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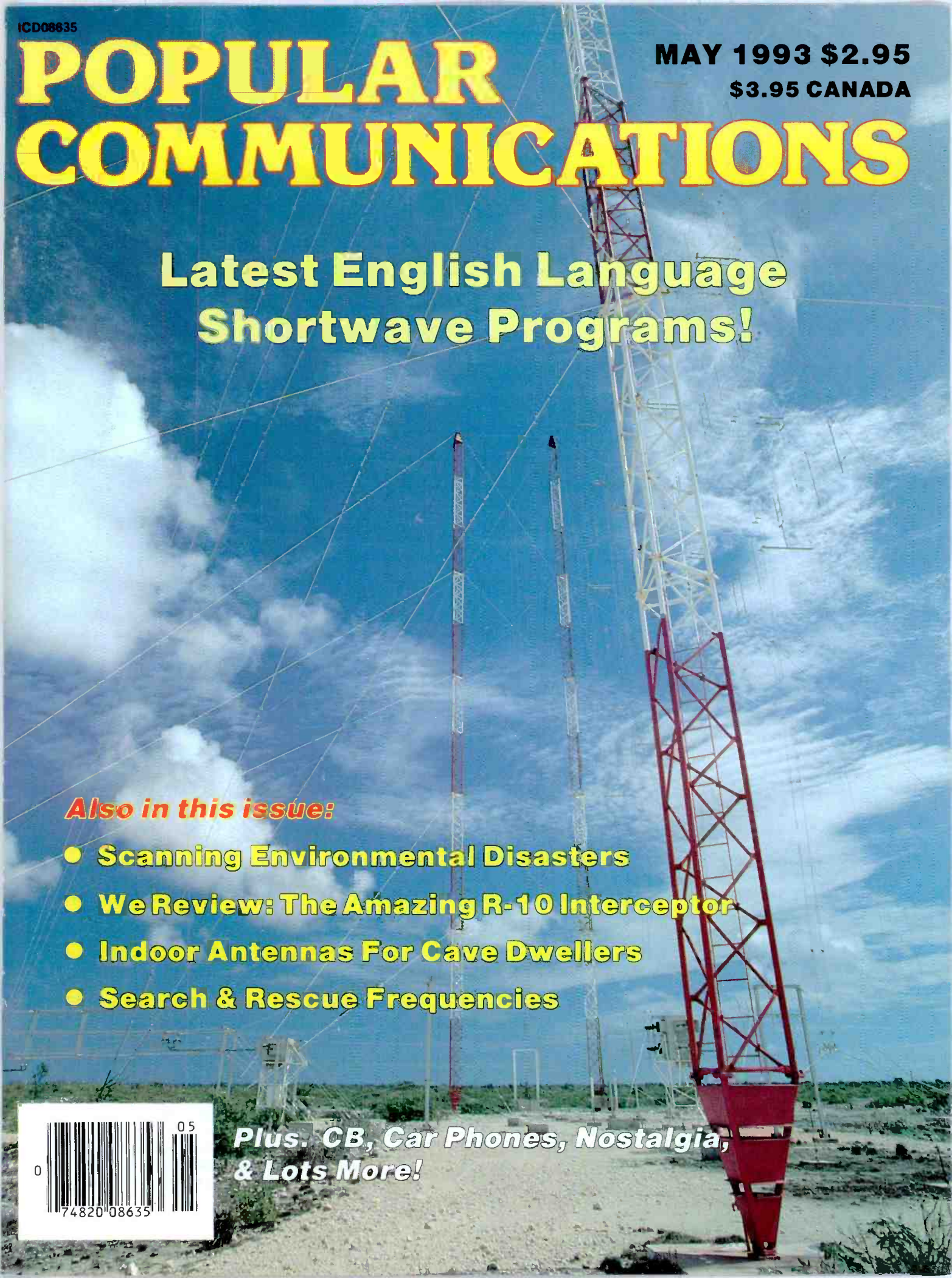

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Designed for DXers by DXers! The NRD-535D (shown above with optional NVA-319 speaker) strikes the perfect balance between form and function with its professional-grade design and critically acclaimed ergonomics. The NRD-535D is the recipient of the prestigious World Radio TV Handbook Industry Award for "Best Communications Receiver."

- Phase-lock ECSS system for selectable-sideband AM reception.
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- Stock fixed-width IF filters include a 5.5 kHz (wide), a 2.0 kHz (intermediate), and a 1.0 kHz (narrow). Optional CW filters include 2.4 kHz, 300 Hz, and 500 Hz crystal type.
- All mode 100 kHz–30 MHz coverage. Tuning accuracy to 1 Hz, using JRC's advanced Direct Digital Synthesis (DDS) PLL system and a high-precision magnetic rotary encoder. The tuning is so smooth you will swear it's analog! An optional high-stability crystal oscillator kit is also available for ±0.5 ppm stability.
- A superior front-end variable double tuning circuit is continuously controlled by the CPU to vary with the receive frequency automatically. The result: Outstanding 106 dB Dynamic Range and +20 dBm Third-Order Intercept Point.
- Memory capacity of 200 channels, each storing frequency, mode, filter, AGC and ATT settings. Scan and sweep functions built in. All memory channels are tunable, making "MEM to VFO" switching unnecessary.
- A state-of-the-art RS-232C computer interface is built into every NRD-535D receiver.
- Fully modular design, featuring plug-in circuit boards and high-quality surface-mount components. No other manufacturer can offer such professional-quality design and construction at so affordable a price.

JRC Japan Radio Co., Ltd.

Japan Radio Company, Ltd., New York Branch Office – 430 Park Avenue (2nd Floor), New York, NY 10022, USA Tel: (212) 355-1180 / Fax (212) 319-5227

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EEB Nation's Largest Shortwave Dealer

New Yaesu FRG100 $539.95

Yaesu's newest and highest performing receiver, CW, SSB AM-FM 50kHz-30MHz. Bright crisp back light LCD readout with adjustable brightness control, micro-processor control permits easy operation for the newcomer or the most seasoned DX'er.

Fifty tuneable memory channels store frequency, mode and filter selection. Two band-edge memories provide scanning between two programmable limits. Tune in 10Hz, 100Hz and 1kHz steps, readout to 10Hz.

Multi-function scanning. Adj. SSB carrier offset, selectable AGC rate, noise blanker, all mode squelch, R.F. activator.

Twin 12/24 hour lets you display local and another time zone. (i.e. UTC)

Yaesu CAT system provides direct link to the FRG100 CPU for computer control of most receiver functions.

Specifications

FREQ 50kHz - 30MHz
Mode USB, LSB, CW, AM FM opt.
Stability Less than 10 PPM 15 to 122 degrees F, opt, less than 2 PPM 15 to 122 degrees F
Tuning Steps CW/SSB 10 or 100Hz
AM/FM 100 or 1000Hz

Sensitivity	CW/SSB 2.4kHz	AM 6kHz
1.8-30MHz	<.25µV	<1µV
.5-1 8MHz	<4µV	<2µV

Selectivity	**-6dB**	**-60dB**	**Shape Factor**
CW (Optional)	.5kHz	1.8kHz	3.6
SSB/CW	2.4kHz	4.5kHz	1.88
AM(N)	4kHz	15kHz(-50dB)	3.75
AM(W)	6kHz	18kHz(-50dB)	3.0
FM (Optional)	15kHz	30kHz	2.0

Circuit Type Dual Conversion 47.21 MHz, 455 kHz
If Rejection 1.8-30MHz , 70dB or better
Dual Antenna Inputs 50 OHM Unbal 450 OHM bal.
Power DC 11 to 14V neg ground 1.2 A max, 120 VAC supply included
Size (WHD) 9.37 X 3.66 X 9.56 inch 6.6 lbs

New and Improved FRG100HP

EEB engineering department could not let this fantastic receiver go by without the high performance treatment.

The major area of improvement has been the filters. Filters are expensive items for a manufacturer to install in their production models. The object being to produce the best all around receiver at the lowest price.

Many shortwave listeners are more than willing to pay extra to have higher performance and that's what we are offering.

FRG1000HP specs similar to above with the following improvements.

Selectivity	**-6dB**	**-60dB**	**Shape Factor**
CW (Optional)	.5	1.5	3.0
SSW/CW	2.4	4.3	1.8
AM (N)	4.0	10.0	2.5
AM (W)	6.0	9.6	1.6
FM	No Charge		

Note - The ultimate out of band signal rejection on the standard filters is -60dB CW & SSB and only -50 dB AM W & N. FRG100HP Collins Filters used in CW, SSB and AM(W) have ultimate rejection of over 1000dB. The 4kHz AM(N) filter is a 15 pole ceramic with 70 dB rejection. This rejection specification is most important when reducing or elimination adjacent channel interference signals.

High Performance Package Includes:

1. Collins mechanical filters .5, 2.4, 6.0 kHz ceramic filter 4 kHz (AM-N)
2. 24 hour bench test
3. Electrical bench test and alignment for optimum performance
4. Exclusive 1 year EEB warranty (optional 2 and 5 year extended warranty available)

FRG100HP.....$899.95

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DRAKE
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R9000 .....$4999.00

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FRG100 .....$539.95
FRG8800.....$599.95*

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416 pages .....(WBR93) $16.95

2. World Radio T.V. Handbook
Complete listing of all worldwide T.V. and SWL broadcast station. By country, time, freq, language, product review on the latest SWL radios
550 pages (WRTVH93) $19.95

3. Scanner Modification Handbook Vol I
Complete instructions for cellular band restoration and many other modifications that will enhance scanner's performance. Covers PRO2004, 2005, 2006, 2021, PRO34, Bearcat, BC900XLT, 200/205 and 760.
160 pages (CRB5) $17.95

4. Scanner Modification Handbook Vol II
Vol II has 18 more great enhancements for the same scanners in Vol I (above). Many modifications are adaptable to other scanners, photos, text, step by step for the average hobbyest.
220 pages (CRB7) $17.95

5. Scanner Listener's Handbook
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POPULAR COMMUNICATIONS

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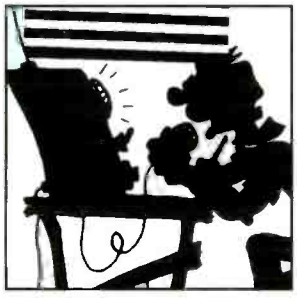

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Note: Radios listed above are all LW-MW-SW-FM digital. Contact us for other models.

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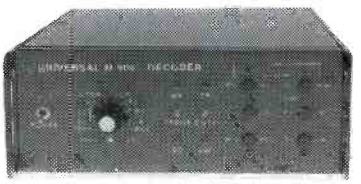
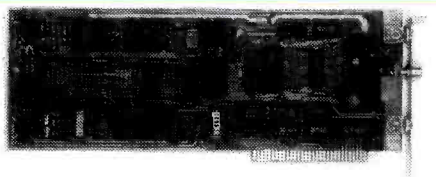
● **Universal M-900**



If you are only *listening* to your shortwave radio you are missing half the fun. With the addition of a Universal decoder and monitor you can *see* the world. The shortwave spectrum is filled with interesting text messages and photos that you can intercept and display. If this sounds interesting to you, request our two free pamphlets: *Listening to Radioteletype* and *Receiving FAX on Your Shortwave Radio*. Shown above is the Universal M-900 ($429.95) which decodes: Morse code, Baudot RTTY, Sitor A/B, FEC-A and FAX. Contact us today for information on the full line of Universal decoders.

● **Universal M-1000**



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BEAMING IN

AN EDITORIAL

BY TOM KNEITEL, K2AES

A Hit & Myth Law

The so-called Telephone Disclosure and Dispute Resolution Act is the official name of the latest anti-scanner legislation. That's the law the cellular industry got pushed through Congress last year in order to make it illegal to manufacture or import scanners that are capable of receiving cellular frequencies, or may readily be user-modified to do so. This new law came about after the largely ineffective Electronic Communications Privacy Act of 1986 (ECPA). Both laws represent the cellular industry's continuing insistence that the only way it can make a lot of money is by selling the public on the myth that radio telephones offer communications privacy.

The ECPA is up to the Dept. of Justice to enforce. That agency has shown little interest in enforcing the law, except in instances of egregious and highly publicized violations. Usually, this involves someone filing a complaint regarding a violation, and then providing evidence in the form of tape recorded cellular conversations. The majority of cases reported in the national media seem to involve unfortunately lurid or similar conversations had by public figures, or by politicians that were overheard and recorded by supporters of opposition candidates. The tapes somehow ended up in the hands of the news media, and that's when the fireworks started.

I was told by a usually reliable source that the ECPA backfired on its original supporters. Those spicy conversations recorded from the cellular channels, then later widely reported as ECPA violations in the press and on TV, went a long way towards sparking the public's interest in eavesdropping on cellular calls. Finding out that there was a law that forbade listening only confirmed suspicions that there were obviously great conversations taking place on cellular. The tabloid press and TV media supported this with juicy transcripts of *alleged* cellular conversations of members of the British Royal Family concerning their romantic escapades. People ran out to buy scanners just to see if they could hear sensational things with their own ears. Those willing to pick through the routine and boring conversations could find enough juicy ones to keep them coming back for more.

So much for the effectiveness of the ECPA.

The law takes into account that the Dept. of Justice wasn't much interested in becoming the enforcement arm, stooge, or handmaiden of the cellular industry. Possibly because of its lack of enthusiasm, the Dept. of Justice has been cut out of the loop of the new law.

That job has now entered the realm of the FCC. Because they seem so harsh, we wonder if the FCC's much publicized activities in persecuting shock jock deejays could well have been the inspiration for the cellular industry to seek out the FCC for enforcing a new law. I can think of no previous instance in this nation's history when our government has had the affront to set forth a menu of off-limits radio frequencies which citizens are neither permitted to tune nor manufacture receiving equipment. A very dangerous precedent for the public to accept. In the long term, I do not see this as a good omen, at all.

In order to enforce the new law, the FCC has now announced that they are proposing to amend their regulations Parts 2 and 15 "to prohibit the manufacture or importation of radio scanners capable of receiving or being altered to receive frequencies allocated to the Domestic Public Cellular Radio Telecommunications Service."

The proposed rules would also "prohibit frequency converters used in conjunction with scanners that receive, or can be easily modified to receive, cellular transmissions and require that scanners are incapable of converting digital transmissions to voice audio." Under rules that might be changed, as the changes are presently proposed, applicants for FCC authorization of scanners and converters would have to provide a statement confirming that the device cannot be readily altered to receive the cellular bands. By "readily altered," the FCC appears to mean by doing something as simple as changing a chip.

Of course, we don't know for certain whether these rules will be changed, nor can I tell what the final form of such changes would be. Almost certainly, changes will be made to Parts 2 and 15, though, and they should generally reflect the present proposals as discussed here.

I don't want to alarm you, but my thought is that right now would be a good time to seriously think about purchasing that scanner that will receive all 800 MHz frequencies, or is capable of being readily converted to receiving them. Or, consider buying that frequency converter that can tune the 806 to 912 MHz band on any scanner that receives the 406 to 512 MHz UHF band. If and when this equipment is banned, it could definitely become scarce. It might even someday actually vanish from the market altogether in the event the FCC decides to be the strong-arm for the cellular industry. Even some used equipment would then become valuable!

Now that they've gotten the ball rolling, who knows what frequencies will show up

(Continued on page 74)

"The R8 is a highly sophisticated receiver. We'd call it professional grade, or about as close to it as receivers get these days."

Staff review
Popular Communications

"The R8 is like a breath of fresh air, with its ground-up engineering and up-to-date digital control from the front panel. I am very pleased to see a quality HF receiver of American manufacture that should successfully compete on the world market."

Bill Clarke
73 Amateur Radio Today

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

Lawrence Magne
Monitoring Times

"The best of the best for high-quality listening to news, music and entertainment from afar. Superb for reception of faint, tough signals, too."

Editor's Choice
Passport to World Band Radio
Tabletop Receivers for 1992

The ears have it!

When we introduced the American-made R8 Worldband Communications Receiver, we knew it would be judged by some very discerning ears, experts accustomed to the finest in short-wave listening equipment from around the world. After listening to the world on the Drake R8 loud and clear, they have delivered a decisive verdict.

They appreciated the R8's sensitivity, clarity, simplicity, and all-around versatility so much that many of them declared the R8 simply the best of its class. High praise, indeed, from very well-traveled ears.

But why take the word of mere experts? Put the Drake R8 to the test yourself with a 15-day money-back trial period on factory direct purchases, and let your ears be the judge. If you're not impressed by Drake's quality, performance and ease of operation, all in a receiver costing less than $1,000.00, return the R8 Receiver within 15 days, and we'll refund your money in full, less our original shipping charge. To order your R8 factory direct, for more information, or for the dealer nearest you, call **1-800-937-2538** today. We're confident that once you've listened to the R8, your ears will hear of nothing else.

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CIRCLE 142 ON READER SERVICE CARD

MAILBAG

LETTERS TO THE EDITOR

Kicked The Stuffing Out of Us

In the January issue of *Mailbag*, you printed my suggestion for bringing out a line of *POP'COMM* sweatshirts, T-shirts, etc. It was a thrill to see my name in print, because I saw that first. Then I noticed that you ran it under a heading that read, "Stuffed Shirt." I felt a little hurt by the "Stuffed Shirt" title given to my suggestion.

Steve Hansch,
Garfield, N.J.

We used the heading because it seemed better than "Stuffed Cabbage." If it will make you feel better about this entire sad affair, please accept our apologies. You have our permission to change the heading in your copy to "Stuffed Cabbage."—Editor.

A Matter of Privacy

I'm perplexed by the letter you ran from a ham operator regarding illicit bugs being secured within his privacy. The federal arrogance doesn't surprise me, but his lack of technical resources does. Most hams can easily find excellent resources on microwave technology, let alone find surplus microwave components. As a member of two ham clubs, I find that you can always find another member who probably knows more about RF devices (on a practical level) than most engineers. He should seek out these people in local ham clubs.

Dr. Leszek A. Balla, KA9GLW,
Chicago, Ill.

Liked WWV Coverage

Thank you, *POP'COMM*, for the detailed and useful information about WWV on page 37 of your January issue. I have many books, but the information that Harry Helms presented was omitted, or not clearly defined.

Albert J. Nye,
New York, N.Y

Collector Wants Your Card

I'm 21 years old and have been licensed since June, 1991. Because of my family's needs, I have never been able to save enough money to buy a radio. Once in a while I can borrow a radio from a friend for a day or two, and someday soon I hope to have my own. I try to enjoy the hobby, anyway, by collecting QSL's, stickers, etc., from addresses I see in your magazine. I write to hams, SWL's, CB'ers, and radio stations. I'd very much like to have my address run in *POP'COMM* and would like to receive any QSL cards, letters, or station stickers from the readers.

John Ormsby, N0PTB,
P.O. Box 2905,
Bryan, TX 77805-9998

Seeking Information

I have a World War II radio that was used in the B-29 bomber. This set is known as the BC-375-E transmitter, and I would like to restore it into working condition. What I need to know is how to rewire the set, and information on the 24 and 28 volt power supplies. Any help would be appreciated.

Michael A. Griffin,
649 Moon Rd.,
Avonlake, OH 44012

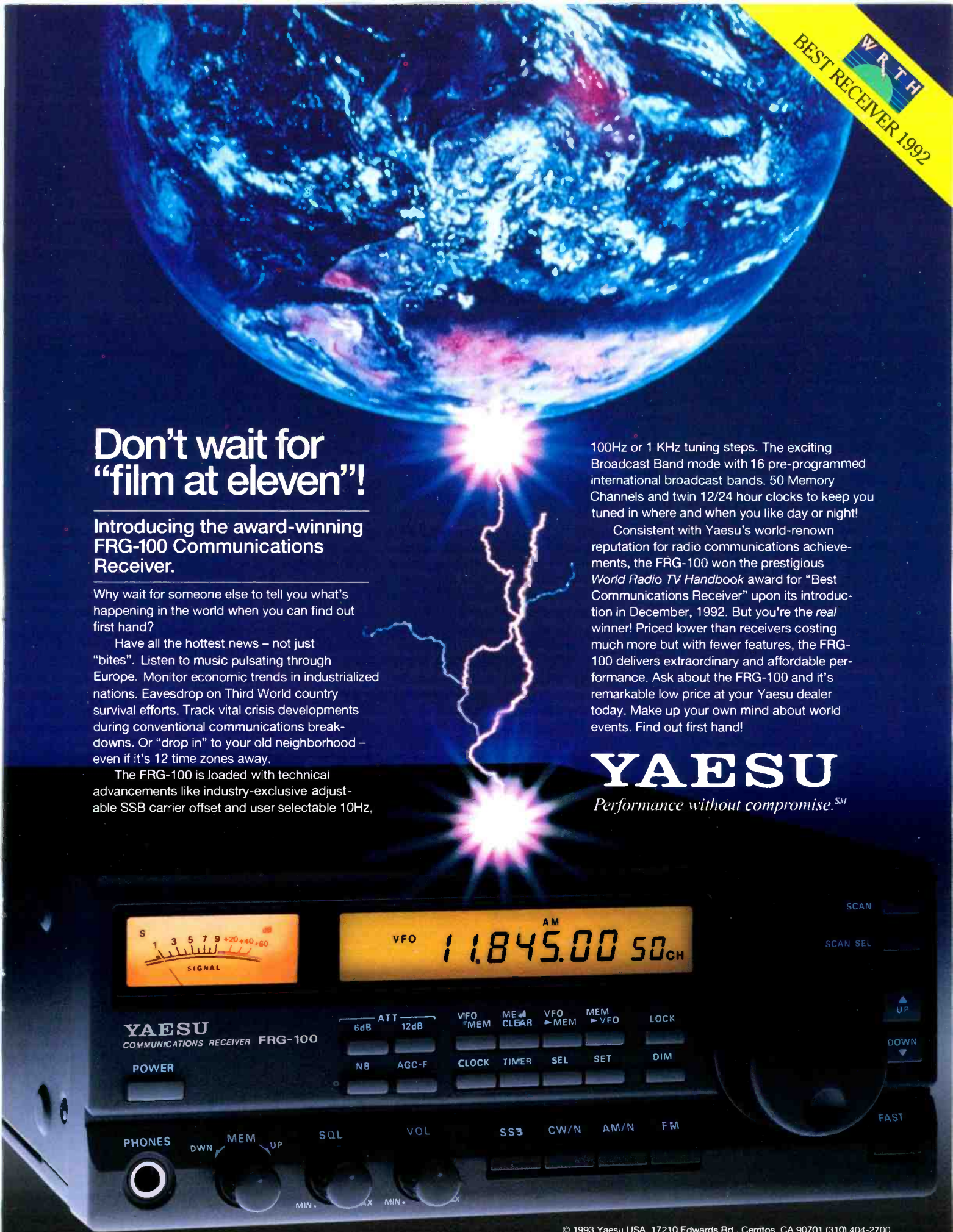
The BC-375-E is an oversized archaic moose that was designed by GE in 1935. It was produced in large quantities for combat destruction in aircraft and other expendable vehicles. It required 28 volts to operate. When the ARC-5 came along and duplicated the performance of the BC-375 with a fraction of the size and weight, it ended the career of the BC-375. I can't verify that the BC-375 was still in use by the time B-29's were put into service.—Editor.

Offering His Services

I often receive letters from North American DX'ers telling me about the problems they are having DX'ing Russian language stations. Many of these stations prefer correspondence in Russian, and will not send a QSL if the report is written in any other language. I have a solution to offer to this problem.

If any of your readers would like to send reception reports for Russian language stations in the former USSR territory, but they do not know the Russian language, let me help. Send the report to me and I will make a qualified translation and forward it to the station. Please include either $2 or 4 IRC's. For an additional $2, I could maintain correspondence with the station on your behalf and send the reply (in English) to you. These fees just cover leasing of computer time to compile the reports and greatly increased postal rates in Russia. Moreover, you need not necessarily know the address of the stations, their names are sufficient for me.

Dimitri A. Souslov,
P.O. Box 96,
Kazan-80,
420080 Russia



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Our best selling mobile scanner. 16 channel AC-DC programmable digital. AC-DC cords, telescopic antenna, mobile mounting bracket, weather search priority. 29-54 MHz, 136-174 MHz, 406-512 MHz, external speaker and antenna jacks.

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Uniden Bearcat BC-142XL 10 Channel Base/Mobile Programmable Scanner

$75.99

($6.00 shipping)

Programmable, digital, AC or DC operation, weather button, priority, lockout button, squelch, memory backup, 2 digit LED display, track tuning, 2 second built-in delay. Frequency coverage 29-54 MHz, 136-174 MHz, 406-512 MHz. Sizes 9"x6⅛"x2¼". Includes AC adapter and telescopic antenna. (Optional Cigarette Lighter Cord #142MPC. $4.99)

Bearcat BC-148XLT

$104.99 *($7.00 shipping)*

16 channel with Automatic Weather Alert (similar to BC-142XL).

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Features include: 10 programmable channels, one touch memory programming, external speaker jack, 29-54 MHz, 136-174 MHz, 400-512 MHz, squelch, lockout, full frequency digital readout, AC or DC operation, retains memory up to 3 days without power, scan button. Includes AC adapter, telescopic antenna, and complete operating instructions. Size: 7¼" W x 2" H x 7¼" D. One year factory warranty. (Optional mobile cigarette lighter cord #901MPC $4.99)

UNIDEN BEARCAT BC 800XLT DIGITAL BASE SCANNER

$214.99 *($8.00 Shipping)*

Receive police, fire, ambulance, cordless phones, marine, trains, weather, ham, stock cars, public service plus much more. Frequency coverage 29-54 MHz, 118-174 MHz, 406-512 MHz, 806-912 MHz (continuous). 40 channels, AC/DC operation, digital programmable, memory backup requires 2 AA batteries (not included), telescopic antenna included, AC power cord included, external speaker jack, external antenna jack. Dimensions: 9¾D x 4⅓"H x 12⅛"W. Channel lockout, direct channel access, scan delay, priority, digital display, auto weather button, automatic search, track tuning.

UNIDEN BEARCAT BC-950 XLT

$249.99 *($7.00 shipping)*

Digital Programmable 100 Channel Scanner

BC-950 XLT covers the following frequencies: 29-54 MHz, 118-174 MHz, 406-512 MHz, 806-954 MHz (excludes cellular). Features compact size of 6-5/16"Wx1-5/8"Hx7-3/8", scan delay, priority, memory backup, channel lockout, bank scanning, key lock, AC/DC power cords, telescopic antenna, mounting bracket supplied, one year factory warranty, search, direct channel access, track tuning, service search including preprogrammed frequencies by pushing a single button for police/fire/emergency, aircraft, weather, and marine services plus exclusive optional features never available on any scanner before. First is an RF receive amplifier for boosting weak signals for only $34.99 plus a CTCSS tone board is available for only $59.99 to make this the number one scanner available in the USA. Optional cigarette lighter plug #950 MPC $4.99.

UNIDEN MR 8100A

SPECIAL SALE PRICE ONLY **$289.99** *($10.00 Shipping Each)*

100 channel digital programmable mobile scanner, turbo scan up to 100 channels per second, lockout, priority, built-in automatic 2 second delay, dimmer control, back lighted keyboard, track tuning, direct programming of frequencies from front keyboard plus you can also program MR 8100 from your IBM compatible PC computer with software and cables included with scanner from Scanner World. Frequency coverage: 29-54 MHz, 118-174 MHz, 406-174 MHz, 405-512 MHz, 806-956 MHz. Dimensions: 7.9"W x 5.8"H x 1.9"D. Earphone jack, BNC antenna jack, DC power cord, mobile mounting bracket, internal memory backup, bank scanning, 10 banks of 10 channels in any combination.

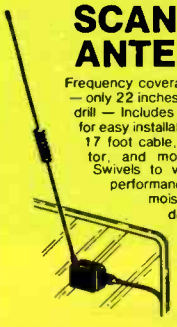
MODEL: FB-911

FIRE BOX PHONE

$45.99 *($5.50 Shipping Each)*

13 memory phone, 3 direct access emergency memories, auto redial, ringer on/off, top light flashes when telephone is ringing, tone/pulse switchable, desk/wall mount, front door closes for authentic fire box appearance, FCC approved. Size: 16"Hx8½"Wx7"D.

GM-1™A GLASS MOUNT SCANNER ANTENNA



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SPECIAL

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Includes mounting kit and cable. Low Band, High band and UHF band include PL259 connectors. 800 cellular band antenna includes TNC connector.

GM-27 27 MHz Low Band for CB	$39.99 ($4.00)
GM-155 144-174 MHz High Band	$39.99 ($4.00)
GM-450 450-470 MHz UHF Band	$39.99 ($4.00)
GM-800 Cellular Telephone Band	$34.99 ($4.00)

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CIRCLE 115 ON READER SERVICE CARD

Scanning Environmental Hot Spots

Monitoring Those Who Want To End Pollution

BY CHUCK ROBERTSON

Global warming. A hole in the ozone layer. Acid rain. Air pollution. Depletion of rain forests. Threatened wildlife species and environments. Toxic spills in oceans and rivers as well as on land. Solid waste and nuclear materials disposal. Nuclear accidents. Just a few of the topics being hotly debated, and acted upon, in every area of the nation. The scene is set for confrontation.

Normally these things get a minute or two on the evening TV news, or brief coverage in the newspaper. If it's something major, the coverage is increased for a while. Of course, a scanner will put a person on the inside of the news, and often even bring out information that doesn't make it into the media.

Toxic Avengers

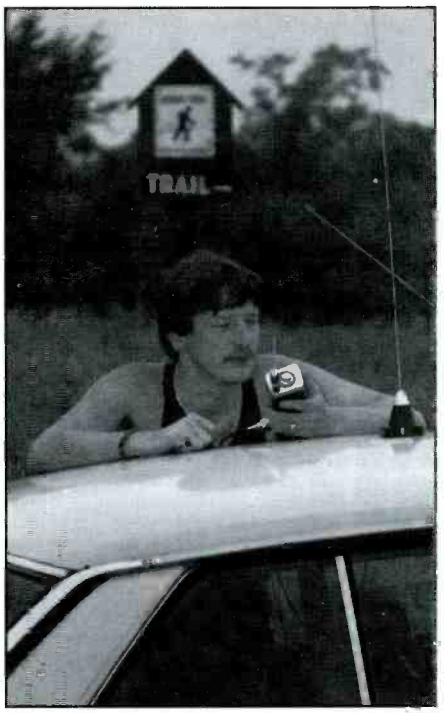
Environmental demonstrations are always taking place. Most protest groups work fully within the law, but some border on the radical fringe and could almost be considered outlaw organizations. Outlaw groups are involved in sabotage, harassment, blocking roads, and other tacky practices. In my area of Illinois, an outlaw group operates to end logging operations in the Shawnee National Forest. They have an effective system for warning their members of approaching police vehicles. These signals go out on CB Channel 13 (27.115 MHz).

Arrests have been made. Illinois State Police detectives, Jackson County deputies, U.S. Dept. of Agriculture agents, and U.S. Marshals participated, using their regular frequencies.

Greenpeace Activities

One of the best known environmental groups is Greenpeace. From a VHF point of view, nationwide, Greenpeace has handhelds on 151.625, 464.50, 464.55, 469.50, and 469.55 MHz. Aircraft are on 122.9 and 123.1 MHz, with maritime operations on 156.35 and 156.425 MHz. In San Francisco, the organization also uses 462.575, 462.60, and 462.625 megahertz.

Oceangoing vessels are authorized for operation on maritime HF channels (and have ham radio aboard). We understand, however, that the vessels rely heavily upon communications through the INMARSAT system, and are not often heard on HF.



An environmental group protester uses a CB radio to keep in contact with others in his organization

A Plea For The Planet

Mainstream environmental groups that you hear a lot about include the Sierra Club, the Nature Conservancy, the National Audubon Society, and the National Wildlife Federation. That doesn't mean that there aren't many more smaller regional or local groups with relatively few members that are doing their share. This may include public education programs, influencing industry, attempting to get new legislation passed, as well as field work doing environmental clean up and wildlife rescues.

Check for their comms on CB and business band channels. Some of their most often noted frequency ranges are provided here.

A Disaster?

Environmental disasters are getting very common. Chemical and oil spills. Radi-

The anti-logging protest at the Shawnee National Forest, in Illinois. Dozens of protesters were arrested. The scanner was going like crazy.

Sampler of Environmental Groups

American Peace Test, Las Vegas, NV: 464.00
Animal Protective League, Warrensville, OH: 461.05
Anti-Pollution Assn., Grassy Key, FL: 151.745
Chemical Waste Mgt., USA: 159.585, 454.50, 464.55, 469.50, 469.55
Chemist's Club, New York, NY: 154.625 (pager)
Clean Alaska, Anchorage, AK: 156.425, 156.50, 461.35
Clean Bay, San Francisco, CA: 156.275, 156.50
Clean Harbors, New York, NY: 156.975
Clean Harbors Inc., Kingston, MA: 463.55
Clean Island Council, Inc., HI: 156.575
Conservancy, Inc., Naples, FL: 461.55, 462.7625
Desert Research Center, Reno, NV: 153.48
DuPont Environmental Watch, USA: 464.50
Eagle Watch, Woodstock, GA: 463.325
E & K Hazardous Waste Svc., Sheboygan, WI: 469.55
Ecology & Environment, USA: 151.625, 454.50, 454.55; Novato, CA: 461.10; Golden, CO: 462.625; Kans. City, KS: 463.25; Seattle, WA: 462.15
Ecology Center, Berkeley, CA: 461.80
Environmental Action, Somerset, VT: 464.00 (Earth Day org.)
Environmental Concerns, Loveland, CO: 461.9875, 466.9875
Environmental Contamination Svc., Fishkill, NY: 452.025
Environmental Element, USA: 151.625
Environmental Hazard Control, Elgin, IL: 461.0375
Environmental Lab, Glen Cove, NY: 460.2875, 461.5375
Environmental Monitor, Abington/Norton, VA: 460.875, 461.325 463.225
Environmental Quality Consultants, USA: 469.50; 469.55; OH 464.25
Environmental Research Institute, CA: 151.625
Environmental Research Institute/Mich., USA: 122.85; MI 461.375 461.3875 462.80
Environmental Safety, Onondaga, NY: 463.45, 469.5125
Fresh Air Society, Ortonville, MI: 422.625
Hazardous Materials Svc., USA: 469.55
HazMat Trans., Inc., Corona, CA: 936.6875
Keep Akron Beautiful, OH: 463.80
LWD, Inc., Calvert City, KY: 463.20, 463.80
Marine Pollution Control, USA: 464.00, 469.00; Detroit, MI: 156.50, 463.775; Calverton, NY: 461.80; New York, NY 452.675.
Marine Science Center, Poulsbo, WA: 156.425
National Audubon Society: Naples, FL; 462.55; Orange, CA: 461.75; Abbeville, LA: 151.205; Ridgeville, SC: 464.05, 454.10
Nature Conservancy, USA: 151.625, 154.57
Nuclear Energy Service, USA: 151.625, 154.57, 154.60, 464.50
Nuclear Fuel Svc., Erwin, TN: 153.11, 153.125, 153.23, 153.26, 153.335, 463.30
Pollution Control, Ft. Wayne, IN: 464.40
Pollution Solutions, Stowe, VT: 464.70
SCA Corp., Memphis, TN: 469.00
Sea Lion Project, Mayville, NY: 156.475
Sierra Club, AK: 122.9
US Ecology, Sheffield, IL: 151.665; NV 151.775; WA 153.36
US Pollution Control, USA: 151.625, 464.50, 469.50; OK 151.655, 464.675; UT 461.5375
Wilderness Conquest, USA: 464.55, 469.55
Wildlife Prairie Park, Hanna City, IL: 154.515
Wildlife Rescue Center, Kirkwood, MO: 154.515
Wildlife Research Ltd., Murdo, SD: 151.955

This Dept. of Agriculture vehicle is shown with a VHF high band antenna on the roof. There's also a low band antenna for comms with state and local police.

Environmental Comms Activity

26.965 to 27.995
29.71 to 31.96
33.12 to 33.40
35.02 to 35.18
35.28 to 35.98
37.88
42.96 to 44.44
48.56 to 49.58
72 to 76
151.49 to 151.955
154.49 to 154.625
158.28 to 158.445
158.48 to 160.20
451.175 to 452.50
452.625 to 452.8875
457.525 to 457.60
460.65 to 464.975
851 to 866
835 to 941

ation venting from nuclear facilities. Illegal waste dumping. You learn about these things almost daily.

Oil spills require a lot of coordination to contain and clean up. Listen for these operations on 25.04, 25.08, 36.25, 41.71, 122.925, 150.98, 154.585, 156.75, 157.125, 158.445, 159.45, 454.00 and 459.00 MHz.

When it comes to disasters involving the environment, you get a chance to hear activity of the frequencies of various federal agencies such as the Environmental Protection Agency, the U.S. Coast Guard, the Fish and Wildlife Service, the Nuclear Regulatory Commission, and the Dept. of Energy, among others. Kneitel's *Top Secret Registry of U.S. Government Radio Stations, 8th Edition* lists the numerous frequencies involved in the operations of federal agencies.

We have heard truckers involved in illegal transporting and dumping of toxic waste discussing these matters over their radios. This has been noted on so-called "outband" frequencies in the no-man's band that lies between the CB and 10 Meter bands.

Hear Here

We aren't going to embark upon a tirade about the pollution of the environment, nor the lack of sufficient motivation to do anything effective to bring about a long-term solution to the problem. Stalling tactics will tie up the courts and lawmakers for decades. We have here a mess of staggering proportions.

But your scanner can tune you in on it. You will be made more aware of what is actually going on. Knowledge is power. ■

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And now we have added a microprocessor to unleash the power of the OE10.

Optoelectronics introduces the 3000A Multifunction Micro HandiCounter® with these new and exciting features:

- **Digital Filter Technique** *(patent pending)*
  Filters stable signals from background clutter
- **Digital Auto Capture** *(patent pending)*
  Holds present reading and stores previous reading for hands free unattended operation
- **Works Even in Presence of Strong RF Signals**
- **Stores Frequencies**
- **Increased Sensitivity**
- **Synchronous RF Detection**
  Super sensitive 16 segment bargraph operates independently from counter
- **High Speed ASIC**
  220 million counts per second.
- **10Hz-3GHz**
- **Multifunction HandiCounter®**
- **Dual High Impedance Amplifiers**
  For ratio and time interval functions
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BE SURE YOU HAVE AN OE10 INSIDE

Selected English Language Broadcasts

Spring—1993

BY GERRY L. DEXTER

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

Time	Country/Station	Frequencies
0000	China Radio Int'l	9770, 11715
	R. Vilnius, Latvia	7150, 7400, 9530, 9710, 17605, 17690
	R. Pyongyang, N. Korea	11335, 15130
	R. Havana Cuba	6000USB, 6060
	VOIRI, Iran (30)	9022, 11790, 15260
	R. Moscow	6000, 6045, 7115, 9720, 9750, 9870, 11735, 11850, 11950,12050, 15425, 21480
	Swiss Radio Int'l	6135, 9650, 9885, 12035, 17730
	AWR, Costa Rica	5030, 9722.5
	R. Canada Int'l	5960, 9755
	R. Vlaanderen Int'l (BRT) Belgium (30)	9930, 13655
	R. Korea	15575
	REE, Spain	9530
	R. Nacional Venezuela (40)	9540
0100	Radio Sofia, Bulgaria	7225, 9700, 11720
	R. Ukraine Int'l	4825, 6010, 6020, 7180, 7195, 7240
	V of Greece (30)	9395, 9420, 11645
	RAE, Argentina	11710
	R. Sweden	9695, 11820
	R. Tashkent, Uzbekistan	5955, 7325, 7335, 9740
	Deutsche Welle, Germany	6040, 6055, 6085, 6145, 9515, 9565, 9610, 9700, 9770, 11865
	BBC	5965, 5975, 6005, 6175, 7325, 9580, 9590, 9915, 11750, 15280, 15310, 15360, 17790, 21715
	RAI, Italy	9575, 11800
0200	Channel Africa, S. Africa	7270, 11745, 15430
	R. Sweden	9695, 11705
	Swiss Radio Int'l	6135, 9650, 9885, 12035
	R. Romania Int'l	5990, 6155, 9510, 9570, 11830, 11940
	V of Free China, Taiwan	5950, 9680, 9765, 11740, 11860, 15345
	R. Canada Int'l	9535, 9755, 11845, 11940, 13720
	R. Cairo, Egypt	9475, 11865
	R. Portugal (30)	9555, 9600, 9705, 11840
	R. Tirana, Albania	9580, 11840
	R. Finland Int'l (45)	9560, 11755
	Vatican Radio (50)	6095, 7305
0300	China Radio Int'l	9690, 9770, 11715
	R. Japan	15325, 17825, 21610
	R. Budapest, Hungary	5975, 9585, 11910
	V of Greece (40)	9395, 9420, 11625
	R. New Zealand Int'l	17770
	Czech/Slovak Radio	5930, 7345, 9580
	Deutsche Welle, Germany	6055, 6085, 6120, 9535, 9545, 9640, 9705, 9770
	V of Free China, Taiwan	5950, 9680, 9765, 11745, 15345
	HCJB, Ecuador	9745, 15155, 17490SSB, 21490SSB
	R. For Peace Int'l, Costa Rica	7375, 7385USB, 13630USB, 15030
	UAE Radio	11945, 13675, 15400, 17890
	R. Tirana, Albania (30)	9580, 11840
	R. Cultural, Guatemala	3300
0400	R. Sofia, Bulgaria	7290, 9700, 11720
	R. Havana Cuba	6180, 9655
	R. New Zealand Int'l	15120
	V of Turkey	9445
	R. Romania Int'l	5990, 6155, 9510, 9570, 11830, 11940
	TWR, Swaziland	5055, 5965, 11740
	SLBC, Sri Lanka	9720, 15425
0500	Kol Israel	9435
	V of Nigeria	7255
	Deutsche Welle, Germany	5960, 6045, 6120, 6130, 9535, 9670, 9690
	HCJB, Ecuador	11925, 21455
	China Radio Int'l	11840
	V of America	5995, 6035, 6040, 6060, 7170, 7200, 7405, 9575, 9885, 11850, 11915,

Time	Country/Station	Frequencies
		11965, 15115, 15205
	R. Austria Int'l (30)	6015, 6155, 13730, 15410, 21490
	R. Havana Cuba	6060
	REE, Spain	9530
0600	Radio Korea	7275, 11810, 15170
	GBC, Ghana	4915
	V of the Mediterranean, Malta	9765
	Monitor Radio, USA	5850, 7395, 9455, 9870, 17555, 17780
	V of Hope, Lebanon	6280
	Vatican Radio	6245, 7250
0700	Radio New Zealand Int'l	9700
	V of Free China, Taiwan	5950
	HCJB, Ecuador	6205, 11735, 17490SSB, 21455 SSB
	R. Vlaanderen Int'l (BRT) Belgium (30)	5900, 9905, 11695
	TWR, Monaco (35)	9480
	R. Finland Int'l (45)	6120, 9560, 1175
	Croatian Radio	6210, 9830, 13830
	R. Netherlands	9630, 11895
	KTWR, Guam (45)	15200
0800	R. Australia	15160, 15240, 17630, 17750, 21775
	SIBC, Solomon Is.	5020, 9545
	R. Austria Int'l (30)	6155, 13730, 15450
	KNLS, Alaska	7365
	Voice of Greece (40)	15650, 17525
0900	CFRX, Canada	6070
	China Radio Int'l	11755, 15440, 17710
	R. Australia	5995, 9510, 9580, 13605, 15170, 21735
	KHBN, Palau	9830
	FEBC, Philippines	11690
	KTWR, Guam	11805
	R. Ulan Bator, Mongolia (10)	11850, 12015
1000	V of Vietnam	12020, 15010
	All India Radio	15050, 17387, 17895
	UAE Radio	13675, 15320, 15435, 21605
	R. Australia	5995, 9580, 21725
	NBC, Papua New Guinea	4890
	R. Korea (30)	11715
	China Radio Int'l	11755, 15440, 17710
1100	Kol Israel	17543
	R. Japan	6120, 11815, 11840
	R. Sofia, Bulgaria (30)	11630, 11720, 13670, 17780, 17825
	China Radio Int'l	11900
	VOIRI, Iran	9525, 9685, 11745, 11910, 11970
	V of Vietnam	7416, 9732
	Swiss Radio Int'l	6165, 12030
	R. Pyongyang	6576, 9977, 11335
	Vatican Radio (20)	7250, 11740, 15210, 21670
	R. Korea	11715
	R. Jordan	13655
1200	China Radio Int'l	9715, 11660, 11795, 15210, 15440
	R. Bangladesh (30)	15200v
	R. Yugoslavia	17740, 21605
	R. France Int'l	9805, 11670, 15195, 15365, 15425, 21645
	V of Greece (30)	15635, 15650, 17515
	R. Tashkent, Uzbekistan	7235, 9715, 15460, 17810
	Radiobras, Brazil	125445
	R. Sofia, Bulgaria	11630
	HCJB, Ecuador	11925, 15115, 17490SSB, 17890, 21455SSB
	R. Korea (15)	9750
	All India Radio (30)	9615, 11770, 15145
	V of Vietnam (30)	17740, 21605
	R. Ulan Bator, Mongolia	11850, 12015
1300	China Radio Int'l	7405, 9715, 11660, 15440
	R. Tashkent, Uzbekistan (30)	7235, 9715, 15460, 17810
	R. Pyongyang, N. Korea	9325, 9345, 9640, 13650, 15250
	Polish Radio	6135, 7145, 9525, 11815
	R. Romania Int'l	11940, 16365, 17720, 17850
	KNLS, Alaska	7355
	FEBC, Philippines	11995
	R. Finland Int'l	15400, 21550
	R. Austria Int'l	15450, 17730
1400	Kol Israel	11587, 11603
	China Radio Int'l	7405, 11815, 15165
	R. Japan	9535, 11815
	R. Iraq Int'l	15250
	R. France Int'l	11910, 15405, 17650
	V of the Mediterranean, Malta	11925
	RTV Morocco	17595
1500	R. Pyongyang, N. Korea	9325, 9640, 9977, 13785
	HCJB, Ecuador	11925, 17490SSB, 17890, 21455SSB
	BBC	6195, 7180, 7215, 9410, 9515, 9660, 9740, 9750, 9760 11750, 11940, 12095, 15070, 15260, 15310, 15400, 15420, 17640, 17705, 17790, 17840
	R. Japan	9535, 15355
	KTWR, Guam	9465
	R. Finland Int'l	6120, 9730, 11755, 15440, 21550
	V of Greece (30)	15630, 15650, 17525
	R. Portugal (30)	21515
1600	Channel Africa, S. Africa	5960, 15430
	AWR, Guam	11980
	R. France Int'l	6175, 11705, 12015, 15530, 17620, 17850
	R. Sweden	15270, 17820, 21500
	V of Vietnam	12020, 15010
	R. Jordan	9560
	Polish Radio	7285, 9525, 11840
	R. Moscow	9880, 21465, 21615
	BSKSA, Saudi Arabia	9705, 9720
	R. Cairo, Egypt	15255
1700	R. Japan	7140, 9535, 11815, 17775
	R. Pakistan	11570, 15550

Time	Country/Station	Frequencies
	R. Canada Int'l	5995, 7235, 13650, 15325, 17820, 21545
	R. Algiers, Algeria	9535, 17745
	All India Radio (45)	9950, 11620, 15080
	KSDA, Guam	13720
	R. Netherlands (30)	9605, 21515, 21590
1800	Kol Israel	7465, 11587
	RAE, Argentina	15345
	Radiobras, Brazil	15265
	R. Iraq Int'l	13680, 15210
	Monitor Radio, USA	9495, 13770, 13840, 15665, 17555, 21640
	R. Kuwait	13620
1900	R Japan	9535, 9640, 11850
	VOIRI, Iran (30)	9022, 9720, 15260
	R. Norway Int'l (Sun)	15220, 17730
	R. Portugal	11740
	HCJB, Ecuador	15270, 17490SSB, 17790, 21455SSB
	R. Austria Int'l (30)	5995, 6155, 9880, 13730
	R. Netherlands (30)	17605, 21590
2000	Kol Israel	7465, 9435, 11587, 11605, 17575
	R. Kuwait	13620
	Vatican Radio	9645, 11625, 15090
	Swiss Radio Int'l	9885, 12035, 13635, 15505
	R. Canada Int'l	5995, 7235, 11945, 13650, 15140, 15325, 17875
	R. Portugal	15250
	V of Indonesdia	9675, 11750, 11785
	R. Damascus, Syria (05)	12085
2100	R. Damascus, Syria (10)	15095
	V of Turkey	9445
	REE, Spain	6125
	R. Cairo, Egypt (15)	9900
	R. Nacional, Venezuela (40)	9540
	R. Portugal	15250
2200	Kol Israel (30)	7485, 9435, 9845, 11585, 11603, 11675
	R. Sofia, Bulgaria (45)	7225, 9700, 11720
	Croatian Radio (03)	5085, 6210, 13830
	R. Havana Cuba	6180
	R. Ukraine Int'l	6020, 7195, 7240, 9710
	V of the UAE	9605, 11710, 11815
	R. Yugoslavia	6100, 7200, 9505
	Swiss Radio Int'l	6030, 9810, 9885, 12035
	R. Budapest, Hungary	6195, 9835, 11910
	R. Vilnius, Latvia	9675, 9710
	All India Radio (45)	9910, 11745, 11785, 15110, 17830
2300	AWR, Guam	15610
	V of Turkey	7180, 11780
	R. Yerevan, Armenia (45)	11920, 12065, 17660
	R. Netherlands	6020, 6165, 11835
	AWR, Costa Rica	5030, 9725, 11870
	R. Austria Int'l (30)	9870, 13730
	SLBC, Sri Lanka	15425 ■

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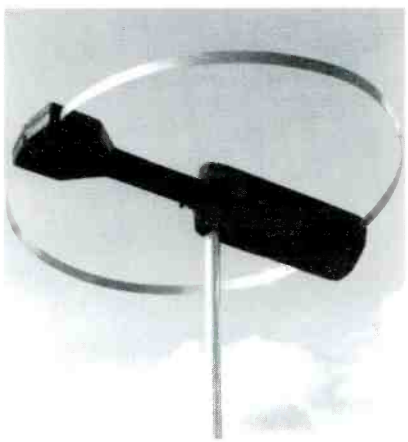

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Radio As It Was

Tales of The Vienna Woods

BY ALICE BRANNIGAN

It was on October 1, 1924, that *Osterreichische Radioverkehrs Ag. (Ravag)* presented the first official radio broadcast from Austria. A temporary studio and 1.5 kW transmitter was established in the Ministry of War Building, Vienna, much to the annoyance of the military personnel working there. The first antenna was a tower that rose 156 ft. above the roof of the 75 ft. high building. Later, the tower was increased by about 30 feet to make it load up better on the station's frequency of 566 kHz.

Development was rapid, however, and within a few months the first permanent transmitter was constructed and installed at Rosenhugel. December of 1925 saw stations open in Klagenfurt and Innsbruck. In June, 1928, the station in Linz was opened, followed soon after by transmitters in Salzburg and Vorarlberg.

The climax of the company's early technical development was the construction of the huge Bisamberg station on a hill next to the Danube River in a Vienna suburb. This magnificent showcase station operated with 120 kW on 592 kHz. It could be heard throughout Europe. The station's location was an important historic site, being the hill where the Turkish siege of Vienna took place in 1683.

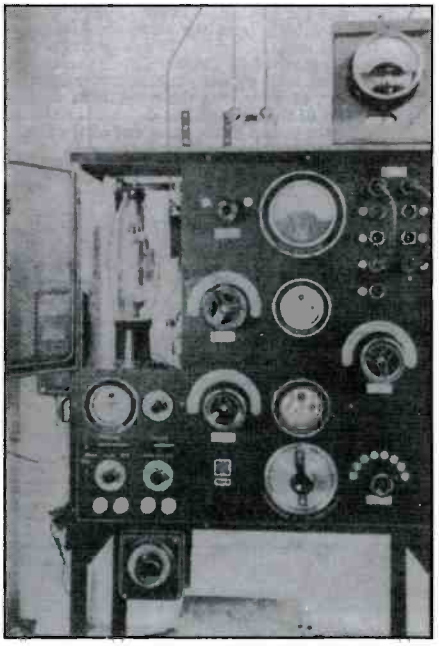
Broadcasting House was constructed in Vienna, being completed in 1937 after two years of work. It utilized the latest equipment and, along with the Bisamberg station, made *Radio Wien* a symbol of European broadcasting technology for its era.

In 1938, the Austrian Broadcasting System consisted of Station Bisamberg, a 5 kW shortwave transmitter in Vienna, 5 kW stations in St. Peter, Klagenfurt, and Dornbirn; 2 kW stations in Salzburg and Aldrans, Monchsberg, and Innsbruck; 20 kW stations in Graz, Freinberg and Linz.

By 1929, Austria had 360,000 domestic radio receivers, but five years later the number had grown to 510,000. By the time Germany annexed Austria (1938), there were 610,000.

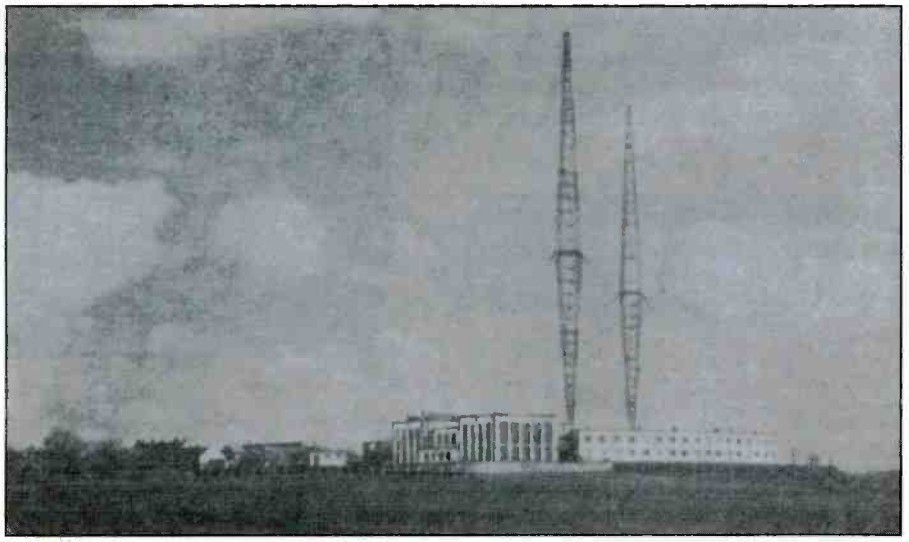
The German occupation caused no major changes in the Austrian network, although a 100 kW station was built at Graz-Dobel to beam programs towards the southeast towards the Balkans. The major change the Germans made during their occupation of the nation was to destroy a large number of receivers owned by Austrians.

Late in WWII, as the Soviet armies approached Vienna, the SS (Kampfsender Prinz Eugen, or military personnel of broadcasting forming Prinz Eugen) blew up the large transmitting station that had stood atop the hill in Bisamberg. Five explosive charges blew up in the area of Broadcasting House, destroying the studios. Fifteen other charges were set off in the grounds

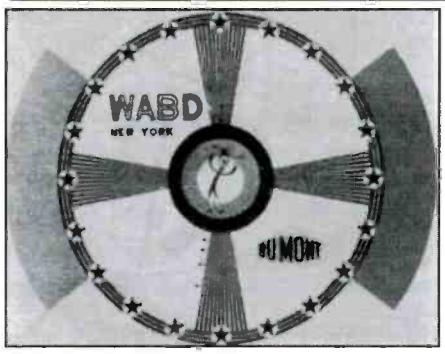


The original 1924 Radio Wien transmitter was a 1.5 kW cabinet job installed in the Ministry of War Building, Vienna.

Station Bisamberg, shown in a view postmarked 4 April 1933. We ran this postcard back in November of 1985 and March of 1986 while trying to gather information on the station. See this month's text on its fascinating story.



A photo of Bisamberg from late 1936 reveals the second tower that was added in order to direct the signal pattern towards the west.



The test pattern of DuMont's WABD, TV Channel 5, New York City, as it looked in 1945. You don't hear about the DuMont Network any longer. It's almost forgotten.

and gardens surrounding Broadcasting House. Damage was heavy.

While the battle for Vienna was fought, all movable equipment (such as portable and mobile units), along with everything else that could be carried away and salvaged was evacuated to the west. Most of what once had been was either damaged beyond repair or else lost in other ways.

On April 8, 1945, the Russians entered Vienna. By April 29, *Radio Wien* was able to get back on the air in time to broadcast the inaugural address of the new government. This had been accomplished with considerable difficulty. The staff had used temporary, borrowed, and patched-together equipment of the poorest quality, but *Radio Wien* had survived.

An allegorical female figure in nautical garb taps out an urgent distress signal on a telegraph key and points at the viewer in this 1909 painting. Why does she summon aid? Where's the original painting now?

The old Broadcasting House was fixed up for temporary use with antennas for one mediumwave and four shortwave transmitters mounted on its roof. Two years after the war ended, Austrians owned 900,000 receivers.

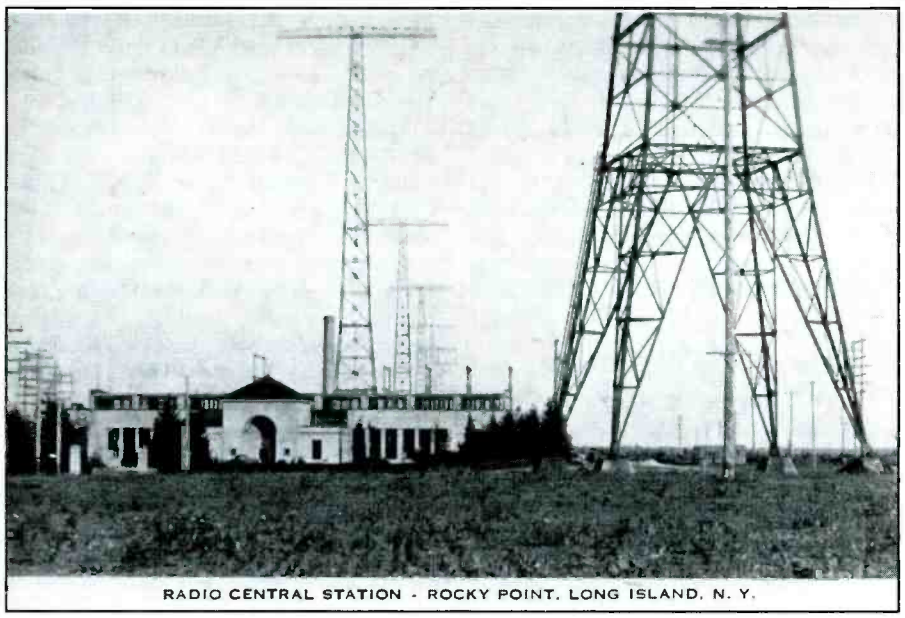
In 1947, a new Broadcasting House was under construction in Rotneusiedl, near Vienna. The Bisamberg site is presently the location of Osterreichscher Rundfunk, which runs 600 kW on 585 kHz during daylight hours, and 1476 kHz at nights.

A Fourth TV Network

Fox TV has become known unofficially as the "fourth TV network," but there was another one in the early days of television broadcasting. Over the months, several readers have asked if we might write a few words about that network, which was known as the DuMont Television Network. Most recently, Bob Varholy, of Baltimore, Md., wrote in asking about the DuMont Network. He remembers that his family owned a DuMont TV set in 1948.

The DuMont Network was founded by Dr. Allen B. DuMont, who had once been the chief engineer for The DeForest Company. He later became interested in television, then began manufacturing cathode ray tubes and other television equipment. In the 1940's, DuMont began manufacturing high quality, expensive, large-screen, console model TV receivers. These were the first deluxe sets available to the public.

DuMont opened W2XWV, his own experimental TV broadcasting station in 1942. In May of 1944, this became commercial station WABD, Channel 5, in New York City. It bore DuMont's own initials, but simultaneously held its Experimental



Radio Central, Rocky Point, N.Y., as a follow up to our March story. This is an excellent 1950 view showing how one of the towers dwarfed the main building there.

Service call letters. At the time WABD opened, WWII was in full swing, but DuMont stated that when the war ended he hoped to establish a network of stations.

In January of 1947, DuMont opened his second station, WTTG, Channel 5, in Washington, D.C. This was in keeping with his plan to own stations along the Atlantic seaboard, and then expand with owned stations, and affiliated stations towards the west as coaxial service extended television service across the continent.

This idea made more sense around a conference table than it did in actual practice. DuMont's network picked up a few affiliates, but got off to a slow start with only an hour or so of nightly programming in 1947. Programs in subsequent years were mostly low cost and undistinguished. They included Captain Video, very old movies, Arthur Murray's Dance Party, amateur talent contests, sports. According to trade publications, the most talked about program DuMont offered was wrestling, hosted by Dennis James. If you liked Hatpin Mary, Gorgeous George, and Antonino Rocca, DuMont was the network for you.

The problem was that new stations getting started were affiliating with CBS or NBC first, usually reserving the fledgling ABC TV network as their ace in the hole in case they couldn't get either of the other two networks. In that era, there were just about enough stations around to carry NBC, CBS, and ABC programming, but not enough left over to sustain the independent DuMont network with its shoestring budget programs. Only a few local markets even had four TV stations then.

Without the finances to compete with the major networks, the DuMont operation could never offer sufficient hours of daily programming, nor any of equal quality. Therefore, it could not sign up enough primary affiliates. A couple of major network affiliates did carry some DuMont programs on a secondary basis. The 1954 season was the final year the DuMont Network even tried to exist. Allen B. DuMont Laboratories, Inc., which was quite successful, continued on after the network foundered.

The failure of DuMont's network, by no means, detracts from Dr. Allen B. DuMont. He was a visionary. His TV sets are still highly regarded. DuMont's early network was a noble effort that had a lot of pluck. Dr. DuMont passed away in 1965 at age 64.

WABD, the former Dumont TV station in New York City, later became MetroMedia's WNEW-TV. Presently it is WNYW, the Fox TV Network station. WTTG, the old DuMont outlet in Washington, D.C., was also later owned by MetroMedia. It is now also part of the Fox TV Network.

Solved Mystery

In the February issue, we ran a photo showing one of the two vandalized US Coast Guard T-133 transmitters still installed at an abandoned USCG site near the old Fire Island Lighthouse, N.Y. Rumor had it that this had once been a Voice of America relay site, but we were seeking information on what this was all about.

A letter from RMC Frederick J. Riley, USCG (Ret.), of Tuckerton, N.J. clears this up to our satisfaction. The 15 kW transmitters were once used by USCG station NMY, and were remotely keyed via microwave link and landline from the USCG station at East Moriches, N.Y.

When Fred was stationed at NMY in the 1960's, T-133 transmitters were used on the 12 and 16 MHz bands to answer OBS and AMVER calls. Fred reports that the opposite wall of the room in the Fire Island building was occupied by a T-134, which was twice the size of the T-133. This was a 20 kW water cooled transmitter for 500 kHz. It was held in reserve for distress or an urgent broadcast, but was tested weekly. He recalls that the antenna was at least 300 ft. tall, maybe 400 ft. The signal could be copied in California. There were other transmitters at this site, too, but they were smaller than the T-133 and T-134.

NMY went QRT in the 1970's, and its duties were taken over by other stations in Boston, Mass., and Portsmouth, Va.

Fred wrote that he can't believe that so much time has flown by.Seems to him as if it was only yesterday that he was standing watch using those transmitters.

Miscellany

In the March issue, we had a story about RCA's Radio Central, at Rocky Point, N.Y. This was, in its time, the world's largest and most formidable radio transmitting facility. Reader N. Hamre, of Santa Monica, Calif., responded to that story with a postcard showing a great 1950 view of the main building and a few of the facility's one dozen 412-ft. towers.

Sandy Berman, of Houston, sent in a colorful 1909 card showing a painting signed by S. Allen Gilbert. It depicts a female radio operator using a telegraph key with sparks flying all over the place. The message reads, "I have a message for you: CQD." Under the letters CQD are the words "Come Quick Danger." CQD was a maritime distress signal used in the era before SOS was adopted for international use. The figure in the illustration wears a nautical outfit, and her left hand points at the viewer. This is probably intended as an allegorical figure, and the painting may have some deeper political significance or symbolism that has been obscured after the passage of 84 years.

Drop by next issue and stay a while. We appreciate your letters, questions, old station QSL's, old station rosters, old wireless photos, and whatever. Special thanks to George Saunders, W6AQQ, of Modesto, Calif., for the enormous collection of 1930's QSL material he presented to the archives here. The great cards and letters represent DX trophies Mr. Saunders earned while in his teen years. You will be seeing these items in upcoming issues.

We dedicate this month's column to the memory of radio pioneer Dr. Harold H. Beverage, who passed away at age 99 on January 27th. He was one of the original engineers at RCA's Riverhead (N.Y.) receiving station in the early 1920's. It was there that he developed the Beverage Wave Antenna used in HF communications, and was the basis for several other antenna designs that came later. From 1941 to 1958, Dr. Beverage was RCA's V.P. of R&D. He held forty patents. ■

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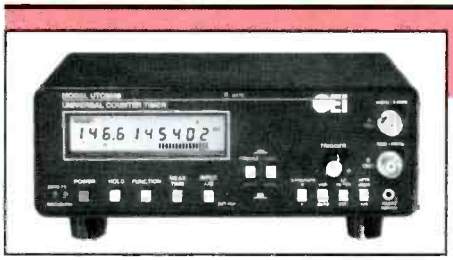

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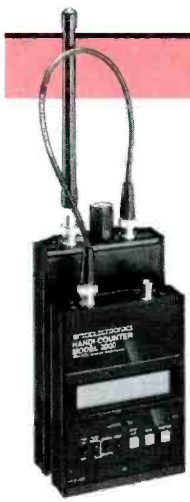

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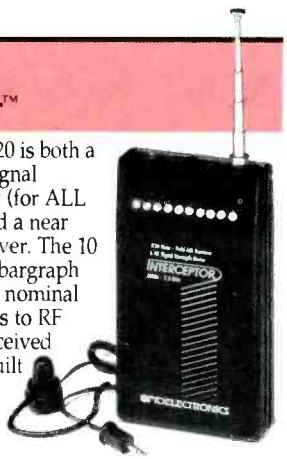

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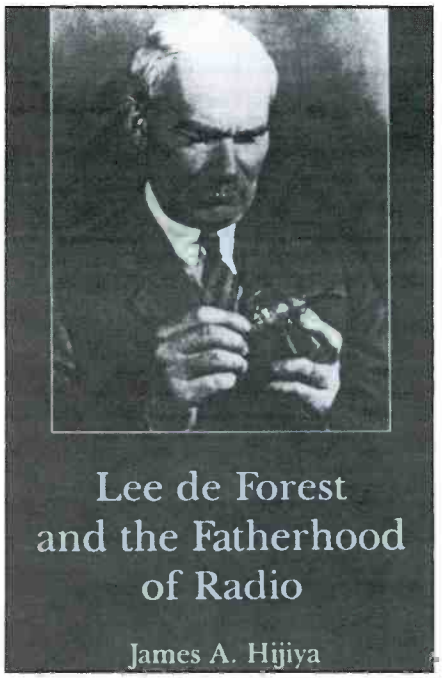


The Man And His Dream

Dr. Lee de Forest is one of the people always associated with the development of radio. Like most of radio's inventive pioneers, he was interested only in voltages and wavelengths. Like other radio pioneers, de Forest had a dream, and a spiritual quest. He, too, was quirky and eccentric, and a poor businessman. His personal life was no bed of roses. Still, Dr. de Forest was not your typical wireless pioneer.

Soon after the turn of the century, Lee de Forest had the foresight to realize that the world was entering an era when technology was going to be increasingly important in the daily lives of average people. He envisioned that technology would bring about radios, military devices, and other powerful inventions that would cause radical changes in the human condition. So much so that the future of civilization would be in the hands of the inventors, not the statesmen. He saw the millennium as resulting from a technological event, and he visualized himself as one of the most important and influential figures in the sphere of technology. If you asked him, he would tell you this.

James A. Hijiya, Ph.D., has written a book about this brilliant and curious man. This book is titled, *Lee de Forest and the Fatherhood of Radio*. The 182-page hardcover book, illustrated with photos, is not so much a treatise on de Forest's contributions to the technology of radio as it is a probing and most enlightening look at the man, himself. The story of his background and upbringing, plus the other factors that played roles in his inventions, his plans, his dreams, his delusions, his successes, and his failures. The "Audion" vacuum tube he invented in 1906 became the foundation of the electronics industry for nearly half a century, and he was a pioneer in talking pictures, solar energy, and television. Holder of more than 300 patents, de Forest was one of the most prolific inventors in American history.

Hijiya's fascinating book shows how de Forest was also into politics, literature, and religion. Tells how he embraced philosophies such as McCarthyism and agnosticism during his long life. But, Hijiya observes, while de Forest's interests were diverse, his vision was not.

The quest de Forest had was to attain immortality, not only through overcoming the physical death of his body, but by avoiding a spiritual death that he felt would have resulted from his having lived without purpose. He hoped the greatness of his inventions would have helped humanity to the extent that he would be assured of a perpetually recognized place in the esteem and gratitude of future generations. He considered this as a form of immortality. He saw technology as a substitute for religion, and apparently thought of himself as one of its saints.

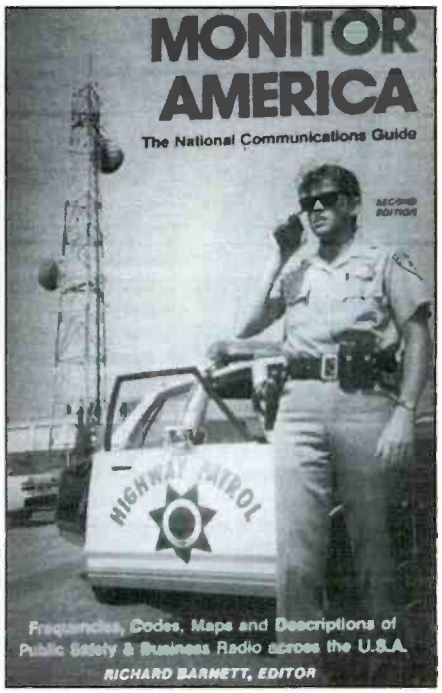
James Hijiya's book offers wonderful insights into this most unusual man. We couldn't put this book down.

Lee de Forest and the Fatherhood of Radio, by James A. Hijiya, is $32.50 from the Lehigh University Press, 440 Forsgate Drive, Cranbury, NJ 08512.

Monitor America

Anyone who has been into scanning for a few years will recall the original edition of *Monitor America*. It showed up about 1985. It was thick, and was an extremely handy national frequency directory. That book eventually went out of print.

Now there is an all new 2nd Edition of *Monitor America*. This one runs to more than 800 pages, presenting extremely comprehensive reports on federal, state, county, and municipal agencies. In addition to state listings for all 50 states, there are 250 major metro and resort areas that are given a close-up examination. Unlike the barebones frequency data in some police/fire frequency directories, most major systems listed in *Monitor America* include exact channel usage, channel plans, maps, codes, and unit designators. Metro sections cover police, fire sheriffs, local government, EMS, intercity and regional networks, amusement parks, cultural attractions, malls, hotels, parks, news media, special events, and more.



State listing data includes State Patrols (with maps, links, unit designators, codes, and trunking plans), DOT, prisons, emergency management, natural resources, fish/game, colleges/universities, ski areas, and other frequencies of interest.

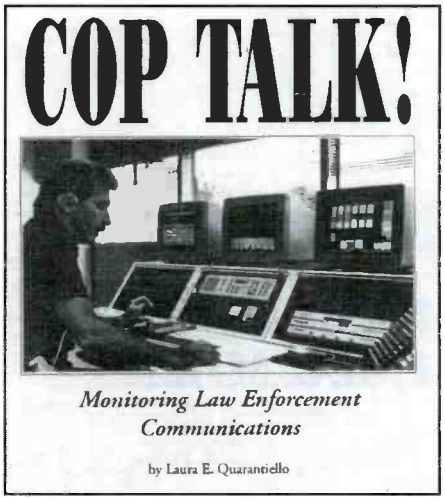
As you can see, this is a powerful information source. It is one of those references destined to join the handful of core books that scanner owners look upon as the prime sources of the information we need in order to get the most from our hobby.

Monitor America carries an MSRP of $24.95. It is sold by leading suppliers of scanners and electronics books. If your favorite supplier doesn't carry *Monitor America*, it may be ordered from Scanner Master, Box 428, Newton Heights, MA 02161.

Behind The Badge

As any scanner owner knows, it's one thing to monitor police communications, but quite another to fully understand what's going on. *Cop Talk* is the title of an excellent handbook explaining how to best understand and get the most from scanning the frequencies used by police.

This book is illustrated, and it offers in-depth explanations of police radio jargon, special frequency usage, undercover comms, tactical comms, car-to-car radio, dispatchers, emergency operations, radio systems, talk-around frequencies, mobile extenders, monitoring laws, and more. There is information on special considera-



tions to be given to monitoring the 800 MHz band, and for successful two-scanner monitoring to increase what you're hearing. Learn the best way to set up a scanner's memory banks. This book has an appendix that provides a glossary, typical codes, plus information on major frequency bands reserved for police operations

Essentially, it's got what you want and need to know to get the most from monitoring police communications on your scanner. *Cop Talk* is $19.95, plus $3.50 shipping/handling ($4.50 to Canada) from CRB Research, P.O. Box 56, Commack, NY 11725. Residents of NY State please add $2.00 tax. VISA/MC accepted. Phone orders 1-(516)-543-9169, or by FAX to 1-(516)-543-7486.

In addition...

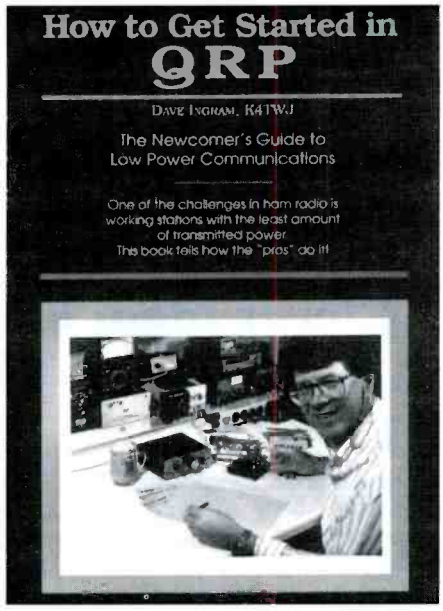
How To Get Started In QRP is a 144-page book by Dave Ingram, K4TWJ. "QRP" is the ham radio term for low power (5 watts or less) transmission. Those who like QRP find it to be an exciting challenge and lots of fun. While we were not furnished with an actual copy of Dave's QRP book, we have seen his books in the past and know that he's very sharp. The press release for the QRP book reports that it covers commercial equipment, operating tips, accessories, home-brew, antennas, power sources, contests, DX'ing, and clubs. This book is $9.95 plus $2.00 shipping and handling from NARA, 16541 Redmond Way, Suite 232, Redmond, WA 98052.

Electronic Media Law and Regulation, by Kenneth C. Creech, is a new 404 page book we learned about via a press release sent to us. This text covers the structures of US legal and regulatory systems; First Amendment issues; privacy and access; broadcast station licensing; broadcast regulation; cable TV regulation; copyright property; defamation and libel; and how new media technologies are affected by current laws and regulations. This book is $34.95 from Focal Press, 80 Montvale Ave., Stoneham, MA 02180.

Advanced Computer Controls introduced Radio Spectrum Explorer software for Windows. This is a new user interface for your scanner, offering different perspectives on operating the radio through several windows, frequency, description, spectrum chart, map, and other windows. System requirements include a personal computer using 386SX-25 or higher processor running Windows 3.1, and a receiver with a computer port and level converter. For more information, contact Advanced Computer Controls, Inc., 2356 Walsh Ave., Santa Clara, CA 95051. Phone 1-(408)-727-3330. Please mention *Popular Communications* when you contact them.

Sherlock, The Intelligent Frequency Finder, is the computerized scanner frequency detective designed to work with the Commtronics HB-232 interface. It is capable of building a virtually unlimited file of up to 1-billion active frequencies. This system does a lot. We were sent a demo disc and found it simple to use and brimming over with great operating aids. The company that produces this excellent program also has *ProScan, The Easy-to-Use Frequency Management System*. Products you will want to check further into by contacting DataFile, Inc., P.O. Box 20111, St. Louis, MO 63123; or circle 101 on our Readers' Service. You'll like these!

Operational History of Japanese Naval Communications, Dec. 1941-Aug. 1945, is a full reprint of an English language translation of a detailed report made at the end of WWII by former Japanese Naval Officers. This was based upon their personal accounts, plus official records. It is an



extremely detailed 407-page report prepared for the benefit of the Allied military command in order to obtain insights into the Japanese viewpoint on communications during some of the most significant campaigns in the Pacific Theatre of Operations. Our observations: More than the nuts and bolts aspects of the copious communications data provided, truly brilliant insights are obtained only when one can detect the subtle philosophies and strategies hidden "between the lines." This book is $26.50, plus $3.00 shipping. California residents add 7.75 percent sales tax. Order it from Aegean Park Press, P.O. Box 2837, Laguna Hills, CA 92654. ■

POP'COMM Tests

The R10 FM Communications Interceptor

Clever Idea: Picks Up All Nearby FM Transmissions Between 30 MHz & More Than 1,000 MHz!

Optoelectronics came up with an interesting handheld device they call the R10 Communications Interceptor. It looks something like a handheld scanner, except with a minimum of controls. You can't program in any frequencies.

When you turn on the R10, it instantly detects and locks in on strong nearby FM signals from 30 MHz to 1,000 MHz (actually to above 2,200 MHz with reduced sensitivity), one at a time. You can hear the signals it picks up via the R10's internal speaker or plug-in earphone. LED's read out the relative signal strength and the FM deviation. Should you wish to dump the signal that the R10 is receiving, press a button and the R10 will look for another nearby strong signal.

This isn't actually a communications receiver in the most traditional sense of the term, although it does perform many of those functions. But you don't need to have any advance knowledge of the frequency/ies you want to monitor. The R10 picks out the signal from any strong ones it happens to be located near, then tunes itself in on that signal. There's nothing to tune, and the R10 will even follow a transmitter that is drifting off frequency. The R10's -40 dbm sensitivity is deliberately intended to detect only strong nearby signals. A squelch or variable sensitivity control on the R10 can further reduce the unit's receiving threshold.

Optoelectronics points out the usefulness of the R10 to radio techs for checking the modulation of transmitters. Check your microwave oven for leaks. A news reporter can show up at a crime, accident, disaster, or other emergency scene and monitor all on-site communications without any prior knowledge of which frequencies are in use.

The R10 can be used to sweep a room for wireless "bugs," or to see if a person is wearing a body transmitter (a "wire"). It can detect if a vehicle has a "bumper beeper" tracking transmitter. It will let a person know if their house is under surveillance by nearby persons using VHF/UHF radios. We wonder if the R10 *might* be able to reassemble all the message components of a frequency hopping system and make sense of the traffic.

Optoelectronics R10 FM Communications Interceptor.

With a little imagination, you can no doubt think up a dozen other things the R10 can be used to do.

The reason the R10 is deliberately designed to operate in the RF "near field" close to a transmitter is that it couldn't perform most of its jobs if it were more sensitive, especially in an urban area. If the R10 were more sensitive and then locked onto the first strong signal it encountered, it would be instantly paralyzed by an avalanche of FM and TV broadcast carriers, even many two-way dispatchers and paging signals.

Out of curiosity, we tried using the R10 against the manufacturer's instructions. We detached the R10's whip (it has a BNC connector) and hooked the unit to an omnidirectional VHF base station antenna on the roof. The R10 instantly locked on an FM broadcast transmitter two miles away. When the R10's sensitivity was reduced, it still kept locking up on the local police dispatcher, who is more than a mile away. OK, so Optoelectronics was right. Too much signal defeats the purpose of the R10.

Optoelectronics points out that the operation of the R10 may be skewed to be more responsive at certain frequency bands than others. This can be accomplished by the use of a frequency-tuned whip antenna, and/or a variable gain tunable preselelector. For general use, however, the R10 is supplied with a telescoping whip.

Typical reception distances with the R10 using no signal amplification allows for cordless phones to be picked up at 25 ft., 5 watt VHF hand-held transceivers about 200 ft., 5 watt UHF handheld transceivers about 450 ft., 800 MHz cellular handheld about 50 ft. Observe, however, that the addition of a tuned preamplifier significantly increases these distances. For instance, a tuned preselector would allow reception of the 5 watt VHF and UHF handhelds for a half-mile, and the cellular handheld at a distance of 1000 ft.

We hooked the R10 to the VHF/UHF whip on the mobile unit and took it out along the Interstate. Had no trouble hearing the cellulars in nearby cars as folks drove by chatting. Heard other stuff, too. Discovered signals we never knew existed! The R10 monitors them, but doesn't read out the transmitting frequency.

It comes with rechargeable batteries and a charger. The batteries offer just over four hours of operation before needing a recharge.

The R10 is certainly innovative and interesting. We are constantly discovering all sorts of great new things the R10 can be used for, many of them outrageously sneaky. Obviously, the R10 has an enormous potential in the private security and surveillance field, where it has been welcomed with much enthusiasm. This is really a terrific and unusual gizmo.

R10 comes from the folks at Optoelectronics, 5821 N.E. 14th Avenue, Ft. Lauderdale, FL 33334. For further information about the R10, contact them directly, or circle 102 on our Readers' Service.

Reviewed by POP'COMM Staff.

THE PARTS PLACE SM

Digital multimeter with PC interface

Incredible Value. Rugged 32-range meter includes PC-compatible cable and software on 3½" disk for measurement logging. V/A/ohms plus 200 kHz counter, continuity, hFE and capacitance, data hold, more! #22-182, **129.99**

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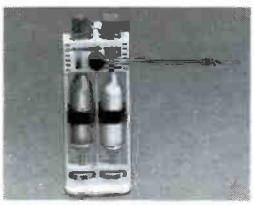
TECHLINE 5-Piece Mini Hand Drill. Ideal for many electronic, assembly and hobby jobs. Fits in the palm of your hand. Features precision gear drive and comes with 3/32", 1/8", 5/32" and 3/16" bits. #64-1979 . . . . . **12.99**

TECHLINE Mini Bar Clamp. Fast and easy pistol-grip adjustment! Use this sturdy clamp to steady projects or PC boards, for gluing and hobby work. The extra-strong jaws open to 6" wide. #64-1984 . . . . . **14.99**

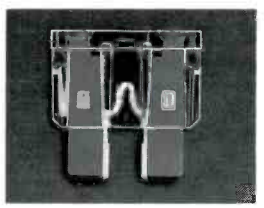
Micronta® AC Power Inverter. For camping, fishing, emergencies. Converts car/boat 12VDC to 115VAC for powering a TV, VCR, light or tool. Compact and efficient. Rated 140W continuous. #22-132 . . . . . **99.99**



Mini Butane Torch. Develops up to 5000° F! Perfect for brazing and silver soldering. With two tips, butane and two micronox cylinders. #64-2165, **27.95**

TV/VCR Spike Protector. Guards four components and 75-ohm antenna/cable line. Installs in seconds in 3-prong AC outlet. 15A. #61-2787 . . . . **27.95**

Dust Remover. Just the thing for cleaning printed circuit boards, hard-to-reach areas, cameras, copiers and more. 6 oz. aerosol. #64-3325 . . **4.99**



Automotive Blade-Type Fuse Kit. A "must" for your vehicle. One each of most-needed types: 5, 7½, 10, 15 and 20 amps. #270-1201, **Set of 5/1.99**

Coax Cable Stripper. Adjustable. Get perfect strips on RG6, RG59, RG58, RG8M, RG62 and other cables 3/16" to 5/16" dia. #278-240 . . . . . **12.95**

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TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

United Nations relief efforts in Somalia are spread out across the expanse of a large, irregularly-shaped nation having absolutely no functional telecommunications system of its own. It was therefore necessary for the UN to quickly establish what was essentially a spread-out and reliable rural telephone system.

This could obviously be best done using radio, and Telemobile's *Phonelink* system radio telephone extension equipment was selected by the UN Development Program. The UN has used *Phonelink* in other parts of the world with portable satellite stations.

The first *Phonelink* systems that went into Somalia were the point-to-point telephone facilities. This is planned to expand to become 35 point-to-multi-point overdial systems with voice mail or rural telephone equipment.

Telemobile Inc. is located at 19840 Hamilton Ave., Torrance, CA 90502.

New Services

Many cellular companies are adding service refinements and extras. These include:

Wireless Data: A packet data system.

One Number To A Person: Users are assigned one number allowing all of their calls to follow them wherever they wish. This often includes call screening and blocking functions.

One Person, One Phone: The wired landline and wireless cellular networks are merged to provide a subscriber with complete control over his/her accessibility via a "smart" pocket-sized personal communicator phone which is used at home, at work, and on the road.

Microcellular Technology: Small short-range microcells with special antennas allowing service to be made available in places like subway platforms and other locations not normally accessible with a cellular.

Information Systems: Systems are providing easy access to subscriber update information on news, stock market prices, sports scores, traffic reports, weather forecasts, soap opera bulletins, entertainment events, and many other things. Voice mail and paging is also becoming available on some systems.

Motorola's "Confidant" pager unit.

Crystal Ball

Those who look into the future of personal communications networks view them as being mostly digital, using a combination of microcell and macrocell formats. Subscribers will carry lightweight pocket-phones, and each subscriber will have a single personal telephone number that can be used anywhere. As you can see, these are the innovations that are now coming into use at many cellular services.

Meanwhile, standard cellular continues to expand rapidly. The sluggish economy didn't even hold it back. At the end of 1991, more than 7.4-million cellulars were in use in the USA, which is a 40 percent growth from a year earlier.

As of the end of last year, cellular was generating $8.25-billion. That will double by 1997 when more than 26-million cellulars are in use.

Prices for analog phones and phone service are dropping. The average monthly bill for service will decrease from 1991's $64.50 to $52.50 in 1997. Non-discounted prices for new analog phones will drop from $195 to $125. Dual-mode (analog/digital) phones will drop from $225 to $125.

Digital technology is already in use and producing revenue in analog/digital systems. Last year they generated $16.4-million, with digital systems alone bringing in another $7-million.

Shop By Phone

If your business trip took a few days longer than expected, you can try to square yourself on the homefront by purchasing a gift while you're heading home. Airline travelers can use GTE Airfone service to place a free air/ground call to SkyMall, Inc.

SkyMall, Inc., an in-flight shopping company, needs only 30-minutes (in some cases) before the plane lands to have the gift you selected waiting and ready upon your arrival at several major airports. Passengers have a large selection of gifts from which to select, picking from companies such as FAO Schwarz, Bloomingdale's, Hammacher Schlemmer, Coach Leatherwear, the Nature Company, and the Chef's Catalog. Prices charged are the same as those shown in the catalogs. You can order anything from a million jumping beans to a red Corvette rental car!

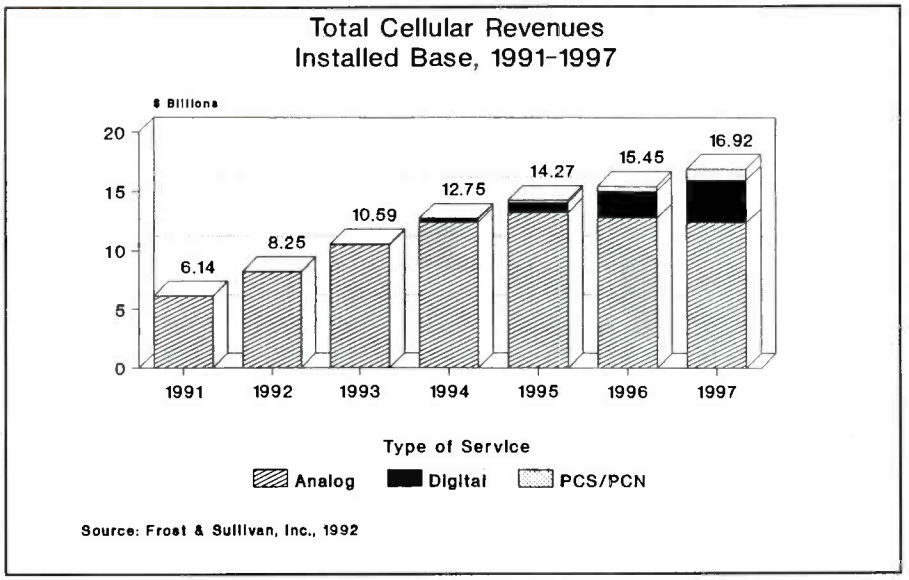
Good idea for that gift you forgot to buy before you left—birthday, anniversary, or peacemaker. You can also order flowers and event tickets.

This service is available aboard Continental, Delta, TWA, and United flights. Gifts may be arranged for with flights landing at the following airports: Los Angeles, San Francisco, Denver-Stapleton, Chicago-O'Hare, Atlanta-Hartsfield, and Phoenix Sky-Harbor.

Companies seeking to offer products through the SkyMall program can call a

Telemobile's point-to-point Phonelink radios that are being used by the United Nations in Somalia.

Motorola sees that young people now getting used to pagers will grow into business people who will have come to depend upon them.



The amazing growth of the cellular service (in the USA) as it is projected from 1991 to 1997.

GTE Airfone marketing representative at (708)-575-1341.

Indiana Toll Road Emergencies

The Indiana Toll Road opened up a new emergency access for owners of cellular phones. By punching up *11 (Star-1-1), drivers are put in direct contact with the road's all-hour communications center. This center, in turn, can dispatch State Police, wreckers, fire departments, and ambulances to sites of emergencies or disabled vehicles.

These calls are toll-free and are available over the entire length of the highway. Drivers experiencing vehicular problems on this road are requested to pull well off the thoroughfare and on to the shoulder, turn on the vehicle's emergency flashers, raise the vehicle's hood, call for help by dialing *11, then remain with the vehicle. After a Toll Road or State Police unit assists you, lower the hood so that other units will know that you have been helped.

Here's A Good Business

Did you know that the cellular rental business runs to about $500-million per year? Action Cellular Rent A Phone, of San Francisco, is a leading player in this field. Corporate accounts are their bread and butter. The rental company supplies everything clients need to keep their sales, repair, and executive forces in touch. The renter needs only to make arrangements for rentals by the day, week, or month and lets the other guy worry about all of the details and paperwork.

Action Cellular Rent A Phone supplied the Democratic Party with 98 rental phones during the last election.

The company may be reached at (415)-929-0400.

Pagers Keep Going

Pagers are getting smaller and smaller as they become increasingly demanded by the public. Motorola's latest models show that this company is bracing itself for a rapid expansion in this area. Their new pagers are smaller, offer color selection, and simple technologies. Motorola sees pagers in increasingly heavy use by children and teens, then graduating with those users into their lives as young adults in the business world and at home.

Motorola's pagers include the "Bravo," which offers message time stamping. A version known as the "Bravo Express" comes in 11 colors, has musical tones, plus a vibrating silent alert. The "Bravo Alphanumeric" receives almost 2,000 characters in 16 memory positions.

The "Motorola Advisor" is an advanced unit providing up to four lines of 20-characters, and a memory capacity of 6,400 characters. Other features include a volume control and the ability to vary the length of the alerts.

Motorola's "Lifestyle" is a numeric pager that can store six messages. It is available in a dozen colors.

The Motorola "Wristwatch Pager" is a numeric unit. The new "Confidant" is the size of a credit card, offering numeric readout of phone numbers up to 12 digits. It will store up to eight numbers, and will time-stamp each one.

The new "Freespirit" is a simple alphanumeric pager that displays 12 characters. It will store ten 20-character messages in its memory. Its alerting signal is a musical tone, or a silent vibration.

We always welcome input from readers in the form of questions, comments, and clippings about cellulars, pagers, and personal communications. We also like to hear from manufacturers and service suppliers.

CB SCENE

BY BILL SANDERS, SSB-295

27 MHz COMMUNICATIONS ACTIVITIES

A quick look this month at the new Realistic TRC-438. This mobile CB radio offers dual ceramic filters for increased selectivity, an ANL, a 4-step S/RF bar indicator, a remote speaker jack, plus a mic that can be unplugged. The small package has a catalog price of $69.95, and is available from Radio Shack.

They Had Something There

One of the more unusual CB radios of the past came from Regency Electronics, Inc., Indianapolis, Indiana. Making its appearance in 1963, the Regency Range Gain was, so far as we are aware, the only CB radio ever designed to operate with DSBRC (Double Sideband Reduced Carrier) modulation.

At $269.95, this was an expensive unit for its day, but it was a beautifully made and interesting set that was a delight to operate. In an era when 27 MHz SSB was being used by only a small core of pioneers, this radio offered a logical step up from straightforward AM. DSBRC was not nearly as esoteric as SSB, and it could still be copied on all AM CB radios. All the fuss was Regency's claim that, under normal conditions, DSBRC provided four times more range than regular AM CB radios. DSBRC really did have far better range than plain AM comms.

The Range Gain had an adjustable noise limiter, and you could tune the receiver a few kHz up or down from each of the set's 23 channels. There was full metering, and the transmitter could be peaked from the front panel using the meter. The Range Gain was housed in a heavy gauge steel mesh cabinet. In all respects, a quality piece of gear.

Almost 30 years ago, Regency produced this wonderfully unique double-sideband reduced-carrier CB rig called the Range Gain. This was the Range Gain II version.

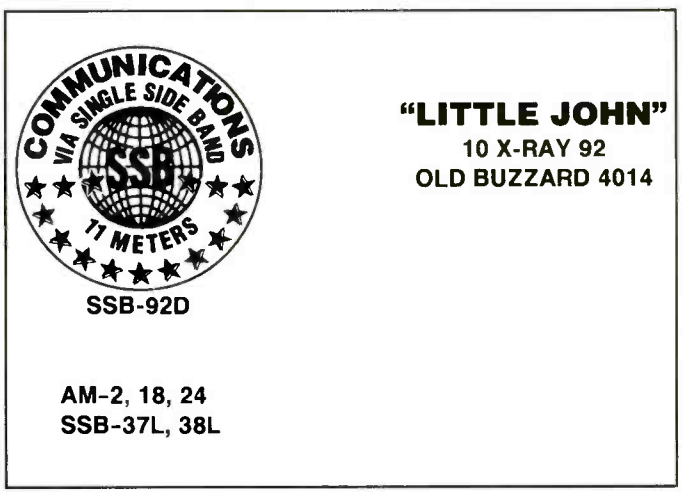
The Regency Range Gain attracted many fans and sold relatively well, taking into consideration its high price and unorthodox modulation system. Our photo shows the Range Gain II, which was a version of the unit Regency later brought out with some circuit and cosmetic changes. A beautiful radio that was one of a kind.

DSBRC was generally forgotten about for more than 25 years until it was recently rediscovered and written up in the *CB Radio Hacker's Guide*, by Kevin Ross (published by CRB Research Books, Inc.). Ross shows how several modern CB's can be modified to operate in DSBRC mode. These include the Cobra 140-GTL, 142-GTL, 148-GTL, and 2000-GTL; the Uniden Washington, Grant, Madison, McKinley, and P-400; and the SBE Model LCMS-8.

Golden Oldies

A reader is hoping someone can supply information or a manual on a CB radio that he described to us only as an "MRC 23 channel CB." This is the only

Realistic's new TR-438 transceiver offers a lot in a small package.



Good looking CB QSL from John SSB Network member SSB-92D, who shouts from Virginia.

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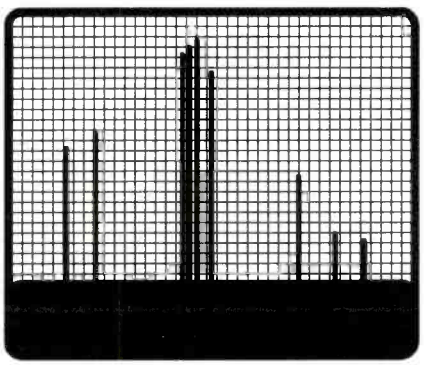
Get instant tech information FREE from your Fax or Computer!
You can obtain specs, freq. info, software and more from our automated services. For fax facts, call from your stand alone fax machine and follow the voice prompts. Use the BBS from your modem of fax/modem equipped computer. Dial 317-849-8683 for fax back service, or dial 317-579-2045 for our computer bulletin board service

Turn your AOR receiver into a full function Spectrum Analyzer!

NEW

AOR SpectraVu SV150
0 to 1300MHz*
80dB on Screen Range
>500MHz Span*
0-50dB Attenuator*
Marker Generator
Selectable Bandwidth
-117dBm Sensitivity

Connect two wires to the rear of your receiver, two wires to the vertical and trigger inputs of any oscilloscope, plug in the supplied power adaptor and you've got it! A full function Spectrum Analyzer. You'll get an instant update, real time display of any off air or inputted frequency spectrum. You can see over 500MHz of spectrum at one time! The SpectraVu is not just an I.F. monitor that only displays a maximum of 10MHz at a time and is slaved to a receiver. Instead, the SpectraVu actually takes over the phase locked loop tuning of your AR2500 or AR2800. Switch the SV150 from receive to either the high or low spectrum mode. You can watch more than 500MHz of bandwidth, or zoom in by narrowing the view down to zero. The built in marker generator makes frequency identification quick and easy. Then flip back to receive mode and listen to what you've found. The SV150 is fast enough to find new transmitters, or interference sources, yet accurate enough be used for tuning L/O's, filters, or checking cable or antennas or on any kind of RF system. We'll do the installation hook-up of your SV150 to your AR2800, AR2515, AR2002 or AR2500 absolutely free of charge during our introductory period; at the time of initial purchase or on your present unit when returned prepaid.

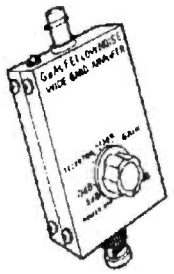


*Here's the small print you've been looking for! The max span and hi/lo band split depend on the 1st I.F. of the unit. Sensitivity is dependent on radio unit. Requires mods to PLL of receiver. 50 dB attenuator is an extra cost option. Interface to the AR1000 or the AR3000, is not yet available. Cabling required: One extra DB9 connector and one extra BNC connector on back of receiver. Two cables to oscilloscope. One

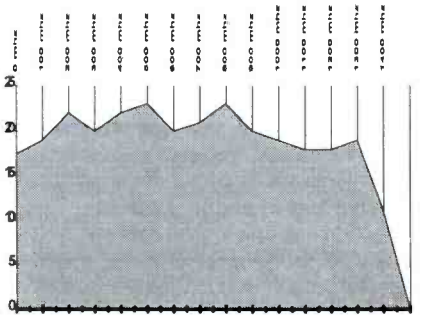
$179.95

12VDC adaptor, supplied. Size: 4 1/2"W x 1 1/4"H x 5 1/4"D. Wt: 12oz. Fax Facts #910 One year warranty. Introductory period ends 6/30/93. Call for info on oscilloscopes & accs. AOR SpectraVu SV150. **$179.95**

AOR GW-2
GaAs FET
Wide Band
RF Pre-Amp



The GW-2 Wide Band Pre-Amp is designed to increase the signal levels present at the input to receivers, frequency counters, spectrum analyzers, etc. There are three basic advantages to the GW-2 design. 1. Wide range, low noise. Use of a GaAs Field Effect Transistor instead of the silicon FET's normally used in comparable devices for far less noise. 2. Variable Gain. Unlike many other signal amplifiers, the GW-2 allows you to vary the amount of gain it produces. 3. Portability. The GW-2 is completely powered by an internal 9 Volt DC standard transistor battery. The chart below shows typical maximum gain figures achieved by GW-2 over complete operating range.



Specifications:Input/Output Impedance: 50 W. Gain: 20 dB nominal (-3 to + 20 adjustable). Input level: -5dbm max. Output level (1dB compression) +4 dbm. Noise figure (typical): 1.5db. Size: 3 1/4D x 4 3/4H x 7/8D. Wt 5 oz. Fax Facts #805 **$89.00** Also, if you have too many of the wrong kind of signals use our:

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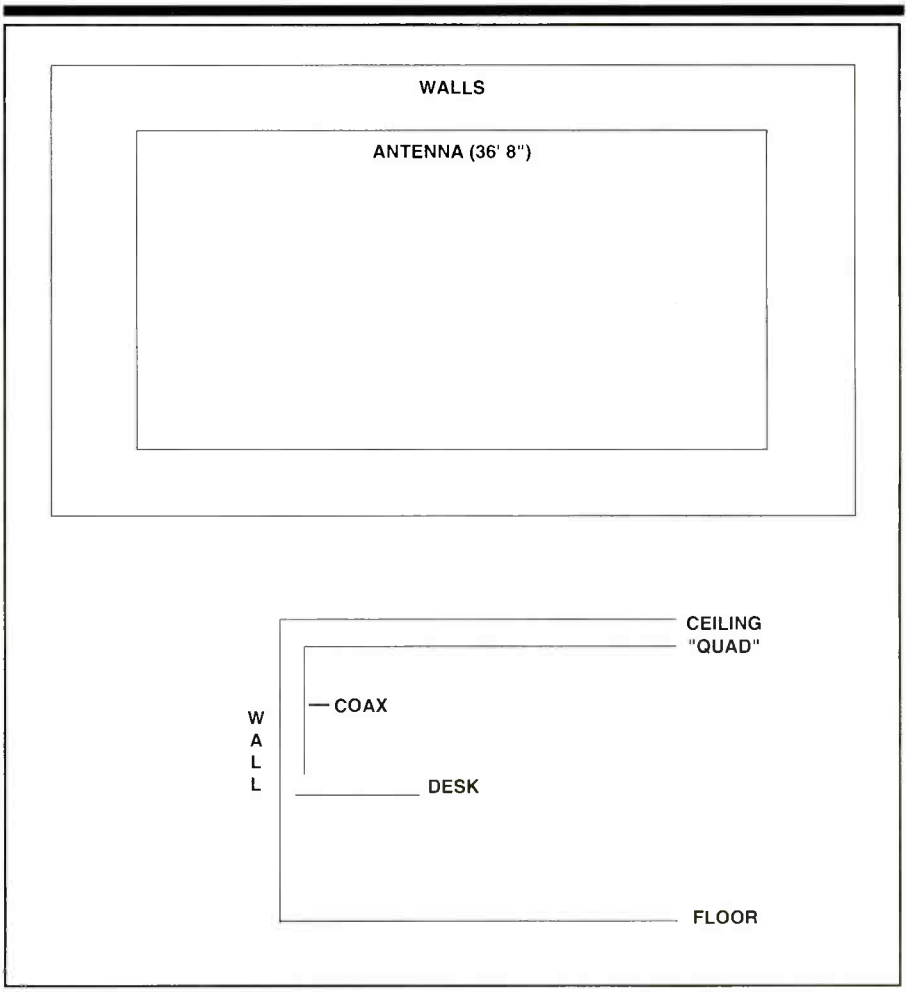
CIRCLE 117 ON READER SERVICE CARD



The CB Quad type antenna that you can hang up on your ceiling, after you first construct the thing.

information we have. The reader needing the information is Darren V. Sheremeta, 552 Reed Canal Rd., Apt. 127, South Daytona, FL 32119.

An owner's manual is needed for an SBE Console IV. This is a deluxe SSB base station from the 1970's. Contact Neil H. Sauerbier, 3111 Route 121, Cohocton, NY 14826.

Does anyone have a schematic for an old Allied A-2567 CB radio? Needs to know how to tweak and peak this set to improve its modulation. Also needs documents for working on Hallicrafters S-38C and S-40 receivers, and Heathkit GD-125 Q-Multiplier. Contact Glenn McFarlin, 901 Lagoon Drive, Pensacola, FL 32505.

Seeking schematics and/or parts for Browning CB radios. Also looking to contact Miguel who designed the original CB's for Courier, and trying to make contact with Ronnie O'Callahan who was with Tram in the old days. Anybody with info, please contact David A. Duquette, 189 Michael Sears Rd., Belchertown, MA 01007.

Channel Chatter

The Pacific Northwest was traveled not that long ago by Jim McCorkle, of Pueblo, Colorado. This included Highway 5 between Portland and Eugene, Oregon. Jim tells us that the north and south bound truckers operate on Channel 17. The traffic heading east and west tends to use Channel 19.

Dick McHale, Byfield, Mass., writes to advise that the bird watching fraternity in the Northeast use Channel 25 to stay in touch. During the weekends this channel is very busy, especially in areas like Newburyport, Mass., where these people like to pursue this interest. Dick also notes that CB Channel 15 is the fishing channel in his region, and is quite active offshore.

Mike Dumagan, SSB Network Member SSB-29G, and Registered Monitor KNY2ACC, of Bay Shore, New York, passed along frequencies. He tells us that Channel 19 is the place to be on the Long Island Expressway (I-495), and also the Sunrise Highway in eastern Suffolk County. Use it also in the Big Apple on the FDR Drive, the BQE, The Clearview Expressway (I-295), in the Bronx and Queens, and on the Whitestone and Throgs Neck Bridges. The Southern State Parkway on Long Island uses Channel 10. Channel 12 is used on the Grand Central and Northern State Parkways. North/

South routes on Long Island use both Channels 10 and 12. Mike belongs to Radio Emergency Long Island REACT (RELI) Team 4552, and reminds all that Channel 9 is monitored for emergencies.

Readers are invited to furnish us with additional information of this type from areas with which they are familiar.

Enforcement and Outbander Comment

An Idaho reader who requests anonymity because he is an NCO in the active military reserves has offered some thoughts on unauthorized comms above Channel 40. He likes to listen between 27.410 and 27.995 MHz. Once in a while he has made some calls there, too.

It is his opinion that these frequencies are virtually unused by those who are authorized to operate there. Therefore, it is a gross misuse of public funds and the FCC's powers to take any actions against the scattered low power hobby communications taking place there. He observes stations on the authorized CB channels obviously running higher than legal power, and even discussing it on the air, but having no FCC action taken against them. It isn't hard to spot CB antennas that are mounted far higher than FCC limits, yet the FCC does nothing.

He therefore feels that stations operating above Channel 40 that run less than about 50 watts can certainly not be actually causing more interference or other problems than those on the legal channels openly operating with linear amps pushing out hundreds of watts, and/or using antennas mounted way above the legal height.

He feels that something is obviously wrong in the way the situation is being assessed and approached by the FCC. His opinions go for all unauthorized low power hobby comms above Channel 40, as well as those just below Channel 1.

So writes our reader in Idaho. Any comments from the gallery?

Cliff-Dwellers' Quirky Quad

CB'ers who live in apartments can't always put up outside antennas. That happened to Michael A. Urich, KA5CVH/9, of Clermont, Ind., and he decided to solve it with an effective indoor antenna for his operations on Channel 39.

What he did was build a quad loop for use inside his radio room. He took the measurements from Bill Orr's book on Quads, and it came out to 36 ft. 8 inches in circumference. The problem was how to hang this thing.

Mike felt he could hang it around the ceiling. His room was 11 by 12, and that was large enough to handle the loop.

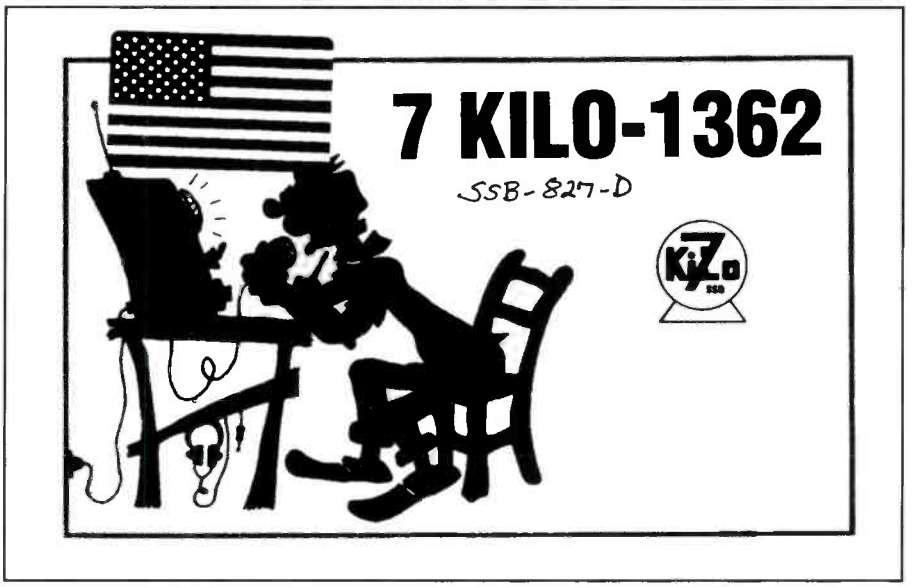
He figured the antenna could be supported at the four corners of the room. The radio was in one corner of the room and the antenna could be fed from that location. The loop was made from 16 ga. uninsulated stranded wire, with a ceramic insulator at the feedpoint. He placed three egg insulators on the loop for the other corners. The local hardware store supplied four hooks intended for hanging swag lamps, one for each corner of the ceiling.

Using those fat heavy duty rubber bands, the insulators were attached to the swag hooks. By adjusting the rubber bands, I got the antenna suspended about 3 inches from the ceiling with very little sag in the wire. With the radio in the corner, I only needed the coaxial balun to reach the combo Power/SWR/Modulation meter, plus a short jumper to the radio. The total feedline length was about a quarter-wavelength, and after a little tuning, the SWR was virtually 1:1 from Channel 35 to Channel 40.

The wiring in the walls did not have much of an effect on the antenna. It worked well, and Mike had a solid eight-mile range. At night, when the band got quiet, he could squeeze ten to twelve miles out of the thing. It was what he needed, and many stations were surprised when he told them what he was using for an antenna.

This may require a little strategy to adapt to all applications, but it did work well for Mike. It gave him good local coverage, and even a bit of DX now and then.

See you on the channel in June? Hope so! Send us your QSL cards, your local channel info, station photos, CB news items, opinions, and like that. ■



Ron, who is 7-Kilo-1362 and SSB Network SSB-827D, sends out this QSL from Oregon.

SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

Help! My police department is about to move to a new band and I won't be able to hear them anymore! These letters come out of *POP'COMM's* mailbag on a regular basis. With the letters usually are clippings of newspaper articles where the reporters perpetuate myths about how the public can't tune in their transmissions anymore (am I the only person in the news industry who understands radio communications?).

The culprit of all these articles in cities from Indianapolis to San Diego to Denver and many in between is 800 MHz trunking systems. Many cities have been sold lock, stock and barrel on the new-fangled radio communications that make obsolete transmissions that until now are carried out on assigned channels on a routine basis.

What trunking does is set aside a group of 5 to 30 channels or more and assign frequencies as they are needed by agencies. Thus, a city's police, fire, ambulance, rescue and municipal operations such as sanitation, streets, health, animal control and more all can operate on the same frequencies without stepping on each others' toes.

At each repeater site is a computer that identifies each unit as it transmits and assigns it to one of the available repeater frequencies within the licensed group. Not only does it carry out that task, but it also automatically sends out a data signal that instructs all other units in the same fleet to tune their radios to the same frequency.

For instance, the controller at the tower may pick up a detective's radio is ready to transmit. The computer assigns it to a frequency, such as 856.7125 MHz. At the same time, it will assign radios used by all other detectives in the same group to tune to the same frequency so they hear the message. The groups may even be broken down into further subfleets, too. For example, within the detective group there may be a subfleet that handles communications for north and south detectives, and maybe even vice units. The detective tells his or her radio (by what might be called a channel selector, usually alphanumeric readout that says something like DET-SOUTH) what group or subfleet he or she wants to communicate with and the controller at the tower site does the rest. If the detective wants to communicate with a vice unit, the controller will make sure all vice units hear his or her message.

Likewise, patrol units may have their radios set up so they cannot hear communications from, say, internal affairs. That would create a problem, of course. In fact, patrol units may have their radios set up so they can communicate only with dispatchers and other patrol cars. On the other hand, they also may be set up so that a patrol car can call a responding ambulance to advise paramedics directly of a patient's condition.

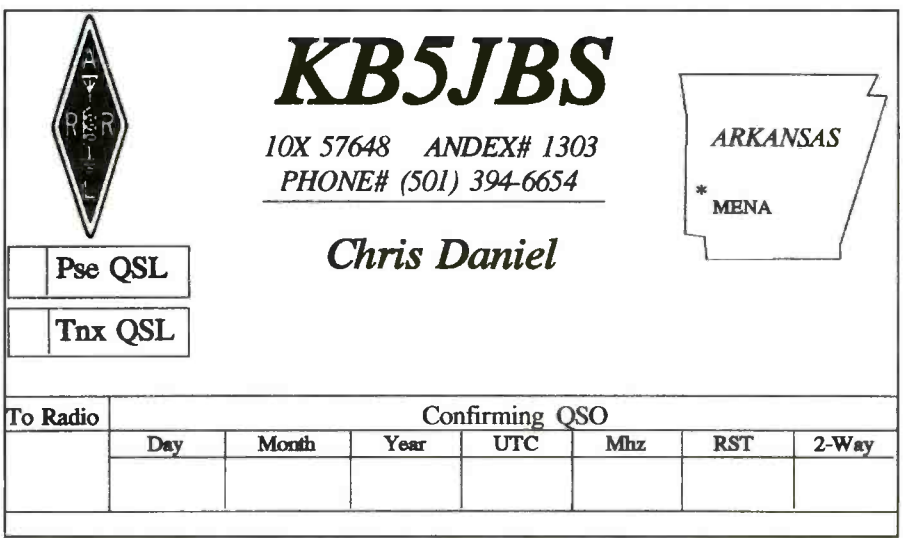
This is the well-equipped Mena, AK, listening post of Chris Daniel, KB5JBS. Chris is into ham radio, SWL and scanners. He also likes to monitor GMRS, aviation and maritime frequencies. While not in the shack, he's working as chief operator at KENA-AM/FM.

In most trunked systems, the frequency used by the various groups changes each time the microphone is pressed, or at least waits until the end of a conversation. Following trunked communications takes a bit of patience, especially when you want to listen only to emergency services, and now you have everyone from the mayor to garbage trucks and ambulance, all using the same frequencies day in and day out. Everybody seems to have their own tricks for listening to trunked conversations, and you'll have to experiment yourself if your city goes to this system.

In the trunked systems that some cities are installing, digital encryption is being used by police services. Thus, all you can expect to hear is what sounds like a rush of static over your radio each time a law officer transmits to other units. It can be annoying, but you'll need to determine whether the encryption is being used on a full-time basis or only selectively by certain units. For instance, trash trucks don't have much need for encryption, however, detectives working a drug bust probably do. If the police department uses encryption on a full-time basis for all communications, you are out of luck, unless you happen to work for the news media. In these cities, the police usually have provided a trunked radio to each newsroom so that their conversations can be eavesdropped on by assignment editors. You can bet the juicy groups, like drug and vice units, won't be programmed into these news radios. And the radios usually aren't offered to the news media until after they start complaining about the right to know in news columns.

The biggest problem I find when cities go to trunked dispatching systems is the myths they feed to reporters who don't know a megahertz from a low band. The clippings that I get from each city show the reporters only regurgitate the facts that the communications supervisors usually tell them. One reporter with a respected western newspaper actually was told that an 800-MHz-capable scanner would cost $2,500 and that the frequencies used by the police aren't available to the public! A quick call to the local scanner shop would have recast those lines he was thrown.

I've seen only one reporter who actually checked out another source in such a



Chris Daniel, KB5JBS, sends us his ham QSL.

story, and found out that, indeed, it was possible to monitor trunked radio communications with certain techniques in mind.

In the meantime, however, news reports will continue to perpetuate tales about how all scanners in a city have become obsolete with the overnight toss of a switch. An enterprising reporter might actually do a sidebar story for his or her readers telling the scanner jockeys how they can tune in trunked transmissions, even if it means something as simple as adding an 800 MHz converter to their scanner, or buying a new scanner that includes the 800 MHz band. Sure, it will cost more than $59.99 at the local Wal-Mart, but it's the price to pay for advancing technology. Long-time scanner users might even remember back when scanners only had one or two bands. Having a UHF scanner was something of a luxury at one time!

Denver, Colo., switched to a trunked 800 MHz system at the end of last year, and there are plans in San Diego, Calif., to make a similar switch very soon. If your local department switches to 800 MHz, don't give up listening to the old frequencies. While some 800 MHz frequencies require the licensee to surrender to the Federal Communications Commission its lower frequencies, some do not. Thus, the old frequencies might be used on an occasional basis (after all, the equipment still may be hanging around station houses), or another surrounding town may get FCC permission to start using the agency's former lower frequencies.

Tune in those trunked systems—they aren't as hard to hear as you might imagine. And don't forget to unlock those data channels after they switch frequencies. You'll know what I'm talking about if you try to hear trunked systems. The data channel sends out the tuning instructions to each radio in the fleet so they know which group to tune in.

DVP Dope

Mark Marchiafava of Baton Rouge, Louisiana, writes:

"In a recent issue of *POP'COMM*, a Cobra cordless phone was featured. This unit, operating in the 900 MHz band, utilizes a digital format and spread spectrum technology. In this same issue, in your column, you acknowledged that most federal channels are now equipped with DVP (Motorola trademark for Digital Voice Protection, a form of digital encryption), rendering it useless to a scanner owner. Don't you think it's time to get your head out of the ground and face the real world? Scanners, as we know them, already are obsolete. The day is soon coming when all you will be able to hear will be the local newspaper's circulation department. When will *POP'COMM* deal with this issue head on?"

Mark, the first column I ever wrote for *POP'COMM* more than 10 years ago was about DVP. And we certainly have visited the issue many times since then over the past decade. To this day, I still don't see much digital encryption used outside the federal government. Sure, some sheriff's departments and vice units in larger cities and even smaller rural counties will use it, but you won't find it used on a full-time basis by any department (with one exception that I know of). Even on the federal channels, you find that perhaps even as much as half the communications are not encrypted, perhaps because the user doesn't know how to activate it. For instance, often you hear one side of the conversation in the clear while the other side is encrypted.

Over the past dozen or more years, I have heard reports that so-and-so has come up with a way to decode or bust digital encryption, but to this day, I yet to prove it's being done. Certainly, if someone really wanted to make a few bucks, he'd market such knowledge.

Remember those voice-inversion descramblers that you used to be able to purchase mail order to decode such transmissions? Well, since the Electronics Communications Privacy Act of 1986 was enacted, they've all dried up. It's illegal to make available such a device now. Surely, the same case would apply to a unit capable of deciphering digital encryption. For the most part, most of America will continue to use two-way radio as it has for the past 40 years, and that means there will continue to be a demand for basic scanners capable of hearing those calls. No merchandiser would be able to sell equipment otherwise that could decipher digital or encrypted conversations. If they did, they might last hours before the Justice Department would be pounding at (or breaking down) the front door.

Sure, I've seen the Motorola units being sold at hamfests that program DVP-capable radios. But having the "key" doesn't mean one can unlock the secret. There are billions of codes and it really isn't worth the effort to try to decode such an enormous number of possible combinations.

Scanners probably won't be able to advance with the technology because of cellular lobbyists who ramrod through Congress silly laws that rarely ever are enforced. And they aren't about to stop either. Sure, some manufacturer may offer a scanner that can follow trunked communications of interest, but keep in mind that there are several manufacturers' protocols for trunked systems on the market and a scanner manufacturer would have to obtain patent rights to offer each possibility in its scanner (in other words, forget about this happening).

Meanwhile, we've got to learn to live with what we have and use it to the best of our abilities. Share your listening tips with others via this column. One person won't make a difference, but many will. If scanner users had organized better, the cellular lobbyists wouldn't have gotten their laws into effect in the first place. So, don't sit there, do something constructive for the hobby. And don't give up listening. There's plenty to hear out there. Keep searching!

What are you hearing on your scanners? What listening tips would you like to pass along? What are your favorite frequencies? How about sending along a photo of your listening post or antenna farm while you're at it. Write to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 N. Broadway, Hicksville, N.Y. 11801-2909. ■

POP'COMM Reviews

DELTACOMM™

Delta Research's Communications Software

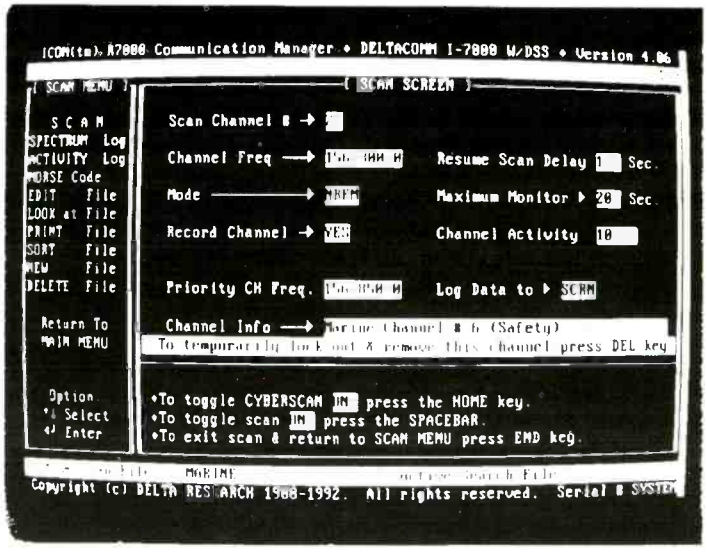


Figure 1—DELTACOMM™ Scan File Monitor Display.

Do you own an ICOM™ R7000, R7100, R71A, R72A receiver or an ICOM™ IC-735 amateur transceiver? Would you prefer to let your computer "do the tuning?" If your answer is "yes" to both questions, Delta Research has a software program designed to assist you in managing your communications hobby.

The DELTACOMM™ software easily installs on any IBM-compatible computer with a hard disk drive and a RS-232C serial interface. In fact, the program has an "auto load" feature that makes installation a snap.

Overview

The DELTACOMM™ software is designed not only to control your ICOM™ receiver or transceiver, but to maximize your monitoring or operating capability. Here are just some of its major features: 1). memory or frequency spectrum search/scan with logging capability, 2). a spectrum log function that can generate a "histogram" and log activity to screen or disk in real time, 3). a "birdie log" feature that can scan the receiver for birdies, then lock out those particular frequencies, 4). Delta Research's proprietary CYBER-SCAN™ feature for monitoring systems that employ frequency hopping techniques, and 5). programmable signal strength limits for selective monitoring and logging.

In addition to the aforementioned specific features, DELTACOMM™ offers full database support, an easy to use menu driven interface, printer support, substantial DOS and file utilities, and fully programmable parameters for scan, search, and spectrum log functions.

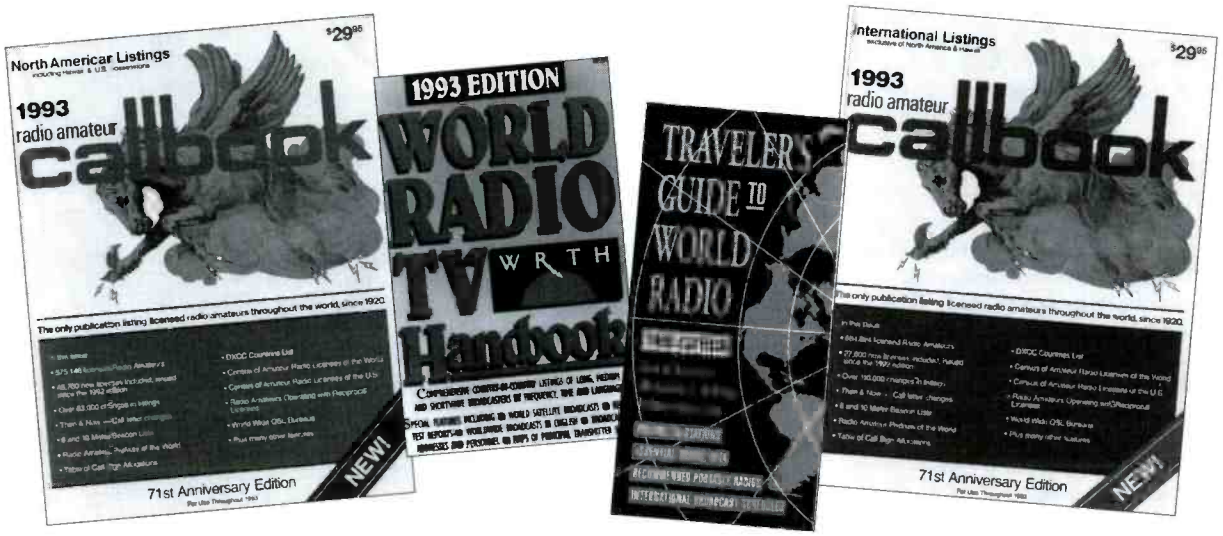
Also, an optional DSS (Digital Signal Strength) hardware interface is available. This allows for digitizing and storing signal level information, user programmable upper and/or lower signal detection limits, and signal strength logging to file or your printer. The DSS hardware interface option is installed with easy to follow NO SOLDER installation instructions.

Summary

If you are looking for an easy to use, yet complete, control program for your ICOM receiver or transceiver, give DELTACOMM™ a try! The program is easy to use and delivers on its advertised features. It is available from Delta Research, Box 13677, Wauwatosa, WI 53213 (414) 353-4567. Please call Delta Research for current pricing on the DELTACOMM™ software package and the DSS hardware interface option

.Reviewed by POP'COMM Staff

Covering the Complete Radio Spectrum



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Available from your local electronics dealer.

CIRCLE 29 ON READER SERVICE CARD

YOU SHOULD KNOW

BY HARRY HELMS, AA6FW

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

DX That Will Soon Go "Pfffft!!"

Let's rewind the tape thirty years ago to 1963 when I first got interested in DX'ing. There was an easily heard medium and shortwave broadcaster called Radio Americas holding forth from Swan Island, a separate radio "country" located in the Gulf of Mexico. Radio Denmark was easily heard throughout North America each evening. International telephone calls were relayed over shortwave from locations like Bermuda and Jamaica, and these stations readily QSL'ed reception reports.

At night, the AM broadcast band had far fewer stations operating than today, and coast-to-coast reception of the major clear channel stations was a phenomenon.

Fast forward the tape to 1993. Things have changed. Stations and DX that were common in 1963 are gone forever. Only QSL's and memories are left.

But today will be one of the "good old days." Time is running out for certain stations. If you want to hear and QSL them, you had better do it now!

Here's a QSL from Telediffusion de France.

The Marines Are In Retreat!

Just a decade ago, the maritime bands were packed with ship and shore stations communicating in Morse code and voice modes with each other. But some major changes are in the offing, and in less then seven years there will be only a fraction of the maritime stations active today still around.

The reason for this change involves the use of satellites for seagoing communications. Satellites, which handle the bulk of U.S. Navy communications, are now utilized on merchant marine vessels with satellite terminals being installed on ships every day. Traffic is shifting away from Morse code and voice modes to high capacity keyboard modes like SITOR. This process is so far along that the international requirement for proficiency in Morse code by ship radio operators was recently dropped for vessels equipped with satellite gear. International agreements will eventually require most ocean-going vessels to be equipped with satellite terminals by the end of this decade. While marine use of shortwave will never entirely disappear, clearly many coastal shortwave maritime stations will cease to exist.

In recent years, several well-known coastal stations in the US have gone off the air. Such familiar callsigns such as KLB in Seattle, KOK in Cerritos, CA, WOE in Miami, and WSL on Long Island are gone for good. This trend also applies to foreign coastal stations. For example, VRT in Bermuda left the air in 1992, depriving DX'ers of their best chance to add that country to their logbooks. And these "silent stations" are constantly being joined by others. For example, station KFS near San Francisco is scheduled to cease operations sometime in 1993 and may have done so by the time you read this column.

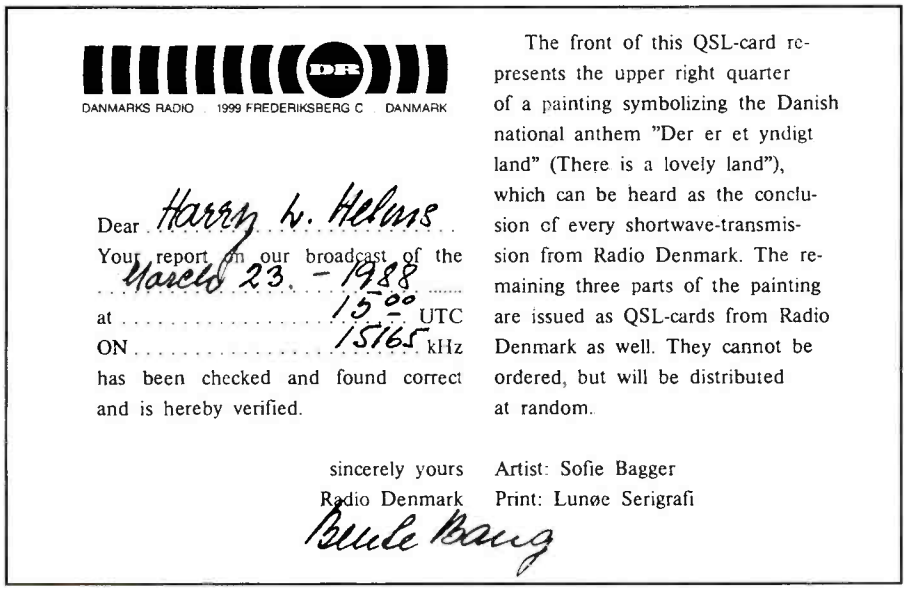
If you want to hear and QSL these station, you don't have much time left.

Table 1 lists some of the more active maritime bands. On these bands you'll find plenty of keyboard modes, such as ARQ, FEC, "plain vanilla" RTTY, and the like. You can also hear what will soon be just a memory: the CW marker. A marker is a message that is repeated continuously so a station can hold onto a frequency between actual messages and to allow receiving stations to tune their receivers. A typical marker will look like these: VVV VVV VVV DE WCC WCC WCC WCC K CQ CQ CQ CQ DE HKB HKB HKB K.

Markers can be repeated for hours, and most are sent at slow CW speeds. If you have a terminal unit capable of copying CW, it should have no trouble whatsoever copying a marker. If you don't have such a terminal unit and don't know the code, don't despair. The repetition and slow speed of a marker means you can record the signal and then decode it later with a Morse code table.

To verify reception of a station sending a marker, copy the marker as received (like in the two examples) and send that along with the usual reception details (time, date, frequency, signal report, etc.) to the station transmitting the marker. Addresses for these stations can be found in directories available from companies that advertise in *POP'COMM*. Don't be too discouraged if you have to try follow-up reports or include prepared QSL cards for the station. After all, these stations don't broadcast to the general public and answering SWL reports is a low priority for them.

Table 2 shows the callsigns of some of the more widely heard maritime stations. Today, they're so easy to hear that they really don't qualify as "DX." In a few years, they'll be the stuff you find in one of Alice Branningan's articles!



DANMARKS RADIO · 1999 FREDERIKSBERG C · DANMARK

Dear Harry W. Helms

Your report on our broadcast of the March 23. - 1988

at 15-00 UTC

ON 15165 kHz

has been checked and found correct and is hereby verified.

sincerely yours
Radio Denmark
Bente Bang

The front of this QSL-card represents the upper right quarter of a painting symbolizing the Danish national anthem "Der er et yndigt land" (There is a lovely land"), which can be heard as the conclusion of every shortwave-transmission from Radio Denmark. The remaining three parts of the painting are issued as QSL-cards from Radio Denmark as well. They cannot be ordered, but will be distributed at random.

Artist: Sofie Bagger
Print: Lunøe Serigrafi

Radio Denmark sends this QSL.

The Incredible Expanding Band

By now, most *POP'COMM* readers have heard of the FCC's plans to expand the upper end of the AM broadcast band to 1700 kHz. I can't quite figure out why any broadcaster in their right mind (yeah, I know that's probably an oxymoron) would want to set up shop above 1600 kHz, since AM listenership has been in a free-fall for the last decade and most consumer AM radios don't tune above 1600 kHz. Nonetheless, the expansion is coming and the stations now there will either move out or be drowned under a sea of new stations relaying some satellite music network.

Traveler's Information Service (TIS) stations are currently found on 1610 kHz, and most of these will move either to 530 kHz or the FM broadcast band. While flea-powered (10 watts or less), some of these stations can be heard over surprising distance at night—I regularly hear stations from the Los Angeles area at my San Diego listening post. This channel is a real jumble at night, with several different stations often taking turns fading up to audibility for a minute or two before fading back down into the mess. (When conditions are really good, however, 1610 kHz is owned by the Caribbean Beacon on the island of Anguilla.)

Several aeronautical beacon stations are also found above 1600 kHz. Like their cousins found on longwave frequencies, these beacons simply repeat their callsigns continuously in Morse code. These callsigns usually do not follow the standard international prefixes used by broadcasting and amateur radio stations, but instead are suggestive of the beacon's location. Unfortunately, many of the beacons once found in the 1600 to 1700 kHz range have recently moved to longwave or left the air altogether in anticipation of the AM broadcast band expansion. Table 3 gives some of the better heard beacons that still remain. It's likely that most of these will be gone by 1995.

Finally, you can hear all sorts of strange "chirpers" and cryptic CW beacons above 1600 kHz, particularly if you live near the

coast. These are low-powered navigational, fishing, and oil exploration buoys. They are used extensively to mark the location of fishing areas and areas being drilled for oil offshore. There are also rumors that these are used to mark the rendezvous locations for smuggling and drug running. Whatever their use, all will soon be gone.

Denmark...New Caledonia...Who's Next???

Denmark wasn't the only country to leave shortwave in the past few years. New Caledonia, Greenland, Zambia, the Marshall Islands and others have also departed. It seems likely these countries will never return to shortwave. Others will certainly follow.

Although shortwave listening is currently at an all time peak of popularity, not everything is terrific for many of the broadcasters. Many broadcasters—both government and private—in Third World nations are undergoing severe financial strains, nursing along antiquated transmitters that date back several decades. When these transmitters go, many of these broadcasters will leave shortwave and concentrate their remaining resources on their AM and FM band operations. As a result, there are fewer shortwave broadcasters in countries like Colombia and Indonesia than there were a decade ago.

I can't predict which stations and countries will be next to disappear, but I can tell you which ones I'm trying to hear and QSL while I can. The collapse of the USSR has resulted in all sorts of new shortwave broadcasters (including even an anti-North Korean station!) setting up shop in Russia and other newly-independent countries. To put it mildly, the political and economic situation in the former Soviet Union is unstable, and there's no telling how long such broadcasters will be allowed to continue.

I'm also trying to hear and verify all shortwave stations I still need in countries like Venezuela, Colombia, Mexico and Indonesia. As the need for domestic shortwave broadcasting steadily decreases in such countries, I feel that most of the currently active stations in those nations will eventually go silent.

There are some stations that will clearly go off the air in the near future. It's unlikely that the BBC relay station in Hong Kong will remain after the colony is returned to Chinese administration later in this decade.

That's one I'd definitely try to hear and QSL if it wasn't already in my collection. The same thing goes for the numerous anti-Castro clandestine stations now operating, since Fidel seems to be on his last legs.

So don't feel bad if you missed out on a lot of good DX that was active before you got into the hobby. There's a lot of stuff you can hear now that will be "collectors' items" in the not too distant future! ■

Table 1
Major Marine Bands

(kHz)
2000-2850
4063-4438
6200-6525
8195-8815
12330-13200
16460-17360
22000-22855

Table 2
Maritime Stations

CKN	Vancouver, BC
DHS	Ruegen, Germany
EBA	Madrid, Spain
GKA	Portishead, England
HLW	Seoul, South Korea
IAR	Rome, Italy
LZW	Varna, Bulgaria
NMN	Portsmouth, VA
OXZ	Lyngby, Denmark
SVB	Athens, Greece
UJY	Kaliningrad, Russia
UQK	Riga, Latvia
URD	St. Petersburg, Russia
URL	Sevastopol, Ukraine
WCC	Chatham, MA
WNU	New Orleans, LA
XSG	Shanghai, China
9HD	Malta

Table 3
Last of the Beacons

1615	OR, Ohura, New Zealand
1620	CEP, Concepcion, Bolivia
1625	PAT, Oastaza, Ecuador
1635	LMC, Limoncocha, Ecuador
1650	SOT, Reyes, Bolivia
1655	RIO, Riobamba, Ecuador
1685	MER, Mercaderes, Colombia
1689	MH, Mt. Hagen, Papua-New Guinea

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POP'COMM's World Band Tuning Tips

May—1993

Freq.	Station/Country	UTC	Notes
2390	La Voz de Atitlan, Guatemala	0230	SS
2490	R. Oito de Setembro, Brazil	0059	close, PP
3200	Trans World Radio, Swaziland	0300	
3205	R. Ribeirao Preto, Brazil	0900	PP
3215	R. Oranje, South Africa	0300	EE/Afk
3231	R. Madagasikara, Madagascar	0330	unid lang.
3255	ELBC, Liberia	0600	s/on
3260	R. Madang, Papua New Guinea	1100	
3270	Namibian Bc Corporation	0300	
3275	R. So. Highlands, Papua New Guinea	1200	
3285	LV del Rio Tarqui, Ecuador	0900	SS
3300	R. Cultural, Guatemala	0200	
3316	SLBS, Sierra Leone	0600	
3320	R. Orion, South Africa	0245	
3326	R. Nigeria, Lagos	0600	
3330	CHU, Canada		time stn
3360	La Voz de Nahuala, Guatemala	0305	close, SS
3370	R. Tezulutlan, Guatemala	0130	local langs
3384	Icelandic State Broadcasting Service	0330	Icelandic
3395	Channel Africa, S. Africa	0400	
3980	VOA via Germany	0600	
3995	Channel Africa, S. Africa	0300	
4040	R. Yerevan, Armenia	0300	Arm.
4331	R. Horizonte, Peru	1100	SS
4460	CPBS-1, China	1300	CC
4485	R. Pajaten, Peru	0130	SS
4635	R. Dushambe, Tadzhikstan	0200	local lang.
4725	Voice of Myanmar (Burma)	1130	Burmese
4760	Yunan PBS, China	1130	CC
4760	R. Frontera, Venezuela	0130	SS
4765	RTVC, Congo	0355	s/on, FF
4770	R. Nigeria, Kaduna	0500	
4795	R. Nova Difusora, Brazil	0758	s/on, PP
4800	R. Popular, Ecuador	0200	SS
4810	R. Orion, S. Africa	0200	
4835	RTV du Mali	0600	FF
4845	R. Fides, Bolivia	0400	SS
4850	R. Luz y Vida, Ecuador	0300	SS
4870	ORTB, Benin	0530	FF
4875	V of Jinling, China	1100	CC
4875	La Cruz del Sur, Bolivia	1030	SS
4885	R. Clube do Para, Brazil	0100	PP
4890	R. France Int'l, Gabon relay	0400	FF
4890	NBC, Papua New Guinea	1100	
4900	R. Centinela del Sur, Ecuador	1100	SS
4904v	R. Relogio Federal, Brazil	0230	PP
4915	R. Anganguera, Brazil	0030	PP
4915	GBC, Ghana	0600	
4920	R. Quito, Ecuador	0300	SS
4935	R. Capixaba, Brazil	0300	PP
4945	Channel Africa, S. Africa	0357	sign on
4950	Voice of Jinling, China	1200	CC
4960	R. Cima Cien. Dominican Republic	0100	SS
4965	R. Santa Fe, Colombia	0200	SS, irreg.
4980	Ecos del Torbes, Venezuela	0200	SS
4985	R. Brazil Central	0100	PP
4990	R. Nigeria, Lagos	2230	
5004	R. Nacional, Eq. Guinea	2130	SS
5020	LV de Sahel, Niger	0500	FF
5025	R. Rebelde, Cuba	0200	SS
5030	R. Continente, Venezuela	0330	SS
5035	Rdf. Centrafricaine, Cent Af Rep.	0430	FF
5040	La Voz del Upano, Ecuador	1199	SS, s/on
5045	R. Cultura do Para, Brazil	0100	PP
5075	Caracol, Bogota, Colombia	0400	SS
5097	R. Eco, Peru	0200	SS
5800	R. Nueva Cajamarca, Peru	1000	SS
5882	Vatican Radio	0100	
5900	R. Vlaanderen Int'l, Belgium	0600	(ex-BRT)
5920	WWCR, Tennessee	0600	
5970	REE, Spain, via Costa Rica	0000	SS
6000	R. Guaiba, Brazil	0000	PP
6015	VOA via Germany	0500	
6020	Radio Netherlands	0100	
6045	R. Polis, Russia	0530	RR
6055	R. Sweden	2200	
6060	Radio Havana Cuba	0600	
6085	Deutsche Welle, via Canada	0530	GG
6095	Radio Free Europe, Germany	0600	Lithuanian
6115	R. Universidad, Mexico	0500	SS
6120	R. Japan	1130	via Canada
6130	CHNX, Canada	24 hrs	
6135	R. Aparecida, Brazil	2330	PP
6135	Swiss Radio Int'l	0230	
6140	ABC, Perth, Australia	1000	
6150	R. Canada Int'l	0630	
6155	Radio Austria Int'l	0830	
6165	R. Netherlands, via Bonaire	0030	
6185	R. Educacion, Mexico	0600	SS
6205	HCJB, Ecuador	0800	
6210	Croatian Radio	0000	Croatian/EE
6219	Radio Bosnia-Hercegovina	0200	irregular
6220	R. Sofia, Bulgaria	2130	Bulg.
6245	Vatican Radio	0745	
6280	King of Hope, Lebanon	0400	
6305	La Voz del CID (anti-Castro)	0800	SS
6400	R. Pyongyang, N. Korea	1230	KK
6560v	Iraqi Radio	0330	AA
6910	R. Africa 2000, Eq. Guinea	2200	close
7105	REE, Spain	0430	SS
7115	V of Pujiang, China	1130	CC
7125	IRRS, Italy	0600	
7150	R. Vilnius, Lithuania	0000	
7170	R. Sofia, Bulgaria	2300	
7190	Rep. of Yemen Radio	0300	s/on, AA
7200	Radio Omdurman, Sudan	0252	s/on
7220	All Union Radio, Russia	0100	RR
7230	Channel Africa	0500	FF
7235	Deutsche Welle, Germany	0400	AA, via Malta
7250	Vatican Radio	0600	//6245
7255	V of Nigeria	0500	s/on
7265	Sudwestfunk, Germany	0100	GG
7265	VOA Relay, Botswana	0300	sign on
7275	ELBC, Liberia	0652	sign on
7290	R. Sofia, Bulgaria	0500	
7300	R. Ala, Russia	1500	sign on, RR
7305	Vatican Radio	0200	SS
7345	R. Czechoslovakia	0100	
7365	KNLS, Alaska	0800	sign on
7417	V of Vietnam	1100	
7445	V of Asia, Taiwan	1400	CC
7465	Reshet Bet HS, Israel	0100	Hebrew
7510	KTBN, Utah	0400	
7550	R. Korea, S. Korea	2230	
9170	R. Omdurman, Sudan	0255	sign on, AA
9265	Icelandic Ntl Bc Svc	0730	EE
9345	R. Pyongyang, N. Korea	1300	
9400	R. Azadi/Liberty of Iran	0230	Farsi?
9425	KFBS, Saipan	1500	RR
9445	Voice of Turkey	2330	TT
9475	R. Cairo, Egypt	0200	
9495	KHBI, No. Marianas	1400	Monitor Radio
9505	R. Yugoslavia	2200	
9510	R. New Zealand	0930	
9525	R. Marti, United States	0030	SS
9535	Swiss Radio Int'l	0700	
9540	R. Tashkent, Uzbekistan	1200	
9545	R. Tirana, Albania	0530	sign on
9555	R. Portugal	0230	
9560	Radio Finland	0230	
9560	R. Jordan	1600	
9565	R. Universo, Brazil	0200	
9570	R. Portugal	0230	
9575	Radio Medi Un, Morocco	0730	FF
9580	R. Tirana, Albania	0230	
9585	Deutsche Welle, Germany	1600	
9595	R. Tanpa, Japan	1000	JJ
9600	R. UNAM, Mexico	1300	SS

Freq.	Station/Country	UTC	Notes
9605	UAE Radio, Abu Dhabi	2230	
9610	ABC, Perth, Australia	1200	
9615	KNLS, Alaska	1400	sign on
9625	Radio Fides, Bolivia	1030	SS
9640	VOIRI, Iran	1500	sign on, Farsi
9645	Faro del Caribe, Costa Rica	0400	SS
9665	Radio Marumbi, Brazil	2300	PP
9680	R. Renascenca, Portugal	1400	PP
9695	Channel Africa, S. Africa	0500	
9695	R. Sweden	0200	
9700	R. New Zealand	1030	
9705	R. Portugal	0230	
9715	QBS, Qatar	1900	AA
9725	BBC via Uzbekistan	1330	sign on
9730	Channel Africa, S. Africa	0159	s/on
9735	R. Nacional, Paraguay	2300	SS
9745	HCJB, Ecuador	1100	
9746	R. Bahrain	2000	AA QRM-HCJB
9750	R. Korea, So. Korea	1200	
9750	R. Canada Int'l	0530	
9760	R. Tirana, Albania	0130	Albanian
9765	V of Mediterranean, Malta	0600	
9770	China R. Int'l, via Mali	0000	
9779	Repubulic of Yemen Radio	0530	AA
9820	KTWR, Guam	1500	CC
9820	FEBC, Philippines	1400	CC
9835	R. Budapest, Hungary	0200	
9850	Voice of Free China, via WYFR	2230	
9870	BSKSA, Saudi Arabia	1800	AA
9885	Swiss Radio Int'l	0200	
9900	R. Cairo, Egypt	2200	
9950	All India Radio	2200	
9965	R. Caiman, anti-Cuba	1300	SS
9977	R. Pyongyang, N. Korea	1100	s/on
11335	R. Pyongyang, N. Korea	1100	
11530	Voice of Hope, Lebanon	2000	
11550	RTT Tunisia	1800	AA
11587	Kol Israel	2245	
11603	Kol Israel	2230	
11620	All India Radio	2000	
11635	R. Netherlands via Madagascar	0100	
11650	China Radio Int'l (R. Beijing)	1500	RR
11670	R. Moscow	0500	
11680	China Radio Int'l, via Fr. Guiana	0400	
11690	FEBC, Philippines	0900	s/on
11705	R. Sweden	2330	
11710	RAE, Argentina	0100	
11715	R. Korea, S. Korea	1030	via Canada
11715	R. Algiers, Algeria	2100	
11725	R. Korea, S. Korea	1000	SS
11730	BSKSA, Saudi Arabia	1430	AA
11740	R. Portugal	1900	
11750	BBC Singapore relay	1200	
11755	R. Finland Int'l	0130	
11765	R. Beijing, China	2100	SS
11780	R. Nacional Amazonia, Brazil	2345	PP
11790	VOIRI, Iran	1200	Urdu/EE
11795	UAE Radio, Dubai	1600	
11795	R. Denmark, via Norway	2300	
11800	RAI, Italy	0100	
11805	KTWR, Guam	0930	
11810	R. Jordan	1400	AA
11820	R. Sweden	0100	
11825	R. Tirana, Albania	2200	
11830	Voice of Russia	1230	RR
11830	R. Anhanguera, Brazil	0200	PP
11840	R. Tirana, Albania	0230	s/on
11855	R. Canada Int'l	1330	
11860	R. Iraq Int'l	0400	
11870	R. Yugoslavia	0040	
11880	R. Australia	1600	
11885	Broad Corp of China, Taiwan	0000	CC
11910	R. Budapest, Hungary	0200	
11925	R. Japan via Gabon	2100	
11930	R. Marti	1800	SS to Cuba
11955	Voice of Turkey	0400	TT
11955	BBC relay, Oman	0130	
11960	RTV Malienne, Mali	0900	FF
11965	V of the UAE	1800	AA
11970	R. Havana Cuba	0130	
11980	KSDA, Guam	1600	
11980	R. Ukraine Int'l	0230	Ukrainian
11985	UAE Radio, Dubai	2100	AA
12015	Radio France Int'l, via Gabon	1600	
12020	V of Vietnam	1100	
12050	R. Cairo, Egypt	0300	AA
12060	R. Ukraine Int'l	0130	unid lang
12085	R. Damascus, Syria	2005	
13605	Radio Australia	2300	
13620	R. Kuwait	2000	
13625	KHBI, Saipan	1400	Monitor Radio
13630	RFPI, Costa Rica	2300	
13635	Swiss Radio Int'l	2130	
13650	R. Pyongyang, N. Korea	0000	
13660	Radio France Int'l	0600	via Hungary
13660	R. Havana Cuba (USB)	0200	USB, EE
13675	UAE Radio, Dubai	1630	
13685	Swiss R. Int'l	0700	
13710	R. Vedo, Russia	1500	RR
13715	R. Czechoslovakia	1600	s/off
13750	AWR, Costa Rica	2300	
13785	R. Pyongyang, N. Korea	1500	
15010	V of Vietnam	1230	
15020	All India Radio	1400	local langs.
15084	VOIRI, Iran	0430	Farsi
15090	Vatican Radio	2245	s/on
15100	FEBC, Philippines	1400	EE, others
15110	REE, Spain, via Costa Rica	1900	
15140	R. Veritas Asia, Philippines	1545	local lang.
15140	R. Nacional, Chile	1730	SS, irr.
15170	R. France Int'l	0700	FF
15185	R. Finland Int'l	2300	
15195	R. Japan	0500	
15200v	R. Bangladesh	1230	EE
15205	VOA relay, Tangier	1800	
15220	Channel Africa, S. Africa	0600	(ex R. RSA)
15250	Iraqi Radio	1500	AA
15265	Radiobras, Brazil	1800	
15270	Deutsche Welle via Rwanda	2330	GG
15300	R. Cairo, Egypt	1500	AA
15325	R. Japan via Fr. Guiana	0300	
15335	RTM, Morocco	2300	AA
15340	R. Japan, via Gabon	2000	RR
15345	RAE, Argentina	2130	
15345	RTM, Morocco	1400	Berber
15345	RAE, Argentina	1300	SS
15355	R. Japan via Gabon	1500	
15360	Deutsche Welle, Germany	2100	
15375	KCBI, Dallas	1800	
15400	UAE Radio, Dubai	0345	
15415	Libyan Jamahiriya Broadcasting	1500	AA
15420	BBC via South Africa	1745	sign on
15425	R. Aum Shinrikyo, Japan	2030	via Russia
15445	SLBC, Sri Lanka	2330	
15465	R. Tashkent, Uzbekistan	1200	
15475	Africa Number One, Gabon	2100	FF
15505	Swiss Radio Int'l	1500	
15505	R. Kuwait	2245	AA
15555	R. Pakistan	1620	slow EE
15570	R. Ukraine Int'l	1500	
15575	BBC via Cyprus	1300	
15615	Rashuth Hashidur service, Israel	1700	Hebrew
15630	V of Greece	1230	
17515	V of Greece	1230	
17535	HCJB, Ecuador	0000	USB
17620	Radio France Int'l	1300	FF
17635	Swiss Radio Int';	1700	
17715	R. Alma Ata, Kazakhstan	2030	
17725	V of the Great Homeland, Libya	2100	AA
17730	Vatican Radio	0628	s/on
17730	R. Alma Ata, Kazakstan	1830	
17740	R. Yugoslavia	1200	
17740	R. Sweden	1300	EE
17745	Radio Portugal	1330	PP
17765	Deutsche Welle, Germany	1330	
17770	R. New Zealand Int'l	0445	
17790	R. Ukraine Int'l	1130	
17790	HCJB, Ecuador	1900	
17815	RTV Morocaine	1700	
17860	R. Moscow	2330	
17860	Qatar Bc Service	1300	AA
17870	R. Sweden	1500	
17875	R. Canada Int'l	2130	
17880	R. Finland Int'l	1300	
17900	R. Pakistan	1115	
18930	WHRI, Indiana	1600	
21490	Radio Austria Int'l	1430	
21455	HCJB, Ecuador	1900	
21505	BSKSA, Saudi Arabia	1600	AA
21625	Radio Sweden	1330	
21820	Swiss Radio Int'l	1500	s/on
25690	UAE Radio, Abu Dhabu	1 230	
25870	WFLA, Tampa, FL (cue xmtr)	2000	FM mode

■

BROADCAST DX'ING

BY ROGER STERCKX, KVT1JH

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Nice Work If You Can Get It: Baltimore AM'er WHLP was recently created to run a full format of job openings available to its listeners. These jobs range from unskilled to highly skilled, part-time to full-time, temporary and permanent. They include opportunities for warehouse workers, biologists, taxi and truck drivers, sales people, clerks, carpenters, engineers, and everything else you can think of.

Companies seeking employees run their ads over WHLP, which charges from $15 to $20 for a 30-second help-wanted spot. There are also short programs relating to dealing with interviewers, preparing resumes, what to wear when applying for a job, starting up your own business, etc.

Western Star Broadcasting, of Chicago, is the company that runs this format on WHLP. They say that by the time you read this, they will have their help-wanted format in a dozen other markets from coast-to-coast. Sounds like a good idea to us.

Radio Reborn: We asked readers to pass along information on stations that play recordings of classic radio programs from the past.

Ken Greenberg, of Skokie, Ill., told us that WNIB/97.1 runs various radio programs at different times on Saturdays. These include Fibber McGee, Jack Benny, Great Gildersleeve, and others.

Vernon Schroeder, Batavia, Ill., mentioned these same programs, which he tells us also run on WNIZ/96.9. In addition, in Dubuque, Iowa, station WDBQ/1490 runs a Sunday night "Big Broadcast" program of classic radio programs.

"The Old Radio Vault" is a program broadcast daily over WCAR/1090, Livonia, Mich. There is a show at 10 a.m., and also 6 p.m., as reported to us by Mark Schindewolf, Sterling Heights, Mich. The programs are varied and include westerns, comedy, kids' programs, etc. Livonia is a Detroit suburb.

And don't forget "When Radio Was," which runs Sundays from 7 to 9 p.m. over WICC/600, Bridgeport, Conn. We have mentioned this one previously. From 2 to 7 p.m. on Sundays WICC/600 has a program of pop music from about the 1930 to 1955 era. The program is hosted by Jim Buchanan, who is a ham and a *POP' COMM* reader. Jim mentions our magazine from time to time.

Sunday nights, WQEW/1560, New York City, plays old time records, although we aren't sure of the exact time.

Bob Proctor, of Adrian, Mich. advises that there are two publications available to those who enjoy listening to old time radio (OTR) programs. One is *Hello Again*, Box 4321, Hamden, CT 06514; the other is *Old Time Radio Digest*, edited by Bob Burchett, 10280 Gunpowder Rd., Florence, KY 41042.

By the way, Bob is a 23-year collector of material relating to OTR. Other collectors can contact him at: Bob Proctor, P.O. Box 893, Adrian, MI 49221.

Two For The Show: In Cincinnati, station WLW/700 purchased local WKRC/550. At one time the stations had been rivals, but now they're all one big family as WLW's air personalities turn up on both stations at different times. There will be some crossover in audiences between the two stations, but WLW will most likely continue with its highly rated "male-oriented locker room" approach, while the other station will present itself to the audience with a kinder and gentler face.

Thanks to Ron Zeis, N4UGB, and Registered Monitor KKY4DP, of Highland Heights, Kentucky, for this information.

A Model Station: A company that offers plastic buildings for use with model train layouts has a TV station that includes a single story building with an attached tower. Pat Griffith, N0NNK, of Denver, tells us he has seen this only in a catalog but it looks very nice and could probably be fixed up with a little work into a decorative broadcast station model for a radio hobbyist. Although the catalog doesn't specify the size, Pat thinks it might be scaled for "S" gauge, which would make it kind of large. He is ordering one. The item is in the catalog of Scenery Unlimited, 7236 W. Madison St., Forest Park, IL 60130.

What's New?: U.S.A. Digital Radio Corp. has applied to the FCC for a permit to construct a 10 kW digital AM broadcast station on 1660 kHz. The transmitter is proposed to be located at 4301 190th St., Torrance, California.

Who's A Cut Up? Not Us!: Fun loving WNOP/740, Cincinnati, was a long-standing outpost of hilarity and zaniness, playing jazz and doing some of the craziest and funniest promos in town. Being funny and irreverent did not guarantee big ratings, advertisers, or financial success. WNOP has now put on a suit and tie, and dumped all of its jazz records into the Ohio River. The station is presently running an all news format piped in CNN, which is about as far removed from its former program format as could be imagined.

Between 1973 and 1989, WNOP was housed in three large steel containers anchored in the Ohio River in Newport.

Applications Filed To Modify AM Facilities

KAGI	Grants Pass, OR	930 kHz	Seeks nite reduction to 123 watts.
KBSU	Boise, ID	730 kHz	Seeks day increase to 15 kW.
KDOV	Phoenix, OR	1300 kHz	Seeks day increase to 20 kW.
KEZF	Beaverton, OR	1040 kHz	Seeks increase to 2.2 kW/200 watts.
KIAM	Nenana, AK	630 kHz	Seeks increase to 10 kW/8.5 kW.
KUGN	Eugene, OR	590 kHz	Seeks nite increase to 5 kW.
WCCF	Punta Gorda, FL	1580 kHz	Seeks reduction to 160 w./106 w.
WCRN	Cherry Valley, MA	830 kHz	Seeks move to Worcester, 7 kW/5 kW.

Changed AM Facilities

KBCN	Fairbanks, AK	1300 kHz	Increased to 5 kW all hours.
KVAR	San Antonio, TX	1160 kHz	Reduced days to 5 kW.
WDMV	Pocomoke City, MD	540 kHz	Move to Brinklow, increase to 1 kW.
WMXY	Hogansville, GA	720 kHz	Reduced days to 7.97 kW.

Applications Filed To Modify FM Facilities

KAFM	Red Lodge, MT	99.5 MHz	Seeks 99.3 MHz, 45 kW.
KDEE	Cameron, MO	92.3 MHz	Seeks 100.1 MHz.
KMIH	Mercer Island, WA	90.1 MHz	Seeks 104.5 MHz
KVST	Huntsville, TX	103.5 MHz	Seeks 103. MHz, 15 kW.
KXKB	Kings Beach, CA	89.9 MHz	Seeks 90.5 MHz.
KZUS-FM	Toledo, OR	107.1 MHz	Seeks 100.7 MHz, 2.5 kW.
WCDX	Mechansville, VA	92.7 MHz	Seeks 92.1 MHz, 4.5 kW.
WCVZ	Zanesville, OH	92.7 MHz	Seeks move to S. Zanesville.
WDBA	Algoma, WI	96.5 MHz	Seeks 96.7 MHz.
WHCJ	Savannah, GA	88.5 MHz	Seeks 90.3 MHz.
WJCR-FM	Nillerstown, KY	90.1 MHz	Seeks move to Upton.
WKZC	Scottsville, MI	95.9 MHz	Seeks 94.9 MHz, 17 kW.

Changed FM Facilities

KITE	Kerrville, TX	92.1 MHz	Moved to 92.3 MHz.
WMJW	Cleveland, MS	107.5 MHz	Moved to Rosedale.
WONO	Walterboro, SC	105.3 MHz	Moved to 93.7 MHz, 6 kW.
WSOS	St. Augustine, FL	105.5 MHz	Moved to 94.1 MHz.

Application Filed To Build Experimental Digital AM Station

CA	Los Angeles	1660 kHz	10 kW

Applications Filed For New FM Stations

AL	Eva	99.9 MHz	6 kW
AL	Wetumpka	97.9 MHz	3 kW
AS	Fagaluta	103.1 MHz	30 kW
AZ	Nogales	91.1 MHz	3 kW
AZ	Window Rock	103.1 MHz	3 kW
IL	Breese	97.5 MHz	6 kW
IL	Mt. Olive	105.3 MHz	6 kW
IL	Pinckneyville	104.3 MHz	3 kW
LA	Lake Charles	90.3 MHz	50 kW
MI	Mio	93.9 MHz	50 kW
MN	Slayton	103.1 MHz	3 kW
NC	Carolina Beach	106.7 MHz	1.8 kW
NY	Jamestown	88.1 MHz	26.5 kW
OH	Columbus	91.5 MHz	
OR	Rogue River	94.7 MHz	2.4 kW
PA	So. Waverly	96.1 MHz	1 kW
SC	Summerton	95.5 MHz	6 kW
TN	Dyer	94.3 MHz	6 kW
TX	Amarillo	99.7 MHz	
TX	Goliad	95.9 MHz	6 kW
VA	Edinburg	88.3 MHz	1 kW
VT	Marlboro	101.5 MHz	

Permits Granted To Build New FM Stations

AL	Tuskegee	99.9 MHz	
AZ	Claypool	105.6 MHz	
AZ	Kearny	105.1 MHz	
CA	Groveland	91.7 MHz	
CA	Lenwood	96.9 MHz	1 kW
CA	Los Banos	106.9 MHz	
CA	Woodlake	104.1 MHz	
FL	Crystal River	91.9 MHz	
FL	St. Augustine	96.9 MHz	1 kW
GA	Lumpkin	99.3 MHz	
GU	Agana	90.9 MHz	
HI	Kahaluu	106.1 MHz	
IA	Albia	96.7 MHz	25 kW
IA	Eagle Grove	100.7 MHz	25 kW
IA	New Hampton	95.1 MHz	
IL	Fisher	102.5 MHz	6 kW
IL	Olney	90.3 MHz	
IN	S. Whitley	101.1 MHz	
KS	Belle Plaine	92.7 MHz	4.6 kW
KS	Copeland	99.1 MHz	
KY	Carlisle	100.7 MHz	6 kW
KY	Hardinsburg	104.3 MHz	
KY	Virgie	107.5 MHz	
LA	Coushatta	94.9 MHz	
MD	Ocean City	106.9 MHz	3 kW
MI	Bronson	94.7 MHz	6 kW
MI	Coleman	101.5 MHz	
MI	Oscoda	100.1 MHz	
MN	Tracy	105.1 MHz	
MN	Winona	101.1 MHz	
MS	Wiggins	97.9 MHz	
NH	Hampton	102.1 MHz	
NH	New London	99.7 MHz	
NJ	Pemberton	88.9 MHz	120 watts
NY	Jamestown	88.1 MHz	265 watts
NY	New Paltz	93.3 MHz	350 watts
OH	Harrison	104.3 MHz	
OH	Portsmouth	91.5 MHz	110 watts
OR	Reedsport	99.5 MHz	6 kW
SC	So. Congaree	95.3 MHz	3 kW
SC	Summerton	95.5 MHz	6 kW
TN	Madisonville	99.5 MHz	
TN	Manchester	101.5 MHz	
TN	Union City	105.7 MHz	6 kW
TX	Cleveland	97.1 MHz	
TX	Glen Rose	92.1 MHz	
UT	Salt Lake City	88.3 MHz	
VT	Killington	105.3 MHz	11 kW
WI	LaCrosse	106.3 MHz	12 kW
WV	Clarksburg	88.1 MHz	

The station once had a mascot named Spot, which happened to be a pig. They decided to raffle off Spot for a barbecue, but ended up eating the prize themselves.

This information from Ron Zeis, N4UGB/KKY4DP, Kentucky.

Tale Of The Call Letters: Mark Schindewolf, of Mich., tells us of the strange case of the stations using the call letters WCXI. He says that if you look at Detroit's recent broadcasting past, in 1986 there were three country music stations. These were WCXI/1130, WCXI-FM/92.3, and WWWW-FM/106.7.

In the late 1980's, WCXI-FM was sold to Fritz Broadcasting, which owns WXYT/1270. The format was changed and WCXI-FM became WVAE (now WMXD).

For several years thereafter, WCXI/1130 remained on the air, but on a Friday last September the station announced that, "On Monday, your favorite FM country station comes to the AM." With nothing more said, on Monday, WCXI/1130 ceased to exist as such. It became WWWW, and began simulcasting with its sister station WWWW-FM.

That wasn't the last of the WCXI call letters in the Detroit area. In October, Mark heard Fenton station WACY/1160 ID'ing as "The new WCXI." A month later the station went dark and has not been heard since. Where and when will WCXI turn up next? It's like the *Voice of The Purple Pumpkin*.

Bumper sticker from KBEST/95 is a classic rock station. (Sent in by C.A. Luse, LaMesa, Calif.)

Indecent Exposures: The FCC issued a $23,750 Notice of Apparent Liability (NAL) to the State University of New York for the operations of WSUC-FM, Cortland, New York. This was for a supposedly indecent broadcast which the FCC said was aired in mid-afternoon when children may have been in the audience. The FCC said that the base amount for an indecency violation is $12,500, so we suppose that this was for one and a fraction violations.

The FCC upheld the prior NAL issued to the licensee of FM station KMEL, of San Francisco. The amount was for $25,000. A listener had complained to the FCC that on a number of dates, between 2 and 6 p.m., there was indecent material broadcast. The station requested that the NAL be dropped or lowered because it was merely innuendo and double entendre, also that it was not patently offensive by local community standards, and furthermore that material broadcast during live and spontaneous programs does not necessarily justify sanctions. KMEL pointed out that it has a good compliance record, and has discontinued the segment of the program that the FCC had deemed objectionable.

The FCC considered these points and then asked KMEL to please send the full amount of the NAL, $25,000.

New Shortwave Station Licensed

KJES Vado, NM

Construction Permits Cancelled

KZHR	Dayton, WA	92.5 MHz	210 watts.
WXSC	Tell City, IN	96.9 MHz	6 kW.

Changed AM Call Letters

New	Was	
KCLL	KNEZ	Lompoc, CA
KDKS	KTOC	Jonesboro, LA
KQKE	KSUR	Soledad, CA
KRVA	KSSA	Plano, TX
WAYB	WZKT	Waynesboro, VA
WLCM	WNNY	Charlotte, MI
WXKN	WLSY	Newburg, KY

New FM Call Letters Issued

KFPR	Redding, CA
KGXY	Lenwood, CA
KPXD	Rosamond, CA
KPXF	Lacombe, CA
KPXG	Gainesville, TX
KPXH	Garapan, Saipan, MP
KRTI	Grinnell, IA
KUPA	Pine Bluff, AR
KZLO	Bozeman, MT
WEGV	Mishicot, WI
WEBK	Killington, VT
WGNR	Monee, IL
WLPG	Florence, SC
WOSP	Portsmouth, OH
WUBS	South Bend, IN
WWGT	Vergennes, VT

Requesting Changed FM Call Letters

Now	Seeks	
WGBI-FM	WGGY	Scranton, PA

Changed FM Call Letters

New	Was	
KAAR	KTSL	Spokane, WA
KBXY	KWXW	Baker, CA
KDKS-FM	KDKS	Alexandria, LA
KDSS	KBXS	Ely, NV
KDZR	KJZY	Denton, TX
KFCL-FM	KFCL	Woodlake, CA
KGKO-FM	KAKI	Benton, AR
KIXW	KQEH	Lenwood, WA
KKPS	KVSE	Brownsville, TX
KLMP	KVSR	Rapid City, SD
KQKE-FM	KSUR-FM	Greenfield, CA
KVRA-FM	KSSA-FM	McKinney, TX
KRGQ-FM	KZQQ-FM	Roy, UT
KTSL	KAAR	Medical Lake, WA
KYYX	KHHT	Minot, ND
WAYB-FM	WAYB	Graysville, TN
WBWN	WRXZ	Leroy, IL
WDAB	WBBR	Travelers Rest, SC
WDEV-FM	WDOT-FM	Warren, VT
WEQL	WKFM	Fulton, NY
WFRY	WFRI	Lima, OH
WGOR	WMTZ	Martinez, GA
WJZD	WWUB	Long Beach, MS
WNTK-FM	WRJE	New London, NH
WNEW	WNEW-FM	New York, NY
WQKL	WAMX	Ann Arbor, MI
WQMB	WGNR	Grand Rapids, MI
WQUB	WWQC-FM	Quincy, IL
WSHZ	WPBC	Bangor, ME
WTND	WVVY	Grifton, NC
WULS	WXEA	Broxton, GA
WWDX	WZMF	Danville, IL

If you hear this one, let us know. Pat Griffith found this real WKRP bumper sticker in the lobby of the Denver CBS -TV affiliate!

This WJLK/94 bumper sticker is from the station in Atlantic City, New Jersey. It was sent in by reader Philip E. Galasso, who is an engineer at WJLK-AM/FM.

FCC NAL's sent to WXRK (New York City), WYSP (Philadelphia), and WJFK (Washington, DC) came to a total of $600,000 for twelve days worth of Howard Stern's shows in late 1991. Previously, KLSX (Los Angeles) had been issued an NAL for $105,000 relating to the same material.

The FCC continues to regulate free speech, censor and control broadcast programming, and establish its own social standards for the American public. Some sharp member of Congress could score major points with the public by making a lot of noise about this arrogant practice. A Congressional howl would get enormous coverage in the national broadcast media, which has had it up to here with FCC censorship and meddling in program matters, and is tired of being ripped off to the tune of thousands of dollars by the agency.

The Total Scene: There are 4,961 AM broadcasters in the USA, 4,766 commercial FM broadcasters, and 1,585 non-commercial FM stations. Add to that, 1,943 FM translators and boosters.

As for TV, there are 1,509 VHF/UHF stations, plus another 1,311 VHF/UHF LPTV stations, 2,515 VHF TV translators, and 2,431 UHF TV translators.

Come back and be with us again in June. Send us AM/FM photos, bumper stickers, comments, news clippings, recent QSL's, format changes, and what-have-you! ■

SATELLITE VIEW

BY DONALD E. DICKERSON, N9CUE

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

Search & Rescue

TV shows like "Rescue 911," "I Witness Video" and "American Detective" are very popular and with good reason. Almost everyone likes a "real life drama!" The heroics performed by rescuers during emergencies appeals to the more noble side of human nature. Few places are more unforgiving to travelers than the high seas and the open skies, and few places provide more drama during an emergency.

Personnel aboard ships at sea found early on that radio communications were their only hope of ever receiving assistance in an emergency. In spark gap days, 500 kHz was the international emergency frequency. Today, 2,182 kHz and 156.8 MHz are standard voice emergency channels. 2,182 kHz is for long range communications and the 156.8 MHz is for short range emergency communications. When ships or private boats are in VHF (156.8 MHz) range of coast stations, they are authorized to carry an Emergency Position Indicating Radio Beacon (EPIRB). These beacons are nothing more than VLF radio transmitters. Most are handheld, battery-operated devices that are manually activated by survivors of the emergency incident. Other fully automated beacons are carried by commercial ships and aircraft. They automatically activate during an emergency.

This is where the Search & Rescue satellite system comes in. The system is known as SARSAT/COSPAR, Search and Rescue SATellite. COSPAR is the name in Russian. Four countries contribute to the SARSAT system: Canada, France, Russia and the USA. The US and Russia provide the spacecraft while France and Canada provide some of the onboard equipment. Each nation provides ground stations capable of receiving signals from the satellites which give the location of the emergency transmitters.

A military helo on an S&R mission.

The H-60 is the backbone of coastal S&R operations. (Courtesy DOD)

The SARSAT system is actually a transponder package that is carried onboard US and Russian polar orbiting satellites. The Russian satellites are called METEOR and the American ones are called Advanced Tiros-N until launch at which time they are called NOAA (or, the National Oceanic Atmospheric Administration, after the agency that is responsible for their operation). Then the satellites are given a number for identification. NOAA 9, 10 and 12 are currently operational.

Polar orbiting spacecraft determine the location of an emergency transmitter by using Doppler techniques. There is a natural shift in frequency as the satellite passes over the transmitter. The satellites relay the emergency signal to waiting ground stations. There are 11 stations in 5 countries around the world. It should take no longer than 6 hours for one of the many orbiting weather satellites that carry the SARSAT transponders to locate an emergency signal and relay it to a waiting station. The GOES geostationary weather satellites are capable of relaying emergency signals from NOAA satellites to ground stations or directly from the emergency transmitter to ground stations. This instantaneous relay does not provide location information, however.

The emergency transmitters use one of three frequencies: 121.5 MHz, 243 MHz and 406.5 MHz. 121.5 MHz is an aviation emergency frequency used by private and commercial aircraft. 243 MHz is the emergency aviation frequency used by military aircraft. The frequency of 406.5 MHz is the newest and least used. It will see more use with newer emergency transmitters.

Once an emergency signal is picked-up by an orbiting satellite, it is relayed to ground stations. They in turn relay it to the

The Pavelow (H-53) is one of the largest used in S&R. (Courtesy DOD)

The Sea King (SH-3H) is used in S&R and tracking down subs. (Courtesy DOD)

International Distress Freqs

500 kHz	Ships
2.182 MHz	Ships
8.364 MHz	Life-boats (CW)
121.5 MHz	Aircraft
156.8 MHz	Ships
243.0 MHz	Ships
406.5 MHz	Ship/Air

Emergency Beacons (EPIRB)
121.5/243.0/406.5 MHz

Coast Guard Emergency Freqs

2.182 MHz	6.125 MHz
3.208 MHz	7.528 MHz
4.125 MHz	9.125 MHz
4.509 MHz	11.434 MHz
5.680 MHz	11.513 MHz

ground station closest to the incident. This ground station then contacts the appropriate civil and military response teams. In the US, Coast Guard and Civil Air Patrol units are dispatched. Other elements of the USN and USAF can respond as needed.

There are several frequencies between 2 and 3 MHz that are used exclusively for ship-to-ship safety communications. The Coast Guard has its own frequency for operations in this band, 2.670 MHz. In addition, the Coast Guard maintains a set of split frequencies called Contact And Long Range Liaison (CALL) channels.

When a Search & Rescue operation is under way, you can expect to hear communications from Coast Guard ships, air-

Coast Guard Ships

2.670 MHz	5.422 MHz
4.040 MHz	6.506 MHz
4.813 MHz	6.720 MHz
5.320 MHz	9.125 MHz

Coast Guard (Call) Split Freq

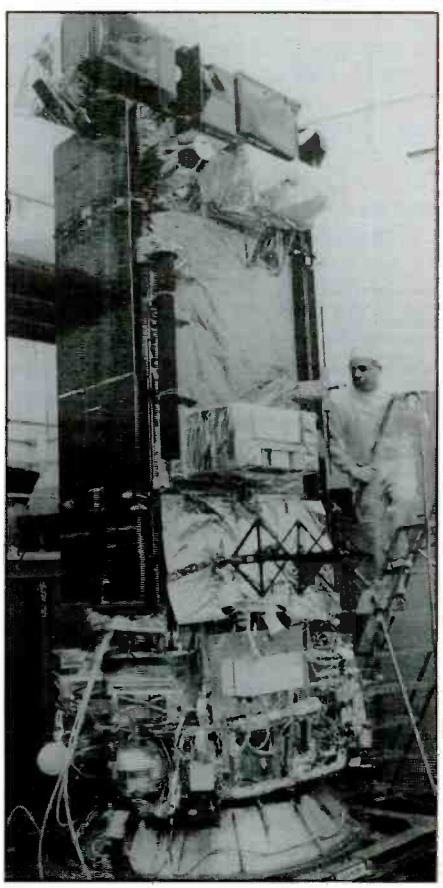
USCG	Ship
4.428 MHz	4.134 MHz
6.506 MHz	6.200 MHz
8.765 MHz	8.241 MHz
13.113 MHz	12.342 MHz
17.307 MHz	16.543 MHz

Civil Air Patrol

4.467 MHz	121.500 MHz
4.469 MHz	121.600 MHz
4.506 MHz	122.900 MHz
5.500 MHz	123.100 MHz
5.582 MHz	143.900 MHz
5.627 MHz	148.150 MHz
11.201 MHz	149.925 MHz
11.975 MHz	173.580 MHz
40.5 MHz	282.800 MHz

Manned Spaceflight Search & Rescue

2.182 MHz	14.993 MHz
3.023 MHz	19.993 MHz
5.680 MHz	121.500 MHz
8.634 MHz	156.800 MHz
10.003 MHz	243.000 MHz



SARSAT transponders are carried on NOAA weather satellites. (Courtesy NASA

Search & Rescue Helos

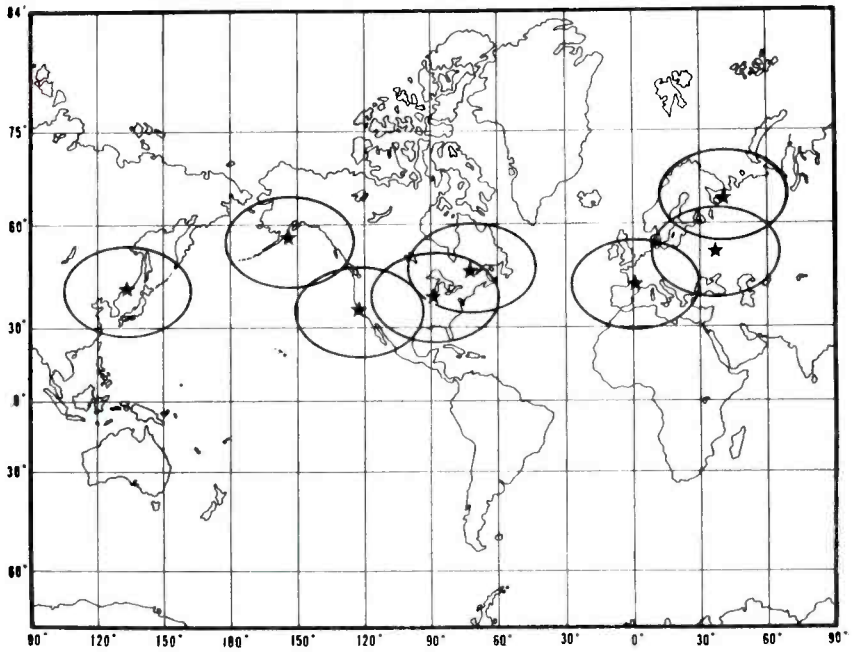
5.692 MHz	34.50 MHz
5.696 MHz	38.160 MHz
8.984 MHz	40.950 MHz
11.201 MHz	41.880 MHz
30.830 MHz	123.050 MHz
32.210 MHz	126.400 MHz

Coast Guard Aircraft

2.261 MHz	11.513 MHz
3.120 MHz	12.887 MHz
5.692 MHz	15.081 MHz
5.696 MHz	123.050 MHz
6.381 MHz	126.400 MHz
6.788 MHz	164.300 MHz
8.648 MHz	237.900 MHz
8.984 MHz	277.500 MHz
11.195 MHz	381.500 MHz
11.201 MHz	383.800 MHz

Search & Rescue Ground Stations
Kodiak, Alaska (USA)
Point Reyes, California (USA)
Scott AFB, Illinois (USA)
Washington, D.C. (USA)
Trenton, New Jersey (USA)
Ottawa, Ontario (Canada)
Toulouse (France)
Tronso (Norway)
Moscow (Russia)
Archangel (Russia)
Vladivostok (Russia)

Search and Rescue Ground Stations



craft, helicopters, and coast stations. You will be privy to medical emergencies onboard ships, engine failures, emergency landings and much more. There are many unsung heroes of the Search & Rescue system. Thousands of lives have been saved thanks to SARSAT and the dedicated professionals who put their lives on the line every day.

Comments, suggestions, reports, information and photos are always welcome. N9CUE @ KK9G.#CEIN.IN.USA.NA. ■

EMERGENCY

BY GORDON WEST, WB6NOA

COMMUNICATIONS FOR SURVIVAL

EMI Up The Line

Volunteer rescue squad members of the Bayview Fire Department just took delivery of their new Horton ambulance. This brand new unit has state-of-the-art everything, but a radio system that mysteriously shuts down at night or when running code 3.

"Once we start rolling on a nighttime call, we can't get back to our dispatcher that is only 3 miles away," says EMT-P Rick Graves. "During the day, signals are fine."

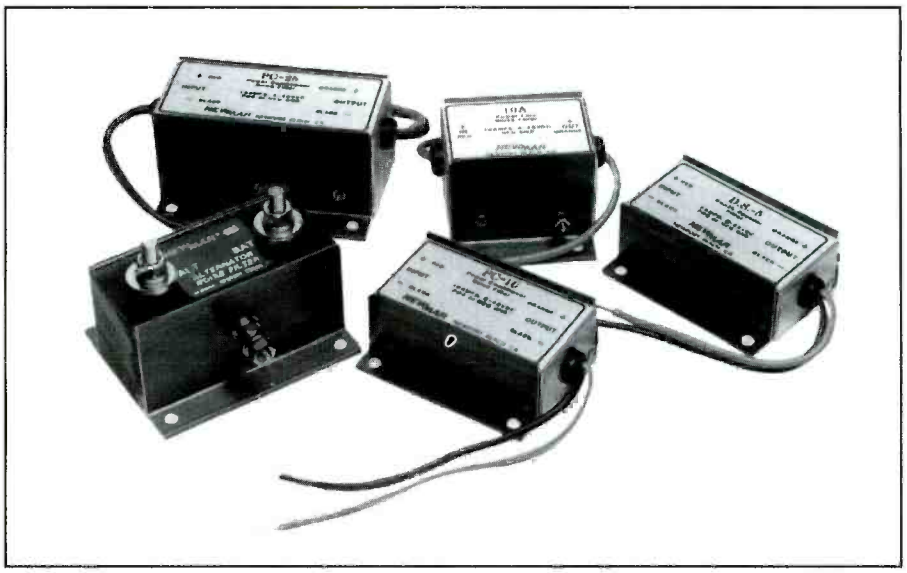
A Motorola 2-way radio technician explained that the problem was associated with a "cheap radio" installed in the unit. Records indicate that four different radio sets were re-installed in the ambulance, and they all suffered from night-time blackout.

The Motorola technician finally came in with an old Mo-Com 70 that he said had enough power to overcome whatever was causing the night-time communications blackout. The Mo-Com 70 was installed, and indeed, the problem was resolved.

Any of you have an idea on why those other 2-way radios wouldn't work at night?

When I was visiting this rescue squad, I was fascinated with their problem. I had them temporarily re-install a 40-watt land mobile unit, operating on 155.160 MHz simplex, with an encode/decode CTCSS of 82.5 Hz. All other units, including the dispatch center, operated continuous decode squelch to cancel the interference from a distant ambulance company running on the same frequency but with a different CTCSS frequency.

Indeed, during the day, the smaller radio came through loud and clear. At night, the dispatcher immediately lost contact with us as soon as we started the run. I put on my earphones, and listened to our transmitted night-time signal on open squelch with both a portable pac-set as well as the Optoelectronics R-10 near-field signal interceptor. Bingo, the culprit behind night-time and code 3 transmission loss was the emergency vehicle's high-output alternator which was injecting an AC whine so severe on the electrical system that none of the all-in-one land mobile radios could filter it out from riding along with the transmitted signal. Any alternator whine on a transmit signal masks the CTCSS tone, and this results in a signal that just won't open up the squelch decode circuit at dispatch headquarters or in the other mobile units associated with this system. During the day, the headlights were off, the alternator was coasting and the alternator whine was at a minimum.

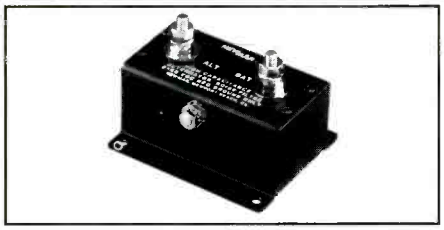


With severe alternator noise, additional filters must be used on the radio siren/PA circuits.

So why would a Mo-Com 70 do any better than the other smaller 2-way radios? The older, big Motorola 2-way radios had massive filters on the DC input specifically to take out alternator whine. In smaller sets, there is physically no room to mount filters large enough to handle the common alternator output interference associated with emergency vehicle high-output charging systems.

The diode rectifiers in high-output alternators will produce a train of extremely short, high-energy pulses. The harmonics of these pulses extend up past 30 MHz, but are especially severe on the lower frequencies. The interference sounds like an

Using a foil-covered AM radio as a noise "sniffer," the radio problems were traced to the alternator whine.



This is the filter that cured the radio problems detailed in this article.

almost musical whine, varying in pitch with engine speed, and varying in intensity with the amount of current required for a night-time code 3 run (10 amps are needed for wig-wag high beams; 8 amps for low beams; 30 amps for electronic siren; 70 amps for Federal Q2-B mechanical siren; 20 amps for light bar and strobe lights; and 10 amps for FM transmitter).

With this amount of current being pulled on a code 3 run, the alternator kicks into full output, and the AC electromotive interference (EMI) travels down the 12-volt radio's DC lead, and into the transmitter, producing up to +/- 5 kHz of alternator whine that all but wipes out voice transmission and completely obliterates the 1 kHz CTCSS tone. Interference is not recovered on receive because the tone squelch decode circuit kicks in, muting the receiver.

Special alternator filters, specifically rated for 100 amp plus loads, shunt the AC ripple to ground while allowing a smooth DC voltage to flow to the other systems in the unit. You would not try to filter out big loads like the mechanical siren or lighting circuits because these loads don't require a pure DC. However, your electronic siren and your radio system indeed need a pure DC circuit to minimize alternator whine shut-down.

This 100-amp filter is installed within one foot of the alternator. This keeps the alternator whine from transferring over to other wires associated with the charging system. The red is attached to the alternator output terminal, and the wire that went originally to the alternator is connected to the "alt" connection post on the filter. The black wire goes to the alternator frame bolt ground. You will need 8-gauge wire to handle up to 120 amps.

If the alternator is "floating" and involves long positive and ungrounded negative leads, you will require two filters, one in each lead, at the alternator.

You can also reduce alternator whine on transmit by filtering the DC input, right at the radio. Now you only need an alternator filter rated at about 10 amps. You may wish to also filter the lead going to an engine tachometer. Some alternators with either internal or external regulators provide an AC output connection for the tach, and this is rich in interference to your radio receiving system.

Once everything is in place, doublecheck that you don't have a significant voltage drop between the "alt" and "bat" terminals of the alternator filter. This sometimes will occur with an alternator that has a built-in voltage regulator. If you do detect reduced alternator output, a special shunt capacitor will convert the "LC" filter to a "CLC" filter with low input impedance in the stop-band. High noise voltage at the regulator input is reduced, and the interference filtering action of the overall filter is actually improved, and the high-output alternator will continue to operate as designed but with reduced EMI.

And for emergency command posts with 200-amp alternators, there is a 200-amp alternator filter also available for resolving the alternator whine.

These filters cost approximately $1.00 per amp at 12 volts DC, and for a free set of application notes for emergency vehicle electrical systems, call Marine Technology, Inc., at 800-772-0796. (In California, 310-595-6521)

This organization specializes in electrical filter noise elimination. Ask for Jack or Rick. ■

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

New Experimental Stations

The Commission, granted the following experimental applications, which are listed in chronological order.

KC2XKW, Israel Military Industry Services, to operate on frequencies 168 MHz, 463 MHz, and 471 MHz for testing and demonstration of robotic systems. MO: Continental, U.S.

KM2XMS, University of Guam, to operate frequencies 2030-2030 MHz for use of GOES Satellite System as part of the Pacific Education and Communications experiments (PEACEAT PROJECT). FX: Pacific Territories.

KM2XMU, Public School System, to operate on frequencies 2030-2033 MHz for use of GOES Satellite System as part of the Pacific Education and Communications experiments (PEACEAT PROJECT). FX: Pacific Territories.

KM2XMV, Superchannels of Las Vegas, Inc., to operate on frequencies 2500-2506 MHz, 2512-2518 MHz, 2524-2530 MHz, and 2536-2546 MHz to test equipment in connection with production of facilities to be developed for local distribution of video services. FX: Henderson, NV.

KM2XMZ, Norand Corporation, to operate on frequencies 26.96-2728 MHz, 49.82-49.90 MHz, 902-928 MHz, 2400-2483.5 MHz, and 5725-5875 MHz for development, testing and demonstration of portable radio data communications system. FX&MO: Cedar Rapids, IA.

KM2XNC, Motorola, Inc., to operate on frequency 915 MHz for development and testing of Personal Alarm and Reporting Systems (PARS) - Prisoner Headcount, Identification and Security System (PHILS) and Officer Alarm, Safety, Identification System. (OASIS). FX&MO: Scottsdale, AZ; Corcoran, CA; Butler, NY.

KM2XNE, Motorola, Inc., to operate on frequencies 901-905 MHz for experimentation and market testing of CT2 technology. FX&MO: Boynton Beach, FL.

KM2XNG, E.F. Johnson, Corp., to operate on frequencies 851-866 MHz to test newly developed communications equipment. FX&MO: Chaska, MN.

KM2XNI, E.F. Johnson, Corp., to operate on frequencies 851-866 MHz to test newly developed communications equipment. FX&MO: Minneapolis, MN.

KM2XNJ, Pulse Engineering, Inc., to operate on various frequencies for fulfillment of State of Maryland Government contract (HF Communications System). FX&MO: Beltsville, MD.

KM2XNL, Vitro Services Corp., to operate on frequencies 22,925 MHz and 22,875 MHz for export of communication equipment. FX&MO: Walton Beach, FL.

KO2XHK, Norand Corporation, to operate on frequencies 469.96 MHz, 457.5375 MHz, 457.5875 MHz, and 458.2125 MHz for development and testing of radio data transmission systems for export. FX&MO: Cedar Rapids, IA.

KM2XHQ, Satelife, Inc., to operate on frequencies 148.260-148.560 MHz to provide communication where no other means are available. FX: Cambridge, MA.

KM2XNT, King Radio, Corp., to operate on frequencies 9325-9425 MHz to evaluate the performance of an airborne weather radar. MO: Continental U.S.

KM2XNV, Comrad Group, Inc., operate on frequencies in 1850-1990 MHz for demonstration of local area wireless network. FX&MO: Central Lake County, IL.

KM2XNW, Uniden America Corp, to operate on frequencies 220.0475 MHz, 220.1975 MHz, 220.3475 MHz, 220.4975 MHz and 220.6475 MHz for development and improvements in the area of Trunked Radio Systems. FX: Floriston, CA.

KM2XNY, State of California, to operate on frequency 401.7025 MHz for fire weather forecasting and for water run-off predictions. FX: Bishop, CA.

KM2XOB, American Telephone & Telegraph, CO., to operate on various frequencies in the 30 and 40 MHz range for development and testing of cordless telephones. MO: Continental U.S.

KM2XOC, Conoco Communications, Inc., to operate on frequencies 1636.5-1645.0 MHz for use of INMARSAT for emergency communication in the event of an oil spill. MO: U.S. and Possessions.

KM2XOI, Metricom, Inc. to operate on frequencies 902-928 MHz for testing new frequency hopping spread spectrum radio devices. FX&MO: San Francisco & San Jose, CA.

Monetary Forfeiture Reduced

The Commission reduced from $52,000 to $26,000 the monetary forfeiture assessed against Madison Communications, Inc., Athens, AL, for operating on 26 unauthorized frequencies.

Madison admitted it had operated on the 26 frequencies without FCC licenses. It explained it operated a small, rural cable system in Alabama, and had decided to extend its service to Huntsville, AL, by establishing a "wireless cable" system. It said its testing of this system resulted in the violations.

The Commission said that while Madison's unauthorized operation may have been in connection with a single unitary system, nevertheless Madison was indisputably transmitting on 26 different frequencies without FCC authorization. It said a monetary forfeiture penalty was appropriately imposed on each of the 26 unlicensed operations ($2000) and Madison had not provided sufficient financial information to demonstrate it was unable to pay that forfeiture or that its payment would have an adverse impact on its ability to provide cable service to the public.

However, the Commission said, in light of Madison's statement that it had a history of overall compliance with FCC rules and the lack of any contradictory evidence in the files, the total penalty should be reduced to $26,000.

Denied Review of Forfeiture

The Commission denied a request by the Port of Ilwaco, Ilwaco, WA, for review of a $1,250 forfeiture assessed for operating radio transmitters on 156.425 MHz without a license.

The FCC's Ferndale, WA, office monitored 156.425 MHz and recorded a radio conversation between a base station and a mobile station that appeared to be operated by the Port of Ilwaco. The Port confirmed that it was operating radio transmitters on 156.425 MHz and Commission records revealed that the Port was doing so without a license. Thus, the Port was assessed a forfeiture in the amount of $1,250.

Seeking review, the Port admitted the violation and paid the forfeiture penalty, but stated a number of reasons why the penalty should be rescinded. The port manager claimed that being new to the position, concern over the radio license was not a high priority since the radio was being used in what was assumed to be a legal manner, and Port employees indicated that the radios were licensed. The Port contended that the violation was not willful; the prompt corrective action was taken; that others committing the same violation have had their penalties rescinded; and that the Port is a local government authority and, thus exempted from FCC penalties.

Upon review, the Commission denied the Port's application for being untimely filed, but, nevertheless responded to the issue it raised. The Port of Ilwaco was not licensed to transmit on 156.425 MHz and that bad advice from employees does not excuse an organization's violation since organizations are responsible for the acts of their employees. Moreover, oversight of failure to become acquainted with the FCC's requirements does not excuse a violation. Also, the Commission stated that

the violation was willful. Willfulness exists if there is a voluntary act in that a person knew that he was doing the act in question, such as using a radio transmitter. Furthermore, to establish a willful violation, it is not necessary to establish that a person knew he as acting wrongfully.

Additionally, the Port of Ilwaco has presented no compelling reasons or provided no details to support its claim that the FCC's penalty assessed against the Port was dissimilar compared to penalties issued to other unlicensed radio operators. Finally, the Commission noted that a local government authority may be subject to an FCC monetary forfeiture penalty.

FCC Establishes New Emergency Medical Radio Services

The FCC established the Emergency Medical Radio Service (EMRS), a new Public Safety Radio Service. Eligibility in the EMRS will be limited to persons or entities engaged in the provision of basic or advanced life support services on an ongoing basis.

In addition, the Commission reallocated for use by EMRS licensees various channels currently allocated to the Special Emergency Radio Service (SERS) and five pairs of 220 MHz narrowband frequencies; and designated the International Municipal Signal Association and the International Association of Fire Chiefs, Inc., as the certified frequency coordinator for the EMRS.

Emergency Medical Service (EMS) communications are those relating to the actual delivery of emergency medical treatment including: a) transmissions between rescuers at the scene of an accident or disaster and physicians at hospital; and, b) the dispatch of emergency medical providers transporting injured persons to hospitals and trauma centers. Currently, EMS providers share frequencies with other types of eligibles in the SERS.

By establishing the EMRS, the Commission said the quality and reliability of EMS communications will be improved. The Commission said also that this action will aid in alleviating the congestion and interference currently hampering EMS communications by restricting use of the relevant channels and assigning additional spectrum for emergency medical communications.

Amendment To Rules Implementing Anti-Drug Abuse Act

The FCC made a minor amendment to its rules implementing the Anti-Drug Abuse Act of 1988.

The rule amendment exempts political subdivisions from the requirements of Section 1.2002 of the Commission's rules. This section requires an applicant for any new, modified and renewed instrument of authorization from the Commission to certify that neither the applicant nor any party to the application is subject to a denial of federal benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1988. Political subdivisions will no longer be required to comply with this rule.

Section 5301 of the Anti-Drug Abuse Act of 1988 gives federal and state court judges the discretion to deny federal benefits to individuals convicted of offenses consisting of the distribution or possession of controlled substances. The only licenses covered by this provision are professional or commercial licenses. Because instruments of authorization obtained from the Commission by political subdivisions are not used for professional or commercial purposes, the amendment exempts these entities from the certification requirements.

FCC Privatizes Exams For Commercial Radio Operator Licenses

The FCC privatized the administration of examinations for commercial radio operator licenses and clarified certain rules.

Currently, the Commission issues six types of certificates, licenses, permits, or endorsements that require the applicant to

pass an examination. Additionally, the Commission recently established two new radio operator licenses that will require the applicant to pass an examination. The Commission's action will privatize all of the examinations for these licenses.

The Commission amended the rules to delegate authority to the Chief, Private Radio Bureau to certify or decertify private entities as examination managers. The Commission will announce by Public Notice, and update as necessary, the names and addresses of entities that will be certified as examination managers when the process is completed. At that time, persons who wish to obtain a commercial radio operator license should go to an examination manager and take the test for the license desired or needed.

The Commission said its decision to privatize commercial radio operator license examinations will provide more frequent examinations in many more diverse and accessible locations. It also will reduce government expenses. The Commission will continue to issue commercial radio operator licenses as well as monitor the progress of private examiners and take steps to improve the process when necessary.

Propose Revisions To Part 21

The Commission proposed to revise Part 21 of the rules to remove the requirement that all Point-to-Point Microwave Radio Service (PPMS) applicants receive an authorization prior to the construction of facilities.

Under the proposal, PPMS applicants who meet certain requirements could begin construction of proposed facilities upon filing FCC Form 494 (Application for a New Or Modified Microwave Radio Station License under Part 21) prior to the granting of an authorization. The Commission is also seeking comment on the proposed revision and elimination of several reporting requirements for all Part 21 applicants, including PPMS applicants. This would include elimination of FCC Form 494A (Certification of Completion of Construction); streamlining reporting requirements related to assignments or transfers of control of Part 21 licenses by combining FCC Form 702 (Application for Consent to Assignment of Radio Station Construction Authorization or License) and FCC Form 704 (Application for Consent to Transfer of Control). A new Form 705 would be used to report information currently requested on FCC Forms 702 and 704. Finally,the Commission is requesting comment on how its rules and forms should be modified to reflect the proposed rule change.

The Commission said that these proposals will allow PPMS applicants to respond more efficiently to increased demands for rapid delivery of service, and help promote greater efficiency consistent with its goals of increasing efficient spectrum allocation and utilization and the elimination of unnecessary regulations. Also, the proposed rules would enable PPMS applicants engaging in pre-authorization construction to more effectively coordinate and consolidate their construction projects with those of other microwave radio service. Moreover, the proposed rules may reduce burdens on FCC staff as well as the public by eliminating the confusion and duplication now associated with filing separate forms to report the information requested on FCC Forms 702 and 704. The Commission said also that elimination of the specified reporting requirements will reduce the filing burden on all PPMS and Part 21 applicants. ■

ANTENNAS & THINGS

BY JOE CARR, K4IPV

SIMPLE ANTENNAS AND ACCESSORIES FOR SIGNAL IMPROVEMENT

Indoor Antennas For Cave Dwellers

Apartment, condo and townhouse dwellers have special problems when erecting shortwave antennas, not only because of limited space, but also because of the very nature of apartment buildings (especially high-rises). To make matters worse, some active antennas are not terribly good inside a steel framed building, especially when large amounts of man-made electrical noise are present. Of course, some of these problems are alleviated if you have a balcony, or a large picture window, but they don't go away. On the plus side, the height that makes high-rise buildings difficult for erecting antennas, also adds a considerable amount of effectiveness to even simple antennas. A 20-foot random length wire antenna at the fifteenth story usually works considerably better than the same antenna twenty feet off the ground. And if you can get (legal) access to the roof...

First, though, make sure you really want to do this trick. Many portable shortwave receivers are optimized for their little telescoping whip antenna. Placing a large blast of signal from a longer or better antenna doesn't improve the situation, it overloads the front-end (sigh)

Indoor Antennas

Indoor antennas are relatively easy to install, and except for certain circumstances, work quite well. While the possibilities for ham operators are a bit limited because of the high power of their transmitters, receiver owners are at less disadvantage. Indoor antennas typically don't work as well as the same antenna outdoors, but in some cases the differences are not profound.

Several problems insinuate themselves into the indoor antenna installation. Perhaps the most important is the matter of safety. You don't want to install the wire where humans or pets can tangle with it. Place the indoor wire where it can't be a hazard.

One popular method of installing townhouse antennas is in the attic or loft. Figure 1 shows how TV antenna wire stand-off insulators are screwed into a roof rafter or truss. Do not screw it into the roof itself, especially if it penetrates to the outside. The screw threads can serve as a "wick" to draw rain and snow run-off water into the attic, rotting the wood around the screw.

The attic or loft probably represents the best alternative for indoor antennas. My "Desert Storm Special" is a bit unsightly,

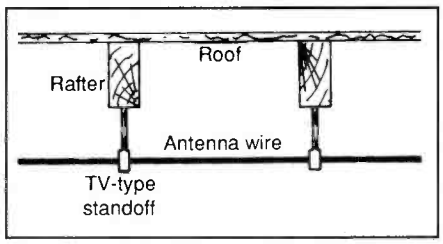


Fig. 1—Securing an antenna wire to rafters in the attic.

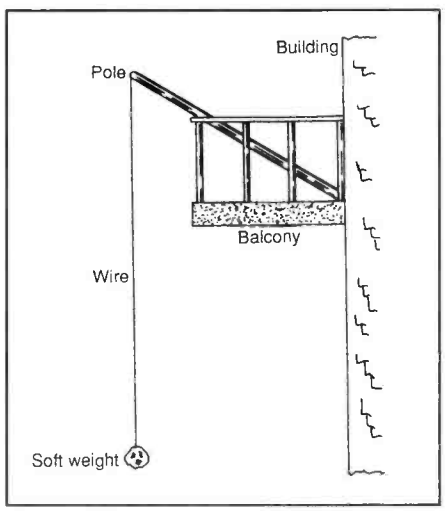


Fig. 2—The "fishing pole special."

and every now and then (for more than a year after the war ended) my wife cast a doubtful eye on that antenna, especially just before company was expected. But in the attic or loft, the antenna is well hidden. Besides, it is also above most of the effects of siding, wiring and plumbing, so will probably work better than most other indoor antennas.

The random length wire is probably the most common attic antenna. It can be installed out of the way to prevent interference when family members try to stuff even more possessions into the attic, or when we are balancing precariously on the rafters trying desperately to not get fiberglass on our skin.

"Be careful in the attic, by the way. Most attics are not finished, and the only thing between you and the floor below is a bit of half-inch dry wall and a coating of paint. If there is no floor in the attic, then stay on the wooden joists ...or you might accidentally drop into "the Loo" while someone ....errr... does their business.

Attic antenna feed lines can be routed through the walls to your receiver if the correct path can be found. Avoid paths that also include the electrical wires. Not only is there a potential electrical hazard, but the power wires sometimes carry loads of noise signals, and they can couple signal into the receiver through the antenna line. In cases where the receiver is on the floor below the attic, then a route through the ceiling of a closet is an unobtrusive way to run the coax or downlead.

Stealth Antennas

Some people are in a seemingly intractable situation regarding receiving antennas. The Homeowners' Association, or the landlord, or some other Person of Higher Authority, just simply won't let you put up an antenna. There are several approaches that can be taken: 1. Hire a witch doctor to stick pins in a little doll that has a photo print of the offender's face pasted on it; 2. Wish fervently (the ferventer the better) that they be visited by a thousand cockroaches, all of them the size of ducks; 3. Put up an antenna that no one knows is an antenna.

Of these, option number three seems to be the most viable. It is quite possible to make an antenna that either doesn't look like an antenna, isn't easily seen, or is only used intermittently and is retracted at other times.

One method for making a sorta stealthy antenna is the ol' flagpole trick. A flagpole is a delightful vertical, and can even be tuned at the base if the tuning unit is unobtrusive. In some cases, the flag pole is metal, so you can either shunt feed the pole or insulate it from ground and feed it the regular way. If the flagpole is fiberglass (or other insulating material), then pass a wire up through the center of it.

Another neat job is the ol' fishing pole trick (Fig. 2), which is popular with high-rise apartment dwellers. Drop a very thin (repeat very thin) wire out the window, or from the balcony, while you are listening to the shortwave radio. When you are finished, then reel it in and stow it in the closet. Why not? After all military and civilian aircraft have been trailing HF wires for years, why not an apartment dweller.One caution, however. Whatever you do, *don't* place a real weight on the end of the wire. I know that the weight will make the antenna wire hang straighter, but there are at least two dangers that I see from the practice. First, when the wind blows the weight

(Continued on page 73)

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Many who've followed the comings and goings of shortwave broadcasting stations over the years wouldn't have wagered very much on the success of Radio For Peace International when it first went on the air a few years ago. It seemed an idea too off the mainstream and a rather rickety arrangement to boot. But all those observers, including yours truly, have been proved wrong. RFPI, almost from day one, has made regular expansions and improvements. It has added more broadcast hours, more power and more transmitters. Now they're adding a second station in a second country! The Ontario DX Association reports that RFPI plans a facility at Salmon Arm, in British Columbia and, at this writing, is going through licensing procedures with the Canadian government. The new site is intended to provide improved coverage worldwide, but especially to listeners in Asia. RFPI hopes to have its Canadian station on the air by late this year.

All India Radio's new station at Bambolim, in the former Portuguese enclave of Goa, is now active. There are two 250kW transmitters at the location, which have been testing between 0430 and 1200 on 5980, 7200, 9650, 11915, 15145 and 17750. So far, though, we haven't heard 'em here, nor do we know of anyone who has.

No doubt you already know, Czechoslovakia has split into two countries: the Czech Republic and Slovakia. The radio dust hasn't settled yet and we don't have a clear picture of what this will do to the former Radio Czechoslovakia which, sometime before the break, was ID'ing as Czech and Slovak Radio International. As for counting the two countries, Charles Fenwick of Maine points out that the 9580 and 9810 frequencies are used by 100 kW transmitters at Vel'ke Kostolony, which is in Slovakia. 11990 and 5930 are 250 kW transmitters at Rimavska'Sobota, also in Slovakia. The only site in the Czech Republic is Litomysl, which uses 200 kW on 7345. Thanks for your info Charles.

Some reports say that Radio Yugoslavia may have to close down due to lack of funds. Lack of funds, eh? The comment one is tempted to make in reaction to that news is so obvious we won't even bother. Meantime, Croatian Radio from Zagreb continues to operate but may have dropped 6210 and replaced it with 6150, surely a bad move, if true. They're also reported to have discontinued 5085 and replaced it with 5025—another bad move, since it puts them under Radio Rebelde. Check for them also on 9830 and 13830 in our evenings.

Radio Bosnia Hercegovina is still being heard occasionally on 6219v (upper sideband). The signal is usually fair, at best, and the program is mostly music. We're told there's no mail service, which is hardly a surprise.

BROADCAST SCHEDULE EFFECTIVE FROM 6TH SEP. TO 1ST NOV. 1992

○

FREQ. (KHz)	M. B.	U. T. C.	TARGET AREA
11950	25	0300 - 1500	KINGDOM & NEIGHBOURING COUNTRIES.
15435	19	0500 - 1100	WEST EUROPE.
21505	13	1100 - 1500	NORTH AFRICA.
9870	31	1700 - 2130	WEST EUROPE.
9885	31	2130 - 2300	WEST EUROPE.
11685	25	2130 - 2300	WEST EUROPE.
9705	31	2130 - 2300	WEST EUROPE.

● – HOLY QURAN

FREQ. (KHz)	M. B.	U. T. C.	TARGET AREA
21510	13	0600 - 0800	CENTRAL ASIA.
15240	19	0600 - 0800	CENTRAL ASIA.
21670	13	0800 - 1000	SOUTH EAST ASIA.
21495	13	0800 - 1000	SOUTH EAST ASIA.
7250	41	1800 - 2100	CENTRAL AFRICA.
11935	25	1900 - 2100	NORTH AFRICA.

● – CALL OF ISLAM

FREQ. (KHz)	M. B.	U. T. C.	TARGET AREA
21505	13	1500 - 1700	NORTH AFRICA.
11950	25	1500 - 1700	KINGDOM & NEIGHBOURING COUNTRIES.

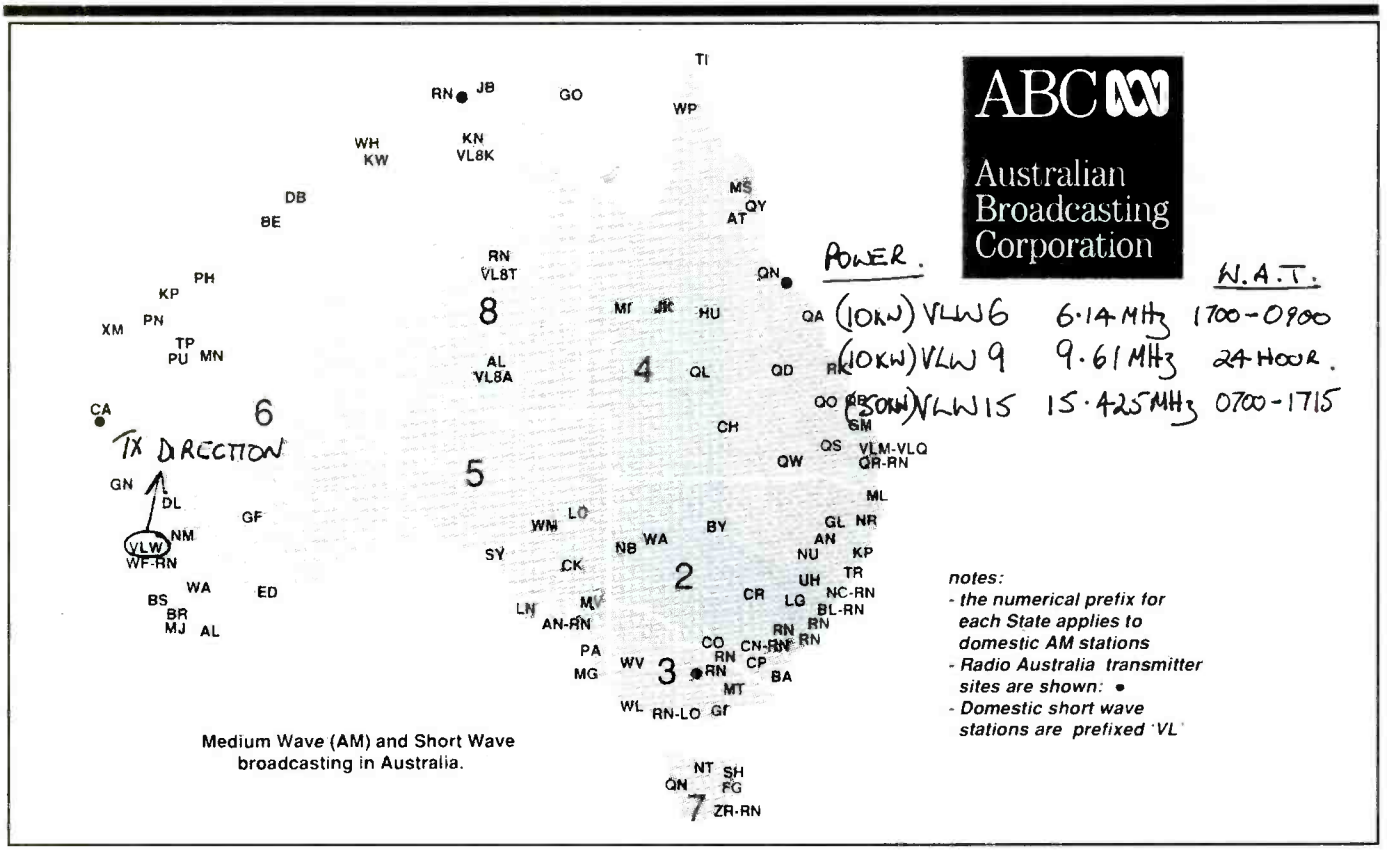
● – 2ND PROGRAMME

FREQ. (KHz)	M. B.	U. T. C.	TARGET AREA
9580	31	0300 - 1700	KINGDOM & NEIGHBOURING COUNTRIES.
6020	49	1700 - 2100	KINGDOM & NEIGHBOURING COUNTRIES.

● – FOREIGN PROGRAMMES

FREQ. (KHz)	M. B.	U. T. C.	LANGUAGE	TARGET AREA
15430	19	0400 - 0500	SOMALI	SOMALIA.
15060	19	0400 - 0600	TURKISH	TURKEY, GREECE, CYPRUS.
17760	16	0500 - 0600	SWAHILI	TANZANIA, KENYA, UGANDA, MOZAMBIQUE,SWAZILAND.
21670	13	1000 - 1200	INDONESIAN	INDONESIA, MALAYSIA, BRUNEI, SABAH.
15345	19	1200 - 1400	URDU	PAKISTAN, BANGLADESH, NORTH & CENTRAL INDIA.
11730	25	1400 - 1600	FARSI	IRAN, AFGHANISTAN.
9705	31	1400 - 1600	FRENCH	WEST EUROPE.
15345	19	1600 - 1700	BANGALI	BANGLA DESH
9705	31	1600 - 2100	ENGLISH	WEST EUROPE.
9730	31	1700 - 1800	TURKISTANI	CENTRAL ASIA.
15245	19	1800 - 1900	BAMBARA	CENTRAL WEST AFRICA.

The schedule of the Broadcasting Service of the Kingdom of Saudi Arabia, at least as of last fall. Most of it is probably still accurate. Thanks to Jill Dybka, Nashville, TN.



This QSL for ABC Regional Radio confirms 6140, 9610 and 15425 for Paul Ecke in New Orleans.

Another of the former Soviet Republics may be on the air with its own international service by now. The Voice of Azerbaijan planned to be active by now, though perhaps only at a small level. It's reported to be broadcasting to Europe between 1700 and 1800 on 6175, but we're not likely to hear that.

Radio Netherlands' relays via Russia and Uzbekistan have started, all of them beamed to various parts of Asia. in English, Indonesian and Dutch. Check 11675 from Chita at 0030-0325; 9810 (Irkutsk) and 7260 (Petropavlovsk) from 0930-1125; 9810 (Irkutsk) and 17655 (Tashkent) 1130-1325; 9810 and 7260 at 1330-1425; 7115 (Chita) 1430-1525 and 9855 (Tashkent) at 2130-2325 and 2330-0030. Radio Netherlands is issuing special QSL's for these relays.

Radio Norway, which had been threatened with a loss of their weekend English programming, had to cut "only" half of it. The Saturday English, instituted just a year or two ago, was dropped so things are back to where they were before, with English from Norway only on Sundays.

US shortwave broadcaster KCBI in Dallas, which returned to the air late last year, did so under the hand of a new owner. The station was purchased from the Criswell Bible Institute by the Two-If-By Sea Corporation, (what a neat name!). So far, though, the station carries only Gene Scott's University Network. KCBI's address is 22720 SE 410th St., Emamclaw WA 98002.

Look for more WWCR frequencies soon. The station is installing a third, 100 kW transmitter that'll be switched on sometime this spring.

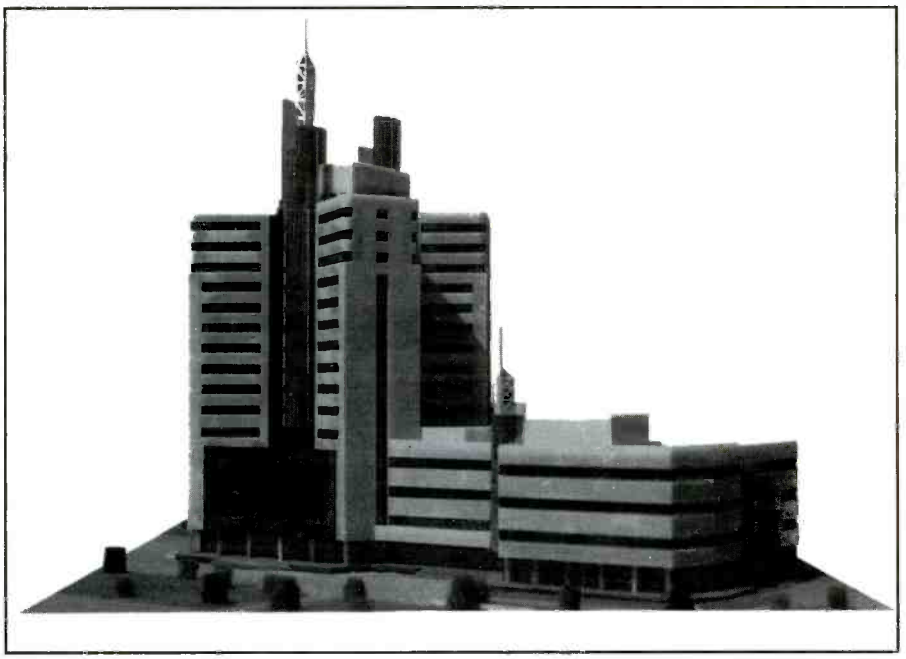
The Honduran station Radio Copan International, which is affiliated with Radio Miami International, reportedly ran another test broadcast. The station has been moved to a better site so perhaps it's now ready for action. The station may well use 15675 so check that spot every now and then. Another new Central American (Caribbean, actually) is Radio Estrella, in Santo Domingo, Dominican Republic. It's been spotted on 6205 a few times. They sign off earlier than you'd expect, around 0010, and the signal isn't very strong.

An appropriate way to introduce the following news is with a long, loud trumpet fanfare:the annual Virginia Beach Hamfest and Computer Fair is no longer just that. The new and improved 1993 version makes it the Virginia Beach Hamfest *and POP'COMM* Worldwide SWL Conference! It'll be held October 2 and 3 at the Virginia Beach Pavilion in Virginia Beach, VA. All of us at *Popular Communications* are very excited about this and we're inviting all our readers to attend this big radio extravaganza! The weekend will feature SWL products and demonstrations, talks by a number of folks, including George Jacobs, Don Dickerson and yours truly. The main speaker will be NBC Science Correspondent Roy Neal, K6DUE. There will be seminars, several representatives from international broadcasters, a tour of nearby Norfolk Naval Base, a flea market and a lot more. Stay tuned to the *Listening Post* for information about hotels, registration and such in coming issues. Meantime, get October 2 and 3 blocked off on your calendar right now! We look forward to meeting you this October!

Mail Call: Wayne Thompson in Las Vegas has returned to the hobby after 25 years away and says the changes that have taken place "boggle the imagination." Wayne is using a Drake R4C ham rig and a Realistic DX-160. Welcome back, Wayne. You can get details about the popular Registered Monitoring Station program by checking with our friends at CRB Research, P.O. Box 56, Commack, NY 11725. Can't give you a "for sure" answer to your unidentified Spanish speaker on 5005, though it might have been the Bolivian, Radio Libertad, which is on variable 5004.

Another returnee is Rev. J.W. Roberts of Brevard, North Carolina whose interest was revved up after his daughter went to Africa to do missionary work. Rev. Roberts is using a Drake R8 but has to use an indoor antenna. The California address for the Equatorial Guinea station is c/o Pearce International Communications, 10201 Torre Ave., Suite 320, Cupertino CA 95014.

Des Walsh (17 Owenabue Rise, Carrigaline, County Cork, Ireland) is a ham (EI5CD) and also an avid SWL. Des is trying to get some interest going in getting the Irish government to return to shortwave



China Radio International's New Year's card shows a model of their new broadcast center which should be in use by next year. Thanks to Rev. J.W. Roberts of North Carolina.

and welcomes comments, suggestions and moral support from everyone. Des notes that Ireland did have a station way back in1939, but it was taken off the air in 1948 following a change in government. Des has a recording of a special program Radio Telefis Eireann did about the "ill-fated shortwave service" and offers dubs of it in exchange for $4 to cover costs of the tape and postage.

Things have changed at The Voicespondence Club, mentioned in last November's column. The club secretary, whose address we gave, has passed away and mail to that address is being returned. The new address is: Charles Owen, President, The Voicespondence Club, 1711 Bellevue Ave., D-1214, Richmond, VA 23227.

Remember your letters 'n' logs are always welcome! Please list log items by country, double or triple space between items, include your last name and state abbreviation after each item and use just one side of the paper. We're still seeking shack photos to include in these pages, as well as spare QSL cards you don't need returned, schedules, station literature, news and photos—in fact, anything related to shortwave broadcasting and SWBC listening! Thanks!

Here are this month's logs. All times are

This AIR QSL shows a view of Delhi. Thanks to Andy Johns, Texas.

in UTC which is five hours ahead of EST, six ahead of CST etc. Broadcast language is assumed to be English (EE) unless indicated otherwise, i.e. AA = Arabic, FF = French, SS = Spanish, etc.

SWBC Loggings

Alaska: KNLS, 7365 at 1200 with IS, ID in RR and inspirational music. (Rausch, NJ),

Albania: Radio Tirana, 9580 at 0231 with news. (Fenwick, ME)

Antigua: BBC relay, 5975 at 2312. (Moser, PA)

Argentina: RAE. 11710 at 0152 with music. (Fenwick, ME)

Ascension Island: BBC relay, 15400 at 1930 to Africa. (Jones, OH) 15420 at 1931. (Fenwick, ME) 21660 at 1542. (Moser, PA)

Australia: Radio Australia, at 1845 on new 5880. Monitored to 2030 when lost to Vatican Radio. 9560//11800 at 1430 with IS and sign on. 11910 at 1930 and 13605 at 2310. (Rausch, NJ) 9580 at 1107 and 11910 at 2000. (Fenwick, ME) 11800 at 1538. (Vaage, CA) 11855 at 2022 to Pacific. (Jensen, IA)

ABC, Perth, 6140 at 1220 with feature, local news and weather. 9610 at 1600. (Rausch, NJ)

Austria: Radio Austria Int'l, 6155 at 0533. (Moser, PA) 9870 at 2334, ID 2335. (Zamora, CA) 15450 at 1030 with IS, frequency announcements, news. (Rausch, NJ)

Belgium: R. Vlaanderen Int'l (ex-BRT) on 9930 at 0033 with news. (Fenwick, ME; Moser, PA)

Botswana: VOA relay, 15625 at 1926 in FF. (Fenwick, ME)

Radio Botswana, 7255 at 0300 with man in SeTswana. (Johns, TX)

Brazil: Radio Educadora Braganca, 4825 in PP at 0046. (Fenwick, ME)

Radio Bandeirantes, 6090 in PP during 0800 time frame. (Urbelis, NY)

Radio Aparecida, 6135, in PP at 0800 and later. (Urbelis, NY)

Radio Universo, 9565. PP programs 0800 and later. (Urbelis, NY)

Bulgaria: Radio Sofia, 9700 at 2323; 2330. (Fenwick, ME; Pellicciari, CT) 11725 at 0000 with national news, Bulgarian pops. (Jones, OH) (11725 or normal 11720? editor)

Canada: Radio Canada Int'l, 5960 at 0030 and 11955 at 1625. (Fenwick, ME) 9755 at 0030. (Zamora, CA) 11945 at 2012. (Foss, AK) 13820 at 2028 and 17820 at 2135. (Jensen, IA)

CIQX, Montreal, relaying mediumwave CIQC at 2003. (Fenwick, ME)

CHNS, Halifax, 6130 at 2042. (Fenwick, ME)

BBC relay via Sackville, 9515 at 1601. (Fenwick, ME)

China: China Radio Int'l (ex-Radio Beijing) 9770 //11715 (both via Mali) at 0021. (Fenwick, ME) 9770 at 0355. (Jensen, IA) 11680 (via French Guiana) at 0400. (Pellicciari, CT) 11855 at 1330 (Johns, TX)

Colombia: La Voz del Cinaruco, 4865 in SS with news at 0130. (Fenwick, ME)

Costa Rica: TIFC, 5055 in SS at 0055. (Fenwick, ME)

Radio For Peace Int'l, 7375 at 0150. (Fenwick, ME) 15030 at 1307. (Rausch, NJ)

Cuba: Radio Havana Cuba. 6010 at 0303 with news. (Moser, PA) 9655 at 0206 and 17705 at 2105. (Jensen, IA)

Czechoslovakia: Czech and Slovak Radio, 5930 at 0106 with news. (Fenwick, ME) 7345 at 0302 with news. (Moser, PA) (NOTE: For the next month or two, or until things are sorted out as to who is programming what and from where we will still list this as Czechoslovakia)

Denmark: Radio Denmark, via Norway, 9650//11870 at 0328 and again at 1530 with news in DD. (Vaage, CA)

Ecuador: La Voz del Upano, 5040//5965 at 1000 in SS with Rosary, IDs, religious programs. (Urbelis, NY) 5965 at 1020 with ID, time checks, song dedicated to everyone at Radio Venezuela! (Rausch, NJ)

Radio Nacional Espejo, 4880 at 0230 in SS. (Johns, TX)

Radio Federacion, 4960 at 0051 in SS. (Fenwick, ME)

Radio Jesus del Gran Poder, 5050 at 0945 in SS. (Johns, TX)

HCJB, 9600//9745 at 0328. (Vaage, CA) 9745 at 0400. (Pellicciari, CT) 9745//15155 at 0054 and 11270 at 2134. (Jensen, IA) 17490 at 1115. (Rausch, NJ)

Egypt: Radio Cairo, 9475 at 0242. (Fenwick, ME)

England: BBC, 3955 at 0515. (Foss, AK) 6195 to Europe at 2051. (Fenwick, ME) 9590 at 2112, 15360 at 0104, 15390 at 2357 and 15400 at 1851. (Jensen, IA) 9600 at 0346, 11750 at 1550. (Vaage, CA) 9915 at 2215. (Zamora, CA)

Finland: Radio Finland Int'l, 11755 at 1949. (Fenwick, ME)

France: Radio France Int'l, 4890, via Gabon, in FF at 0435. (Zamora, CA) 7135 at 0451. (Foss, AK) (FF? editor) 12015 (via Gabon) at 1645 in FF to 1658 close. (Vaage, CA) 15300 in FF at 1912. (Fenwick, ME) 17620 at 1536 in FF. (Moser, PA) 17650 at 1400 with news. (Jones, OH)

Gabon: Africa Number One, 17630 at 1140 "Le Musique African", in FF. (Rausch, NJ)

Germany: Deutsche Welle, 6040 (via Antigua) at 0130. (Pellicciari, CT) 6145 at 0059 with IS, ID in GG and into EE.

(Moser, PA) 9545 (Antigua presumed, editor) at 0330. (Vaage, CA) 11785, African service via Sri Lanka at 1910. (Rausch, NJ)

Ghana: GBC-1, 4915 at 0601 with news, 0614 ID "You are tuned to Radio One." and into local language. (Zamora, CA)

6130 international service at 0650. (Urbelis, NY)

Greece: Voice of Greece, 9420 at 0138 with news. (Fenwick, ME) 17525 at 1528 with news. (Moser, PA)

Radiophonikos Stathmos Makedonias, 9935 at 2030-2200 with Greek music and announcements. (Urbelis, NY) 11595 at 1900 in Greek with news, Greek music. (Rausch, NJ)

Guam: KSDA—Adventist World Radio, 9835 at 0130 and 15610 at 2300. (Johns, TX) 11980 at 1400 with IS, EE ID "This is AWR—The Voice of Hope." Into JJ. (Rausch, NJ)

KTWR, 9785//11700 at 1530 in CC. (Johns, TX)

Guatemala: Radio Tezulutlan, 3370 with IS at 1058, sign on and into presumed news in SS. (Rausch, NJ) 4835 at 0018 in SS. (Fenwick, ME)

Radio Cultural, 3300 at 0345 with religious programming. (Pellicciari, CT)

Guinea: Radio Television Guineenne, Conakry, 7125 at 0558 sign on with IS, anthem, drums, IDs, highlife and vernacular chants. (Urbelis, NY (Presume all in FF, editor)

Abbreviations Used in Listening Post

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

Hawaii: WWVH time station, 15000 at 0110. (Jensen, IA)

Honduras: La Voz Evangelica, 4820 at 0012 in SS. (Fenwick, ME)

La Voz de la Mosquitia, 4910 at 0200 with EE religious program. ID at 0233 "You are listening to the Voice of La Mosquitia, HRHK" then hymns to 0300 close. Announcer said they are 200 miles back in the jungle and have to fly in. Power is supplied by a 20 kWdiesel running a generator. (Rausch, NJ)

India: All India Radio, 11620 at 2216 with tourist info program. (Zamora, CA) East Asia Service on 15050 in CC at 1200. (Rausch, NJ)

Indonesia: Radio Republik Indonesia, 15155 with time signal at 2200, ID and news in Indonesdian. (Zamora, CA)

Iran: VOIRI, 9022 at 0040 with news, UPI stories. (Jones, OH)

Israel: Kol Israel, 9435 at 2230 with "Israel News Magazine" and 11603 at 2231. (Fenwick, ME) 11587 at 1800 with news, regional weather, sports,into FF at 1815. (Rausch, NJ) 15615 at 0909, call-in program, unidentified language. (Foss, AK)

Rashuth Hashidur service, 9388 at 0630 in Hebrew with American and European pops. (Rausch, NJ)

Italy: RAI, 9575 at 0100 with news. (Pellicciari, CT)

European Christian Radio, tentative, 6210 at 0500. (Johns, TX) (Think more likely it's Croatian Radio, Andy. IRRS normally not on til 0700, editor)

Japan: Radio Japan, 5960 via Canada at 0300. (Pellicciari, CT) 9535 at 1704. (Zamora, CA) 17810 at 2350. (Rausch, NJ)

Jordan: Radio Jordan, 9560 at 1602 with news, ID, pops. (Zamora, CA)

Kuwait: Radio Kuwait, 13620 at 2015 with music, "Kuwait In The Media" and more music. (Moser, PA)

Lesotho: BBC relay, 3255, 0300 with news, sports. (Urbelis, NY) (Reports can be sent to the Radio Lesotho address, Errol. Editor)

Lithuania: Radio Vilnius, 7150 at 0023. (Fenwick, ME) 17605//17690 at 0027. (Moser, PA) 17690 at 0025. (Fenwick, ME)

Malaysia: Radio Malaysia, Kuching, Sarawak, 4950 at 1400. (Johns, TX)

Mali: China Radio International, Malta relay 9770 at 0026. (Moser, PA)

Malta: Radio Monte Carlo East, via Sackville, Canada on 5960//9775 at 0400 with news in AA, several IDs. Off at 0420. (Urbelis, NY)

Mexico: Radio Mil. 6010 in SS nightly 0600-0800 with commercials, station IDs, variety of Latin music. (Urbelis, NY)

Monaco: Trans World Radio on 9480 at 0738 with IS, sign on at 0740. (Moser, PA)

Netherlands: Radio Netherlands, 6020 at 0030. (Moser, PA) 9895 to Asia at 1615, off 1525. (Vaage, CA) 11655, South Asia service via Madagascar at 0230. 11720 at 0350. (Jensen, IA) 17605 at 1935. (Fenwick, ME)

Netherlands Antilles: Radio Netherlands Bonaire relay, 6165 at 0031. (Moser, PA) 9720 to Asia at 1010 and 11835 at 0100. (Rausch, NJ)

TWR, Bonaire, 11930 at 0304. (Moser, PA)

New Zealand: Radio New Zealand Int'l, 9510 at 1500 with live cricket coverage from domestic radio, including local commercials. 1600 news and 1606 detailed marine weather. (Zamora, CA) 9700 at 1013. (Moser, PA)

Nigeria: Voice of Nigeria, 7255 at 2030 with "60 Minutes" feature and music program, talking drums IS to 2056 when into FF. (Rausch, NJ) 0537. (Moser, PA)

North Korea: Radio Pyongyang, 6576 at 1130. (Johns, TX) 11335 at 0008, 11700 at 2320. (Fenwick, ME) 13760 at 0000 with revolutionary songs. (Pellicciari, CT)

Northern Marianas: KHBI, 13625 at 2159 IS and sign on, into news and religion. (Rausch, NJ) 2300. (Johns, TX)

KFBS, 9670 at 1500 with ID in EE. Also 1500 on 11665 in GG, with EE ID at 1530. (Johns, TX)

Norway: Radio Norway Int'l, 9650 with EE ID at 0303 and into Norwegian. Also in NN on 11870 and EE IDs 1500 and 1529. Vaage, CA) 11795 at 2300. (Pellicciari, CT)

Palau: KHBN/Voice of Hope-Asia, 9830 at 1400. (Johns, TX)

Philippines: FEBC, 11995 at 1430. (Johns, TX) 15450 at 2357 with IS, ID "FEBC Radio International, the sound alternative," "Weekend Sunrise" program to news at 0030. Closes at 0200. (Rausch, NJ)

Romania: Radio Romania Int'l, 6155 at 0224. (Fenwick, ME) 11940 at 1257 with IS, frequency announcements, news. (Rausch, NJ) 17745 at 1730. (Johns, TX)

Russia: Russia's Radio, 18195 at 1220 in RR. (Rausch, NJ)

Radio Moscow, 7150 at 2229. (Fenwick, ME) 9870 at 2310. (Moser, PA) 9890 at 1645 and 11980 at 1230. (Rausch, NJ) 17605 at 2214 "Focus On Asia and The Pacific." (Jensen, IA)

Rwanda: Deutsche Welle relay, 17860 at 1940 in GG. (Fenwick, ME)

Saudi Arabia: 9720//9870 at 1915 in AA with music, news. (Urbelis, NY) 9870 in AA at 1900. (Rausch, NJ)

Seychelles: FEBC, 9810 at 1459 with IS, ID "You are tuned to Network, in the 19 and 31 meter bands." News at 1500. (Zamora, CA)

Singapore:BBC relay, to Asia on 9740/ /9750//11750 at 1300. (Rausch, NJ)

Solomon Islands: SIBC, 9545 at 1000 with ID, news, music to 1127 close. (Rausch, NJ)

South Africa: Radio Orion, 4810 at 0130. (Johns, TX) Radio Suid Afrika, 4810 in Afrikaans at 0304 with easy listening music. Into rock 0315. (Zamora, CA)

Radio RSA, 4810 at 0008 and 1916 in FF on 15365. (Fenwick, ME) 15430 at 0430. (Johns, TX)

South Korea: Radio Korea, 15575 at 0031. (Fenwick, ME)

Spain: Radio Exterior de Espana, 9530 at 0005; 0500. (Fenwick, ME; Pellicciari, CT)

China Radio Int'l relay, 9690 at 0300. (Moser, PA)

Sudan: Omdurman Radio, 9170 with EE 1830-1900 and into AA and vernacular to close at 2159. Parallel 7200. (Urbelis, NY)

Sweden: Radio Sweden, 17870 at 1551 in Swedish, then IS and into EE at 1600. (Moser, PA)

Swaziland: Trans World Radio, 3240 at 0300 in the Shona language. Bible programs. Low audio level. (Urbelis, NY)

Switzerland: Swiss Radio Int'l, 9650 at 0018. (Fenwick, ME) 9885 at 0001; 0204. (Moser, PA; Jensen, IA) 12035 at 2021; 2210. (Foss, AK; Zamora, CA)

Taiwan: Voice of Free China, via WYFR, 5950 at 0206. (Fenwick, ME) 9680 at 0200. (Pellicciari, CT)

Togo: Radio Kara, 3222 at 0527 sign on with IS, anthem, ID, high life music, news. All FF. Weak. (Urbelis, NY)

Turkey: Voice of Turkey, 9445 at 2305 with news. (Fenwick, ME)

Ukraine: Radio Ukraine Int'l, 4825 at 0113. (Fenwick, ME) 7195 at 0108. (Moser, PA) 17605 at 0100. (Johns, TX)

Unidentified: 12360 at 2052 in CC with classical music. (Foss, AK)

United Arab Emirates: UAE Radio, Abu Dhabi, 9605 at 2317. (Fenwick, ME) 9605//11710 at 2300 with press review, mailbag. (Rausch, NJ)

UAE Radio, Dubai, 13675 at 0339 requesting letters. (Jensen, IA)

United States: WEWN, 7540 with tests at 0545 "You are listening to WEWN, Birmingham, Alabama, USA—A Catholic radio service of the Eternal Word Television Network." (Scharff, NJ)

WFLA, Tampa, Florida, 25870 at 1600. (McFerren, MO) (This is used as a "cue" for the station's traffic planes and is not an actual broadcast frequency, editor)

Uruguay: Radio El Espectador, 11835 with news, IDs, commercials around 2230-2330. All SS. (Urbelis, NY)

Uzbekistan: Radio Tashkent, 7325 at 1200. (Johns, TX) 9540 at 1200. (Moser, PA) 9840 at 1845 in AA. (Rausch, NJ)

Vatican: Vatican Radio, 6096//7305 at 0258. (Moser, PA) 9605 at 0221. (Fenwick, ME) 15090 at 0640.(Foss, AK) 21515 at 1400. (Jones, OH)

Venezuela: Ecos del Torbes, 4980 at 0119 in SS. (Fenwick, ME)

Vietnam: Voice of Vietnam, 9840 at 1342 with commentaries, 1346 ID, listener's letters. (Zamora, CA)

Yugoslavia: Radio Yugoslavia, 9580 at 0100; 0115. (Pellicciari, CT; Moser, PA)

That's it. A great big thank you to those who did the work this month: Errol Urbelis, Kings Park, NY; William LeRoy McFerren, Belton, MO; Paul Jensen, Mason City, IA; Andy Johns, Mansfield, TX; Richard A. Jones, Dayton, OH; Ed Rausch, Cedar Grove, NJ; Marty Foss, Pitkas Point, AK; Larry R. Zamora, Highland, CA; Steve Pellicciari, Norwalk, CT; William Moser, New Cumberland, PA; Charles Fenwick, South Harpswell, ME; Bjorn F. Vaage, Granada Hills, CA and Steven F. Scharff, Union NJ.

Thanks to all and, until next month, good listening! ■

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KEYNOTE SPEAKER, Roy Neal, K6DUE, will talk about SAREX (Shuttle Amateur Radio Experiment) and Tuning the Space Shuttle Comms. He's the Chairman of SAREX, for ARRL-AMSAT and former NBC News Correspondent.

Dozens of manufacturers and dealers of SWL and amateur radio equipment will be on hand demonstrating their equipment and ready to answer your questions on the spot -- including -- Kenwood, ICOM, Yaesu, Alinco and more!

Flea Market held in conjunction with the 18th Annual Virginia Beach Hamfest and Computer Fair (the areas LARGEST computer exhibit). The first Popular Communications Worldwide SWL Conference has something for everyone! Make plans NOW to be there. As part of the one-time $25 admission charge, on October 3 you also get a tour of nearby Norfolk Naval Base that includes a visit to a ship and Naval Base waterfront.

Make Plans Now to attend both days – October 2 - 3, 1993 at the Virginia Beach Pavilion; minutes from the beach, Navy bases and historic sites!

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RTTY

BY ROBERT MARGOLIS

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

NASA's Stennis Space Center in Mississippi sent a test message in the ARQ mode to another NASA facility in December, according to Fred Hetherington of Florida. He monitored the transmission on 14452.8 kHz at 1414 UTC. Stennis, with the callsign KHA950, sent the test to KHA906, Ames Research Center, Moffett Field NAS, Mountain View, California, Hetherington said. This is the first time, I believe, that NASA has used HF Radio for RTTY transmissions. Nice going, Fred!

Whozit Dept.: "VVV VVV VVV ZSO ZSO ZSO TESTING" was the repeated call of an unidentified station in RTTY broadcasts in November, December and January. It was in a tape loop that took five minutes to run full cycle. When the tape loop returned to the beginning a noticeable pause of perhaps one second was seen. The test message ran in two columns across the page. "ZSO" may've been a Z-Code directive to another station to "transmit slips once."

Hetherington came upon this station in November at around 2230 UTC on 7520.0 kHz, and while checking on it later found it still operating at 0010. I first heard this station at 0311 UTC on Dec. 31 on 7580.0 kHz. Its testing ended at 0348. The next night, Jan. 1, it was on 7856.2 kHz at 2251 UTC with the same test. Three nights later it was on 7941.5 kHz at 0142 UTC. The decoder setting was always 170/75R.

The Navy's MARS stations in Antarctica was the subject of a RTTY traffic report I monitored in January. Stations NNN0NPA, NNN0ICE, NNN0NWB, NNN0NBG, and NNN0NUZ, use 13827.5, 13975.5, 14761.5, and 20998.5 kHz for phone patches to the States.

The report said that written traffic and phone patches share 13975.5 kHz whenever 20998.5 kHz was lost due to propagation. The frequency 14761.5 kHz was being used on a "not-to-interfere" basis with Stateside stations whenever propagation was good. Lastly, the report said that phone patches from McMurdo station had nearly come to a halt on shortwave radio by the end of 1992 because most of them were being handled via satellite.

A few years ago a Soviet cruise ship, *UERU, Aleksandr Pushkin*, was found on the loggings lists of many RTTY monitors. Then the name disappeared mysteriously from those lists as it wasn't being heard from any more. Well, the 850-passenger *Pushkin* is still around, folks, but it sports a new name—*Marco Polo*. Last December, it was undergoing a $60 million renovation in Europe for Orient Lines, its new owner, it was reported by *The New*

BRITISH MULTIPLEX RTTY
(submitted by "John Doe" of England)

Cyprus circuit 1		Cyprus circuit 2		Gibraltar circuit	
London (GXQ)	Cyprus	London (MKK)	Cyprus	London (GXQ)	Gibraltar
4923.0	5025.0	4848.0	5120.0	4500.0	5229.0
7390.0	7580.0	5405.0	7488.0	5102.0	7747.5
7474.0	7960.0	6995.0	8155.0	7710.0	7770.0
7680.0	9135.0	7455.0	9940.0	9082.0	8048.0
9092.0	10495.0	7710.0	10220.0	9147.0	9065.0
9435.0	13565.0	8085.0	10586.0	10210.0	9135.0
10855.0	13925.0	9338.0	11095.0	10415.0	10346.0
10890.0	14405.0	10200.0	12148.0	12115.0	12325.0
10906.5	14855.0	10216.5	13515.0	12152.0	13473.0
11016.5	15689.0	10280.0	13968.0	13512.5	14759.0
11411.5	15817.0	10654.0	14602.5	15901.0	15737.0
13695.0	16280.0	11550.0	14670.0	15990.0	15760.0
13839.0	19430.0	12145.0	15840.0	16060.0	17468.0
14381.0	19895.0	13880.0	16148.0	17397.5	18506.0
14807.0	20290.0	14432.5	17535.0	18040.0	
15945.0	20980.0	14445.0	18045.0	18241.0	
16273.5	24855.0	14540.0	18535.0	18325.0	
16431.0	26430.0	14840.0	20330.0	20095.0	
17520.0		15715.0	21830.0	20200.0	
18205.0		16039.5	22946.0	23479.0	
18410.0		18120.0	23380.0		
18905.0		18449.0	25530.0		
19290.0		18456.0			
20295.0		18775.0			
20320.0		19250.0			
21847.0		20810.0			
23012.0		20970.0			
23020.5		23464.0			
24148.0		24620.0			
26395.0					

London also on 5813.0, 8110.0, and 17495.0. Cyprus also on 11465.0, 12185.0, 14583.0, 16325.0 19057.0, and 20125.0. It is not known to which circuit these are allocated.

PICCOLO
(submitted by "John Doe" of England)

VHC/VMA	MKK wkg MSS	MKK wkg MTS	MTS	MSS	GYU	MKD
10865.0	9053.0	8035.0	7567.5	9244.0	5835.0	12185.0
14368.0	10480.0	9338.0	10967.5	10235.0	7812.5	13969.0
14455.0	10588.0	9933.5	12282.5	11440.0	11155.0	14585.0
16170.0	10760.0	10261.0	15855.0	14710.0	12305.0	16234.0
19965.0	11605.5	11584.0	18879.0	14828.0	13525.0	18554.5
22810.0	13445.0	11615.0	19615.0	15815.0	13942.5	19057.5
	14473.0	12145.0	20308.0	16270.0	14535.0	20125.0
Rhein-	14692.0	13580.0	20600.0	18420.0	14950.0	20425.0
dahlen,	15750.0	14510.0	23174.0	18941.0	15780.0	23375.0
Germany	16344.0	16205.0	23380.0	19005.0	15938.0	24655.0
	17515.0	17520.0		22922.0	18935.0	
10429.0	18512.0	18057.0			20365.0	
12195.0	18525.0	18750.0			22835.0	
13554.0	19810.0	20265.0			24505.0	
14599.0	20170.0	20436.0			26510.0	
15980.0	23761.0	22890.0				
18331.0	24745.0	23055.0				

Decimo-
mannu,
Sardinia

10394.0
12202.0
13415.5
14842.0

GYU = Royal Navy, Gibraltar
MKD = Royal Air Force, Akrotiri, Cyprus
MKK = Royal Air Force, London, England
MSS = British Army, Belize
MTS = British Military, Falkland Islands
VHC = Royal Australian Navy, Belconnen, Australia
VMA = Royal Australian Air Force, Melbourne, Australia

These frequency lists were supposed to appear in the March RTTY column, where mention of them was made, but a leprechaun visiting our office at the time pulled a prank on us and hid the lists from us until now. Our apologies to "John Doe" and our readers for putting up with the little elf, whom we've sent back to Ireland, via Parcel Post, to live the rest of his life in exile.

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UT"?2O
54:-85.ONDLX
GHTDU
ZUIZA U  QTUMMTNLSGSMESAGE   .1 &)"  535 "  92-11-27  4:1
-SST DE RJI BSTWNBUL
N
N
MNWNN
RYRYRYRYRYRRRYRYRTRRYRYDRYRYRYRYRYRERSXYRYRY
JRRYRYRYRYRYYRYQYRYR RYRYRYRYRYRYRYRYRYYR RYRYRE
ET(KV))4635(KV)YRY ET(V):8746 65
(KV)RYN RWERTYUIOPASJKLXCVBNMAZET()KV)DY E(KVRYCEKV(RY SQWURTRUBOPA()"/:;?,.
$THE OICK BROWNZFOX KMPS OVER TH LVY VOG BACO.
OWHUICK PON FOL JUMPS
OVYR
HE LZY DOG PACKX
BJYOH
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An unidentified station manually typed this text on 14508.7 kHz, at 1353 UTC, ARQ Mode. Anyone have an identity? (Logged by Robert Margolis).

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YRRYYRYRYRYRRY
SDV SDV SDV RYRYRYRY
GPERYNLYNYRYRYRYRYRYRYRRYRYRYCYRXGYRYRY
EQXEDAWPEQUBXSDV SDV SDV 'RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRZRYRY
PEGRUDM RH
Y
ZRYRYRYRYRYRYRYRYRY
YRFXWJWZRYRYRYRYRYRYRYRYRY
SDV SDV SDV RYRYRYRYRYRY
CCCCC
?
ZA BERN NR  00069/04086'DII 32)
06
-(2   MANDATWT NA G-N BUNZIN SE UDWLJAVA DO IDVANETO NA
BAMESTNIK.MOLY DECATA MU DA ZAPOGNAT NOVATA UQEBNJWTDIPA V
BWLGARIY.42
IZHHNRH55 76 18-:)8
2 G.        A.IVANOV
FFFFF?GD   ZOK   ZOH 1  GR 0   DUMI 32
    NV
ZXSHUTFATXUTSHCKQXV B EUXE(ANWPLPVEV
GGD  ZOK   ZOH 1  GR 0   DUMI 32
8   NV
CCCCCO
?2TNNRERN NR  00069/04086 DUMI 32
        MANDATWT NA G-N BUNZINNR UDWLJAVA DO IDVANETO NA
ZAMESTNIK.MOLY DECATA OU DA ZCIONAT NOVATA UQEBNA GODINA V
BWLGARIY.
IZH NR 55 76 18/26 8 92 G.        A.IVANOV
FFFFF?
```

This transmission is from the Bulgarian Embassy, Berne, Switzerland, ran on 16025.3 kHz at 1244 UTC, 425/75R. (Logged by Robert Margolis).

York Times newspaper. Plans call for the newly-renovated ship to be used for Indian Ocean cruises in October and then on cruises to Antarctica sometime later.

Another report from Hetherington is about a station with an RY's test slip that was repeated on 7679.9 kHz from 1050 to 1110 UTC in December. Along with the RY's was "JFID HW9444," which is a puzzler he wants us to help solve for him. He says that after the testing stopped he saw "a few words in a strange language then four-letter code groups." This was followed by more wordage, and repeats of TCANYANQ along with frequent use of the colon. The transmission, at 425/50N, ended at 1119 UTC, and the station left the air at 1125.

Robert Hall of South Africa made an analysis of all his RTTY loggings made between July 31, 1991, and July 31, 1992, and found that Baudot RTTY was the dominant data mode. Of 468 loggings, each received on different frequencies, 197 of them, or 42 percent, were in the Baudot mode.

The second most popular mode he encountered was ARQ, which was used by 91 stations, or 19 percent. This was followed by 43 ARQ-E3 loggings, or 9 percent, and 26 ARQ-M2/M4 loggings, or 5 percent. The rest of the list filled out with 20 FEC loggings, 4 percent; 11 SWED-ARQ, 2 percent; and 7 FEC-A, or 1 percent. The 54 remaining loggings, which included ARQ-S, FEC-S, FDM, and Packet modes, made up 12 percent of the total.

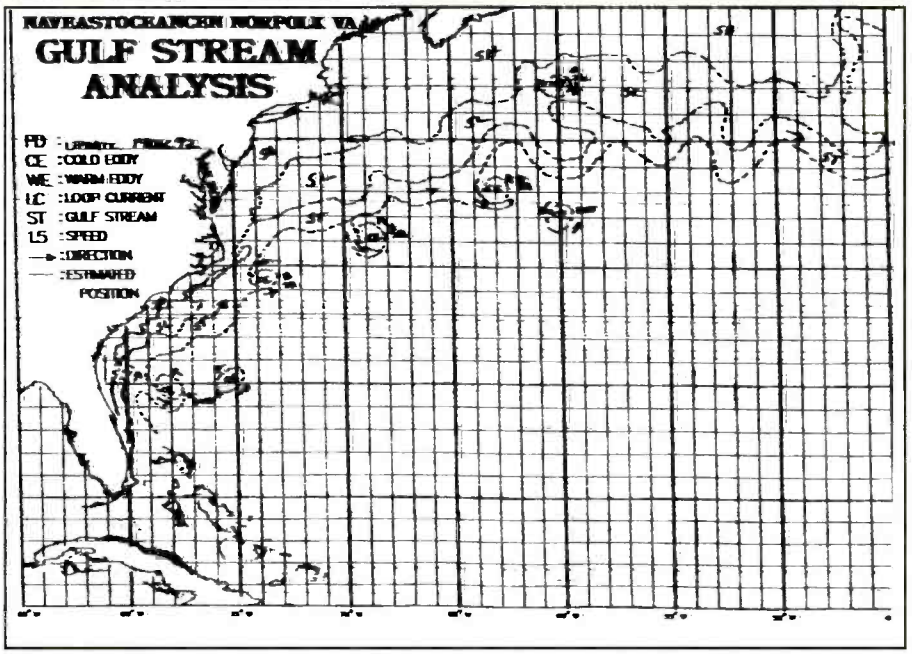
Taking his analysis a bit further, the total Baudot, ARQ and FEC loggings are 308, or 66 percent. For the beginning RTTY-monitoring hobbyist this suggests that there's plenty of RTTY activity to be found

using a simple decoder that offers just those three RTTY modes. One doesn't have to have a real sophisticated decoder to enjoy this hobby.

Correction: The picture caption to figure 2 in the March RTTY column should've read, "weatherfax broadcast of DEF37, Mainflingen Meteo, Germany, is seen in this retransmission by Madrid Meteo, Spain, on 6830 kHz."

Abbreviations Used In The RTTY Column

AA	Arabic
ARQ	SITOR mode
BC	Broadcast
EE	English
FEC	Forward Error Connection mode
FF	French
foxes	"Quick brown fox. . ." test tape
GG	German
ID	Identification/Ied
MFA	Ministry of Foreign Affairs
nx	News
PP	Portuguese
RYRY	"RYRY . . ." test tape
SS	Spanish
tfc	Traffic
w/	With
wx	Weather



North Atlantic Gulf Stream analysis chart of NAM, U.S. Navy, Norfolk, VA was sent at 0300 UTC on 8080 kHz, 120/576. (From Robert Margolis).

RTTY Intercepts

518.0: GNI, Niton R., England, w/FEC navigation warnings at 0820. GCC, Cullercoats R., England, w/warnings at 0850. (Ari Boender, NLD)

3196.0: Prague Meteo, Czechoslovakia, w/coded wx & plaintext wx in Czech, 50 baud at 0320. Logged before nation divided into the Czech Republic and Slovakia. (Ed.)

3693.2: RFLI, French Navy, Fort de France, Martinique, w/msgs to RFLIGE, St. Jean du Maroni, ARQ-E/96 at ??? (Fred Hetherington, FL)

3840.0: LRO23, Buenos Aires, Argentina, now w/AFP nx in SS along with NA nx. Was 75 baud at 0200. (Hetherington, FL)

4213.5: UFN, Novosibirsk R., Russia, w/an ARQ phasing sig. + its ID in CW at 0215. (Hetherington, FL)

4343.0: WLO, Mobile R., AL, w/gulf stream data at 0450, FEC. (Ed.)

4489.0: GFL26, Bracknell Meteo, England, w/coded wx at 0053, 50 baud. (Ed.)

4788.5: 6VU23, ASECNA, Dakar, Senegal, w/CQ's & RYRY, 50 baud at 0443. (Ed.)

5208.0: FSB, Interpol, Paris, France, w/ARQ phasing sig + CW ID at 0411. (Ed.)

5268.3: Un-ID w/crypto after DYWFEG (rptd 4X) & JUYEWX (rptd 4X), 75 baud at 0359. (Ed.)

5740.5: HZN, Jeddah Meteo, Saudi Arabia, w/coded wx, 50 baud at 2236. (Ed.)

5887.2: IMB2, Rome Meteo, Italy, w/coded wx, 50 baud at 0343. (Ed.)

6776.3: AFA3CB, USAF MARS, Kansas City, MO, & AFA3EY, Lino Lakes, MN, on a packet BBS at 1622. (Ed.)

6830.0: RDW72, Khabarovsk Meteo, Russia, w/coded wx at 1450, 50 baud. (Ed.)

6880.0: Un-ID idling, ARQ, 0024-0025, then QRT. (Ed.)

6905.0: Un-ID Interpol sta. w/IPUY selcal, ARQ at 0617. (Ed.)

6916.7: Un-ID w/a badly garbled ARQ msg in EE at 0545. Made out the words "scraping right side" but hardly anything else. Sig level dropped sharply 10 mins later. (Ed.)

7402.7: JMG3, Tokyo Meteo, Japan, w/coded wx at 1509, 50 baud. (Ed.)

7524.0: TYE, ASECNA, Cotonou, Benin, testing at 0100, ARQ-M2/96. (Harold Manthey, NY)

7525.0: HZH31, Jeddah Meteo, Saudi Arabia, w/coded wx, 100 baud at 0140. (Hetherington, FL)

7532.2: Un-ID Interpol sta. w/encrypted msgs, each separated by several 2L grps, ARQ at 0733, foll at 0739 by either lengthy repeats of "UMDMS"or the selcal IPBX. (Ed.)

7580.0: VVD57, New Delhi Meteo, India, w/coded wx at 0230, 50 baud. (Ed.)

7594.0: AJE, USAF, Croughton AB, England, w/EGWR wx data at 2143, 75 baud. (Ed.)

7610.0: 3XA, Conakry Air, Guinea, w/RYRY, 50 baud at 0112. (Manthey, NY)

7625.0: HZN47, Jeddah Meteo, Saudi Arabia, w/coded wx, 100 baud at 0513 & 2235. (Ed.)

7626.0: TZH, ASECNA, Bamako, Mali, w/RYRY, 50 baud at 0044. (Manthey, NY)

7646.2: DDH7, Pinneberg Meteo, Germany, w/coded wx, 50 baud at 0747. (Ed.)

7681.0: Un-ID in Poland w/diplo nx in Polish, 75 baud at 0749. (Ed.)

7681.5 & 7682.5: GXQ, British Army, London, England, w/RYI's, foxes & 10 count, FDM 50 baud at 0814. (Ed.)

7689.5: TUH43, ASECNA, Abidjan, Ivory Coast, w/RYRY at 0317 & 2240, 50 baud. (Ed.)

7759.7: RGH77, Arkhangelsk Meteo, Russia, w/coded wx, 50 baud at 0327. (Ed.)

7800.8: Un-ID Interpol sta. w/IPTX selcal, ARQ at 2245. (Ed.)

7855.0: ROK24, Moscow Meteo, Russia, w/coded wx, 50 baud at 1345. (Ed.)

7962.8: MKD, RAF, Akrotiri, Cyprus, w/RYI's, foxes & 10 count, 50 baud at 0336. (Ed.)

7984.8: Un-ID w/crypto after "IXQJG A" (rptd 4X) & "ZDXWY" (rptd 4X), 75 baud at 0337. (Ed.)

7996.0: YZD9, Tanjug, Belgrade, Yugoslavia, w/nx at 1915, 50 baud. (Boender, NLD)

8082.0: Un-ID, most likely American, w/chitchat msgs in EE, ARQ at 0352. (Ed.)

8149.0: PBB, Goeree Island Navrad, NLD, w/availability tape, 75 baud at 1815. (Boender, NLD)

8163.9: 5YD, Nairobi Air, Kenya, w/RYRY, 50 baud at 0000. (Dave Phillips, OH)

8303.5: LOR, Puerto Belgrano Navrad, Argentina, w/5L grps & navareas, 75 baud at 0459. (Ed.)

9001.3: Un-ID w/text in SS, ARQ at 0107. Suffered severe QRM from un-ID sta. on same freq. running 75-baud encryption. (Ed.)

9090.5: Un-ID w/ARQ xmsn heard under radiofax and FDM xmsns at 0825. When fax sig. ceased momentarily at 0830, found ARQ sta. was sending selcal UQKM. (Ed.)

9141.7: Un-ID w/CUBR selcal, ARQ, 0110-0115. (Ed.)

9153.8: D4B, Sal Air, Cape Verde Islands, w/RYRY at 0751, 50 baud. (Ed.)

9241.8: Egyptian Emb., Washington, DC, w/text in EE of a news conf. & texts in AA, ARQ at 2332. (Ed.)

9273.2: CCM, Magallanes Navrad, Chile, w/5L msgs to warship c/s CCLA, 100 baud at 0800. (Ed.)

9394.9: Un-ID U.S. mil. w/op msgs, FDM 50 baud at 1543. Occurring same time as next item. (Ed.)

9395.0: Un-ID U.S. mil. w AP/UPI nx, FDM 50 baud, channel B01, at 1525. (Ed.)

10258.4: Un-ID U.S. mil. w AP/UPI nx on channel B01, FDM 50 baud, & KAWN/KMKC wx on channel B03, FDM 75 baud, at 1656. (Ed.)

10443.5: CCS, Santiago Navrad, Chile, w/plaintext wx in SS & EE, 100 baud at 0102. (Manthey, NY)

10522.6: HMF45, KCNA, Pyongyang, North Korea, w/nx in FF, 50 baud at 0825. (Manthey, NY)

10550.5: GFL23, Bracknell Meteo, England, w/RYRY at 2355, 50 baud. (Phillips, OH)

10585.3: MKD, RAF, Akrotiri, Cyprus, w/RYI's, 50 baud at 2350. (Phillips, OH)

10600.0: XVN37, VNA, Hanoi, Vietnam, w/nx in EE at 1400, 50 baud. (Manthey, NY)

10634.0: CNM37, MAP, Tanger, Morocco, w/nx in FF at 1710, 50 baud. (Ed.)

10804.4: NA, Buenos Aires, Argentina, w/nx in SS at 2329, 75 baud. (Phillips, OH)

10893.0: LRB39, Telam, Buenos Aires, Argentina, w/nx in SS, 50 baud at 0054. (Phillips, OH)

11021.5: RFLIG, French Mil., Cayenne, French Guiana, w/"controle de voie" at 0610, 0710, 0810, 0910 & 1010, ARQ-E/96. Unclas. msgs sent to Paris at 1018 & 1105. RFLIG moved to a higher freq. at 1130. (Ed.)

11063.0: LZU2, Sofia Meteo, Bulgaria, w/coded wx at 1530, 50 baud. (Ed.)

11125.7: DHJ51, Grengel Meteo, Germany, w/coded wx, 100 baud at 1459. (Ed.)

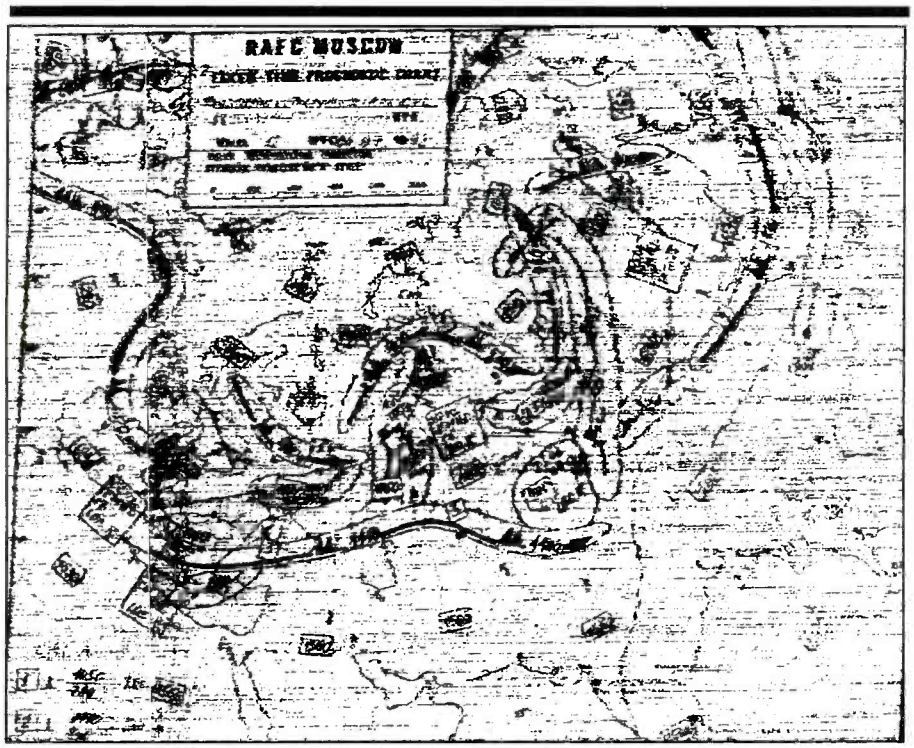
11139.0: DFZG, MFA, Belgrade, Yugoslavia, w/nx in EE & SC re Bosnian warfare, 75 baud at 1530. (Ed.)

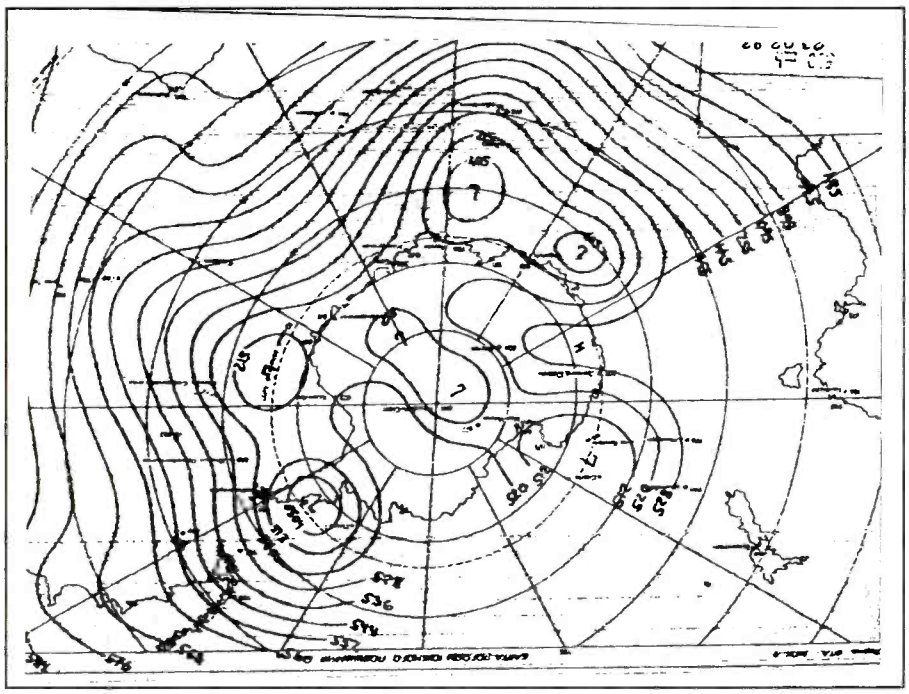
11158.0: Un-ID w/coded wx, 75 baud at 1541. (Ed.)

11421.5: Un-ID ending text in AA, 50 baud at 1332. (Ed.)

11430.0: HMF55, KCNA, Pyongyang, North Korea, w/RYRY at 2126, foll by nx in FF at 2130, 50 baud. (Ed.)

11452.7: IMB3, Rome Meteo, Italy, w/coded wx, 50 baud at 2117. (Ed.)





Weather chart from the Russian Antarctic base at Molodezhnaya was sent at 1235 UTC on 18490 kHz. (From Robert Hall, RSA).

11475.0: HMF52, KCNA, Pyongyang, North Korea, w/RYRY, 50 baud at 1755. (Manthey, NY) Same sta. on 11476.0 at 2145 w/nx in EE. (Ed.)

11485.5: TUH, ASECNA, Abidjan, Ivory Coast, w/RYRY at 0241, 50 baud. (Ed.)

11604.0: YZJ3, Tanjug, Belgrade, Yugoslavia, w/nx in EE, 50 baud at 1410. (Ed.)

12051.5: FDY, French Air Force, Orleans, France, w/RYRY & le bricks, 50 baud at 1618. (Ed.)

12063.0: AFRTS, Hollywood, CA, w AP/UPI nx at 1625, 50 baud, FDM channel B01. (Ed.)

12212.5: YZO7, Tanjug, Belgrade, Yugoslavia, w/nx in FF at 1702, 50 baud. (Ed.)

12317.0: Un-ID w/foxes, 10 count & "testing," 75 baud, 1840-1920. Freq. then shifted to 12318.0 & into FDM mode w/same test. (Hetherington, FL)

12579.0: NRV, USCG, Apra Harbor, GU, w/a wx b/c at 0515, FEC. (Hall, RSA)

12589.5: WCC, Chatham R., MA, w/wx forecasts, FEC at 1647 (Ed.), and at 0501. (Hall, RSA)

12933.0: URL, Sevastopol R., Ukraine. w/msgs, 50 baud at 1455. (Boender, NLD)

13128.1: Un-ID w/TVVV selcal, ARQ at 2050. (Ed.)

13318.7: Un-ID Egyptian diplo w/ARQ tfc in AA at 1551. (Ed.)

13385.9: Un-ID (Yugoslavian?) w/5F grps at 1540. 75 baud. QRU SK QRU SK at 1541. (Ed.)

13386.9: Un-ID, possibly Yugoslavian, w/5L grps at 1544, 75 baud. QRU QRU SK SK at 1541. Tuned in after b/c by sta. on13385.9 kHz. (Ed.)

13388.0: DPAF, MFA, Belgrade, Yugoslavia,

w/nx in SC, 75 baud, 0114-0130, foll by RYRY + DPAF c/s, 0132-0135. Op msgs sent 0135-0141 included "rpt via fax." Tanjug nx in EE followed at 0141, then crypto after DFDFDF at 0146. (Ed.)

13415.2: Un-ID w/TVPX selcal, ARQ, 1806-1812. (Ed.)

13425.2: Un-ID idling, 1757-1805, then QRT, ARQ. (Ed.)

13440.0: YZJ5. Tanjug, Belgrade, Yugoslavia, w/nx in SC & EE, 50 baud at 1549. (Ed.)

13444.2: RFQP, French Navy, Djibouti, w/"controle de voie," ARQ-E3/100 at 1558. (Ed.)

13457.5: CNM49, MAP, Tanger, Morocco, w/nx in SS at 2110, 50 baud. (Ed.)

13480.0: Un-ID idling at 1732, ARQ-M2/200. Went QRT at 1804. (Ed.)

13780.0: HMF35. KCNA, Pyongyang, North Korea, w/nx at 1535, 50 baud. (Boender, NLD)

13867.9: Un-ID idling at 1940, ARQ. (Ed.)

13858.9: "Agua" and "Luna" w/packet radio msgs in SS at 1520. Also included 5L grps. (Hetherington, FL)

14339.3: BAF47, Beijing Meteo, China, w/coded wx synopses for Chinese towns, 50 baud at 0017. (Ed.)

14355.5: SAM, MFA, Stockholm, Sweden, w/Udtex in Swedish, SWED-ARQ at 1710. Seen another day at 1708 w/crypto after IIIII. Crypto ended 1715 w/some I's, foll by SOND, more I's, OMWPH, still more I's, BAGLFLFG, I's again, NBSPG, more I's, NBSPGON, IIIII..., then string of K's & QRT. Returned at 1835 w/371 5L grps to Ambassaden Mexico. (Ed.)

14377.0: Un-ID w/a 5L msg, 1437-1441, 75 baud. (Ed.)

14381.6: GXQ, British Army, Stanbridge, England, w/foxes & RYRY, 50 baud at 1704. (Schimmel, WV)

14429.5: Un-ID idling, ARQ at 2118. (Ed.)

14454.8: Un-ID w/coded wx, 50 baud at 1520. (Ed.)

14467.3: DDH8, Pinneberg Meteo, Germany, w/RYRY at 1517, 50 baud. (Ed.)

14479.0: OEC, MFA, Vienna, Austria, w/tfc, ARQ-S5/96 at 1445. (Ed.)

14508.7: Un-ID w/garbled ARQ xmsn at 1354. Msg ends w/"-sst de rji bstwnbul (Istanbul?)" foll by RYRY, ET(KV), 10 count, & foxes, then QRT. (Ed.)

14607.4: JPA23, Interpol, Tokyo, Japan, w/police bulletins, ARQ at 2325. (Manthey, NY)

14613.7: Un-ID w/encryption, ARQ, 1424-1442. (Ed.)

14642.0: Un-ID w/XHIK selcal, ARQ at 1456. (Ed.)

14674.3: DFZG, MFA, Belgrade, Yugoslavia, w/nx in EE, 75 baud at 1630. (Hall, RSA)

14800.0: 3VA71, TAP, Tunis, Tunisia, w/nx in FF at 1520, 50 baud. (Ed.)

14806.0: Un-ID w/5L grps, 1540-1548, 75 baud. (Manthey, NY)

14910.3: DFZG, MFA, Belgrade, Yugoslavia, w/nx in EE at 1539, 75 baud. (Schimmel, WV)

16009.8: Un-ID idling, 1502 to past 1530, ARQ. Probably same sta. heard idling again on two more days at the same time. (Ed.)

16093.0: AFRTS, Hollywood, CA, w AP/UPI nx at 1510. FDM 50 baud on channel B01. (Ed.)

16111.0: HBD20, MFA, Berne, Switzerland, w/5L grps, ARQ at 1317. (Ed.)

16332.4: "V5G," MFA, Bucharest, Romania, w/nx in Romanian at 1644, ROU-FEC/164.5. CW s/off at 1656. (Ed.)

16339.7: Un-ID w/RYRY + "IL CJL FD DWYT," RYRY + "LFE NL GFD," RYRY + "MCJL LXD M FRNZ," RYRY + "DNIDI JT EVT," & other similar patterns. All were manually typed. Was FDM 100 baud at 1605. (Ed.)

16807.6: GKE6, Portishead R., England, w/a "PAN PAN" distress call for yacht "Coyote," FEC at 1708. The three most common distress calls in order of importance are "mayday," "pan," and "securite." The "pan" b/c was issued because the "Coyote" was overdue on its passage from the USA to France. (Hall, RSA)

17156.7: MFA, Cairo, Egypt, w/Egyptian press extracts in EE to embs in Scandinavia, Eastern Europe, Africa & So. America. Was ARQ at 1705. (Ed.)

17530.0: SRI, Schwarzenburg, Switzerland, w/nx in FF at 1845, foll by RYRY at 1848, 50 baud. (Manthey, NY)

18221.0: CNM76, MAP, Tanger, Morocco, w/nx at 1625, 50 baud. (Boender, NLD)

18319.9: OMZ, MFA, Prague, Czechoslovakia, w/diplo nx in Czech & Telex tfc, 100 baud at 1400. Logged before breakup of the nation into 2 separate ones. (Ed.)

18496.0: CNM80, MAP, Tanger, Morocco, w/RYRY, 50 baud at 1628. (Boender, NLD)

18558.0: "V5G," MFA, Bucharest, Romania, w/diplo text in Romanian at 1630, ROU-FEC/164.5. (Ed.)

18634.8: CLP1, MFA, Havana, Cuba, w/a circular in EE consisting of nx items, 50 baud at 1430. (Ed.)

18646.6: PCW1, MFA, The Hague, NLD, w/selcals TVVF, TVMS, & TVPK, ARQ at 1420. (Boender, NLD)

18648.5: SOT265, PAP, Warsaw, Poland, w/nx at 1435, FEC. (Boender, NLD)

18972.2: DFZG, MFA, Belgrade, Yugoslavia, w/nx in EE, 75 baud at 1544. (Hall, RSA)

19011.7: Un-ID w/TVPX selcal, ARQ at 1543. (Ed.)

19567.7: Un-ID Egyptian diplo w/text in AA, 1339-1358, ARQ. (Ed.)

19589.8: IED21, ANSA, Rome, Italy, w/nx in II at 1616, 50 baud. (Schimmel, WV)

19734.7: URD, St. Petersburg R., Russia, w/ARQ phasing sig & CW ID at 1158. (Hall, RSA)

19860.4: GYA, RN, London, England, w/a test tape at 1159, 75 baud. (Hall, RSA)

19980.0: 9BC33, IRNA, Teheran, Iran, w/nx in EE, 50 baud at 1640. (Manthey, NY)

20021.5: DFU20, PIAB, Bonames, Germany, w/nx in SS, GG & EE, FEC-A/96 at 1510. (Manthey, NY)

20716.7: RFFA, Mindefense, Paris, France, w/tfc & 5L msgs to Libreville, Gabon, ARQ-E3/50 at 1530. (Ed.)

21855.8: MFA, Paris, France, w/a 5L msg to African & Latin American embassies, ARQ6-90/200 at 1452. (Ed.)

21859.3: DFZG, MFA, Belgrade, Yugoslavia, w/Tanjug nx in SC, 75 baud at 1456. (Ed.)

22550.0: MTO, Royal Navy, Rosyth, Scotland, w/availability tape, 75 baud at 1708. (Ed.)

22861.5: CLP1, MFA, Havana, Cuba, w/nx & coded msgs to Zambia. 50 baud at 1620. (Manthey, NY)

22862.9: CLP44, Cuban Emb., Harare, Zimbabwe, w/encrypted circulars at 1716, 50 baud. (Ed.)

23036.7: Un-ID Egyptian diplo, w/msgs in AA, 1347-1354, ARQ. (Ed.)

23051.8: Possibly a Cuban diplo w/crypto at 1613, 75 baud. Crypto ends w/manually typed "wkx wrp wrp wri wrp wkp." (Ed.)

23602.7: Un-ID idling, ARQ at 1458. (Ed.)

23841.7: RFFA, Mindefense, Paris, France, w/"press marine," ARQ-E3/192 at 1655. (Ed.)

24102.2: DFZG, MFA, Belgrade, Yugoslavia, w/Tanjug nx in SC, 75 baud at 1501. (Ed.)

24790.0: ISX24, ANSA, Rome, Italy, w/nx in EE re anti-Mafia sweep in Central and Soutwest Sicily, 50 baud at 1510. (Ed.)

25227.0: HBD20, MFA, Berne, Switzerland, w/text in GG, ARQ at 1515. (Manthey, NY) ■

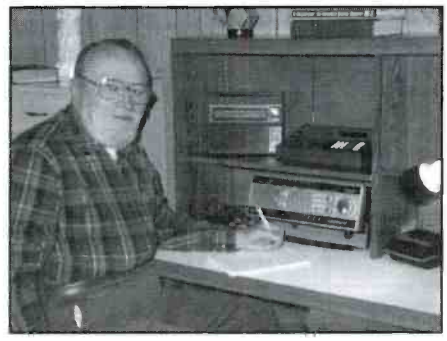
HOW I GOT STARTED

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

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

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

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



Francis J. Benjamin at his HF, VHF, and UHF monitoring post in Mississippi. He's retired after a busy 36 year career in the U.S. Air Force.

Our May Winner

This month our winner is Francis J. Benjamin, of D'Iberville, Miss. Francis wrote:

"My start in radio began 18 years ago when my brother, Lorenzo, who lives in California, upgraded his station. He sent me his old shortwave receiver.

"At the time, I couldn't spend many hours at the dials, but I liked what I heard. Now, after a 36 year career in the U.S. Air Force, I'm retired. I have plenty of time to pursue a hobby, and find that communications is rewarding and enjoyable.

"Since the time I began concentrating my efforts on my hobby, I have added to my equipment. I now have a Bearcat DX-1000 receiver, with a 60 ft. longwire antenna mounted in the attic. I have a programmable scanner, two portable AM/FM receivers, and a tape recorder.

"After my military career gave me the honor of serving (or at least visiting) 29 nations, shortwave now allows me to continually travel to these countries. Located near the Mississippi River and the Gulf of Mexico, my scanner brings in Marine traffic, as well as Keesler Air Force Base (home of the Hurricane Hunters). There is always something interesting to monitor." ■

BY DON SCHIMMEL

COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Some interesting news was received from Simon Mason, England who said he had not heard the YL/GG station, "Papa November" since late October 1992. This station had been on the air for at least 25 years every day on 2707/5015/7404/11108 kHz at 0000, 0600, 1200 and 1800 UTC. Simon added that the other 2 letter stations are still in operation and prior to writing his letter he had heard that PZ, EG and EL. DFC37 and DFD21 are also still operating.

Marcelo Toniolo dos Anjos, Brazil, wrote that he was a Chemical Engineer, 27 years old and a DX'er since he was 13. He likes to monitor utility stations and sent in some of his loggings.

Bradford Wall, CA says he has followed the utilities column in *POP'COMM* with interest for several years and is an avid US Navy monitor. He particularly enjoys listening to the MARS transmissions.

From Virginia we received a note from Perry Crabill, Jr., who said, "I'm especially pleased with catching Beacon YFL on 214 kHz. It is located in Ft. Reliance, NWT, Canada, at the eastern end of the Great Slave Lake, and less than 300 miles from the Artic Circle. My computer says it is 2,073 miles from my monitoring site. YFL is a high-powered beacon, rated at 4,000 watts."

Todd Hockert, MN indicated that in addition to the informative letter he had received from the Air Traffic Manager at New York Radio, they also sent along a very nice patch and some stick-on emblems, all of which was a pleasant surprise.

Scanners and CB radio started off Carmen Narde, NY in the '70's and then with the purchase of a Kenwood R-2000, utility monitoring was added.

These extracts are from a lengthy but very informative letter from Richard Baker, OH. He started out by indicating he had just written about 80 QSL letters. The addresses were 6 Royal Navy warships, 28 USN ships, 15 USCG Cutters, 9 USCG Groups, all the CommSta's, and GANTSEC San Juan, 2 AirSta's and 8 Canadian CG stations, plus 5 coastal stations and a few aeradio stations.

Richard pointed out that one of his loggings concerned a rescue at sea involving the USS Defender (MCM-2). "After staying up all night listening to these rescues, aware that at least one ship had sunk, I was disappointed that none of the press agencies (4 major newspapers, CNN, etc) ran an article on this story, and I stated so in my PFC letter to the ship. The radioman on the ship sent back a 3 page letter detailing the rescue, a ships decal, copies of the only newspaper that ran the story that they know of. *The News Herald*, Panama City, Florida, where they docked , and a photo of the C.O. with the rescue men. It makes quite a story.

Turns out the ship that sank, the *Hosten*, a Honduran 255 merchant ship, had a 14 year old Haitian stowaway on board. All 14 crewman were rescued, ten by the USS Defender. When I was listening to all this going on, frantically switching channels, some of the comms gave me goose bumps, they were so intense. The amount of skill required to maneuver so large a ship next to a life raft in 30 foot seas with 30-40 knot winds, with gusts up to 60 knots, and a burst at one point of 80 knots, and with the ship rolling 40 degrees...well, it just makes your mind spin. The letter also points out the importance, even in our high-tech world, of the humble HF radio.

On another note, a PFC I received back from the USCGC Spencer (WMEC0905) shows a correction of their published call-sign. NROS has been changed to NWHE.

Regarding requests for QSL's sent to USN ships. I learned through the Post Office that Military APO/FPO ZIP codes were changed in 1991 and that although there had been an unofficial extension of the cut-off date, letters are now being returned if they are addressed per the old procedure.

The city location (NY, MI, SF, SE) are no longer used as part of the APO/FPO address. Instead, designations AE for ZIPs 090-098, AA for ZIPS 340, and AP for ZIPs 962-966. It was explained that FPO is the equivalent of a state. So an example of a proper FPO address would be: FPO AP 96633-2730. I have had several letters returned because I used addresses in the old style. Most QSL guides and reference books show the old style.

Further information on overseas ZIP codes, which are also affected, can be found in the U.S. Post Office Publication

LF and VLF Time and Frequency Stations

Call Sign	Location	Power (kW)	Carrier (kHz)	Days/ Week	Hours/ Day
DCF77	Mainflingen, Germany	20	77.50	7	24
GBR	Rugby, United Kingdom	60	15.95 16.00	7	22
HBG	Prangins, Switzerland	20	75.00	7	24
JJF-2 JG2AS	Sanwa, Sashima, Ibaraki, Japan	10	40.00	7	24
MSF	Rugby, United Kingdom	25	60.00	7	24
NAA	Cutler, Maine United States	1000	24.00	7	24
NCA	Aguada, Puerto Rico	100	28.50	7	24
NTD	Yoshima, Japan	50	17.40	7	24
NLK	Jim Creek, Washington, United States	125	24.80	7	24
NPM	Lualualei, Hawaii, United States	600	23.40	7	24
NSS	Annapolis, Maryland, United States	400	21.40	7	24

Here are some more Time and Frequency stations in addition to those listed in the January 1993 column.

U.S. Department of Transportation
Federal Aviation Administration

FEDERAL AVIATION ADMINISTRATION
NEW YORK AUTOMATED FLIGHT SERVICE STATION
150 ARRIVAL AVENUE
LONG ISLAND MAC ARTHUR AIRPORT
RONKONKOMA, NEW YORK 11779

September 14, 1992

Todd Hockert

Dear Listener:

Thank you for your interesting letter and SWL report of September 7, 1992, concerning our VOLMET (aviation weather) broadcast.

For your information, NEW YORK RADIO operates ground-to-air communications and a VOLMET broadcast, 24 hours a day, serving the flying public in cooperation with other stations which share the same frequencies.

Our ground-to-air service is conducted on VHF 122.2 Mhz and 122.6 Mhz, coordinating the relay of aircraft position reports, air traffic control information, weather reports and other pertinent data between pilots of aircraft and the appropriate control authority. The output of our transmitter is two kilowatts, using a rhombic antenna arrangement.

The VOLMET broadcast operates on the hour and thirty minutes past each hour, announcing the weather for 25 different airports, including 3 Caribbean Island air terminals. The program is divided into four 5 minute segments; each dealing with 6 terminals in a pre-determined schedule, including any pertinent severe weather advisories. Immediately following the New York broadcast, a similar 10 minute presentation is made by GANDER RADIO, located at Gander, Newfoundland, for airports in Canada.

The operating frequencies of the broadcast are 6604, 10051 and 13270 Khz using a rhombic antenna. The fourth frequency is 3485 Khz and this broadcast is made by the use of a doublet antenna arrangement. The power output of the VOLMET transmitters is rated at 3 kilowatts. The purpose of the VOLMET is to alert pilots of North Atlantic and Caribbean flights to changes in existing weather and forecast conditions at their destination and possible alternate airports. All of our transmitters are located at Sayville, Long Island, New York, which is approximately 45 miles east of John F. Kennedy International Airport (JFK).

We hope this information will be of some help to you. Thank you again for your interest.

Sincerely,

George A. Tracy
Air Traffic Manager
New York AFSS

This letter QSL was received by Todd Hockert, MN.

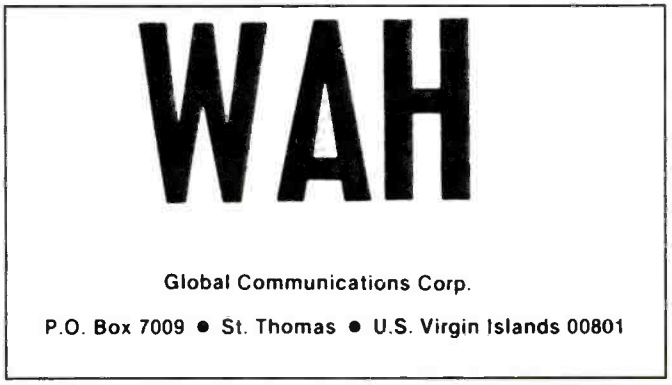
65, titled National ZIP Code Directory, which is sold for US $15.00. The Military address information is in section 12, page 3, of volume 2. I have not seen this information mentioned anywhere, and it could save those who send QSL requests to the U.S. Military, time and money."

Our thanks to Richard Baker for bringing this matter to the attention of readers.

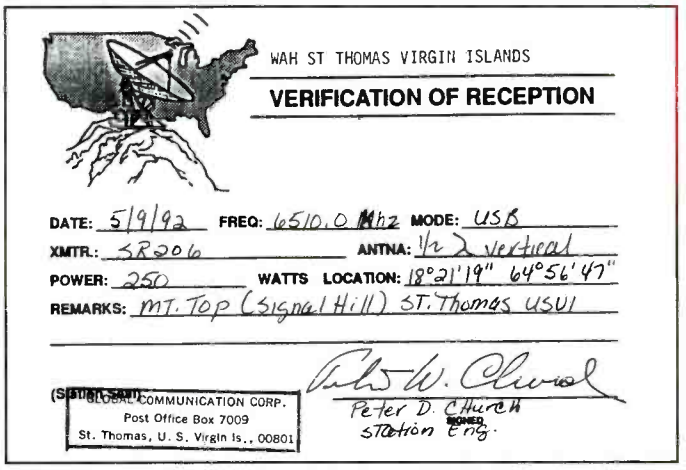
According to a press release, SPRINT has continued with its tradition of free long distance calls during major holiday periods for military personnel around the world over the Military Affiliates Radio System (MARS). "It is difficult to adequately express what these calls mean to military personnel over the holidays," said Dr. Tom Austin, assistant coordinator of the Navy/Marine MARS Afloat Network. "SPRINT has supported this endeavor for years and it is genuinely appreciated."

A number of readers have asked about "Scope Signal." This is an upgrade program for USAF HF ground-station radio facilities. Each station has four-channel ISB receivers and exciters, with 10 kW linear power amplifiers from the Collins (Rockwell International, Collins Defense Communications, Richardson, Texas) line of HF-80 communication equipment. All stations are virtually identical in design. Special features of the system design include extensive use of built-in test equipment and remote diagnostics for on-line fault monitoring of the station equipment. For further details see *JANE's Military Communications*.

I want to share with readers the contents



Along with the return of his PFC, Ed Rausch, NJ received a WAH QSL card.



of two tapes I received. The first tape was from an anonymous contributor and contained transmissions monitored on 9023 kHz USB between HUNTRESS (Air Force Joint Surveillance System/Air Defense/ Northease Regional Operational Center Control/NORAD/Air Intercept Control Center) and unidentified stations "Rough & Ready" and "341." It seemed that the operator at HUNTRESS was not really certain of how to conduct communications. Stations 341 and HUNTRESS went "Green" (scrambled mode) to pass SATCOM frequencies. Something however was not right at the HUNTRESSS end because the frequencies being given could be heard in the plain under the scrambled version. Either the HUNTRESS equipment was malfunctioning or the operator had not set it up properly. The frequencies heard were: Up-link 302.925, Down-link 249. 325. Both were MHz, no doubt. Later, after the above, a YL operator was briefly heard using a callsign of "Northern Lights." I checked my reference books but I do not have an ID for that call."

The second tape was from Ed Rausch, NJ and I found it to be hilarious. It was a male operator on 5389 kHz announcing dinome groups in the Spanish language in a sing-song fashion. Or perhaps it would be more accurate to say that it sounded like a "Tobacco Auctioneer." At one point in the message he must have lost his place because he hesitated a very long time on the last dinome given and then finally proceeded with the following groups. It did seem as if he was giving the message line by line because I detected him saying "cero siete" (07) after a series and then "cero ocho" (08) after the next series of groups and then "cero nueve" (09) after the next series. It was difficult to make out all the groups of the message. Reception was not the greatest for the entire transmission and it took a bit of listening to get used to the "delivery." I do not believe this was a "Spy Numbers" type transmission but rather I suspect it was a Latin American Military message. Immediately following the completion of the message the operator says something but I think it would require close listening to 40 or 50 repeats of the phrase to really nail it down. As Ed said of the logging, "A most interesting variation!"

Before we pass on to the loggings for this month, I have one more point to comment on. In the future, when readers report on signals of the "water dripper" type, please indicate if it was a steady drip-drip-drip sequence or was a period of rapid-irregular drip sounds. If the former it is probably a radar signal, and if the latter it could be a multi-frequency step-tone data transmission. These details were gained after consulting with several experts in the Signal Analysis field.

Ute Intercepts. All Times UTC.

50: OMA50, Liblice, Czechoslovakia, time signal station at 1410 in CW. (Boender, Netherlands)

60: MSF, Rugby, United Kingdom in CW at 1403 w/time signals. (Boender, Netherlands)

75: HBG, Prangins, Switzerlands in CW at 1420 w/time signals. (Boender, Netherlands)

77.50: DFC77, Mainflingen, Germany in CW at1414 w/time signals. (Boender, Netherlands)

214: Beacon YFL, Ft. Reliance, NWT, Canada at 1151. (Crabill, VA)

227: Beacon SJY, Riverside, CA at 0819. (Vaage, CA)

230: Beacon AND, Anderson, SC at 0520. (Newberry, GA)

233: Beacon LG, Hawthorne, CA at 0824. (Vaage, CA)

245: Beacon TLR, Tulare, CA at 0827. (Vaage, CA)

253: Beacon UR, Burbank, CA at 0829. (Vaage, CA)

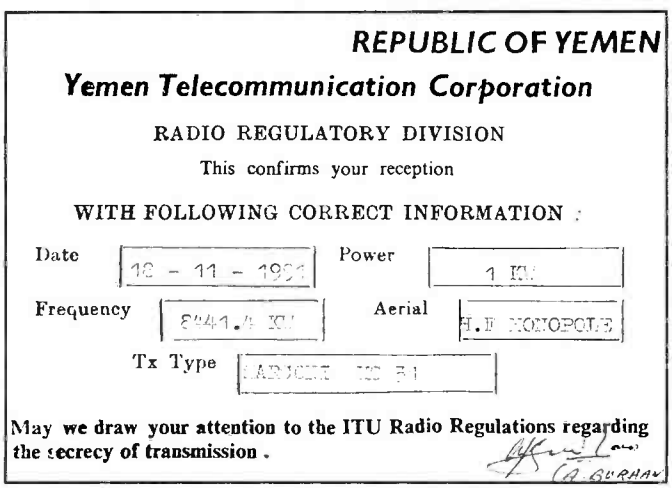
254: Beacon SPK, Reno, NV at 0829. (Vaage, CA)

257: Beacon LKA, Riverside, CA at 0830. (Vaage, CA)

270: Beacon EZM, Eastman, GA at 0535. (Newberry, GA)

275: Beacon EZT, Elizbethton, TN at 1003. (Crabill, VA)

278: Beacon OS, Hawthorne, CA at 0835.



This QSL was received by Hiroshi Saito, Japan.

USCG Cape Henry Light Station (Beacon CB, 292 kHz.) Fort Story, VA.

(Vaage, CA) Beacon FKR, Frankfort, IN at 1108. (Crabill, VA)

281: Beacon UVA, Uvalde, TX at 1017. (Crabill, VA)

282: Beacon GWE, Fox Field, CA at 0837. (Vaage, CA) Beacon OXD, Oxford, OH w/sloppy keying at 1124. (Crabill, VA)

284: Beacon SCD, Sylacuga, AL at 1136. (Crabill, VA) Beacon DPG, Dugway Proving Grounds, UT at 0840. (Forsman, CA)

289: Beacon CB, Ft. Story (Cape Henry LS), VA at 0457. (Vylasek, VA)

290: Beacon AOP, Rock Springs, WY at 0839. (Vaage, CA) Beacon MKJ, u/i at 2009. (Long, PA) Perhaps this is MKP located at McKeesport, PA on a frequency of 287 kHz. (Ed.)

296: Beacon G. Galveston Light, TX at 1103. (Vaage. CA)

300: Beacon QQ, u/i at 2011. (Long. PA) My refs show QQ to be on 400 kHz and located at COMOX, Canadian Forces Base, BC. (Ed.)

302: Beacon L, Point Loma Light, CA at 0842; Beacon V. Point Vicente Light, CA at 0842. (Vaage. CA)

305: Beacon P, Pine Is., BC, Canada at 1030. (Forsman, CA)

306: Beacon R, St. Johns LS, FL at 0545. (Newberry, GA)

308: Beacon CI, Channel Harbor South Jetty Light 2, CA at 0843. (Vaage, CA)

310: Beacon SP, Smith Point LS, VA at 0459. (Vylasek, VA)

314: Beacon VM, Venture Marina South Jetty Light 2, CA at 0845. (Vaage, CA)

317: Beacon CBE, Cumberland (Municipal), VA at 0506. (Vylasek, VA)

319: Beacon RB, Redondo Beach West Jetty Light 3, CA. (Vylasek, CA)

326: Beacon MCY, Reno Desert Rock, NV at 0848. (Vaage, CA)

329: Beacon YHN, Hornepayne (Municipal), ONT., Canada at 0509. (Vylasek, VA)

332: Beacon SNV, Schipol, Holland at 1405. (Boender, Netherlands); Beacon ULH, Tullahoma, TN at 1115. (Crabill, VA)

335: B eacon SW, Newburgh (Stewart-Neely), NY at 0514. (Vylasek, VA)

336: Beacon HE, Sheboygan, WI at 1129. (Crabill, VA)

336.50: Beacon NIK, Nickyh, Belgium at 1427. (Boender, Netherlands)

338: Beacon PBT, Red Bluff, CA at 0952. (Forsman, CA); Beacon CYR, Cairo, GA at 0557. (Newberry, GA)

339: Beacon MKR, Glasgow, MT at 0952. (Forsman, CA)

341: Beacon DNI, Sherman, TX at 1137. (Crabill, VA); Beacon AK, Oakland, CA at 0948. (Forsman, CA)

343: Beaon DNT, Dyersburg. TN at 1142. New one. (Crabill, VA)

344: Beacon FCH, Fresno, CA at 0938; Beacon XX, Abbotsford, BC, Canada at 0938; Beacon BKU, Baker, MT at 0944. (Forsman, CA); Beacon JA, Jacksonville, FL at 0523. (Vylasek, VA)

347: Beacon NID, China Lake, CA at 0851. (Vaage, CA)

347.50: Beacon LAK, Lake Holland at 1422. (Boender, Netherlands)

348: Beacon MNC, Shelton, WA at 0935. (Forsman, CA)

350: Beacon NUC, San Clemente, CA at 0851; Beacon NY, Enderby, BC, Canada at 0853. (Vaage, CA); Beacon DNS, Denison, IA at 1158. (Crabill, VA)

350.50: Beacon ROT, Rotterdam Airport, Holland at 1402. (Boender, Netherlands)

353: Beacon LWT, Lewiston, MT at 0922; Beacon ZES, Cape Scott, BC, Canada at 0922. (Forsman, CA)

357: Beacon MO, Modesto, CA at 0903. (Forman, CA)

359: Beacon BO, Boise, ID at 0923. (Vaage, CA)

360: Beacon PN, Port Menier, Quebec, Canada at 0437. (Vylasek, VA)

360.50: Beacon MAK, Mackel (Brussels Airport), Belgium at 1425. (Boender, Netherlands)

361: Beacon MT, u/i at 0855. (Vaage, CA) This beacon not listed in my refs either. (Ed.)

362: Beacon RPX, Roundup, MT at 0926. (Vaage, CA)

364: Beacon GV, Valkenburg Airport, Holland at 1424. (Boender, Netherlands)

367: Beacon HA, Hao Atoll, Tuamotu Island, French Polynesia at 0856; Beacon MO, Modesto, CA at 0857. (Vaage, CA)

368: Beacon ZP, Sandspit, BC, Canada at 0859. (Forsman, CA)

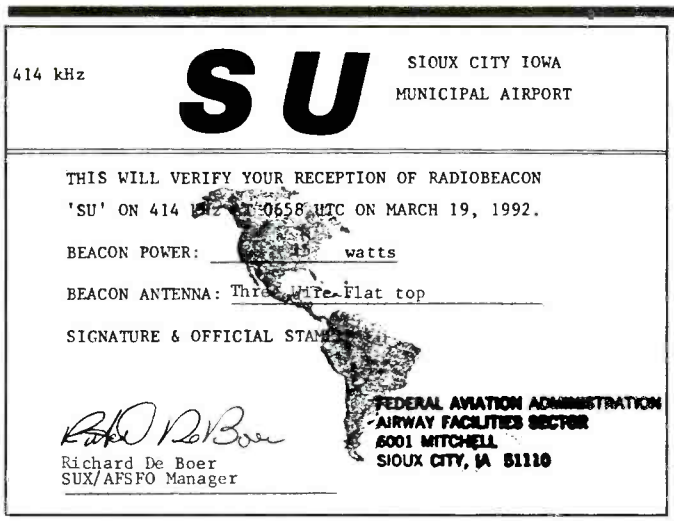
369: Beacon PS, Rotterdam Airport, Holland at 1401. (Boender, Netherlands)

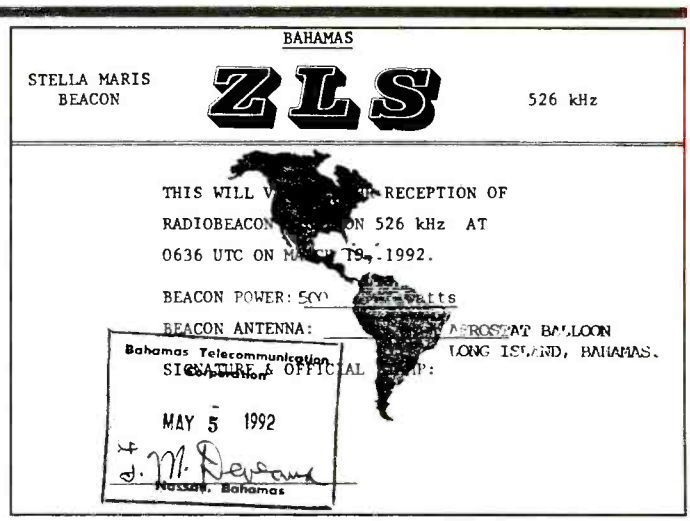
370: Beacon PAI, Pacoima Helicopter Pad, CA at 0854. (Vaage, CA)

371: Beacon ITU, Great Falls, MT at 0857. (Forsman, CA)

Abbreviations Used For Intercepts

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





Two more Beacon PFC's from the collection of Steve McDonald, Canada.

374: Beacon EKG, Polomar, CA at 0858. (Vaage, CA); Beacon LB, Livermore, CA at 0853. (Forsman, CA)

375: Beacon VMR, Vermillion, SD at 1209. (Crabill, VA)

376: Beacon WP, Schipol, Holland at 1408. (Boender, Netherlands)

377: Beacon MCX, Monticello, IN at 0924. (Crabill, VA)

379: Beacon SF, San Francisco, CA at 0858. (Vaage, CA); Beacon ACZ, Wallace, NC at 0937. Sloppy keying. (Crabill, VA)

380: Beacon BBD, Brady, TX at 0859. (Vaage, CA)

383: Beacon CNP, Chappel Municipal, NE at 0901. (Vaage, CA)

385: Beacon EMR, Augusta, GA at 0618. (Newberry, GA); Beacon HYX, Saginaw, MI at 0543. (Vylasek, VA)

386: Beacon STD, Stad, Holland at 1415. (Boender, Netherlands)

388: Beacon MS, McInnes Is, LS, BC, Canada at 0837. (Forsman, CA)

388.50: Beacon CH, Schipol, Holland at 1406. (Boender, Netherlands)

390: Beacon JT, Stephenville, Newfndlnd, Canada at 0430. (Vylasek, VA)

391: Beacon EBY, Neah Bay, WA at 0834; Beacon DDP, San Juan, PR at 0834. (Forsman, CA); Beacon RZO, Demopolis, AL at 1007. (Crabill, VA)

392: Beacon ML, Charlevoix, Quebec, Canada at 0554 (Vylasek, VA)

394: Beacon MK, Jackson, TN at 0943. Weak w/long fadeouts. (Vaage, CA)

395: Beacon DA, Schiphol, Holland at 1404. (Boender, Netherlands)

396: Beacon GOI, Ft. Knox, KY at 1017. (Crabill, VA)

397: Beacon EJK, Greensboro, GA. ID in CW & automated altimeter in AM at 0622. (Newberry, GA); Beacon LLJ, Challis, ID at 0753. (Forsman, CA)

398: Beacon G, Windsor, ONT, Canada at 0558. (Vylasek, VA)

400: Beacon OHY, Cordele, GA at 0625. ID in CW & automated altimeter in AM. (Newberry, GA); Beacon ENS E , prob Ensenada, Mexico. Hrd at 0904. (Vaage, CA)

404: Beacon OLF, Wolf Point, MT at 0958; Beacon HEQ, Holyoke, CO at 0907. (Vaage, CA)

404.50: Beacon RR, Rotterdam Airport, Holland at 1400. (Boender, Netherlands)

407: Beacon CO, Colorado Springs, CO at 0908. (Vaage, CA); Beacon CM, Champagne, IL at 0935. (Crabill, VA)

408: Beacon SN, St. Catherines, Ontario, Canada at 0602. (Vylasek, VA)

411: Beacon RD, Redmond, OR at 0908. (Vaage, CA)

420: Beacon VFY, Lake City (Municipal), SC at 0609. (Vylasek, VA); Beacon GAS, u/i at 1056. (Crabill, VA) I also no listing for this beacon. (Ed.)

442.50: FFB, Boulogne-Sur-Mer Radio, France w/wdx at 1256. (Boender, Netherlands)

521: Beacon INE, Missoula, MT at 0912. (Vaage, CA)

526: Beacon RWE, Camp Roberts, CA at 0736. (Forsman, CA)

2670: USCG Group Cape Hatteras NMN13 wkg USCGC Point Batan w/lat-long for SAR case. At 0340 NMN13 w/notice to mariners. Gave description & last known posit of life raft from above SAR case. Raft was 8x12 grey and orange with a canopy top. (Rausch, NJ)

2725: IDQ, Italian Navy in CW at 2143 w/VVV IDQ mkr. (Boender, Netherlands)

2840: 9GW, u/i w/OKC. u/i passing coded msgs. OGK, u/i wkg 8FJ, u/i w/coded msgs. Both hrd 2228 in USB. Oprs had South European/French accent. (Boender, Netherlands)

3016: Gander Metro bcst of bulletin to all a/c in North Atlantic corridor that Shanwick recd msg from an American Airlines flt that moderate to severe turbulences were present between 38-36 degrees degrees north lat. All a/c to be on lookout for these conditions. (Caldicott, MA)

3407: Krasnodar, Russia Volmet at 2310 & Alma Ata, Kazakhstan Volmet at 2315. All USB. (Boender, Netherlands)

3485: New York Volmet at 2317; Gander Volmet at 2320. All USB. (Boender, Netherlands)

3940: CG Station and SB6GG wkg vessel in distress of OR coast. Vessel's battery weak—replied to questions w/"mike clicks.") 300-1000. (Merritt, NY)

4149: Tanker Irving Canada (VCWX) wkg Tanker Irving Eskimo (VCRJ) w/2 OMs discovering early buildup of ice in Canadian Maritime region ports. Hrd at 1310. (Rausch, NJ)

4373: "Octopus" comms w/Z8B wkg 3K8 for wx his QTH. Hrd 0624 USB. (Baker, OH)

4395: YL/GG rptng 371x3, 80892, 036 from 2200-2205. Then five dashes and into 5F grps. Also on 6235 kHz. (Mason, England)

4408: Halifax CG in USB at 0435 w/msg of mariners to be on lookout for drifting bouy w/radar reflector and flashing light. (Narde, NY)

4426: VIT, Townsville, Queensland, Australia Maritime Radio w/High Seas wx & navigation warnings for Coral Sea at 1233. (Rausch, NJ)

4722: RAF Volmet, W. Drayton w/wx for European cities. Hrd 2243 in USB. (Baker, OH)

5030: YL/EE w3/2 & 5F grps at 0615. Also on 5528 kHz. (Rausch, NJ)

5305: SLHFM "P" at 2110 was sending PPP**PPP**. "C" was audible in backgnd. Another day "C," "D," and "S" were hrd. Note: * is the CW wait (AS) signal. (Mason, England)

5668: OM/EE w/RR accent rptng 897 897 897 000 from 2100-05 then off. (Mason, England)

5692: Several day SAR conducted off NJ coast for missing fishing vessel. Cape May Air, CGCs Hornbeam & Point Highland along w/2 helos and 3 C130s participated in search. An oil slick was detected over a two mile length however, a Norwegian tanker was spotted ten miles away in a straight line which indicated this was ship which produced slick. (Caldicott, MA)

5696: A1R wkg Comsta New Orleans in USB at 0104 w/eta to Kingston AFB for Medvac. Severe QRN. (Narde, NY)

5900: YL/SS in AM at 1106 w/6F grps. (Rausch, NJ)

6224: WHV926, (u/i shore sta) in USB w/ves Miss Canada said to be at docks, op's info. (Baker, OH) l/d poss Buds Boat Rental, Inc., Venice, LA. (Ed.)

6501: USCG Comsta Kodiak at 0220 w/high seas wx. (Rausch, NJ)

6510: WCM, Cincinnati, wkg Ohio River tugs w/loads & position. Hrd were James C. Justice, John Levine (?), and others u/i, hrd in USB at 1833. (Baker, OH); WAH, St. Thomas in USB at 0203 w/wx for Virgin Islands and NW Caribbean. (Caldicott, MA)

6550: Dutch CG a/c following MV General Adno, a Philippine ship who disposed oil in North Sea. Petrol almost colliding w/Hotel Echo Lima Mike platform. USB at 0821. (Boender, Netherlands)

6604: NY Radio in USB at 2240 w/Aero wx for Baltimore, New York, Philadelphia, Neward & Boston. (Narde, NY)

6679: Auckland Volmet w/aviation wx at 1150. Tokyo at 1210 & Hong Kong at1215. Also on 8828 kHz. (Rausch, NJ)

6753: Edmonton Military w/wx bcst at 0020 in USB. (Baker, OH)

6840: YL/SS in AM w/4F grps. Off at 0241. (Hill, MI)

6853: YL rptng Papa Delta at 1930 w/electronic tones. At 1935 GG 5F tfc for 054 of 71 grps length. (Mason, England)

6934: YL/SS rptng several times, 835 x3, 1-0 count. then into 4F grps. AM at 0302. (Hill, MI)

7735: Norfolk SESEF testing xmtrs w/USS Hodge (?) at 1309; USS Dill (?) at 1358, USS Ashland at 1359; USS Anzio (CG-68) NZIO at 1403, USS Dwight D. Eisenhower (CVN-69) NIKE at 1523, u/i ship w/tactical call "Upper 40" at 1524; u/i Upper 25 clg at 1554 and USS Spruance. DD963, NDQV at 1808. All USB to start, all modes tested. (Baker, OH)

8240: Vessel Robin L clg Portishead Radio at 0013. At 0018 USCGC Alert (WMEC630) NZVE wkg Comsta Portsmouth for pp. At 0025 USCGC Laurel (WLB391) NRPJ w/Comsta N. Orleans re 0000 voice sked. At 0142 HMS Exeter (D89) GVUJ clg Portishead Radio w/id "Warship Exeter." All in USB. (Baker, OH)

8684: Two air sorties (USCG 1718 & 1501 (C130s)) flew over 16,000 sq. miles of ocean NE of Bermuda in search of missing sailboat racer Michael Plant. 1718 returned to AFB in Bermuda after sundown. (Caldicott, MA)

8743: KMI, Dixon, CA wkg Cruiseship Song of America, HSPC, at 0206 & 0216 wkg Baja Bandit. All in USB. (Baker, OH)

8749: WOO, Ocean Gate, Manahawkin w/wx in USB w/0001 sign off. (Toniolo Dos Anjos, Brazil)

8785: Halifax CG in USB at 2338 w/iceberg report. (Narde, NY)

8794: Scheveningen Radio, Holland w/tfc list in USB at 1309. (Nicholson, England)

8825: Amtrans 550 w/NY, reports he back on course sat 2233; Air France 008 w/Shanwick for rdo check at 1531; KLM 783 w/Shanwick. Enroute Amsterdam-Curacao at 1601. All USB. (Boender, Netherlands)

8828: At 0234 Honolulu Volmet w/wx for Hawaiian Islands, then coast to 0240. USB. (Baker, OH)

8861: Nandi, Fiji Islands wkg several flights at 0817 in USB. (Toniolo Dos Anjos, Brazil)

8873: Ndjamena Control wkg Springbok 57 at 0348 in USB. (Toniolo Dos Anjos, Brazil)

8891: Speedbird 283 w/Iceland, Selcal check at 1315; Virgin 008 w/Iceland at1345; Scandinavian 903 w/Iceland at 1228; Swissair 107 w/Shanwick w/Selcal check at 1242. All USB. (Boender, Netherlands)

8906: Air France 6300 in USB at 2223 wkg NY w/position report and Selcal check. (Narde, NY); Portugal 352 w/NY. FL370 Selcal check at 2338; West Indies 902 w/NY. Destination London Heathrow. Selcal check at 2357; Lufthansa 515 w/NY. Enroute to Frankfurt. Clearance for FL330 at 0017; Air France 532 w/NY at 0025. All USB. (Boender, Netherlands)

8924: Transavia PH-HVM w/Amsterdam LDOC. Has problems w/several instruments. Selcal doesn't work either. USB at 1445. (Boender, Netherlands)

8939: Rostov, Ukraine Meteo in USB w/Volmet at 1525; S. Petersburg, Russia Volmet in USB at 1805. (Boender, Netherlands)

8984: Foxtrot 5 Oscar wkg Comsta Portsmouth w/pp w/Miami Ops re ELT activation. Advised shows to be in area of runway Ft. Lauderdale Int'l Airport. Advised RTB. Hrd 2156. All USB. (Baker, OH)

9410: CW station sending "LON" in background of BBC World Service on this freq at 1200. (Mason, England)

10018: Pakistan 806 w/Karachi. Enroute Frankfurt-Karachi at flight level 330. Hrd 1510; Reach 7005 w/Bombay, requested pp to Malaysia at 1531; Air India 405 w/Bombay, Selcal check at 1541. All USB. (Boender, Netherlands)

10069: United 911 w/Berna LDOC. Enroute Madrid-San Francisco. Plane has malfunctions. Pilot consulted ops San Francisco. Plane has malfunctions. Pilot consulted ops San Fran & returned to Madrid for repairs. USB at 1124. (Boender, Netherlands)

10072: Caledonian 487 w/London LDOC, eta Gatwick 1922. USB at 1707. (Boender, Netherlands)

10493: FEMA Net w/WGY912 wkg WGY910, 906 & 902 w/rdo cks. Advises no nat'l test today due shortage of staff. Hrd 1803. At 1824 WHCA wkg WGY912 w/rdo ck. At 1959 Whiskey Hotel base (White House) w/WGY912 for rdo ck. All USB. (Baker, OH)

11000: CW station at 1055 sending VVV DE OLX. At 1100 YL/Czech sending -29. First digit was not audible due to fault on voice machine. At 1105 into 5F text but the number 7 (sedm) was not working properly. Deduced original 3F grps was 729. Parallel bcst on 6760 kHz was OK. (Mason, England)

11176: Offutt requests stns echo Sky King msg. After msg sent, it foll by rpts by Andrews, MacDill, & 1 other u/i AFB. Last one says "Echo out." Many of these Sky King msgs this day. (Baker, OH)

11288: MSR 11 (Egypt Air) w/Cairo LDOC for Selcal check in USB at 1728; Saudi 003 w/Jeddah LDOC for pp at 1737 in USB. (Boender, Netherlands)

11300: Adis Control wkg Mauritius 057 in USB at 0050. (Toniolo Dos Anjos, Brazil)

11336: U4255 wkg Gander for position & tfc at 1538 in USB. (Hill, MI)

12143.7: YL/SS in AM at 1307 w/5F grps. (Willmer, MI)

12598: SPA62, Gdynia, Poland in CW at 1233 w/id & phasing in ARQ. (Boender, Netherlands)

12780: 9AR, Rijeka (Ex-YUR w/new callsign) also hrd on other freqs 16942 & 8700 kHz. This indicates that 9A is the prefix now used by Croatia, one of the states of the former Yugoslavia federation. (Juan, Spain)

12942: JNA, Tokyo Naval in CW reported plans of an 11 hour rocket firing to be conducted in the North Pacific. Several coordinates were given as areas of warnings to mariners. (Caldicott, MA)

12975: IQX, Trieste wkg u/i vessel in CW at 1300. (Boender, Netherlands)

13060.5: 70A, Aden Radio in CW at 1316 w/mkr. (Caldicott, MA)

13113: Halifax in USB at 2210 w/maritime wx. (Narde, NY)

13244: Reach 5077EE wkg Elmendorf, pp Hylda for status at 0332 in USB. (Baker OH)

13345.6: Two OM/EE (Fishing boat captains) at 1344 in USB w/xxxx language and cryptic references to u/i subject. One mentioned that another fellow had come into dock (saw someone on the dock?) and put in reverse & backed out at 150 mph? (Ed.)

13351: Oostende Radio w/YFH, YRS (not air tfc). (Juan, Spain)

14441.5: Navy MARS. At 2256 NNN0CZV (USS Hayler DD997) wkg PRQ & QSY'd to 14467 kHz. At 0135 NNN0CRK (USS Ponce LPD15) relaying thru CBE to UTO w/QSY to 14483.5 kHz. At 0137 NNN0AHF wkg UTO w/QSY to 14483.5 kHz & back. UTO queries UMS if AHF unit 4 authorized use freq, UMS to ck, hrd no response. All USB. (Baker, OH)

14685: Flint 454 wkg Atlas. Panther was trying to contact on Echo 11076, no contract. Then went back to Papa ch. USB at 1000. (Koch, IL)

15045: United 911 wkg United Dispatch via pp fm Berne Radio. Dispatch was trying without success to send wx fax to a/c. (Rausch, NJ)

16382: Corps of Engineers w/WUH Omaha w/WUG NCS Vicksburg, advises is training net. Also refers to MO exercise on 4 meg MARS net. Advises meets 1300 on 4029 USB & 1200 on 4023. Also advises Ft. Bragg no longer on 7311. USB at 1545. (Baker, OH)

16528: Stallion clg 355 & 355 clg Stallion, Heavy QRM, neither hears other. Hrd at 1607. Another day 2 OM/EE in comms re meet at border, if Visa's needed for Guatemala & need someone to spk SS. One id given as Buenos Aires 2. USB. (Baker, OH)

16830: HEC27, Berne, Switzerland in CW at 1129 w/id & phasing in ARQ. (Boender, Netherlands)

16997: UHD, Riga, Latvia in CW at 1152 w/CQ DE UDH ANS 4/8/12/16 MHz. (Boender, Netherlands)

17141: UFN, Novorossiysk, Russia in CW at 1210 w/DE UFM 4/8/12/16/22. (Boender, Netherlands)

18843.6: Two OM/EE exchanging sig reports in USB at 1627. Weaker stn tells other this freq is 18 Bravo and they to go to 22159 kHz which is 22 Alpha. Weaker stn sez he glad he can be hrd & will continue checking for sig reports all the way up to San Diego. (Must be South of San Diego at time of contact). Strong stn gives callsign as WUZ6854. Unable determine call of weaker stn. (Ed.)

20276: BEA, Argentine UNPROFOR hrd many days in QSO w/LSE, BA, Argentina, LTA, LTH, LTK, LTM (all u/i) & LTS in Esperanza, Antarctica. BEA based in Croatia. (Juan, Spain)

20600: Venezuelan Mil in Sahara Desert, in Tindurf (Western part of Algeria, close to Morocco & Western Sahara borders), trying get info re Venezuelan "coup d'etat." Started on this freq but later shifted to 20900 kHz. Hrd at 2000. (Juan, Spain)

20936: NNN0CVC (USS Kalamazoo AOR6) w/NNN0RRC (u/i) for pp's. Also short contact of NNN0BBF (u/i) for NNN0CVD (USS Santa Barbara AE28). (Juan, Spain)

20977: LPC10000A, LPC546/2, Argentine Mil w/tfc like MARS tfc. (Juan, Spain)

20987: Spanish speaking Nuns in Liberia had taken refuge in the hospital of another religious community. Were asking to pray for peace returning in Liberia; LPT509, LPT1000, Argentine Mil w/tfc like MARS msgs; U/i South American warships, heard twice. The second was arriving at the Canary Islands. (Juan, Spain)

22330.5: D3E81, Luanda, Angola w/V mkr inCW at 1825. (Rausch, NJ)

22636.5: JCT, Choshi, Japan in CW at 0003 w/mkr. (Toniolo Dos Anjos, Brazil)

28950: Starts here then moves to 28970 kHz. LU3NAH/9A2, amateur callsign for BEA, Argentine UNPROFOR (see 20276 kHz item), LU1HRM/9A2 (iden) wkg LU amateurs. 28950 used at 1615 and 24950 at 1645. (Juan, Spain) ■

Antennas & Things *(from page 53)*

and wire become a pendulum, and will sway back and forth, picking up distance on every gust, and then—*SMASSSSHH-HH*!!!—right through the window on a floor below. Second, if the weight comes loose, then it will fall all fourteen stories to the ground. A 1/2 oz. fishing weight will kill a pedestrian on the street if it falls far enough, and will make a real mess out of car roofs and windshields. Safety first!

In some cases, I've seen a "soft weight" used for hanging antennas. An old sock (washed, hopefully) is stuffed with a few cotton balls, and used to hold down the end of the antenna. Still, safety must prevail. While there is some doubt that a cotton ball from the 15th floor is deadly, I'd still be careful if there is any possibility that the ball could hit someone.

"Another neat trick is the ol' flower pot trick. Some developments allow tall flowers and plants—even artificial—on the balcony or patio. Some people make it a rather tall artificial plant, maybe six or eight feet high. A thin wire woven into the foliage can make a reasonable—not good but ok—antenna for shortwave receivers. Alternatively, wrap the fake stalk with a long length of wire. It will work similarly to a helical wound vertical at some frequencies.Other antenna ideas are found in my *Receiving Antenna Handbook* (HighText Publications, 7126 Miramar Road, #15, San Diego, CA 92121; 619-693-5900).

Beaming In *(from page 4)*

on next month's banned-frequency menu? The FCC seems both ready and willing to go along with this, not uttering so much as a single peep of protest.

Wouldn't you think that before Congress began giving away the electromagnetic spectrum to its special friends, *someone* at the FCC would have pointed out that the airwaves belong to the public. Chunks of it can't be cordoned off by Congress for the benefit of private parties. Shouldn't the FCC have pointed out that if the cellular industry wants communications privacy, then it will have to install voice scramblers because that is the way privacy has traditionally been obtained on voice radio circuits?

Someone at the FCC should have pointed out that the cellular industry is full of beans with its myth about how the public won't buy or use cellphones unless privacy is assured. Ship to shore telephones, precellular car phones, and high seas phones have been in wide use since the 1940's and privacy has never been an issue. Fact is, cellular users aren't hung up about privacy. In truth, this privacy hysteria the cellular industry has long pushed proves to be all smoke and mirrors.

You can't go to a beach, concert, store, airport, restaurant, theatre, hotel lobby, or even a public rest room where people aren't very loudly yakking on cellphones, annoying everybody within earshot. People can place calls from cellular pay phones while riding in many New York City taxi cabs, sharing their conversations with the cab drivers. People chat as they walk down the street talking on handheld cellphones, and use them in city buses. Cellphones can even be used on subway platforms. Yet the industry keeps parroting that these people demand privacy. This false claim should have been brought to the attention of Congress by the FCC.

An FCC staff member could have pointed out to Congress that from time to time one radio service petitions to get the frequencies of another reallocated for its own purposes, or the FCC decides to reallocate the frequencies on their own initiative when the agency claims frequencies are needed. That's how several UHF-TV channels were lost, and how cellular got its frequencies. That's how ham radio lost frequencies. But, by the Cellular industry getting Congress to legislate their special private access to two blocs of 800 MHz-band frequencies, the now-outflanked FCC should have noticed that these people have succeeded in craftily removing their own frequencies from the grasp of other frequency-hungry radio services of the future.

The government once determined cigarettes were a threat to national health. We now know that cigarettes even affect nonsmokers. Yet cigarettes are permitted to continue on sale so long as they carry a government-specified warning advising of the danger to (only) the smoker. Receivers including the cellular bands aren't a threat to the public health, but Congress now says they can't be sold. This makes sense?

Why didn't the FCC suggest to Congress that full-frequency receivers remain available to the public, but carry a warning notice? The FCC should have also demanded that the cellular industry be required to put notices on its phones warning the public that since the instruments are unsecured wireless communications devices, users cannot have any reasonable expectation of privacy.

I somehow think that at one time the FCC would not have been so passive in letting this type of law get through Congress. The FCC should have gone there right at the start and set those nincompoops straight on behalf of the public whose airwaves they are the stewards. Problem is that I'm thinking about the FCC in its halcyon years. The span of years when the FCC had dynamic outspoken Commissioners who made a difference—E.K. Jett, Benjamin Hooks, Rosel Hyde, Newton Minow, and other leaders. The years when the FCC's Washington staff included folks like Curtis Plummer, Ivan Loucks, Bill Grenfell, and others of their caliber. Professionals who knew what was going on, and most importantly, were involved people who seemed to care.

Maybe I'm reading the signs wrong, but these days I get the impression that the agency, chugging along on an anemic budget, is understaffed, lacks strong leadership, and has become disconnected from many of the public's needs. This unfortunate new law was enacted while the FCC was patting itself on the back for issuing staggering fines to broadcast stations carrying Howard Stern's program. Yeah, right. Hip hooray. Everybody is very impressed. Thanks a bunch, but in the meantime, it looks like we just saw a 50 MHz chunk of UHF spectrum tossed into the political porkbarrel.

Too bad that while the FCC was establishing community moral standards and otherwise occupying itself with boondoggles, they bungled the ball when it came to ensuring public ownership and access to the airwaves. They let Congress begin handing out frequency bands as gifts to its pals. Who knows where this practice will lead? Wherever it will be, it won't be good.

The FCC needs to regain its stewardship of the airwaves. How many more fiascoes like this can the agency or the public allow? How many hits can the airwaves take before the usable spectrum available to the general public has more holes than the ozone layer? The RF spectrum requires adequate and constant preservation from political destruction. In the meantime, full-frequency scanners could eventually turn into better long-term investments than municipal bonds. ■

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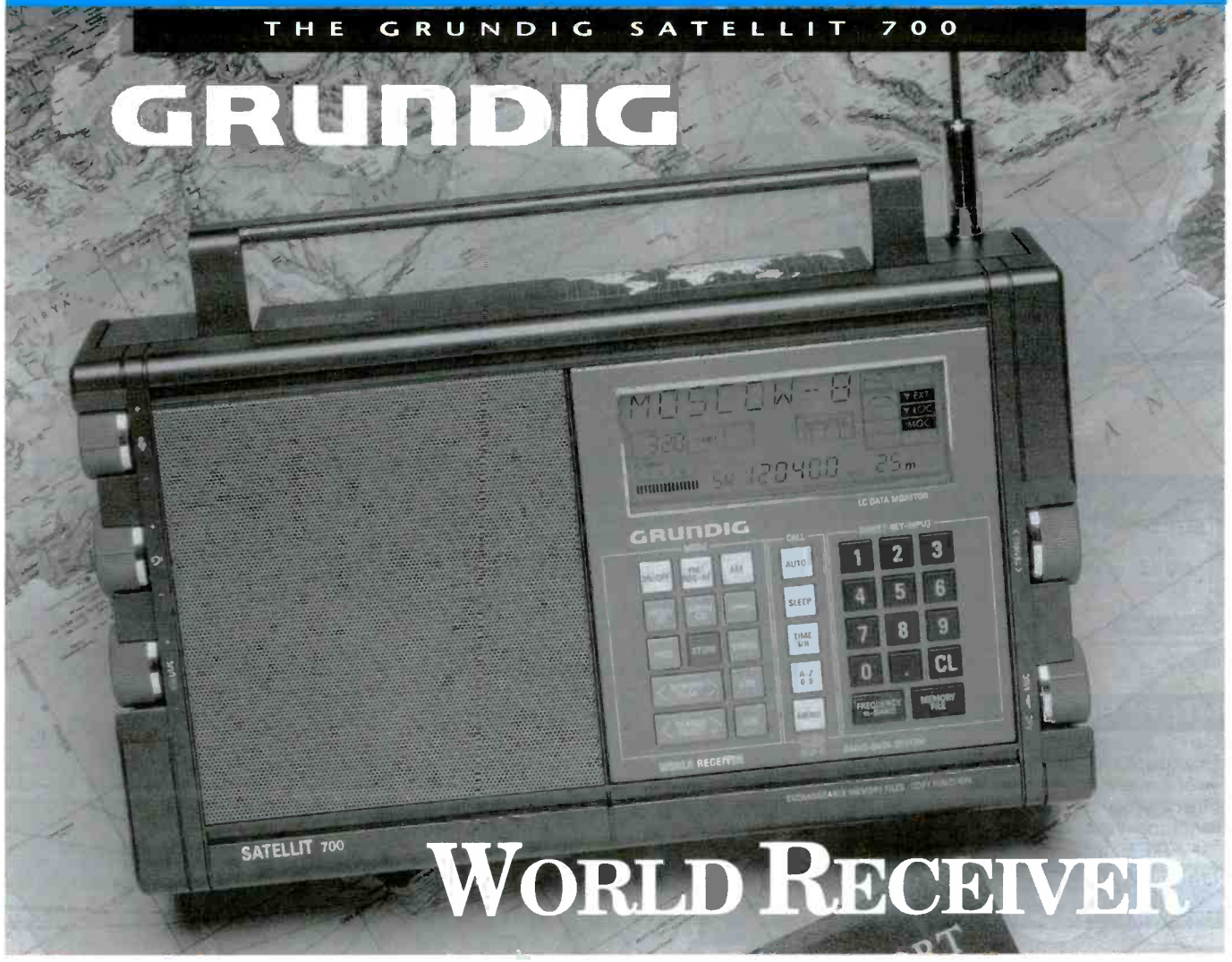

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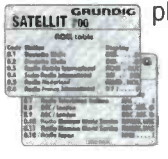

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WHEELING HAMFEST/COMPUTER SHOW: Sunday, May 16th 1993, 8am to 3 pm. Admission $2.00 in advance, $3.00 at door. Women and children 17 and under admitted free. Many awards and door prizes given away. Directions on: 146.910 and 146.715. For more information and advance tickets contact: The Triple States Radio Amateur Club (TSRAC), Box 240, RD #1-Adena, Ohio 43901. Phone: (614) 546-3930.

AR-3000 .1-2036 MHz al mode scanner for sale. Orig. package & schematics. Must sell, make offer. Call Kristian at 501-444-6850.

Kenwood R-2000 receiver $435. Send money order to David VanDensen, 888 E. Shady Lane Lot 241, Neenah, WI 54956, or phone 414-734-2437.

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The South Milwaukee Amateur Radio Club will its 23rd annual "Swapfest" on Saturday, July 10, 1993 from 7am to 2 pm. It will be held at The American Legion Post #434, 9327 South Shepard Ave., Oak Creek, WI 53154. Parking and refreshments are available. Admission is $4.00 per person which includes a "happy-time' with free beverages. Many prizes will be awarded throughout the day. Talk-in will be on 146.580 MHz FM simplex and most local repeater freq. For more information contact: The South Milwaukee Amateur Radio Club, PO Box102, South Milwaukee, WI 53172-0102. Ph: 1-414-762-3235 ext. 58.

ANTIETAM Radio Association, W3CWC, PO Box 52, Hagerstown, MD 21741 will hold the Hagerstown Hamfest on Sunday, May 16, 1993 at the Hagerstown Junior College Athletic and Recreation Center. Doors will open at 8:30am and close at approximately 3:30pm. Admission is $5.00 with children under 12 admitted free. Talk-in on 146.34/146.94 repeater. Vendors: reserve a space by contacting Fred Bailey, N3HTN, Hamfest Chairman, (301) 416-8079.

WANTED: SWL would like to swap QSL cards with other SWLs. WCQ6RRS, Ralph R. Shankland, PO Box 253, Temple City, CA 91780.

Wanted: A diagram (photo copy) for a Prominent, MS24, 23 channel C.B. or information as to where to acquire it. Werner Weiss, 4667 Dapple Ln., Boulder, CO 80301.

FOR SALE: ICOM R-1 receiver with BP-84, CP-12, BC-74A. $400. E. Clarke, PO Box 1404 Cullman, AL 35056. (205) 739-3356.

Kenwood R-2000 receiver for sale $475 shipped; Send money order to David VanDensen 888 E. Shady Lane, Lot 241, Neenah, WI 54956. (414) 734-2437.

WANTED: Pre-1970 lists of US radio stations, especially 1945-1960. Whites Radio Log, Broadcasting Yearbook, World Radio Handbook, etc. Will also purchase photocopies of same. Ralph Marson, 8070 Busch, Centerline, MI 48015.

WANTED: Complete owner's service manual for a CP300 CB radio. Write to Mike Schlegel, 6014 Vistamar, Toledo, OH 43611.

WANTED: PRO-2004, 2005, 2006 scanners. Full cellular preferred. Please state price, including shipping, and your phone number. Blackwell, West 1029 First Ave., #507, Spokane, WA 99204.

Realistic DX440, plus like-new Quantum Loop (BCB). Both for $200.00 firm or trade for SONY 2010. Pete (205) 773-5505.

SONY ICF SW 7600 new with box and all accessories - $150. Eves: 201-927-0153.

WANT TO BUY: Kit assembly instruction manual for Viking Valiant. Must be complete and legible. Tel. 219-747-1176 (ans. mach.), or write, Mr. Wright, 2220 Dunkleberg #207, Fort Wayne, IN 46819. Costs reimbursed.

COMMODORE 64 COMPUTER, Magnavox color monitor, Seikosha printer, floppy disc drive, joy sticks, mouse, manuals, lots of software. All good condition. $250 plus shipping. (404) 448-7187.

AIRCHECKS: Looking for non-telescoped tapes of 1960's & '70's Top-40 and AOR stations in the Midwest and Southeast U.S. Russell Wells, 409 Flavia Circle, Troy, Alabama 36081.

Sell: Shortwave, amateur, scanner, all-types radio equipment/parts (and bought, good/bad). For large list send $1.00 and S.A.S.E. Joe Bedlovies, PO Box 139, Stratford, CT 06497.

Looking to swap info with UTE SWL for USN/USCG, etc. Rick Baker, PO Box 4222, Austintown, Ohio 44515. E-Mail: AE411@YFN.YSU.EDU.

FOR SALE: AOR-AR1000XLT portable scanner SONY ICF SW77 portable SW receiver with accessories and manuals, both about 6 months old. Excellent condition. Special price for both or $360 each. Call (215) 356-1454 (days), or (215) 353-7270 (evenings).

HEATHKIT HR-1680 Amateur receiver needing operation manuals and schematics. Willing to pay reasonable copy cost. Contact Ed Carroll, KD4BAS/KIN9ET, PO Box 193, Morganfield, Kentucky 42437-0193. 73's and thanks.

SONY PRO-80 with accessories, very good condition - $300, or best offer. (216) 782-2086, 12pm-5pm EST Mon-Sat.

Bytek S1-KX NAM Multiprogrammer like new cond. - $350.00 shipping included. Roger LaVake, PO Box 632, Virginia City, NV 89440. (702) 847-9511.

Marconi TF 2304 modulation meter - AM/FM, 1000 MHz automatic tuning, FM deviation to 150 kHz, AM modulation to 100%, AC/DC, IF/AF outputs, with book, $175.00 (or trade). Stan, (516) 736-5371, evenings.

WEFAX system including software. Receives weather fax, RTTY, CW, etc. Build into a DB25 connector. Powered by serial port, $31.95. William Nolle, 122 Phillips Rd, Hazel Green, AL 35750. (205) 828-7127.

WANTED: Non-working Bearcat 4-6 thinscan portable scanner or back cover &crystal cover. Send info to George Utterback, 2107 Bryn Mawr Dr., Stow, Ohio 44224.

I have several Canadian police and fire hat patches I would like to trade with other collectors. Mike Starr, Genessee E.M.S., PO Box 190216, Burton, MI 48519.

Free Materials: Use Amateur Radio in school? Free teacher idea packet will help. Send 9x11 SASE with $1.90 postage to: Conrad Ekstrom, WB1GXM, PO Box 1076, Claremont, NH 03743-1076.

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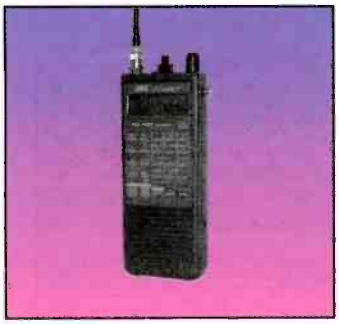

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AM Broadcast to Microwave
1000 Channels

500KHz to 1300MHz coverage in a programmable hand held. Ten scan banks, ten search banks. Lockout on search and scan. AM plus narrow and broadcast FM. Priority, hold, delay and selectable search increment of 5 to 995 KHz. Permanent memory. 4 AA ni-cads and wall plus cig charger included along with belt clip, case, ant. & earphone.

Size: 6 7/8 x 1 3/4 x 2 1/2. Wt 12 oz.

Fax fact document # 205

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1 to 1300MHz

Patented Computer Control

62 Scan Banks, 16 Search Banks, 35 Channels per second. Patented Computer control for logging and spectrum display. AM, NFM, WFM, & BFO for CW/SSB. Priority bank, delay/hold and selectable search increments. Permanent memory. DC or AC with adapters. Mtng Brkt & Antenna included.

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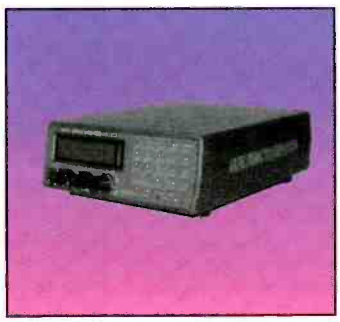

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Size: 2 1/4H x 5 5/8W x 6 1/2D. Wt. 1lb.

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and 1000 Channels.

500KHz to 1300MHz. Ten scan banks, ten search banks. Search lock and store. BFO. 2 Antennas. AM/NFM/WFM. Selectable increments . Tons of features,

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5 7/8 x 1 1/2 x 2.
Wt 14 oz.

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Five banks of 20 channels each. Covers 29-54, 118-174, 406-512 and 806-954MHz (with cell lock). Features scan, search, delay, priority, CTCSS option, lockout, service search, & keylock. Includes AC/DC cords, mounting bracket, BNC antenna. Size: 4 3/8 x 6 15/16 x 1 5/8. Weight: 4.5lbs.

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100 Channel 800 MHz

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Size: 5 3/4H x 2W x 1 1/2D. Wt: 12oz..

Fax fact document #650

Bearcat 200XLTN ~~$229.95~~

200 Channels 800 MHz

Ten scan banks plus search. Covers 29-54, 118-174, 406-512 and 806 956MHz (with cell lock). Features scan, search, delay, 10 priorities, mem backup, lockout, WX search, & keylock. Includes NiCad & Chrgr.

Size: 1 3/8 x 2 11/16 x 7 1/2. Wt. 32 oz.

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