Secondary Freq	
					XFL	Mazatlan, Mexico	.5	Secondary Freq	
					XFM	Manzanillo, Mexico	.5	Secondary Freq	
					XFY	Guaymas, Mexico	.5	Secondary Freq	
					NOY	Galveston TX	.5		

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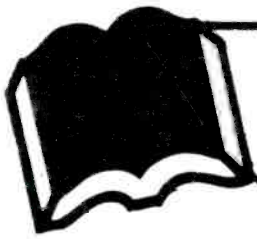
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kHz	Call	Location	kW	Sked/Remarks
458	6YI	Kingston, Jamaica	2	Even H+00
	9YM	Tobago, Trinidad	1	
	VON	St. Johns, Nfld.	1	
460	CLC	Cienfuegos, Cuba	.25	
461.53	XFA	Acapulco, Mexico	.5	Secondary Freq
	XFB	Cd. del Carmen, Mexico	.5	Secondary Freq
	XFE	Ensenada, Mexico	.5	Secondary Freq
	XFK	La Paz, Mexico	.5	Secondary Freq
	XFL	Mazatlan, Mexico	.5	Secondary Freq
	XFM	Manzanillo, Mexico	.5	Secondary Freq
	XFP	Cd. del Carmen, Mexico	.5	
	XFY	Guaymas, Mexico	.5	Secondary Freq
464	KOK	Los Angeles CA	7.5	
	OYG	Mesters Vlg., Greenl.	.4	
	OYN	Upernavik, Greenl.	1	
	OZN	Prince Christian Snd., Greenl.	2	0025 0425 0825 1225 1625 2025
	TIM	Limon, Costa Rica	3	
	VCO	Sydney, Nfld.	.4	Odd H+00
465	XFS	Tampico, Mexico	.5	
466	NMN	Portsmouth VA	2	
	NMR	San Juan PR	2	
468		ships		
470	NBA	Balboa, Panama	.25	
	NOJ	Kodiak AK	2	
	XFA	Acapulco, Mexico	.5	Secondary Freq
	XFB	Cd. del Carmen, Mexico	.5	Secondary Freq
	XFE	Ensenada, Mexico	.5	Secondary Freq
	XFK	La Paz, Mexico	.5	Secondary Freq
	XFL	Mazatlan, Mexico	.5	Secondary Freq
	XFM	Manzanilla, Mexico	.5	Secondary Freq
	XFU	Veracruz, Mexico	.5	
	XFY	Guaymas, Mexico	.5	Secondary Freq
472	NMF	Boston MA	2	
	NMQ	Long Beach CA	2	
	WKQ	Lena Point AK	.5	0130 0330 1630
	WKR	Perkinsville AK	.5	1930
	WOE	Lantana FL	2	Odd H+30
474	VFR	Resolute NWT	.4	
475	XFA	Acapulco, Mexico	.5	
476	9YL	Trinidad	1	0030 0430 0830 1230 1630 2030
	CLA	Havana, Cuba	2.5	Even H+25
	KFS	San Francisco CA	30	Odd H+30
	ZBM	Bermuda Harbor	.12	
478	OXI	Godthaab, Greenl.	1	0020 0320 0620 0920
	VAE	Tofino BC	.4	Even H+20
	VON	St. Johns, Nfld.	1	Even H+50
	WNU	Slidell LA	18	0035 0235 0435 0635 0835 1035 1430 1630 2035 2235
480		ships		
482	CLM	Santiago de Cuba, Cuba	.25	
	WLC	Rogers City MI	1	0200 0500 0800 1100 1700 2000 2300
484	KLC	Galveston TX	7.5	Odd H+30
	VAG	Bull Harbour BC	4	Even H+50
	VAK	Victoria BC	.5	Secondary Freq
	VAW	Killinek NWT	.4	Odd H+20
	VCS	Halifax N S	.4	Odd H+00
484.5	8PO	Barbados	2	0103 0503 0903 1303 1703 2103
485	XFE	Ensenada, Mexico	.5	
	XFQ	Salina Cruz, Mexico	.5	
486	NMY	New York NY	.5	
487	PJC	Curacao	2.5	Secondary Freq
488	KLB	Seattle WA	4.5	Even H+30
489	VAU	Yarmouth N S	.4	Even H+40
	VCM	St. Anthony, Nfld	.4	Even H+10
	VCO	Sydney Nfld	.4	Secondary Freq
	XFC	Cozumel, Mexico	.5	Secondary Freq
	XFF	Coatzacoalcas, Mexico	.5	Secondary Freq
	XFN	Progreso, Mexico	.5	Secondary Freq
	XFP	Chetumal, Mexico	.5	Secondary Freq
	XFQ	Salina Cruz, Mexico	.5	Secondary Freq
	XFS	Tampico, Mexico	.5	Secondary Freq
	XFU	Veracruz, Mexico	.5	Secondary Freq
	XFY	Guaymas, Mexico	.5	
500	CALLING & DISTRESS FREQUENCY			
	ships & all shore station in this listing plus			
	HIA	Santo Domingo, Dominican Republic	5 kW	
	XFN2	Merida, Mexico	.5	
512		ships		Secondary to 500 kHz
518	NMF	Boston MA	30	0100 0700 1300 1900 (FEC mode transmissions) PC



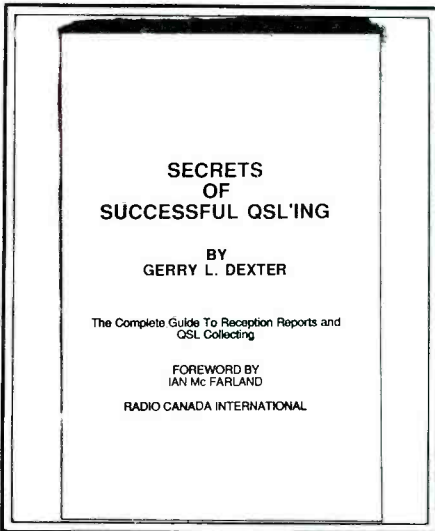
BOOKS YOU'LL LIKE!

BY R.L. SLATTERY

Get That Wallpaper!

Mastering the art and science of accumulating station verifications usually requires a lot of expensive trial-and-error, to say nothing of a large investment in postage. Gerry Dexter's latest book, *Secrets of Successful QSL'ing*, puts you ahead of the game in all respects.

With 225 countries verified and a QSL return rate of more than 90%, backed up by 35 years of DX'ing, Gerry knows all of the ins and outs, the clever little tricks and psychological gambits that bring about maximum replies to reception reports. Perhaps most important, he knows what not to include in a report.



Secrets of Successful QSL'ing is a 113-page book that discusses basic reception reporting formats for broadcasting stations, for clandestines and pirates, for Hams, broadcast band stations, "utes," and FM/TV stations. He tells about when and how to include return postage, when and how to follow-up a report that seems to have gone ignored, getting station addresses, tech information on the stations' signals, using international time, special techniques for Warsaw Pact stations, and just about anything else you'd ever want or need to know in order to be as sure as possible of getting that valued hunk of DX wallpaper. In fact, the book is illustrated with examples of some of the results of Dexter's QSL'ing efforts.

In all, we'd have to say that Dexter seems to have covered all of the bases in *Secrets of Successful QSL'ing*. Couldn't really think of anything that wasn't discussed in this very complete guide for the DX listener. You'd be surprised how many ideas Dexter offers

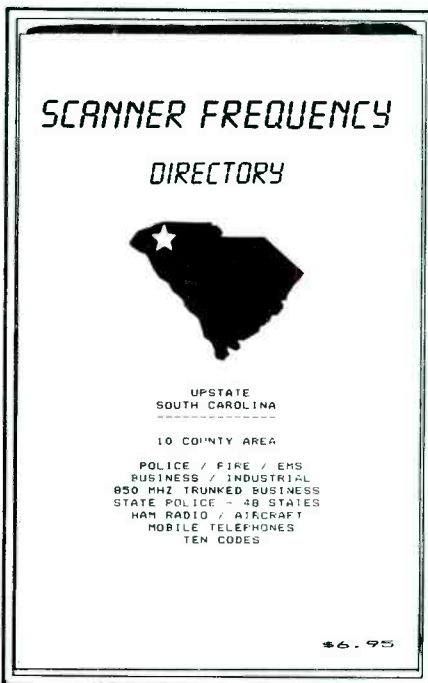
that you've probably never tried, or even thought of.

Secrets of Successful QSL'ing is \$9.95 (plus \$1 postage) from Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147.

South Carolina Scanning

Larry Williams of Radio Research, 10 Elf Lane, Greenville, SC 29611, sent us a copy of his current frequency directory for the upstate (10 county) area of South Carolina.

This is a 67-page publication covering police, fire, EMS, industrial and various other relevant frequencies in and around Greenville, Spartanburg, Anderson and environs. It's quite a nice publication and contains all sorts of little extra useful tidbits, such as out-of-band programming tricks and skip signal frequencies noted in this neck of the state.



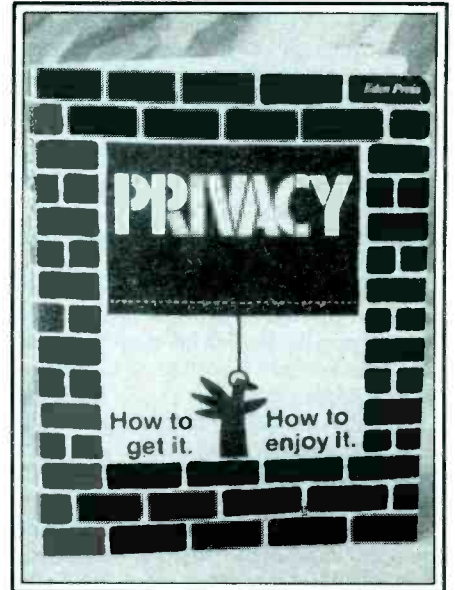
By the way, the book was done on a Radio Shack TRS-80 color computer and looks quite good.

Williams has done a nice job with this local frequency directory and it's something that you'll find worthwhile if you hail from its coverage area, or if you'll be passing through on your vacation. This book is \$6.95 plus 73 cents postage.

You can order it from Radio Research (address given above).

Want Privacy?

Tired of telephone interruptions? Junk



mail? Unwanted salesmen? Feeling "exposed" and vulnerable by your personal records? Want peace and quiet, and total privacy in regard to your mail/telephone/address, your bank accounts and finances, cars, possessions, health/education/court/credit and education records, and your personal identity?

A useful book simply called *Privacy* offers 28 brilliant chapters detailing hundreds of practical solutions. No matter what your circumstances, you can increase your privacy to the point of virtually "disappearing."

Privacy expert Bill Kaysing tells you how to avoid electronic surveillance/eavesdropping, become "invisible" to investigators, stop generating financial records, and how to acquire telephone/mail privacy.

He tells you how to avoid Big Brother by staying out of government files, how to stop generating negative files and start cranking out helpful new records, how to generate a quick cash income, and how to interface multiple addresses to achieve "deep cover."

This is a new updated and enlarged edition that includes expanded coverage of financial privacy including how not to use checking accounts, and how to employ all manner of really clever approaches to insuring that your earnings and savings aren't an open book for strangers to review.

These are the best techniques we've yet seen for getting complete privacy and enjoying same. This large 160-page book is \$18.95 plus \$1 postage/handling to addresses in USA/Canada/APO/FPO. Order it from CRB Research, P.O. Box 56, Commack, NY 11725. **PC**

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

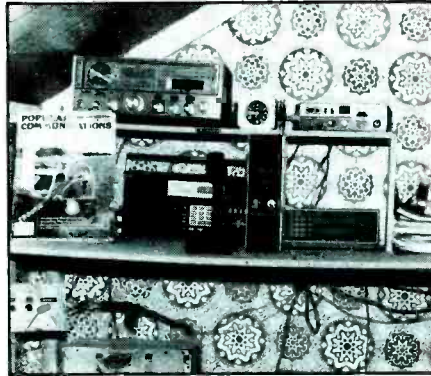
Last month we briefly mentioned the news that Spanish Foreign Radio is to build a relay station in Costa Rica in order to provide Western Hemisphere listeners with a stronger signal. It looks like the power of this one will be 500 kW, which means you'll probably be able to tune it in without even having to turn on the radio. As a bonus, the transmitters will also be used for broadcasts of "Radio Costa Rica International." We presume, but don't know for certain, that this will mean English programming from Costa Rica.

Another station we'll be hearing more clearly in the future is Radio Beijing. The Chinese and the French have agreed to devote time on their transmitters to relaying each other's programming. So, Radio Beijing will be aired over Radio France International's hefty 500 kilowatt relay station in French Guiana. Again, we don't know how soon this is going to begin.

Brunei, a small oil-rich state nestled against the north coast of the island of Borneo has been silent on shortwave since 1981, the culprit being old equipment for which parts were too hard to locate. It seems that the authorities in Brunei (the radio folks, anyway) are at least in the talking stage regarding a return to shortwave. D.C. English, the station's Supervisory Engineer, wrote Florida DX'er Terry Krueger that letters of support from listeners will be used as part of the justification for a return to shortwave. So, here's your chance to have a voice in a shortwave decision. Write to Mr. English at Radio TV Brunei, Bandar Seri Begawan, Negara Brunei Darussalam (Brunei).

Adventist World Radio-Asia should be on the air with its new station in Guam by sometime this summer. The call letters KSDA will be used. Most of the broadcasts will be in various Asian languages, but there will be some English. The tentative summer schedule includes English from 0300-0400 on 15140, at 0900 on 15440, probably just prior to 1500 on 9870, 2100 on 7160, 2200 on 11880, 0900 (or 0930 more likely) on 11860 and 1000 (or 1030?) on 11855. None of these look like ideal time/frequency matchups for reception in the U.S. It's possible that English IDs will be part of the transmissions in other languages.

The Dominican Republic station we mentioned last month did run tests very briefly during the first couple of days of March, but wasn't heard in the days following that. It may well have returned to the air by now and may even be a regular. Tests were on 6245 during the evening and 15045 was slated for daytime use, but we can't say if either will be a permanent frequency. The station is in Santo Domingo and is called Radio Caribe Mundial (Caribbean World).



This neat set up belongs to Michael L. Woodward in St. Catherine, Ontario.

Bill Loucks in Marion, Indiana writes to tell us that the 100 kW Harris transmitter at WHRI is feeding a log periodic antenna. Programs are fed via phone line from studios in South Bend to the transmitter in Nobelsville, though the station hopes to do this via satellite eventually. Additional info from the station says two log periodics are used, with azimuths of 42 and 157 degrees and an effective radiated power of four million watts. Nobelsville is about eight miles northeast of Indianapolis and South Bend is about 115 miles north of Nobelsville. Douglas W. Garlinger is the Chief Engineer at WHRI and signs the QSL cards which are now being sent. Any reader in the area who can supply us with some pictures of the station?

Kenya Beat That!

John Weersing in Wildomus, California vacationed in Kenya a while back and sends a clipping from Nairobi's *Daily Nation* of 11 February. The paper carried an item complaining about poor reception of the Voice of Kenya within the country, particularly in western Kenya. The broadcasts are the most poorly heard on shortwave, according to the article. Now, the Voice of Kenya recently in-



The new card from the new WHRI in Indiana.

stalled 250 kilowatt transmitters and many, including ye old, thought reception of the station would improve considerably. Guess they have a way to go yet.

Inscrutable Chinese

An article from last year's April edition of *Asia Week* was sent in by Ron Jack in Hinton, Alberta. The article deals with the several anti-Beijing clandestine broadcasters—Radio October Storm, Radio Spark, Voice of the People's Liberation Army and Contingent of Proletarian Fighters—that occasionally air brief transmissions critical of the government of Deng Ziaopeng. Ron wonders if there's any more information about these stations. The general consensus, Ron, is that they are Soviet-sponsored and probably come from the Vladivostok area. Some of them, at least, have been active off and on since the days of Mao. The stations apparently have an inexplicable habit of going off the air for summer vacation. Even when they are active it is only on a sporadic basis, with transmissions lasting only five to ten minutes. They can show up anytime between around 0900 to 1200, most commonly on 7525 and 9627. Activity also seems largely dependent on the current state of relations between Moscow and Beijing. Most have been heard in the U.S., though not with any consistency.

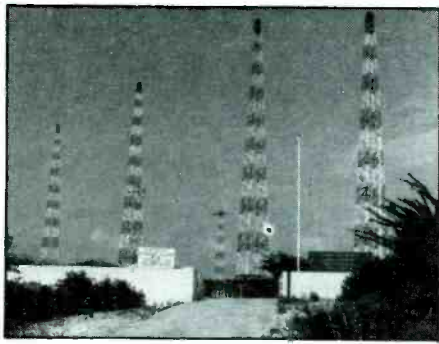
Caiman? Cayman?

One of our readers caught a very early broadcast of the anti-Cuban clandestine Radio Caiman. Even though he wasn't alone in thinking at first that it was Radio Cayman in the Cayman islands (wouldn't we love it, were it so!) we won't use his name here to save him any possible embarrassment. Anyway, the reader fired a reception report to Radio Cayman and got a QSL in response! Radio Cayman does receive foreign reports thanks to its 1555 kHz medium wave outlet, but they apparently didn't check this one very closely. Unfortunately, Radio Caiman is an anti-Cuban clandestine, while Radio Cayman is a legitimate government/commercial outlet. The two have no connection. A QSL isn't always a QSL!

The Rest Of The Mail

Nancy Lindsay in Roanoke, Virginia would like us to pass along her thanks to whomever it was who recommended her for a spot on ANARC's Frequency Recommendation Committee. Done.

Jed Hill in Falls Church, Virginia sends along a photo of a portion of the Radio Netherlands antenna farm on Bonaire, which he took while on vacation there. Jed says he couldn't get everything in the picture—the



A part of the antenna installation at the Radio Netherlands Relay station on Bonaire in the Netherlands Antilles. Special thanks to Jed Hill, Virginia.

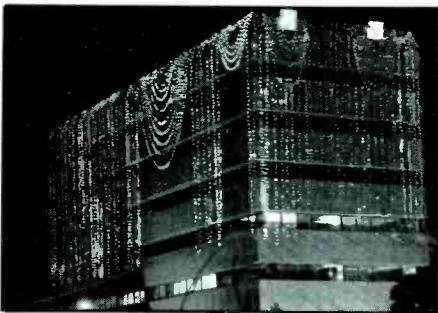
place is so big! Jed went snorkling just across from the Radio Netherlands installation to the accompaniment of a "constant hum of the trade winds whistling through the wires." Sigh! We really love getting station pictures from our readers, Jed. Thanks!

Do you use a Kenwood R-2000? If so, William Fry would like to hear from you at P.O. Box 135, Twillingate, Newfoundland, Canada. William is looking for a good receiver to copy CW and RTTY and was told his present set isn't very good for that purpose. Contact one of the SWL suppliers advertising in POP'COMM, Bill. They can give you suggestions.

John Mayson in Tampa, Florida is one of the big guns in "Flasdx," the Florida chapter of the SPEEDX club. They're looking for new members; if you live in Florida you're urged to make contact. Meetings are normally held in the Tampa area. Write John at 4009 Arroyo Lane, Tampa, FL 33624.

David Cole in Baton Rouge, Louisiana is studying for his Ph.D in political science at Louisiana State University and relies on shortwave to keep himself up to date on the international news. David has his eye on a new Sony ICF-2010.

Two guys from Alaska, Gary Bledsoe (1722 Crescent Drive, Anchorage 99508) and Dave Twiggs of Ft. Richardson are interested in forming a club for listeners in that state. Gary says that DX from his location is a challenge with lots of noise, aurora, black-outs, and a "serious" distance between stations. However, Gary says the DX from Asia is "a snap." Gary holds Ham call AL7HM,



This Radio Pakistan QSL shows "Broadcasting House." Thanks to Stan Mayo.

but is inactive because he says he's having too much fun SWLing. Dave reports he and Gary are planning a trip to KNLS and promises pictures. We look forward to that!

The nice QSL card from Radio Pakistan pictured this month is courtesy of Stanley Mayo in Yarmouth, Maine. Stan says his Drake SSR-1 receiver was damaged as it was being shipped back to him after a tune up, so Stan is currently without a radio.

Sara Vickers of Pittsburgh, Pennsylvania recently moved up to a Kenwood R-2000 and checks in with a report this month. Welcome back and, in answer to your question, look for Radio Dublin International in the evenings on 6.910. Generally it's poor, but once in a while it comes in fairly well.

Garth Carmon of Edmonton, Alberta wants to know what type of QSLs we are looking for as possible illustrations. Just about anything, although we obviously have many of the more common ones on hand. Many of the copies are simply not useable due to too much or not enough contrast. The ideal situation is when readers have a duplicate they can send and don't need to have returned.

Another Ham getting into shortwave listening is Philip Ryals, WB6WRU of Fremont, California. He joins us thanks to the transfer of SCAN subscribers to POP'COMM. Although he's getting started with an old Heathkit receive, Phil sees an ICOM R71A on the horizon. Hope you'll check in often, Philip.

Let's Hear From You!

We encourage your loggings (by country with your name and state abbreviation after each and some distance, i.e. white space, in between, please). Also comments, questions, observations, clippings, shack photos, schedules, and a wide variety of other what-have-you's are always welcome.

Listening Reports

Here's what's on. All times are UTC.

ALASKA- KNLS on 7355 at 1806 w/EE religious pgm (Twiggs, AK).

ALBANIA- R. Tirana, EE to NA at 0005 on 7065 (Woodward, ONT); 0000-0030 on 7065 & 0100 s/on on 7120 (Sherry, MA); 0030 w/Nx (Vickers, PA).

ANGOLA- Emis. Regional do Lobito, 7192v at 0453 w/drums, native singing, IS, anthem & into PP (Hickerson, AR).

ANTIGUA- Deutsche Welle Relay, 6120 w/Nx in EE at 0500; on 6040 at 0130 (Linville, ALB); 6085 at 0530 in GG (Carman, ALB); 6185 at 0340, into GG at 0350 (Filiault, MA); 6145 at 0510 announcing expanded sked to NA at 0100, 0300 (new, Editor) & 0500 (Ryals, CA).

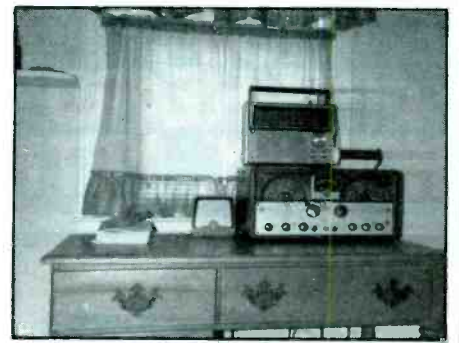
ARGENTINA- RAE on 9690 at 0400 in SS (Woodward, ONT); 0151 in EE (Bledsoe, AK); 0130 (Carman, ALB); 11710 at 0120 in SS (Loftus, OR); 15345 at 1200 EE Nx (Vickers, PA).

ASCENSION ISLAND- BBC Atlantic Relay, 6005 at 0533 w/World Service for Africa (Bledsoe, AK); 15400 at 1430 (Woodward, ONT).

AUSTRALIA- R. Australia, 7125 at 1230 (Carman, ALB); 9580 at 1345 (Hunt, NC) w/stock reports (Filiault, MA); 1230 w/news, also 9710 (Sherry, MA); 1230 Nx (Carman, ALB); 1420 w/freq. list & s/off (Vickers, PA); 1510 w/Nx (Woodward, ONT); 0843 on 9655 (Ryals, CA); 17975 at 0051 (Linville, ALB); 5995/6060/7215/9580 at 1300 (Northrup, MI).

VLW9 Perth on 9610 at 1630 w/50's hits (Carman, ALB); 1356 w/ABC National Nx (Shute, FL).

VNG time station, 4500/7500 at 1230 nearly daily (Carman, ALB).



Edward J. Cichorek's Somerset, New Jersey shack features a "blast from the past"—an old Hallicrafters SX-99, purchased at a garage sale for \$10!

Abbreviations Used In Listening Post

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

AUSTRIA- R. Austria International, 6000 at 0430 in EE, heavy QRM by Moscow (Woodward, ONT); 6155 at 0130 in EE (Hunt, NC); 15320 at 1230-1255 s/off (Sherry, MA).

BELGIUM- BRT on 5910 at 0230 (Sherry, MA); 15590 at 1330 w/listeners' letters (Woodward, ONT).

BOTSWANA- R. Botswana, 7255 w/IS, choral Mx, announcements in Setswana (Weiss, VA); 0351 in // w/4820 under HRVC, Honduras (Shute, FL).

BRAZIL- Radiobras, 11745 at 0205 in EE (Hunt, NC); 0100 w/Mx & commentary in PP (Carman, ONT)-- Yes, they QSL, Editor; 0203 in EE w/frequencies, address (Vickers, PA); 0200 Nx, Mx, commentary, listeners' letters (Cole, LA); 0223 Brazilian MX (Glooschenko, ONT).

R. Nacional Amazonas, 11780 w/Mx & ID (Twiggs, AK); 1530 in PP (Vickers, PA); 2300 in PP (Carman, ALB); 0218 Mx, commentary (Glooschenko, ONT); 0158 w/ID (Bledsoe, AK). Editor's note-- Very few Brazilian stations BC in SS; the native language there is PP.

BULGARIA- R. Sofia, 7100 at 2155 w/Nx & commentary in EE (Glooschenko, ONT).

CANADA- R. Canada International, 5960 at 0300 w/Nx (Linville, ALB); 15325 at 2008 in EE w/Nx, Wx, Sports (Loftus, OR).

CBC Northern Service, 9625 at 1230 w/local Nx in EE (Carman, ALB).

CFCX, Montreal, 6005 at 1715 w/theme song contest (Northrup, MI).

CFRX, Toronto, 6070 at 1435, music (Northrup, MI).

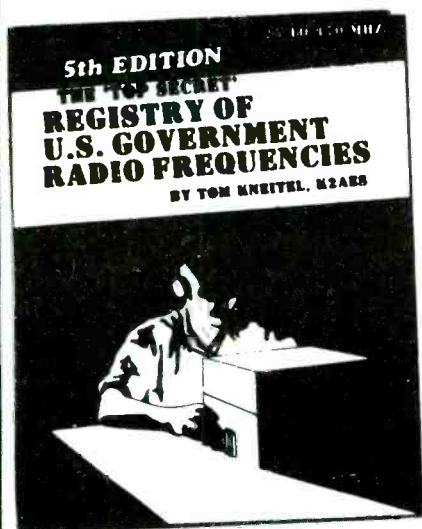
CHU time station, 7335 at 2343 FF/EE time announcements (Twiggs, AK); 1559 on 14670 (Loftus, OR).

CHAD- R. Nationale Tchadienne, 4904 at 0536 in FF, African vocals (Weiss, VA).

R. Moundou, 5291v at 0515, African Mx, OM w/FF ID (Hickerson, AR).

CHILE- R. Nacional, 15140 at 1830 rapid commentary (Carman, ALB); 0050 pop Mx & ID (Bledsoe, AK); 2130 w/soft rock (Glooschenko, ONT); 15130 w/soccer game (Vickers, PA).

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CHINA- R. Beijing at 1401 in EE an 9730 w/Nx, weak (Shute, FL); 9820 at 0000 w/Nx in EE (Weiss, VA).

CLANDESTINE- R. Camilo Cienfuegos/La Voz del CID on 6305 at 0130-0200 US Mx, SS commentary (Glooschenko, ONR).

R. Cairman, 2470 at 0200, American pops, SS talk (Linville, ALB).

R. Truth (anti-Zimbabwe), 5015 at 0430 s/off w/EE Nx by YL, commentary, ID, horns 0458 & bird IS (Paszkiwicz, WI); 0431 w/bird call IS, s/off at 0502 (Shute, FL).

COLOMBIA- La Voz de la Centauros, Villavicencio at 0503 w/ID & freq. announcement (Shute, FL). Was this 5955 kHz?-- Editor.

R. Sutatenza, Bogota, 5095 at 0105 in SS (Weiss, VA); 0435 w/Latin pops, ID, national anthem, s/off 0504 (Loftus, OR).

COOK ISLANDS- R. Cook Islands, 11761 at 0540 w/OM in (presumed) Maori w/Nx, Rx pgm, island Mx (Hickerson, AR).

COSTA RICA- R. Impacto on new 6160 at 0510 w/Latin pops (Shute, FL); 1230 in SS (Carman, ALB).

TIFC Faro del Caribe, 5055 w/Rx pgm in EE at 0318 (Weiss, VA).

R. Rejo, 4832 w/discussion in SS at 0233 (Vickers, PA).

R. Columbia, 4850 at 0830 in SS (Carman, ALB).

CUBA- R. Havana Cuba, 6090/6100/6140 at 0359 w/EE ID; 6100 best (Loftus, OR); these 3 at 0342 w/EE, Cuban jazz at 0400 (Ryals, CA); 6100 w/jazz, tourist promos at 0510 (Woodward, ONT); 6140/9740 at 0100-0130 w/Nx, Mx, sports (Glooschenko, ONT); 11760 in SS at 2206 (Vickers, PA); 9730 at 0400 w/ID & "Territorio Libre en America." (Filiault, MA); 11950 in FF to Europe at 2130 (Henry, MA).

R. Rebelde, 5025 at 0300 w/live sports (Carman, ALB).

CZECHOSLOVAKIA- R. Prague, 5930 at 0145 in EE to NA, monitoring club info (Hunt, NC); 0100 in EE & strong (Sherry, MA); at 0342 (Woodward, ONT); 15110 at 1825 s/off w/EE ID (Twiggs, AK).

DOMINICAN REPUBLIC- R. Clarin, 11700 at 1741 w/vocal Mx (Weiss, VA).

EAST GERMANY- R. Berlin International, 15240 at 1530 in Southeast Asian service in EE (Filiault, MA); 1455 in GG w/ID, frequency sked (Twiggs, AK).

ECUADOR- HCJB, 6095 in EE at 0236 (Vickers, PA); 6230 at 0630 w/DX Party Line (Ryals, CA); 9870 at 0405 in EE (Filiault, MA); at 0100 (Carman, ALB); 0445 w/Happiness Is (Ryals, CA); 11745 at 2140 w/DX Party Line (Carman, ALB); 11835//15295 Dutch or GG at 2300, PP at 2330 (Sherry, MA); 15155 at 0030 s/on in EE (Carman, ALB); 15250 at 0000 w/GG Rx pgm (Carman, ALB).

R. Nacional Espejo, 4680 in SS at 0451, Mx & echo ID (Shute, FL); 0335, Andean Mx, ID (Hickerson, AR).

R. Quito, 4920 at 0134 in Spanish w/frequent ID's (Vickers, PA); 0225 w/Latin Mx (Pitkin, CT).

La Voz del Upano, 5040 at 0314, Mx, OM announcer in SS (Weiss, VA).

La Voz de las Caras, 0117-0153 s/off on 4795, commentary, local vocals, ID (Paszkiwicz, WI).

R. Cenit, Portoviejo, 4772 at 0033 in SS, no ID so tentative logging (Vickers, PA). Could be but haven't seen this one reported in quite a while-- Editor.

EGYPT- R. Cairo, 9475 at 0245, YL announcer in EE (Weiss, VA); 9675 at 0215 w/Nx of Arab nations (Hunt, NC); 9805 at 1835 in French w/ID, Arabic Mx (Twiggs, AK); 2146 w/local Mx (Vickers, PA).

ENGLAND- BBC, 5975 at 0000, 6175//7325 at 0030, 21660 at 1600 w/football (Sherry, MA); 9510 at 1310 w/"24 Hours" (Northrup, MI); 0449 w/"Newsreel" (Woodward, ONT); 15070 at 1724 in English (Vickers, PA).

EQUATORIAL GUINEA- R. Nacional, Bata, 5003.6 at 0555 w/ID, talk, local Mx, all SS (Hickerson, AR).

FALKLAND ISLANDS- FIBS, 3958 at 0450 w/jazz piano, request pgm, good ID & signal! (Hickerson, AR).

FINLAND- R. Finland International, 15400 at 1200 w/IS & s/on announcement by YL (Twiggs, AK); 1500 w/discussion on the new Nordic Communications Satellite (Woodward, ONT).

FRENCH GUIANA- R. France International Relay, 6055 at 0530 w/Mx & SS talk (Carman, ALB); 0315 w/Nx in EE, soccer results in FF (Woodward, ONT); at 0330 (Carman, ALB); 2345 on 9535 w/FF pops, SS announcer (Henry, MA); 9800 at 0300 (Carman, ALB); 0306 w/Nx, ID in FF (Twiggs, AK).

RFO Cayenna, 3385 at 0100 w/music, FF announcer (Weiss, VA).

GABON- Africa #1, 4810 at 2140 w/Nx in FF (Weiss, VA); new 4830 freq (replaces 4810-- Editor) at 0500 s/on in FF (Hickerson, AR); 1200//15475 in FF at 2000 (Carman, ALB); 15475 at 1722 in FF (Twiggs, AK).

GREECE- V. of Greece, 9935 at 0330 (Carman, ALB); 11645 at 1230 w/Greek Mx, announcements by YL (Twiggs, AK).

GREENLAND- Gronlands R., 3999 at 1050 w/pop & country/western, YL announcer (Hickerson, AR).

HONDURAS- HRVC, La V. Evangelica, 4820 at 0158 in SS w/Rx talk (Vickers, PA).

HUNGARY- R. Budapest, 6025 at 0200 w/"news-rama" in EE (Hunt, NC); 0230 w/Nx in (presumed) Hungarian (Vickers, PA).

ICELAND- Icelandic State BC Service, 12112.5 at 2300 s/on in Icelandic w/Nx. Was a new frequency but now moved again (Hickerson, AR).

INDIA- All India Radio, 7295 at 1355 w/Indian Mx, time pips, ID by YL (Hickerson, AR); 9545 at 1310 w/Eastern-sounding Mx, missed ID at S/off (Northrup, MI).

INDONESIA- R. Republic Indonesia Ujung Pandang, Celebes on 4753 at 1257-1332 in Indonesian w/talks, IS, ID, Nx, Mx; ID at 1308 (Paszkiwicz, WI).

RRI, Ambon, Moluccas, 4845 at 1252-1340 w/instrumentals, ID 1300 & 1328, Nx 1300 (Paszkiwicz, WI).

IRAQ- V. of the Masses service on 6050 at 0002 in AA, ID 0030, //7270 (Hickerson, AR).

ISRAEL- V. of Israel, 5885 w/Nx at 2230 (Henry, MA); 0200 on 7335 (Carman, ALB).

ITALY- RAI on 9575 w/ID at start of EE at 0100, into FF 0120, Italian 0140 (Linville, ALB).

JAPAN- R. Japan, 5990 at 1100 w/Nx, commentary in EE, Mx (Cole, LA); 9605 at 1920 w/poetry & commentary (Carman, ALB); 15420 at 0055 s/on (Linville, ALB).

JJY time station on 8000 at 1500 (Carman, ALB).

LIBYA- V. of The Arab Homeland service, 9615 at 0610, all AA (Bledsoe, AK); LJBC, 15415 at 1135 in AA (Twiggs, AK); at 1550 w/AA Mx & AA ID (Vickers, PA).

LITHUANIAN SSR- R. Vilnius, 11860 (via USSR transmitters), s/on at 2300 w/ID, frequencies in EE (Twiggs, AK).

MADAGASCAR- R. Madagascar, 3287.6 at 0230 w/OM in FF, jazz, s/off 0255 (Hickerson, AR).

MALAYSIA- R. Malaysia, Sarawak, 5030 at 1445 in CC w/talk & MX (Twiggs, AK).

MALI- RTV du Mali, Bamako, under a CW station on 4782 at 0556 w/IS, anthem, FF s/on (Shute, FL).

MONACO- Trans World R., 9495 at 1800 w/OM in FF, Titana's 9500 s/on wiped it out (Weiss, VA).

MOZAMBIQUE- R. Mocambique, 4734 at 0345 in PP, orchestral Mx, 4-note gang IS, ID 0400 (Hickerson, AR).

NETHERLANDS- R. Netherlands, 9540 at 2050 w/EE ID (Twiggs, AK); 9715 w/Media Network (Shute, FL); 15560 at 1453 w/"Image-s" in EE (Filiault, MA); 17605 at 1430 Mx/Nx & frequencies (Vickers, PA).

NETHERLANDS ANTILLES- R. Netherlands Relay, Bonaire, 6020 at 1123 w/commentary, s/off (Glooschenko, ONT); 6165 at 0235 in EE (Hunt, NC); 0530 on a Sunday w/"Happy Station" (Ryals, CA); at 0530 (Carman, ALB); 9590 at 0230 s/on (Twiggs, AK).

Trans World Radio, Bonaire, 9530 at 0330 w/"Through The Bible" (Linville, ALB); 11815 at 1200 w/Rx message (Carman, ALB).

NEW ZEALAND- R. New Zealand, 15150 at 1820 in EE w/"Good Morning New Zealand" pgm, lots of country-western (Bledsoe, AK).

NICARAGUA- V. of Nicaragua, 6015 w/Nx at 0050 (Glooschenko, ONT); 0535 in EE, Nx at 0545 (Loftus, OR); at 0136, pop Mx, Nx in EE (Weiss, VA); 0100 in EE (Carman, ALB); 0415 w/pop, into SS (Filiault, MA); 0115 w/local Nx (Hunt, NC).

R. Zinica, Bluefields, 6120 at 0205 w/ID, frequency, pop Mx "Musica romantica de Radio Zinica." BBC not on (Paszkiwicz, WI).

NIGERIA- R. Nigeria, Kaduna, 4770 at 0430 w/much Michael Jackson Mx, EE ID's for Channel One (Hickerson, AR).

V. of Nigeria, 15120 at 2100 w/discussion about the economy (Weiss, VA).

NORTHERN MARIANAS- KYOI Saipan, 9665 at 1900 s/off & switch to 9670, pop Mx (Twiggs, AK); 9665 at 1630 w/top 40 & appeal for money in EE & JJ (Carman, ALB).

NORWAY- R. Norway International, 11850 at 1730 replying to a letter asking why they don't QSL-- claiming they QSL all correct reports (Carman, ALB); 15245 at 1358 w/IS,

ID in EE & Norwegian (Filiault, MA); 15310 at 1415 answering letters, various features (Hunt, NC).

PERU- R. Ancash, Huaraz, 4990.6 at 0445 in SS w/comedy skit, ID (Hickerson, ID).

R. Atlántida, Iquitos, 4790 at 0240 w/Mx & SS announcer (Weiss, VA); 0345 w/Latin Mx (Pitkin, CT); 0238 in SS w/discussion (Vickers, PA).

PHILIPPINES- V. of America elay, Tinang, 9670 at 1415 w/"Jazz Hour." (Loftus, OR).

R. Veritas Asia, 9595 at 1500 s/on in EE w/trumpet IS, Mx, Rx Nx items (Twiggs, AK); Currently off the air after Marcos' supporters shut up the station-- Editor.

QATAR- Qatar BC Service, 9905 at 1835 in AA w/talk & local Mx (Pitkin, CT); 2005 poor in AA (Weiss, VA).

ROMANIA- R. Bucharest, 5990 at 0230 in EE w/pop Mx pgm (Vickers, PA); 11940 at 0600 w/EE ID & address (Twiggs, AK).

RWANDA- Radiodiffusion Rwandaise, 3330 at 0410 in Swahili w/highlife, FF ID (Hickerson, AR) Deutsche Welle relay, 15410 at 1300 in EE, Mx, correspondents' reports, listeners' letters, into FF 1315 (Cole, LA).

SAUDI ARABIA- BC Service of the Kingdom of Saudi Arabia, 11730 at 0500 w/Rx service, recitations, long gaps between (Hunt, NC); 0524 w/recitations (Twiggs, AK).

SENEGAL- Radiodiffusion du Senegal, 4890 at 2345 w/announcer in vernacular, Mx (Weiss, VA).

SIERRA LEONE- SLBC, 5980 at 2200 in EE w/talk. Poor sigs (Kokinda, OH).

SOMALIA- R. Mogadishu, 7200 at 0330 in Somali w/local Mx (Pitkin, CT).

SPAIN- Spanish Foreign R., 6055 at 0145 w/SS lesson (Henry, MA); 7105 in EE at 0130 (Sherry, MA); 9630 w/EE Nx at 0500 (Woodward, ONT); 15365 at 1707 w/end of SS Nx, Mx (Vickers, PA).

SOLOMON ISLANDS- SIBC on 9545 at 0722 in EE & Pidgin, national Nx, U.S. pops, not heard on 5020 (Loftus, OR).

SOUTH AFRICA (REP. OF)- Radio RSA, 3230 at 0300-0330 w/Nx, comment (Sherry, MA); 6010 at 0200 w/"Africa Today" (Ryals, CA); 9585 at 0630 w/EE Nx (Cole, LA); 2153 ending EE, into PP (Vickers, PA); 11900 at 2130 (Carman, ALB); 1858 in PP (Linville, ALB).

SABC on 4880 at 0535 in Afrikaans (Pitkin, CT). Capital R., Transkei, 3930 at 0324 in EE (Kokinda, OH).

SOUTH KOREA- R. Korea, 15575 at 0227 in EE (Linville, ALB); at 0230 (Carman, ALB).

SRI LANKA - SLBC on 9720 at 1500 w/EE Nx (Weiss, VA); 11800 in EE at 1545 w/ID, local Mx (Woodward, ONT).

SUDAN- R. Omdurman, 5038.8 at 0358 s/on announcements in AA, anthem, Rx messages, flute alternating with talk, time pip & Nx at 0430 (Paszkievicz, WI).

SURINAM- R. Surinam International, 17775 (via Brazil-- Editor) at 1732 in Dutch w/Nx & frequencies (Vickers, PA).

SWAZILAND- Trans World Radio, 9550 at 1940 w/Mx & announcements in FF & Lingala to Zaire (Weiss, VA).

SWEDEN- R. Sweden International, 15345 at 1409 in EE w/features (Vickers, PA); 1400 w/regional & world Nx in EE (Filiault, MA); 1405 w/Nx & "Weekday" (Filiault, MA); 1620 FF Nx (Henry, MA).

SWITZERLAND- Swiss Radio International, 6135 at 0221 in EE w/discussion, local WX (Vickers, PA); 15430 at 1530 w/EE Nx (Filiault, MA); 1620 FF Nx (Henry, MA).

Red Cross BC Service, 9885 at 0340 w/EE to NA, barely audible (Cole, LA).

SYRIA- R. Damascus, 7455 atx2155 in AA, ID 2200 & headlines in EE, anthem & off at 2205 (Pitkin, CT); 12085 at 2130 (Carman, ALB).

TAHITI- R. Tahiti, 9750 at 0315 in FF w/rock; also 11826/15170 (Hickerson, AR).

TAIWAN- VOFC, 6070 at 0739 in EE, to 0800 when into CC (Ryals, CA).

TUNISIA- RTT Tunis, 7225 at 2300 w/Nx in AA, //7280, both good (Pitkin, CT); 7225 at 0653 in AA, ID w/mention of Tunis at 0700 (Shute, FL).

UKRAINE SSR- R. Kiev, 11860 at 0315 in EE w/DX club (Carman, ALB).

UNITED ARAB EMIRATES- UAE R. Dubai, 7310 at 0330 w/regional & world Nx in EE (Filiault, MA); 11730 at 0345 in EE, ID as the "Sunshine Station" (Bledsoe, AK); 17830 at 1330 w/EE Nx (Cole, LA).

UNITED STATES- WHRI World Harvest R., 6010 w/Rx pgm at 0610 (Ryals, CA); 9615 w/test BC at 0209 (Hickerson, AR); 2030 on 11865 (Twiggs, AK); 15105 at 1600 (Carman, ALB).

WRNO, 6185 at 0530 w/Mx & commentary (Carman, ALB); 7355 at 0150 (Linville, ALB),

0015 w/rock (Carman, ALB); 0240 w/"FM-100" announcement (Glooschenko, ONT); 11705 at 2130 w/screaming Rx pgm (Carman, LA); 15420 at 1714 w/Beach Boys (Vickers, PA); 1830 w/rock (Carman, ALB).

WYFR, 9510 in FF at 2045, EE ID 2050, back into FF (Woodward, ONT); 9555 at 0100 in SS (Henry, MA); 9850 at 0030 (Carman, ALB); 11830 w/Rx at 1400 (Sherry, MA); 15170//15365 at 2200 w/Rx (Ryals, CA).

Voice of Free China (via WYFR), 5985 at 0455 in CC (Woodward, ONT); at 0515 5985//6065 in CC (Carman, ALB); 0249 in EE (Vickers, PA); 7355 at 2250 w/cooking lessons (Henry, MA).

KCBI, 11790 at 2130; 11905 at 1830 w/DX pgm (Carman, ALB).

AFRTS, 15345 at 1700 w/live sports (Vickers, PA); 1755 w/Nx (Woodward, ONT).

R. Marti, 9525 at 0400 "Aqui Radio Marti" & s/off (Woodward, ONT); 0115 w/pop Mx in SS (Vickers, PA); 11930 at 2200 (Carman, ALB).

USSR- R. Moscow, 5915 at 2230 w/mailbag (Henry, MA); 6000//7115//9500 at 0200 in EE; at 0100 on 7420 (Linville, ALB); 7150 at 0355 in EE w/mailbag (Filiault, MA); 7290 at 2000 w/EE Nx (Carman, ALB); 9755 at 1320 w/"Soviet Way of Life," 1425 on 9875 (Northrup, MI).

R. Peace & Progress, 1415 on 7170 in EE, ID as the "voice of Soviet opinion." (Bledsoe, AK).

Mayak service via Cuba relay, 4765 in SS at 0348 (Linville, ALB). Hmmm. I assumed Mayak, but Mayak wouldn't be in SS-- Editor.

VATICAN- Vatican R., 9605 at 0050 in English (Vickers, PA).

VENEZUELA- Ecos del Torbes, 4980 at 0200 in SS in SS w/soccer (Vickers, PA); 0245 w/Latin Mx (Glooschenko, ONT).

La V. de Carabobo, 4780 at 0330 in SS (Pitkin, CT) R. Yaracuy, 4940 at 0122, pop Mx, SS (Weiss, VA). R. Mara, 3275 at 0348-53 s/off, ballads, ID, anthem & off (Hickerson, AR).

La V. de El Tigre, 3253.4 at 0406 lively music, ballads, ID's in Spanish (Hickerson, AR).

R. Mundial Bolivar, 4770 at 0153 w/Latin pops, frequent ID's (Vickers, PA).

R. Rumbos, 9660 at 0345 Nx in SS, ID (Twiggs, AK).

R. Capital, 4850 at 0345 w/US Top 40 (Pitkin, CT).

VIETNAM- V. of Vietnam, 10060 at 0453 w/time pips, ID by YL. Believe this is domestic service (Hickerson, AR).

WEST GERMANY- Deutsche Welle, 15185 in CC(?) at 1200; 17800 at 1300 in GG (Sherry, MA); 11795 at 1230 in GG (Carman, ALB).

YEMEN (SOUTH)- Democratic Yemen BC Service, Aden, 7190 at 0330 in AA, Nx (Pitkin, CT).

YEMEN (NORTH)- Radio San'a, 9780 at 2010 in AA (Pitkin, CT); 1826 in AA (Twiggs, AK); 1645 w/vocal Mx, announcements (Weiss, VA).


ZAMBIA- R. Zambia, 3346 at 0448 w/highlife Mx, ads, ID, time (Hickerson, AR).

ZANZIBAR- RTZ, 11734.6, tentative, 1746-1815 close in (presumed) Swahili, mentions of Tanzania, IS & Nx 1800, brief announcement before s/off (Paszkievicz, WI).

ZIMBABWE- ZBS Radio Two, 3306 at 0325 s/on in vernaculars w/highlife, talks about Zimbabwe (Hickerson, AR).

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NEW AND EXCITING TELEPHONE TECHNOLOGY

Telephone Equipment Update

Although the telephone industry is the oldest section of the electronics industry, it is still coming out with new products. Some of these are the same old phones in new bodies and some are applications of new technology.

One new product that has been introduced to handle a problem created by new phone services is the Telephone Sentinel, made by Telecommunications Technology Corporation of McLean, Virginia. The Telephone Sentinel is a programmable toll restrictor.

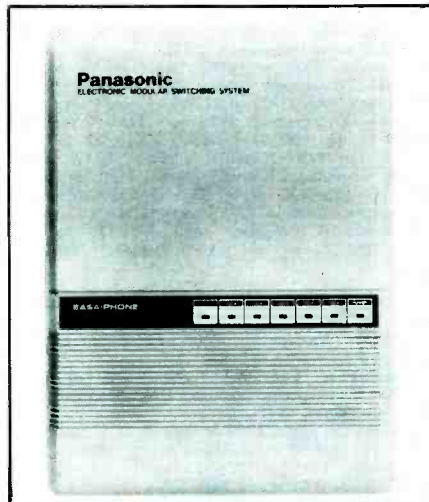
This device's primary use is for blocking "976" calls—at last relief for parents! Also, it can restrict all long distance calls, all outgoing calls, 411 calls, and 555 calls. The sentinel will allow 911 emergency calls and can be programmed to allow only certain calls through or block specific numbers, such as the pizza delivery service or mother-in-law's number.

The Sentinel can be mounted on a specific phone or the whole line. It will work with both pulse and tone phones. Programming is done via the phone dial using an access code. The access code can be changed at any time by the owner. The restricted phone numbers can also be overridden. The Telephone Sentinel is available at phone stores, distributors, and Radio Shack (under the DuoPhone label). The price is about \$80.

With the explosion of cellular phone service, accessories for cellular equipment are now turning up. One device is the AB1X cellular interface. What this device does is attach to a cellular phone and provide a standard RJ11 phone jack that will accept regular phone accessories. A cellular phone is really a radio, so it does not supply the kind of current or ringing signals needed for regular phone equipment. The AB1X takes care of this problem.

Phone answering machines, regular telephones, cordless phones, speaker phones, and even standard modems can now be attached to a cellular phone. It also has a tape recorder output jack to record phone conversations. It will also accept either tone or pulse dialing. The AB1X is made by Morrison and Dempsey of Northridge, California and costs about \$400.

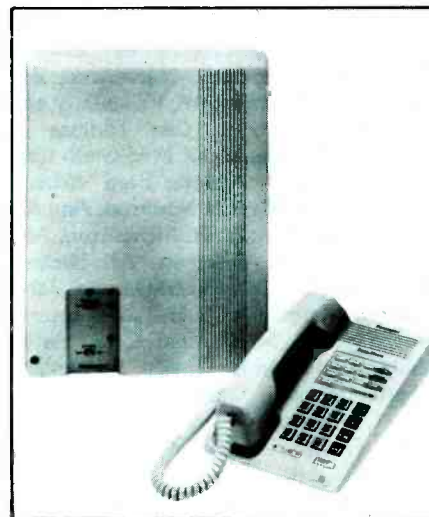
For those people who install phones and work on phone lines, there is a new test set on the market. This is the Ameritec AM-44 transmission test set. Until now, test sets have been large expensive boxes. The AM-44 is the same size as a hand-held digital multimeter. It will measure line loss, frequency, noise, generate tones, allow moni-



Panasonic KX-T616 PBX.

toring of the line and work as a speaker phone. Pulse or touch-tone dialing are accommodated, as well as MF interoffice signaling. MF interoffice signaling consists of tones used by the phone company for routing calls. This is a very sophisticated piece of equipment. Ameritec is located in Covina, California and the AM-44 costs about \$2,500, which may seem a lot but is what such equipment costs, whatever its size.

For home or small business use, Panasonic has come out with a small PBX. Mitel has discontinued their SX-5 small PBX, so this introduction by Panasonic is on its own in the market. Small PBXs are just the thing



Panasonic VA-208 Key System.

in large houses and small business. The Panasonic KX-T616 will accept up to six incoming lines and sixteen extensions. Each extension can power three phones.

The new Panasonic PBX has all the usual PBX features, such as music on hold, paging, tone or pulse operation, intercom between extensions, hold, call waiting, speed dialing, toll restriction and SMDR. SMDR (Subscriber Message Detail Recording) is a printout of calls made and received, which extension they were made from, and the durations of the calls. Like all PBXs, the KX-T616 is fully programmable. The KX-T616 costs about \$1,000 and telephone instruments, paging amplifiers, etc. are extra. This is relatively inexpensive for a system of this power and size.

The usual way to price a PBX is figure what it costs per extension. To do this, divide the number of extensions into the price. The Panasonic comes out at \$62.50 per extension. In business use a price per extension of \$350 is considered reasonable, so the Panasonic is quite a deal. As a PBX is easily installed, requiring only two wires per extension, any home owner or small businessman should be able to install this PBX.

Also from Panasonic are a couple of small key systems. Key systems have most of the features of a PBX, but require special phones and more wires per instrument than a PBX. There are two key systems from Panasonic—the VA-208 and the VA-412. The smallest system, the VA-208, will handle two lines and eight extensions. The VA-412 will handle four lines and twelve extensions.

Both these units and most PBXs will also handle a "door phone," which is useful for security or people who have trouble getting to the door. These key systems, being electronic, require only four wires per phone and can be easily installed by anyone competent with a screwdriver. The VA-208 costs about \$1,600 or \$200 per extension. The VA-412 costs about \$2,300, with all extensions or about \$190 per extension. These prices are higher than the PBX price previous, but bear in mind the phones are included. Yet a PBX regular 2500 set costs \$60 each, as opposed to about \$125 for a key system set.

Comdial, a company that used to be called Stromberg Carlson, has been making phones for about 100 years. They have an electronic key system called the Executech. This is a rugged piece of equipment that comes in many models, from three lines and eight extensions to eight lines and 24 exten-



Sedeca SE 84 telephone.



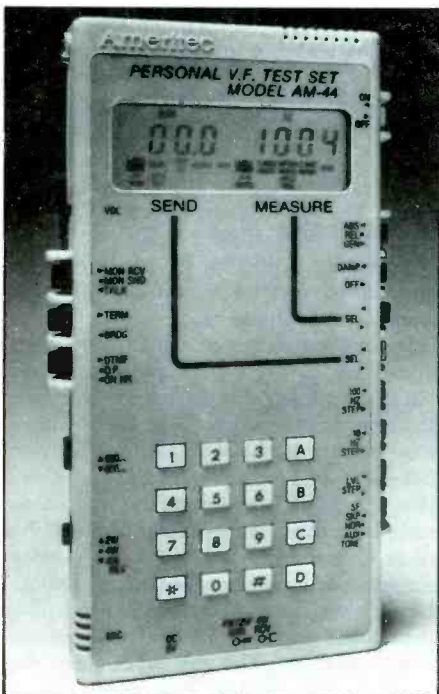
The Krone Phone.

sions. Like the Panasonic units, they require four wires per extension.

The Comdial units come with a choice of two colors, ash and black. Every unit also has a built-in speed dialer. The price of the three line, eight extension system is about \$1,550 fully equipped or about \$180 per extension. The big system, eight lines with 24 extensions, costs about \$4,500 or about \$180 per extension.

Let's move on to the biggest selling and most used item in the telephone business—single line phones. There have been some changes and some new phones introduced.

From Europe there are two entries and one exit. L.M. Ericsson, the Swedish manufacturer, has withdrawn their top of the line phones from the U.S. market. The Royal Wood phone and the 1892 are no longer available. The Royal 100, known in the rest of the world as the Diavox, is still available. The Diavox sells for about \$70.



Ameritec AM-44 Test Set.

The Royal Wood and 1892 phones may still be available in the stores, but after they are gone, if you want one, you will have to buy it on your next trip to Europe. The Royal Wood was a Diavox made of read wood. It was available in mahogany, cherry, rosewood, and walnut. A beautiful phone, it was perfect for the man who has everything. The 1892 was a reproduction of the world's first telephone with a handset. This was a wonderful piece of Victoriana made with cast iron and gold leaf decoration.

France presents a very nice looking phone called the SE 84. This phone is available in many bright colors and has a bell adjustable in loudness and tone. It is manufactured by Sedeca, who have an office in Canyon Country, California, and costs about \$70. Sedeca is a large French manufacturer that makes telephone equipment for hotel and business use.

For telephone sales or "boiler room" use, there is now a telephone specifically for headsets. The phone is about the size of a pack of cigarettes, so it can be clipped on a belt or attached with velcro on the side of a desk. It has a touch tone pad and ringer. For those hard to hear calls it has volume control. The unit comes complete with a headset and costs about \$70. It is manufactured by WICOM of Tarzana, California who, for some bizarre reason, have decided to call the unit the "Walk 'N' Talk."

From Germany, the equipment manufacturer Krone have a well-built telephone available in many colors, as well as a brushed metal finish. Krone have an office in Wilton, Connecticut. Their phone sells for about \$90.

Northern Telecom, the Canadian company that also manufactures in Nashville, Tennessee, have some new nice looking phones. This company was a Bell company back in the old days and make equipment that meets the Bell specifications. The new

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residential phone is called Harmony and will sit on a desk or mount on a wall. It comes in five different colors, but not black. The price is about \$65.

The other phone for single line use is the Quick Touch. This is a feature phone with built-in dialer and hold. It comes in three colors—sorry, still no black. The price for this phone is about \$100.

Appearing on the market these days are phones distributed by the RBOCs (Regional Bell Operating Companies). Judge Greene has not allowed these companies to manufacture products, but they may sell and distribute. Another thing that Judge Greene gave them was the right to use the Bell name and logo.

The result of this is that the RBOCs are selling phones imported from the Far East and marking the boxes "Genuine Bell." This is a misrepresentation. To the public, "Gen-

uine Bell" means a phone manufactured by Western Electric—the "old" Bell system. The "new" Genuine Bell phones I have checked do not in any way approach the quality and performance of phones made by Western Electric, which is now called AT&T. Unfortunately, people will buy these phones hoping they are buying a well-made phone.

The world's biggest telephone manufacturer, AT&T, seems to have changed their standard 2500 sets from gong ringers to electronic ringers. This makes the phones lighter, which means they fall off the desk more readily. Refurbished AT&T phones with gong ringers are still available.

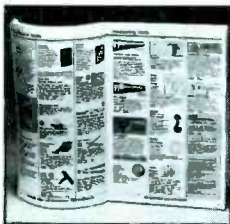
I wish I had more information about what AT&T is doing, but their PR people never seem to have the time to discuss anything with me. They want to keep the info a secret, I guess.



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On the subject of gong versus electronic ringers, this is a subject of much debate. The camps are well divided. Everyone has their point.

The gong ringer is the loudest ringer you can power off the phone line. It is a strident ring that will wake the dead and is hard to ignore. It adds weight and substance to the phone. The sound is very directional, so in a large open plan office it is easy to locate which phone is ringing. People have been conditioned over the years to recognize the sound of a telephone bell.

The electronic ringer, which warbles or chirps, usually has a warm pleasant sound that does not jar. It is always softer than a gong ringer, so people who do not have good hearing can have problems perceiving that the phone is ringing. Music lovers can have the same problem as the melodious tones from the phone can blend in with the music from the HiFi. Although the location of electronic ringers may be hard to identify, the pitch and duration can be changed. This way, unless you are tone deaf, phones can be differentiated. The volume of electronic ringers can be adjusted so they can ring as softly as you wish.

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AZ Tucson	KWB519	163.375
	KWB519	168.00
CA Flint Peak	KQK839	164.9875
CA Los Angeles	KQK931	163.375
	KQK930	164.9625
	KQK930	170.125
	KPS228	410.35
	mobiles	164.9625
CA Oakland	KRN702	164.175
	KGZ654	173.6125
		163.375
CA Pasadena	KQK839-42	406.225
	KQK839-42	410.20
CA Richmond	KQK947	164.175
	KQK948	164.9875
	KQK949	173.6125
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	KJS962	168.525
	KPS231	409.275
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IA Davenport	KPS236	410.325
IA Des Moines	KQK898	164.20
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	KQK896	164.70
	KQK990	406.375
	KQK990	410.20
IL Chicago	KTM447	162.225
	KTM447	163.375
		164.9625
	KUK226	164.9875
	KFA908	166.225

	KV0711	170.125
	KGW285	408.025
	KGW285	410.00
	KBZ415	410.20
	KQK990	410.20
	KHA236	410.325
	KGW285	416.975
	KBZ415	419.125
		406.325
IL Des Plaines		172.30
IL Forest Park	KPS247	171.3875
IN Indianapolis	KL1391	410.20
	mobiles	163.00
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KY Covington	KSM828	164.9625
KY Lexington	KZY647	419.125
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	KPS244	410.325
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	KV0717	166.20
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MD Baltimore	KRG616	162.225
	KGR913	169.00
	KUK225	172.30
MD Bethesda	KJR914	168.525
MD Largo	KV0725	164.50
	KV0728	166.20
	KV0726	167.125
	KV0727	172.30
	KRB200	163.375
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MN Minneapolis	KLUB38	163.00
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	KWN214	164.175
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	KEX535	164.9875
	KPS243	166.225
MN Saint Paul	KQK988	163.00
	KWN212	163.375
	KWN213	164.10
	KWN214	164.175
	KWN215	164.20
	KZY645	416.975
MN Duluth	KFA907	164.70
MO Kansas City	KSM717	164.9875
	KSM869	169.60
	KFA906	164.70
MO Saint Louis	KQK881	166.225
	KQK880	169.60
		171.2625
	KQK986	406.375
	KQK986	410.20
NC Charlotte	KQZ395	163.375
	mobile	171.2625
NC Greensboro		162.225
	KWN222	166.225
	KWN221	171.2625
	KWN223	171.3875
NE Omaha	KUA315	164.70
	KRW605	169.00
	KCM205	406.325
NJ Bellmawr	KCM213	172.30
NJ Jersey City	KMJ539	167.125
	KZY644	168.325
NJ Kearney	KUK223	162.225
	mobile	164.20
	mobile	164.9625

NJ Newark	KRG620	172.30
NJ Secaucus	KUK218	164.9875
	KQR671	170.125
	KZY630	170.775
	KV0730	171.175
	KUK222	171.2625
	KUK218	172.30
NY Albany	KPS230	410.20
NY Bronx	KDR794	173.6125
NY Buffalo	KCM215	410.325
NY Hicksville	KGU967	173.6375
NY Jamaica (JFK Apt.)	KLW571	173.6125
	KHA284	409.275
	KPS229	409.825
	KPS229	410.20
	KHA293	410.325
NY Long Island City	KDR795	169.1125
	KDR795	173.6875
NY Menands	KDT626	172.30
NY New York City	KRK426	163.375
	KEG308	166.375
	KCM209	406.325
	KCM209	409.275
	KCM209	410.325
OH Cincinnati	KRK425	162.225
	KQK867	163.375
	KPS248	164.9625
	KSM828	171.2625
	KWN224	171.3875
OH Cleveland	KR0655	162.225
	KFX826	173.7375
OH Columbus	KSM830	164.20
OH Dayton	KSM831	164.9875
OK Norman	KQK987	406.375
	KQK987	410.20
OK Oklahoma City	KPS227	410.20
OK Tulsa		162.225
OR Portland	KJS961	164.70
PA Harrisburg		164.70
PA King of Prussia	KPS232	409.275
PA Lancaster	KPS241	170.125
PA Philadelphia	KRK427	164.20
	KQK894	164.50
	KQK928	164.70
	KBP345	166.275
	KQK926	169.60
		415.05
PA Pittsburgh	KSM832	163.375
	KQK893	164.10
	KQK894	164.50
	KQK895	164.9625
	KPS233	409.275
PA Warrensburg	KL415	164.70
PR San Juan	KQK889	164.10
SC Columbia	KRB656	166.20
TN Chattanooga	KQX978	162.5875
TN Knoxville	KLI393	163.00
TN Memphis	KQK886	163.375
	KQK884	164.175
	KQK885	164.70
	KDC251	164.9125
	KSM827	171.2625
	KRZ810	162.225
	KSM826	171.2625
TX Dallas	KRU250	162.225
	KQK877	164.175
	KQK876	171.3875
	KZY632	406.225
	KZY634	406.325
	KZY635	406.40
	KZY635	409.175
	KZY632	409.225
	KTI427	409.275
	KZY634	409.35
	KSM828	409.45
	KFA908	410.325
	KGM267	414.725
TX Fort Worth	KZY632	406.225
	KQX989	406.375
	KZY632	409.225
	KZY634	409.35
	KQK989	410.20
TX Houston	KZY625-9	406.375
	KGM275	406.375
	KZY625-9	410.20
	KPS234	410.325
TX San Antonio	KCM216	409.45
UT Salt Lake City	KLI392	163.00
		406.40
VA Fairfax	KQK878	172.30
VA Norfolk	KQK846	162.225
VA Portsmouth	KPS246	163.375
VA Richmond	KDF221	166.20
	mobile	167.125
VA Washington	KLY416	167.125
WA Seattle	KQK944	163.375
	KQK945	164.175
		164.9625
	KSJ960	166.6125
WI Madison		166.225
WI Milwaukee	KQK932	166.225



SATELLITE VIEW

INSIDE THE WORLD OF TVRO EARTH STATIONS

Two Solid-State Satellite Antenna Motor Drives

Two new motor drives, both stressing simplicity of operation and reliable performance, have been added to Channel Master's Sat-scan line of satellite antenna positioners.

The first, Model 6253, is a basic unit featuring easy-to-use pushbutton controls for simple up-down operation. The second unit (Model 6252) adds an infrared hand-held remote control for the basic Satscan.

Operation of both units is quickly learned by the consumer. Pushing either button moves the dish. The consumer compares the LED read-out with the satellite locations recorded by the installer on the consumer's permanent satellite locator card, kept near the Satscan.

"Operating these Satscans is as easy as operating a basic TV," commented Channel Master's Don Berg. "For consumers who are not comfortable with today's key-pad consumer electronics technology, these Satscans are perfect," he continued.

Both models employ solid-state circuitry instead of mechanical relays, an improvement that will eliminate the industry-wide problem of motor drives "hanging up." The company believes that it is the first satellite manufacturer to introduce this solid-state technology to dish actuators.

Both units use low 36-volt DC operation, have non-volatile memory, heavy-duty ball screw linear actuator drive, and are protected by a weatherproof expandable jack bellows and motor boot.

The basic unit retails for \$395 with the remote version selling for \$495. They are available through Channel Master distributors located in over 400 cities throughout the United States.



Two New Mesh Dishes For The Satellite TV Market

Luxor North America Corp. has introduced two aluminum mesh satellite TV antennas for the U.S. market. The Luxor Satellite TV Antenna is available in a 9-foot, 12-rib design and a 10.5-foot, 18-rib design. Each antenna has "deep dish" parabolic geometry for maximum signal reception.

The Luxor antennas are designed for maximum strength with minimal lightness for ease of shipping and handling. Their basic structure is a 14½" parabolically-shaped steel hub supporting heavy-duty, steel ribs in a poly trans vinyl sheath. The snap-in mesh petals are rust-proof, hexagonal-patterned expanded aluminum mesh for a high strength-to-weight ratio. The outer rim, a rigid extruded aluminum rail anchored to the ribs, forms a solid framework for the petals.

Running the length of the poly trans vinyl sheath are extended channel "steps" de-

signed for easy insertion and retention of the mesh petals. These make possible the antennas' quick-step rib assembly. The mesh is laid on the steps and quickly snapped in place without the tedious fitting associated with slide-in panels. The mesh petals are finished in a durable baked-on, low-luster, black satin finish. All hardware is plated for weather protection.

Poly trans vinyl is tough, resilient plastic developed for the satellite field. It is invisible to satellite signals and, as a rib cover, creates no gap in the dish's reflective surface.

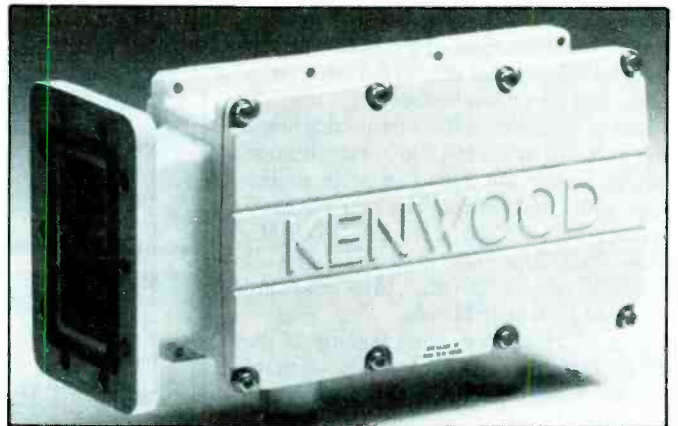
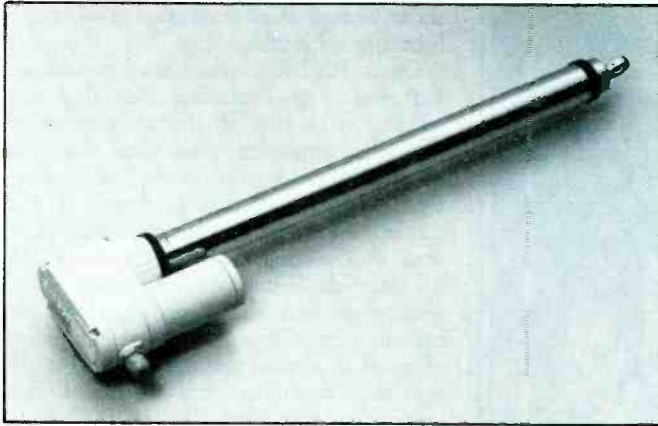
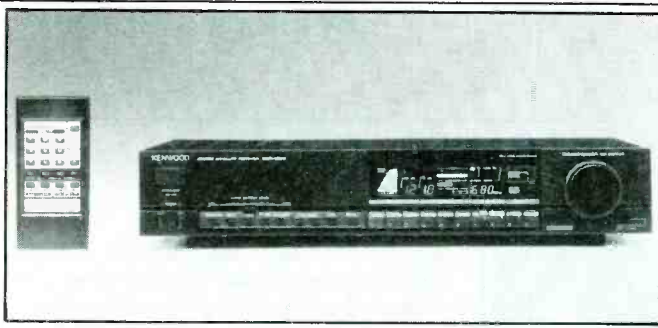
The new Luxor polar mount features self-aligning bearings that minimize pivot-point wear, a finely-adjustable declination offset for on-line satellite tracking regardless of geographic location, and provision for a linear antenna actuator. The antennas will accommodate a Chaparral Polarrotor One, dual feedhorn, or sidewinder.

The two sizes of Luxor antennas are shipped UPS and packaged in easily-handled cartons. An optional LNA (low noise amplifier) enclosure is available. The antennas are U.S. manufactured to Luxor design, performance, and material specs. Each unit carries a 5-year warranty.

Full-Function Microprocessor-Controlled Satellite Receiver

Kenwood's new advanced design satellite receiver system represents a unique approach to satellite television reception. Unlike current products on the marketplace, which require manual operation for most or all of their functions, the Kenwood Satellite Receiver uses advanced computer technology to perform virtually all receiver functions. The KSR-1000 4 GHz Stereo Satellite Receiver,





KSP-1000 Satellite Antenna Positioner, LNB-1000 Low Noise Block Down Converter/Amplifier (LNB), and KSA-900 Antenna Actuator is an interactive system, designed to function as a single unit.

The KSR-1000 serves as the control unit, while the KSP-1000 optimizes antenna position, the KSA-900 drives the antenna, and the LNB delivers the antenna output to the receiver. Once the system is installed, satellite broadcasts can be selected with a single switch, and transponder frequencies tuned in with a single tuning knob.

"Kenwood's new satellite system is as simple to use as a conventional television set," says Dan Petersen, Vice President of Sales and Marketing. "Microprocessor technology has helped us create the first truly convenient satellite receiver. You just select the satellite and tune it to the desired transponder."

The KSR-1000 Stereo Satellite Receiver is the heart of the system. Up to 18 satellite signals may be stored in the receiver memory. The KSP-1000 can be fine-positioned to any of 360 points, providing access to satellites anywhere in the sky. All transponder frequencies currently broadcasting have been preset at the factory, eliminating the need for any post-installation modification. A unique parental lock feature allows parents to "lock out" any two transponder frequencies on a locked-in satellite so that children will not be able to access adult channels. The dish antenna can also be completely locked by a pre-programmed numerical code which will prevent children from playing with the antenna.

The KSR-1000 is a true state-of-the-art product offering stereo reception and built-in Dolby B noise reduction for current Dolby broadcasts, such as those found on the Disney Channel, MTV, and several movie chan-

nels. The SCAN mode helps for preset of satellite position. Once a broadcasting satellite is located, the antenna position is locked in and the transponder selector can be used to tune in the transmission. The KSR-1000 is capable of receiving Mono/Multiple Stereo, Discrete Stereo, and Matrix Stereo signal and will automatically reproduce the audio mode of the signal received. A single infrared remote control unit can activate all system operations, making the Kenwood Satellite Receiver system the most convenient on the market today.

The KSR-1000 is perfectly complemented by the KSP-1000 Satellite Positioner. Like the KSR-1000, it is microprocessor controlled with positional data on up to 18 satellites stored in its memory. The microprocessor technology facilitates precise fine tuning, enabling the actuator to be adjusted to any one of 360 points for flawless reception. The KSP-1000 can also be activated by the KSR-1000's remote control, further enhancing the incredible convenience of this sophisticated system. A bright fluorescent digital readout displays all relevant information, including satellite number, antenna position and over-travel limits, while soft-touch controls are easy to operate.

Kenwood quality permeates each of the four components of the new satellite receiver system. From the clean styling and functional design of the components to the advanced technology engineering, the Kenwood Satellite Receiver system is truly high-end. Kenwood is backing the system with a complete 1-year warranty. Kenwood satellite dealers will emphasize installation and service, reinforcing Kenwood's commitment to the quality of this unique product. The Kenwood Satellite Receiver system (without antenna

and feed horn) will be offered at a suggested retail price of \$2,390.

Microprocessor Controlled Antenna Positioner

Prostar Microwave, Inc. is proud to announce the Pro XP-1 microprocessor controlled antenna positioner, manufactured by Pen-tec MTI.



Designed to compliment the Prostar XR-1 remote control stereo satellite receiver, all receiver and actuator functions can be controlled by the XR-1's existing remote control. The XP-1 remembers skew, format, and satellite position for up to 24 satellites. Other features include a 10-year non-volatile memory, parental lock-out, large easy-to-read alpha-numeric display, and programmable east and west limits.

Although designed to work together as a pair, the XR-1 and XP-1 can be used alone to compliment any satellite system. For further information, contact Wayne Gaines at Prostar Microwave, Inc., 2575 Baird Road, Penfield, NY 14526.

SCANNER SCENE

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

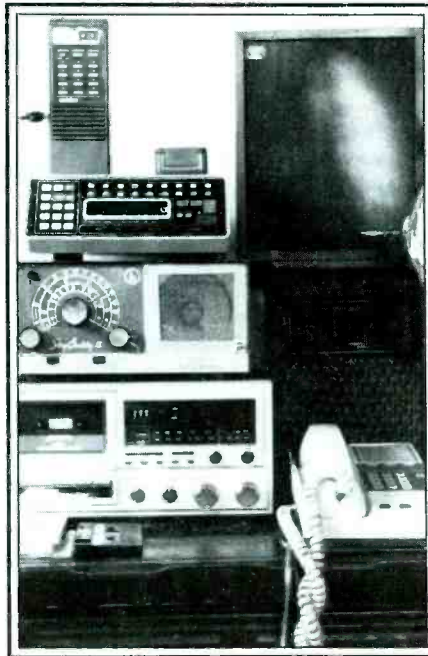
One of the best hand-held scanners made to date has been Regency's HX1000. However, unless you find some old stock sitting around in a radio shop, you won't be able to find the HX1000 anymore. Regency Electronics, Inc. has replaced the HX1000 with the HX1200, a hand-held in the same case, minus and plus a few features.

First of all, the HX1200's frequency range isn't as broad as the HX1000, even though they've added the 118-136 MHz aircraft band to the new model. The new HX1200 covers 26.15-59.995, 118-135.975 (AM), 136-175.975, and 406-519.9875. The old HX1000 covers 26-65, 116-196, and 305-544 MHz, all FM only.

Two of the most exciting features of the HX1200 are that it can scan up to 45 channels and there is direct-channel access to programmed channels, something the 30-channel HX1000 doesn't have. For instance, if you want to lock in on the frequency on Channel 16 while scanning, all you have to do is hit "manual," "16," and "manual." That's a real time-saving feature you miss with the HX1000, which you have to manually step through the channels to monitor a particular channel.

If you want to use the lamp on the HX1000, you often have to fiddle in the dark to find the switch on the bottom right-hand side of the keyboard. Even then, the light will remain lit for only 20 seconds in an effort to cut down on battery drain. However, with the new HX1200, all you need to do to activate the LCD viewing light is push the "push-to-talk-type" switch on the side of the radio. That's real handy and easy to use, especially for mobile use.

On the HX1000, the "PTT" switch is used to access a clock, something Regency decided to leave out of the HX1200. While I never used the clock feature for telling time on the HX1000 (most scanner listeners wear a watch, don't they?), it was nice in that I reset the clock to 0:00 every time I recharged the nicd batteries. Thus, when I reached about eight to nine hours of usage according to the clock, it was time for a recharge, eliminating the need to place it in the charger every day. By turning off the clock with the switch in the HX1000's battery compartment, it lapsed time only when the radio was turned on. Also on the clock switch inside the HX1000, there was a CPU reset position. If for some reason the radio's programming capability and operation locked up during operation, the CPU reset switch enabled the radio to operate again, however, all programming would be lost when throwing the switch. The HX1000 does tend to lock up; it happened to me at least three times. The HX1200 doesn't have a CPU reset switch, so



This compact listening post belongs to Brian M. Johnson III of San Diego, California. Brian does his listening on a Uniden Bearcat 50XL hand-held, a J.I.L. SX-200 scanner, an old Hallicrafters S-119 Sky Buddy II short-wave receiver, and a Realistic AM-FM radio (where you hear the news after you hear it on your scanner, right, Brian?).

hopefully the radio won't experience any lockup. The PTT clock switch on the HX1000 also doubled as a stop-scan switch. If activity caused the radio to lock onto a particular channel during scanning, you could hold the channel even after the transmission ended by holding the PTT clock switch down. There's no way to do that with the HX1200.

When I'm frantically trying to search out a particular frequency, I like to monitor the one channel while programming in the other. With the HX1000, the receiver continues to receive on the last entered channel while entering a new frequency or checking your search limits. The HX1200 mutes the receiver while programming in new frequencies, something that might prove irritating. I imagine there's a way to eliminate muting if you got out the soldering iron; I did it to my Regency M100 because it bothered me.

A couple of new features on the HX1200 includes a "clear button. If you goof while entering a frequency, simply push the clear button and poof—it's gone. With the HX1000, everybody probably has their own method to goof control. Mine is to hit "manual," others might just turn off the radio or enter the goofed frequency and then enter the correct frequency. The "clear" but-

ton on the HX1200 makes it easier. There is also an indicator on the HX1200's display to show the keyboard lock switch is on. An additional dot above the frequency decimal shows when the lock is activated so keyboard functions are disabled.

On the HX1000, locked-out channels are indicated by the channel number flashing, which can be hard to see while stepping through channels to review what channels might be locked out. On the HX1200, the letter "L" appears after the frequency on the display to indicate a locked-out channel in scan. It's a lot easier to see when reviewing all 45 channels. If you want to review all 45 channels on the HX1200, you must press the manual button each time to review each channel. If you depress the manual button and hold it down, it reverts to scanning until you remove your finger. The HX1000 slowly steps through the various channels when you hold down the manual button, thus eliminating the need to constantly push the manual button for each channel.

A drawback of the HX1200 is noise the radio generates as it's scanning or searching. It puts out a constant low tapping sound as it scans each frequency or searches through frequencies. That's not to say the HX1000 is noiseless. The HX1000 generates a slight "rushing" sound as you increase the volume control while scanning channels.

The HX1200 also has adopted Bearcat's infamous "rolling zeroes" on scan: The channel numbers scan as the zeroes roll across the display. The HX1000 just shows the frequencies and channel numbers during scan. I can't imagine what purpose the rolling zeroes actually serve. Let's see the actual frequencies! The HX1200's keyboard-entry beep is a bit lower in pitch than the HX1000, too. Sometimes the beep on the HX1000 can be bothersome; it would be nice if the function could be user-silenced (on all scanners).

One feature Regency didn't carry over from the HX1000 to the HX1200 is the ability to zoom in on frequencies during search. The HX1000 has up and down search capability to find the center of a received frequency. If you overshoot a received frequency on search on the HX1200, you'll have to start again on the search.

One annoying feature of the HX1000 is that you have to push "scan" every time you turn it on because it sits in manual on Channel 1. The new HX1200, however, remembers whether you were in manual or scan the last time you had the radio on and returns to that channel you had in manual each time you turn on the radio. It's nice to know the radio will scan each time it is turned on.

When searching with the HX1200, the radio won't return to the lower search limit



The new Regency HX1200 hand-held scanner has replaced their popular HX1000.

unless the radio is turned off, in which case it automatically returns to search from the lower limit when turned on. With the HX1000, all you need to do is push "search program" and then "search scan" again to return to the lower search limit again. Another thing to note with searching on the HX1200 is that if you search on hold and move the switch to delay after it has locked onto a channel, the radio won't automatically start searching again, as it would with the HX1000.

The HX1200 comes in the same case as the HX1000 and has a black keyboard, rather than the brushed aluminum face the HX1000 has. The receiver is as good as the HX1000, which is excellent. You'll hear a lot with this radio, including signals over far distances. Compared side by side, the receivers perform roughly the same.

A news release from Regency says the radio comes "programmed with 45 of the most popular frequencies," however, I really wouldn't consider frequencies such as 30.00 MHz a "popular" frequency. Some frequencies such as 155.340, the national medical emergency channel, were programmed in, however, I guess some were programmed in for test purposes.

Once again, the manual included with the HX1200 is typical of those included with most radios: they don't tell you the whole story. Only a tinkerer such as myself will learn of some of the radio's tricks, such as the "lock" indicator on the display.

In its news release on the HX1200, Regency says the radio is for those who "appreciate the versatility of a hand-held scanner when they want to keep up with the action at air shows and other outdoor events." And that's really the main difference between it and the HX1000. The HX1200 includes the aircraft band and it has 45 channels.

The HX1200 has a suggested list price of \$370, however, mail order and telephone sales outlets are selling it for \$220 or less.

Added note: For those of you really on the go and who might give their HX1000 or HX1200 a beating, one manufacturer of leather cases for two-way radios has come out with a model for the radio. Bee Electronics Inc. (2655 Gardner Road, Broadview, IL 60153) sells two models for the HX1000 and HX1200. Model No. 6540 fits both scanners and protects the radio with leather. Model 6545 also fits both radios, however, it allows access to the keyboard

without removing the scanner. Both models retail for \$43.95. For further information, write to the company or call 800-336-3115. The company also has a model (No. 9340) that fits the Radio Shack Realistic Pro-30 hand-held scanner and retails for \$46.95.

We'd like to hear your comments at POP'COMM. We also welcome your letters, frequency lists, and photographs. If you have a question, don't hesitate to send it in and we'll try to answer it. Write: Chuck Gysi, N2DUP, Scanner Scene, Popular Communications, 76 North Broadway, Hicksville, NY 11801-2909.

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PACKET MANIA

The hottest trend in radio today is packet radio. Packet is error-free communications, and involves linking a special converter called a TNC (terminal node controller) with a transceiver or receiver and your computer. With a TNC you can copy RTTY, AMTOR, code, or packet communications. Madison offers both the AEA PK-80 or the Kantronics Communicator, both priced at \$229.00, as optimum ways to get started in packet. Call for further information.

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CIRCLE 10 ON READER SERVICE CARD

BROADCAST TOPIK

BY MARK MANUCY, W3GMG

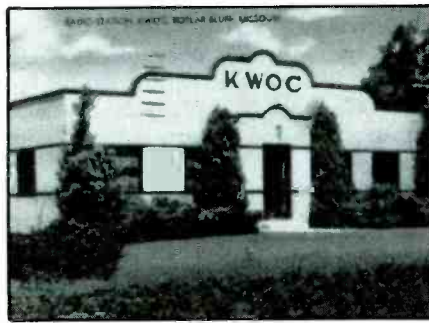
DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Back in the March column, *The Old Farmer's Almanac* was mentioned in connection with meteor showers. The meteor showers can create exciting DX for the TV and FM listeners. As the meteors enter the earth's atmosphere they can cause the reflection of the VHF frequencies, which will cause the signals to be heard greater distances than normal. The length of the signal burst is not very long, so it is important to have a tape recorder running to help in the id of the station. Of course, a VCR would be helpful when using a TV set for DXing anyway. The biggest shower of the year will be the Perseides, which will occur August 11-13 with the best time being at 4 a.m. (EST). The next best showers will be Orion on October 20 and Gemini on December 13. For Perse point your antenna to the north, but for Orion and Gemini, south would work better. The time for best results is 2 a.m. for Gemini and 4 a.m. for Orion. The signals will not be particularly strong and will last for only a short time, so be prepared for fast work.

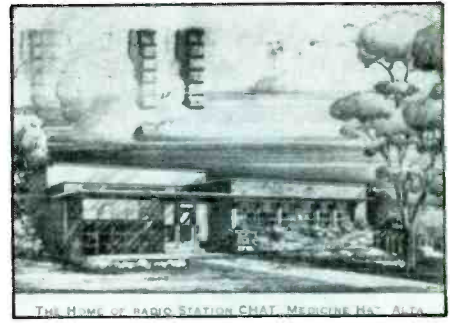
AM Stereo discussions among broadcasters seem to be taking a back seat for the time being as a general upgrading of the AM signal has become more important in order to compete with the FM stations. The National Association of Broadcasters is building a facility west of Washington, DC, on which they will erect two antenna systems in order to experiment with antennas proposed by two engineers which are designed to reduce sky wave propagation. This should reduce interference to stations on the same channel as well as adjacent channels, while improving local coverage. The tests will be conducted between 1600 and 1700 kHz. This is the same story I reported to you several months ago. The land has been purchased and construction has begun, but it will be next year before the station is on the air. I'll keep you informed.

As far as AM Stereo is concerned the growth rate in the U.S. is not skyrocketing as Motorola and Kahn might like it to be. C-Quam has been accepted as the standard in Brazil, the country that has more AM stations than any other except the U.S. I have installed in my auto radio, twin decoders for C-Quam and Kahn and am planning a trip to Florida next week, so I hope to get some first-hand experience in listening to AM Stereo "on the road."

If the static of the AM band is getting too strong to handle, how about some good reading. There has just been published in Baltimore a book written by a long time Baltimore broadcaster, Tom O'Connor, called *Baltimore Broadcasting from A to Z*. It is written in the trivia format and has lots of old-time pictures. Many shots are of radio



KWOC in the 40's.



CHAT in 1947.

and TV. Baltimore has lots of broadcasting "firsts" that Tom mentions in his book. If you would like a copy, send \$8.95 (that includes postage) to Tom O'Connor, 116 W. University Parkway, Baltimore, MD 21210. Another book I really enjoyed, which is now in paperback, was *Rocking America* by Rick

Skylar. Rick tells about the early days of rock at WABC in New York and even before, mentioning some of the early rock jocks, such as Jack Lacey, Freid, and others. Skylar's book is published nationwide and should be available at many book stores. If you can't find it, let me know and

Station Updates

Call	Location	Freq	Pwr	Ant
AM				
WLVA	Lynchburg, VA	590	5/1	DA-N
WLEM	Emporium, PA	650	5/0	O
WXIC	Waverly, OH	660	N/C	O
WCRR	Rural Retreat, VA	660	.55/0	O
WKJB	Mayaguez, PR	710	10/.75	O
WPRP	Ponce, PR	910	5/5	DA-N
WYFC	Ypsilanti, MI	990	.5/.25	DA-2
WHBO	Pinellas Park, FL	1040	5/.5	DA-N
WYNS	Lehighton, PA	1160	5/1	DA-2
WTTL	Madisonville, KY	1310	2.5/0	O
KHYT	S. Tucson, AZ	1330	2	O
WBUG	Ridgeland, SC	1430	.88/0	O
WIXR	Mt. Pleasant, SC	1480	.88/0	O
WSFB	Quitman, GA	1490	1/1	O
FM				
WMNR	Monroe, CT	88.1	4.1	402'
KGNZ	Abilene, TX	88.1	N/C	62.3'
WYFG	Gaffney, SC	91.1	61.76	N/C
KSMU	Springfield, MO	91.1	N/C	403'
WCSG	Grand Rapids, MI	91.3	9	570'
KCRT-FM	Trinidad, CO	92.5	91.2	1033'
KOOL-FM	Phoenix, AZ	94.5	100	1653'
KUUB	Bozeman, MT	95.1	N/C	780'
WRBS	Baltimore, MD	95.1	N/C	512'
KAGE	Winona, MN	95.3	1.35	496'
WXCW	Homosassa Spgs, FL	95.3	2.8	339'
KIPR-FM	Diboll, TX	95.5	N/C	567'
WROW-FM	Albany, NY	95.5	12	N/C
WAYV	Atlantic City, NJ	95.7	N/C	255'
KBBC	Lake Havasu, AZ	95.9	100	988'
WJFX-FM	Aiken, SC	95.9	N/C	314'
KINI	Crookston, NE	96.1	100	1006'
WLPR	Mobile, AL	96.1	100	1000'
KHEZ	Crookston, MN	96.1	N/C	415'
LQDF-FM	Larned, KS	96.7	3	266'

I'll dig up the address. If the behind the scenes stories of radio operations are interesting to you this will be a fun book to read.

The other new book is the *1986 WRTV Handbook*. It is the 40th anniversary issue and is jam packed with new BCB stations, both in the U.S. and abroad. It is much easier to find the different areas this year since they have gone to two colors of ink to separate the columns. It is advertised by several firms throughout the pages of *POP'COMM*.

Those who enjoy the RPU monitoring might try KABC-TV which, according to Robert Homuth, uses 26.190 MHz for program cueing. He also says the station QSLs. Send reception reports to Steven C. Pair, Engineering Supervisor (Mini-Cam), c/o ABC, 4151 Prospect Ave., Hollywood, CA 90027. Bob asks of other RPUs in use and for the moment all I can suggest is keep reading, as we always include this type of re-

port in the column. The other one you mentioned (WTVN on 26.250) is one of the most active.

My AM STEREO bumper sticker for this month comes from Edward Bunch. By the way I found another AM stereo auto radio advertised in the J.C. Penney catalog. Several people, including Richard Mattiasels, have written to mention the Radio Shack units. I haven't asked for AM Stereo bumper stickers, but readers have been sending them in each month so they have been in the column for the past six months or so without fail. I don't know if we'll have one next month . . . just have to wait and see. Roy Hafeli sent a sticker from his college station and cable broadcast station CFML in British Columbia, Canada. Interesting letter, Roy.

Bob Gallardo sent the kind of letter everyone likes to get. "I just wanted to tell you that



Dear Radio Friend,

We appreciate very much your letter of Oct. 29, 1986 giving reception of broadcast from our station on Oct. 28, 1986. The data given by you has been checked and we take pleasure in verifying your report.

We would appreciate any further reports on the receiving conditions in your district, as well as any suggestions or criticism which you may care to make. It helps us in our work and it is pleasant to keep in touch with our audience.

We would also appreciate it if you would invite your friends to listen to our programs.

With best wishes, we are,

Radio Station XELO
C. Juarez, Chih., Mexico.

800-Kcs.

150,000 Watts

the BCB loop antenna you described in the May, 1985 issue of *POP'COMM WORKS GREAT!* . . . Your directions were very clear and concise . . . The loop antenna completely cured the severe noise problem I had . . . Using the loop antenna with my Kenwood R-600." What more can I say? Bob said it all! Thanks for taking the time to write, Bob. Box loop plans are \$5.50 and ferrite loops plans are \$7.50. The ferrite loop includes a preamp, which by itself is \$2.50 for the plan. The box loops normally don't need a preamp. Modification plans for the R-70/71 front end on the BC band are also \$2.50. All plans are post-paid.

Shawn Axelrod writes asking about loops, saying he just discovered his long wire is hard to rotate! Don't feel lonesome, Shawn; even if you did rotate the long wire it wouldn't make much difference in the ability to null a station. Shawn also mentions the SR/SS times he uses for DX'ing in Winnipeg, Manitoba. I mentioned the *Old Farmers Almanac* a few months ago for getting SR and SS times in the U.S. for grey line DX'ing. They are available in Canada from the weather office (Environment Canada) in 15-year cycles for \$5. Mention the closest major Canadian city when ordering.

Milton Strathoitler sent a letter with a whole bunch of questions, but did not include any return postage. I would appreciate getting return postage if the writer has need for information to be returned to him. I did answer Milt and would mention the questions here but most of them did not pertain to BCB DX'ing.

Call	Location	Freq	Pwr	Ant
KAWW-FM	Heber Springs, AR	96.7	3	328'
WLER-FM	Butler, PA	97.7	2.3	N/C
WKCX	Rome, GA	97.7	.472	780'
WPMO	Pascagoula, MS	99.1	N/C	981'
WZND-FM	Zeeland, MI	99.3	2.4	N/C
WQXE	Elizabethtown, KY	100.1	2.14	380'
WZPR	Meadville, PA	100.3	20	N/C
WQXC-FM	Otsego, MI	100.9	3	328'
WFXR	Ravenel, SC	101.7	1.32	482'
WRXL	Richmond, VA	102.1	20	786'
WLJC	Beattyville, KY	102.3	1.2	N/C
WLKQ	Buford, GA	102.3	1.82	400'
KWDQ	Woodward, OK	102.3	N/C	355'
WPRB	Princeton, NJ	103.3	6	823'
WAPP	Lake Success, NY	103.5	5.8	N/C
WIXL-FM	Newton, NJ	103.7	20	500'
WORJ	Ozark, AL	103.9	3	328'
WQAL	Cleveland, OH	104.1	11	N/C
WIOF	Waterbury, CT	104.1	17.8	N/C
WJYA-FM	LaGrange, GA	104.1	100	1290'
WKHG	Leitchfield, KY	104.9	N/C	272'
WHFL	Havana, FL	104.9	2	N/C
WLKZ	Wolfeboro, NH	104.9	3	328'
KZNN	Rolla, MO	105.3	100	631'
WNEF	Woonsocket, RI	106.3	2.47	361'
WNQQ	Blairsville, PA	106.3	2.4	N/C
WLNR	Lansing, IL	106.3	2	397'
WMJX	Boston, MA	106.7	24.5	719'
WZKX	Gulfport, MS	107.1	1.86	393'
WKLJ	Oxford, MA	107.1	N/C	319'
WKQB	St. George, SC	107.5	100	1005'
WSJC-FM	Magee, MS	107.5	100	984'
WBCY	Charlotte, NC	107.9	100	1693'

Key: D = Daytime N = Nighttime DA = Directional Antenna DA1 = Same Pattern Day & Night DA2 = Different Pattern/Power Day/Night O = Omni Antenna Day And/Or Night * = Special Operation Or Critical Hours N/C = No Change



Any readers living near Garberville, California, may wonder what's going on at KERG. The station applied for a power increase from 3 kilowatts to 51 kilowatts and was granted the additional power by the FCC. The KERG tower is located just over 60 feet from a California state Department of Forestry fire watch tower and apparently the antenna is nearly on the level of the fire tower's manned operation post. The state complained about the higher radiation level

the men in the tower were facing and the FCC reduced the stations to two kilowatts. The station finally got the commission to increase the limit to eighteen kilowatts and the state complained again reducing KERG back to two kilowatts. So the FCC has said to KERG either solve the problem or stay at two kilowatts. So, hopefully by the time you read this KERG will be operating with something more than two kilowatts!

The FCC is also hopeful to have the pact

with Mexico in place later this year giving stations on the Mexican clears some operating time at night. The Mexican clears are 540, 730, 800, 900, 1050, 1220, and 1570 kHz. An interesting note along this line is the power of a local station here on 1010 kHz. They are now on at night with 25 watts. The previous station that I heard on 1010 was WINS from New York, which had a listenable signal most of the time. Now neither signal is listenable on 1010. I live about five or so miles from the station running 25 watts. The feelings are mixed on all these low power assignments. I wonder how much listening is being destroyed. I spend some time at night listening to WNEW on 1130 kHz, and if a local came on that channel creating interference I would miss WNEW. There happens to be no other stations, AM or FM, with their format within the Baltimore/Washington market. There are stations playing old records but they don't have the "class" of WNEW and are not "interesting" listening. As this post-sunset operating continues many listeners are going to lose their favorite stations due to interference.

Power increases are in the works for many stations in Alaska, Hawaii, Puerto Rico, and the Virgin Islands. The FCC has decided to change the Class IV rules in those areas, making the stations come under Class III rules. This will allow some of the stations to increase their power to as much as 50 kilowatts. These increases will have to protect mainland U.S. stations operating on 1230, 1240, 1340, 1400, 1450, and 1490 kHz. The Caribbean islands have been subject to considerable interference from other islands across the water due to the high conductivity of sea water.

More power, more power—seems that's all you hear from the FCC. Well, the trend will not likely reverse anytime soon, so the best answer for the DX'er is better receiver, better antenna. This is what we spend quite a bit of time on in this column and will continue to do so. This applies to AM and FM—especially to FM right now with the power increases coming faster each month since the commission has said up your power or forever be pinned to your current coverage. No one likes to be held down . . . so the FM power increases will continue until the deadline is reached. The only way to counter is with a better receiver and/or a better antenna.

How does one determine the different receiver qualities before spending mucho bucks? There is a book currently on the market which does just this for less than \$20, *Radio Receivers, Chance or Choice*. Also the *World Radio TV Handbook* does excellent reviews in their publications throughout the year. The reports are honest and they pull no punches.

That about runs the clock down for this month. Remember, your comments and suggestions and pictures are always welcome. The mailing address is P.O. Box 5624, Baltimore, MD 21210. **PC**

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RADAR REFLECTIONS

RADAR DETECTORS AND THEIR USE

BY JANICE LEE

Introduction Of Detector Bans Declared Unconstitutional

Across the nation state officials' frustration is escalating. Unless they find a way to slow speeding motorists on their highways, they stand to lose part of their federal highway construction funds. Frustrated lawmakers sometimes do strange things. Even though these actions aren't always appropriate, doing something—anything—seems to lower their blood pressure.

Statehouse frustration has caused a rash of unusual legislation lately; eleven bills have been introduced to ban radar detectors. Note that such bans are being considered this year in Maryland, Massachusetts, Maine, New York, Rhode Island, and Wisconsin, and I, as president of Radio Association Defending Airwave Rights, Inc. (RADAR), sympathize with the lawmakers' frustration.

But I'm worried that their frustration has impaired their common sense. Here's why: Over 150 million Americans have driver's licenses. About four million radar detectors have been sold. According to federal figures, over half of our nation's drivers exceed the speed limit. Even if detectors were banned, over 71 million motorists would still be speeding. These numbers certainly don't justify banning radar detectors. I encourage radar detector owners in the affected states to ask their lawmakers to check their math.

To emphasize that radar detector bans cannot reduce speeding, I cite Connecticut as an example. During the first year of its crackdown on speeding, that state spent about \$500,000 in overtime pay for troopers. This crackdown yielded 108,632 speeding tickets and a 29 percent decline in speeding motorists according to the state's transportation department. Connecticut is one of only two states with detector bans. If banning radar detectors was effective, Connecticut would not have spent a half-million dollars.

Even though Connecticut's detector ban has been on the books since 1962, troopers find it is almost impossible to enforce. Courts have ruled that possession does not imply use. Therefore, to convict a motorist of using a detector, officers must actually see the device being used.

Connecticut's experience is not an exception. No matter how they are written, detector bans are a law enforcement nightmare. Technological changes have reduced the easy-to-spot black box on the dashboard to a cassette, easy-to-conceal device. Short of setting up roadblocks and searching cars, officers cannot enforce a law prohibiting possession or installation of a detector. For

these reasons, Connecticut lawmakers are currently considering making radar detectors legal again.

I believe detector bans are not only useless, but they also malign detector owners. These citizens are presumed guilty by association. Marketing studies reveal that typical detector owners are not lane-hopping speedsters. Usually they are people who drive frequently. They purchase radar detectors to defend themselves against malfunctioning or incorrectly operated police radar. These drivers realize that one out of every five radar speeding tickets is spurious. Detector owners believe the Constitution gives them the right to know when they are in a traffic radar's beam.

Because of this right, I doubt that lawmakers in any of these six states will actually ban radar detectors. I have seen over 27 state legislatures debate such bans. In each case, lawmakers decided against a ban because it violates drivers' freedom of speech. This includes listening to radar devices.

In addition, lawmakers have noted that the 1934 Communications Act allows only federal lawmakers to regulate radio receivers. Last summer the FCC reaffirmed that radar detectors are radio receivers. Therefore, state lawmakers cannot turn them off without tromping on federal toes.

All in all, I believe lawmakers who introduce detector bans are looking for a quick fix to relieve their frustration over a national problem. Unfortunately, their solution will work about as well as putting a band-aid on a split radiator hose on a hot summer day.

Vermont Is Illegally Confiscating Radar Detectors

The recycling craze has hit Bennington, Vermont's police department. They're trying to recycle an old law banning police scanners in vehicles and apply it to radar detectors. Lumper Vega found out about police recycling efforts the hard way: Officer Penny Kuzmeskus stopped him, confiscated his radar device, and gave him a ticket. Vega is charged with violating regulation T-13VSA3014—use of a radio receiving device in a vehicle.

Vega and his lawyer, Patricia R. Barr of Bennington, believe that in this case police recycling will prove futile. So do I. Four states (Indiana, Kentucky, Michigan, and New York) have attempted to apply these types of laws to radar detectors with no success. It is clear that the intent of Vermont's regulation is to prevent lawbreakers from eavesdropping on police, and also to prevent them from jamming police broadcasts.

Radar detectors neither receive nor inter-



fere with police radio messages. The frequencies used for police communications are different than those used by traffic radar. Similar to an auto's AM/FM radio, radar detectors are simply radio receivers tuned to traffic radar. Detectors do not affect traffic radar any more than a radio alters a radio station's signal.

Bennington police seem to have fallen victim to an anti-detector virus that has infected the New England states. Sponsors claim that the bills they have introduced banning radar detectors will solve their states' constant struggle to comply with federal speed guidelines. States exceeding speed guidelines have been threatened with reductions in their share of federal highway construction funds.

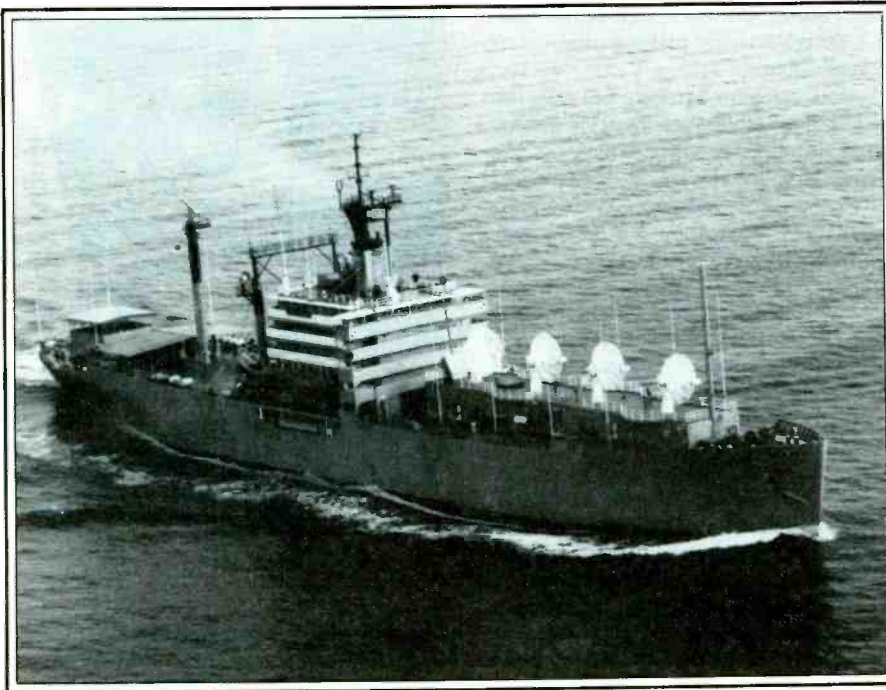
I recognize that the issue is indeed serious, but doubt that any of the New England states will approve such legislation. In the last eight years, 27 states (a total of 75 bills) have defeated similar legislation. One of the main reasons is that lawmakers who respect motorists' constitutional rights cannot vote for a detector ban.

I hope that New England lawmakers will take a long look at Connecticut's experience. That state is now considering rescinding its 24-year ban on using and installing radar detectors. Connecticut's recent crackdown on speeders proves that banning detectors does not stop speeding.

There's only one thing more difficult than actually seeing a driver using a radar detector. That's trying to recycle an old law by charging a driver with possession of a radio receiver that is really a radar detector.

Janice Lee is the Editor of Monday, A.M., the newsletter of Electrolert, Inc.

THE EXCITING WORLD OF RADIOTELETYPE MONITORING



Radar adorns the deck of NBOY, USNS Range Sentinel, a missile range instrumentation ship that has been logged with sending of RTTY traffic. She is operated by the Military Sealift Command, is unarmed and noncommissioned. Propulsion is by steam turbine. Her crew consists of 14 officers and 54 men, all of whom are civilians, and 27 technicians. (Photo courtesy U.S. Navy)

Would you like to receive RTTY and FAX printouts on just one machine? Now you can with a Tactical Facsimile Recorder recently introduced to the U.S. military and various governmental agencies and commercial firms by Alden Electronics, Inc., of Westboro, Massachusetts.

The unit is a portable receiver that operates from 2 to 30 MHz. It is small, compact, lightweight, and comes in a carrying case. It contains a built-in synthesized HF radio for listening to worldwide shortwave broadcast stations. The antenna and operating supplies, including paper and the means to obtain printouts, are packed in the case.

Information about this recorder was found in a military magazine article about product developments. The recorder's price was not given, but it can be assumed that it is quite expensive in that it is being made for professional use. Mention of the product is made here in hopes that a similar recorder will be manufactured in the not-too-distant future by a commercial firm for the consumer market. Alden, of course, is a supplier of the FAX equipment used by hobby users as well as professional users.

How are secret codes tested to determine their vulnerability to cracking? An article in the February 1986 *PC World* magazine, for which its author interviewed some cryptographers, says, "The customary modus operandi in cryptography . . . is to publish your secret code in scientific journals, then wait as the rest of the cryptographic community

tries to prove mathematically that it's a piece of junk. Most codes are effectively cast into oblivion via this procedure."

In this column last December, mention was made of an encryption system that had been used for nearly a decade by the military and federal government and may have been used to encrypt RTTY messages. The article stated the system would be available to the public at a low cost and as standard equipment for microcomputers.

The system, called Public Key Encryption (PKE) when it was developed by Massachusetts Institute of Technology nearly 10 years ago, uses "public" and "private" keys for coding and decoding messages. It now can be purchased under the brand name of "Mailsafe," which is manufactured by RSA Data Security Inc., and is patented by RSA as a "Public Key Cryptosystem." The firm has the exclusive patent from MIT to sell products based on PKE, and to license its use to other vendors.

Those of you who use microcomputers to store RTTY copy from HF radio should keep your eyes peeled to developments of language translation software and hardware. I have only seen brief mentions of such programs in the trade press and understand that there are still problems with translating material from foreign languages into English. As the programs become perfected, you should consider purchasing the ones for French, German, and Spanish, to use in translating RTTY news copy into En-

glish. It is not advisable to get software to translate the Cyrillic or Arabic texts you see on your computer screens (if they become available) because of the differences in the keyboard systems from what the Russians and Arabs use and what we use.

Two questions before we begin the loggings. Are any of the readers of this column female RTTY monitors? (We haven't seen recent Alice Brannigan RTTY loggings!) Has anyone within the continental United States been able to log any RTTY stations besides CFH on the VLF band? This column sure would appreciate loggings from our YL readers and VLF RTTY loggings from all readers.

RTTY Loggings

Time to turn on that old RTTY machine and view the action.

Abbreviations Used In The RTTY Column

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

2345: LOV3, Argentine Navy, Rio Grande, Argentina, RYRY test to ZLE at 0950, 850/66R (Fred Hetherington, FL). ZLE is probably Royal New Zealand Navy-- Editor.

3266: News in SS from TELAM, Buenos Aires, Argentina, at 0425, 800/66N (Dallas Williams, CO).

3694.4: RPTIH, the ID used by the Portuguese Navy base at Horta, Azores. Noted w/RYRY & foxes at 0255, 850/66R (Editor's logging).

3999.2: HZJ, Jeddah Aero, Saudi Arabia, RYRY at 0245, 425/66N (Editor's logging).

4097.4: "Kilo Cinco Kilo" spotted w/RYRY to "Papa Cinco Charlie" at 1057, 850/66N (Editor's logging).

4174: RYRYRY & "URBZ DE UIYY" noted at 0245, 170/66N (David Alpert, NY). Welcome to the column, Dave! UIYY is the callsign of a Soviet ship; URBZ is the coastal station at Klaipeda that the ship was contacting. Had you stuck with this contact you'd soon have gotten the name of the ship-- Editor.

4352: WLO, Mobile, AL, w/WX in FEC mode at 0545 (Guy Atkins, WA).

4489.2: GFL26, Bracknell Meteo, England, w/WX conditions at various European locations in meteo code at 1812, 425/66R (M/Sgt David Freed, U.S. Army, West Germany).

5117.7: Un-ID agency w/RURY test. Used the callsign TYE which is assigned to the nation of Benin. Was 425/66N at 0352. Would like any reader input on this one. (Editor's logging)

5133.2: KAA60, Federal Communications Commission monitoring station at Grand Island, NE, noted at 1715 with "This is a test for circuit adjustment purposes from KAA60 Grand Island." Test tape ran until 1740 & was also noted at 2124. Was 425/60N. Then, 11 days later was monitored running "bit inversion" traffic (Editor's logging).

5240.2: HGC22, a Hungarian station, w/RURY tape to Polish station SOF290. Was 425/66N at 0200. Who has these call letters? (Tom Brailey, MI)

6263: LITA, the Norwegian flag luxury liner NORWAY working WLO in ARQ at 0435 (Jim Hartung, MD). Built in 1961, the vessel is the world's largest cruise ship. She weighs 69,500 tons, outweighing the famed QE2 by about 2,000 tons! She has a beam of 100 ft, and that makes her too wide to traverse the Panama Canal. Her capacity is 2,000 passengers. Tom Kneitel claims his Sea Ray is only slightly smaller than this ship-- Editor.

6269: SQMX, the Polish ship ZIEMIA SULSKA sending a telegram to the coastal station at Szczecin, Poland, in ARQ at 2233 (Editor's logging).

6504.5: WCC on Cape Cod (MA) w/nx to ships, ARQ at 0345 (Michael Walker, TX).

6848: SOG284, PAP in Warsaw, Poland, w/RURY at 2122, 425/66R (Brailey, MI).

6943: 5TX, ASECNA, Nouadhibou, Mauretania, w/RURY test at 0445, 425/66N (Brailey, MI).

6999: CSY, Santa Maria Aero, Azores, w/aviation ftc at 0205, 425/66R (Brailey, MI).

7603.7: KAA60, FCC, Grand Island, NE, (see listing on 5133,2 kHz) w/network ftc using inverted bits to KQA62, FCC at Allegan, MI. KQA62 was on 10902.2 kHz. Was 425/60N at 1705 (Editor's logging).

7853: WFI67, ITT Worldcom announcing that it is "testing from Mobile Alabama." Listed as Brentwood NY, and signal strength would seem to indicate so. Was 850/67N at 1240 (Tom Kneitel, NY) Only 1 Kneitel logging this month? Guess it's the boating season-- Editor.

7979.4: VNV, A.A.P., Sydney, Australia, w/EE nx BC to the Antarctic, 1155 in 300/66N (Hetherington, FL).

7996: YZD9, TANJUG, Belgrade, Yugoslavia, w/EE nx BC at 1813, 525/66R (Freed, W. Germany).

8140: WBR70, Miami Meteo, FL, w/coded wx at 0300, 850/100N (Harry Weber, IL; Atkins, WA).

8140.2: CLN219, PL, Havana, Cuba, w/EE nx BC at 0940, 425/66R (Atkins, WA).

8328.5: SQKG, the Polish reefer ship DZIECI POLSKIE w/telegram at 2216 in ARQ to station SPO (Editor's logging).

8346: LIMN, the Norwegian chemical tanker IVER HERON to WLO in ARQ at 0010 (Jim Navary, VA).

8348: ICEI, the Italian passenger ship ENRICO C w/Telex to Dakar via HEC18 in Berne, Switzerland. Was in ARQ at 2349 (Hartung, MD). Jim, you noted that it was 713 ft. in length & was built in 1966. My reference source (Jane's Merchant Ships) says 579 ft. long & built in 1951 (ex-PROVENCE)-- Editor.

8349: SWIQ, the Greek bulk carrier ANDROS ISLAND, w/EE ftc to SVA in Athens at 0050 in ARQ (Navary, VA).

8350: UHCK, the Soviet bulk carrier KAPITAN GLAZACHEV w/ftc in ARQ at 1916 (Hartung, MD). This is actually a bulk timber carrier-- Editor.

8350.5: URUK, the Soviet M/V ANDOMALES w/ftc to UFN in Novorossisk, 0006 in ARQ (Hartung, MD). This one's a combo bulk & timber carrier. For those of you unfamiliar w/maritime abbreviations, M/V means "motor vessel." Other similar abbreviations include M/S (motor ship), MTS (motor twin-screw, or motor turbine ship, or motor transport ship), SS (steamship), T/S (turbine ship), TSS (twin-screw ship, or twin-screw steamship, or turbine steamship) & TTS (twin turbine-screw)-- Editor.

8351: FPCZ, CBL-101, working WLO in ARQ at 0010 (Hartung, MD). The CBL-101 is a French cable-laying ship. I believe it's working somewhere around South America-- Editor.

8354: SPYM, the Polish passenger ship STEFAN BATORY w/telegrams to Gdynia via WCC in ARQ at 0441 (Editor's logging).

8510: NMO, USCG in Honolulu, HI, working NODZ, the USCGC WOODRUSH at 0430 in 170/100R (Williams, CO). The cutter is a seagoing buoy tender built in WWII-- Editor.

9820.2: RUZU, the Soviet wx outpost at Moloz-

ezhnaya, Antarctica w/coded wx at 0315, 425/66R (Editor's logging).

9846.2: TUH, ASECNA, Abidjan, Ivory Coast w/RURY at 0346 in 425/66N (Editor's logging).

10435.2: ZAY, ATA nx in FF from Tirana, Albania at 1550, 425/66N (Weber, IL).

10590: SS text w/doubling or tripling of each word in succession. Was 425/66N at 2305 (Navary, VA). What this seems to indicate is that it was manually sent & also that it was from either MFA or PTT in Havana, working a station on another frequency. What you've described seems pretty common from these Cuban stations & that's probably what you monitored-- Editor.

10805: NA, Buenos Aires, Argentina, nx BC in SS at 0232,850/66N (Walker, TX).

10880: 5LA10, Montrovia, Liberia, w/USIA nx BC in EE at 0110, 850/100R (Navary, VA).

11006.5: The AFRTS commander in Los Angeles w/ftc at 0335, 850/100N (Navary, VA).

11052: Tfc in an un-ID language noted at 0238. A Cyrillic keyboard appears to have been used but there were many Latin suffixes in the text. Some easily ID'd words such as "Lenin" were noted. Was 250/66R (Williams, CO).

11410.4: "JMS" sending 5F group ftc at 2242, 450/50R (Walker, TX). Most likely from Havana-- Ed.

11638.1: Coded wx & plaintext wx in EE/GG sent at 1848 by DDKB, Hamburg Meteo, W. Germany, 425/66R (Editor's logging).

12182: 9KT291, KUNA, Safat, Kuwait, w/AA nx at 2000, 400/66N (Hetherington, FL).

12218.2: WGY906, FEMA, Denton, TX working WGY908 at San Francisco; was 120/100R at 1531. At 1622, WGY903 (Olney, MD) showed up to work WGY906 (Editor's logging).

12238.4: CDH, Chile, w/RURY from 1300-1330, 425/66N (Hetherington, FL).

12250.2: RURY's w/no ID & very short 5F msg at 1443, 500/66R. Suspect it to be E. German embassy in Havana (Editor's logging).

12316.3: Un-ID station using tactical ID of "RCF" w/RURY & CQ at 1445, 500/100N. RCF is normally a call used at Moscow. A 5F group message followed until 1457, then RURY of 10-seconds duration (w/o CQ's) spotted here various times between 1515-1645 w/5F groups at 1545 & 1645 (Editor's logging).

12518: HCRA, Rio Amazona, w/ARQ Telexes in EE to Newark (NJ) & Guayaquil, Ecuador at 1924 (Navary, VA). This is an Ecuadorian flag reefer ship-- Editor.

12682.5: LGB, Rogaland, Norway, at 1325 working ships in ARQ mode (Editor's logging).

12900.3: PWZ33, Brazilian Navy, Rio de Janeiro, Brazil, plaintext wx in PP, 0100 in 850/66R (Hetherington, FL).

12933: 72JKL, Madrid Naval R., Spain, w/ftc & wx in SS to 78EAL, 850/100R, at 1324 (Freed, W. Germany).

13083.5: WLO, Mobile R., AL, w/wx in ARQ at 1440 (Daryl Symington, OH).

13455.1: MFA in Warsaw, Poland, w/ftc to the Polish Consulate General in Montreal, 1328 in 350/66N (Editor's logging).

13463.9: VNA nx in EE from Hanoi at 1450 in 500/66N (Hetherington, FL).

13510: CFH, Canadian Forces, Halifax, NS, w/harbor & approaches forecast & an aviation advisory at 2139, 850/100R (Jerry Brumm, IL). Jerry, you'll find RTTY reception greatly improving if you move to the suburbs!-- Editor.

13580.7: HMS19, KCNA, Pyongyang, North Korea, w/SS nx at 1040 beamed to Caribbean, 425/66N (Hetherington, FL).

13628.6: OEM63, Vienna Meteo, Austria, at 1700 (425/133R) w/coded wx for Danish & Norwegian towns (Editor's logging).

13777: ZRO3, Pretoria Meteo, RSA, w/coded wx at 1910, 425/100N (Editor's logging).

13827.6: NNNNONIM, USN MARS station, Gulfport, MS, working NNNNONRD in PR at 2237, 170/100R (Symington, OH).

13971: CLPI, MFA in Havana w/diplo ftc to embassies at the Congo, Guayana & Libya at 1730, 425/66R (Rich Knowles, IL).

13998.1: FTN99, DIPLO, Paris, France, at 1931, 425/66N. FF nx BC about 150-million francs set aside for treating air pollution (Editor's logging).

14638.2: CME326, Czech embassy at Havana w/5F groups to MFA in Prague at 1348, 425/100N, followed by CW ftc.

14724.3: TNL, ASECNA, Brazzaville, Congo, w/RURY at 1648, 425/66R (Editor's logging).

14901: CLN451, PL, Havana, Cuba, w/news in EE at 2005, 425/66R. Items about Haitian situation (Phil Clinard, TN). Let's welcome this new contributor to the column-- Editor.

14932.4: APS, Algiers, Algeria, w/AA nx at 1724, 850/66N (Editor's logging).

14937.7: 5UA, ASECNA, Niamey, Niger, at 1730 w/flight plan in FF for a DC-8 to fly from Mauretania to Mali. Was 525/66N (Editor's logging).

14989.3: TNL77, Brazzaville Meteo, Congo, w/coded wx, 425/66N at 1743 (Editor's logging).

15480.4: APS, Algiers, Algeria, w/SS nx at 2034, 850/66N (Editor's logging).

15865: RBK79, TASS, Moscow, USSR, w/AA nx at 1535, 425/66R (Navary, VA).

16117: 6VK317, PANA, Dakar, Senegal, w/FF nx at 1455, 425/66R (Navary, VA).

16662.5: KHLD, ARCO Marine's tanker AMERICAN SPIRIT w/Telex in ARQ at 1856 to WLO (Editor's logging).

18875.1: DIPLO, Paris, France, w/FF nx, 350/66N (Frankie Gittens, Barbados).

Contributors to this column should note there is normally a time lapse from the time you mail your loggings to POPCOMM to the time they appear in print. Don't wait to see them in print before contributing more loggings! We'll use what you send, don't worry! Keep sending them regularly so there are plenty of loggings to use each month **PC**

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BETTER SIGNALS

BY ED NOLL, W3FQJ

ANTENNAS AND SIGNAL IMPROVING ACCESSORIES

An Aeroband Aerial

The usual scanner antenna is resonated away from the aero frequencies. The main antenna design emphasis is on the 150-MHz region while aircraft activities are found around 125 MHz, not much above the end of the FM broadcast band. Some scanners do not contain an AM demodulator and aeroband pick up is not included; hence, the aeroband antenna performance has often been a secondary consideration. There are top performance commercial-grade aeroband antennas available, but they can be costly.

Why not put your own together? You can even duplicate exactly the construction information that follows or use a bit of your own mechanical ingenuity depending upon the materials you have available. All you need do is to stick to the given dimensions and observe a few construction tips. Try to find some scrap aluminium tubing. You don't need much. Perhaps you have an old TV antenna in the basement or one up on the roof you no longer use. Watch out for neighborhood discards. Of course there are the flea markets and hamfests, too.

An omnidirectional antenna can be a simple versatile dipole cut for 125 MHz (Figure 1A). On the aeroband it will usually outperform the usual so-called all-band scanner antenna, particularly on this frequency. Mount it on a crossarm so the associated transmission line runs straight away from the dipole feed point by at least 0.2 wavelengths so as to sustain a reasonable omnidirectional pattern.

If you wish some directivity and gain in one general direction (you may wish to aim on a

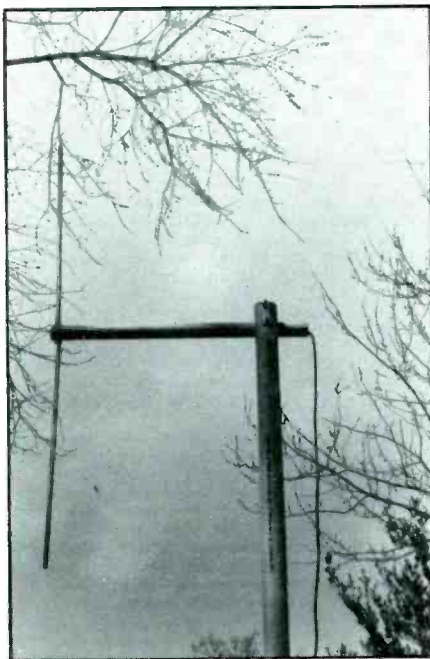


Figure 2: Simple omnidirectional aeroband antenna.

particular airport), you can go to a simple beam (Figure 1B). A parasitic reflector will give you a boost in that general direction with some decline in back pick up (even back pick up will be better or no worse than what you obtain from the usual all-band compromise antenna). In my own situation I can pick up a readable but not strong signal from the Philadelphia control tower, which is just not there when using an all-bander.

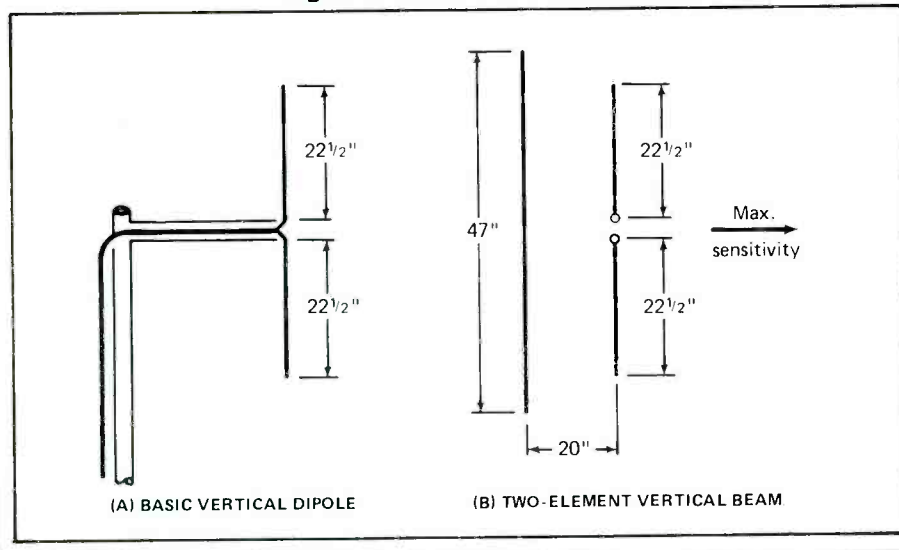


Figure 3: Bolt/nut terminals for attaching antenna elements and line.

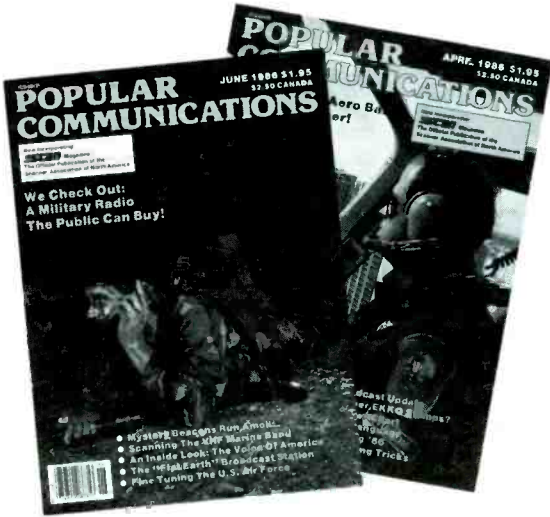
Omnidirectional antenna (Figure 2), was assembled from two pieces of $\frac{3}{8}$ " aluminum tubing and a 22" length of 1" PVC piping that served as the crossarm. The latter is held fast to the top of the mast with a U-bolt assembly readily available from your hardware store or, maybe as a scrap item from a discarded TV antenna. Transmission line runs through the tubing from the dipole, exiting at the opposite end, then proceeds down the mast externally to the level at which the trip is made to your radio room. Note that this arrangement guides the line perpendicularly away from the dipole by the 22" length of the crosspiece.

Construction begins with the drilling of two terminal holes at the one end of the crossarm. Eye-ring solder lugs are attached to the ends of the inner conductor and braid of the transmission line. Push the line through the crosspiece and, then, pass the terminal bolts through the eye-rings. Now pass the terminal bolts through the end holes from the inside. Attach external nuts temporarily. Next cut the two 22 $\frac{1}{2}$ " lengths of aluminum tubing. Flatten one end of each and drill an end hole to accommodate each protruding terminal bolt. Bend each aluminum end at an angle of 90° and tighten to the terminals using nuts and lockwashers (Figure 3). Remember the transmission-lines eyebolts are held down internally by the bolt heads; dipoles, externally by the lockwashers and nuts. Sealant tape over the

Figure 1: Basic 125 MHz antennas.



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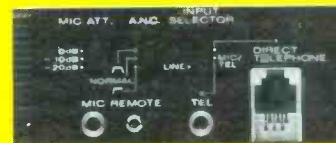


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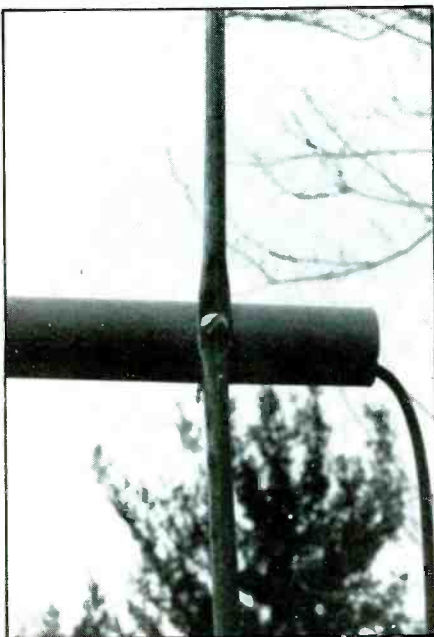


Figure 4: Reflector bolted to crossarm.

crossarm end will help provide weather protection.

A U-bolt is used to attach the crossarm to the mast (Figure 2). Pull up tight on the associated nuts making certain that the dipole is positioned vertically (Figure 2). Tape the exiting transmission line to the mast a few places in its drop down the side so it doesn't flap in the wind.



Figure 5: Aeroband two-element beam.

When a gain antenna is preferred, you can use the same basic construction; only this time a 47" reflector is bolted to the very end of the opposite end of the crossarm (Figure 4), and, the U-bolt is moved along to the crossarm center (Figure 5). Flatten the central area of the reflector and drill an appropriate hole. Hold the reflector tight to the crossarm with a bolt/nut/lockwasher combination. If you like you can invest in another U-bolt assembly for a firmer attachment to the crossarm. In this case two properly spaced holes must be drilled in the reflector, one on each side of the very center of the reflector tubing. Again the transmission line exits from the reflector end and is returned to the mast in a lazy loop, where it is taped as it proceeds down the mast.

Aero Antenna Checking

In checking a scanner antenna you need some method of quick comparison with another antenna that you use as a reference. Furthermore, you must make your tests on weak signals because the combination of scanner AGC and squelch make it just about impossible to evaluate antennas on the basis of strong incoming signals. More details on this subject were given in the Better Signals column of the April 86 issue.

If you plan a directional antenna, you must always have knowledge of direction of signal arrival. You must know whom you are listening to! An aero frequency guide is essential. A very useful publication is *Air Scan* (Fourth Edition) from CRB Research, PO Box 56, Commack, NY 11725 (\$10.95 plus \$1.00 shipping).

If you are within range of a control tower, they represent an excellent test signal. Tower transmitters operate at low power and direct their signals upward toward circling and incoming aircraft. Thus, the overland range is limited and signals are weak and useful for testing. They also provide a positive bearing

for checking directional antennas. My own location provides one tower signal arriving from due east (received with ease) and second one from due south (receivable on a good antenna). Also, there are towers a considerable distance away both north and west. Although the flight tower signals do not come through they represent useful testing facilities. All one need do is sit on the tower frequencies and wait for an aircraft that is requesting landing instructions from the tower. The aircraft signal is often readable because the aircraft transmitter is much higher than the control tower and usually of higher power.

Similar conditions exist for the FAA air route traffic control centers. There are a number of these centers spaced about the country. In addition they have remote-control transmitters in various locations about the center. If you learn the location of these centers you can use them in checking out the performance of receiving antennas. Again if you are located near to such a remote location you not only hear the calling aircraft but also the information sent from the remote site to the planes flying along the FAA air route. When you are a distance away from such an FAA remote, you can hear the planes calling in as they are enroute. Often they will give a geographical location and, if you know it, you have a temporary fix in checking out a directional antenna.

Small airports usually have transmit capability that is active only at specific times. There are often practice landing sessions and you can hear the small planes requesting landing instructions. If you are really interested, you can visit one of these airports and inquire about their radio facilities and equipment.

Aero listening is interesting and instructive. Send for your guide and begin to build special antennas for this band. **PC**

Kind Readers,

Thank you for the kind letters in response to my article on DXing with an antique one-tube radio. I'm happy to have brought back some fond memories. However, I should have mentioned I was also an O1A radio Ham. The Depression era Ham usually didn't pamper tubes and to get more output always used more than the recommended filament and plate voltages. Also rheostats and dropping resistors took money away from buying an extra battery to hook in the B series. My own home-brew regen shortwave receiver and Hartley oscillator or MOPA O1A transmitters always operated with full storage battery voltage (kept up there with a Tungar rectifier power supply) and as many B batteries as an anemic pocket book could afford. Actually, we always rationalized that the "good-performance" emission life of the O1A was no doubt longer with high filament voltage, although total life may have been shorter. After all it was being reactivated all the time???

—Ed Noll, W3FQJ

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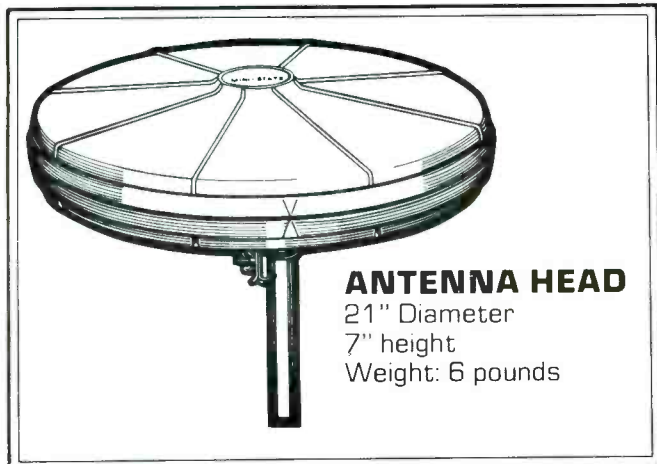


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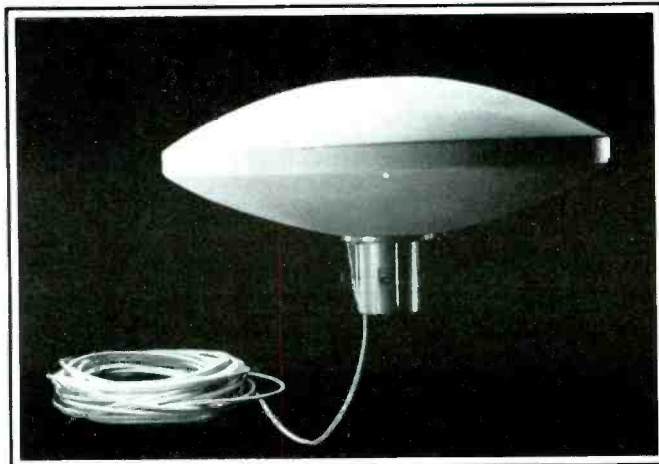
AM/FM-TV Mobile Reception



ANTENNA HEAD

21" Diameter
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Diagram of directional TV antenna.



Mobile FM/TV antenna system—amplified.

An important part of any emergency mobile communications center is the ability to receive outside news reports on radio or television. Many times, viewing a "live" picture may assist you and your emergency communications committee on the severity of the disaster and where special emergency equipment may be needed.

Luckily for us, portable radio and portable television prices have plummeted, and so has the size of the equipment. The latest of liquid crystal display technology now allows us to view a small, hand-held type television for hours on just a single charge of its internal battery pack. This type of equipment lends itself perfectly to a mobile command post or an emergency mobile communications center.

Good reception depends on a well-planned AM/FM-TV antenna system—and these antenna systems may be the critical part of adequate reception. Let's take a look and see what a good AM/FM-TV antenna system may consist of.

Here are the frequencies we wish covered:

- AM Broadcast Radio Reception— .55 MHz to 1.705 MHz
- Shortwave Reception—2 MHz to 30 MHz
- TV Channels 2 to 6—55 MHz through 88 MHz
- FM Entertainment Radio Band—88 MHz through 211 MHz
- TV Channels 7 to 13—175 MHz through 211 MHz
- UHF Television Channels 14 to 28—470 MHz to 512 MHz
- UHF Television Channels 28 to 69—512 MHz to 908 MHz

Trying to use your existing all-band scan-

ner antenna usually won't do the trick to bring in all of these frequencies to your AM/FM-TV equipment. The scanner antenna is matched to a characteristic impedance of 50 to 70 ohms, and is usually vertically polarized. Polarization and impedance mismatches won't bring in the reception as you would like.

Impedance Matching

Even reception-only antennas (as opposed to transmitting antennas) require impedance matching. An impedance mismatch could result in a standing wave ratio as high as 4 to 1, and this would cause the AM or FM signal to drop by as much as 12 to 15 dB.

Your automobile-type AM and FM/cassette receiver requires a characteristic input impedance of 92 ohms. If you have ever cut into a piece of car-radio coax, you will see that it has a tiny, hair-like center conductor surrounded by a foil jacket. This is special 92-ohm coax matched specifically for automotive-type receivers. This coax terminates into a Motorola input jack.

For the best automobile radio AM/FM reception, almost any low-priced, telescopic, automotive-type, whip antenna will work well. It must be mounted high above any metal structures, and for best results, it must be mounted on a piece of metal to act as a ground plane. Using the automobile-type antenna on a piece of wood will indeed pull in signals, but signals may be attenuated by as much as 6 dB by not having the necessary ground plane beneath the whip. You will experience marginal to poor reception by simply pushing a piece of wire into the automotive radio jack; avoid this whenever possible!

You will also find poor reception on your automobile-type radio if you try and hook in your RV-style television antenna.

"Our directional, amplified, AC/DC, 'mini-state' TV antenna that we bought at Radio Shack has a built-in 20 dB trap specifically designed to cancel FM frequencies," comments Bill Alber, WA6CAX, a well-known survivalist communicator.

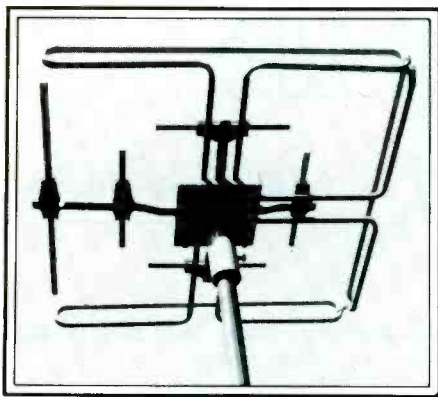
"Unless that 20 dB trap is bridged, the mobile, omni-directional, amplified antenna won't work at all on FM music band frequencies. The coax is also not suited for any type of AM reception at all, so anyone using an RV-type, amplified TV antenna will have minimum reception when this equipment is connected into a regular automotive receiver," adds Alber.

That 20 dB trap used on the FM band is specifically designed to knock out FM reception that may create "cross hatch" on TV Channel 6. This TV-only antenna also uses a different impedance coax—75 ohms; instead of a Motorola-type plug on the end of the coax, it uses a standard television F-connector.

In short, don't use your RV TV antenna for your automobile AM or FM reception. It won't work.

TV Reception

For the best long-distance television and FM music band reception for television and home-style FM stereo receivers, a Yagi antenna would be your best bet. The Yagi antenna is your standard beam-type television antenna with elements tuned to cover the entire television band. The longer elements work on the lower TV channels, including FM stereo reception, and the smaller elements work on the high VHF TV channels



Amplified VHF/UHF TV mobile antenna.

as well as all of the UHF TV channels. This type of antenna must be used in conjunction with a rotator in order to aim it at the transmitting TV stations.

The benefit of this type of antenna is high gain and directivity, and minimum reception of reflections that cause ghosting. If you have a permanent type of emergency communications point, the Yagi antenna is a good way to go.

Mobile communication centers may require the amplified, omni-directional or compact directional antennas housed in a white fiberglass dome. The small directional-type antennas work well to minimize ghosting. They achieve gain through a 20 or 30 dB amplifier built into the antenna system. The omni-directional antennas also have the same type of gain circuit, but they receive signals in all directions.

The big problem with omni-directional, amplified TV antennas is ghosting. Since they receive signals in all directions, TV and FM reception may come in at different angles and slightly out of phase. The phase shift is what creates ghosts. The beauty of these antennas is that you don't need to aim them—simply turn them on and park your vehicle in an area of best reception.

Another popular type of mobile television antenna is the "swept wing," horizontal dipole antenna. You see these a lot on chauffeur-driven limousines. These are usually

effective in strong signal areas when used with a built-in amplifier, but ghosting is a very common problem with this type of low-profile antenna system. Despite what the manufacturers claim, it's also bi-directional, which requires you to maneuver your vehicle for best reception.

One of the finest scanner/receivers available for FM music and all-channel TV reception to include all-mode and all-frequency VHF and UHF scanner reception is the Yaesu FRG-9600 scanner receiver. This hot receiver takes a plug-in module for video reception; simply take the video output from the set and hook it to any black-and-white or color monitor, and presto, you'll get a sharp television picture that has been internally amplified by the receiver. This type of receiver will also allow you to fine tune the picture for maximum clarity and minimum ghosting and snow. With 99 channels of memory built into this receiver, it allows you to instantly use this set for scanner reception as well as FM and television reception. I have compared this set personally to my TV receiver, and I find this has a lot more gain than my regular television set. For a spec sheet on this television scanner receiver, write Yaesu Electronics, ATT: Chip, 6851 Walthall Way, Paramount, California 90723.

For best automobile AM/FM reception, stick with your standard automotive-type, telescopic whip antenna. Although there are advertised AM/FM antenna pre-amps specifically designed for automotive-type, telescopic whips, these pre-amps usually do nothing more than increase both the noise as well as the relative signal level.

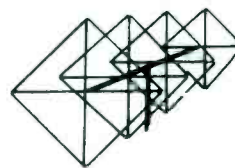
For the best in television reception, a Yagi antenna would be your first choice, followed by mobile-type, amplified, omni-directional or directional TV antennas. Always use coax to feed these antennas to your TV receiver; never use twin lead that is susceptible to ghosting and interference.

Through the use of top-notch, professionally designed TV antennas, you will be assured of picking up strong signals in almost every emergency communications area you should travel to.

The new Yaesu scanner is more than capable of picking up TV.

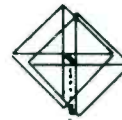


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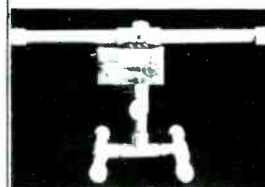
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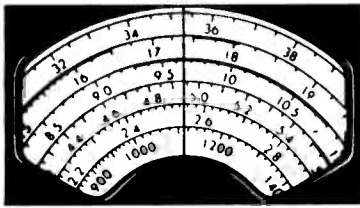
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COMMUNICATIONS CONFIDENTIAL

BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

In the January 1986 Intercepts Section there was a cipher text item supplied by Steve Johnson, Florida, which he heard on 4780 kHz. I checked out this frequency and have concluded that the transmission he heard must have been the Federal Emergency Management Agency (FEMA) station WGY912, which is the VIP Relocation Site, Mt. Weather, Virginia. Mt. Weather is located at Berryville, Virginia, which is in the Blue Ridge Mountains. This station sends very slow encrypted traffic consisting of 5L groups. Further details on FEMA communications can be found in the *Shortwave Directory* (2nd Edition), pages 55-58, edited by Bob Grove. The directory is available from various POP'COMM advertisers.

Owen O'Neil sent in a note along with his intercept and offered the following comments: "I'm real new to SWLing. Just start-

ed about 4 months ago.—I spend a lot of time in the 2 to 3 MHz band . . . common receptions include Halifax, NS, St. Johns, Newfoundland, and various U.S. Coast Guard Stations such as Norfolk, Miami, New Orleans, etc. Thus I was really surprised to pick up a station on the other side of the world. On 2701 kHz at 0310 I heard a YL repeating in English 'This is Cyprus Radio with your telephone maritime service.' She would then say the same thing again in a foreign language (Turkish?)." Owen has a Kenwood R600 hooked up to a 150-foot long wire in the back yard. His antenna runs East/West, and he also uses a ground of six feet of copper pipe driven into the ground. Thanks for your letter Owen, and good DX'ing.

Robert Homuth, Arizona gave us some copies of recent QSL letters he had received. The one from WWV/WWVB was

particularly interesting. They are presented here for your information.

Chris Nicholson, Indiana has provided a picture of his equipment layout with the following description: "My monitoring equipment includes a Hammarlund HQ100A, Hammarlund HQ170, URR/35C Military Air Receiver, and several scanners. I love to experiment with and repair radio equipment. My helper, Kitty, serves as a heatsink for the Boonton 202N Signal Generator and is also a good static electricity source. I hold a First Class Commercial with Radar endorsement (that has expired to become a General Radiotelephone license). I am putting together a GMRS station licensed as KAD9453 on 462.55/467.55 MHz.

"The test equipment pictured includes a Polarad SA-84 WA Spectrum Analyzer, TEK 543 Scope, URM-25F Generator, Optoelectronics 8013 Counter, FLUKE

This letter from WWV/WWVB sent to Robert Homuth of Arizona is of special interest.

A reception report of the Skookumchuck (SX) Non-Directional Beacon, near Cranbrook, British Columbia, Canada. (Courtesy of Robert Homuth)

December 17, 1985

Mr. Robert C. Homuth

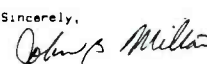
Dear Sir:

Thank you for your interesting letter of November 20th. We are always pleased to hear from our (harmonic) listeners. Please excuse the tardiness of my reply. Between two feet of snow and jury duty, I am really behind!

I suspect that you are indeed hearing WWVB at 420 khz. I have not heard of that particular harmonic being heard, but I'm sure it is our station.

The main WWVB transmitter is an untuned 50 kw. amplifier, similar to an audio amplifier. I suspect that the harmonic in question is down some 20-30 dB from the fundamental. This would indicate a power level of from 10 to 100 watts.

I have enclosed a copy of the WWVB format so you could accurately check what you hear. If you can report reception on 60 khz, we would be glad to send you a QSL card.

Sincerely,

 John B. Milton, Chief Engineer WWV/WWVB

23 December 1985

Transport Canada
 Air Administration
 P.O. Box 220
 Vancouver, B.C.
 V6Z 2J8 Canada

Your File Votre référence
 Our File Notre référence

Mr. Robert C. Homuth

Dear Mr. Homuth:

This letter confirms your reception of the Skookumchuck (SX) Non-Directional Beacon. The beacon is located approximately 20 miles from Cranbrook Airport near Cranbrook, British Columbia. The beacon is used to provide guidance to aircraft on IFR approach to Cranbrook Airport.

Technical Data:

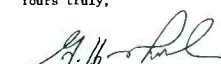
Transmitter

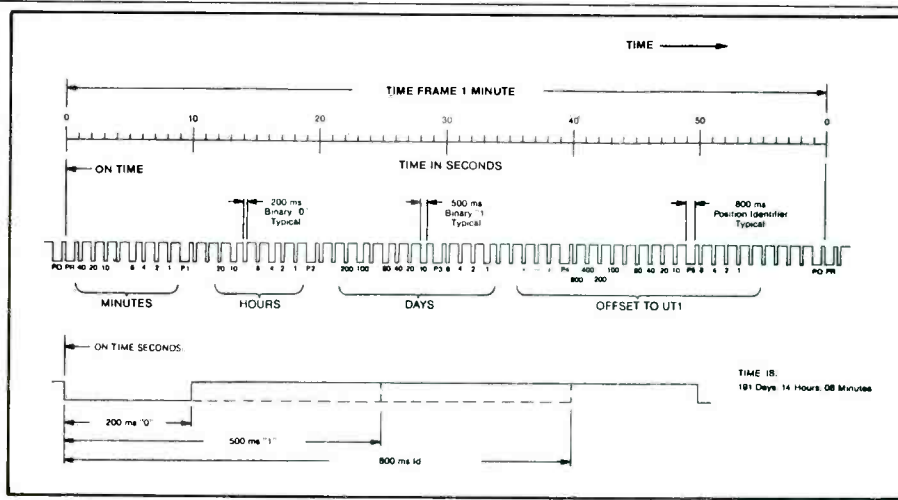
- Type - NEL 8001
- Manufacturer - Nautel Electronics Laboratories Ltd. Rackett's Cove, Nova Scotia, Canada
- Power - 500 watts CW, 1900 watts PEP
- Frequency - 368 kHz
- Emission - A2H (carrier and upper sideband)
- Modulation - 1020 Hz keyed identification - SX

Antenna

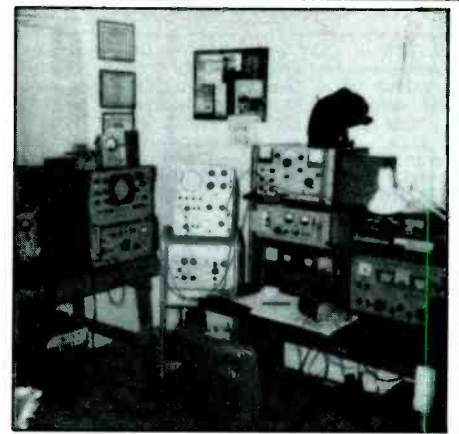
- 125 ft. free-standing steel tower
- location - 49°57'17" N, 115°47'30" W

Good DX'ing and have a Merry Christmas!

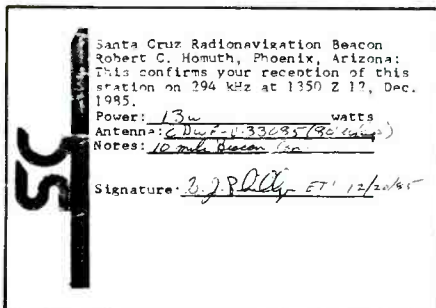
Yours truly,

 G.H. Wheeler
 Navigational Systems Specialist



The time code system of WWVB.



The beautiful monitoring station used by Chris Nicholson.



Robert Homuth received confirmation of reception of Santa Cruz Radionavigation Beacon.

8060A DMM, Bird Watt Meter, and several power supplies. I am a technician maintaining linear and digital IC test systems at an IC manufacturing plant here in Kokomo, Indiana (Silicon Prairie). I live close to Grissom AFB and the Military Air Band can get very active, especially during Military Exercises." Here are some of his air band items: All entries are AM mode and in MHz.

271.8 WX Info, updated hourly
275.8 & 295.7 Tower
362.9 & 372.9 Approach

Reader Hank Rogers, Pennsylvania, copied some unidentified transmissions on 6450 during the day and 4700 at night. The CW signal is usually sent as VVV VVV, or sometimes just VVV, repeated over and over with no further identification. Hank said he has heard this broadcast day after day. Any guesses?

Again, let me remind readers that we actively solicit "ute" station loggings for our intercepts listings. Listings should be in ascending frequency order (that is, lowest frequencies first), and should include as much relevant information as possible, including callsign, location, mode, time (in UTC), and information regarding the type of communication monitored and/or the callsigns of the stations being called or worked. If at all possible, type your loggings for maximum clarity; if they can't be typed, please print clearly in letters that are large enough to be easily readable without the help of a magnifying

glass. It also helps if you list your name at the end of each individual logging and also leave a sufficient amount of space for your poor old editor to cut them apart for mixing in frequency order with the loggings that other monitors have submitted. These are just some suggestions I'm passing along in order to provide you with the best column possible.

Unfortunately, some listings that have come in can't be used because the handwriting is just too difficult (or too tiny) for me to decipher. Your loggings are important; please submit them so that they are able to be included. It truly pains me to have to discard loggings that simply can't be read no matter how much effort I make!

Intercepts

- 224: QM beacon, Moncton, NB, at 0305 (Robert Ross, ONT).
- 288: SL beacon, San Luis Obispo, CA. This is a USCG 50/10 sequence beacon running 13 watts. At 1302 (R. Homuth, AZ).
- 294: SC beacon, Santa Cruz, CA at 1330 (Homuth, AZ).
- 317: PB beacon, Piedras Blancas, CA at 1330 (Homuth, AZ).
- 322: S beacon, Pt. Sur Light, CA (Homuth, AZ). B beacon, Buffalo, NY, at 0035 (Ross, ONT).
- 329: AQD beacon, Hartford, CT, at 0143 (Ross, ONT).
- 375: HPL beacon, Nucla, CO (Homuth, AZ).
- 386: SYF, St. Francis, KS (Grace Flight Service, Inc.), 30-50 watts at 0459 (Homuth, AZ).
- 396: ZBB beacon, Bimini Island, at 0227 (George Osier, NY).
- 420: WWVB, Ft. Collins CO. A harmonic of time signals very strong at 1300 every morning (Homuth, AZ).
- 437: CFH, Maritime Command Radio, Halifax, NS, w/notices for the Caribbean, "man overboard at 14-55N 66-00W at 0815, vessels in vicinity asked to keep lookout & assist if possible & report sightings to Coast Guard, San Juan." Also, Aircraft, red and white Cessna 210, 2 persons on board, reported to have ditched 5-10 miles west of St. Martin, report to Coast Guard, San Juan." This monitored at 0134 (Osier, NY).
- 521: INE beacon, Missoula, MT at 0600 (Homuth, AZ).
- 1783: Un-ID "pips," 1 every 2 seconds at 0227 (Osier, NY).
- 2182: USCG Eastern Shore(?) in USB at 0325 asking all stations to tune to 2670 for wx BC (C. Nicholson, IN).
- 2716: USS WHIDBEY ISLAND (LSD-41), a USN dock landing ship working Little Creek Harbor Control at 1126 in USB. Also the USS GLOVER (FF-1098), a frigate, to Norfolk Harbor Control in USB at 1142 (Bab Margolis, IL).
- 3315: USAF MARS stations AIR (at the Pentagon via transmitters at Andrews AFB in MD) and

Abbreviations Used For Intercepts

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

AFD1YD in USB at 0040. This is MARS Region #1 Channel "Romeo Alfa" (Pat Griffith, CO).

- 4063: KSKF, M/V KEYSTONE CANYON in USB to KMI (on 4357.4 kHz) w/phone patches (Daryll Symington, OH).
- 4066.1: USS NEW JERSEY (BB-62), battleship in USB at 0035 w/phone patches to CSS1 (San Diego) on 4360.5 kHz (Symington, OH).
- 4111: AM voice tfc, seems like net of Arabic or Indian OM's; also on 4100 & 4165 w/freqs drifting at times as much as 10-20 kHz! Also what sounds like keying mikes on/off very fast, sigs poorly modulated, strong hum on carrier. Noted at 0138; 1st time I've heard anything like this (Osier, NY).
- 4134.3: KSLB, M/V SEALAND PACER in USB at 0012 to NMN (USCG Portsmouth VA) on 6506.4 kHz (Symington, OH).
- 4212.5: 3FZV, ship ORIENTAL HOPE in CW at 0450 w/Telexes (Margolis, IL).
- 4220: LZW, Varna, Bulgaria, in w/CW calltape at 0030 (Ross, ONT).
- 4221: GYU, Gibraltar Naval Radio, CW calltape at 0222 (Osier, NY).
- 4252: CYF (Canadian allocation but this is probably a tactical ID), w/CW calltape at 0530 (Hall, WA).
- 4262: Y15 in CW calling YRN (Rumanian allocation) at 0500 (Hall, WA).
- 4270: FUJ, Noumea Naval Radio, New Caledonia, in CW at 1058 w/calltape (Osier, NY).
- 4317: ZSC33, Capetown, RSA w/CW calltape at 0226 (Brumm, IL).
- 4348: KLB, Seattle, WA in CW at 0108 w/calltape (Ross, ONT).
- 4360: VACANCY working GREEN EYES in LSB at 0254 w/tfc about fire exercise & running phone loops (Symington, OH).
- 4385.3: VAL, Canadian Coast Guard, Vancouver, w/Pacific Coast wx & sea forecast/conditions in USB at 0608 (Griffith, CO).
- 4400: VID, Darwin, Australia. High Seas station working Macaroon II in duplex (paired w/4106 kHz) in USB at 0853 (Hall, WA).
- 4400.8: NRQW, USCGC SWEETGUM to Commsta Miami in USB at 0402 (Symington, OH).
- 4425.6: WOM, Miami, FL w/High Seas ship/shore traffic to vessel KATHY LOUISE in USB at 0530 (Griffith, CO).
- 4428: VIS, Sidney, Australia High Seas Radio

in USB at 0839 w/morning tfc list in simplex. Switched to 2201 kHz (Hall, WA).

4428.7: USCG Communications Station, Honolulu, HI calling C2CR (Nauru allocation) in USB at 0538 (Griffith, CO).

4525: Y3S, Nauen, East Germany, in CW at 0153 w/time signals (Osier, NY).

4611: CENTRAL MAINTENANCE in USB at 2108 to COMBO KING and BROWNIE (Margolis, IL).

5000: ZUO, Pretoria, RSA in CW at 0300 w/ID & time every 5 minutes (Ross, ONT).

5016: GG/YL in USB w/5F groups, usual format, at 0038 (Osier, NY).

5070: SS/YL in AM w/5F groups. New voice, not a tape, sounded live. At 0134 (Osier, NY).

5082.5: MUW TN in CW at 2330. Repeated until 2332 then into 5L groups w/message using ADGIMNRTUW letters. Ran until 2338 (Margolis, IL).

5130: 131 at 0243 in CW, repeated to 0245 (Margolis, IL).

5195.5: VDTNN444 in CW at 2020, repeated to 2030 (Margolis, IL).

5255: WWJ40 at 1926 in USB, working WWJ44, WWJ45 & WWJ58. U.S. Government stations but agency not known; unlisted. At 1930 they switched to "F4" frequency (Margolis, IL).

5550: Eastern 927 (airliner) calling New York in USB at 0142 w/arrival time & fuel report (Griffith, CO).

5574: Hawaii Air 916 (airliner) calling San Francisco in USB at 0514 asking for permission to change altitude (Griffith, CO).

5692: USCG Helicopter 1389 to Cape May (CG) Air in NJ, USB at 0245. Chopper asking for info on power lines & obstructions in the area of Pea Patch Island. Cape May told them to maintain 1,000 ft. to clear the obstructions in the area. Simultaneously, USCG in LA was working Helicopter 1495. Could copy all 4 stations without trouble! (Griffith, CO).

5811: SS/YL in AM w/4F groups, usual format at 0207 (Osier, NY).

5874: WAR46 working WARHAWK, who R/C's w/DUNGAREE. WAR46 is at Ft. Ritchie, MD, a VIP relocation site in the FEMA system (Hall, WA).

6387: ZS3J, South African Navy, Silvermine, RSA, in CW at 2324 w/calltape & ARQ. Possible new call & frequency as seems to be unlisted (Brumm, IL).

6355: KJS, U.S. Maritime Administration, Kings Point, NY, with CW CQ-marker at 1818 (Peter Thompson, England).

6364: HZG, Damman, Saudi Arabia in CW w/CQ tape at 1818 (Thompson, England).

6395: TBA/2/3, Izmir Naval Radio, Turkey in CW at 1821 (Thompson, England).

6491: KLB, Houston, TX, coastal radio calling CQ in CW at 0630 (Hall, WA).

6435: CLQ, Havana (Cajimar), Cuba, in CW w/calltape at 0239 (Brumm, IL).

6462: FUM, Popeete Mahina Naval Radio, Tahiti in CW at 0723 w/calltape. Difficult copy due to severe noise (Brumm, IL).

6463: YUM (Yugoslavian allocation) in CW w/CQ marker at 0540 (Hall, WA).

6506.4: USCG San Francisco calling HOTEL 6 ALFA in USB at 0505 (Griffith, CO).

6577: San Juan 766 (aircraft) calling New York w/arrival time & fuel data, USB at 0138 (Griffith, CO).

6675: EE/YL in AM w/5F groups. Strange SS acent, not sure if EE or SS?? Started at 0018, out at 0022 (Osier, NY).

6714: KING 46 working JOKER in USB at 1914 w/tfc about KC-135 rendezvous & picking up "32 survivors." (Symington, OH).

6723: Loop tape of test counts in USB at 1403. Operator counting up/down 1-5, 1-10, 1-15, 1-20, then repeating this sequence (Nicholson, IN) This is a USN aero frequency-- Editor.

6727: CENTURY 54 calling Scott AFB, also on 9014 kHz in USB at 0215. At 0217, CENTURY 54 contacted RAYMOND 24 (base) w/info about mechanical problem (Nicholson, IN).

6761: SKYBIRD, HAZO 66, ECONOMIC, WORKOUT & OVERSLIDE in USB at 0224 on SAC "Quebec" (Nicholson, IN).

6850: KVM70, FAA Honolulu/Samoa net w/wx at 0017 in USB (Hall, WA).

7627: KWS78, U.S. Dept. of State, Nicosia, Cyprus, w/QRA tape in CW at 1935 (Tom Kneitel, NY).

8294.2: 5M5Q, a tactical ID, in CW at 1538 w/AVV tape (Margolis, IL).

8441: 70A, Aden, Democratic Yemen, in CW w/calltape at 1847 (Thompson, England).

8457: LSA4, Boca, Argentina, in CW w/SS tfc followed by calltape (Brumm, IL) Time?--Ed.

8459: PPJ, Juncao, Brazil, w/CW calltape at 0129 (Osier, NY).

8469: CUB, Funchal, Madeira Islands, calling CQ at 0115 (Thompson, England).

8473: GYA, Whitehall (London), England Naval Radio calling CQ in CW at 1742 (Thompson, England).

8501: PPL, Belem, Brazil w/SS, wx in CW at 0135 (Osier, NY) George, this was probably not SS but PP-- Editor.

8516: SAT, Tripoli, Libya, calling CQ in CW at 1746 (Thompson, England).

8534: WKM, New Orleans, LA w/calltape in CW at 0054 (Osier, NY).

8570: CPA (Bolivian allocation) calling CQ in CW at 0810. Mentioned La Paz, then into hi-speed CW (Hall, WA).

8589: HPP, Panama, in CW at 0250 w/calltape & list of their frequencies (Brumm, IL).

8597: VIP03, Perth, W. Australia, calling CQ in CW at 1947 (Thompson, England).

8630: 9MBA, Penang, Malaysian Navy in CW calling CQ at 2348 (Thompson, England).

8643: D beacon in CW at 1958 (Thompson, England).

8652.5: PZN, Paramaribo, Suriname, calling CQ in CW at 2056 (Kneitel, NY).

8685: CNP, Casablanca, Morocco in CW w/CQ tape at 1803 (Thompson, England).

8759.2: WOM, Miami, FL, w/High Seas ship/shore telephone calls in USB. Working FAIR SKY at 0531, off west coast of Mexico (Griffith, CO).

8679: IQX, Trieste, Italy, w/CW calltape at 2103 (Kneitel, NY).

8745: 5AB, Benghazi, Libya, calling CQ in CW at 2112. Listed incorrectly on 8746 kHz in Klingenfuss' book (Kneitel, NY).

8778: UNIFORM 7 DELTA and UNIFORM 3 TANGO, USN stations testing in USB at 0500 (Griffith, CO).

8828: Hong Kong Aeradio in USB at 1616 w/forecast in EE for Kai Tak airport (Hall, WA).

8903: 9PL, Kinshasa Aeradio, Zaire, working SPEEDBIRD 52 (airliner) in USB at 2201 (Symington, OH).

8942: Singapore Aeradio in USB at 1547, also Bangkok Air working a Philippine airliner & relaying to Manila. Faded under RTTY (Hall, WA).

9121.6: WGY912, Mt. Weather FEMA Installation, VA w/coded CW tfc at 1904 (Kneitel, NY). Noted at 1945 w/5L groups in CW (Margolis, IL).

10960: FDY, Orleans, France w/AVV tape in CW at 1334. Seems to be a new frequency for FDY (Alice Brannigan, MA).

11180: SAM-86970 in USB at 2328 to Andrews AFB w/point-point to NASA in Florida, enroute Patrick AFB (Symington, OH).

11182: GRILL 23 (a flight of 2 C-130's) working BACON 20 (Rhode Island Air National Guard base) on phone patch via Scott AFB. GRILL 23 inbound from Bermuda at 1640 (Griffith, CO).

11246: ASCOT 5832 (RAF aircraft) working MacDill in USB at 2105 w/phone patch to wx center (Symington, OH).

12329: OVG12, Frederikshaven Naval Radio, Denmark in CW at 1548 w/calltape. Poor signal, barely readable with frequent fading (Brumm, IL).

12544.8: DZF, Bacoor, Philippines, in CW at 1625 w/calltape. Later had keyer problems. Severe adjacent channel interference (Brumm, IL).

12659: 6VA6, Dakar, Senegal, w/CW calltape at 1746 (Osier, NY).

12703: XFL, Mazatlan, Mexico in CW at 2050 w/calltape (Brumm, IL).

12844.5: XFC, Cozumel, Mexico in CW w/"QAP 12545" (Brumm, IL) "QAP 12545" means "I'm monitoring 12545 kHz for calls"-- Editor.

13030: LOL, Buenos Aires, Argentina, in CW calling CQ at 2258 (Hall, WA).

13045: PZN4, Paramaribo, Suriname in CW at 1753 w/calltape (Osier, NY).

13173: A Mexican vessel, OM/SS op., calling Cabo San Lucas coastal station in USB at 1830 w/copious radio checks (Hall, WA).

15015: AHF3, Albrook AFB, Panama in USB at 2050 w/aviation wx BC (Ross, ONT).

16861: HZG, Damman, Saudi Arabia, in CW w/CQ at 1121 (Thompson, England).

16950: BVA (Chinese allocation) calling CQ in CW at 1220 (Thompson, England).

17010: TAH, Istanbul, Turkey, calling CQ in CW at 1234 (Thompson, England).

18237: SS/YL in AM w/5F groups, usual format, at 1728 (Osier, NY).

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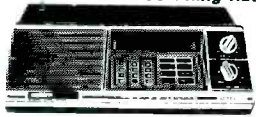
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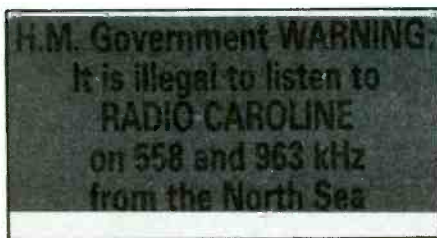
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Ahoy there! You are sailing in pirate waters again, mate, and if you are a pirate fan, welcome aboard.

Pirate activity at present continues to be somewhat on the "down" side. I don't know if there's a direct connection between this slackened activity and the FCC's apparent crackdown on pirate broadcasters, or whether the reasons lie elsewhere. Perhaps it is some of both that is causing the current rough waters. I do know that the FCC's Grand Island, Nebraska office recently released another list of cities in which it says it is investigating pirate activity. The list included such places as Newark, Delaware; Green Bay, Wisconsin; Pierce, Alabama; Ponca City, Oklahoma; and Minneapolis/St. Paul, Minnesota, among others. St. Paul was recently the site of a pirate bust. KSMR there was closed down and fined \$750.

In Europe, the problems of the pirates seem more related to inadequate funds or plain bad luck than they do to government crackdowns. Laser 558, the American-owned station that made such a splash when it went on the air nearly two years ago, is now off the air, and it looks permanent. Reports and news articles sent in by David Kerr of Cedar Rapids, Iowa and Bartok Jaruzelski in London say Laser's ship, the MV *Com-*

municator, suffered generator and engine failure and came close to sinking in a storm on November 8. The *Communicator* was towed into the British port of Harwich, where several civil writs have been served by persons to whom Laser owed money. The ship will have to be sold to pay off the debts. Laser operated from the North Sea, outside the British 12-mile limit and had five American disc jockeys.

Radio Caroline is "still going strong" according to Bartok Jaruzelski. Operating from the Motor Vessel *Ross Revenge*, Caroline runs a combined oldies and Top 40 format from a 5 kilowatt transmitter, which has now moved to Laser's old 558 kHz frequency. A second Caroline outlet uses 50 kW on 963 and airs the Dutch "Radio Monique," commercial U.S. religious programs, and its own "Caroline Overdrive," which is an English language album rock service. I understand Caroline plans to add a transmitter on shortwave and I'd appreciate details on this.

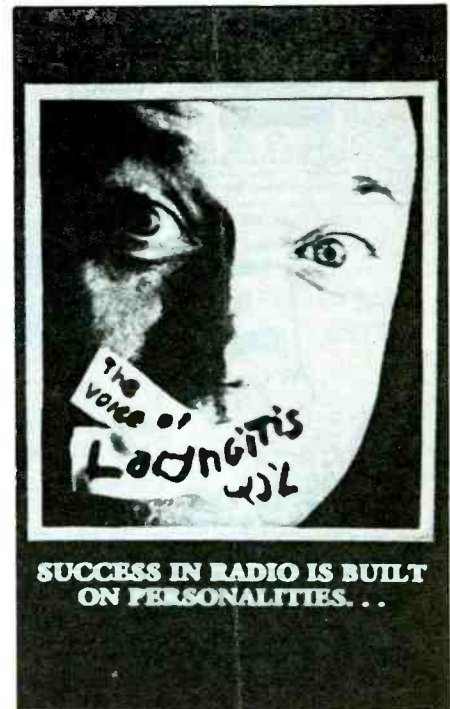
Jaruzelski also says there are rumors in Britain that a new station, Stereo 531, is being outfitted in Honduras, after which it will sail for the British coast. Bartok speculates this may be just rumor, as were stories of WRLI, which was to operate from the *Four Freedoms*, and Tennessee Sound, which was supposedly planned to broadcast from the *General Lee*.

Across The Dial

Radio 7425 informs this column that it operates most weekends between 0000 to 0400 UTC on 7435. They also say they operate nightly on 27.995 and 27.885 MHz lower sideband. 7425 uses a Drake T4XB transmitter and 50 watts. The 11 meter band frequencies have two Cobra 2000 GTL's of 100 watts each. Programming is Top 40 and shortwave listening tips. During February operations were on 11 meters and 7435 was scheduled for use in March. The station didn't give an address but noted they do announce one on the air.

WGAT—"Gator Radio from the Great Dismal Swamp of Virginia"—was heard in late December by Marty Lukacz in Ohio. In fact, Marty heard the station with several different transmissions on December 31. Among the info gleaned from the broadcasts (which were hosted by a "Dr. Klystron") was a power of 500 watts using a 31-year-old RCA transmitter feeding a half wave dipole. Programming was pop and rock with "ads" for antenna insulators and antenna wax. The location was said to be "four miles from the nearest paved road." WGAT said reception reports were to be sent to this column.

So. It must be said *again*. In a word: **NO!**



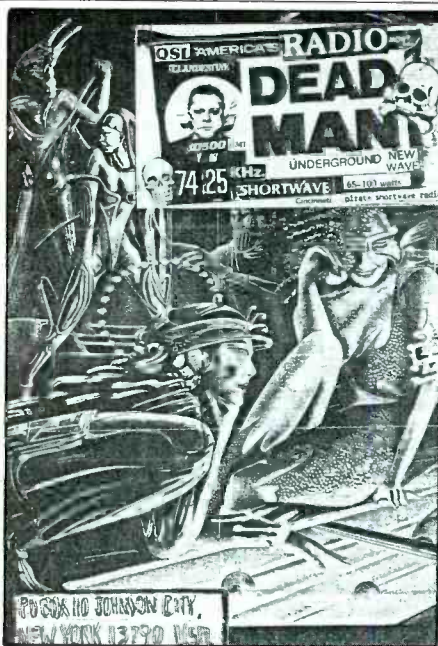
This is one of five QSL card styles issued by the Voice of Laryngitis. Thanks to Vern Weiss of Illinois.

Neither this column nor *Popular Communications* acts, has ever acted, nor will in the future act as a pirate station mail drop. Please don't send reception reports to the magazine or this column. We file 'em!

Twilight Radio "The Boss," Tom Kneitel, got a reply from this station, which uses just 5 watts from an old 1968 low power transmitter originally intended for 640 kHz. The transmitter has been converted and operates on 1620 kHz. The station's excellent rock music can't be heard very far away from its base on eastern Long Island, but it does plan a "major power increase" sometime this year and will be adding an FM band frequency as well! Twilight Radio also has plans for a 1986 Christmas Eve special called "A Message of Peace," which it hopes all pirate and underground stations will air on a simultaneous basis. Address is P.O. Box 641, Sag Harbor, NY 11963.

Radio Dead Man advises of an address change. The station can now be reached via Post Office Box 10, Johnson City, NY 13790.

Brooklyn Pirate Radio The pirate picture in Brooklyn is updated for us by Jeff Plotkin: WJPL is on 91.5 FM on Saturday nights after midnight local time, and runs til around 8 a.m. Sunday mornings. WHOT also uses



Radio Dead Man's literature could give you bad dreams at night!

91.5 and is on every other Friday night til 8 a.m. Saturday. In addition, WHOT also uses 1625 (AM) Friday and Saturday nights taking telephone calls and QSL requests. **KBXL** is on the air Saturday nights from 9 til 11 p.m. (I assume this is Pacific Standard Time) from its headquarters in California.

Programming is big band music and old time radio shows. Transmitter is only 10 watts, feeding an 850 foot antenna supported by a helium balloon. You can listen for this one on 1000 kHz. Thanks to Alex Cannon in Riverside, California for the information.

Unidentified Robert S. Ross in London, Ontario heard a pirate on January 2 at 0332 on 7418 playing Michael Jackson's *Thriller* until abrupt sign off at 0336. Anyone know which station this was?

Hello, Hilo? Tracy Sands in Anaheim, California says that mail sent to the venerable Hilo, Hawaii mail drop is now being returned by the post office. Well, that's the first such instance I'm aware of. Perhaps an isolated case? Anyone else having trouble lately?

KNRH is reportedly on the air on 11975, but the station says it has not received any DX reports so far.

Remember, this column needs your information input! If you operate or are connected with a pirate station, please send us information about your station. We also need photos of pirate installations, copies of pirate QSL cards, news and clippings about pirate broadcasting and activities. And, of course, everybody's pirate loggings! Be a first rate, first mate of Pirates Den, join in and help out your fellow pirate enthusiasts with whatever information you can provide. Letters should go to Pirates Den, c/o Popular Communications, 76 North Broadway, Hicksville, NY 11801.

Thanks. See you next month when we drop anchor here again!

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Outputs: Earphone (minijack); Record output (minijack)

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Power Requirements: Batteries "D" x 3 (4.5V) (optional); "AA" x 2 (3V) (optional) for programmable clock/timer; AC 120 Volts, 60 Hz with AC Adaptor (supplied); DC-12 Volts with DCC-127A Car Battery Cord (optional)

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Color: Black

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Optional Accessories: DCC-127A Car Battery Cord; AN-1 Active Antenna

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Beaming In (from page 4)

activity, but it was far from being anything that might be labeled "successful."

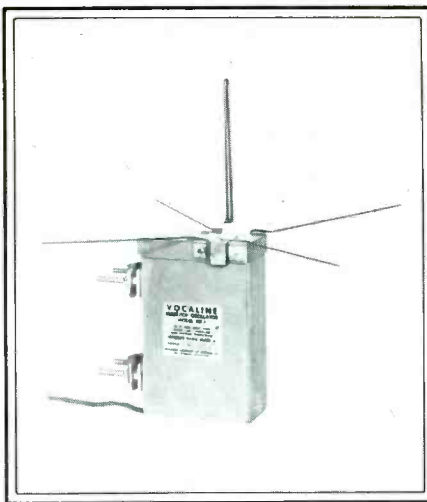
After roughly ten years of nothing happening on the short-range personal communications scene, the FCC decided to try yet another approach. In the late 1950's the agency cancelled the so-called 11 meter Ham band (on 27 MHz) and established the Class D Citizens Band. Although it took another fifteen years to click with the public, it was apparent right from the start (in 1959) that the band was regarded by its users as a great hobby service used to meet new friends on a local and international scope.

Although the general public loved CB radio on 27 MHz, insofar as the FCC's idea of establishing a short-range personal radio service went, it was a monumental disaster. Possibly in dread of the Class A CB service being tainted by their rowdy and fun-loving cousins on 27 MHz, the FCC changed the name of the Class A Citizens Radio Service to the General Mobile Radio Service (GMRS). Oddly enough, under its new name, the 462/467 MHz service seemed to finally show signs of genuine public interest. Many individuals and small businesses who had purchased 27 MHz equipment and thought the antics and crowding on that band in the 1970's too overwhelming found the GMRS (which offered FM and repeaters) to be more to their liking.

Still questing after their (seemingly) impossible dream, the FCC then came up with still another approach—that of allocating frequencies on 49 MHz for low-powered short-range communications at minimal cost to the consumer. In the creation of this band, the FCC forced unlicensed 100 mw hand-held transceivers off the 27 MHz band and demanded that such devices be operated on 49 MHz. That failed to make 49 MHz a roaring success, however, the eventual development of "hands-free" FM transceivers that clip onto a person's belt began bringing the usefulness of the 49 MHz band into reality. It is questionable if the addition of cordless telephone operations to 49 MHz served any beneficial purpose toward promoting the concept of short-range personal communications in that band.

Apparently the FCC has not felt that the new Cellular Mobile service, the GMRS, nor the 49 MHz band is going to pan out as the way to make E.K. Jett's 1945 dream come true. At any rate, they're still searching around for that elusive handle to grab in order to get this idea off the ground to their complete satisfaction.

Having totally walked away in frustration at the inability to exercise any real control over 27 MHz CB; having ruled out proposals for a (Class E CB) 220 MHz-band personal radio service; having ended consideration for opening up a short-range service on 900 MHz; and having killed the G.E. proposed Personal Radio Communications Service (also known as PCRS, a concept that G.E. is said to have spent more than



The Vocoline Company of America marketed 465 MHz short-range personal communications gear in 1948. You could toss an anvil further than you could talk with this equipment. The public wasn't interested.

\$25-million developing)—the agency has come up with still another idea.

This time it's the Consumer Radio Service. The new idea is to give the public a 460 MHz transceiver in the \$50 to \$80 price range that offers a communication range of less than 500 feet for conversations lasting from thirty seconds to one minute. Furthermore, one transceiver would be able to signal specific individual transceivers within range.

There is, as you might expect, a trade-off for the benefits of this new proposed radio service. Well, it's that all of this is part of a plan the FCC says is to "restructure" (translation: "kill off") the GMRS. If the FCC proposal (PR Docket 86-38) is approved, more than half of the existing 20,000 GMRS users will be negatively affected.

Gone will be GMRS repeaters and licensed stations to make room for a radio service that seems, to me, to be far less

useful than the existing services! Marrying selective calling to a two-way circuit is nothing new or especially novel; it could be added to 49 MHz transceivers just as easily.

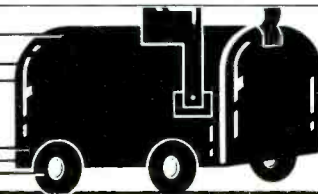
As it turns out, selective calling accessories used to be available for 27 MHz CB gear in the early 1960's. The idea was a flop and the equipment was soon withdrawn from the marketplace. Why anybody thinks that selective calling on a transceiver with a piddling 500 ft. range is going to be especially useful is a total enigma. Anyway, doesn't the Cellular service already offer this?

GMRS users, by the way, are not at all happy about this latest FCC concept. Frankly, I tend to think it's kind of silly myself. The FCC has certainly had sufficient time and opportunity to get Jett's idea on the road, and the public has been sufficiently disrupted as the agency tinkers and continually experiments with a seemingly unending parade of schemes that have thus far caused the public confusion, inconvenience, needless expense, and annoyance.

Yes, I agree that 40 years ago E.K. Jett had a great vision. If it did no more than inspire the concept of Dick Tracy's two-way wrist radio, it was worthwhile. On the other hand, it may well be that after four decades of obsession with Jett's dream, somebody ought to know when to mercifully give it a peaceful and permanent rest. It may well be that, at this point, it's a case of trying to re-invent the wheel because the public's needs for such communications have been adequately accommodated by existing services. Or possibly the public doesn't really want this service; or technology still hasn't caught up with the concept. Either that, or else there's something lacking in the FCC's ability to convince the public that Jett's idea has to be given existence at any cost and inconvenience, no matter how long it takes.

On the face of it, the basic FCC description for this proposed 460 MHz Consumer Radio Service looks like we've now gone full circle and are back where it all began in the 1940's. *No mas! No mas!* **PC**

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