

POPULAR COMMUNICATIONS

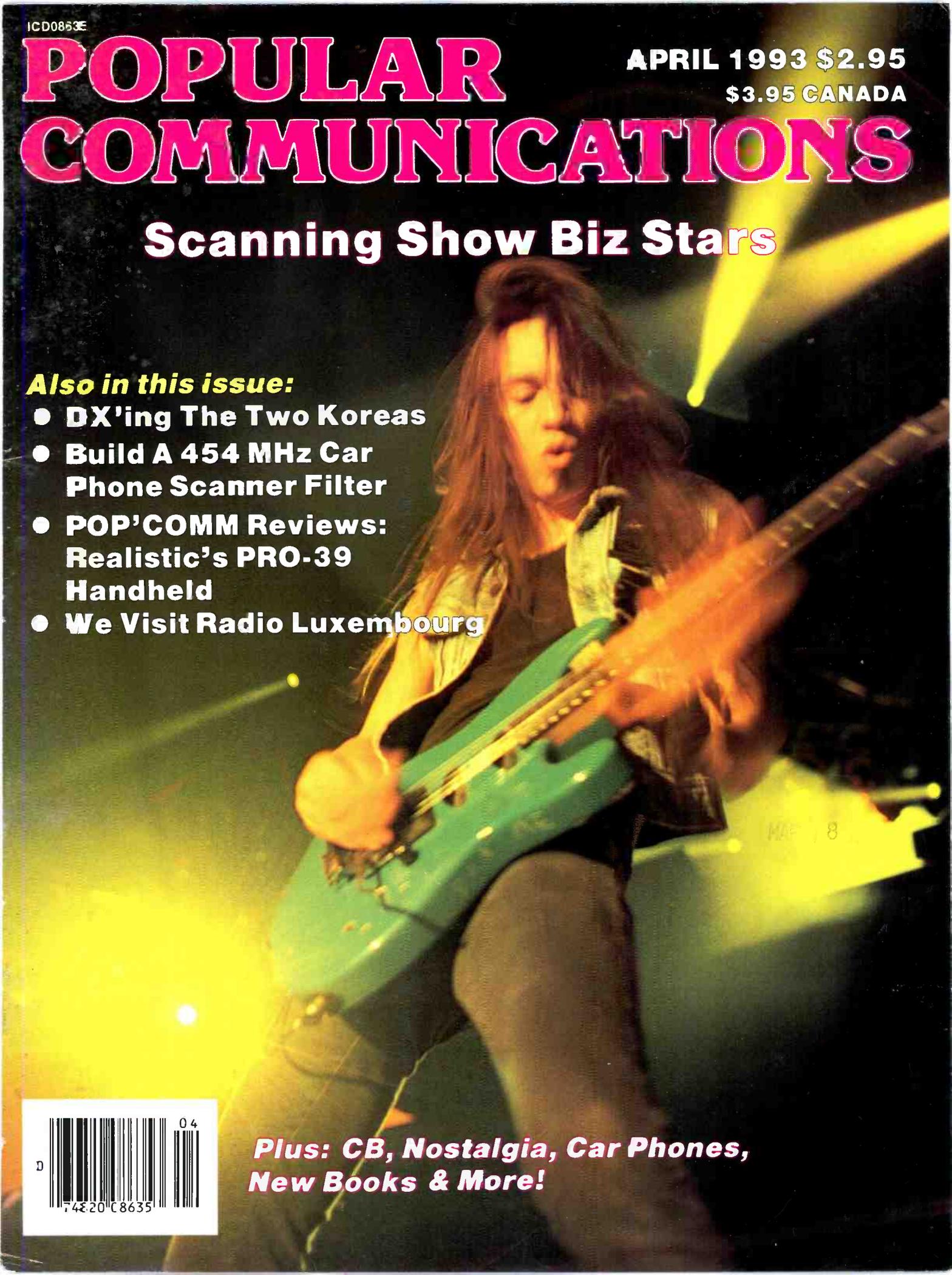
APRIL 1993 \$2.95

\$3.95 CANADA

Scanning Show Biz Stars

Also in this issue:

- **DX'ing The Two Koreas**
- **Build A 454 MHz Car Phone Scanner Filter**
- **POP'COMM Reviews: Realistic's PRO-39 Handheld**
- **We Visit Radio Luxembourg**



Plus: CB, Nostalgia, Car Phones, New Books & More!





NRD-535D

"Best Communications Receiver"

World Radio TV Handbook 1992



"Unsurpassed DX Performance"

Passport to World Band Radio 1992

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

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."

JRC *Japan Radio Co., Ltd.*

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Japan Radio Company, Ltd. - Akasaka Twin Tower (Main), 17-22, Akasaka 2-chome, Minato-ku, Tokyo 107, JAPAN Tel: (03) 3584-8836, Fax: (03) 3584-8873

CIRCLE 78 ON READER SERVICE CARD

- Phase-lock ECSS system for selectable-sideband AM reception.
- Maximum IF bandwidth flexibility! The Variable Bandwidth Control (BWC) adjusts the wide and intermediate IF filter bandwidths from 5.5 to 2.0 kHz and 2.0 to 0.5 kHz—continuously.
- Stock fixed-width IF filters include a 5.5 kHz (wide), a 2.0 kHz (intermediate), and a 1.0 kHz (narrow). Optional JRC 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.

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 5-1.8MHz	<25µV <4µV	<1µV <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.

FRG100HP 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:

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

FRG100HP.....\$899.95

Radios & Scanners

AOR	JRC	SANGEAN
AR1000XLT \$429.00	NRD535 \$1249.00	ATS800 \$99.95
AR3000XLT \$1029.00	NRD535D \$1749.00	ATS803A \$179.95
	KENWOOD	ATS808 \$189.95
BEARCAT	RZ1 \$499.95	ATS818 \$219.95
BC200XLT \$239.95	R2000 \$659.95	ATS818CS \$249.95
BC760XLT \$259.95	R5000 \$899.95	
BC800XLT \$249.95		
	LOWE	SONY
DRAKE	HF150 \$599.95	ICFSW1S \$299.95
R8 \$969.00	HF225 \$749.95	ICFSW15 \$99.95
	HF235 \$1995.00	ICFSW55 \$369.95
	MAGNAVOX	ICFSW77 \$469.95
GRUNDIG	3405 \$79.95	ICFSW7600 \$219.95
SAT700 \$479.95	3625 \$99.95	ICF2010 \$349.95
	3805 \$79.95*	ICF7601 \$119.95
	ICOM	ICF7700 \$179.95
R1 \$459.95	PANASONIC	
R100 \$619.95	RFB45 \$169.95	YAESU
R71A \$1039.00	RFB65 \$219.95	FRG100 \$539.95
R72A \$949.95		FRG800 \$599.95*
R7000 \$1219.00	REALISTIC	
R7100 \$1269.00	PRO43 \$299.95	
R9000 \$4999.00	PRO2006 \$359.95	
	PRO2022 \$269.95	

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EEB Top 10 Best Selling Books

- Passport To World Band Radio**
The bible for SWL... all new for 1993 date on every SWL station, name, call, location, freq, power, target, language and more, plus test reports and over 90 SWL radios.
416 pages (WBR93) \$16.95
- 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
- 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, 260/205 and 760.
160 pages (CRB5) \$17.95
- 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 hobbyist.
220 pages (CRB7) \$17.95
- Scanner Listener's Handbook**
Hear more from your scanner. Lots of information put together for both the newcomer and old time scanner listeners. Freq breakdown, services, cross ref 25-2100MHz
175 pages (T6) \$14.95
- How To Get Anything On Anybody**
Called "Really Scarystuff" says Charles Jaco, CNN News, follow up of best selling Vol. I. 5 years in making exposes intelligence collecting, including never before published tricks, techniques, photos. Must reading.
232 pages (HTGA) \$35.00
- Tune In On Telephone Calls**
Explains how persons with scanners can tune in on private phone calls, cellular and cordless phones, as well as other services.
160 pages (CRB1) \$12.95
- Complete SWL Handbook (3rd Ed)**
Whether you're a beginner or a seasoned DX'er you need this book. Up-to-date info will make your SWL more meaningful and satisfying. Local, foreign, ships, aircraft, pirates, space shuttle, RTTY and more.
294 pages (2655) \$17.95
- Electronic Spying (7th Ed)**
Startling book revealing closely guarded methods and equipment used by pros to snoop on others. Photos and non-tech language make it easy to understand how it's done. Many Police agencies use this book in their training.
56 pages (CRB14) \$8.95
- Shortwave Directory (7th Ed)**
Revised DX'er's bible to 30MHz, including VLF, U.S. and foreign Air Force, Navy, Coast Guard, Army, energy, state, FBI, FCC, DEA, NASA, spies, smugglers. Glossary of terms heard on the air.
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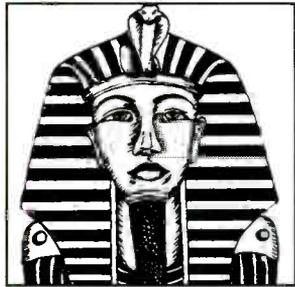
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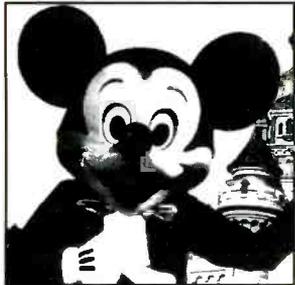
VOLUME 11, NUMBER 8



9



38



46



24

FEATURES

Scanning Show Biz	9
Go Backstage With Your Scanner & Eavesdrop On The Stars! <i>By Chuck Robertson</i>	
POP'COMM Reviews: The Realistic PRO-39 Scanner	12
<i>By POP'COMM Staff</i>	
Radio: Early Broadcasting Days	14
Back When A Nickel Was Worth 5 Cents & A Good Cigar Was A Freem <i>By Alice Brannigan</i>	
Books You'll Like	18
Monitor Aero Comms, A Book For Circuit Hobbyists, Tune In With Your Computer <i>By R.L. Slattery</i>	
DX'ing The Koreas	20
Two Nations, Side By Side, But Worlds Apart! <i>By Gerry Dexter</i>	
A Visit To Radio Luxembourg	24
And We Brought Along Our Camera! <i>By Scott Hower, K7KQ</i>	
Mobile Phone Scanner Adapter	28
Filtering Out The Pilot Tone <i>By Martin Zinaich</i>	

COLUMNS

Listening Post	30
You Should Know	35
Emergency	36
CB Scene	38
How I Got Started	43
Satellite View	44
Ham Column	46
Communications Confidential	48
Telephones Enroute	54
RTTY	58
Washington Pulse	62
Scanning VHF/UHF	66
Broadcast DX'ing	68
Pirates Den	72

DEPARTMENTS

Beaming In	4
Mailbag	6
Worldband Tuning Tips	40
New Products	53
Communications Shop	76

This month's cover: On stage is Scotti Hill of the rock group Skid Row. Photo by Larry Mulvehill.

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

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● Shortwave Receivers Past & Present

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● Complete SWL's Handbook

By Bennett, Helms, Hardy. Nearly 300 pages on all aspects of SWL'ing. \$16.95

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● Easy-Up Antennas for Listeners & Hams

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● World Radio TV Handbook

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● Universal M-900

● Universal M-1000

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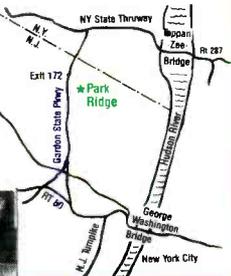
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CIRCLE 2 ON READER SERVICE CARD

BEAMING IN

BY TOM KNEITEL, K2AES

AN EDITORIAL

Hey, Jack!

Lately, the news reports indicate that one of the fastest expanding areas of crime is carjacking. That's when someone steals a car while its owner is driving the vehicle, or else getting in or out of the car. Drivers who have resisted have been beaten up, sometimes kidnaped, even killed.

Carjacking, especially in metro areas, has become widespread in response to so many owners of late model luxury cars having installed alarms, tracking, and other anti-theft devices to protect their vehicles from being stolen when parked and unattended. Now car thieves figure they can avoid those measures by taking the car while its owner is there. Theft protection devices used while the vehicle is parked don't usually operate at those times. The vehicle doesn't need to be damaged to gain entry, and the thief even gets the car keys to save him the trouble of jumping the ignition to get it started.

It's a direct trip from the point of theft to a chop shop, or a garage where all of the vehicle identification numbers will be changed and the car readied for export.

Washington finally stepped in and declared carjacking to be a federal crime with a mandatory prison sentence. As yet, this threat hasn't caused any significant reduction in carjackings. And plenty of parked cars still get ripped off in the old fashioned way.

A couple of years ago, the FCC designated frequency 173.075 MHz for use by the several stolen vehicle recovery systems that were being readied for the marketplace. The LoJack system, which is presently being used in at least seven states has specially equipped police cars that can track down stolen cars, which transmit a distinctive signal on this frequency. Systems from Teletrac and Code Alarm allow company personnel to determine the location of the stolen vehicle based on their use of the tracking signals, then give that information to the police.

Systems such as these, involving radio, are a natural for this purpose. As carjackings have spread, new systems are starting to show up that are more specifically addressed to that problem, rather than to stolen cars in general.

One company offers a device that allows the person whose car was stolen or carjacked to call a toll-free number. This triggers a signal to be sent out that immediately disables the car engine, then begins flashing its lights, honking its horn, and sounding an loud alarm siren.

The car owner with this system can dial up another number to unlock the car if he or she becomes locked out. Another service is to get the engine started so it will be warmed up.

Courts are able to use this same system to disable a vehicle from operating during certain hours, such as those owned by persons with time restrictions.

What with all of these systems and the growing need for them, the FCC is going to have to think about shaking loose a couple of additional frequencies. How many different systems can effectively share this one frequency in a busy local area? In Newark, New Jersey, they steal enough cars every week to supply the yearly import needs of a small nation.

Still, there are other questions.

I have a radio controlled ceiling fan in one of my rooms. At least a couple of times each month it begins operating for no known reason, except because it is erroneously responding to signals sent out by someone else's remote control unit in my area. But then, that's probably also why my radio controlled garage door mysteriously opens or closes according to its own whims.

That makes me wonder what happens if somebody's car system should happen to malfunction. Imagine if it started sending out a tracking signal when the car wasn't actually being stolen. What about if the owner was behind the wheel when the vehicle decided to erroneously respond to a radio message advising it was being stolen or carjacked? The car would suddenly stop, even in the fast lane of an Interstate highway. It might be harrowing trying to explain to the police how you happened to be driving a car that was in the midst of a serious alarm event.

Come to think of it, even if a vehicle was being carjacked, having it suddenly and unexpectedly disabled in moving traffic could create a hazard for any number of other drivers and their vehicles. Furthermore, the police might not think highly of a vehicle abandoned in a traffic lane with its lights flashing and horn sounding.

My scanner has 173.075 MHz programmed in. Signals have been monitored there. Nothing like, "Mayday! I'm a Red '93 BMW being stolen!" or anything along those lines. There aren't any voice signals on this frequency. Anguished vehicles cry

(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
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LETTERS TO THE EDITOR

Darn The Torpedoes!

In the November *Beaming In*, subtitled "Hacking A Wonderful Time," you wrote about asking "agencies why they are so damned casual..." The emphasis is mine. It would have been much better to have omitted this word because it is one of the so-called "four-letter" words, even though this particular word just happens to have six letters. I like the editorial, except for this one word. Had you omitted this word, the tone of the editorial would have been preserved.

Kenneth MacLaughlin, N1CPX,
Concord, NH

This is a valid criticism. When Jeanine saw the bad word I had written, she made me wash my hands and keyboard out with soap. You made a damn good point, Kenneth.—Editor.

Considered Opinion

I am new to radio, so I am admittedly unfamiliar with the ins and outs of the hobby. Nevertheless, upon leafing through a friend's copy of your magazine I was a bit disturbed. It seemed as if your magazine was promoting a number of illegal

activities from the "how to's" of modifying CB equipment to transmit far above legal limit, to listening to illegal broadcast stations.

These things may be of interest to your readers, but as far as I am aware, it's still illegal. Perhaps I am in an idealist minority, but it seems our time could be better spent learning how to make our rigs more efficient, our signals clean and clear, and getting the most mileage per watt, rather than searching for loopholes in the law and abusing the privileges we have.

Brian Grover,
920 West Wilson,
Chicago, IL 60640

Welcome to the hobby, Brian. Being a rank newcomer, please consider that some might have accused you of pro-cacidity in sending your critical analysis of our editorial philosophy on the basis of having leafed through a single issue. Had you not been a new entrant to the hobby, we would have had some serious fun responding to your letter. Your observations are not quite accurate. We have never published instructions on how to illegally modify CB equipment to transmit above the legal limit. There is noth-

ing illegal or unsavory about listening to unlicensed radio stations. As you wrote, your opinions were made based on things as far as you were aware of them. Unfortunately, it doesn't appear that your awareness yet goes very far. Spend some time in the hobby. Get more knowledge and experience. Then, rack up at least several issues worth of close familiarity with our publication. At that point, we hope you'll again send us your thoughts.—Editor.

Hose Sorry Now?

Being one of those auto mechanics you wrote about who spends his days replacing leaky engine hoses and dead spark plugs, I couldn't help but wonder about the final diagnosis and solution to the problem with your super-receiver (February *Beaming In*).

William Chen,
Los Angeles, Calif.

Sent back to the dealer, the super-receiver immediately demonstrated its problem. Then, just as quickly, it seemed to cure itself. It sat on the service bench for 3 weeks and performed daily. Everything tested OK. No matter what they did, they couldn't force it to malfunction again. They called and asked me to describe the symptoms. I told them it had stopped working, deprogrammed its memories, and then made only strange noises accompanied by a flashing panel display. Eventually they said that if it continued working after another day on the bench, it would be returned to me. But the next day the receiver freaked out again. They went back inside the set and reseated all of the boards. The set began working, so a week later they sent it back to me. It has been working ever since. Probably just needed a few weeks off.—Editor.

Write Right

At Wellington Marine Radio ZLW we often receive letters from DX'ers around the world, and are pleased that our "ute" signal can be picked up in so many nations. However, because of a change in address, there is often a delay in our receiving these letters. We would therefore be pleased if you could print our correct present address in *Popular Communications* for the benefit of your readers. It is: Wellington Maritime Radio ZLW, P.O. Box 17-374, Karori, Wellington, New Zealand.

Margaret Kyle,
Administrative Assistant, ZLW,
Wellington, New Zealand

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

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Bearcat BC-148XLT \$104.99

\$104.99 (\$7.00 shipping)
16 channel with Automatic Weather Alert (similar to BC-142XL).

UNIDEN BEARCAT BC 800XLT



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

UNIDEN BEARCAT BC-950 XLT



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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 pre-programmed frequencies by pushing a single button for police, fire/emergency, aircraft, weather, and marine services plus exclusive optional features never available on any scanner before. First is an RF receive amplifier for boosting weak signals for only \$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 #950MPC \$4.99.

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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.
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Scanning Show Biz

Go Backstage With Your Scanner & Eavesdrop On The Stars!

BY CHUCK ROBERTSON

A variety of show business communications are within range of your scanner. For instance, if there's a rock concert, a musical, a play, an opera, country music show, a standup comic, or other show, see if you can find their wireless microphone or instrument transmitter frequencies. Fun? Sure! You might even save the price of a ticket.

There's a good chance they will be using at least two wireless transmitters, so you might even need more than one scanner to hear everything. With a little luck, you can stay out in the parking lot and enjoy everything in stereo—maybe even quad.

First, let's look at the types of radio equipment and frequencies used in the entertainment industry. This will give you a better idea of where to program your scanner for star-search.

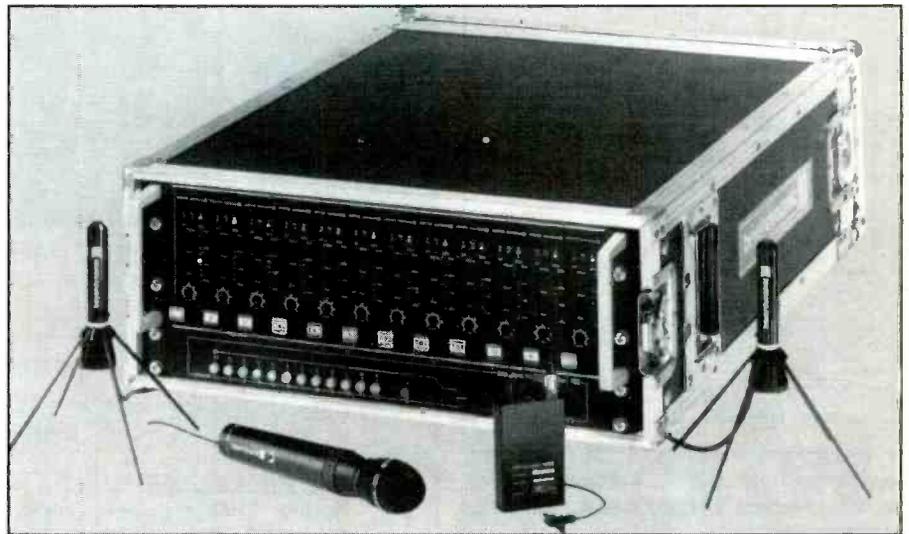
Sound Advice

As we will see, these crazy wireless transmitters can pop up on almost any frequency. Most of the top stars use devices that operate in the 174 to 216 MHz TV band. Cher's wireless handheld has been reported on 200.90 MHz.

Visualize this band as being divided into 12.5 kHz increments, although you will see that the actual use is more along the lines of stations using frequencies spaced in 25 kHz steps. Full wideband FM (WFM mode), which offers the best sound fidelity, is used by the best professional grade equipment, although some systems use bandwidths that fall somewhere between WFM and the fidelity of plain communications type NFM as used by taxi and police dispatchers. Always check both NFM and WFM modes for best results.

In the equipment category, the Nady Model 401 VHF mike and instrument wireless system covers the 170 to 218 MHz band. Notice that the 216 to 218 MHz drops into the 216 to 220 MHz maritime and low-power telemetry band. Presently, only the 218 to 220 MHz portion is used by high powered marine stations, and they are along the Gulf of Mexico, and in the Mississippi River system.

Electro-Voice has a popular wireless microphone and guitar transmitter system that uses any two of the frequencies from the group: 169.505, 170.245, 171.045, 171.905, 178.225, 179.20, 184.025,



The portable Beyerdynamic U-700 wireless system comes from Beyerdynamic, 56 Central Ave., Farmingdale, NY 11735.

and 185.125 MHz. Other frequencies below 216 MHz are available on special order.

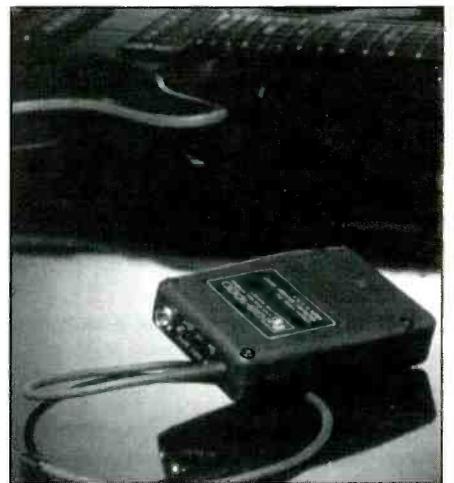
The Telex ProStar unit operates in the 165 to 185 MHz band. Based upon the frequencies being reported in use by wireless mikes in churches and night clubs, this unit may be widely used. The Nady 2000 VHF system covers the entire 151 to 216 MHz band. These units are sometimes set up to operate on Business Radio channels like 151.625, 154.57, and 165.60 MHz, so check those out.

Video camcorders may be equipped with wireless microphones. The Audio-Technica unit system operates in the 169 to 172 MHz band, but makes reference to competitive units that operate in the 49.67 to 49.99 MHz band.

Headset wireless mikes like those used by Madonna and Sting are becoming popular. Look for these in the 174 to 216 MHz band.

When Things Got Crowded

As you might imagine, in some areas, the 174 to 216 MHz TV band is congested. A few years ago, the FCC opened up all TV bands for low power "local remote" transmitters. These are 54 to 72 MHz, 76 to 88 MHz, 174 to 216 MHz, 470 to 608



The GT-1000 guitar transmitter sends out signals in the 169 to 216 MHz band. It's made by Electro-Voice, Buchanan, Michigan.

MHz, and 614 to 806 MHz. Power on the VHF bands is limited to 50 mW, with 250 mW on UHF. If a station ID is used before/after the transmission, 1 watt (maximum) may be used.

Usually, VHF equipment runs the full allowable limit. UHF equipment is often operated below the full power limit because of the battery drain that would entail. All

Wireless Mike Bands & Frequencies

26.10-26.48 MHz
 30.84 MHz
 33.14 MHz
 33.40 MHz
 35.02 MHz
 42.98 MHz
 49.83-49.89 MHz
 54.00-73.00 MHz
 74.60-88.00 MHz
 161.625-161.775 MHz
 169.445 MHz
 169.505 MHz
 170.245 MHz
 170.305 MHz
 171.105 MHz
 171.045 MHz
 171.845 MHz
 171.905 MHz
 174.00-216.00 MHz
 470.00-608.00 MHz
 902.00-928.00 MHz
 944.00-952.00 MHz

operations must take place at least 60 miles from the nearest TV broadcast station using that frequency.

The Beyerdynamic U-700 wireless mike and guitar transmitter runs on 12 channels, and is able to transmit over the entire 470 to 980 MHz. With an adapter, the U-700 can repeat the UHF wireless signals in the 33 to 41 MHz band, which is popular for this use in Europe. In the USA, there are wireless systems that have the microphones repeated in the 72 to 76 MHz band.

The Nady RW-3 synthesized system operates in the 902.30 to 927.50 MHz range, while Nady's Model 950 10-channel system operates between 945 and 955 MHz. The Shure L-5 unit uses the 944 to 952 MHz band.

As I mentioned before, these units can pop up just about anywhere!

Stay Tuned

Receivers used in the entertainment industry to pick up wireless mikes are usually classified as *diversity* types. In essence, two receivers are located at a specified distance apart (a foot or more), and are interconnected. This is done to compensate for signal drop-out or distortion due to phase shift caused by the wireless mike being moved around during a performance. If the signal pickup at one antenna should become less than top quality, the one going to the other antenna can be relied upon.

For best results, the receiving system is located close to the performer. Once the performer's signal is accessed, it can then be processed for the audience. Keep in mind that during any given performance, there may be a dozen or so independent



One on-stage performance could well mean the use of several wireless mikes and instrument pickups, with each on its own frequency.

Frequencies of The Stars

Unless otherwise noted, licenses are for portable use at any location within the United States.

The Ambassadors: 151.715 MHz
Apollo Theater, New York, NY: 461.7625 461.7875 466.7625 466.7875
Atlanta Symphony Orchestra: 151.625 MHz
Baillie & The Boys: 464.50 469.55 MHz
Barbara Mandrell: 154.60 MHz
Bill Erickson Stunt Eqpt., N. Hollywood, CA: 464.50 464.55 469.55
Billy Joe Royal: 151.625 MHz
Birns & Sawyer: 173.225 173.325 MHz
Boston Symphony Hall, MA: 461.10 MHz
Brenda Lee: 469.50 MHz
Buddy Lee Attractions: 469.55 MHz
Classic Affairs: 461.1875 464.50 464.55 466.7625 468.6875
Cleveland Ballet: 151.685 151.895 MHz
Conway Twitty: 464.50 464.55 469.50 469.55 MHz
Country Jamborees: 151.625 MHz
Dallas Theatre Center, TX: 463.9125 MHz
Diana Ross: 464.55 469.55 MHz
Dollywood, TN: 463.80 463.825 463.925 464.025 464.10 464.675 464.70 464.725
Don Osmond: 464.50 464.55 MHz
Doobie Brothers: 464.55 469.55 MHz
Embers Nightclub, Portland, OR: 169.445 171.845 MHz
Events & Entertainment, Oak Park, IL: 466.9875 MHz
Events Unlimited: 464.50 464.55 469.50 469.55 MHz
Frank Sinatra: 464.55 469.55 MHz (Estate at Rancho Mirage, CA= 464.60 464.65 MHz)
Fun Enterprises: 151.625 151.955 (Based in Vancouver, WA)
Funny Farm, Sparr, FL: 464.375 MHz
Funtime Fulltime, Berry Creek, CA: 460.70 465.675 MHz
Gib Richards Prod.: 33.14 MHz
Graceland, Memphis, TN: 151.655 151.925 MHz
Grand Performance: 469.50 MHz
Grateful Dead: 469.50 469.55 MHz
Hard Rock Cafe, Dallas, TX: 466.1875 MHz
Jam Sound & Stagecraft, Youngstown, OH: 463.80 MHz
Joe Fraser: 154.57 MHz
Joe Haggred, Jr.: 151.925 MHz
Joe Walsh: 35.02 154.57 154.60 170.245 171.105 MHz
John Denver: 469.50 469.55 MHz
Kenny Loggins: 173.225 173.275 MHz
Kenny Rogers: 151.625 MHz
Larry King: 151.925 MHz
Lee Greenwood: 464.50 464.55 MHz
Light Brigade: 464.55 MHz

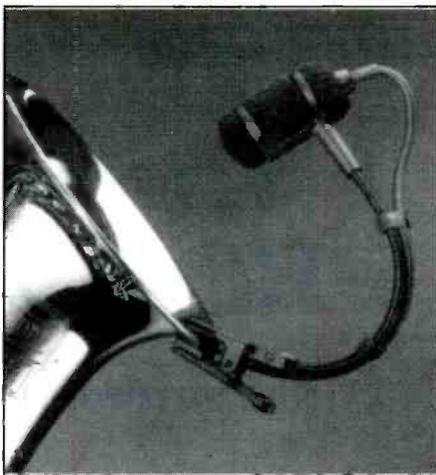
wireless mikes and instrument systems in simultaneous use. The relative volume and tone of each must be mixed "live" into the one combined sound that is recorded, broadcast, or fed out to a concert audience.

On The Road Again

Roadies move the sets and heavy equipment for traveling entertainers. These people coordinate their operations using two-way radio. Special effects, lighting crews, transportation crews, crowd control, audio crews, and security officials (read that as bodyguards) also use the same frequencies. These activities are invariably found in the Business Radio Service. Look in the accompanying listing for hints on where to hear these behind-the-scenes communications.

Ears To You

TV and motion picture crews (including movies and specials for cable TV networks)



This sax mike is the ATM35CW, and we wonder if it's in use when things get quiet around the White House. Made by Audio-Technica, 1221 Commerce Dr., Stow, OH 44224.

Try These Frequencies For Roadies, Security, Lighting Crews, etc.

35.04 MHz
151.625 MHz
154.57 MHz
154.60 MHz
464.50 MHz
464.55 MHz
469.50 MHz
469.55 MHz

all use two-way radio to coordinate their filming. More often than not, these are "location shoots," and could very well take place right in your home town. The people you might hear include the director, assistant directors, stunt coordinators, transportation personnel, lighting and sound crews, camera and boom operators, security officers, etc.

Their two-way comms often turn up on 173.225, 173.275, 173.275, 173.325, and 173.375 MHz. Handhelds and mobiles predominate.

Wireless microphones are used to transmit the dialogue to off-camera receivers. Listen for the signals on the frequencies previously discussed. Most live dialogue recordings ("wild tracks") made during the filming of theatrical movies are seldom of sufficient quality to be used in the final release versions shown to the public. The wild track dialogue is later looped (lip-synched) in a recording studio by the actors, then combined with separate music and sound effects tracks to form a soundtrack that is used with the release version of the film.

Leftovers

Not every star is a big star. Not every entertainer uses the most expensive equipment available. Some people aren't too fussy about what they use to get the job done.

A reader tells us that he knows of a local rock group that uses a wireless mike operating on a 39 MHz frequency assigned to the Police Radio Service. Other wireless mikes have been reported throughout the scanner bands, in every nook and cranny. You need to be resourceful to track down some of these frequencies.

It's Show Time

Hope we have pointed you in the right direction and provided you with some good ideas. With this information at your fingertips, and your scanner at your eartips, you should be able to partake in the glitter and glitz of show biz without once getting personally trashed in the supermarket tabloids. This makes you better off than 70 percent of the people you'll monitor on these everlovin' show biz frequencies. ■

Lights, Cables & Heavy Stuff, Inc.: 173.225 173.275 MHz
Loretta Lynn: 469.50 469.55 MHz
Main Attractions, Springfield, MO: 469.55 MHz
Main Event: 151.625 151.925 461.25 (Based in Nashville, TN)
Mark Miscovic: 33.14 MHz (Based in Las Vegas, NV)
Marshal Tucker Band: 151.625 MHz
Marty Evans: 173.225 173.275 173.325 173.375 MHz
National Enquirer, Lantana, FL: 154.57 MHz
Matt Armstrong Shows: 151.625 MHz
Media Events Concepts: 469.55 MHz
Media Visions, Las Vegas, NV: 463.975 MHz
Memphis Pink Palace, TN: 154.57 MHz
Metropolitan Opera, NY: 72.74 72.62 151.625 151.715 151.835 151.865
151.895 151.925 154.54 159.505 170.305 171.045 171.845 171.905
Mickey Gilley: 151.625 151.925 151.955 469.55 MHz (TX= 151.745 MHz)
Minnesota Orchestra: 468.70 MHz
Miss Universe, New York, NY: 464.50 469.50 MHz
Nitty Gritty Dirt Band: 151.625 MHz
Oak Ridge Boys: 464.225 464.50 469.225 MHz
Opryland USA, TN: 469.725 MHz
Pyro Spectaculars, Santa Ana, CA: 461.30 MHz
Reba McEntyre: 464.50 464.55 MHz
Roadhouse Prod.: 151.925 MHz
Robert Ghiraldini: 173.225 MHz
Ronnie Milsap: 464.50 464.55 MHz
Roy Clark: 464.475 MHz
Royal Brass: 151.895 MHz
Shakespeare Festival, Montgomery, AL: 464.675 464.775 MHz
Shelly West: 469.50 MHz
Show Biz Chicago: 464.50 464.55 464.825 MHz
Showtime Prod.: 464.50 469.50 MHz
Silver Dollar City, Branson, MO: 151.685 151.835 152.30 463.8125
468.8125
The Skyliners, Sandy, UT: 463.55 MHz
Sound In Motion, Pelham, MA: 461.625 MHz
Special Effects Tech.: 464.50 MHz
Special Events Comms: 469.50 469.55 469.60 469.625 469.65 469.70
469.725 469.75
Stage Sound: 464.4375 464.4875 464.50 464.5125 464.55 464.9625
464.9875 467.7625
Stage Tech: 151.625 MHz
Star Trek Enterprises, Woodland, CA: 464.10 MHz
Tennessee Johnny & Flasher, TN: 462.65 MHz
Transound: 173.225 173.275 173.325 173.375 (Malibu, CA= 856.9125)
W.C. May The Great: 151.625 MHz
Whitesnake: 464.50 469.50 MHz
Wynonna Judd: 151.625 151.925 151.955 151.995 MHz

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Remote unit mounts outdoors away from electrical noise for maximum signal and minimum noise pickup. Mount it anywhere - atop houses, apartments, ships, buildings, balconies.

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POP'COMM Checks Out:

The Realistic PRO-39 Scanner

200 Channels, Handheld, Neat!

Realistic's PRO-39 is the company's top-of-the line handheld scanner offering standard frequency coverage. In 200 memory channels (of 10 banks each), it covers 30 to 54 MHz, 108 to 174 MHz, 380 to 512 MHz, plus 800 to 960 MHz. The cellular bands are blocked. Other than a few minor coverage differences, and a \$50 lower price, the most significant difference between the Realistic PRO-39 and the much talked about PRO-43 is the PRO-43's ability to receive AM signals in the 225 to 400 MHz UHF aero band. The PRO-39 doesn't cover the UHF aero band.

The design of the new Realistic handhelds has been changed, offering a more rounded very attractive appearance. The PRO-39 looks very much like the PRO-43, with the volume control and squelch on the top of the case, and the lockable keyboard on the front of the set.

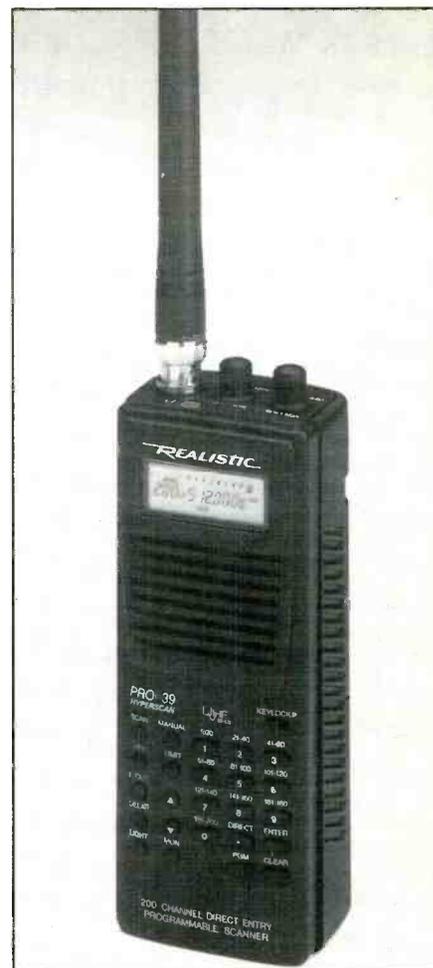
Functionally, the PRO-39 has Realistic's Hyperscan, meaning that it scans at 25 channels per second, and searches at twice that speed. There is a selectable 2-second delay, and a priority channel with sampling every 2 seconds.

Sensitivity is 1.0 uV, except in the VHF aero band, and above 800 MHz, where it is 2.0 uV. Selectivity is rated at +/-10 kHz for -6dB, +/-20 kHz for -50 dB. There is a crystal filter and a ceramic filter to increase selectivity.

The channeling in the PRO-39 is 5 kHz steps from 30 to 54 MHz, also 137 to 174 MHz. There are 12.5 kHz steps on other frequencies, except for the VHF aero band, which is set up for the normal 25 kHz spacing used between 108 and 137 MHz.

The PRO-39 is roughly 6 inches tall, 3 inches wide, and about 3/4 of an inch deep. It operates from 6 AA-type or optional rechargeable NiCd batteries, or you can use an optional AC or DC adapter. The rubberized antenna is attached via BNC jack.

We found the PRO-39 easy to operate. The 34-page instruction manual answers any questions, although after about two times through the programming and oper-



Realistic's PRO-39 handheld has 200 memory channels.

ating process anybody should catch on without needing the book.

The PRO-39 gave a good accounting for itself, performing well under mobile and portable conditions receiving on various bands. The controls are easy to read, as is the LCD display. It's well constructed and smart looking. At \$299.95, the Realistic PRO-39 is reasonably priced and offers good value.

Reviewed by POP'COMM staff.

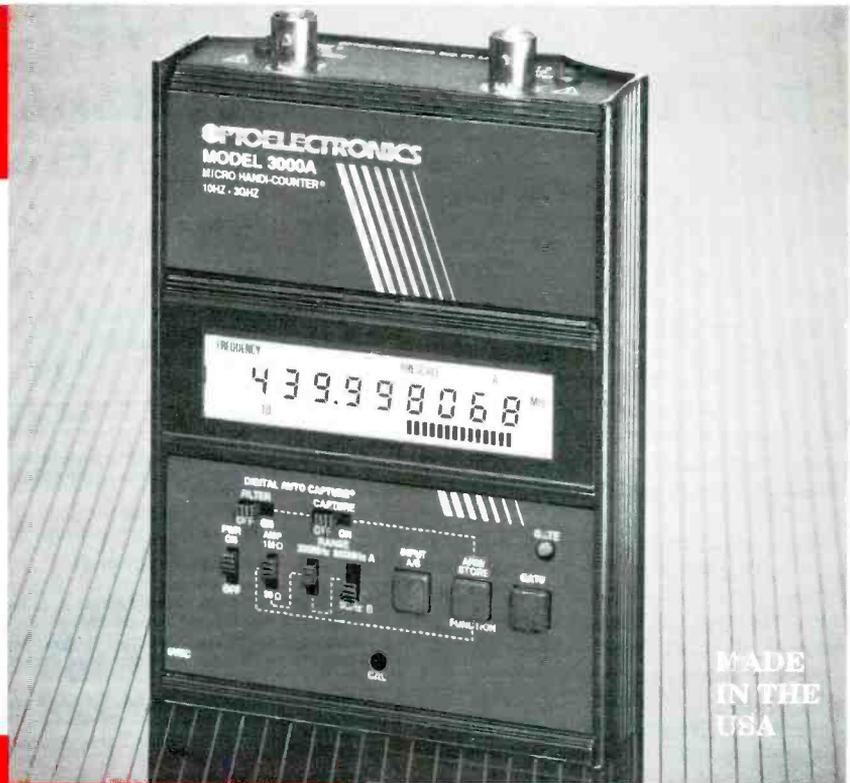
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Radio: Early Broadcasting Days

Back When A Nickel Was Worth 5 Cents & A Good Cigar Was A Freem

BY ALICE BRANNIGAN

Modern regulations relating to broadcasting cover AM, FM, and TV operations. In the USA, these regulations consist of FCC Part 73, which fills about 365 pages. Things get complicated as times go on because in broadcasting's earliest days the regulations governing stations were downright brief.

The earliest broadcasters in the US began getting the first issued commercial licenses from the Department of Commerce's Bureau of Navigation in September of 1921. Quite a few stations had operated non-commercially on an experimental basis prior to this. The original (September) commercial licenses went (in this order) to WBZ in Boston, WDJ in Roselle Park (N.J.), WCJ in New Haven (Conn.), and WJZ in Newark (N.J.). November 7th is when Pittsburgh's KDKA, regarded by many as "the first broadcast station," received its commercial license. KDKA, using the Experimental Service call letters 8XK, had been broadcasting for about two years prior to its commercial license being issued. By the end of 1921, there had been 25 commercial broadcasting licenses issued, and the long line for new licenses formed to the right.

Less than four months later, 184 stations in the US had been issued licenses. The US closed out 1922 with more than 600 commercial stations in operation. Radio broadcasting had captured the public's fancy, and in an unexpectedly big way. The government wasn't prepared for this, nor understood the nature of the beast.

The regulations covering the 1921-1922 pioneer broadcasters were very simple. Licenses were issued for stations to use as little as 5 watts, with a couple running as much as 2000 watts. Most likely because the government never imagined the popularity that broadcasting would attain, or what would happen when many stations tried broadcasting simultaneously on a single frequency, all stations were licensed to transmit their "important news items, entertainment, lectures, sermons, and similar matter" on the same frequency which was 360 meters (corresponding to 833.3 kHz). In addition, some of these stations

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THURSDAY . . . Miss Helen Davis, Soprano; M. Cliff Young, Pianist

FRIDAY . . . Westminster Orchestra

SATURDAY - Devotee music

SUNDAY . . . Miss Ethel Mackey, Soprano and Miss Mary Emerson, Pianist. Sacred Music

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Children's Hour . . . "Man-in-the-Moon" stories, by Miss Josephine Lawrence
Newark Sunday Call
Tuesday and Friday, 7:00 P. M.

Hourly News Service . . . Newark Sunday Call; weekdays, every hour from 11:00 A. M. to 7:00 P. M. on the hour

Radio Amateurs' Night . . . Thursday 7 P. M.
J. B. WALKER, editor Scientific American

Weather Forecast (Official Gov't) . . . Daily, 11:00 A. M., 5:00 and 10:00 P. M.

Marine News . . . Marine Engineering Service, weekdays (except Saturdays), 2:05 P. M.

Official Arlington Time . . . Daily, 9:55 P. M.


(Program subject to change)

Program sked from WJZ, one of the first commercially licensed broadcasters in the USA. This is from mid-December of 1921, which is less than three months after they got their license. This station served New York City from Newark, N.J., and evolved into New York City's present-day WABC/770.

were authorized to also use a special second wavelength, which was 485 meters (618.5 kHz), solely for the purposes of transmitting official weather forecasts, and or crop and market reports. Larger broadcasting stations were required to constant

ly monitor 500 kHz for distress calls from ships at sea.

Use of the 485 meter wavelength was largely dependent upon a station being approved for its use by the Weather Bureau or the Department of Agriculture's Bureau of Markets and Crop Estimates. Even if approved for operation there, either agency had the power to later revoke that approval and remove the station's authorization for broadcasts on that wavelength.

The Weather Bureau was particularly concerned with abuses of 485 meter broadcasts. For one thing, only current weather information was permitted to be sent out. Morning observations were not permitted to be transmitted after 7 p.m. of the same day; no evening observations to be used after 7 a.m. the following day; no special warnings to be used after midnight the same day.

One section of the regulations stated, "Whoever shall knowingly issue or publish any counterfeit weather forecast or warning of weather conditions falsely representing such forecast or warning to have been issued or published by the Weather Bureau, United States Signal Service, or other branch of the Government service, shall be fined not more than five hundred dollars, or imprisoned not more than ninety days, or both."

Before each weather, crop, or market broadcast, a station was required to announce its call letters, location, and make a statement certifying that the information was authentic as received from the government.

With so many stations jammed on to 833.3 kHz, there were bound to be interference problems. Stations did not normally broadcast programming on a 24-hour schedule, but quite a few decided to leave their transmitter on the air all the time anyway, even when they weren't broadcasting. This added to the normal interference, and was probably done to block local reception of other stations using the common 833.3 kHz frequency.

Regulations specifically stated that transmitters had to be shut off when no programs were being broadcast. Furthermore,

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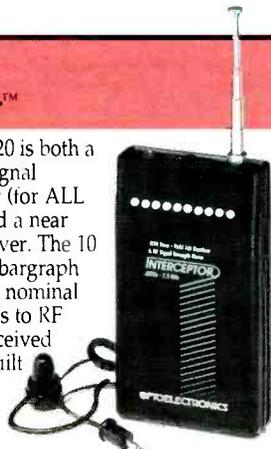
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the regulations told stations that "care should be taken not to extend schedules resulting in interference with the schedules of other stations."

They Did It With Frequency

Broadcasters, radio manufacturers, and listeners complained bitterly about the one crowded wavelength available. The government heard, but things don't always take place quickly there. Soon enough, there were stations that decided to abandon the assigned but crowded 833.3 kHz frequency, then show up on a frequency of their own choice where they didn't have to do battle with the signals of other broadcasters. Naturally, it wasn't allowed. As early as mid-1922 the government regulations began containing warnings to broadcasters violating the law by operating on various unauthorized wavelengths between 200 and 500 meters (600 and 1500 kHz).

Keep in mind that during the broadcast era of 1921-1922, legal broadcasting had consisted of nothing more than two specific frequencies allocated for this purpose in the midst of other communications activities. The rest of the frequencies were designated for use by maritime, military, overseas point to point, Post Office, experimental, telegraph, press, ham and other non-broadcast services. There was no "broadcast band" as we know it today. It wasn't until 1923, when broadcasting was allocated the frequency range 630 to 1345 kHz, when the broadcasters had (more or less) a real band. At that point stations could obtain licenses for frequencies other than 833.3 kHz.

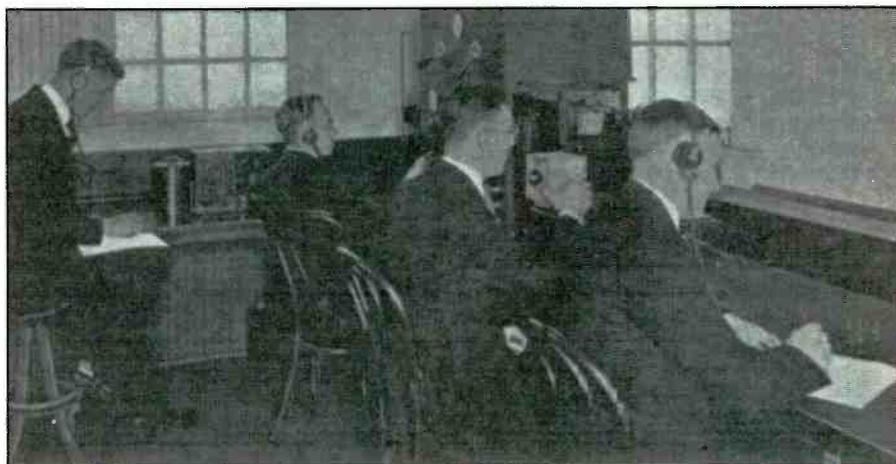
Here are a few examples of frequency allocations in the 1914 to 1922 era. All coastal stations and ocean going ships were required to operate on 500 and 1000 kHz. They exchanged radio telegrams on 167 kHz. Maritime direction finding transmissions were usually on 315, 500, and 667 kHz. Coastal telegraph stations might be assigned to additional specific frequencies within the frequency range of 287 and 500 kHz.

Many U.S. Navy stations sent out time signals, but the main station was NAA in Washington, DC on 120 kHz.

By 1924, with broadcasting going at full steam, the maritime service still used its 1000 kHz telegraph frequency, which was right in the middle of the band used by the broadcasters. Other non-broadcast stations were there, too. One example was WBAK, on 750 kHz, which was the Pennsylvania State Police station at Harrisburg. The E. C. Davis Packing Co., of Fairport, Virginia, operated station KDAH on 667 kHz. Every U.S. Bureau of Lighthouses' Light Vessel had a frequency at 630 kHz, and another at 794 kHz. Station NOF, at the Anacostia Naval Air Station, in Washington, D.C., regularly sent out voice and c.w. on 728 kHz. These are but a few typ-



Opening day at Newark's WJZ shows the announcer (left) seated next to the transmitter. The other man (right), wearing a headset and seated at the typewriter, monitors 500 kHz for ship distress calls.



An early scene at KDKA in East Pittsburgh. The announcer is second from the right, all other personnel are engineers and the marine frequency monitoring operator.



A rare photo of Sarnoff's short-lived station WDY, in Roselle Park, N.J. It was the second American commercial broadcast station licensed, and one of the first broadcasters to go dark. It had problems with poor signal delivery into New York City. Those problems were made worse by WDY's uninteresting programming. It was absorbed into WJZ.



Early broadcaster WEAS was a 1922 station opened in the Hecht Company's department store, Washington, D.C. The purpose of WEAS was to entertain, but mainly to let the public know about the products offered by the store.



WPA was put on the air in 1922 by The Fort Worth Record, making it the first newspaper west of the Mississippi River to put a station on the air. This was a 300 watt station that used an antenna supported by two salvaged windmill towers mounted on the roof of the 5-story newspaper building. It operated on both frequencies available to broadcasters in 1922. WPA even sent out police bulletins.

ical examples of the considerable amount of non-broadcast activity still dotting broadcast frequencies during the early era. In other words, broadcasters were at last able to spread out into a band of frequencies, but did not have exclusive use of them.

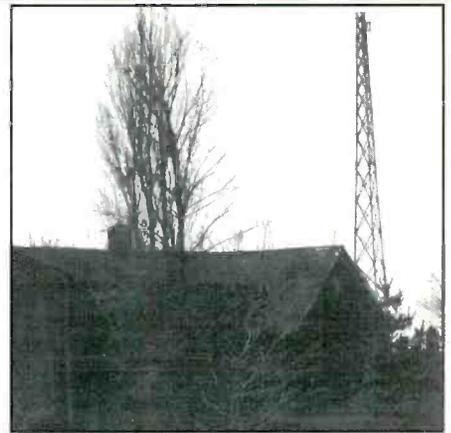
The Early Settlers

Dominant among the very earliest American commercial broadcasters were newspapers, department stores, and educational institutions. The big next wave of licensees included radio manufacturers and stores that sold and repaired radios and record players. Then everybody else showed up in a colorful mix of churches and every kind of business imaginable.

There were hotels, restaurants, theatres, pharmacies, gas stations, and insurance companies. Even individuals who thought it would be fun to put up a 5 or 10 watt station operated from their garage, barn, or bedroom got in on broadcasting.

Many of the very first American commercial broadcasters (or their direct heirs) are still in operation. A few rusting towers and almost forgotten call letters are all that remain of many of the early smaller stations that people started because it seemed that broadcasting could be so challenging and enjoyable.

It was exactly 70 years ago that broadcasting came into its own and traded in its two channels for some elbow room, even though it had to be shared with others. But



A rusting radio tower outside of an abandoned barn. A few old timers say that they recall this as having once been someone's attempt at starting a local broadcasting station—but that it was so long ago, nobody remembers the details. (Photo by B. Parenti, N.Y.)

they knew, as Steve Allen's song says, "This Could Be The Start Of Something Big!"

We wanted to devote this section to these events, and salute those stations that first recognized that broadcasting was going to turn into something wonderful.

Return next month for a visit back in time. Thank you for your letters, photos, old QSL's, clippings, station listings of yesteryear, and your questions.

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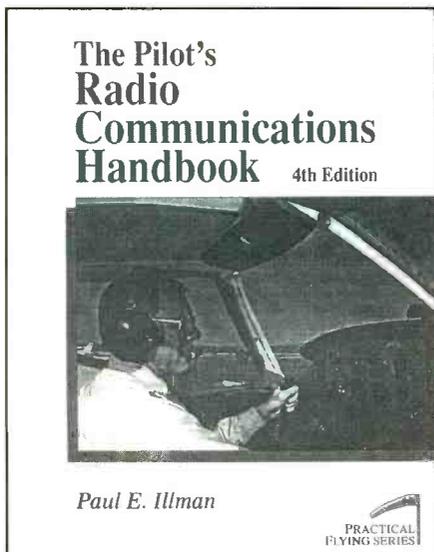
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All About Aero Communications

The Pilot's Radio Communication's Handbook, 4th Edition, is the just-revised and updated new version of Paul Illman's excellent book. The fully illustrated (photos, maps, drawings) 232-page book is a complete explanation of virtually every type of aeronautical communications facility, and this new edition includes new FAA airspace reclassifications and the consolidation of flight service stations into regional automated flight service stations. This is not a frequency directory, it is a book that tells you how aeronautical communications systems operate.

The book covers the the entire spectrum of VFR radio communications. Topics include an explanation of communications frequencies and how they are used for unicom, multicom, flight service stations, ground control, control towers, ATIS, weather, and other purposes. Numerous dialog examples show typical communications to be encountered when you use or monitor the VHF aero band.

Information is provided to explain transponder comms, including the air traffic control radar beacon system, transponder terminology and codes, and the new requirements for Mode C transponders in terminal control area airspace.

There is a comparison of radio procedures for all types of terminal airspace, airport radar service areas, terminal radar service areas, radar approach and departure airports, and nonradar approach and departure control.

Also, radio communications for in-flight emergencies are explained.

The book is a must-have for all persons

who enjoy monitoring the aero communications bands, because aero band scanning is twice as exciting if you understand how the comms operate and everything they're talking about. The transcripts of sample two-way air/ground radio comms for various types of situations on different frequencies make it very easy to get a clear grasp on what it's all about.

The Pilot's Radio Communication's Handbook, 4th Edition, by Paul E. Illman, is \$16.95, plus \$3.50 shipping (\$4.50 to Canada) from CRB Research Books., Inc., P.O. Box 56, Commack, NY 11725. Residents of NY State please add \$1.74 tax. VISA and MC accepted. Phone orders taken at 1-(516)-543-9169.

A Different Shade of Gray

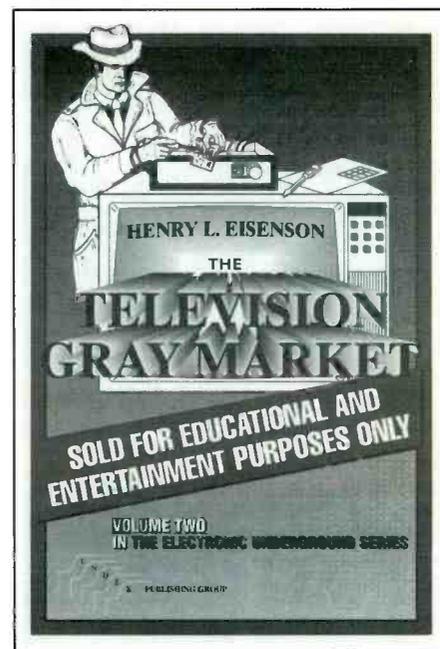
To most people, the TV industry consists of Arsenio and his audience making barking noises, or its Roseanne and her tattoos, or maybe it's just a ball game. TV also conjures up other meanings, and insiders know TV sparked the birth of a billion dollar underground business. This area of TV has no press agents, so you seldom hear much about it. It relates to stealing TV signals and programs from satellites and cable systems, and programs from copyprotected videotapes.

A 160-page illustrated 6" by 9" book titled *The Television Gray Market*, by Henry L. Eisenson, explores this shadowy fringe area of TV in some depth. This is a consumer-level book that describes legal issues and risks, industry security measures, scrambling and descrambling techniques, as well as the possibilities of equipment modification.

The book explains so-called *test chips* and *test modules* for cable boxes, plus other products and services that are advertised to enable viewers to view this programming. The author relates discussions he has had on these matters with members of the gray market as well as their customers, plus discussions with members of the agencies entrusted with enforcing the laws against signal and program theft. It has good information.

There is a comprehensive listing of suppliers offering TV gray market services and products.

The simple truth is that if a TV signal, program, or videotape recording exists, no matter what measures are taken to protect it from being stolen, there are several approaches to ripping it off. Numerous sources can supply the required materials. Furthermore, there are millions of citizens ready and quite willing to violate the law to



access those signals and programs without giving the owners, the legalities, ethics, or possible risks a second thought. What became of "Honesty Is The Best Policy"? Wasn't anybody ever a Boy Scout?

The Television Gray Market is \$23.75 (sent post paid), from Index Publishing Group, 3368 Governor Drive, Suite 273F, San Diego, CA 92122. VISA/MC/AMEX accepted. Phone orders 1-800-334-8152. Residents of California please add 7.25 percent tax.

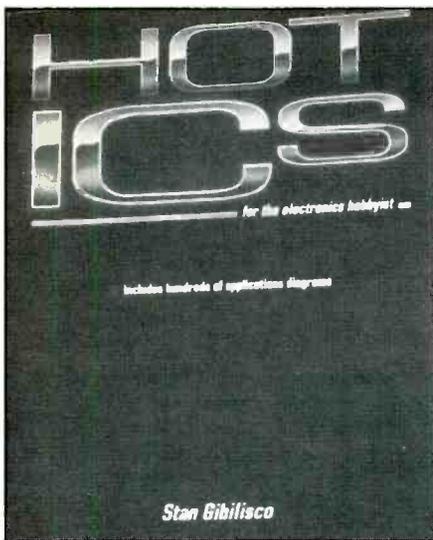
Let The Chips Fall Where They May

The hobbyist who likes to experiment with electronic circuits is faced with a staggering array of integrated circuits (IC's) to select from. IC's come in all price ranges, degrees of sophistication, as well as chronological position in the march of technology. It can become confusing.

Stan Gibilisco has done his share in making things easier for the experimenters of the world. This is in the form of his 420 page book entitled, *Hot IC's For The Electronics Hobbyist*.

Here is a book packed with more than 200 low-cost chip designs that represent the latest technological developments in IC's. You'll find many new circuits you probably haven't come across before. Each circuit includes a pinout diagram, full specs, suggested uses, and other relevant information to give you the most from the devices shown.

The book is organized according to cat-



egories, which include: communications circuits; clocks and counters; control circuits; data conversion and processing circuits; logic circuits; microcomputer peripheral circuits; power supply, test equipment, and instrument circuits.

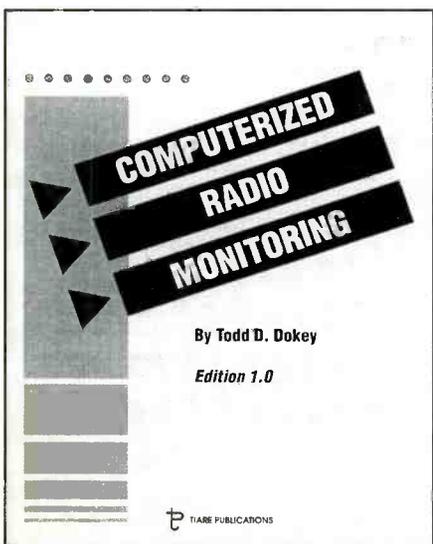
The manufacturers whose chips are used include Raytheon, Allegro Microsystems, Analog Devices, LSI Computer Systems, Silicon Systems, and GEC Plessey Semiconductors.

If you are into circuits and experimenting, Gibilisco's book is one that should provide information enough to keep you interested and busy for quite some time to come. Everything he presents in the book has several practical applications.

Hot IC's For The Electronics Hobbyist is \$19.95 from TAB Books. If your nearest TAB dealer doesn't carry the book, you can order it directly from TAB Books, Blue Ridge Summit, PA 17294-0850. The TAB catalog number for this book is 4122.

In Addition...

Computerized Radio Monitoring, by



Todd D. Dokey is a 125-page comb-bound book explaining the various factors and facets of using your computer to aid your scanner or shortwave listening hobby. This could include something as simple as maintaining your station logs or frequency reference listings on your computer. Or, it could mean actually interfacing your computer to your receiving equipment, then controlling the functions of the equipment from your keyboard. There are all degrees of usage between those extremes. Such matters are the gist of Dokey's text. While this is not an advanced text, the author takes for granted that the reader has a reasonable knowledge of what computers do and how they are operated. Quite a good book. Some material in the book's Suggested Reading List has long been out of print, although it is not so noted. *Computerized Radio Monitoring* is \$22.95 (plus \$2 shipping and handling, or \$3 foreign) from Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147. VISA/MC accepted. Phone-in orders (414)-248-4845.

There is a Version 2 of *Scan*, a combination of hardware and software to control Icom receivers that support CI-V port. *Scan* brings fully automated scanning, logging, and receiver control, offering a maximum scanning speed of more than 2,000 channels per minute. *Scan* delays, monitor time limits, and scan speed settings allow intensive monitoring. These can be manually overridden at any time. Many tape recorders may be remote controlled by *Scan*, and programmed to operate with specific channels.

A mouse-driven built-in editor may be used to edit channel parameters. The Amiga can read out the frequency of a hit, the time, the user's comment. Any combination of these may be programmed for individual channels. High resolution graphics

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by

Future Scanning Systems

constantly show scan activity, displaying scanning position, locked-out channels, and number of hits. There's a running display of frequency, mode, signal, tape recorder, speech status, comments, etc. A date/time imprint may automatically be inserted on all hits. In fact, *Scan* does much more than enumerated here. A version of *Scan* can control two Icom radios simultaneously, using a single interface and computer. *Scan* requires at least 1 Mbyte of ram, and is Workbench 2 compatible. The single radio version of *Scan* is \$149, the two-receiver version is \$199. These prices include shipping to points in the USA (add \$15 for outside USA). *Scan* consists of a program disc, which is supplied with a 70-page manual. This is from Future Scanning Systems, P.O. Box 654, Bartlesville, OK 74005. The phone number is (918)-333-7474 if you want to order with a VISA/MC.

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DX'ing The Koreans

Two Nations, Side By Side, But Worlds Apart

BY GERRY L. DEXTER

Democracy facing communism. US troops on the scene for decades with no homecoming yet imagined. A war of words, political moves and counter moves over four decades old.

It sounds like a relic left over from the cold war and that's exactly what it is. Korea—North and South. Korea—The People's Democratic of, and Korea—The Republic of. It is one of the few remaining places on the globe where the cold war's two opposing political systems still divide a people, where two armies still watch—and sometimes fire—across a common border.

Korea became a gameboard where world powers made plays for global dominance. The country was divided after WWII, the north occupied by Soviet troops, the south by the Americans. Today's two separate nations were established in 1948. The north invaded the south in 1950 and the Korean war, which lasted until 1953, soon involved US and UN forces, the Chinese Communists and, by proxy, the Soviets. Over the 40 years since this UN "police action" ended tension levels between the two have gone up and down like the sales chart of some erratically managed company.

Although relations between North and South are nowhere near as hot as they once were—indeed, several nervous attempts at reconciliation have been made in recent years—the two countries still seem a long, long way from unification. In their separateness they offer some of the most interesting monitoring targets you'll find on shortwave.

In the South, the first radio broadcasts were made by the government and its Kyungsung Broadcasting Station in 1927. The government broadcaster became the Korean Broadcasting System in 1973. 1993 marks the 65th anniversary of broadcasting in South Korea. KBS is a huge organization, broadcasting eight different local networks over several dozen mediumwave and FM channels throughout the country. It also operates two TV networks.

Radio Korea, the international service of KBS, began in 1953, using the name The Voice of Free Korea. Actually, the initial foreign language broadcasts were aired only on mediumwave and for only 15 min-



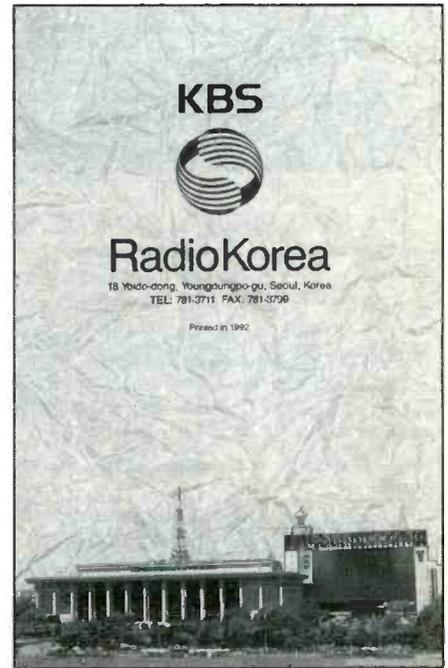
Radio Korea seems to have an endless variety of full color QSL cards.

utes per day. They were intended for what must have been a considerable foreign community living in Korea at the time. Programs in Japanese were the first to be aired in an actual overseas shortwave program in 1955. English for North America began in September, 1957. The current name, Radio Korea was not adopted until 1973.

At present Radio Korea broadcasts a dozen different language services: Korean, Arabic, Chinese, English, French, German, Indonesian Italian, Japanese, Portuguese, Spanish and Russian.

Broadcasts in English beamed to various parts of the world are currently scheduled at: 0000-0100 on 15575; 0600-0700 on 7275, 11810 and 15170; 0800-0900 on 7550 and 13670; 1030-1100 on 11715; 1100-1200 on 15575; 1215-1315 on 9750; 1400-1500 on 9570; 1600-1700 on 5975, 9870 and 2030-2130 on 6480, 7550 and 15575.

Transmitters of 100 and 250 kW are located at Kimjae and these take the main load. Another site at Hwasong has some lower power units and is used primarily for



KBS is housed in a large, modern building in Seoul.

rebroadcasts of various home service networks. The broadcasts on 11715 for the American continent are relayed by the Radio Canada International transmitters at Sackville, New Brunswick.

In the North there are three more or less distinct radio networks. Unlike the South, where there are also privately owned mediumwave and FM stations, everything is run by the government. Radio Pyongyang began an overseas service several years before Seoul did with a broadcast to the South which began in 1949. English, aired during the war, was dropped after the conflict ended and not resumed again until 1960. Today, Radio Pyongyang's shortwave service airs programs in Arabic, Chinese, English, Japanese, French, German, Spanish, Russian and Korean—a total of nine languages, three fewer than Radio Korea.

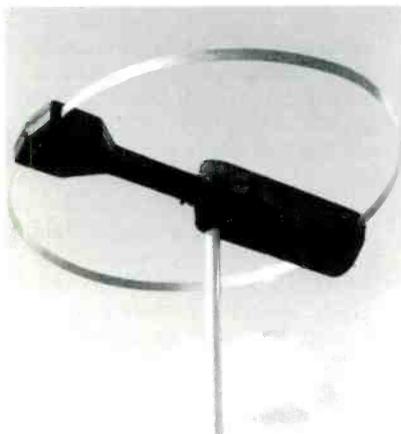
Radio Pyongyang's overseas service transmitters are mostly in the 100 and 200 kW range and are located at Pyongyang, Kanggye and Kujiang.

The current English language broadcast schedule for North America is: 2300 on

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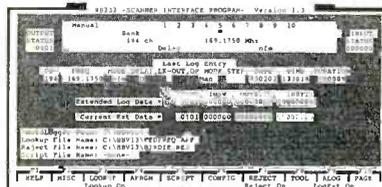


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11700, 13650; 0000 on 11335, 13670 and 15115; 1100 on 6756, 9977 and 11335; 1300 on 13650 and 15230. Radio Pyongyang in English to other parts of the world includes: 0400 on 15180, 15230 and 17765; 0600 on 15180 and 15230; 0700 on 15340, 17765; 0800 on 15180, 15230; 1300 on 9640, 13650, 15230; 1500 on 9325, 9640, 9977; 1600 on 9640, 9977; 1700 on 9325, 9640, 9977; 2000 on 6576, 9345; 1300 on 9325, 9345. Broadcasts begin on the hour and run for 50 minutes. The content of the programs, as ever, is focused on the works and wonders of leader Kim Il Sung and his heir-designate son, Kim-Chong-il.

Other stations: North Korea's other two broadcast entities can also be heard on shortwave though we enter, here, through a door marked "Very Difficult DX."

The Pyongyang Broadcasting Station operates from the capital city area from 2100 to 1800 the following day and is relayed from a transmitter at Kanggye on variable 6400. Also from 2100 to 1900 on 3320; 2100-0930 and 1500-1900 on 6250; 2300-0100 and 0550-0830 and 1500-1800 on 3250, all via transmitters in or near Pyongyang. All transmissions are in Korean and are relays of various mediumwave outlets. For most North American monitors the best reception bet would probably be around 2300 on 6250, though hearing this will be anything but an everyday affair.

The Korean Central Broadcasting Station is a fair sized network of medium and shortwave transmitters which air regional programs and also relay the Pyongyang Broadcasting Station.

There are shortwave transmitters at several sites involved in relaying these services, which generally operate between 2000 and 1800. These are: 2350 - Sariwon; 2850 - Pyongyang; 3220 - Hamhung; 3350 - P'yongsong; 3920 - Hyesan; 3960 - Kanggye; 3970 - Wonsan; 3980 - Ch'ongin; 6100 - Kanggye; 9665 - Pyongyang; and 11665 - Kanggye.

These stations are almost never picked up in North America, especially those on the lower frequencies. The transmitter powers aren't all known but some are in the 100 kW range. Most of the frequencies are somewhat variable.

In the South, the Korean Broadcasting System has shortwave transmitters at Hwasong, which relay the KBS Radio One service (non-commercial) with 5 kilowatts on 3930 and one of the Liberty services at other times. The Liberty One service (for Koreans living outside Korea) is carried over a 50 kW transmitter on 6015 between 0400 and 2100. Liberty Two (essentially a rebroadcast of Liberty One) is aired on 6135 (10kW) from 1400-0000. Radio Korea is carried on this channel at various other times. A 50 kilowatt transmitter on 5975 broadcasts the Radio Korea overseas service.



These regional, lower frequency outlets in both North and South Korea can be assumed to exist, at least partly, to reach the other half of the country, though they are not really advertised as such. Much of the radio propaganda beamed from South to North and North to South is via a group of so-called clandestine stations operated by each government.

The South: Echo of Hope, beamed to the North, claimed, at least in earlier times, to be a dissident voice out of the North. Actually, it uses KBS transmitter facilities at Kimpo. It is probably the oldest of the three or four Korean clandestines, having first been reported in 1973. The broadcasts, all in Korean, can sometimes be heard by North American DX'ers. 6348 is scheduled between 0253-0700, 0753 to 1200 (best bet after 1000 to the 1200 close) and 2253 to 0100. Broadcasts also air on 3985 at 1253 to 1700 and 1953 to 2100.

Another South Korean based clandestine is the Voice of The People, said to exist as an answer to the North's Echo of the Masses (see below). It has been on the air since 1986 and operates at 1353 to 1700 and 1953 to 2130 on 3912 and on 6600 variable (also reported on 6605) from 0253 to 0430, 0553 to 0730, 0823 to 1000 and 2253 to 0030. Note the same odd starting time for the transmissions on both of these southern stations.

The North counters with two clandestine voices of its own, again both run by the Pyongyang government.

Oldest is the Voice of National Salvation, which claims to be operated by the South Korean National Democratic Front. The station formerly used the cumbersome name Voice of the Revolutionary Party for Reunification and claimed an affiliation with a so-called political party of the same name. It's a fair bet, however, that neither party ever existed, or existed in name only. "The Voice" first went on the air in 1970 and switched to the current name in the mid-1980's. Unlike the other stations, this one airs some programs in English. It is believed to be located at Haeju, North Korea, although it claims to be broadcasting from the South.

The schedule is: 0255-0700, 0955-1700 and 1955-0100 on 3480, 4400, 4450 and 4557. Also 0955-1700 on 4120, which sometimes varies down to 4117. Of all the Korean clandestines this is the easiest to hear. Try during the 1100-1300 period.

Echo of the Masses also claims to be in the South but is actually a North Korean operation. It came on the air in August, 1985. The South responded with the Voice of the People, though it took them at least a year to do it.

"Echo" was last scheduled at 0300-0600, 2000-2300 on 4160 and this frequency plus variable 5885 from 1100 to 1400. There's some possibility that this station may have closed down months ago.

A station which may or may not be a clandestine is The Voice of the Youth Infantrymen, which was reported by Japanese monitors in 1991. It was said to be operating on 3000, 3025 and 5000 between 1400 and 2100 and believed to be originating in the North. We've not seen any recent details on this one.

To our knowledge no one has ever gotten a verification for reception of any of the Korean clandestines.

Verifying the regular broadcasts of Radio

Korea, however, is about as easy as mailing your report. The station responds quickly, with a colorful QSL card, brochure, report forms, stickers and other literature. Use the main address: Radio Korea, 18, Yoido-doing, youngdungpo-gu, Seoul 150-790, Republic of Korea.

The Radio Pyongyang situation is quite different! It has long been the norm not to receive a reply from Radio Pyongyang. But this condition has been more a matter of some never explained problem in transit — the letter not leaving the United States safely or not getting into the North. Many DX'ers have found that having the report remailed from Canada or England is all it takes to produce a reply. The address is simply Radio Pyongyang, Pyongyang, Democratic People's Republic of Korea (not North Korea). Write in care of the English service if that's what you are reporting. Some other DX'ers have reported success (going direct) by writing to the Ministry of Posts and Telecommunications in Pyongyang, which is the ultimate communications power in the country (after Kim il-Sung, of course).

Some reporters to Radio Pyongyang received an extremely curious (non-QSL) reply for a time in 1991 (see illustration).

The letter, mailed from Japan and in English (more or less!), purported to be from someone who had found the listener's name and address while visiting a friend at Radio Pyongyang. The writer then offers his political views, which oppose those of the government, and tries to draw a response from the addressee, apparently hoping to find some agreement, though the writer admonishes the recipient to be careful because the reply will probably be read by the secret police.

The examples we saw were not signed by the same person nor were they identical in content. They do appear, though, to have been written on the same typewriter. None of the recipients we know of found the nerve to reply to the letter and we can't blame them there. Those who've discussed it haven't been able to come up with any theory for the purpose behind the letters, though the guess is that it may have been the work of the North Korean intelligence agency but, again, to what purpose we can't imagine.

The letters do, though, add to the spice of DX'ing this still divided land, where two antagonistic systems of government still face each other across the 38th parallel and still wait for their own cold war to end. ■

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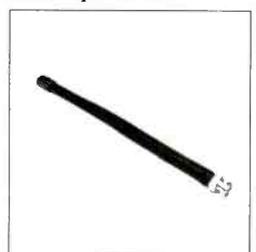
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CIRCLE 9 ON READER SERVICE CARD

A Visit To Radio Luxembourg

And We Brought Along Our Camera!

BY SCOTT HOWER, K7KQ,

Radio Luxembourg is a division of Compagnie Luxembourgeoise de Tele-diffusion, or CLT Multi Media. The parent company operates several channels, as well as longwave, mediumwave, shortwave, and FM stations that carry programs in several languages. There are also radio stations in Ireland and The Netherlands, plus on German cable systems that are part of CLT. Even a symphony orchestra is part of this conglomerate.

Sadly, the English language programs from Radio Luxembourg will have ended by the time you read this. It was just winding down when I visited the station's new studios on the outskirts of the city of Luxembourg.

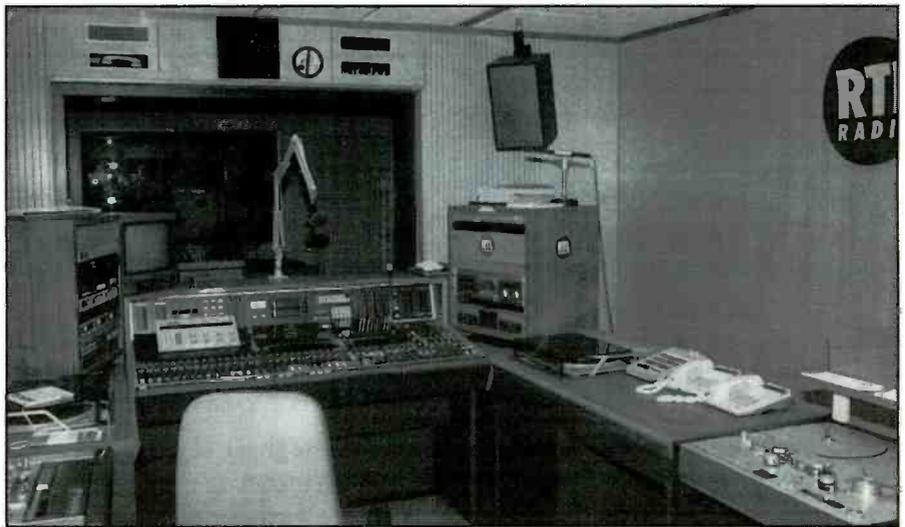
The English language studio required the air personality to also run the control board for the program. The Luxembourgish language studio has separate facilities for the air personalities and the studio engineer. Just about all music heard comes from CD's played on Studer machines. Jingles are on carts, with commercials stored on hard disc drives.

There are German and French programs, too. Much of the French programming originates from a studio in Paris. Regardless of where the studio is located, all programs pass through master control where each program is routed to its associated transmitter site.

Transmitter Sites

I visited transmitter sites at Junglinster, Beidweiler, and Marnach. Junglinster is an older site, having longwave and shortwave facilities. The 234 kHz longwave transmissions come from two parallel transmitters using a water cooling system employing a pond in front of the building.

Junglinster's longwave antenna is a directional array using three towers. I estimate their height to be close to a quarter wave, which is about 1,000 ft. The shortwave antennas consist of a turnstile for 6090 kHz, and a curtain on 15350 kHz



Production studio at Radio Luxembourg

directed towards North America. Balanced lines are used to feed both shortwave antennas.

A short distance down the road from Junglinster is a new longwave site in the

village of Beidweiler. There are parallel Thomson-CSF transmitters producing a 2000 kW signal. Here, the water cooling system uses heat exchangers on the roof. The antenna system is a three-tower direc-



All programs are routed through master control to the proper transmitter site.



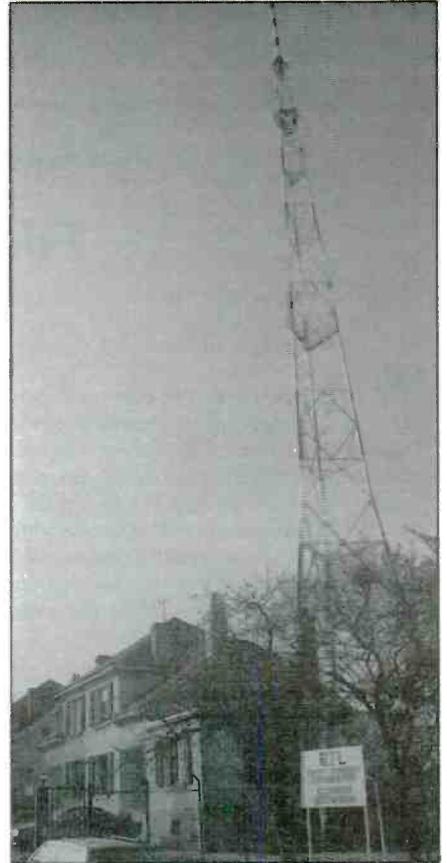
Transmitter control room at Beidweiler.

tional array beamed towards France.

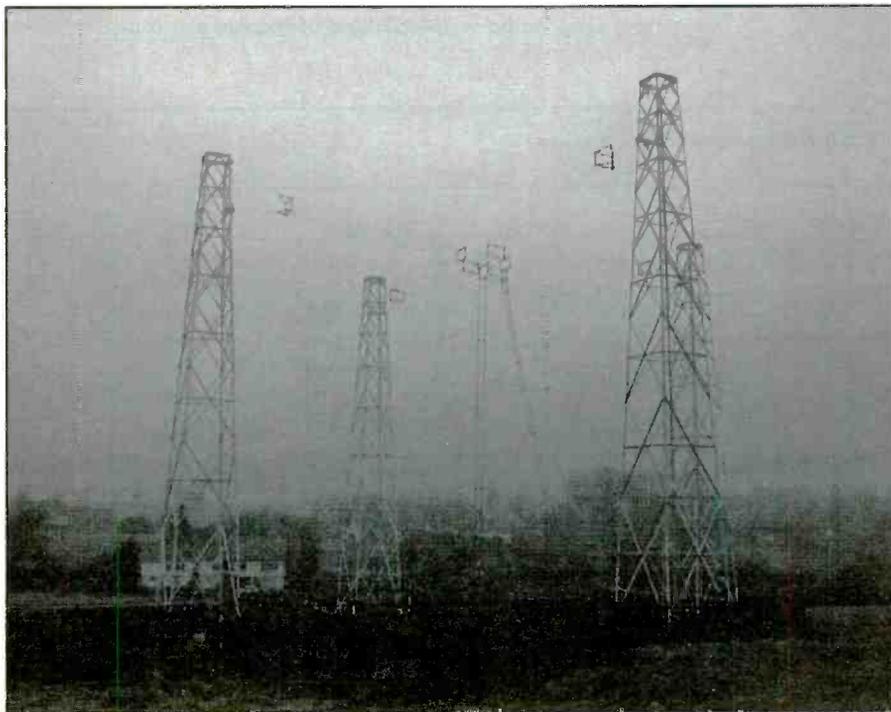
Marnach, site of the 1200 kW transmitter on 1440 kHz, is situated in the northern part of the country. Prior to December of 1991, this signal (known as "208" for its wavelength) could be heard nightly throughout the UK. As an alternative to the BBC, the station carried English programs and rock music. In recent years, however, competition from commercial stations in Britain as well as a much improved BBC,

may have helped Radio Luxembourg decide to end English programming on 1440 kHz. It isn't known if the directional pattern of this antenna was changed after English was discontinued.

Radio Luxembourg impressed me as being dedicated to quality. The studios and transmitter sites are meticulously maintained. These are modern facilities, with computers used for many things including music selection and audio storage. ■



The Junglinster transmitter site.



A view of the Junglinster 6090 kHz turnstile antenna.

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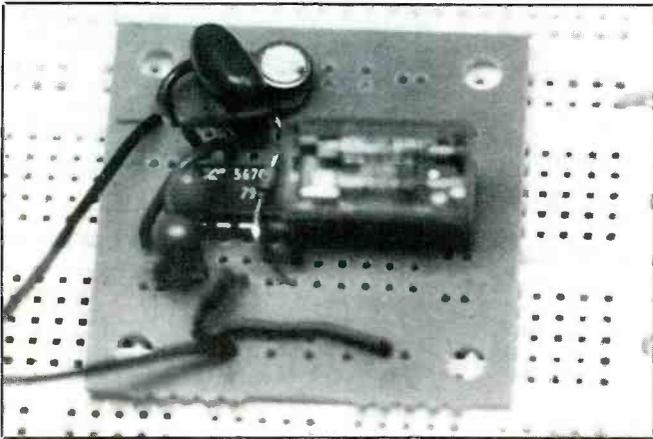
BY MARTIN ZINAICH

With cellular phones becoming so popular some scanner buffs may have forgotten about mobile phones. The mobile phone frequencies (454 MHz) are well within the range of most low cost scanners unlike cellular phones. The only drawback is the pilot tone. This tone (2 kHz) is sent on the next available frequency and will make your scanner sound like a tone generator and drive you crazy while you await the next call.

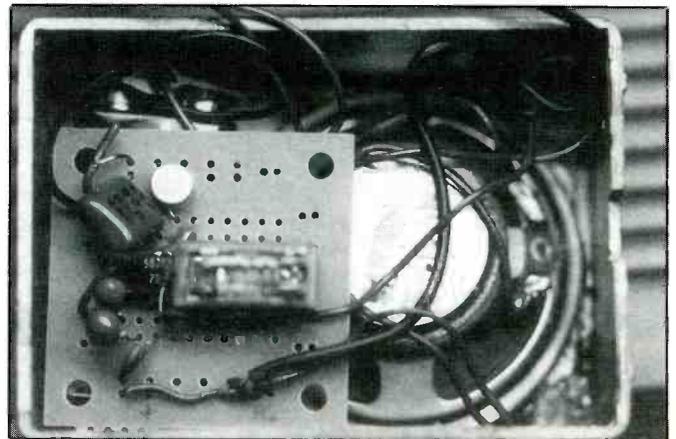
The mobile phone scanner adapter (MPSA) will keep your scanner quiet until a call starts. Once the call is over the scanner will advance to the next available frequency and the adapter will again silence the pilot tone. Best of all you don't have to disassemble your scanner. The MPSA simply plugs into the ear phone jack.

The MPSA is built around the LM567 tone decoder. Signals from the earphone jack are

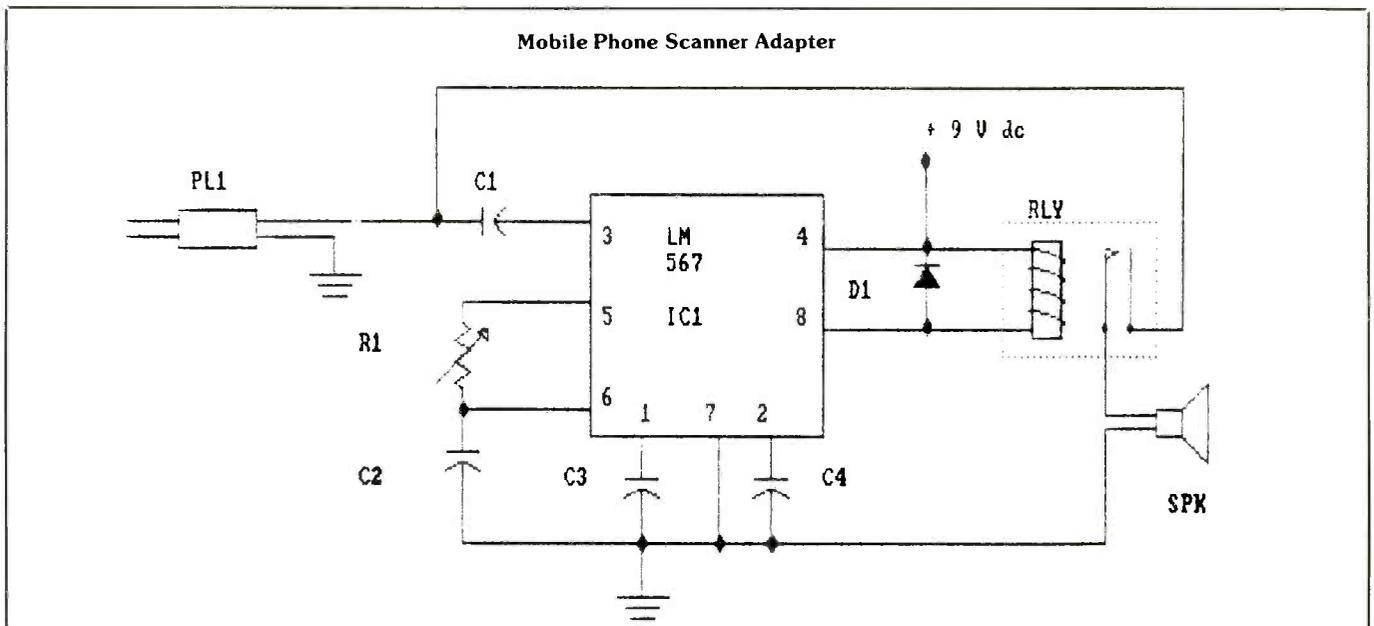
fed into pin 3 of the LM567 via C1. Also, the signal is fed directly to a normally closed relay. R1 and C2 set up the VCO's center frequency and R1 is adjusted to match the pilot tone. C3 is the output capacitor. C4 is the low pass capacitor which controls the detection bandwidth. When the LM567's VCO equals that of the frequency applied to pin 3, pin 8 goes low, energizing the relay and disconnecting the speaker. When a call comes in the pilot



Assembled circuitry on perf. board.



Perf. board installed inside of speaker enclosure.





Finished unit atop scanner.

tone goes away, pin 8 goes high and disengages the relay which connects the speaker. When the unit is turned off the speaker is connected allowing normal operation.

Construction

There are no critical parts or construction procedures. The circuit is easily built on a perf. board or a printed circuit could be made but is not needed. The board once stuffed is installed in a suitable enclosure. An on/off switch should be installed between the 9 volt battery and the 9 volt line.

Operation and Adjustment

The MPSA is plugged into a scanner that is programmed with the mobile phone frequencies. When the scanner stops on the next active channel you will hear the pilot tone. Adjust R1 until the relay engages and the speaker is silent. You may need to make this adjustment a couple of times by making your scanner scan until it comes back around and begins adjusting R1 again. You may also have to adjust the volume of your scanner for proper operation.

Mobile Phone Scanner Adapter Parts List

IC1 LM567
 C1 .01UF @ 25V
 C2 1UF @ 25V
 C3 10UF @ 25V
 C4 3.3UF @ 25V
 D1 1N914
 R1 10K POT.
 RLY 9 TO 12 N.C. RELAY
 SPK 4 TO 8 OHM SPEAKER
 PL1 1/8" PHONE PLUG

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

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

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Aug. 21, 1987

Wilson Antenna Company Inc.
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 Henderson, Nevada 89015

Subject: Comparative Gain Testing of Citizen's Band Antennas
 Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below:

FREQUENCY (MHZ)	RELATIVE GAIN (dB)	RELATIVE POWER GAIN (%)
26.965	1.30	35
27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
27.215	1.60	45
27.265	1.75	50
27.315	1.95	57
27.365	2.00	58
27.405	2.00	58

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LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Well, which would you like first, the bad news or...the bad news! OK, as long as you don't care we'll give you the bad news that's already in effect. Dallas shortwave broadcaster KCBI, which has been silent for some years recently returned to the air, apparently under new ownership. Unfortunately, its entire broadcast schedule is being used by Dr. Gene Scott who can already be heard anytime of the day or night on practically every usable shortwave band from 5 MHz and up! The other bad news is the coming loss of Trans World Radio in Bonaire. The station has announced it is leaving shortwave and will use satellites to downlink its programs to local radio stations throughout Latin America. It's sad, indeed, to lose one of the major—and best—of the religious broadcasters! TWR says it will dismantle its high power transmitter but probably keep the 50 kW station in case it's ever needed. We'll miss those folks!

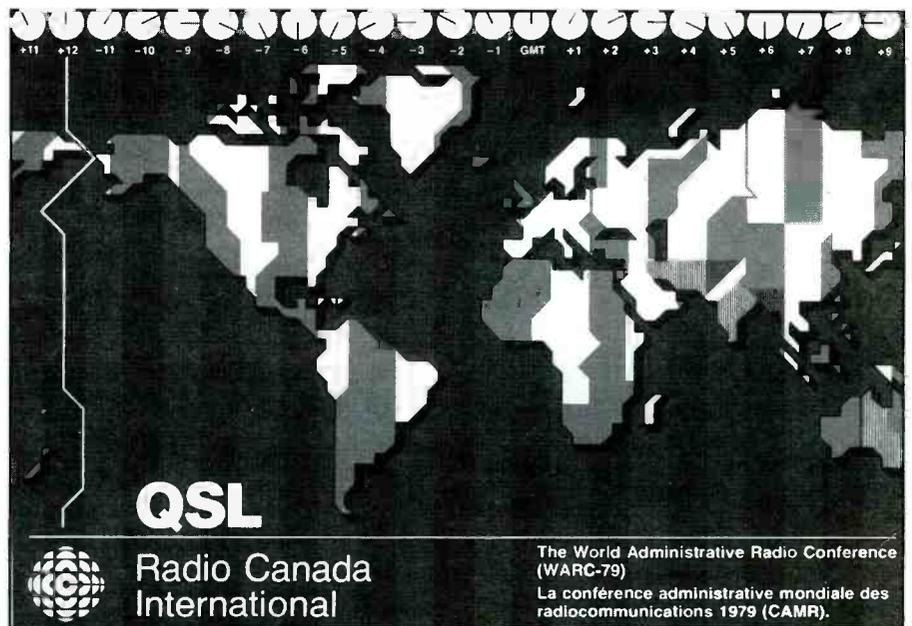
Radio Bosnia-Herzegovina from ravaged Sarajevo is being heard by a number of North American listeners. Though reported with sporadic reception on 7240 USB variable it's doing better on 6220 or a hair below, (in AM) around 0100/0200, playing mostly music. Listen for time pips and an ID on the hour. We're holding off on sending a reception report since the mail situation is unclear at present.

Radio Japan should soon have three more 300 kW transmitters active from its Yamata site. Once these have been fired up the BBC plans to use them for improving its service to China.

Still waiting for the appearance of Radio Miami International, the actual transmitter, not the programming you're hearing on WRNO. Last we heard they were still projecting a start up early this year and expected to be active daily between 2200—0600 and 1000—1400. The frequency should be 9955.

China Radio International, Beijing, has broken ground for a new home. The new studios and offices are about a 30 minute drive from the present location, in western Beijing's Shijingshan District. The 16 story building will have enough room to accommodate up to 50 different language departments and will be furnished with the latest in broadcasting equipment. The facility will be fully computerized "from script writing to production and broadcasting." The total cost is expected to run some \$40 million. Construction is expected to be completed by the end of 1994, though it may be another year before all the equipment can be installed.

Deutsche Welle now has a toll-free number in the US: 1-800-393-3248, which also works for some parts of Canada.



Errol Urbelis in Kings Park, New York supplies this historic Radio Canada International QSL commemorating the 1979 World Administrative Radio Conference.

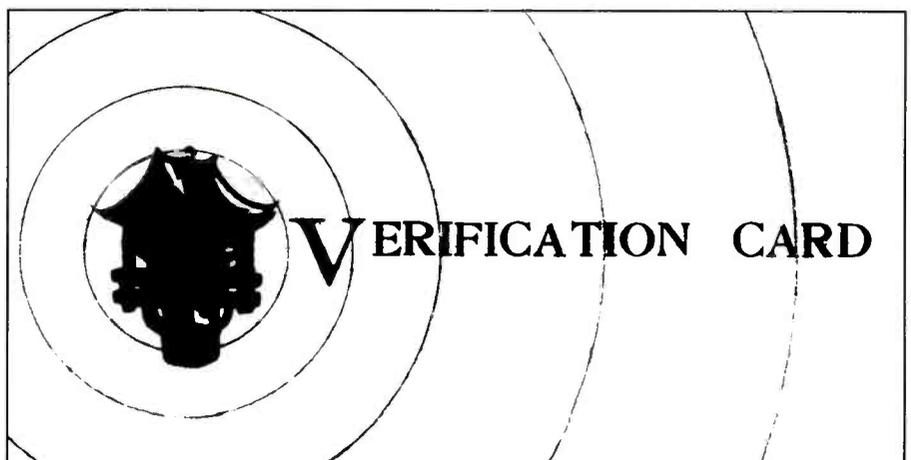
We have a big loggings section this month so we'll get on to that. But first the usual reminder that we always welcome your log reports, letters, station schedules and informational material and any extra QSL cards we can use for illustrations. And let's not forget the shack photos! Here, too, is the usual plea to list your log items by country, double space them (at least!) and include your last name and state abbreviation after each one.

If you don't include your name on each item and if you don't give us cutting room we can't use your material. Simple as that!

Here are this month's logs. All times are UTC and broadcast language is English unless noted otherwise (SS=Spanish, FF=French, AA=Arabic, etc).



Errol Urbelis does his listening from this well-equipped shack which features some very nice vintage Hallicrafters and Hammarlund equipment.



The Voice of Vietnam continues to send attractive QSL's, though they are still on paper, rather than card stock. Thanks to Paul A. Roales for this one.

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



Also using some old Hallicrafters gear is Steve Sorensen of Waverly, New York

SWBC Loggings

Albania: Radio Tirana, 9580 at 0229 sign on. (Dybka, TN) 9760 at 2203. (Fenwick, ME)

Algeria: RTV Algerienne, 11715 at 2135 in EE. (Moser, PA)

Antigua: BBC relay on 9640 at 0512. (Tucker, GA) 17840 at 1500. (Fenwick, ME)

Deutsche Welle relay, 6040 at 0102. (Moser, PA)

Argentina: RAE, 11710 at 0145. (Moser, PA) 15345 at 0022 in SS. (Fenwick, ME)

Radio Nacional Buenos Aires relay, 15345 at 2300 with ID in SS. (Zamora, CA) 0017 in SS with folk music, ID, drama. Abrupt off at 0100 but //11710 continued. This relay isn't listed in the reference books at this hour, is Sunday/Monday UTC only. (Lamb, NY)

Ascension Island: BBC relay, 9600 at 0300. (Bilec, PA) 15390 at 2115. (Tucker, GA) 15400 at 1930. (Jones, OH) 21660 at 1449. (Dybka, TN)

Argentina: Radio Australia, 5995 at 1330. (Zamora, CA) 9580//11880 at 1500. (Vaage, CA)

13605 at 1100 to East Asia. (Rausch, NJ) 15365 at 0257. (Moser, PA) 127715//17795//21740 at 0212. (Jensen, IA) 21740 at 2315 in FF. (Lamb, NY)

ABC Brisbane, 4920 at 1353. (Zamora, CA) And //better 9660 at 0900. (Rausch, NJ)

ABC Perth, 15425 at 0115. (Paszkiwicz, WJ)

Austria: Radio Austria Int'l, 9875 at 0130-0200. (Bilec, PA) And //9875 at 0200 in GG. (Fenwick, ME) 13730 at 1243 with "Shortwave Panorama." (Tucker, GA) 21490 at 1629 in GG. (Lamb, NY)

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Belgium: Radio Vlaanderen (Flanders) Int'l (ex-BRT) 5910//9905 at 2200 s/on. 2225 close. (Rausch, NJ; Moser, PA) 9930 at 0035. (Jones, OH) 21810 at 1400. (Tucker, GA)

Bolivia: Radio 16 de Marzo, 4864 in SS at 0815 with music and ID. (Rausch, NJ)

Bosnia: Radio Bosnia-Hercegovina, 6219.95 at 0417 with classical and easy listening music, 4+1 time pips at 0500, ID, news with mentions of B/H. (Paszkiwicz, WI)

Botswana: Radio Botswana, 7255 at 0253 with IS, anthem, s/on. (Moser, PA) 0325. (Dybka, TN) VOA relay. 7265//7280 at 0328 with "Daybreak Africa." (Lamb, NY) 9885 at 0330. (Scheurell, PA)

Brazil: Radio Gaucha, 6020 at 0340, commercials, time checks, love songs. PP. (Paszkiwicz, WI) Radio Inconfidencia, 6010 at 0747 in PP with pops, religious talk, ID. (Lamb, NY) Radiobras, 15445 at 1205. (Sorensen, NY) Radio Cancao Nova, 4825 at 1000 with sambas, ID in PP. (Rausch, NJ) 9675 at 0309 in PP. (Scheurell, PA)

Radio Guaiba, 6000 at 2335 in PP. (Paszkiwicz, WI) 6000//11785 at 0710 in PP. (Lamb, NY)

Radio Florestas Verdes (The Green Jungle) 4865 at 1030 with music and ID in PP. (Rausch, NJ)

Radio Clube do Para, 4885 in PP at 0336. music and ID. (Scheurell, PA)

Radio Cultura Sao Paulo, 9615//17815 at 2342

in PP with sambas, ID. (Lamb, NY)

Swiss Radio Int'l relay, 17730 at 0002. (Moser, PA) Radio Universo, 9565 at 2024 in PP. (Fenwick, ME) Radio Brazil Central, 4985 at 0826 in PP. Also at 0653 here and //11815 (Lamb, NY)

Radio Marajoara, 4955 at 0810 in PP with local pops, IDs. (Lamb, NY)

Bulgaria: Radio Sofia, 7290 at 0518. (Lamb, NY) 11720 at 2328. (Moser, PA)

Canada: Radio Canada Int'l, 5755 at 0257 close. 9535 to Latin America at 0148 and 11915 at 2257 close. (Jensen, IA) 5960 at 0034. (Moser, PA) 9535 with IS and sign on to Asia at 1330. (Zamora, CA) 11955 at 1400-1700. (Bilec, PA) 15325 at 2258. (Zamora, CA)

CFRX, 6070 at 0520 with talk program. (Carson, OK)

CHNX, Halifax, 6130 at 2000. (Fenwick, ME) CFCX, Montreal at 1957. (Fenwick, ME)

CKZN, St. John's at 0320-0500 with classical music, local ID 0400. (Paszkiwicz, WI)

Central African Rep.: RTV Centrafricaine, 5035 at 2116 with African guitar music, announcements and IDs in FF. (Lamb, NY)

China: China Radio Int'l (ex-Radio Beijing) 9770 (via Mali) at 0015. (Dybka, TN) 11715 (via Mali) at 2000. (Rea, OH) 0300. (Bilec, PA) 11755 (Beijing)/15440 (Kunming) at 1035. (Lamb, NY) 15130 via Mali at 1612. (Zamora, CA)

Bonne Année

Happy New Year

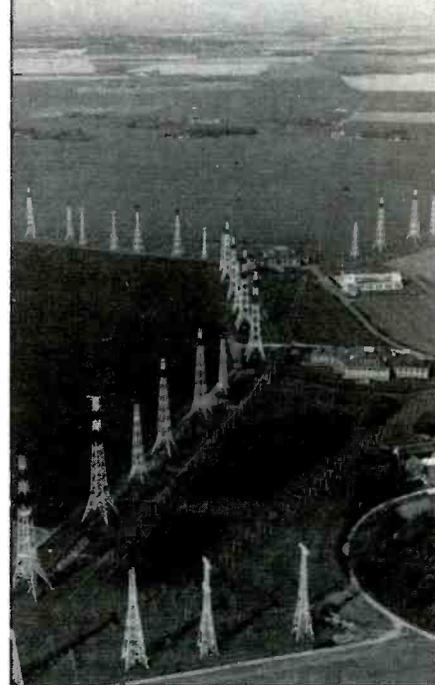
Feliz Año Nuevo

Glueckliches Neues Jahr

Feliz Ano Novo



1
9
8
3



This 1983 Happy New Year card from Radio France International features a nice color photo of one of the transmitter sites (Thanks to Steve Sorensen).

Fujian People's Bc Str, 4975 at 1343 with EE lessons and programs in CC. (Zamora, CA)

Hunan People's Bc Str, 4990 with EE lessons at 1345. other programming in CC. (Zamora, CA)

Colombia: La Voz de Yopal, 5050 at 0128-0329 with Caracol mentions, time checks, vocals, possible tutebol. (Paszkiwicz, WI)

La Voz del Cinaruco, 4865 at 0210 with promos, Caracol news. (Paszkiwicz, WI) 0202 with IDs, commercials for Bank of Colombia. (Lamb, NY)

Caracol Villavicencio, 5955 at 0939 in SS with folk music, IDs. "Nada e Impossible" talk show. (Lamb, NY)

Caracol Bogota, 5075 at 0001 with news in SS. (Fenwick, ME)

Costa Rica: Adventist World Radio, 5030 at 1150 with "Your Story Hour." Also 5980.4 at 0100. (Paszkiwicz, WI) 9725//13750 at 0053 with ID, address, end of EE at 0055. into SS. (Zamora, CA)

Radio For Peace International, 7385USB at 0345. (Carson, OK) 13630 USB at 0200. (Rea, OH) 15030 at 1300. 1400. (Moser, PA; Jones, OH)

Radio Reloj, 4832.5 at 0425 with multiple SS IDs, music and news. Best after 0400 when Radio Tachira has signed off. (Rausch, NJ)

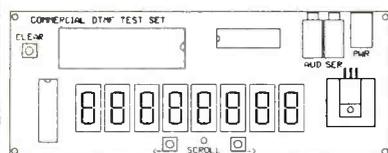
Cuba: Radio Habana Cuba, 7950 at 0222. (Jensen, IA) 9540 at 0335 in SS. (Carson, OK) 9655 at 0410. (Dybka, TN) 11950 at 0000-0600. (Bilec, PA) 11970 at 0140 in SS. (Fenwick, ME)

Radio Rebelde, 5025 at 0337 in SS. (Dybka, TN) **Cyprus:** BBC relay, 9660 at 0826. (Moser, PA) 15575 at 1430. (Dybka, TN)

Czechoslovakia: Radio Czechoslovakia, 5930//7345 at 0405. (Lamb, NY) 7345 at 0000. (Rea, OH)

Denmark: Radio Denmark, via Norway, 9650 at 0430 in Danish. (Bilec, PA) 15330 at 1630 with EE ID and into Danish. (Vaage, CA)

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Dominican Republic: Radio Cima, 4960 at 0100 with merengue and salsa. ID "Desde la capital Dominicana en sus 500 años de historia, transmite Radio Cima, 100.5 FM y 4960 banda tropical de 60 metros." (Bloisse, NJ)

Ecuador: HCJB, 9745//15155 at 0059 and 17790 at 1910. (Jensen, IA) 11925//17890 at 1330. (Zamora, CA) 15270 at 2047 in FF. (Tucker, GA) 17890 at 1538. (Fenwick, ME) 21480 at 1754. (Long, WV)

Radio Jesus de Gran Poder, 5049.8 at 1230 with religious service in SS. (Rausch, NJ)

Escuelas Radiofónicas on 5011.5 at 1100 with talk and ID in SS. (Rausch, NJ)

Radio Católica Nacional. 5030 at 1215 with music. talk, ID in SS. (Rausch, NJ)

La Voz del Napo, on 3279.8 at 0307 with national anthem at sign off. (Paszkiwicz, WI)

Radio Popular. 4800 at 1039 in SS with IDs, dedications and Schubert's "Serenade" played on local instruments. (Lamb, NY)

Egypt: Radio Cairo. 9475 at 0400 with news. (Kershaw, TN) And //11865 at 0240. (Moser, PA) 9900 at 2218 with music. (Fenwick, ME)

England: BBC via Skelton. 3395 at 2139. (Lamb, NY) 5875 at 0245: 7325 at 0006: 9590 at 2300: 11750 at 0227 and 17840 at 1500. (Jensen, IA) 9410//9740 at 0059. Also 15260 at 1630. (Vaage, CA) 11965 via Delano, CA, 0244. (Carson, OK) 12095 at 2000. (Fenwick, ME) 15070 at 1605. (Zamora, CA)

Equatorial Guinea: Radio Nacional, Bata. 5004 at 2110-2204 close in SS with news, local info, IDs, announcements, some high-life music. (Urbelis, NY) Radio Nacional Malabo. 6250 at 2140-2200 in SS. (Urbelis, NY)

France: Radio France International, 9800 at 2206 in FF. (Fenwick, ME) via Gabon on 12015//17620 at 1637. (Zamora, CA) 17695 at 1400. (Rea, OH) 21645 at 1251. (Moser, PA)

French Guiana: RFI relay, 9800 at 0415. (Dybka, TN) 15200 at 0017 in PP. (Fenwick, ME)

Finland: Radio Finland Int'l. 11755 at 1941. (Lamb, NY) 15400 at 1235: 1330. (Sorensen, NY; Bilec, PA)

Gabon: Africa No. One, 9580 at 0700 in FF, African music, commercials. (Kershaw, TN) 17630 at 1516 in FF. (Dybka, TN)

RFI Plus Afrique relay, 4890 at 0435 in FF. (Lamb, NY)

Radio Japan Gabon relay, 15355 at 1500. (Urbelis, NY)

Germany: Deutsche Welle, 5545 at 0304, 9565 at 0132. (Jensen, IA) 6040 (via Antigua) at 0140. (Jones, OH) 6085 (via Canada) at 0300: 9670 (via Antigua) at 0500. (Bilec, TN) 6145 at 0100. (Moser, PA) 7225 via Rwanda at 0400 sign on. 9515 at 0100 sign on. (Zamora, CA) 11965 (via Rwanda) at 1512. (Vaage, CA) 13790 at 1932. (Tucker, GA)

VOA Munich relay on 3980 at 0447 in Czech. (Lamb, NY)

RIAS, Berlin, tentative at 2115 in GG with talk. BBC off. (Paszkiwicz, WI)

Radio Canada via DW 17715 at 1519 in GG. (Fenwick, ME)

Ghana: GBC, 4915 at 0537 with African choral music. IDs, drum IS, news. (Lamb, NY) 0600 with news in EE, high-life music. (Kershaw, TN)

Greece: Voice of Greece, 7450 at 1915. (Rausch, NJ) 9395 at 2330 with news. (Rea, OH) //9420 at 0225 in Greek. (Dybka, TN) 9420 at 0500 with Greek music. EE news. (Kershaw, TN) 15560//17525 at 1532. (Moser, PA)

R. Macedonia, 9935 at 2110 in Greek. (Urbelis, NY)

Guinea: RTV Guineenne, Conakry. 7125 at 0600 sign on in FF and vernacular with IS, anthem, IDs. (Urbelis, NY)

Guatemala: Radio Cultural/TGNA, 3300, 0236 in SS, into EE at 0259. (Lamb, NY) 0330 "Through the Bible." (Kershaw, TN)

Radio Tezulutlan, 4835 at 0150 in SS with music, talks. (Scheurell, PA)

La Voz de Antlan, 2390 at 0242 with birthday song, marimbas, ID, Better at 0330 recheck, at best fair at peaks. (Paszkiwicz, WI)

La Voz de Nahuala, 3360.4 at 0229 with talks, marimbas, ID, time checks, brass instrumentals, SS

(Paszkiwicz, WI)

Honduras: La Voz Evangelica, 4820 at 0100 in SS. (Fenwick, ME) 0210 with "noticias religiosas". (Scheurell, PA)

Hong Kong: BBC relay, 7180 at 0953. Into CC at 1000. (Lamb, NY) 11765 at 0900. (Urbelis, NY)

Hungary: Radio Budapest, 9835 at 2205 with news. ID, press review. (Lamb, NY) And //11910 at 2200 sign on. (Moser, PA)

India: All India Radio, 4990 (Madras) at 0000 with IS. 9950 at 0029//15165 (Paszkiwicz, WI) 7412 (Aligarh)//9950 (Delhi) and 11620 (Bangalore) at 2108. (Lamb, NY) 11620 from 1300. (Kershaw, TN) 2200. (Miller, GA)

Iran: VOIRI, 9022 at 0039 world news in EE. (Moser, PA) 11790 at 0030. (Miller, GA) 1152. (Sorensen, NY)

Iraq: Radio Iraq International, 11860 at 0404 with ID, mideast music, news, into AA at 0400. Jammed. (Paszkiwicz, WI) 15340 at 0400. (Kershaw, TN)

Israel: Kol Israel, 5900 domestic service in AA at 0400. (Rausch, NJ) 9435 at 2002 to 2027 close. Also 0500 to 0515 close. (Tucker, GA) 11605 at 2020 and 15640 at 1800. (Moser, PA)

Italy: RAI, 9575 with news at 0106. ID. (Zamora, CA) 11800 with news at 0100. (Rea, OH) 17780 at 1740 in II. off at 1745. (Fenwick, ME)

Japan: Radio Japan, 6120, via Canada, at 1144. (Sorensen, NY) 11875 at 1405 in JJ. (Northrup, MO) 15325 (via French Guiana) at 0300. (Bilec, TN) 17810 at 0300 sign on. (Zamora, CA) 17825 at 0259. (Lamb, NY)

Radio Tanpa, 9535 at 1325 in JJ with call-in program. (Northrup, MO)

Jordan: Radio Jordan, 9560 at 1710. (Paszkiwicz, WI) 11940 at 0520 in AA. (Dybka, TN)

Kenya: Kenya Broadcasting Corp, 0220 on 4935 with instrumentals, news, ID. (Paszkiwicz, WI)

Kuwait: Radio Kuwait, 13620 at 2005 with features, music, ID. (Long, WV)

Lebanon: Voice of Lebanon, 6550 in AA at 0440 with news and music. (Rausch, NJ)

Lithuania: Radio Vilnius, 9530//17690 at 0010 and 17605//17690 at 0004. (Lamb, NY) 17690 at 0000-0030 with news of Lithuania, Estonia, Latvia. IDs. (Scheurell, PA)

Luxembourg: Radio Luxembourg, 15350 at 2253 with "Original Top 20" program and "Radio Luxembourg: the station for the 21st century." (Zamora, CA) (This frequency and service is probably off the air now, editor)

Madagascar: Radio Netherlands relay, 9860 at 0232. (Lamb, NY) 9895 at 0334 in DD. (Scheurell, PA)

Malaysia: RT Malaysia, Sarawak, 4950 at 1423 with stock market reports. (Zamora, CA)

Mali: China Radio Int'l relay, 9770 at 0415. (Dybka, TN) 11715 at 0342. (Scheurell, PA)

Malta: Deutsche Welle relay, 9735 at 0319 in GG with classical music, interview, ID, IS. (Lamb, NY)

Mauritania: ORTM, 4845 at 0050 in FF. (Moser, PA) 0148. (Scheurell, PA)

Mexico: Radio Mil, 6010 in SS at 0420 with ballads, news highlights. (Paszkiwicz, WI)

Monaco: TWR Monte Carlo, 7315 at 1833 in GG with IS, ID, religious program, choral music. Faint, but there. (Lamb, NY) 9480 at 0615 with "Gospel Story." (Moser, PA)

Morocco: RT Marocaine, 11920 at 0245 in AA with vocals, fanfare, news. //15335. (Paszkiwicz, WI) Radio Medi Un, 9575 at 0024 with mideast music. (Dybka, TN)

Netherlands: Radio Netherlands, 6020 at 0030. (Moser, PA) 9860 at 0152. (Carson, OK)

Netherlands Antilles: Radio Netherlands relay, 9590 at 0335. (Dybka, TN) 11835 at 0116. (Fenwick, ME) 21515 at 1920. (Jensen, IA)

TWR, Bonaire, 9535 at 0300. (Dybka, TN) 1200 on 11815. (Moser, PA)

New Zealand: Radio New Zealand Int'l, 9510 at 1214 with national radio relay. (Tucker, GA) 9700 at 1114. (Moser, PA) 17770 at 0300. (Lamb, NY)

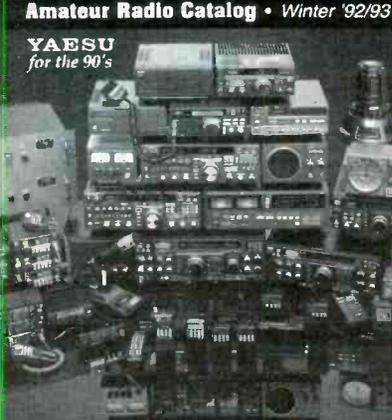
Nigeria: Voice of Nigeria, 7225 at 2012 with news. (Fenwick, ME) 0550 with news. (Rea, OH) Radio Nigeria, 4770 (Kaduna) and //4990 (Lagos) at 0545 with regional music to news at 0600. (Rausch, NJ)

North Korea: Radio Pyongyang, 9325//9345 at

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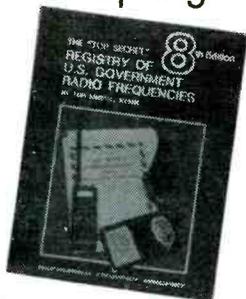
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1300 with news. (Rea, OH) 13650 at 0035 in SS to 0050 close. (Zamora, CA) 13760//15115 at 0025. 13785 at 1707. (Lamb, NY)

Northern Marianas: KHBI. 9530 with Monitor Radio at 1403. (Moser, PA)

Norway: Radio Norway Int'l. 9560//9650 at 0403 with weekend EE. Also 15220//17730 at 1902. (Lamb, NY) 9645 at 0010. (Jones, OH) 11795 at 2300. (Rausch, NJ) 15180 at 2106. (Moser, PA) 15330 in NN at 1610. but EE ID. (Vaage, CA)

Oman: Radio Oman. 11890 at 1325 in AA with music. (Northrup, MO)
 BBC Masirah Island relay. 15310 at 1301. (Moser, PA)

Palau: Voice of Hope, 9830 at 1248 with ID, address. religious programs. (Zamora, CA)

Paraguay: Radio Nacional, 9735 from 0700-0900 with Paraguayan folk music. SS announcements. (Kershaw, TN) 0830 sign on with anthem. (Urbelis, NY)

Peru: Radio Atlantida. 4790 at 1020 in SS. (Rausch, NJ)

Radio Union. Cuzco, 6115 at 0600 with Peruvian music. commercials in SS. (Kershaw, TN)

Radio Satellite. 6724.4, 0105 with vocals. ID, time check. (Paszkiwicz, WI)

Ondas del Mayo. 6803.5 at 0238 in SS with vocals, announcements. ID, flutes, ID and off 0300. (Paszkiwicz, WI)

Radio Ancash, 4991 at 1045 with talk and ID in SS. (Rausch, NJ)

Radio Cora. 4915 in SS at 0416 with tangos, folk music, IDs, jingles. (Lamb, NY)

Philippines: VOA relay, 11715 at 1312 and 15290 at 0035. (Lamb, NY)

Portugal: Radio Portugal. 9570 at 0230 with news. (Bilec, PA) 9635 at 2200 in PP (Fenwick, ME) 0256 in PP. (Dybka, TN) 9760 in PP at 2000. (Lamb, NY) 21515 at 1543. (Rea, OH) 21655 at 1640 in PP. This transmission is Sat/Sun only. (Lamb, NY)

Qatar: Qatar Broadcasting Service. 17800 in AA at 1310. (Urbelis, NY)

Russia: Radio Moscow. 4795, possibly via Ukraine. 2236 to 0000 close. 12010 at 0359. (Lamb, NY) 7150 at 2135. 15210 at 1501. announcement of commercial time available for purchase on Radio Moscow. 15210 at 1501 (Tucker, GA) 7170 at 1527. (Zamora, CA) 12070 at 0223; 17720 at 0208. (Jensen, IA) 9640//11900 at 1501. (Vaage, CA) 11790 at 2129. 15280 at 1111 in GG. (Moser, PA) 17830 at 1200. (Bilbec, PA)

New Wave Radio. 17760 at 1712 in RR. (Fenwick, ME)

Romania: Radio Romania Int'l. 5990 at 0400. (Bilec, PA) 9510 at 0200. (Long, WV) 6155 at 0200. (Scheurell, PA)

Rwanda: Deutsche Welle relay, 7225 at 0437. (Moser, PA) 11965 at 1503. (Dybka, TN) 15270 at 2352 in GG. (Lamb, NY)

Saudi Arabia: BSKSA. 11685 at 2130 with ID, music. AA. (Jones, OH) 11730 at 1457 in listed Farsi with classical music, anthem, ID, news. (Lamb, NY) 21505 at 1300. (Kershaw, TN)

Seychelles: FEBA. 11710 at 1530 with news, sports. ID, drama. Off 1556. (Zamora, CA)

Singapore: BBC relay, 9740 at 1116. (Moser, PA) 11750 at 1506 and 17790 at 0107. (Lamb, NY)

South Africa: Channel Africa (ex-R. RSA) 11745 at 0226 in EE and 11900 at 0347 in FF. (Lamb, NY) 15430 at 1611. (Moser, PA) 17840 with soccer at 1526. (Dybka, TN)

Radio Allegro classical music service, 4810 at 2207 in Afrikaans. Into Radio Orion service at 2300. (Lamb, NY)

Radio Orion, 4810. (return to old frequency) 0005 in EE and Afrikaans. (Lamb, NY) 0235 with ID, rock, news. IS, time check and into Radio Sud Africa service 0300. (Rausch, NJ)

South Korea: Radio Korea, 9750 at 1304. (Moser, PA) 15575 at 0030. (Long, WV)

Spain: Radio Exterior de Espana, 7275 in SS at 2016 and 9580 at 2135 in AA. (Fenwick, ME) 9530 at 0100-0200. (Long, WV)

Sri Lanka: Sri Lanka Broadcasting Corp., 15425 at 2335 with music and news. (Rea, OH)

Sudan: Radio Omduman. 4994 at 2100-2200 s/off. Heard only the one day. (Urbelis, NY) 7200 at 0259 sign on with IS, anthem into AA. (Moser, PA)

Swaziland: Trans World Radio, 9655 at 0357

with handbell IS. ID and into Chewa program. (Lamb, NY) 11740, presumed, 0510 with EE religious program, fading. (Paszkiwicz, WI)

Sweden: Radio Sweden. 9695 at 2000 and 21550 at 1600. (Bilec, PA)

Switzerland: Swiss Radio Int'l. 3985 at 0501. (Lamb, NY) 9650 at 0200. (Sorensen, NY) 9885 at 0151 with IS, ID. (Jensen, IA) 13635//15430 at 1700. (Moser, PA) 17635 at 1730 sign off. (Long, WV) 17670 at 1300. (Bilec, PA) 17730 via Brazil at 0025. (Zamora, CA)

Taiwan: Voice of Free China. 5950 via WYFR at 0200. (Scheurell, PA) 9680 via WYFR at 0300. (Bilbec, PA)

Togo: RT Togolaise, 5047 at 2151 in FF with African and reggae music, ID, news, anthem and off at 2202. (Lamb, NY)

Tunisia: RT Tunisienne, 11550 at 0500 with AA music and announcements. (Kershaw, TN)

Turkey: Voice of Turkey, 9445 at 2112. (Moser, PA) 0350. (Kershaw, TN) 11895 at 2310. (Rea, OH)

Ukraine: Radio Ukraine Int'l. 4795 at 2300 EE to 2358 close. (Rausch, NJ) 0100 on 9665//9685//17690. (Lamb, NY) 0125 on 7195//7240//9685//17605//17690. (Moser, PA)

United Arab Emirates: UAE Radio, Dubai, 11945//13675 at 0331 with news, IDs, weather, program on Islamic civilization. (Lamb, NY)

UAE Radio. Abu Dhabi, 21605 at 1629, close at 1630. (Tucker, GA)

United States: KCBI. 15375, reactivated. Gene Scott programming at 2110 to past 2203. Also 1930. (Paszkiwicz, WI) WFLA, Tampa, FL 25868 at 1729 with Rush Limbaugh program, commercials, news, sports, IDs. (Lamb, NY) (Used to cue its traffic airplanes so not formally a broadcast but they issue QSL cards for it nonetheless. Editor)

WHRI. 7315 with Radio Free Croatia program at 0000. (Jones, OH)

Uzbekistan: Radio Tashkent, 9540 at 1201, also at 1210 on 9715//15460. (Moser, PA)

Vatican: Vatican Radio. 7305 at 0308 with EE sign off, IS to 0315 and sign on in SS. (Sorensen, NY) 9605 at 0145 in SS. (Fenwick, ME) 11625 at 0458 with IS, ID, drums, into African service. (Lamb, NY)

Venezuela: Radio Continente, 5030 at 0119 in SS with Latin pops, commercial for insect spray, religious program and "Casino Continente" music show. (Lamb, NY)

Radio Tachira, 4830 in SS at 0109. (Fenwick, ME)

Radio Rumbos, 4970 in SS at 0510 with Venezuelan pops. (Kershaw, TN)

Ecos del Torbes, 4980 in SS at 0332, ID 0357, anthem and off at 0400. (Dybka, TN)

Vietnam: Voice of Vietnam, 12020 at 1250 with local music. (Moser, PA)

Yugoslavia: Radio Yugoslavia, 7200 at 2204. (Moser, PA) 9580 at 0209. (Lamb, NY) 11870 at 0300 with war news. (Jones, OH) 17710 at 1237 with news to sign off. (Sorensen, NY)

A tip of our collective hats to the following guys and gals this month: Marie Lamb, Brewerton, NY; Ed Rausch, Cedar Grove, NJ; Mark A. Northrup, Gladstone, MO; Louis Long, Wheeling, WV; Robert E. Tucker Jr., Savannah, GA; John Spencer Carson, Norman, OK; Jill Dybka, Nashville, TN; Bjorn F. Vaage, Granada Hills, CA; Michael Rea, Mc Donald, OH; Dino Bloisse, Jersey City, NJ; Sheryl Paszkiewicz, Manitowoc, WI; William Moser, New Cumberland, PA; Larry R. Zamora, Highland, CA; Charles Fenwick, S. Harpswell, ME; John Kershaw, Tullahoma, TN; Michael J. Bilec, Port Vue, PA; Richard A. Jones, Dayton, OH; Paul Jensen, Mason City, IA; John Miller, Thomasville, GA; Andreas Scheurell, Pittsburgh, PA; Steve Sorensen, Waverly, NY and Erroll Urbelis, Kings Park, NY. ■

Why I Hate the SINPO Code

We have some really dumb traditions in the SWL hobby, and for my money one of the dumbest is the "SINPO code" system for evaluating the quality of a received signal. What makes SINPO especially annoying for me is that its use is actively promoted by some stations; a few (such as Trans World Radio in Swaziland) require all reception reports to include a SINPO code report in order to receive a QSL. A thorough, detailed, but plain English report on the quality of their signal isn't enough—you have to include those five magic letters and numbers or no card. (I speak from experience; Trans World Radio in Swaziland denied me a QSL because I didn't include a SINPO rating.)

My goal in this month's column is simple. I want you to hate SINPO as much as I do and help stamp it out once and for all.

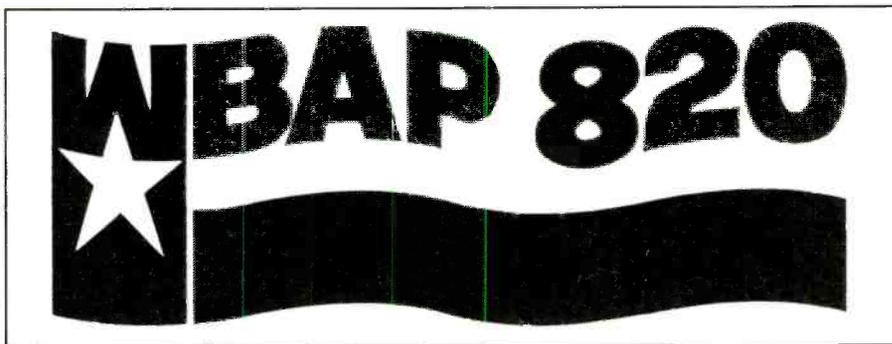
What is SINPO Anyway?

SINPO started with the best of intentions. It was supposed to be a shorthand way to give a complete signal report in a way that was more objective than a narrative description of the signal. But, as so often happens, this was a good idea that lost something in the translation to the real world.

SINPO is an acronym for Signal strength, Interference, Noise, Propagation, and Overall quality. Each of these factors is assigned a number from 1 to 5, with 5 being the best and 1 being so poor as to be unusable. For example, a signal that is S5 in SINPO is like the signal from a local AM or FM broadcast station. By contrast, a S1 signal is so weak that almost nothing can be understood; you can tell the signal is "there" but only scattered words or phrases can be understood. S3 is an average signal that doesn't pin your S-meter but is clearly understandable. The other SINPO factors follow the same pattern. An I5 signal would be one with no interference whatsoever while I1 would be a signal overwhelmed and rendered useless by heavy interference.

So What's Wrong With SINPO?

The idea behind SINPO is a good one. It was supposed to make reception report data more objective and complete than a simple "your signal was very good" type of evaluation. But SINPO is subject to what I like to call the "Dick Clark Fallacy." Remember the old American Bandstand television show, where host Dick Clark would



A bumper sticker from "Total Radio" WBAP/820 AM.

ask his teen guests to rate the latest record and the response would invariably be something like "I give it an 87 because it's got a good beat and you can dance to it"? SINPO has the same problem—just because you attach a number to something doesn't automatically make it more objective, precise, or meaningful. An opinion is an opinion whether you express it in words or with numbers. And that is why I don't like SINPO.

Let's suppose you tell a station in your reception report that "your signals were SINPO 43233." For those stations that require SINPO ratings in reception reports, that's enough to satisfy their requirements. But in terms of how useful it really is to the station, it leaves a lot to be desired.

Let's take that SINPO report apart piece-by-piece. The signal strength was rated as a S4, meaning it was above average. But what does that mean? We both could listen to the same signal, and I might give it a S4 while you might think it was only S3. Our opinions of the signal's strength are just that - opinions.

The I3 part of the report means there was a moderate amount of interference. But what was the cause of the interference? Was it from another station 5 kHz above or below the station's frequency? Was it from another station broadcasting to North America or from a domestic broadcaster in Latin America?

The N2 part is one that can be really misleading. The "noise" part of SINPO is supposed to refer to natural radio noise, like static due to lightning or random ionospheric "hiss." But a lot of SWL's use the N element to indicate noise from any source, even if it is from a television set, light dimmer, or other electrical device in their home. Those devices might put out a lot of noise, but there's not a great deal the station can do about them.

The P3 part should denote average propagation. But what is "average propagation"? Many SWL's tend to equate good

propagation with strong signals, but that isn't always the case. A major European broadcaster can put excellent signals into North America even during lousy propagation conditions, while a weak, barely audible signal from a rare Indonesian or Bolivian station can mean that propagation conditions were superb. As a result, an attempt was made a couple of decades ago to change the SINPO code to the "SINFO code," with the F standing for the number of fades in a minute. The trouble with that is how are those fades counted—"by ear" or by watching the S-meter? In a single minute or over several minutes?

The O part is where a lot of SINPO reports get really goofy. Stations receive many reports, like "SINPO 23334," that don't make a great deal of sense. Some listeners try averaging the first four factors to get the O part, while others go with their "feel" for the overall quality (for example, is the interference more troublesome than the propagation?).

So what can you do about SINPO? Try using plain English instead of some mystic numbers. Try this simple test: which of the following would probably be more valuable to the station that gets your reception report: "your signals were of fair to good strength, with a couple of slow, shallow fades every minute. There was some slight interference from a radioteletype station about 1 kHz above your frequency, and there was very little atmospheric noise" or "your signals were SINPO 34434."

That, in a nutshell, is why I hate SINPO. It doesn't give nearly enough useful information and is often misleading.

Try giving signal reports in plain English in your reception reports. You might still have to include SINPO when reporting to those stations, but also throw in a plain English report as well. Tell them that you are doing so because the SINPO report doesn't do their signal justice.

It is from little blows like this that mighty empires fall. ■

Identifying Receiver Desensitization

Disaster communications may pull together many emergency command vehicles, all located within a 100-yard perimeter of each other. While this may seem to be an efficient venue for everybody operating as a close-knit group to handle the disaster, all of these local radio sets may interfere with each other without the operators even knowing it.

The biggest problem of a combined emergency communications command post is receiver desensitization. And to make matters worse, unless you know you have it, you might not realize what the problem is. Worse yet, you may be thinking that the communications break-up is happening at the transmitter end of the circuit, but in reality it's happening right in front of you.

Desensitization is the blocking of an incoming on-frequency signal by a nearby transmitter and antenna system on an adjacent frequency within the same band. During receiver desense, the incoming signal might abruptly break up, or simply drop in intelligibility and carrier quieting.

To illustrate this, you are out at the disaster command post staging area with your ambulance, operating on 155.160 MHz. Your radio equipment runs full decode CTCSS, so all you hear are your own company units.

Approximately 100 yards away, another private ambulance company arrives in the staging area, operating on 155.220 MHz—a special emergency channel. They, too, operate with full decode CTCSS, and hear only their own units.

Realizing that there may be interference to your communications because you are on adjacent frequencies, each agency turns off CTCSS decode. You take a test transmission, and none of your signal is heard on their frequency with open squelch. They do the same thing, and you hear no change in the background white noise. Your two systems will probably work fine, separated by 100 yards, right?

Wrong. Your dispatcher, five miles away, is giving you instructions when all of a sudden their signal disappears on the air, into the white noise. You suspect that the dispatcher has radio problems, and ask for several repeats. The dispatcher acknowledges, and indicates that they can hear you perfectly.

Again, their transmission breaks up. The problem is receiver desensitization caused by the other ambulance company, on an adjacent frequency, transmitting while



Close proximity of emergency vehicles may result in receiver desense problems. These two units are too close together.



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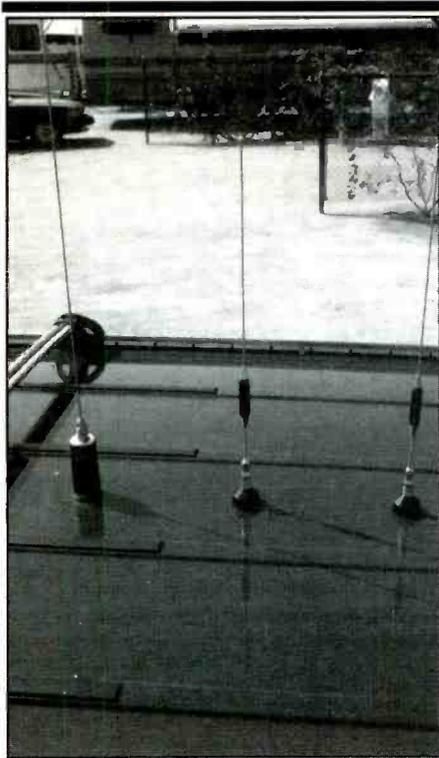
you're trying to receive. Even though they are not on the same frequency, their signal is close enough to swamp your mobile transceiver's "front end," causing the incoming signal to completely disappear into the white noise.

Now the fire department moves in, transmitting around 154 MHz. This time, your dispatcher drops in audio strength, and white noise rushes in, but you are still able to hear the communications. Here again

the problem is desense, but it is not as severe because the other station is separated by over 1,000 kHz in frequency.

You should not experience desensitization if other nearby stations are on completely different bands. For instance, a rural fire department may be on low band at 46 MHz, and that would not desensitize any radio on high band at 155 MHz or 460 MHz.

Desensitization may also be avoided by



These antennas are so close together they may lead to receiver overload desense

municipalities using UHF or 800 MHz trunked radio systems. On these two bands, your transmitter gives an offset from your receiver, giving you many megahertz of isolation to co-channel users even though you may be operating a UHF channel separated by only 25 kHz, while the other station transmits their signal 5 MHz higher than where you are receiving. On the 800 MHz band, it could be as much as 30 MHz higher. Operating half duplex with an offset of at least 5 MHz minimizes the problems of desensitization.

Handheld transceivers are extremely sensitive to other co-channel simplex systems. I have seen 40-watt mobile units desensitize an adjacent-channel handheld over 200 yards away. The closer the two units are in frequency within the same band, the higher the degree of receiver wipe-out.

Desensitization does not actually damage the other receiver. It just momentarily drops its sensitivity when the nearby in-band transmission from the other station is taking place. As soon as they un-key, your radio is back to normal. Putting your radio in CTCSS decode will do nothing to alleviate desensitization. The only way to get away from desensitization is to get away from the other transmitting station.

So next time you set up at a command post staging area, watch out for other in-band transmissions. If all of a sudden your receiving station suddenly drops in intensity, or drops out completely, it's probably desensitization. Get away from the pack, and you should be all set. ■

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27 MHz COMMUNICATIONS ACTIVITIES

Do I detect a hint of spring in the air? I think so. That means I'm in the market for a handheld CB. Outdoor activities and all that good stuff. My eyeball has fallen on the Realistic TRC-224, because it runs 3-watts, offers 3-channel operation, and some other good features, not the least of which being that (at \$59.95) it is rather inexpensive.

The TRC-224 has *Range Boost* modulation, a ceramic filter to increase receiver selectivity, a noise limiter, a high/low power switch, a low-battery indicator, and you can use it with an external antenna. The set's internal antenna is a center-loaded telescoping whip.

The unit takes 8 "AA" batteries (or 10 NiCd's) for power. It comes with crystals for Channel 14, and you can add crystals from a selection of 6 additional channels Radio Shack keeps in stock.

CB like these are ideal for camping, hiking, biking, and other things of the coming months.

A Look Back

This month we will look at one of the more unusual pieces of 27 MHz equipment to show up in the early 1960's. This was the Executive 1500 from International Crystal, Oklahoma City. It wasn't a transceiver, it was a complete AM/CW station, including the antenna. It wasn't exactly CB, either, but it was legal, and very clever.

FCC Rules Part 15, which govern unlicensed low-powered operation, are what let the Executive 1500 remain legal. It operated with very low power, and was intended for the serious 27 MHz DX hobby experimenter. The unit operated on the radio control channels between some of the CB channels (26.995, 27.045, etc.) and it used flat side (horizontal) signal polarization. This was an attempt to minimize interference from CB signals.

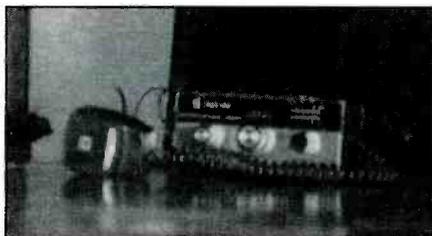
The transmitter was mounted on top of the mast, right at the antenna. This eliminated line losses. Since Part 15 restricts the length of the antenna, International Crystal's antenna was a dipole made of fiberglass with the radiating elements wound in a helical configuration to keep their physical length short.

In other words, every possible trick was put to use to give the signals a chance at being viable, while remaining fully legal. The station put out a good signal, especially on CW. A minor cult of Executive 1500 users existed, and many DX contacts were reported.

International Crystal promoted this station package (which included everything)



This was a complete 2-way legal hobby station brought out in the 1960's. A interesting concept that wasn't a success.



Hank Jeleniewicz located this Johnson 123-SJ at a flea market.

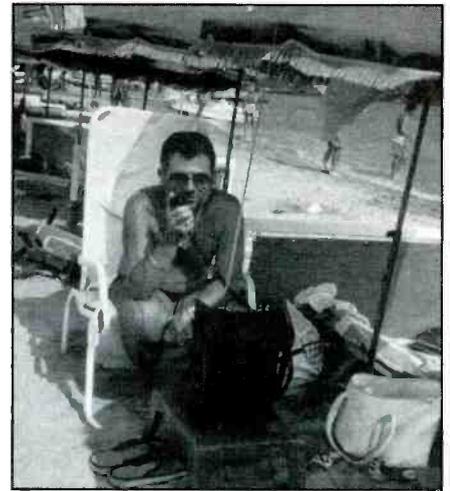
for a year or two. They hoped it would catch on in a big way. Unfortunately, it never stirred up enough interest to justify keeping it in production. It was a good idea whose time had not yet come. It's still a good idea, which is a good transition point for our next topic.

49 MHz—What?

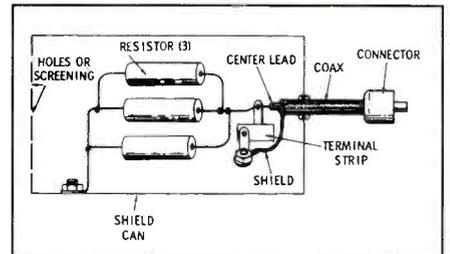
From St. Louis, Mo., we got a letter from Henry Hampel. Henry feels that the 49 MHz band has some possibilities for the hobbyist that nobody has done much about.

Steve Engelman (*The Highwayman*), of Nashville, Ill., tells us that he has heard rumors about a new FM radio much like CB on 49 MHz. He asks if we know anything about a service like this being considered by the FCC.

Low-power two-way FM transceivers are allowed on 49 MHz, and no license is required. There are no restrictions on the types of communications. There are power, antenna, and equipment restrictions, however. This isn't anything new, such stations have been active for years. There are obviously some potentials for hobby use of the 49 MHz band that remain untapped. If readers indicate a significant interest in 49 MHz hobbying, we will try to pursue it further. Let us know.



Here's a photo of Georges Wach, SSB Network member SSB-73D, of P. O. Box 6, 92173 Vanves Cedex, France. Yes, folks, he's operating a portable on the beach at Monte Carlo!



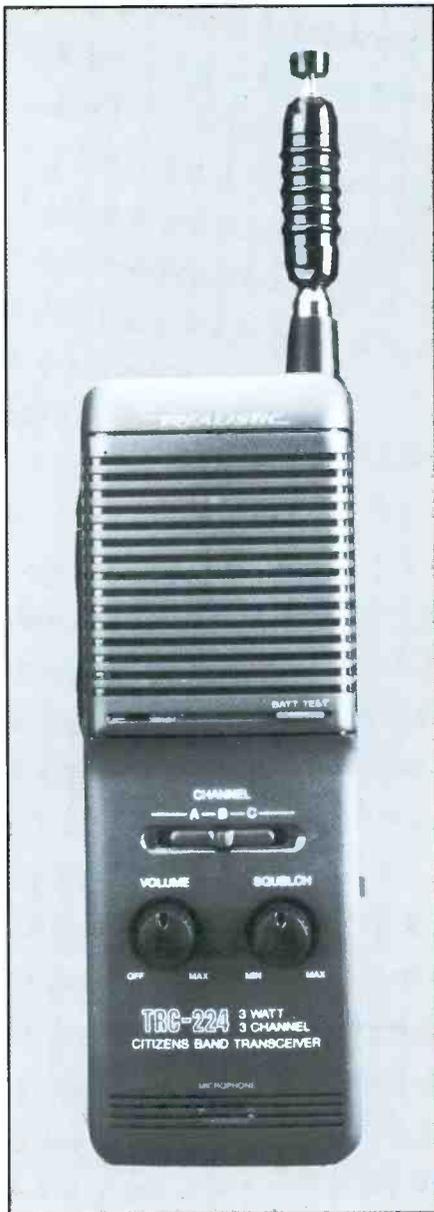
Build this simple dummy load to keep your CB rig from busting a gut while it's being tested, repaired, or modified.

Steve Engelman also asks how to get information about the SSB Network. Easy! Send a request to them, and enclose a long SASE (US 29 cent stamp) for the information to be returned to you. Their address is: SSB Network, P.O. Box 908, Smithtown, NY 11787.

Help Wanted Section

We are beginning to get a number of requests from readers looking for literature on older CB radios. Certainly, we are pleased to do what we can in helping readers locate this material.

The E. F. Johnson 123-SJ is a set from a flea market that would be complete with its operating manual. It works fine! Would you believe it was purchased for only \$10? Contact: Hank Jeleniewicz, 74 Tonnelle Ave., Jersey City, NJ 07306.



Realistic's handsome TRC-224 three-watt-unit.

Anybody out there have a manual for a Pearce-Simpson Simba SSB? This is another flea market find, but we aren't sure of its operating status. Contact: Roy E. Waite, Tomigaya Grand 301, 2-19-5 Tomigaya, Shibuya-ku, Tokyo 151, Japan.

There's a former orphan Pinto 23-B in a new home. It is now waiting for operator or tech manuals. This is a base station, and its loving new owner hopes to find out something about the set. Contact: Emory H. Chambers, Registered Monitor KFL4GE, 1910 Juniper Drive, Edgewater, FL 32141.

Any assistance you can offer these readers would be appreciated.

Channel Chatting

CB Channel 17 is used by truckers and 4-wheelers heading north and south on I-



When not sunning himself in Monaco, Georges, SSB-73D, operates this base station from his home QTH in France.

5 from Canada to Mexico. In fact, roads within about 10 miles east and west of I-5 also use Channel 17.

This information from Cecil L. Wingard, Stockton, Calif.

Comment on the frequencies above Channel 40 arrived from J. R. Riner, who is President of the Southeast Georgia CB Club. The opinion of this reader is that these frequencies should be opened up for legal CB use in the USA, possibly restricted to SSB operation.

He feels that in many areas of the world, these frequencies are authorized for two-way hobby communications. Therefore they are generally useless for other types of activity. The FCC is clearly unable to adequately keep hobbyists in the USA from using frequencies above 27.405 MHz, even after 30 years of trying. Riner thinks it is now time for the agency to take a realistic approach and finally allocate these frequencies for this use in order to conform them to their established worldwide and US usage. Riner feels that the majority of those who operate above Channel 40 without FCC sanction would prefer to do so with a set of rules and the agency's blessings.

What do readers think of this concept?

Who's A Dummy?

When you have reason to test your transmitter during tests, repairs, or modifications, it should not be connected to an antenna except for extremely brief announcements. Yet, sometimes it is necessary during these times to have the transmitter on for longer periods. As you may know, it is not at all healthy for your trans-

mitter to send out a signal without a suitable load connected to the CB rig's antenna terminal. Severe damage to the transmitter could occur.

If you don't want to connect an antenna and have a lot of locals angry at having to listen to the interference from your test signals, you need a way of turning on your transmitter without either damaging its components or sending out a signal. This is accomplished by using a dummy load, which you attach to the CB set's antenna connector.

An ordinary No. 47 pilot lamp will work, but it provides only an approximate match into a transmitter with a 50-ohm output impedance. Since the filament acts as a coil, it can't perfectly substitute for a normal transmission line and antenna. An accurate dummy load, however, can be easily constructed from a couple of resistors.

As shown in the illustration, the dummy load is made of three resistors wired in parallel. Each resistor is rated at 150 ohms, with a tolerance of 5 percent and a power rating of 2 watts. They are wired and soldered together by their own leads. The total resistance of this combination is 50 ohms, which is a good match to a CB radio. The two free leads of the dummy load are soldered to a short length of coaxial cable which is connected to the antenna socket.

This will handle up to about 6 watts of AM power, which will do fine for legal CB rigs. The dummy load will get warm since it is converting RF energy into heat. For this reason, allow a slight air space between adjoining resistors when wiring them to-

(Continued on page 42)

POP'COMM'S World Band Tuning Tips

April—1993

Freq.	Station/Country	UTC	Notes	Freq.	Station/Country	UTC	Notes
2390	La Voz de Atitlan, Guatemala	0230	SS	5970	REE, Spain, via Costa Rica	0000	SS
2490	R. Oito de Setembro, Brazil	0059	close, PP	6000	R. Guaiba, Brazil	0000	PP
3200	Trans World Radio, Swaziland	0300		6010	Radio Mil, Mexico	0400	SS
3205	R. Ribeirao Preto, Brazil	0900	PP	6020	Radio Netherlands	0100	
3215	R. Oranje, South Africa	0300	EE/Afk	6040	Deutsche Welle, via Antigua	0100	
3231	R. Madagasikara, Madagascar	0330	unifd lang.	6055	R. Sweden	2200	
3255	ELBC, Liberia	0600	s/on	6060	Radio Havana Cuba	0600	
3260	R. Madang, Papua New Guinea	1100		6085	Deutsche Welle, via Canada	0530	GG
3270	Namibian Bc Corporation	0300		6085	Radio San Gabriel, Bolivia	1000	SS
3275	R. So. Highlands, Papua New Guinea	1200		6115	R. Universidad, Mexico	0500	SS
3285	LV del Rio Tarqui, Ecuador	0900	SS	6120	R. Japan	1130	via Canada
3290	R. Namibia	0500	unifd lang.	6130	CHNX, Canada	24 hrs	
3315	SLBS, Sierra Leone	0600		6135	R. Aparecida, Brazil	2330	PP
3320	R. Orion, South Africa	0245		6135	Swiss Radio Int'l	0230	
3325	R. Maya, Guatemala	1030	local lang.	6140	ABC, Perth, Australia	1000	
3335	TWR, Swaziland	0345	s/off	6150	Radio Record, Brazil	0000	PP, //9505
3365	R. Rebelo, Cuba	0400	SS	6155	Radio Austria Int'l	0830	
3380	R. Chortis, Guatemala	0230	SS	6165	RDF Nat. Tchadienne, Chad	2200	close, FF
3384	Icelandic State Broadcasting Service	0330	Icelandic	6180	R. Nac. Amazonas, Brazil	2200	PP
3395	Channel Africa, S. Africa	0400		6205	Radio Estrella, Dom. Rep.	0100	SS, irr.
3980	VOA via Germany	0600		6210	Croatian Radio	0000	Croatian/EE
3995	Channel Africa, S. Africa	0300		6220	Radio Bosnia-Hercegovina	0200	irregular
4000	RRI, Kendari, Indonesia	1100	II	6250	RN Malabo, Eq. Guinea	2200	s/off, SS
4331	R. Horizonte, Peru	1100	SS	6329	Estacion C, Peru	0100	SS
4460	CPBS-I, China	1300	CC	6340	Radio Muhabura (clandestine)	0400	anti-Rwanda
4485	R. Pajaten, Peru	0130	SS	6560	R. Pyongyang, N. Korea	1000	JJ
4649	R. Santa Ana, Bolivia	0100	SS	6670	R. Bac Tai, Vietnam	1200	local
4725	Voice of Myanmar (Burma)	1130	Burmese	6803	Ondas del Mayo, Peru	1000	SS
4754	Rdf. Maranhao, Brazil	0100	PP	6910	R. Africa 2000, Eq. Guinea	2200	close
4760	R. Frontera, Venezuela	0130	SS	7105	RTVC, Congo	0600	FF
4765	RTVC, Congo	0355	s/on, FF	7110	V of Ethiopia	0330	local lang.
4775	R. Tarma, Peru	0500	s/off, SS	7115	V of Pujiang, China	1130	CC
4795	R. Nova Difusora, Brazil	0758	s/on, PP	7125	IRRS, Italy	0600	
4800	R. Lesotho	0330	local	7125	R. Vedo, Russia	0700	RR
4832	R. Reloj, Costa Rica	0200	SS	7170	ORTS, Senegal	0700	FF
4845	ORT, Mauritania	0600	FF	7190	Rep. of Yemen Radio	0300	s/on, AA
4850	CRTV, Cameroon	0430	FF/EE	7200	Radio Omdurman, Sudan	0252	s/on
4850	R. Luz y Vida, Ecuador	0300	SS	7220	All Union Radlo, Russia	0100	RR
4864	RRI-Ambon, Indonesia	1200	II	7230	Channel Africa	0500	FF
4875	V of Jinling, China	1100	CC	7235	Deutsche Welle, Germany	0400	AA, via Malta
4875	La Cruz del Sur, Bolivia	1030	SS	7240	R. Australia, Brandon	0800	pidgin
4879	R. Nac. Espejo, Ecuador	0130	SS	7255	V of Nigeria	0500	s/on
4890	R. France Int'l, Gabon relay	0400	FF	7265	Sudwestfunk, Germany	0100	GG
4890	NBC, Papua New Guinea	1100		7265	VOA Relay, Botswana	0300	sign on
4900	R. Centinela del Sur, Ecuador	1100	SS	7275	ELBC Liberia	0652	sign on
4904v	R. Relogio Federal, Brazil	0230	PP	7280	Voice of the Strait, China	0930	CC
4915	Voice of Kenya	0300		7300	R. Ala, Russia	1500	sign on, RR
4915	R. Anganguera, Brazil	0030	PP	7305	Vatican Radio	0200	SS
4915	GBC, Ghana	0600		7345	R. Czechoslovakia	0100	
4920	R. Quito, Ecuador	0300	SS	7365	KNLS, Alaska	0800	
4945	Channel Africa, S. Africa	0357	sign on	7417	V of Vietnam	1100	
4950	Voice of Jinling, China	1200	CC	7450	Voice of Greece	2300	SS
4960	R. Cima Ciento, Dominican Republic	0100	SS	7465	Reshet Bet HS, Israel	0100	Hebrew
4975	Super Radio Tupi, Brazil	0000	PP	7510	KTBN, Utah	0400	
4980	Ecos del Torbes, Venezuela	0200	SS	7550	R. Korea, S. Korea	2230	
4990	R. Nigeria, Lagos	2230		9170	R. Omdurman, Sudan	0255	sign on, AA
4990	Hunan PBS, China	1200	CC	9265	Icelandic Ntl Bc Svc	0730	EE
5004	R. Nacional, Eq. Guinea	2130	SS	9345	R. Pyongyang, N. Korea	1300	
5020	LV de Sahel, Niger	0500	FF	9400	R. Azadi/Liberty of Iran	0230	Farsi?
5025	Bhutan Broadcasting Svc	1230		9425	KFBS, Salpan	1500	RR
5030	R. Continente, Venezuela	0330	SS	9445	Voice of Turkey	2330	TT
5035	Rdf. Centrafricaine, Cent Af Rep.	0430	FF	9450	R. Yerevan, Armenia	2245	
5040	La Voz del Upano, Ecuador	1199	SS s/on	9475	R. Cairo, Egypt	0200	
5050	La Voz de Yopal, Colombia	0130	SS	9495	KHBI, No. Marianas	1400	Monitor Radio
5075	Caracol, Bogota, Colombia	0400	SS	9505	R. Yugoslavia	2200	
5280	Radio Guaiba Barrea, Brazil	0000	PP	9510	R. New Zealand	0930	
5305v	R. Lider, Peru	1000	s/on, SS	9530	R. Vilnius, Lithuania	0000	
5800	R. Nueva Cajamarca, Peru	1000	SS	9535	Trans World Radio, Bonaire	0300	
5882	Vatican Radio	0100		9540	R. Tashkent, Uzbekistan	1200	
5900	R. Flanders Int'l, Belgium	2200	ex-BRT	9545	R. Tirana, Albania	0530	sign on
5935	R. Latvia Int'l	2130		9555	R. Portugal	0230	

Freq.	Station/Country	UTC	Notes	Freq.	Station/Country	UTC	Notes
9560	Radio Finland	0230		11970	R. Havana Cuba	0130	
9560	R. Jordan	1600		11980	R. Ukraine Int'l	0230	Ukrainian
9565	R. Universo, Brazil	0200		11985	UAE Radio, Dubai	2100	AA
9570	R. Portugal	0230		12015	Radio France Int'l, via Gabon	1600	
9575	Radio Medi Un, Morocco	0730	FF	12020	V of Vietnam	1100	
9580	R. Tirana, Albania	0230		12050	R. Cairo, Egypt	0300	AA
9580	R. Yugoslavia	0100		12060	R. Ukraine Int'l	0130	unid lang
9595	R. Tanpa, Japan	1000	JJ	12085	R. Damascus, Syria	2005	
9600	R. UNAM, Mexico	1300	SS	13605	Capital Radio, via Abu Dhabi	UAE	2230
9605	UAE Radio, Abu Dhabi	2230		13620	R. Kuwait	2000	
9610	ABC, Perth, Australia	1200		13625	KHBI, Saipan	1400	Monitor Radio
9615	KNLS, Alaska	1400	sign on	13635	Swiss Radio Int'l	2130	
9625	Radio Fides, Bolivia	1030	SS	13650	R. Pyongyang, N. Korea	0000	
9640	VOIRI, Iran	1500	sign on, Farsi	13660	Radio France Int'l	0600	via Hungary
9645	Faro del Caribe, Costa Rica	0400	SS	13660	R. Havana Cuba (USB)	0200	USB, EE
9665	Radio Marumbi, Brazil	2300	PP	13680	Rep. of Iraq Radio	2030	AA
9665	R. Ukraine Int'l	2200	0100	13685	Swiss R. Int'l	0700	
9695	Channel Africa, S. Africa	0500		13710	R. Vedo, Russia	1500	RR
9695	R. Sweden	0200		13715	R. Czechoslovakia	1600	s/off
9700	R. New Zealand	1030		13760	R. Pyongyang, N. Korea	0000	
9705	R. Portugal	0230		13855	INBS, Iceland	2300	Icelandic
9715	R. Tashkent, Uzbekistan	1330		15010	V of Vietnam	1230	
9725	BBC via Uzbekistan	1330	sign on	15020	All India Radio	1400	local langs.
9730	Channel Africa, S. Africa	0159	s/on	15084	VOIRI, Iran	0430	Farsi
9735	R. Nacional, Paraguay	2300	SS	15090	Vatican Radio	2245	s/on
9745	R. Cairo, Egypt	0200		15100	FEBC, Philippines	1400	EE, others
9746	R. Bahrain	2000	AA, QRM-HCJB	15110	REE, Spain, via Costa Rica	1900	
9750	R. Korea, So. Korea	1200		15135	R. Ukraine Int'l	2100	
9750	R. Canada Int'l	0530		15140	R. Nacional, Chile	1730	SS, irr.
9755	R. Monte Carlo, Monaco	0400	AA	15165	R. Tashkent, Uzbekistan	1400	Uzbek
9760	R. Tirana, Albania	0130	Albanian	15180	Rep. of Iraq Radio	2300	AA
9765	V of Mediterranean, Malta	0600		15185	R. Finland Int'l	2300	
9770	China R. Int'l, via Mali	0000		15195	R. Japan	0500	
9815	Radio Havana Cuba	0100	tests	15200v	R. Bangladesh	1230	EE
9820	KTWR, Guam	1500	CC	15205	VOA relay, Tangier	1800	
9820	FEBC, Philippines	1400	CC	15220	Channel Africa, S. Africa	0600	(ex R. RSA)
9835	R. Budapest, Hungary	0200		15265	Radiobras, Brazil	1800	
9855	China Radio Int'l	1300	JJ	15270	Deutsche Welle via Rwanda	2330	GG
9870	BSKSA, Saudi Arabia	1800	AA	15300	R. Cairo, Egypt	1500	AA
9885	Swiss Radio Int'l	0200		15325	R. Japan via Fr. Guiana	0300	
9900	R. Cairo, Egypt	2200		15340	Iraq Rep. Broadcasting	0230	EE/AA
9950	All India Radio	2200		15340	R. Japan, via Gabon	2000	RR
9965	R. Caiman, anti-Cuba	1300	SS	15345	Trans World Radio, Bonaire	1230	
9977	R. Pyongyang, N. Korea	1100	s/on	15345	RTM, Morocco	1400	Berber
10990	BSKSA, Saudi Arabia	1400	AA (feeder)	15345	RAE, Argentina	1300	SS
11530	Voice of Hope, Lebanon	2000		15355	R. Czechoslovakia	0400	
11550	RTT Tunisia	1800	AA	15360	Deutsche Welle, Germany	2100	
11570	R. Pakistan	1600		15375	KCBI, Dallas	1800	
11620	All India Radio	2000		15400	UAE Radio, Dubai	0345	
11625	Vatican Radio	0500		15400	Radio Finland Int'l	1500	
11635	R. Netherlands via Madagascar	0100		15420	BBC via South Africa	1745	sign on
11650	China Radio Int'l (R. Beijing)	1500	RR	15425	R. Aum Shinrikyo, Japan	2030	via Russia
11665	R. Cairo, Egypt	1430	AA	15445	SLBC, Sri Lanka	2330	
11680	China Radio Int'l, via Fr. Guiana	0400		15425	ABC, Perth, Australia	0100	
11685	R. Ala, Russia	0200	RR	15505	Swiss Radio Int'l	1500	
11705	R. Sweden	2330		15505	R. Kuwait	2245	AA
11710	RAE, Argentina	0100		15555	R. Pakistan	1620	slow EE
11715	R. Korea, S. Korea	1030	via Canada	15570	R. Ukraine Int'l	1500	
11720	R. Sofia, Bulgaria	0300		15575	BBC via Cyprus	1300	
11725	R. Korea, S. Korea	1000	SS	15580	V of Freedom, via R. Moscow	1330	anti-Viet
11730	BSKSA, Saudi Arabia	1430	AA	15615	Rashuth Hashidur service, Israel	1700	Hebrew
11740	R. Portugal	1900		15750	R. Russia	1800	RR
11750	BBC Singapore relay	1200		17515	V of Greece	1230	
11755	R. Finland Int'l	0130		17535	HCJB, Ecuador	0000	USB
11760	R. Tbilisi, Georgia	2130	RR/EE	17620	Radio France Int'l	1300	FF
11765	R. Beijing, China	2100	SS	17635	Swiss Radio Int'l	1700	
11780	R. Vilnius, Lithuania	2300		17715	R. Alma Ata, Kazakhstan	2030	
11790	VOIRI, Iran	1200	Urdu/EE	17725	V of the Great Homeland, Libya	2100	AA
11795	R. Denmark, via Norway	2300		17730	Vatican Radio	0628	s/on
11800	RAI, Italy	0100		17730	R. Alma Ata, Kazakstan	1830	
11805	KTWR, Guam	0930		17740	R. Yugoslavia	1200	
11810	R. Jordan	1400	AA	17740	R. Sweden	1300	EE
11820	R. Sweden	0100		17745	Radio Portugal	1330	PP
11825	R. Tirana, Albania	2200		17770	R. New Zealand Int'l	0445	
11830	Radio Romania Int'l	0158	sign on	17770	R. Havana Cuba	1800	SS
11830	R. Anhanguera, Brazil	0200	PP	17775	R. Jamahiriya, Libya	2300	AA
11840	R. Tirana, Albania	0230	s/on	17815	R. Tashkent, Uzbekistan	1200	EE
11855	R. Canada Int'l	1330		17815	RTV Morocaine	1700	
11860	R. Iraq Int'l	0400		17860	R. Moscow	2330	
11870	R. Yugoslavia	0040		17860	Qatar Bc Service	1300	AA
11870	Adventist World Radio, Costa Rica	0100	SS/EE	17870	R. Sweden	1500	
11885	Broad Corp of China, Taiwan	0000	CC	17875	R. Canada Int'l	2130	
11910	R. Budapest, Hungary	0200		17880	R. Finland Int'l	1300	
11925	V of Mediterranean, Malta	1400		17895	HCJB, Ecuador	24hr	SSB
11930	R. Marti	1800	SS to Cuba	18930	WHRI, Indiana	1600	
11945	R. Space, Russia	1500	RR	21490	Radio Austria Int'l	1430	
11945	Iraq Republic Broadcasting	0030	AA	21515	Radio Netherlands via Bonaire	1730	
11955	Voice of Turkey	0400	TT	21625	Radio Sweden	1330	
11955	BBC relay, Oman	0130		21695	R. Ukraine Int'l	1530	Ukrainian
11960	RTV Malienne, Mali	0900	FF	21820	Swiss Radio Int'l	1500	s/on
11965	V of the UAE	1800	AA				

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CIRCLE 46 ON READER SERVICE CARD

CB Scene (from page 39)

gether. This allows for air circulation for cooling. Keep all leads as short as possible to prevent a coil effect that could upset the 50-ohm impedance match to the transmitter.

The shield for the dummy load can be any convenient size. Bolt one end of the resistors right to the side of the can, while the other end goes to a terminal that keeps it insulated from ground. The center lead of the coax goes to the part that is insulated from ground. Connect the coax shield to ground, which is the mounting foot of the terminal strip. Use a rubber grommet at the hole where the coax enters the can to protect the cable from being damaged at that point.

The other end of the can needs a couple of small holes for cooling purposes. You can build this project in an ordinary tin can if you want, using the opened end of the can as the heat-escape end. If you do this, cover over the open end with copper screening or metal with some small holes in it in order to prevent any unwanted escape of RF energy.

Come back and catch us here next month. Send us your photos, QSL's, thoughts, questions, local CB channels. We will be looking for you on the channel. ■

Q S L

100 %

The Pharoah



KEN. E.W.07.
21 HEDGEFIELD VIEW
DUDLEY
CRAMLINGTON
TYNE & WEAR
NE23 7QL
ENGLAND

Black Rabbit 028

QSL of Ken. "The Pharoah," a CB'er in England. It was sent to us by Pat Burke, SSB Network member SSB-349A, of Ft Wayne, Ind.

THE FUTURE OF AMATEUR COMMUNICATIONS

Once in a lifetime, a transceiver is introduced that's so extraordinary and innovative that it opens a totally new era in HF communications. ICOM's pacesetter IC-781 proudly exhibits that hallmark achievement with futuristic designs and features of true legendary proportions. Whether DX'ing, contesting, pioneering new interests or enjoying unquestionable top-of-the-line performance, the IC-781 is indeed today's standard of excellence!



Multi-Function Five Inch CRT. Displays frequencies, modes, memory contents, operating notes, RIT, two menu screens, plus a panoramic view of all signals in a selected range. A portion of the screen also serves as a display for data modes like RTTY, AMTOR, and PACKET.

Dual Width Noise Blanker includes MCF filter plus **level and width controls** to eliminate pulse and woodpecker noise with minimum adjacent-signal interference.

Unique Spectrum Scope. Continuously indicates all signal activities and DX pileups with your operating frequency in the center. Selectable horizontal frequency spans of 50, 100, and 200kHz for each side of the frequency you're listening to. Vertical range indicates relative signal strengths. A contesteer's dream!

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CIRCLE 54 ON READER SERVICE CARD

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.

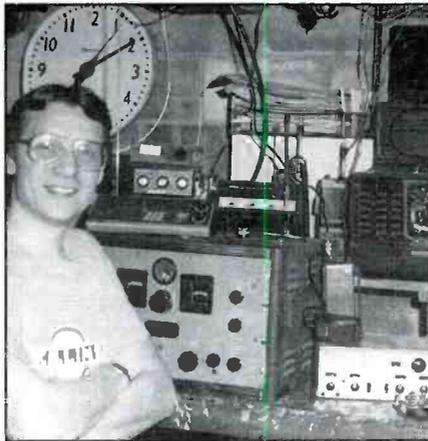
Each month we will select one entry and run it here. You need submit your entry only once, we'll keep it on file. All submissions become the property of *Popular Communications*, and none can be acknowledged or returned. Entries will be selected for use taking into consideration if the story they relate 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.

Our April Winner

This month our winner is David Wheeler



David Wheeler, KA2YMU, displays a few of his restored radios. The Zenith Transoceanic is the black set in the center.

er, KA2YMU, of Hudson, New York. David wrote:

"At the age of 10 I saw an amazing radio in use at our neighbor's home. It was a wondrous device covered with buttons and knobs, and it could pick up strange fre-

quencies and stations. I was told that it was a 1950's vintage Zenith Transoceanic. Better than that, I was treated to several demonstrations of what could be heard on this radio. That's all it took. I was hooked.

"Not that long after, the Zenith had been relegated to gathering dust on a shelf in their cellar. I asked my neighbor if it was for sale. Knowing the interest I had shown in the radio, he winked at my father and asked if \$5 would be a good price. I had never wanted anything so badly.

"I did yard work, took out the trash, returned bottles, and finally assembled the required \$5. I lugged home the radio and cleaned it up. For at least a week it was barely turned off. I started reading DX magazines, sending for QSL's, and learning about the hobby. My friend, Fred, had a Knight-kit Star Roamer and we eagerly compared loggings to see whose were the best.

"An interest in CB radio eventually set in, and later the desire to get a ham license. I collect and restore old radios. And, after thirty years, I still have my Zenith Transoceanic in mint condition. Every once in a while, I give it a listen just for old time's sake."

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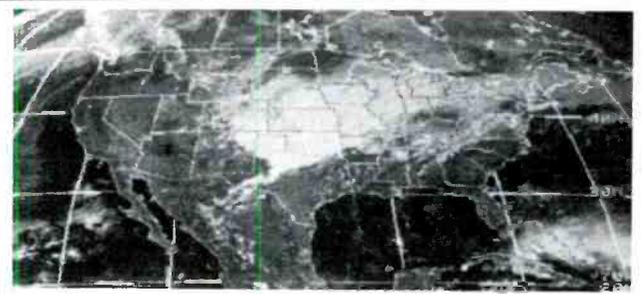
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CIRCLE 16 ON READER SERVICE CARD

Weather Satellites

You no doubt, take the services of the weather satellites for granted, as I do. If you have ever watched a local TV weather forecast you have been watching weather maps produced and transmitted to ground stations by weather satellites. These satellites are called GOES (Geo-stationary Operational Environmental Satellites) and are in a 22,000 mile high geostationary orbit. You can put together your own WxSat station and receive pictures from space with relative ease.

The GOES spacecraft sends pictures of the earth's surface in FAX mode on a frequency of 1,691.0 MHz (1.69 GHz). To receive these transmissions you will want to use a dish antenna of at least four feet in diameter, larger ones like your 10 foot TVRO dish work even better. Another option is to use a GOES satellite high gain loop yagi, available from Vanguard Electronic Labs, Dept. PC, 196-23 Jamaica Ave., Hollis, NY 114233.

Frequencies in the GHz range are challenging for the hobbyist to handle because of the nature of the high line losses and losses at connectors, etc. For this reason it is more practical and economical to downconvert the 1.69 GHz signal to 137.5 MHz. 137 MHz is the location of the Polar orbiting weather satellites.

If you decide to use a dish antenna you will need to build a "Coffee Can" feed horn to attach to your dish. It can be mounted easily beside your present feed horn. You will also want to use low loss coax. If the distance between your dish and receiver is near or over 100' you will probably need a pre-amp in the line.

The Polar orbiting weather satellites actually use a sun-synchronous orbit that keeps them over the sunlit portion of the earth, while maintaining an altitude of approximately 900 miles. They transmit images in Slow Scan TV mode (SSTV). This service is called APT or Automatic Picture Transmission. This signal is 50 kHz wide. A normal Fast Scan TV transmission would take up over 18 MHz of bandwidth. The entire weather satellite band is only 1 MHz wide. For this reason it is important to have a receiver which has an IF or bandwidth to match that of the satellite. If the bandwidth is wider than the satellite transmission, the added white noise that is received will cause snow in the received picture and lower the quality of the images considerably.

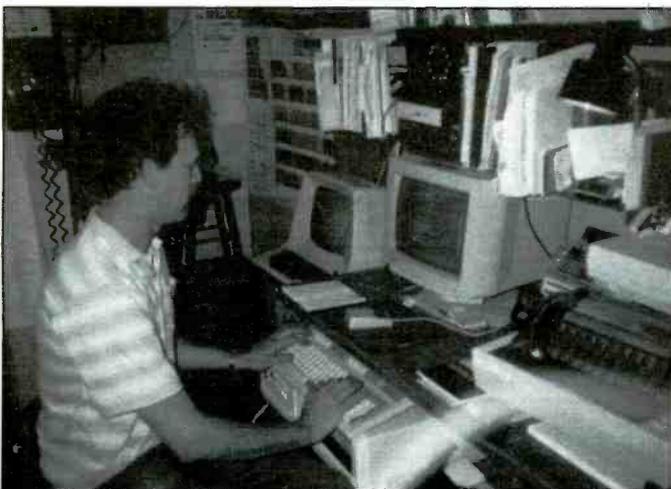
The polar orbiting satellite used by the US is called Advanced Tiros N. It uses the 50 kHz bandwidth. The GOES satellites use 30 kHz as do the Russian Polar orbiting satellites called Meteor. I have found that good results will be obtained with a dedicated weather receiver like the Vanguard WePIX 2000-B. The polar orbiting satellites have simpler antenna requirements. A single element horizontal twist antenna is all that is required to get great pictures. Vanguard's APT-2 has a built-in pre-amp, but you can also build your own antenna as Ron Burke did. This design is from Ralph Taggart's *Weather Satellite Handbook*. This handbook also gives detailed instructions for a "Coffee Can" feed horn, too.

You next need an interface, TNC, Multi-Mode modem or a specialized Multi-fax

Polar Orbiting Satellites		
Name	Freq.	Country
NOAA9	137.620 MHz	USA
NOAA 10	137.500 MHz	USA
NOAA12	137.500 MHz	USA
METEOR 3	137.800 MHz	Russia
METEOR 2-20	137.850 MHz	Russia
METEOR 3-4	137.300 MHz	Russia

board to connect to your computer. In the case of the Multi-fax board you will need an IBM Clone. You can get a dedicated board for your IBM from OFS Weather FAX (1-919-847-4545) or from Vanguard. You may already have a Multi-mode TNC like the MFJ-1278. When the TNC's are connected to your computer with the appropriate software (available from MFJ and Vanguard), you're ready to tune the satellites and get some great pictures.

The GOES geo-stationary weather satellites carry four systems onboard. The Visible-Infrared Radiometer and Atmospheric Sounder transmits images to ground stations where they are combined with images from the Polar orbiting satellites. These combined images are then retransmitted to the waiting GOES spacecraft. From there they are transmitted to ground stations in facsimile mode or FAX, known as WeFAX. A second onboard system monitors the earth's magnetic fields. GOES spacecraft can also monitor and relay data from mobile and stationary weather platforms. Perhaps the most important system on GOES is its Search & Rescue transponder. This satellite can-

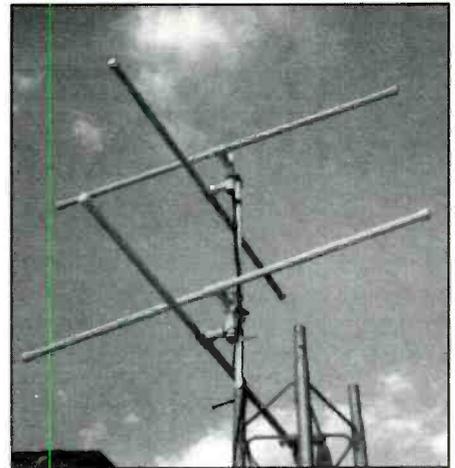
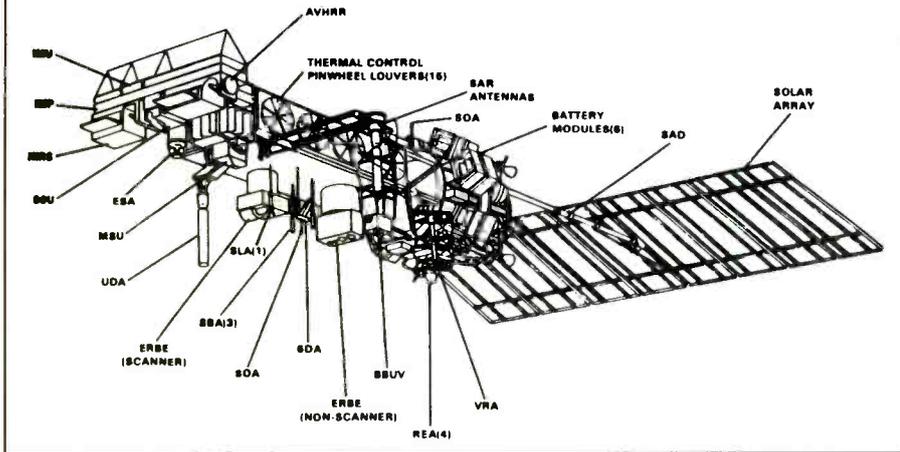


Ron Burke (KB9DJA) colorizing a map.



Coffee Can feed horn mounted on KB9DJA's TVRO dish.

Advanced TIROS — N



KB9DJA's homemade Polar Satellite antenna.

not locate emergency transmitters like the Polar orbiting satellites can, but it can relay emergency signals to the Advanced TIROS-N and can relay signals from the Tiros to ground stations.

The Polar orbiting Advanced Tiros-N satellite carries 6 systems. An Advanced High Resolution Radiometer (AVHRR) and an Infrared Imager. A thermal sounder measures temperature and moisture levels throughout the various layers of the earth's atmosphere. The satellite also monitors variations in the earth's magnetic fields and temperature changes brought about by solar activity. The French provide a radio-location and data collection system called ARGOS (See Dec. '87 issue of SV). The Argos transponders collect data on radio equipped trucks, boats and aircraft. This will tell company executives just where on planet earth their equipment is at any given moment. It also collects weather data from remote, fixed or mobile platforms. It can even monitor movement of radio equipped wildlife.

The Polar orbiting weather satellites are the backbone of the International Search and Rescue effort. The Soviet and US satellites can locate emergency transmitters by measuring the change in transmit frequency as they, the spacecraft, move across the sky. This sampling of the Doppler Shift allows them to pinpoint the locations of the transmitter and ground stations then dispatch rescue units from military bases, etc.

Remember, you will need a 4' or larger dish with a "Coffee Can" (homemade) or a "store bought" feed horn for 1.691.0 MHz for GOES reception and a down-converter. To use the Advance TIROS-N Polar orbiting satellites you will need a twist antenna. From this point the systems are identical. A 137 MHz receiver, with proper bandwidth specifications, a modem (TNC or IBM Multi-FAX board) and appropriate software for the computer you already own, of course.

If you are able to attend the Dayton

Hamvention this year in Dayton, Ohio, you will want to look in on the Weather Satellite Forum. It is put together by Dave Latch, N9MCE, an old salt with weather satellites. It is well worth the effort to catch this forum. If you want more info on Vanguard equipment, they sell complete packages or separate pieces. If you would like more infor-

mation on weather satellites dial up their BBS at (718) 740-3911 or 468-2720. Tell them POP'COMM sent you.

Remember your questions, photos, comments and suggestions are always welcome. I can also be reached at N9CUE & KK9G IN. USA

See you next month. ■

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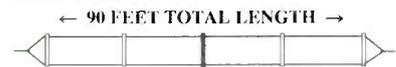
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CIRCLE 32 ON READER SERVICE CARD

GETTING STARTED AS A RADIO AMATEUR

Special Events—An Easy Way to Dress Up Your Shack

For many of us, one of the big attractions of ham radio is awards chasing. From Worked All States (WAS) to the DX Century Club (DXCC), hams seem to “wall-paper” their shacks with as many operating achievements as possible. A look at shack pictures in any ham magazine (or a visit to your friend’s shack) will almost always turn up something framed and on the wall, be it QSL cards, a contest award, DXCC, whatever. It’s ham radio’s equivalent of the “ego wall” you see at work from time to time. It’s meant to impress the impressable, and to let your fellow hams know just what a great operator you are. It also serves as a way to reflect on the mileposts along your ham radio career.

In this month’s column, *QST* Special Events column editor Warren C. Stankiewicz, NF1J, shares some inside info on how to round up some Special Event wallpaper of your own. If you follow his advice, you’ll be knee deep in certificates before you know it.

Special-Event Stations

Have you ever wished you could have a couple of “snazzy” pieces of paper on the wall to show to your friends and family? If you don’t have the time for dedicated awards chasing—and who does these days?—there’s an easier way to pick up some attractive and interesting decorations for your shack—by working some of the hundreds of Special Event stations that show up on the bands each year.

Special Events are on-air activities designed to generate interest in specific happenings. Clubs or groups try to contact as many people as they can in a given time period (usually the course of a weekend), and they produce special QSL cards and suitable-for-framing certificates to issue to the stations they work. Even if you’re just getting started, Special Event stations are usually easy to work, and many set up in the Novice/Technician 10-meter phone subband for easy access.

Special-Event stations pop up year round, although the busiest months seem to be April and May, as many groups use them as a warm up for Field Day in June. The “events” can range from a town festival, the commemoration of special historical events, the opening of museums, club anniversaries, or even holidays, such as operating from Christmas, Florida, in December. Clubs use these opportunities to get on the air in a big way, not only to publicize these events to the ham community, but also to demonstrate ham radio to



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SPECIAL EVENT STATION
CONFIRMING QSO WITH

- JLIYZE, TOKYO DISNEYLAND
- N6MM, DISNEYLAND, ANAHEIM, CA
- TM6MM, RADIO CLUB DE ST. MAUR, PARIS
- WA4ABQ, WALT DISNEY WORLD, FL
- W6RO, QUEEN MARY, LONG BEACH, CA

APRIL 1992

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J**

As you can imagine, Disney Special Event stations generate lots of on-air activity. Hams fortunate enough to work one of the Disney stations last year received this handsome certificate in return.

the public. Just ask anyone who’s been bitten by the Special-Event bug: any excuse will do when it comes to getting on the air!

Regardless of their diversity, all Special Events operations have something in common—the awards, er, special certificates! They range from commemorative color QSL cards to full-blown, giant-size, color certificates. Some are truly impressive, and they’re all available just for making one contact with the station(s) involved.

How To Find Them

How do you find these stations? Most ham radio magazines devote some space in each issue to the Special Events occurring that month. These generally appear as brief announcements listing the sponsoring club, the reason for the event, a frequency or two, and details on how to claim your certificate. All you need to do is get on the air and begin the hunt.

Most operations will use only one or two transmitters, and antennas can range from verticals to multi-antenna beam arrays. Almost all operate on the 40, 20 and 10-meter bands and will usually make a sked for a CW contact if you ask for it.

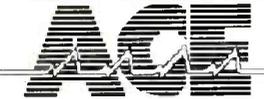
When beginning your search, remember that interference and band crowding can

force the stations to move up or down in frequency a bit, depending on the bands. If the operation doesn’t list any frequencies, careful tuning of the General-class 10-meter phone subband (28.300-28.500 MHz) should turn up what you’re looking for. Some stations are even including VHF or packet operations so the new Techs can get in on the fun.

Working Special-Event Stations

So how hard is it to work one of these stations once you’ve found them? As I mentioned, most Special Event Stations are relatively easy to work. Some extremely popular events, however, will generate huge amounts of interest, and pileups can result. (This merely makes the chase a bit more interesting!) When you work a station, be sure you carefully mark down all the QSO information. Some stations will give you a contact number—this will help them track you down when it comes time for them to confirm your QSO. Many groups work upwards of 3000 hams in the course of a weekend—if your information is just a lit-

(Continued on page 75)



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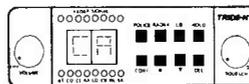
Five banks of 20 channels each. Covers 29-54, 118-174, 406-512 and 806-954MHz (with cell lock). Features scan, search, delay, priority, CTCSS option, lockout, service search, & keylock. Includes AC/DC cords, mounting bracket, BNC antenna. Size: 4 3/8 x 6 15/16 x 1 5/8. Weight: 4.5lbs. Fax fact document #550

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560XLTz
\$99.95
16 Channel
10 Band



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Bearcat 100XLTN 100Ch H/L/U..... \$159.95
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Coverage of above hand holds is: 29-54, 136-174, 406-512 except 100 which also adds 118-136 Air Band Fax facts #475

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Bearcat 210 16Ch H/L/U/Air..... \$129.95

Coverage of above units is: 29-54, 136-174, 406-512, plus Air in 172 and 210 and air plus 800MHz in the 855. Fax facts #675

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YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Bob Polhamus, CA made his first contribution to the column and indicated he was a 25 year old Electronic Technician. "I use a DX-440 receiver, Palomar VLF converter, 70' longwire antenna and a 12" Interceptor loop antenna. In the future I plan to use a L-400B LF active antenna and a NCL 100AA low-pass filter."

Another overseas reader joins our ranks. Peter Nicholson in England wrote, "I have been a reader of *POP'COMM* for the past twelve months or so and find utilities particularly interesting. My main interests are in the aviation and maritime bands. As a result, *Communications Confidential* is the first page I look for on receipt of my copy.

I have never sent loggings to any magazine before, but I've finally decided that it's time for me to make some contribution instead of always leaving it to someone else. So I have enclosed some of my loggings in the hope they may be of interest and use to other enthusiasts."

Roger Caldicott, MA described some recent antenna work he had completed which included installation of an 8.7 MHz half-wave dipole that also provides good reception of 17 MHz ship-shore CW signals. An antenna switch was also installed which allows him to select any one of his three antennas.

Richard Baker, OH said he was into SWL'ing almost 20 years ago. "After reading a copy of *POP'COMM* I got the bug again. Recently I was able to purchase a Lafayette HA600 and for an antenna am using a coax fed 100' longwire.

It was with the aid of the contributors to the column that I was able to quickly jump back into the hobby. I now listen to utility stations almost exclusively. So in hope of giving someone else a quick start, I have enclosed some selected intercepts and a QSL card."

Ben Baumann, CA says he likes the LF beacon entries in the loggings section of the column. "Have been listening to the LF range for years. The best DX from the old QTH in the Los Angeles area was the US Navy station, call sign NWC, which was located at the North-West Cape of Australia. The frequency was 18 kHz and I was then using an RBL receiver. The present location here in Oceanside which is half way between Los Angeles and San Diego has severe noise problems on the lower frequencies. I am now using a Kenwood TS680 with a 50' wire around the ends of the 50' high roof as an antenna."

Rick Sohl, TX advised me of a US Government SHARES communications exer-



This neat looking monitoring position belongs to Frank Carson in Maryland

cise this past November, but unfortunately I was involved in concentrated coverage of another network and could not listen to the SHARES exercise. These exercises are held periodically but I do not know the schedule. Rick indicated that 7535 and 14902 kHz were very busy.

By-the-way, the Office of the Manager of the National Communications System has in the past sent out QSL cards for verification of reception of SHARES communications. I am unaware if this practice continues.

Frank Carson, MD stated that he was a county police officer and that he enjoys monitoring. "I've been a scanner listener since about 1979 and recently added shortwave to that hobby. I started with an old Heathkit SB301 receiver and then got a Sangean ATS-803A. For that receiver I have a random length longwire antenna in my attic 'antenna farm.' My other receivers include a PRO-34, PRO-38 and a Bearcat 46 crystal scanner. My police cruiser also has several scanners installed."

Here is a request for help from Corey Soderlund, RI who noted "CONSOLAN TUK" on the dial at 190 kHz of his Halcrafters WR-1500 receiver. "As I hear this

station it broadcasts regional aviation weather but where is this station and what does "CONSOLAN TUK" stand for? The station transmits the letters "TUK" in CW."

Well, Corey, I can help with the TUK identification. This is a Transcribed Weather Broadcast (TWEB) station located at Nantucket, MA and it operates on a frequency of 194 kHz. I do not have a clue as to the meaning of the "CONSOLAN" designator. It may simply be an abbreviation used by the person who wrote it on the dial of the receiver. Perhaps one of our readers can supply a definition of "CONSOLAN."

UTE Loggings. All Times UTC.

209: Beacon IB, Atikotan, Ont., Canada at 1114. (Crabill, VA).

218: Beacon J, u/i. (Baumann, CA) My refs do not show this freq for a J beacon. (Ed.)

221: Beacon BJT, Athens, GA at 0519. (Newberry, GA)

227: Beacon SJY, San Jacinto, CA. (Polhamus, CA)

233: Beacon LG, Long Beach, CA. (Polhamus, CA)

245: Beacon GTP, Thomasville, GA at 0531. (Newberry, GA)

248: Beacon UR, Burbank, CA. (Polhamus, CA)

253: Beacon UR, Burbank, CA. (Polhamus, CA)

254: Beacon SPK, Reno Int'l, NV at 1027. (Vaage, CA)

Radio _____ Confirming

Our _____ QSO Of _____

At _____ Time _____

Report _____ Freq. _____

Xmit. _____

Rev. _____

Ant. _____

Remarks: _____

Office of the Manager
National Communications System
8th & South Courthouse Road
Arlington, VA 22204

73's _____

Name / Callign _____
Pse QSL Trx _____

SHARES



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Sample QSL card for SHARES communications

- 257: Beacon LKA. Chino. CA. (Polhamus. CA)
- 263: Beacon JDN. Jordan Muni. MT at 1038. (Vaage. CA)
- 264: Beacon UIA. Andalusia. AL at 1040. (Vaage. CA)
- 266: Beacon BR. Atlanta. GA at 0535. (Newberry. GA); Beacon BY. Beechy, Sask.. Canada at 1041. (Vaage. CA)
- 269: Beacon ZW. Teslin. Yukon. Canada at 0347. (Vylasek. VA)
- 273: Beacon ZV. Sept Iles. Quebec. Canada at 0345. (Vylasek. VA)

- 278: Beacon XSD. Tonopah Test Range. NV at 1044. Beacon GOS Lakeview. OR at 1042. (Vaage. CA); Beacon OS. Los Angeles. CA. (Polhamus. CA)
- 284: Beacon UYF. London. Ont.. Canada at 0341. (Crabill. VA)
- 285: Beacon D. (Polhamus. CA) ID is NE. Northport Bay. CA. (Ed.)
- 292: Beacon DP. Dan Point Breakwater (Light 5). CA. (Polhamus. CA)
- 293: Beacon MP. Montauk Point LS. NY at 1719. (Vylasek. VA); Beacon TOR. Torrington. WY at 0853. (Vaage. 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)

- 294: Beacon CL. Ft. Macon. NC at 2347. New freq: ex 298 kHz; sequenced with Jupiter Inlet beacon. (Crabill. VA); Beacon BMC. Brigham City. UT at 1048. (Vaage. CA)
- 299: Beacon LCR. Las Cruces Muni. NM at 1105. (Vaage. CA)
- 300: Beacon LAP. La Paz Int'l. BCS. Mexico at 1106. (Vaage. CA)
- 302: Beacon V. Point Vicente. CA. (Polhamus. CA)
- 305: Beacon RO. Roswell Indust.. NM at 1110. (Vaage. CA)
- 307: Beacon OT. SW Pass Light Ship. LA at 1001. (Crabill. VA)
- 309: Beacon EEX. Swainsboro. GA at 0546. (Newberry. GA)
- 319: Beacon RB. Redondo Beach. CA. (Polhamus. CA)
- 326: Beacon MA. Midland Regional. TX at 1116. (Vaage. CA)

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VERIFIED CORRECT.
 OPERATOR: Richard Baker
4125 KHZ USG
29 SEPT 92
0409 UTC
 John Baker

Richard Baker, OH shares his NOJ QSL with readers.

- 335: Beacon YXO, u/i. (Baumann, CA) Location is Carmi, BC, Canada. (Ed.): Beacon SV, Savannah, GA at 0557. (Newberry, GA)
- 338: Beacon CYR, Cairo, GA at 0239. Is DSB. Shows in Guide as SSB. (Crabill, VA)
- 342: Beacon CXE, Chase City Municipal, VA at 0418; Beacon MTN Baltimore, MD at 0422. (Vy-lasek, VA)
- 344: Beacon FCH, Fresno, CA. (Polhamus, CA)
- 350: Beacon NUC, San Clemente Is., CA. (Polhamus, CA); Beacon NY, u/i. (Baumann, CA) Located En-derry, BC, Canada. (Ed.)
- 351: Beacon LLD, Lanai, HI at 1125. Best DX this month. 2514 miles. (Vaage, CA)
- 353: Beacon F7, Georgian Bay, Ont., Canada at 0353; Beacon FOA, Flora, IL at 0400. (Crabill, VA)
- 355: Beacon DQK, Offshore/CA (Chevron). (Bau-mann, CA)

- 359: Beacon BO, Boise, ID; Beacon EMT, El Monte, CA. (Polhamus, CA)
- 362: Beacon CA, Columbia, SC at 0605; Beacon SUR, Fitzgerald, GA at 0606. (Newberry, GA)
- 365: Beacon CKK, Miami, FL at 0610. (Newberry, GA)
- 367: Beacon HA, Hao Atoll, French Polynesia; Beacon RY, u/i. (Baumann, CA) I wonder if RY is ex-419 kHz. Grosse Is. MI? (Ed.)
- 375: Beacon EMC, Winnemucca Muni, NV at 1138. (Vaage, CA); Beacon UBE, Cumberland, WI at 1133. (Crabill, VA)
- 378: Beacon CPM, Compton, CA. (Polhamus, CA)
- 380: Beacon GC, Gillette County, WY at 1211. (Vaage, CA); Beacon ML, Milledgeville, GA, ID in CW & automated altimeter in AM at 0614. (Newberry, GA)
- 382: Beacon LRJ, Le Mars, IA at 1138; Beacon JB, u/i at 0345. (Crabill, VA)

- 386: Beacon SYF, St. Francis County, KS at 1151. (Vaage, CA)
- 391: Beacon DDP, San Juan, Puerto Rico at 0506. (Vylasek, VA); Beacon EBY, Neah Bay, WA at 0939. (Vaage, CA)
- 392: Beacon PNA, Pinedale, Wenz Field, WY at 1216. (Vaage, CA)
- 397: Beacon SB, San Bernadino, CA. (Polhamus, CA); Beacon LLJ, Challis, ID at 1219. (Vaage, CA)
- 399: Beacon ENS E, Ensenada, BCN, Mexico at 1157. (Vaage, CA) The Stryker Guide lists this freq as 400 kHz. (Ed.)
- 400: Beacon QQ, COMOX CFB, BC, Canada at 1220. (Vaage, CA); Beacon SLW, Wooster, OH at 1157. (Crabill, VA)
- 404: Beacon OUC, Ocracoke, NC, ID in CW and wx in AM at 0630. (Newberry, GA); Beacon OLF, Wolf Point Int'l, MT at 1222. (Vaage, CA)

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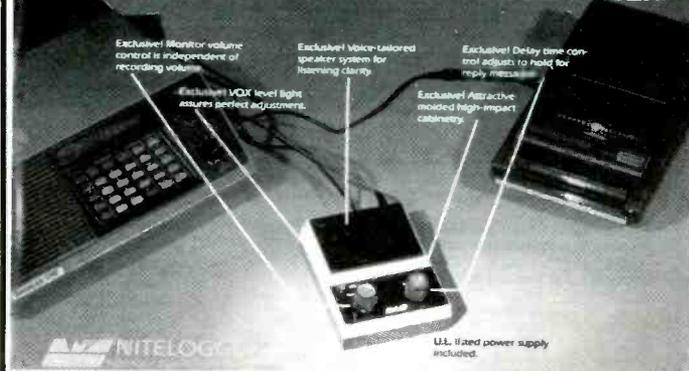
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CIRCLE 23 ON READER SERVICE CARD

- 410:** Beacon DAO, Ft. Huachuca, AZ at 1001; Bea-con GDV, Glendive, MT at 1003. (Vaage, CA)
- 411:** Beacon RD, Redmond, Roberts Field, OR at 1204. (Vaage, CA)
- 521:** Beacon INE, Missoula, MT at 1211. (Vaage, CA)
- 530:** Traffic Information Station (TIS) LAX, Los Angeles Airport, CA; TIS Orange County, CA, CALTRANS. (Polhamus, CA)
- 1615:** GCC1, Cullercoats England in CW at 2158 w/CW id "GCC1" and phasing in ARQ 100 bd. (Boender, Netherlands)
- 1704:** OXZ, Lynby, Denmark in USB at 2143 w/navigational warnings. (Boender, Netherlands)
- 1713:** PCH, Scheveningen, Holland in USB at 2145 w/wx. (Boender, Netherlands)
- 1869:** GKZ, Humber, England in USB at 2135 w/navigational warnings. (Boender, Netherlands)
- 2670:** At 0546 USS Defender wkg USCG Helo 1478 in USB re coordination rescue attempts of 2 stragglers in water w/15 other persons still afloat. Helo 1478 told Defender they spotted 4 people in life raft and would place spotlight on them. Defender kept USCG Group St. Petersburg, FL informed of each finding. (Caldicott, MA); At 0624 Defender (MCM-2) in comms w/Rescue 1478 and indicates he has spotlight on a second raft in water from the u/i sinking ship. 1478 advises he has to depart due low fuel, dropped buoy, enroute home plate Clearwater. At 0847 CG Group St. Petersburg requests if anyone on Defender saw the 5 persons leave ship. Defender replied 'negative.' I followed this activity and a 2nd ship taking water during a gale off Florida until after 0935. CG had heavy air tc on 5696 kHz. (Baker, OH)
- 3865:** WV Phone net in LSB passing MARS t/c. Hrd at 2241. Net sign off at 2245. (Baker, OH)
- 4010:** YL rping Delta Foxtrot Delta 21 w/electronic tones from 1600-1605. At 1605 5F grps for 3 addresses. Rptd at 1630 in USB. DFD21 is callsign of Deutsche Bundespost. (Mason, England)
- 4125:** ComSta Kodiak, NOJ, with u/i vessel NE of Whingham Island relaying non-emer comms. Hrd at 0409. (Baker, OH)
- 4177:** NMF, ComSta Boston w/CW mkr at 0245. (Hill, MI)
- 4373:** Zero-Kilo wkg 4X, 2MI & others. (4X had British accent) USB mode at 0233. (Hill, MI)
- 4414:** November 1 Delta w/Quebec 0 Yankee, relaying comms for Lima 7 Uniform (not hrd) rel departure time and freq. All u/i. Hrd 0851. (Baker, OH) These believed be US Navy tactical callsigns. (Ed.)
- 4426:** MNM, USCG Portsmouth w/wx bcst in USB at 0553. (Nicholson, England); At 0430 CAMSPAC, Master Station Pacific, San Francisco under MNM w/wx. (Baker, OH)
- 4637.5:** WRB 669, Rowan Oil "Houston Base" w/callup of oil well sites. Hrd at 0707 in USB. (Baker, OH)
- 4742:** Architect, RAF Strike Command wkg 14M4 w/wx for EHVb (Valkenburg), EDUR (Bruggen) and EKYT (Aalborg) in USB at 0926. (Nicholson, England)
- 4751.5:** Crazy Weed Alpha wkg Romeo, Missionary and Brother-1 concerning power failure at their QTH. Advised all s/ns they had only voice comms, no secure comms. (Rausch, NJ)
- 4825:** Navy MARS Region 4 training net at 2335. (Rausch, NJ)
- 4835:** Shipyard control wkg USS Constellation re supplies on Helo which enroute. The ship had undergone a 29 month, \$800 million overhaul. The Constellation was the last of 5 carriers to receive the "Service Life Extension Program" which was designed to extend the active service of those ships by at least 15 years. (Rausch, NJ)
- 4890:** YL/EE wkg several fishing boats off Nova Scotia w/position reports and quantities of fish caught. Hrd at 1045. (Rausch, NJ)
- 5190:** Cape Radio in USB wkg USCGC Dauntless (WMEC-624) and USS De Wert (FFG-45) during support of shuttle Endeavor at 1257. (Willmer, MI)
- 5390:** CGD-206, Bell Canada Bush Radiotelephone service at 2315 w/tfc in EE & FF. (Rausch, NJ)
- 5535:** British Airways Speedbird 246 clg Speedbird London w/tech & status msgs at 0305. Speedbird 56 at 0318 advises re toilet cage flooding and cabin crew oxygen bottle used. All USB. Tried to QSL, letter stated they will not confirm any info. (Baker, OH)
- 5610:** Station Two in pp w/Station Three wanting Customs Air, both u/i, had English accents. Hrd 0257. Kilo Foxtrot 536 in pp looking for Absolute 539 at 0401. (Baker, OH)
- 5616:** Shanwick OAC, Wkg TWA 814, Northwest 37 and American 89 in USB at 1258. (Nicholson, England)
- 5680:** Plymouth Rescue, UK wkg 7 Charlie Bravo in USB at 0822. (Nicholson, England)
- 5685:** MKH5, RAF wkg Foxtrot Yankee Yankee 44, 45, & 51 w/clearances. FYY is callsign of a/c of #6 Flight Training School, based at RAF Finningley in Yorkshire, operating BAE Jetstream and Dominie a/c. (Nicholson, England)
- 5745:** OM/SS, poss military, in USB at 0300 w/tfc & 3L grps. (Hill, MI)
- 5757:** AAA4TN, Net Control US Army MARS w/msg relay in USB at 0248. (Hill, MI)
- 5825:** YL/SS in AM at 1035 w/5F grps. (Willmer, MI)
- 5910:** Scallop fisherman off Long Island w/XX rated chit chat at 1230. (Rausch, NJ)
- 6224:** Southbound II, VA 4219 wkg vessels- Cloverleaf, Windblower (?), Harsonvale (?), Cataline and others giving extensive wx to each. Hrd 2243 to 2330. Stated is on 6 MHz nightly at 2230, 12 MHz at 2330. (Baker, OH) Motor vessel Southbound II is located in the Bahamas and the Skipper has been sending out wx reports for the Atlantic/Caribbean areas for some time. (Ed.)
- 6226.8:** Alpha Whiskey net, drug interdiction ops w/Alpha Foxtrot, Alpha Romeo and Alpha Uniform hrd at 0130 USB running tracks on "boggies." At 0150 one unit advises "hostile" a/c coming in, was advised to break off contact. (Baker, OH)
- 6227:** YL/SS numbers station, hrd 0705, "finale" twice at 0713 and off. Sig covered 6222 to 6232 kHz. (Baker, OH)
- 6229:** YL/S in LSB fm 0713-0719 w/5F grps. (Carson, MD)
- 6321:** USB sig consisting of 4 tones (lasting 10 secs) then in CW "SLL." Hrd at 1817. (Carson, MD)
- 6510:** WAH, Virgin Islands, St. Thomas in LSB at 0220 w/wx. (Hill, MI)
- 6513:** CG Rescue 6001 pp to D5Rcc re SAR for missing small plane in Yorktown, VA area. USB at 0114. (Hill, MI)
- 6519:** VIS, Sydney, Australia in USB w/pp t/c w/Min-gar. This station only hrd on frequency at sunrise for less than 30 mins. (Caldicott, MA)
- 6604:** Gander w/0500Z wx observations. Hrd at 0555 in USB. (Baker, OH)
- 6679:** KVM70, Honolulu VOLMET in USB at 2235 w/wx conditions. (Koch, IL)
- 6683:** Andrews AFB in LSB at 1855 wkg Executive 1 Foxtrot passing several pp's. (Koch, IL)
- 6693:** St. Johns Military w/rdo check in USB at 0243. (Hill, MI)
- 6720:** US Tactical comms between N8J, N8M & X7X at 0430. (Mason, England)
- 6738:** Architect, RAF Strike Command w/airfield color coded wx reports in USB at 0530. (Nicholson, England); Coded msgs rptd twice. Sender never sent ID, recipient ID'd as BIO-7. (Franz, FL) This is a USAF freq. (Ed.)
- 6750:** At 0013 FT (NCS) in USB wkg an Alligator Playground w/D, H, K, N, P, and Black Eagle 02 (airborne). FT advised Black Eagle 02 that air tracks were not correlating and wanted know if they had auto correlation in their r system. This net also on 9023 and 11214 kHz during fold days. (Willmer, MI)
- 6753:** RCAF VOLMET, Trenton, W/wx in USB at 0533. (Nicholson, England)
- 6760:** At 1755 CW station sending VVV DE O.LX. At 1800 YL/Czech rptng 571 until 1803 when into 5F grps. Also on 5300 kHz. O.LX is callsign of CETEKA Press, Prague. (Mason, England)
- 6795:** YL/EE in AM at 0237 w/5F grps. Also hrd next night. (Hill, MI)
- 7404:** YL rptng Oscar Alpha w/electronic tones from 1900-1905. Then YL/GG w/5F grps for 122. Msg was 73 grps length. (Mason, England)
- 7415:** YL/EE w/5F grps from 0500-0530. Covered up pirate bcst. (Rausch, NJ)
- 7535:** Norfolk SESEF testing xmtrs on USS Anzio (CG-68, NZIO) at 1752 and Humphreys (poss USNS Joshua Humphreys, T-AO-188, NNJH) at 1846. (Baker, OH)
- 7650:** At 2000 (on Wednesday) YL/EE rptng 636 x3 80688 031 until 2007. After five dashes went into 5F grps. YL said "I say again" then rptd msg. (Mason, England)
- 8188:** Every Sunday at 0800, 1100 & 1300—Music Box playing Swedish Rhapsody melody. Then YL rps 5F group for 2 mins and then into 5F grps for that addressee. (Mason, England)
- 8240:** HMS Exeter wkg Portishead Radio w/pp's to UK, USB at 0530. (Nicholson, England)
- 8728:** Monaco Radio, Station announcement in USB at 0601. (Nicholson, England)
- 8737:** Cyprus Radio w/announcement in USB at 1901. Also on 13098 kHz at same time. (Nicholson, England)
- 8764:** CG Cutter Spencer w/pp t/c to Savannah Air thru ComSta Portsmouth asking flight mechanic re servicing instructions for Helo landing gear strut. (Caldicott, MA); Warship HMS Coventry (F-98), GDKG, w/pp Portishead Radio (?). Later came up on 8764 kHz clg Portsmouth CG, did not hear response as Boston CG was giving wx. (Baker, OH)
- 8788:** WOO, Ocean Gate wkg vessel 9HGX3 in USB at 0513. (Nicholson, England)
- 8846:** New York Radio in USB w/ks Delta 41 at 2244, American 664 at 2245, American 658 at 2246, Iberia 615 at 2311, Delta 98 at 2312, Delta 1216 at 2336, American 1150 at 2340 & Americap 624 at 2347. Position reports & Selcal checks. (Boender, Netherlands)
- 8906:** Santa Maria Radio wkg Air France 583 at 2220, Air France 505 at 0015, Guadeloupe 4052 at 2345, Corse Air 927 at 0021. USB mode. Position reports & Selcal checks. (Boender, Netherlands)
- 8912:** Homeplate, Customs, Homestead, FL in USB at 1445 wkg COTHEN 209, Customs Radio Techs. Testing xmtrs then scrambled comms. (Koch, IL)
- 8967:** Coded msg simulcast on this freq & 11176, 11243, 15015, and 17975 kHz. USB at 2025. (Hill, MI)
- 8984:** X-ray Six Victor to Miami Operations at 1228 in USB. Pilot spotted downed a/c. Tail section sticking out of water but he didn't think the a/c was in too deep from his position. Pilot was about to obtain id marking on tail section but was deterred by nearby freighter in the path of the a/c. Pilot radioed he going to attempt warn ship of the nearby downed a/c. (Caldicott, MA); CG Rescue 2101 re ELT activation. Found sailboat at location w/no lights or sail, no apparent distress but signaling a/c w/a light. I could not apparent distress but signaling a/c w/a light. I could not hear ComSta response (poss Miami). Hrd at 2352. (Baker, OH)
- 9023:** Sentry 61 in USB wkg Giant Killer via Trenton Military at 1407 coordinating a refueling orbit area. Sentry 61 was to work either F-15's out of Langley or F-16's out of Shar AFB. Sentry 61 was advised they could not work the orbit they wanted due to a scheduled missile exercise. At 1340 Bandsaw advised Crow Ops? that suspect was on ground at airport. Exercise Coordinator advised that counternarcotics portion of exercise Fertile Angel was terminated. (Willmer, MI)
- 9032:** Architect, RAF Strike Command wkg Atlantic 89 (poss Nimrod a/c) w/wx for St Mawgan in USB at 0933. (Nicholson, England)
- 9197:** FHWA net in USB w/WWJ40 (NCS) wkg KTX20 (DOT Washington, DC), KWB406 (Ames, IA) and 11 FHWA stns on FHWA ch. F4 at 1511. (Willmer, MI)
- 9960:** YL/SS at 0230 w/4F grps. (Rausch, NJ)
- 10015:** NOAA 43 flying out of Puerto Villarta, Mexico in USB wkg KJY74 at 0130 conducting tropical storm research off Baja California. Advised they had made 7 penetrations and were returning to base. (Willmer, MI)
- 10066:** Rangoon wkg Speedbird at 1638, KLM 832 at 1713, Alitalia 405 at 1701, Cathay 749 at 1814, Scandinavian 749j at 1825, Air Qatar 743 at 1830, & Scandinavian 970 at 1900. (Boender, Netherlands)
- 10780:** AFE71, Cape Radio wkg Aria Brunswick (EC-135) w/rdo check then monitored channel during shuttle Endeavor lift off. Hrd at 0825. (Koch, IL)
- 10970:** Mossad station Mike India Whiskey 2 rptd by YL from 1645-1650. (Mason, England)
- 11000:** At 1555 CW stn w/VVV DE O.LX. Then at 1600 YL/Czech rptng 864 until 1604 when into 5F grps. Also on 6760 and 5300 kHz. (Mason, England)

11176: Incirlik GCCS. Turkey wkg MAC flight in USB at 1830. (Nicholson. England): 2123DD wkg McGuire Command Post w/tfc & request for wx for McGuire & Dover AFB. ETA at McGuire 0100. (Duffy, S. Africa): NPF675 in USB at 1322 w/pp thru Andrews to North Island NAS, San Diego, CA. Advised they had 4 star Admiral on board. (Koch. IL)

11200: RAF Volmet hrd at 2301, faded 0045. wx at "Oscar" locations. USB mode. (Baker, OH)

11234: Architect, RAF Strike Command wkg NATO 43 (E3A) w/pp to ops. Discussing control of Vegas, Javelin & Triplex during exercise over northern England. USB at 1043. (Nicholson. England)

11243: SAC. Coded msg in USB at 0544. (Nicholson. England) The SAC and the Strategic Missile Forces of the US Navy have been combined and the new name is Strategic Command (STRATCOM). (Ed.)

11267: Oscar Nine Oscar reading test msg twice. Clg Sierra Nine Quebec. Refs show this is USN HiComm channel. (Franz. FL)

11306: Portishead Air w/pp for Aspro 345. Inter European Airways flt enroute Izmir to Bristol. Also air tlc wkg Dar-Es Salaam at same time. USB at 0547. (Nicholson. England)

11309: New York wkg various a/c's for position & tlc in USB at 1534. (Hill. MI)

11345: Stockholm in USB wkg Delta 137 at 1415 and Airmail (?) 173 at 1325. (Boender. Netherlands)

11384: Balkan Airlines Ops, Sofia. Wkg company a/c w/wx at 0550 in USB. (Nicholson. England)

11430: YL/EE w/264 callup in AM from 0130-0134. Then 197 x2 106 x2 and into 5F grps x2. (Willmer, MI)

11470: YL/EE with 3/2F grps w/warble jammer in background. Also YL/EE on 16198 kHz w/same tlc. (Mason. England)

11494: Omaha 314 in USB at 1828 wkg Slingshot. Advised picking up faint signal on VHF band but was real weak, went back to scan. (Koch. IL)

11598: At 2130 BW (NCS) in USB coordinating

an extensive air interdiction exercise. Intercept controllers hrd included Delta, Foxtrot, Juliet and Lima. Controllers would contact BW w/track nbrs. IFF modes noted. request tanker refueling, and update BW on fighter intercept activity. BW arranged for tanker refueling and advised controllers of what button to conduct intercept on. (This prob referred to fighters UHF rdos having preassigned freqs for each button on their rdos.) Tankers mentioned included Exon 01, Exon 02, and Vikar 700. Fighters mentioned included Foxtrot 301, 307, and 403. Lima also advised BW that Vixen 01 was airborne and would contact Red Crown. Air threat conditions, weapons status, and CAP's were also mentioned. Red Crown was a callsign used during the Vietnam War for US Naval ships conducting air intercepts from the Gulf of Tonkin. (Willmer, MI)

11637: U/i stns. One advised other he tried send msg w/o using CCR, gave nbr for him to call for help. USB at 1610. (Baker, OH)

12184: YL/EE in RCS w/415 callup from 1400-1410. Ten tones and into 225 3/2F grps. Bcsts ran Tuesdays and Sunday. Simulcast on 15618 kHz. (Willmer, MI)

12323: USCGC Campbell (WMEC-909) in USB wkg M/V Salano (?) via ComSta Portsmouth at 2107. Sa-lano had ill crewman needing medevac. Three CG parajumpers had already landed aboard the vessel and were prepared patient to be medevaced to Martinique by a HH-25 Dolphin fm the Campbell. (Willmer, MI)

13089: NMF, CG ComSta Boston wkg USCGC Dauntless for pp to Miami Ops. Advised the plane is outside of area (CHUMP). Ship was on 12242 kHz. USB at 1733. (Koch. IL)

13155: Helsinki, Finland clg vessels UILG and UVPV in USB at 0807. (Nicholson. England)

13217: SAM200 in USB at 0524 wkg Andrews for pp. wx at u/i location. (Baker, OH)

13270: New York Volmet w/aviation wx in USB at 1933. (Nicholson. England)

13285: AA Flt 155 in USB cld Rainbow Radio

(LDOC) Tors Cove, Newfoundland that a female passenger was struck unconscious for 3 mins when attempting be seated. She was breathing and currently being attended by an MD on board. As soon as passenger responded, AA 155 asked Rainbow Radio to relay to ORD to have paramedics available when flight arrives at terminal. (Caldicott, MA)

13291: A/c ABHL wkg Gander for Selcal check. USB at 1349. (Hill. MI); Delta 35 wkg Gander in USB at 1426. (Boender. Netherlands)

13304: E1 A1 Operations. Tel Aviv w/wx for company a/c. USB at 1011. (Nicholson. England)

13330: Cedarbase Beirut, Middle East Airlines Operations wkg company a/c. Capt requested confirmation that his family were booked a/c. Capt requested confirmation that his family were booked on flt to Larnaca. (Nicholson. England)

13354: San Francisco aero w/Delta flight enroute Geneva, gave alt & squawk info. Advised this is primary, secondary is 8843 kHz. Hrd at 2232. At 2240 Honolulu aero and u/i a/c poss call STQ. At 1814 New York aero wkg British Airways Speedbird 255 & other a/c. USB mode. (Baker, OH)

13909: At 1708 Starman in USB advising MU Base that a/c was coming up on HF. Few mins later Grumman 81A contacted MU Base & gave ETA. (Willmer, MI)

13918.5: G2 wkg G1, E1, and Controller in USB during war games exercises at 1515. G2 coordinated a Medevac for a head injury that had occurred during insertion. (Willmer, MI)

14585: KAK880, El Paso, TX wkg KAK7809 barely heard, KAK920, Del Rio, TX came on. This is Immigration/Naturalization Service. (Koch. IL)

15682: YL/EE in USB at 1730 w/5F grps. Bcst ended at 1746 w/Lincolnshire Poacher tune. (Nicholson. England)

15867: Omaha 09 wkg Big Time on USB at 1545. Trying contact Omaha 76 on 345.6 MHz but no comms. Then said he was prob close to Miami Center. (Koch, IL)

16198: YL/EE w/1-0 count and 488 form 1300-1310. After 10 tones, Count 225 and into 3/2F grps. Also on 10529 kHz. (Mason. England)

16414: YL rptng Hotel Sierra fm 1630-1635 then YL/GG w/5F grps for 961 and 344. (Mason. England)

16477.6: Athens Radio. This is ICDD (phoneticized) DO YOU RECEIVE? After several calls he apparently gave up. USB at 1811. ICDD is ESSO Portovenere, a Tanker. (Ed.)

17016: SLHFMS sending "C" at 1320 in CW. Other letters hrd this vicinity also. (Caldicott, MA)

17357: OM/SS shouting, talking over another OM/SS. Sounded tense. Hrd at 1924 in USB. (Baker, OH)

18018: Architect. RAF Strike Command wkg Ascot 4574. A/c requesting confirmation of clearance to overfly Ethiopia. USB at 0923. (Nicholson. England)

18171: Flint 112 wkg Atlas in USB at 1603. Flight ops normal. Requesting pp w/u/i Flint unit. (Koch, IL)

18433.7: RIW TD TA (cut nbrs for 675 03 01) in CW at 1534. Strong sig but very bad tone, characters badly keyed. Text was 5L grps (cut nbrs) 1-0=ANDU-WRIGMT. (Ed.)

19303: At 1659 ARIA Control in USB wkg ARIA 1 and ARIA 2 w/ prob launch support of a Delta III w/Mars Observer aboard. (Willmer, MI)

20192: Cat 1 wkg tracking sites 12A and 12B during launch of a Delta III w/Mars Observer aboard. First motion time was passed by Cat 1. Cat 1 also advised tracking sites that separation had occurred resulting in two targets and ignition of upper stage had not yet occurred. USB at 1706. (Willmer, MI)

20350: YL rptng Hotel Kilo fm 1600-1605. Then YL/GG w/5F grps for 393 and 621. (Mason. England)

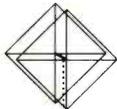
22015: Andromeda (poss Royal Navy vessel) in NATO exercise. Captain of vessel sent msg in USB at 1353 to others in exercise indicating Andromeda leaving ex-exercise early to ensure they able to enter Straits before nightfall & that Canadian ship will now operate as our Backship (?). (Boender. Netherlands)

22477.5: KPH, San Francisco in CW w/tlc list at 1900. At end of list at 1917, KPH told ships to QSY to 17088 or 22557 kHz as well as two other lower freqs for High Seas wx. Immediately foll this msg, KPH began wkg ships on 22477.5 kHz. (Caldicott, MA)

23214: Omaha 314 wkg Bushwacker in USB at 1320. Asking if a/c 734 left yet. Was advised no & then returned to scan. (Koch, IL)

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NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Transportable HF Radio Systems

Harris developed a series of compact transportable HF communications which are ideal for flyaway applications where ruggedness and rapid deployment are necessary.

The new systems are based on the FALCON Series RF-5000 transceiver and are available in 125 Watt and 400 Watt versions. All equipment is housed in compact heavy-duty transport cases.

The transportable radio systems include all of the advanced features available in the FALCON Series radios, including digital signal processing and extensive built-in test capability. Available options include high speed data to 2,400 bps, analog voice security, digitally encrypted voice and data, automatic link establishment and frequency hopping. All of these options can be installed inside the receiver/transmitter unit and can be added without significant change to system size and weight.

A separately packaged transportable antenna coupler system is also available in a ruggedized carrying case, including all interconnecting cables. It can operate with a wide variety of antennas for different applications.

For more info, contact Harris Corp., 1680 University Ave., Rochester, NY, 14610.

Pocket Roll-up "J" 2 Meter Antenna

MFJ Enterprises, Inc. announces the MFJ-1730 Pocket Roll-up "J" 2-Meter Antenna.

MFJ's 1730 2-Meter half-wave vertical J antenna is for traveling, vacationing, and motel use when attending hamfests. You can roll up this half-wave 2-Meter gain antenna, stick it in your pocket, and go! Using the MFJ-1730 is a cinch: just hang

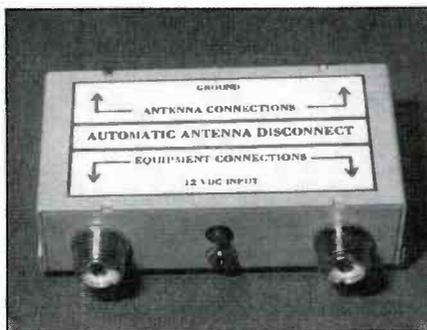


it in a convenient spot, plug the handy BNC connector into your handheld, and enjoy base station performance almost anywhere!

The MFJ-1730 Roll-up antenna really adds big-time performance to your handheld. It is omni-directional and does not need an awkward ground plane. Works indoors and outdoors. Works with all 2-Meter handhelds. Good gain characteristics. Classic half-wave "J" design.

It comes with MFJ's one full year unconditional guarantee.

For more information or to order, contact any MFJ dealer or MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762 or call (601)323-5869, Fax: (601)323-6551, Telex: (601)323-6551, or order toll-free at 1-800-647-1800.



Antenna Disconnect

LPS Enterprises (LPS) introduced a line of Automatic Disconnect products. These products are designed to help protect electronic equipment from damage due to static discharges and voltage surges.

The Automatic Antenna Disconnect is a device designed to automatically disconnect an antenna when the transmitter or receiver is powered down, either by the operator, or as a result of a power failure. The device automatically re-connects the antenna when power to the equipment is restored. The device is available with all types of RF connectors, and custom con-

figurations are also offered. For the electronics hobbyist, a kit form is also available. Typical applications for the product include amateur radio, citizens band radio, business communications, satellite receivers, and shortwave listeners.

The Automatic Modem Disconnect is a device designed to automatically disconnect a computer modem from the telephone line when the computer is powered down, either by the operator, or as a result of a power failure. The device automatically re-connects the modem when power is restored to the computer.

Additional automatic disconnect products are planned. For further information on these products, please contact Pete Nicholls, N4BHB, at LPS Enterprises, 308 Sterling Drive, Warner Robins, Ga 31088. Telephone 912-929-9416.

Worldwide Comms & Monitoring

Remote control of two "off-the-shelf" HF/VHF/UHF communications receivers or transceivers from any DTMF telephone is possible using the Radphone 2000DX Remote Control System.



Major international broadcasters are using the Radphone 2000DX to remotely monitor their own (and their competitors) transmissions in the targeted countries.

News services are placing receivers under Radphone 2000DX control in strategic locations around the world to monitor local broadcasts and utilities.

Government agencies are using the Option 'T' versions that allows transceiver control including a microprocessor controlled VOX.

A voice synthesizer prompts the user for PIN access and reads back Tx/Rx frequency, mode, bandwidth and functions as keyed in by the user.

For information from Philip Collins & Associates, contact Marc Robinson at Philip Collins & Associates, Pty. Ltd., 8A Moore Ave., West Lindfield, NSW 2070 Australia.

TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

Northern Telecom's Companion PCS system has become the first fully operational wireless business system available using the widely accepted CT2 Common Air Interface (CT2 CAI) radio standard. The Companion system uses portable, personal telephones that fit into pocket or purse. The initial system went into operation in Hong Kong, although trials are presently taking place in Europe, Asia, Canada, and the USA.

The Companion system is available as an enhancement to an existing business telephone system, or it may be used independently. Northern Telecom offers the Companion 100, a system that can support up to 80 portable phones. There is also the Companion 10, a stand-alone system that supports up to 32 portable telephones.

Northern Telecom claims that Companion is far less expensive to use than a cellular system. There are no additional per-minute or monthly fees. Companion is compatible with any existing PBX system. Companion has excellent applications in hospitals, universities, factories, arenas, tourist attractions, banks, malls, airports, at construction sites, and many other localized areas.

Cellular Broadcast Use

Vin Musiello, of Long Beach, Calif., sent along a postcard asking if broadcast stations are allowed to use cellular phones for remote pickups. They certainly are, and there are quite a few products on the market designed for this purpose.

One product I happened to see in use a few months ago at a sports event was called the Cellcast RBS-400 Remote Broadcast Studio. The fellow from the radio station told me that the unit weighs about 15 lbs., and fits into a shoulder bag. It can operate from batteries, 115 VAC, or a vehicle's cigarette lighter.

The unit has a 4 channel mixer, program and cue to all channels, an internal speaker, a peak indicator for each audio channel, a single line encoder, and other features. It can also be used as a regular 3 watt cellular phone.

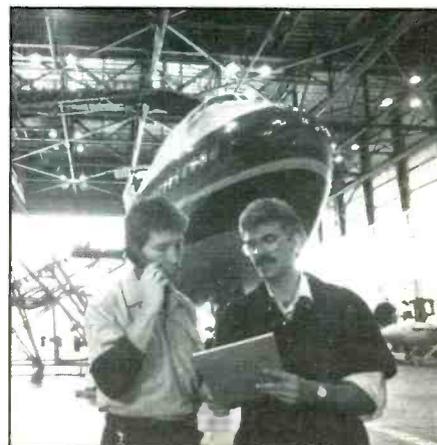
This unit comes from Cellcast Communication Products, 1190 South Main, Owosso, OK 74055.

Buy Amalgamated Copper—or Cotton!

Radio Call Company introduced *The Financial Pager* for use in the N.Y. City metro area. This alphanumeric pager pro-



Northern Telecom's Companion wireless communications system uses these handheld transceivers.



The Northern Telecom system is well suited to limited range applications.

vides the latest information on any stocks, bonds, and indexes selected by the subscriber. The information reads out in full text on a four-line LED screen.

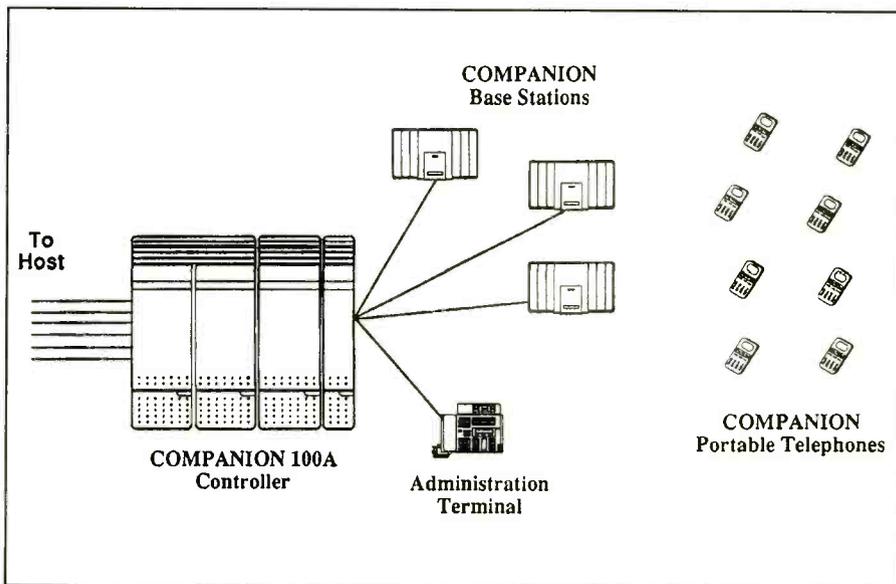
There are three alerts available. The "Price Alert" allows the user to decide what price change to track (compared to the previous day's closing price). The user is alerted when the criteria are met in a single day. A "Volume Alert" notifies the user when a specified number of shares is traded. It also reports opening prices on specific stocks. A "Time Alert" sends price quotes for up to 5 minutes at a scheduled time each day.

Other financial advisory services are pro-

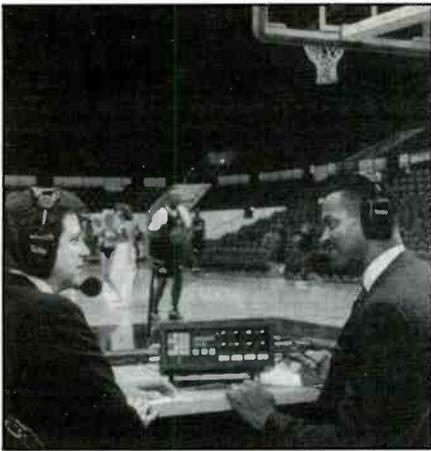
vided on this page, in addition to these. For more information, contact Radio Call at 1-(516)-753-0300.

Scrambled Cordless Phone

Radio Shack's DuoFone ET-499 cordless telephone is a 10-channel cordless phone offering privacy via a voice scrambler. Most cordless telephones containing scramblers are priced at several hundred dollars, and that's because they operate in the exotic new 900 MHz band. The ET-499 sells for \$159.95 because it makes



A diagram of how the Northern Telecom Companion system works.



The Cellcast portable broadcast unit on the desk, and in operation.



Radio Shack's DuoFone ET-499 is cordless telephone with voice scrambling offered at about half the price as other scrambler units.



This pager gives you the latest stock market prices.

use of the regular 46 MHz cordless band. Features include 10 channel operation, a 640,000 possible combination protection code that changes each time the phone is used to prevent other cordless phones from accessing the phone's dial tone, a paging system, 30 number memory, one-touch redial, and extended life battery. Works with tone and pulse dialing systems and is hearing aid compatible.

Bell Help

In the aftermath of Hurricane Andrew, Bell Atlantic did its share in helping out the people of South Florida.

Within days after the disaster, the federal government asked Bell Atlantic Mobile Systems, Inc., and COMSAT's Systems Division to deploy a complete portable cellular system to provide communications for medical crews working to care for thousands of homeless people.

Bell Atlantic Metro Mobile loaned more than 20 portable cellular phones to NationsBank, enabling the local lender to travel door-to-door to assess damage and speed the processing of loan applications.

Bell Atlantic mobile subscribers who become stuck in traffic or lost within the Philadelphia metro area can now access a

passengers. Since the service was introduced in 1986, almost a million and a half calls have been placed.

Amtrak tells me that they are now accepting MCI Cards to place domestic and international calls through these phones. MCI Cards with magnetic strips must be used to activate the phones. Billing will come from MCI along with your regular charges.

\$30,000 Saved is \$30,000 Earned!

The FCC told the Virginia RSA 6 Cellular Limited Partnership that the agency was displeased that the company had "engaged in unlawful preconstruction at three proposed cell sites." The cellular company was told by the FCC to please remit a forfeiture of \$60,000 for this affront to the bureaucratic system.

The company asked for the forfeiture to be canceled, or at least reduced, for several reasons that they cited. The FCC rejected these pleas, although the agency agreed that the company had a "good record of compliance before the Commission." This was sufficient to get the forfeiture reduced by \$30,000.

Almost too bad the original forfeiture wasn't \$100,000. If they could have gotten the FCC to cut in half they could have saved as much as \$50,000!

Seems to me that this company was attempting to show incentive in being ready to provide service to its subscribers as quickly as possible. They deserved neither the arrogant treatment they got with the original outrageous \$60,000 forfeiture, nor the magnanimous reduction to "only" \$30,000.

Are they supposed to be grateful? Are we supposed to be impressed?

new service to help them. They dial *JAM (StarJam) and are quickly put through to speak directly to a Metro Traffic consultant who can quickly advise them of what to do—how to avoid the jam, or how to get to their destination.

This system operates weekdays from 5 a.m. to 8 p.m., and on weekends from 8 a.m. to 7 p.m. (holidays to 5 p.m.). Although normal airtime and toll rates apply, there is no surcharge to use the service.

Digital Radio Phones Replace Landlines

The small northern Texas community of Quitaque may have a few more than 500 residents, but it became an American first. They ripped down all of the phone lines in Quitaque and replaced the entire telephone system with an Ultraphone digital wireless telephone system supplied by InterDigital Communications Corporation.

Some subscribers are as far as eight miles away from the central office. As the old system was being dismantled, local residents anticipated the new system with some doubt. They questioned if the radios would have privacy, and whether the units would work during snow or dust storms.

The second city in the USA to receive this system is Haviland, Kansas. The system may be in the process of activating as you read this.

InterDigital Communications Corporation Boulevard, Suite 105, King of Prussia, PA 19406-2755.

On Track

Amtrak has GTE Railphone cellular phones on trains carrying 65 percent of its

NAMPS Standards

Motorola tells me that the US cellular group, TIA, has released standards for Narrow-band Analog Mobile Phone Service (NAMPS). IS-88, IS-89, and IS-90.

In December of '89 Motorola introduced NAMPS as a narrow-band system that could provide increased capacity and enhanced services. It permits current AMPS cellular systems to accommodate the rapid growth of new subscribers. New York's Syracuse and Utica Telephone Companies will be installing NAMPS this year. Other cities believed to be planning on utilizing NAMPS include Seattle, Denver, Minneapolis, Phoenix, and Las Vegas.

Further information on NAMPS may be available from Motorola, 600 North US Highway 45, Room AN460, Libertyville IL 60048.

We invite your letters, press releases, news clippings, and other materials relating to cellulars, pagers, and personal communications. ■

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

Upon the battlefields of Liberia, where a civil war has raged for the past few years, the International Committee for the Red Cross is treating the many wounded. It is keeping in contact with its headquarters in Versoix, Switzerland, at the same time by sending RTTY messages over shortwave radio. These messages describe the care being given by ICRC volunteers and observations they make as the war progresses.

I happened to tune in their RTTY station in December while they sent a message about the many ambulance service runs they made. They told of treating 29 wounded civilians, 67 sick civilians, and three wounded soldiers at several field hospitals. Another message reported that one of the warring factions was "only fighting back when attacked." These messages, in English and French, were in the ARQ mode at 1714 UTC on 13963.7 kHz.

Moving to another battlefield, this one

in Bosnia, we can learn some aspects of the war there by reading the aviation-related messages coming from 5YD9, Nairobi Air, Kenya. These messages are sent as Notices to Airmen (NOTAM's) at 50 baud on 13365.7 kHz.

A NOTAM recently issued cites "guidelines for approval of non-UNPROFOR and non-UNHCR flights into the airspace of Bosnia and Herzegovina."

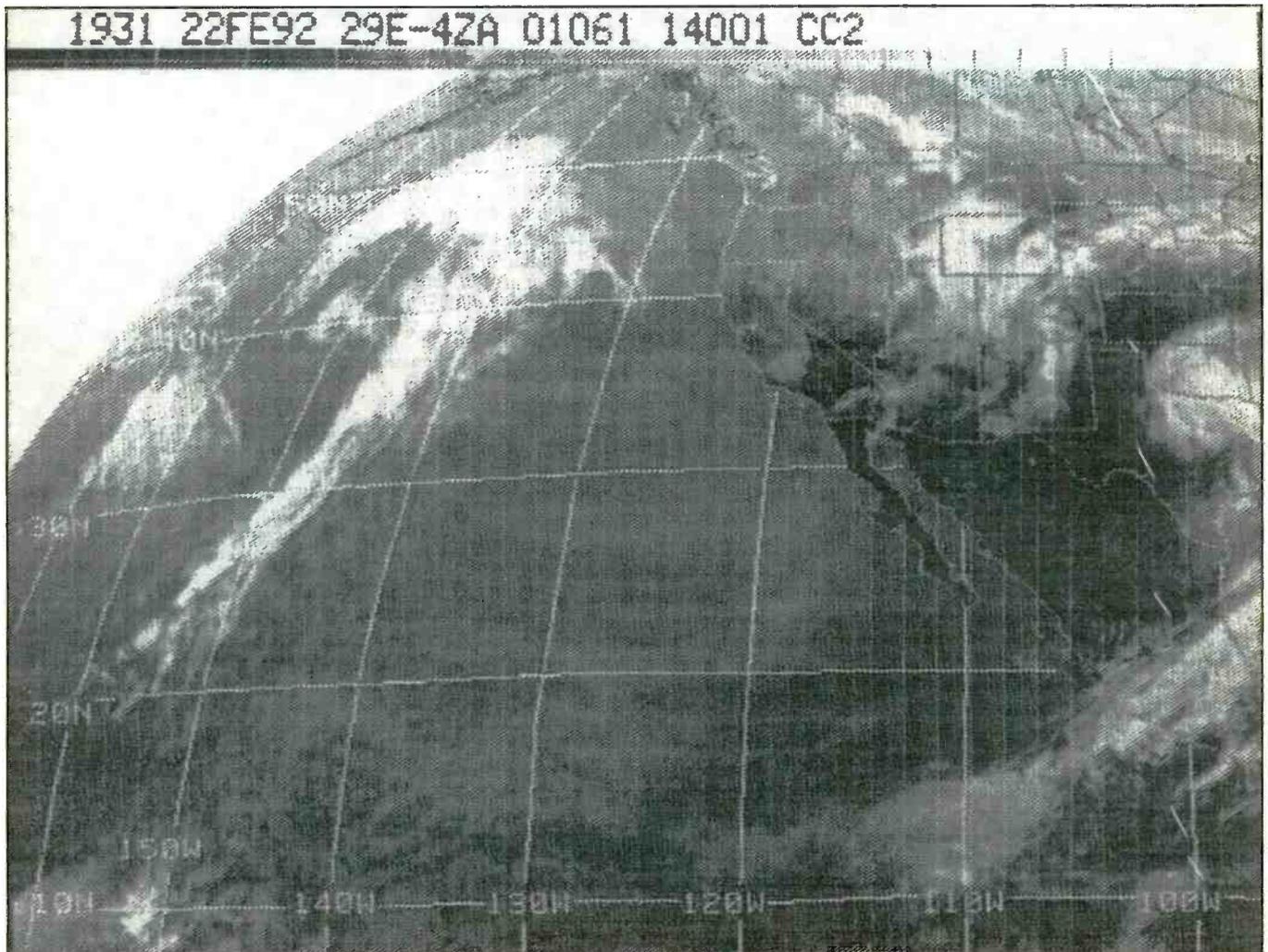
"United Nations Security Council resolution 781 calls for a ban on all military flights in the airspace of BIH...The foregoing does not restrict other flights that might be performed with civilian aircraft or classed as humanitarian in nature or which may be judged by UNPROFOR to be used in the pursuance of the peace process in the United Nations designated no fly zones," reads the NOTAM.

From coastal station SAB, Goeteborg Radio, Sweden, comes frequency lists with

headers reading, "Operating procedures ship-to-shore semi-fax service operation/country codes" followed by "info about sub-station Argentina," "sub-station Europe," and "sub-station Panama." All listed transmitting frequencies coincide with those used by Goeteborg's RTTY channels. This transmission was on 8214.9 kHz in ARQ mode at 0400 UTC.

On the diplomatic front, the foreign affairs ministry in Belgrade, Yugoslavia, apparently has devised a new callsign for itself—DPAF. While watching Serbo-Croat text on 13388.0 kHz at 0114 UTC one day last December, the transmission broke away at 0130 for several minutes of RY's along with the new callsign. The usual callsign is DFZG. After the testing came some brief msgs from the RTTY operator followed by news in English. The decoder setting was 400/75N.

Mutuelle Africain de Presse of Rabat,



Weather chart of NMC, U.S. Coast Guard, Point Reyes, CA, sent at 2030 UTC on 12730 kHz, 120/576. (Submitted by Robert Pizzi, CA)



Soccer players newsfax photo from LRO26, AP, Buenos Aires, Argentina, moved at 2315 UTC on 5777.5 kHz, 60/288. (From Robert Margolis)

Morocco, recently gave these callsigns and frequencies for its news broadcasts to Latin America: CNM31/6X on 10416.9 kHz to Brazil; CNM49 on 13547.5 kHz to Colombia; and CNM39/1X on 10757.4 kHz to Puerto Rico.

Reporting from the Republic of South Africa, Robert Hall says he came upon a Norwegian diplomatic station using the SWED-ARQ RTTY mode in November. SITFA transmissions have occurred in the past, but this is the first time the Norsemen are said to be using the newer mode. Bob's logging was from the Norwegian embassy in Lagos, Nigeria, to MFA, Oslo, Norway. He bagged this one on 19808.0 kHz at 1202. Rah, rah, Bob!

Writing from Georgia, Norman Talley, Jr. (W4ARH and AFF2GA), who is active in the U.S. Air Force MARS program, provides more insight into the U.S. Military RTTY net on 14646.5 kHz which was discussed in some of last year's RTTY columns. The packet BBS net included AFA01, Washington, DC; AFA02, Key West, FL; AFA03, Bonita Springs, FL; and AFA05, Homestead AFB, FL, which was extensively damaged by Hurricane Andrew last August.

Talley's info is from a packet BBS transmission from AIR, U.S. Air Force MARS, Andrews AFB, MD. He says interference from other stations kept him from getting the complete text. His copy reads, "...Andrews Air Force Base (AFA07) and one at Albrook Air Station, Panama. The remaining 16 SITFA stations are located in the capitol cities throughout Central and South America and operated by each country's air forces. Our SITFA station in Panama is the main focal point for the entire network.

"The SITFA network has two circuits, the northern and southern circuits. The following SITFA stations make up each circuit. Northern: Andrews Air Force Base, Colombia, Dominican Republic, Ecuador,

El Salvador, Guatemala, Honduras, Nicaragua, Panama, and Venezuela. Southern: Argentina, Bolivia, Brazil, Chile, Paraguay, Peru, and Uruguay.

"The primary mission of the SITFA is to achieve a greater solidarity among the air forces of the Americas, and to increase their communications capabilities for hemispheric defense. SITFA provides interconnecting communications channels for all the air force chiefs of staff, embassies, air attaches, and military aircraft of the member countries.

"All personnel assigned to the SITFA station here at Andrews are bilingual, with Spanish as the primary language used within the system. Our station also provides a great community service for the Prince George and Montgomery County area of Maryland..."

Talley says he believes SITFA is a Spanish acronym for "International Telecommunications Society of American Air Forces" or something similar. He says other callsigns noted on 14648.3 kHz, which is the lower sideband frequency to the center frequency of 14646.5 kHz, are LUB01, probably Buenos Aires, Argentina; ZWU26, possibly in Brazil, SIT101, "anyone's guess;" and AIR1AF, "which is the callsign used by AIR to conform to packet protocol. The -1 appended to the calls indicate a packet BBS."

I raised the question recently that if a five-letter group is called a pentagram, what is the name for a five-number group? Talley says "two-number groups are called dinomes, and three-number groups are called trinomes, therefore, a five-number group would probably be a 'pentanome,' but I have never heard it called that."

On a side note, Talley says, "I have seen in several publications the callsign IBA identified as Italian Navy, Naples, Italy. The location is correct, but the callsign is assigned to HQ, Allied Forces Southern Eu-

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rope (NATO). The transmitter site is actually located at Castelvolturno, Italy. I was Operations NCOIC for several years at their Lago di Patria receiver site."

In December's column, I mentioned a "whozit" station found on 18454.9 kHz running a strange looking text at 50 baud. I noted the frequent use of the number 3, and the letters D, F, H, T, V, and Y, in the text, and commented that the former Tass and APN news agencies in Moscow, Russia, occupied the frequency until the end of 1991. The transmission occurred last July.

Talley determined from a sample of the text provided that it was a news broadcast from Tass (now called Itar-Tass), and "it was definitely transmitted on a Cyrillic national Teletype machine."

The beginning of the somewhat garbled illustrated text began with, "25198 + (+137112 301148 VMK GDW NNNP ZCZCAF094 1 VRAUWAQ BFXX EL365 FHC HQ FHC F5 WCF013 30.7?92 FHC?002 BDY BTH3FYV OH' SFHTR-FCDV.3FY BDY XFYADHC' FHC-TYGHTXV QFCFH QF)=: QF3FXBFYV T HXXBFYV XFQCFYFRVW YVYD-KCVYLF3V IHZFYV UFY2F U3DVDVC, DHBT..."

He translated this to read, "25198 + "+137112 301148 IYUL 92 BBBTS YAMYAMFA094 1 INFZKFU TASS

ED365 ARM RU ARM AP KMA013 30-7,92 ARM,002 TVSH TGRBASHI CHR YARGNAMVI(3ASH TVSH SAISHFVRM ARMGSHPRGSI UAMAR UADIM SD UA3ASTASHI G RSSTASHI SAUMASHANIK SHISHVLMISHDA3IKHRYAA-SHI ZASH2A Z3VIVIM, VRTG..."

There is enough here to make several observations, even though Talley gave me a complete transliteration of the entire illustrated text. It appears to me that this broadcast was indeed from Tass, in Armenian, and was from possibly Kirovakan, Armenia. I monitored the station at 1218 UTC on July 30, 1992. This is shown in Talley's copy as "301148 IYUL 92," although the time reads a half-hour earlier from when I received the transmission. "TASS...ARM RU ARM" tells me this is a Tass broadcast from ARMenia to RUssia in ARMenian. The circuit identifier, KMA013, says to me that it was being sent from Kirovakan to Moscow on the A circuit, and the news item is the 13th one of the day on that circuit.

Thank you, Norm, for all your input. One of the pleasures I get from writing for POP'COMM is readers such as you who share their knowledge with the rest of us, making this hobby much more interesting and enjoyable.

Two brief notes to Robert Hall, who was mentioned earlier in this column: Yes, Bob,

the HOKA Code 3 RTTY/FAX decoder is in use and does produce excellent results. Both Takashi Kuroda of Japan and I use Code 3's along with other decoders in our monitoring efforts. As to your query about computers and radio frequency interference, the Federal Communications Commission in the United States has regulations pertaining to them. All personal computers have to be certified by the FCC before they can be sold in stores here. Class B classification is given to those PC's meant for use in homes. They have to be well shielded from causing RFI to radios and television sets. Class A certification is given to PC's used in business and industry, where RFI restrictions are less stringent. Therefore, Class B graded computers are suitable for use in your RTTY-monitoring work, but Class A computers are not. Many computers coming into the United States from the Far East are said to be sold to consumers without being tested and certified by the FCC.

Two of the three radiifax news photos accompanying this month's column were sent in by Richard Sprau of Florida and Hal Bilodeau of Illinois. The photos were transmitted by HMF52. KCNA, Pyongyang, North Korea. Both contributors used floppy disks to store their intercepts. Sprau's news photo was converted to Z-Soft's PC

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Paintbrush .PCX graphics format and required 15,000 bytes of disk space, which I expanded to 31,237 bytes for proper viewing here. A 24-pin dot matrix printer made the printout. Bilodeau's photo, in CompuServe's .GIF graphics format, used 133,068 bytes and was expanded to 345,114 bytes. A printout was made with a laser printer. The photo of the soccer players, transmitted by LRO72, AP, Buenos Aires, Argentina, was sent directly from fax decoder to laser printer and is from my own collection.

RTTY Intercepts

4015.0: AEM1USA, U.S. Army MARS, Heidelberg, Germany, working AEM1VLK. Packet at 1900. (Ary Boender, NLD)

5740.0: RKR78, Irkutsk Meteo, Russia, w/wx synopses from Iran. 50 baud at 0150. (Harold Manthey, NY)

7396.8: RPFN, Monsanto Navrad, Portugal, w/RURY, SGSG, foxes & 10 count, 75 baud at 0306. (Ed.)

7414.0: Un-ID idling, ARQ-E/72 at 0303. (Ed.)

7636.8: SESEF, Norfolk, VA, w/kg U.S. Navy ship w c/s NCGD, 75 baud at 1920. (Ed.)

7689.5: TUH, ASECNA, Abidjan, Ivory Coast, w/RURY + QJH1, at 0637, 50 baud. (Ed.)

7808.0: DFZG, MFA, Belgrade, Yugoslavia, w/RURY & QTC, foll by crypto after XPXPXP, 75 baud at 0630. (Ed.)

7850.2: ZAA, ATA, Tirana, Albania, w/nx in EE at 1913, 50 baud. (Ed.)

9068.0: "Country Song" w/RUR RYR, foxes, & 10 count, 50 baud at 0803. (Tubbs, Germany)

9214.5: "Key Board" w/RUR RYR, foxes & 10 count to "Country Song," 50 baud at 0828. (Tubbs, Germany)

9222.5: "Music Stand" w/RURY, foxes & 10 count at 0939, 50 baud. (Tubbs, Germany)

9370.6: "Pokhara" w/msg re lost FTC msg to "Rogvae," Piccolo at 1224. (Graeme Bartlett, AUS)

10215.4: HZN46, Jeddah Meteo, Saudi Arabia, w/coded wx at 1635, 100 baud. (Robert Hall, RSA)

10259.4: RCF, MFA, Kupavna, Russia, w/CQ + RURY at 1640, 75 baud. (Hall, RSA)

10478.2: CBDFT, Un-ID Chilean mil., working CBMFD & CBDFA, ARQ-M2/96 at 0128. (Manthey, NY)

11039.0: DDH9, Pinneberg Meteo, Germany, w/coded wx at 1250, 50 baud. (Boender, NLD)

11404.0: VJW, Darwin, Australia, rpts c/s every 16 secs., 1900-2000 + 1129. Piccolo. (Bartlett, AUS)

11508.0: Garbled c/s, either PWF33 or PWF38, Salvador, Brazil, w/RURY & SGSG at 1950, 75 baud. (Manthey, NY)

12622.1: Un-ID South American sta. in ARQ mode, 850-Hz shift, at 1111. (Fred Hetherington, FL)

12714.0: UXN, Arkhangelsk R., Russia, in ARQ at 1232. (Ed.)

12739.8: Un-ID w/RURY + "vmgtcnjhb" preceding encrypted t/c, 100 baud at 1243. (Ed.)

12741.3: HWN, Paris Navrad, France, w/RURY & SGSG, 75 baud at 2030. (Ed.)

13372.0: Un-ID idling in DUP-ARQ at 1507, sends QRA's in CW at 1515. (Ed.)

13399.0: DFZG, MFA, Belgrade, Yugoslavia, w/Tanjung nx in EE at 1501, 75 baud (Ed.), and at 1630. (Hetherington, FL)

13530.0: RVW53, Moscow Meteo, Russia, w/coded wx at 1256, 50 baud. (Boender, NLD)

13934.0: LZC25, Sofia, Bulgaria, w/QRA, RY's & ZHC to Beijing, 1402-1415, 50 baud. (Ed.)

13946.5: Un-ID w/nx in SS re Iraq in the aftermath of the Persian Gulf war. 50 baud, 2130-2144. Cuban diplo? (Ed.)

14355.5: SAM, MFA, Stockholm, Sweden, w/5L grps & a Telex in Swedish, SWED-ARQ at 1426. (Ed.)

14367.0: BZP54, Xinhua, Yuryumqi, China, w/nx in EE at 1240, 75 baud. (Boender, NLD)

14467.3: DDH8, Pinneberg Meteo, Germany, w/RURY, foll by coded wx, 50 baud at 1220. (Hetherington, FL)

Abbreviations Used In The RTTY Column

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

14566.5: Un-ID w/5L grps at 1704, ARQ. (Ed.)

14726.0: Un-ID w/"11177 00125 10915 02461 05269" preceding a 5L msg. 75 baud at 1800. S/off 1817 w/"nil nr 460 will qso cfm cfm nil tks gb sk." (Ed.)

14784.7: ATP65, Infoind, New Delhi, India, w/nx in EE, 50 baud at 1613. (Hall, RSA) Hasn't been called Infoind for many years. Bob. The nx b/c is from India's external affairs ministry (MEA)—Ed.

14831.5: Un-ID w/RURY foll by many 5F msgs. 50 baud at 1315. (Ed.)

15935.0: MENA, Cairo, Egypt, w/nx in EE at 1725, 75 baud. (Ed.)

16092.5: AFRTS, Hollywood, CA, w/AP/UPI nx, 50 baud, FDM channel B01. at 1641. (Ed.)

16107.5: HBD20, MFA, Berne, Switzerland, w/5L grps. ARQ at 1407. (Ed.)

16117.2: SCEF, Isla Rey Jorge, Antarctica (Chilean base), w/wx synopses for all the Chilean camps, 2303-0410, ARQ w/a 850 Hz shift. (Ed.)

16138.0: "YBU" w/RURY at 1614, foll by a 5L msg at 1615, 75 baud. (Ed.)

16228.0: Un-ID w/5L grps at 1410, 75 baud. S/off 1412 w/"qru qru sk sk." (Ed.)

16903.0: UJY, Kaliningrad R. Russia, working various ships at 1132, ARQ. (Boender, NLD)

16955.0: UDH, Riga R., Latvia, w/ARQ t/c to ships at 1138. (Boender, NLD)

16963.0: UJY, Kaliningrad R., Russia, w/RURY at 1150, 50 baud (Boender, NLD)

17036.0: UXN, Arkhangelsk R., Russia, w/RURY to ship c/s 9HIZ3, 50 baud at 1200. (Boender, NLD)

17054.0: Un-ID w/RURY + "vmgtcnjhb" between encrypted msgs at 2000, 100 baud. (Hetherington, FL)

17235.0: HJN2, Bogota R., Colombia, w/ARQ t/c in SS at 2000 and a FEC t/c list at 2005. (Hetherington, FL)

17443.0: BZG48, Xinhua, Yuryumqi, China, w/nx in FF at 1215, 50 baud. (Boender, NLD)

18151.8: Un-ID w/encryption at 1424. ARQ-E/192. (Ed.)

18482.0: "RCCS," Darwin, Australia, w/crypto foll by "biseeeeeee k" & QRT at 1222, Piccolo. (Bartlett, AUS)

18561.0: 9BC31, IRNA, Teheran, Iran, w/nx in EE at 1158, 50 baud. (Hall, RSA)

18648.3: SOT265B, PAP, Warsaw, Poland, w/nx in Polish, FEC at 1500. (Ed.)

18715.6: MUQ, un-ID British sta., w/requests to "QSY F15," foll by foxes & "go for green." Piccolo at 2332. Partner was on F13 prior to this xmsn. (Bartlett, AUS)

18726.0: GFH, British Mil., Hong Kong, w/cryp to foll by LOLO, Piccolo at 1113, 0440 & 0740. (Bartlett, AUS)

18971.7: DFZG, MFA, Belgrade, Yugoslavia, w/propaganda in EE at 1555, 75 baud. (Hall, RSA)

19007.6: AFRTS, Hollywood, CA, w/AP/UPI nx, 50 baud, FDM channel B01. at 1933. (Ed.)

19018.4: CLP1, MFA, Havana, Cuba, w/5F grps to Tanzania, 50 baud at 1905. (Manthey, NY)

19067.6: Un-ID s/off w/"saludos alarcon" at 2150, 50 baud. Cuban diplo? (Ed.)

(Continued on page 75)

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FCC ACTIONS AFFECTING COMMUNICATIONS

New Experimental Licenses

The Commission, by its Office of Engineering and Technology, Frequency Liaison Branch granted the following experimental applications.

KM2XKT, S.T. RESEARCH, CORP., experimental to operate on frequencies 1635.5-1645.5 MHz for use of an INMARSAT earth station to aid in the development of equipment to further maritime and mobile satellite technology. FX&MO: Newington, VA.

KM2XKU, National Satellite Publishing, Corp., experimental to operate on frequencies in the 2500 kHz range for development of a low power multichannel system for technical demonstration of equipment and techniques. FX: Rosenberg, TX.

KM2XLG, Solectek, Corp., experimental to operate on frequencies 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz for development of a line of wireless spread spectrum products for digital data information systems to be used in commercial and industrial applications. FX: San Diego, CA.

KM2XLL, ADX MICROSYS, CORP., experimental to operate on frequencies 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz for development and testing of spread spectrum radio systems. FX&MO: Continental U.S.

KM2XLM, SCALED COMPOSITES, INC., experimental to operate on frequencies 219.175 MHz and 1433.7 MHz for development and testing of an unmanned aircraft to be controlled by telecommand signal. MO: CA; NV; NM; AZ.

KM2XLO, WESTINGHOUSE COMMUNICATIONS SERVICES, INC., experimental to operate on 902-928 MHz for demonstration of the RF Identification System. MO: Continental U.S.

KM2XLQ, TECO ENERGY, INC., experimental to operate on frequencies 1850-1990 MHz for conducting concept trials and research that are related to the establishment of personal communications services. FX&MO: Tampa, FL.

KM2XLR, YELM TELEPHONE, CO., experimental to operate on frequencies 902-928 MHz, 930-931 MHz, 1850-1990 MHz, 2400-2483 MHz, and 5725-5850 MHz for development of radio techniques, equipment operational data, and engineering as it relates to personal communications services and market testing. FX&MO: within 32 KM of NL:46 56 29; WL: 122 36 18.

KM2XLS, GECO GEOPHYSICAL CO., INC., experimental to operate on frequencies 2413.75 MHz and 2463.75 MHz to test Prakla-Scismos (MIDAS) Microwave

Seismic Data Link System. FX&MO: CONTINENTAL U.S.

KM2XLT, HARRIS CORPORATION, experimental to operate on frequencies 5925-6425 MHz for evaluation and development of innovative satellite communication techniques. FX: Palm Bay, FL.

KM2XLY, WESTINGHOUSE COMMUNICATIONS SERVICES, INC., experimental to operate on frequency 1790 MHz for demonstration of video transmission equipment to potential customers. MO: Baltimore, MD.

KM2XLZ, WESTINGHOUSE COMMUNICATIONS SERVICES, INC., experimental to operate on frequencies 9600-9900 MHz for testing and demonstration of airborne surveillance platform. FX&MO: Anne Arundel County, MD (CONUS).

KM2XMA, DUKE UNIVERSITY, experimental to operate on frequencies 3237 kHz, 7880 kHz, and 11399.5 kHz for fulfillment of US government contract, (Naval Warfare). MO: China Lake, CA.

KM2XMD, GTE AIRFONE, INC., experimental to operate on various frequencies for use of cordless telephones aboard aircraft to connect to satellite terminal. MO: CONTINENTAL U.S.

KM2XME, UNIVERSITY OF ALABAMA, experimental to operate on frequency 915.0 MHz for use of radar to collect wind profile and temperature data. FX: Pulaski, TN.

KM2XMG, KING RADIO CORP., experimental to operate on frequencies 9325-9425 MHz to evaluate the performance of an airborne weather radar. FX: Olathe, KS.

KM2XMO, WLR RESEARCH, INC., experimental to operate on frequency 915 to fulfill U.S. government contract, (FAA). MO: Jamaica, NY

Consumer Alert

The Commission has become aware that certain entities are advertising investment opportunities in the Specialized Mobile Radio (SMR) service and are offering, for a substantial fee, to prepare applications to the FCC for SMR license. As with any business opportunity, consumers should carefully examine all aspects of any proposal before investing. In order to respond efficiently to the many inquiries we have received from the public as a result of these advertisements, we are issuing this Consumer Alert. The following points respond to the most commonly asked questions about the SMR business.

1. SMR's are not a recent regulatory development. The SMR service was created in 1975 and has been in existence since that time.

2. SMR licenses are not cellular telephone licenses. For most SMR's dispatch radio service, not mobile telephone, is their primary business. The Commission has issued only two cellular telephone licenses per market. Each cellular licensee has several hundred channels at its disposal. By contrast, the Commission issues licenses for only five or ten SMR frequencies at a time, and each SMR licensee has much less spectrum capacity than either cellular licensee. There are often many more SMR providers than cellular telephone companies in a market.

3. SMR licenses have been granted in the 800 MHz and 900 MHz bands. SMR's may be licensed anywhere in the country in the 800 MHz band if the frequencies are available. The Commission has licensed 900 MHz SMR's only in the 50 largest metropolitan areas of the United States. The Commission is not presently awarding SMR licenses in the 900 MHz band.

4. SMR licenses in the 800 MHz band are not available in many of the largest cities in the United States because all frequencies have been licensed. Applicants who apply for frequencies in these areas will be placed on a waiting list in the event frequencies become available. There is no assurance that frequencies will become available.

5. SMR licensees must construct their systems within 12 months of licensing. If a licensee fails to construct within that time period, the license cancels automatically, and the FCC will take it back. A license for a system that has not been constructed may not be sold.

6. SMR license application forms (Form 574) are available without charge from the FCC. The application filing fee is \$35 per call sign. You can obtain FCC forms by calling (202) 632-FORM. If frequencies are available at the desired location and there are no other problems, applications are generally granted within 120 days.

For further information on SMR licensing, please contact the FCC Private Radio Bureau's Licensing Division at (717) 337-1212. For general information on the SMR business, please contact the FCC's Public Service Division at (202) 632-7000.

Fined \$6,400 For Unlicensed Operation

The Federal Communications Commission's San Diego Office has fined Mexican Border Service, Inc., of San Diego, California, \$6,400 for operating an unlicensed two-way radio communications system.

The maximum penalty for unlicensed radio operation in a first conviction is a fine of up to \$100,000 or imprisonment of up

to one year, or both. Such misuse of radio frequencies is a serious offense because of its potential for interfering with safety-of-life services such as aviation, marine, and law enforcement.

Changes Proposed For Amateur Rules Concerning 222-225 and 1240-1300 MHz Bands

In response to three petitions that involve unrelated changes to the rules for the amateur service 222-225 MHz band, the Commission proposed creating a small new subband where repeaters are prohibited; authorizing frequency privileges for Novice Class operators in the entire band; and allowing Novice Class operators to be licensees and control operators of repeaters in the 222-225 MHz band as well as in the 1270-1295 MHz segment of the 1240-1300 MHz band.

The American Radio Relay League, Inc. (ARRL) requested that a new subband be designated at 222.00-222.15 MHz where repeaters would be prohibited, but where all other types of station operation could continue. It said a small segment is needed where experimentation can take place but where frequencies need not be shared with repeaters.

ARRL also requested expansion of the frequency privileges for Novice Class operators to encompass the entire 222-225 MHz band. It believes that Novices Class operators would benefit from such expansion because they would be exposed to routine types of amateur station operation other than repeater operation.

Dr. Michael C. Trahos requested that Novice Class operators be authorized to be licensees and control operators of repeaters in the 222-225 MHz band and in the 1270-1295 MHz Novice subband of the 1240-1300 MHz band. He argued that the amateur service should follow the General Mobile Radio Service and the Private Land Mobile Radio Services where licensees are authorized to be licensees of repeaters without even being required to pass an examination in proper repeater operation.

The Commission said it believed there was merit in these petitions and asked for comments on the proposed rule changes.

Maritime Rules Pertaining To Bridge-To-Bridge Act Amended

The Commission amended Part 80 of its rules to conform to changes in the U.S. Coast Guard's rules pertaining to vessels subject to the Vessel Bridge-to-Bridge Radiotelephone Act of 1971. These changes broaden the applicability of the Bridge-to-Bridge Act to include all power driven vessels 20 meters or longer. They also require vessels subject to the Bridge-

to-Bridge Act to be equipped with radio installations capable of operating on marine VHF channel 22A and, in certain areas, Channel 67.

The Bridge-to-Bridge Act requires that certain vessels operating on the navigable waters of the United States be equipped with marine VHF radio installations capable of receiving and transmitting navigational safety warnings and communications with the Coast Guard. The Coast Guard administers the VHF radiotelephone carriage requirement of the Bridge-to-Bridge Act, and the Commission prescribes regulations concerning the technical and operating characteristics, including frequencies, of the required radio equipment.

Applicants Must File On Current Form

Effective now, only the September 1991 edition of FCC Form 404, Application for Aircraft Radio Station License, will be accepted for processing.

Earlier editions of the application form filed will delay issuance of the license. Those applications will be returned without action, along with a request to refile the September, 1991 edition.

Current editions of FCC Form 404 may be obtained from the Commission's Forms Distribution Center, 2803 52nd Ave, Hyattsville, MD 20781, phone (202) 632-FORMS.

For further information, contact Private Radio Bureau's Consumer Assistance Branch, 1270 Fairfield Rd., Gettysburg, PA 17325-7245, phone (717) 337-1212.

Change In Renewal For Broadcasting Proposed

The Commission proposed requiring licensees of certain types of broadcast stations to report on their license renewal applications the status of their operations. Specifically, it proposed modifying Form 303-S to require licensees of full power commercial AM, FM and TV stations to report whether, at the time of license renewal, their stations are on the air or have discontinued operations.

The Commission permits these licensees to limit or discontinue operations for up to 30 days without authority from the Commission. Licensees are required, however, to notify the Commission of limited or discontinued operations not later than the 10th day of such operation. The licensee is required to request additional time if station operations are not resumed within 30 days. Licensees must turn in their licenses to the FCC when discontinuance is permanent.

These regulations have not been universally followed, however, and the Commission said it was aware of many stations that had discontinued operation without notifying it. By asking, on FCC Form 303-

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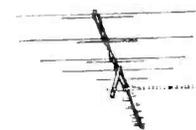
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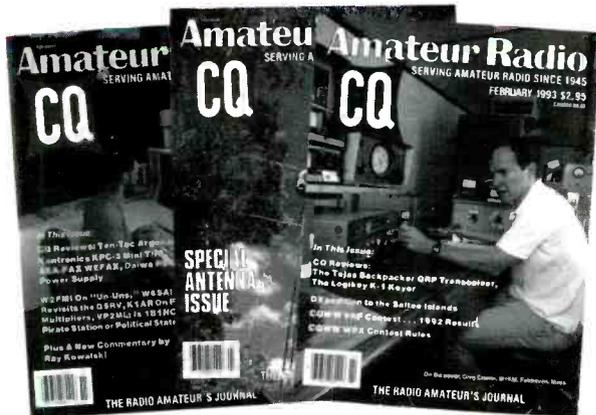
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S, the status of the station, the Commission will have an effective way of tracking the status of the stations and making sure the public interest is served by promoting expeditious restoration of service to the public on stations that are no longer operating.

Apparent Liability For A Forfeiture For Operating At An Unauthorized Location

The FCC notified Digital Mobile Communications, Inc. Michigan of an apparent liability for a forfeiture in the amount of \$40,000 for willful and repeated violations of the rules by operating at an unauthorized location. The NAL was issued for station KQC884 in the Public Land Mobile Service at Dearborn, MI.

Digital filed FCC Form 489 notifying the Commission of the construction and operation of a new location on frequency 35.58 MHz at Dearborn, MI. FCC rules permit the construction and operation of additional transmitter locations without prior Commission approval provided that the reliable service area contour and the predicated interference contour of the additional transmitter are totally encompassed by existing station contours and the transmitter location is below Line A as defined by the rules. As the result of mutual agreements, the Commission has had an arrangement with Canada requiring the exchange of frequency assignment information and engineering comments on proposed assignments along the Canada-United States borders in certain frequency bands above 30 MHz and above lines A and B. Digital's new transmitter location is located above Line A and therefore the construction and operation of the facility require prior Commission approval and notification by FCC 489 is not permitted in this case.

Consequently, the Commission found that Digital's operation is unauthorized and has been continuous since July 31, 1991, because authorization for construction of the station was never obtained by Radio Relay, the prior owner of the station. The Commission stated that constructing and operating facilities in close proximity to the Canadian border absent prior frequency coordination with Canada cannot be deemed a minor violation. Moreover, there was no voluntary disclosure by Digital of its violation.

Changes In Television Technical Standards Proposed

The Commission proposed amending Sections 73.682 and 73.699 of the rules to permit optional transmission of expand-

ed closed-captioning and other types of information using all of line 21, field 2, of the vertical blanking interval (VBI) of broadcast television signals. It also has proposed reserving use of line 19 of the VBI for optional use of a ghost-cancelling reference (GCR) signal.

These changes were requested by the Consumer Electronic Industries Association (EIA/CEG) and Advanced Television Systems Committee (ATSC).

In its proceeding in GEN Docket 91-1, Amendment of Part 15 of the Rules to Implement the Provisions of the Television Decoder Circuitry Act of 1990, the Commission noted that Public Broadcasting Service/National Captioning Institute specifications permit two distinct channels of captioning information to be transmitted, either to caption in two different languages or for two different reading levels. However, comments in that proceeding indicated that captioning two channels simultaneously required a change to the TV broadcast rules, such as allowing use of all of line 21, field 2. The Commission indicated, however, that such a change was outside the scope of that proceeding. Therefore, EIA/CEG requested the changes that the Commission has now proposed.

The Commission agreed with EIA/CEG that reconfiguration of line 21, field 2 to provide enhanced closed-captioning (whether it be for a second language or a higher level of captioning quality) would appear to serve the public interest. It indicated that this change could not only enhance closed-captioning for hearing-impaired persons, but also could expand various captioning uses for non-hearing-impaired persons as well. As suggested by EIA/CEG, the Commission proposed that the same data format be used for field 2 as has already been established for field 1.

The Commission stated its belief that, while many advances in NTSC television quality have been made over the years, picture degradation through ghosting (one or more fainter images or "ghosts" appearing in the TV picture, usually offset to the right of the desired image and most often caused by reflections in the path of the TV signal) remains a significant reception defect, possibly the most significant defect yet to be eliminated or minimized. ATSC proposed a GCR signal to address this defect. ATSC requested that a GCR signal be substituted on line 19 of the VBI, in place of the vertical interval reference (VIR) signal for which that line is currently reserved. The Commission agreed with ATSC's suggestion that the public interest might be better served by the GCR circuitry than by continued reservation of line 19 for a VIR signal that has not been effectively implemented.

The Commission found merit in both proposals and noted that significant benefits can be derived by prompt action in this

rulemaking. It said TV manufacturers are currently designing receivers equipped with closed-captioning circuitry mandated by the TV Decoder Circuitry Act of 1990 and that the earlier the FCC can act on these proposals, the less disruptive it will be for manufacturers already planning their compliance with this requirement and the sooner televisions equipped with these features can be made available to the public.

FCC Releases International Traffic Data

The FCC released a report titled International Communications Traffic Data Report for 1991, prepared by the Common Carrier Bureau's Industry Analysis Division.

The report is significantly different from prior reports. Resale traffic has been separated from facilities bases traffic to avoid double counting. Transiting traffic is being published for the first time. Also for the first time, services to Canada and Mexico are included. Reporting categories are now consistent with industry settlement practices to ensure consistent reporting. The list of international points has been clarified and expanded. Finally, country-by-country data is provided for six categories of private line services. These improvements are expected to increase the utility of the report.

Traffic between the United States and other countries is reported on a country-by-country basis for message telephone, message telegraph, exchange telex and private line services. Although international traffic data is reported in great detail, it is not reported until many months after the end of the calendar year so that U.S. and foreign carriers can reconcile their books. For example, most of the 1991 data now being published was filed on October 31, 1992.

The report shows that customers in the United States spent about \$9.8 billion for international services in 1991. Calls to and from other countries resulted in almost 14 billion minutes of traffic. In addition, United States carriers now provide over 11,000 private line circuits between the United States and international points. As a result of the settlement process, United States carriers paid a net amount of \$3.3 billion to foreign carriers and retained almost \$6.5 billion in revenues.

The report and its underlying data are available for reference in the Industry Analysis Division's Public Reference Room, Common Carrier Bureau, 1250 23rd Street, N.W. Plaza Level. Copies of the report may be bought by calling the Downtown Copy Center at (202) 452-1422.

For additional information, call Linda Blake or Jim Lande of the Bureau's Industry Analysis Division, (202) 632-0745. ■

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SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

While you start thinking about travel plans for the rest of the year, it's not too early to start putting together a list of frequencies you'll want to tune in either during the summer months or while you travel. Having a list of frequencies at hand will save valuable minutes that could be spent scanning or searching for new frequencies.

Randall Griffin of Kenner, Louisiana, says he's a new *POP'COMM* reader and that his listening has been enhanced by what he reads here. Randall wants to pass along what has become his favorite frequency. The general mobile radio service (GMRS) frequency of 462.625 MHz is used at New Orleans International Airport and is identified on the air as "APCOMM." The frequency seems to be used as a link between various airport services such as operations, maintenance, fire/rescue, security, etc. He's heard all kinds of exciting communications on this channel.

Chris Tiller of Commerce, Georgia, passes along some frequencies of interest for the Atlanta area: 155.670, Jackson County police; 154.400, Jackson County fire; 155.295, Jackson County EMS; 154.190, Atlanta fire; 155.910, Metro Atlanta highway patrol; 460.150, Atlanta police downtown; 460.200, Atlanta police traffic; 460.300, Atlanta police Vine City-Balton; 460.525 Atlanta police SWAT team; 460.350, Atlanta police Zone 1, west. Chris says he uses a Radio Shack PRO-2006 and is a newly licensed ham. He's also interested in hearing from fellow monitoring enthusiasts in his area who would like to form a scanner/shortwave club. You can write to Chris at: 8806 Jefferson Road, Commerce, Ga. 30529.

James Richardson of Littleton, Colorado, writes to say he is forming a monitoring group in the Rocky Mountains. The regional group will serve Colorado, Wyoming, Montana, Utah, Kansas, Nebraska, New Mexico and maybe more. A newsletter and tours are planned. For more information, write to James at: 11391 Main Range Trail, Littleton, Colo. 80127-4049.

David Wipert of Parsons, Tennessee, sends along some frequencies of interest for his area: 460.225, Decatur County Sheriff's Department, Parsons police, Decaturville police; 154.400, Decatur County and Parsons fire departments; 122.800, Parsons Airport; 155.265, Decatur County Rescue Squad; 155.205 and 155.340, Decatur County General Hospital; 156.165, Decatur County highway maintenance; 155.370, statewide police intersystem; 460.400, statewide mutual aid. David also offers a tip for powering a base scanner during power failures. He connects the DC cable for a radio to a pair of 6-volt lantern batteries wired in



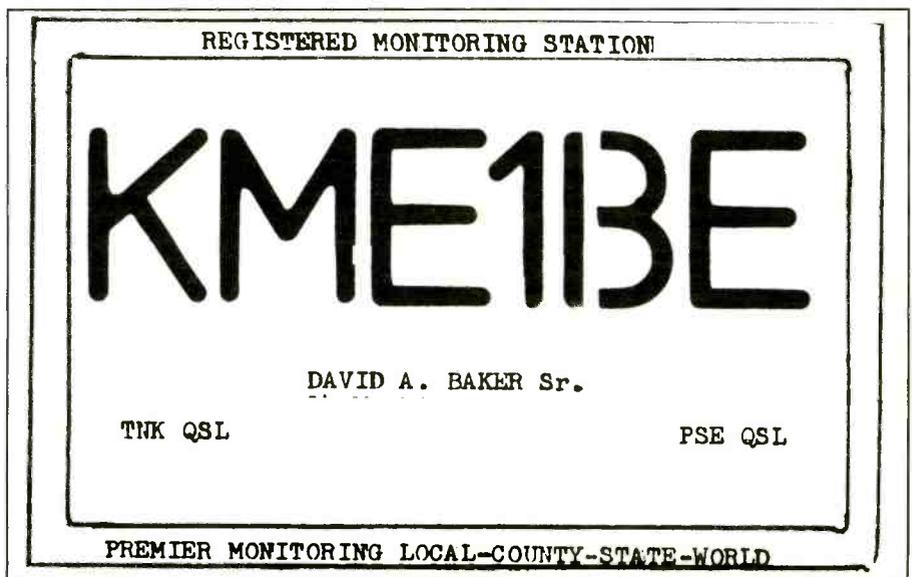
This is the Kansas City, Missouri, listening post of Dennis Parker. Scanners include Realistic PRO-32, PRO-34 and PRO-43. A shortwave receiver and CB station round out this well-equipped shack. A voice-activated tape recorder also is set up to log all the action.

series. Also, a 12-volt lantern battery or 8 "D" cell batteries also will work. He finds this useful since he doesn't own a handheld scanner; and those who own handhelds may find this helpful if they've forgotten to charge up their equipment.

Bob Burton of Kansas City, Kansas, claims he's stumbled across an interesting frequency. Bob says he hears news operations from somewhere in Florida on 25.87 and wonders if this is a bootleg station. No, 25.87 is legit, as it is used by WFLA in Tampa, Florida for remotes, as well as traffic copters and planes.

Apparently, the 450 and 455 MHz bands were real crowded in their area, so the station set up a 100-watt Motorola Micro transmitter on 25.87 narrowband FM, to handle news operations. If you have a shortwave receiver, you can tune in this station in the AM mode by detuning to 25.867 or 25.873 for the slope detection. The station seems to be gaining a following not only around the United States, but also around the world, where it can be heard regularly. Try during the morning for the best results.

Burt Steinberg, N2RTO, of Monsey,



Station card used by Dave Baker, Sr., Registered Monitor KME1BE, of Lincoln ME. Dave is N1GOI on the ham bands.

New York, says he's interested in listening to voice communications from the space shuttles on 259.7 and 296.8 MHz. He says he has tried catching the NASA crews, but to no avail. He wants to know if there is a trick to hearing the astronauts. Sure, as one seasoned shuttle-listening pro tells me—it's perseverance! Don't expect to hear the crew talking day in and day out while they are zipping around the planet. Rather, the shuttle makes use of much higher microwave frequencies and satellites for routine communications while in orbit. If you want to hear them on the 200 MHz band, first make sure your receiver is in the AM mode. Second, you probably will hear communications on the 200 MHz channels only during the following times during a flight: immediately after launch, as shuttle crews check out the radio system (it's used only as a backup these days), and immediately before the shuttle lands back on earth, as the crew again checks out the radio system. Check the launch and land times in your local newspaper or on TV and keep an ear to the radio. You will hear them—as long as it isn't a classified military flight.

Michael Breier of Buffalo, New York, responds to a question posed by Joe Galante, KNY2ADJ, in the November 1992 issue of POP'COMM. Joe had written requesting the frequency used by the sole police car in Akron, New York. Michael says that he's been told that Akron police uses a local government frequency of 153.785 for dispatch. He also says that the Erie County, N.Y., sheriff and New York State Police patrol the Akron area. Thus, Michael passes along these frequencies of interest: Erie County sheriff, 460.450 (dispatch), 460.200; New York State Police, 154.695, 155.505 and 155.565.

Landon L. Prillman Jr. of Fairfax, Virginia, writes to ask that I "forward any information pertaining to my hobby of scanning frequencies. My interest is public safety, federal law enforcement frequencies and Drug Enforcement Administration that are in the UHF and VHF frequencies." Well, I started writing about the scanning hobby more than 20 years ago and have been here at POP'COMM for more than 10 years. I surely have amassed a lot of information over the years, but a lot of it resides in the old noggin. I am able to help out on specific requests, but don't ask me to empty out the old brain data bank, OK?

If you have an interest in public safety or federal agencies, then you probably have some favorite frequencies already. How about sending in a few for your fellow readers, especially since you are located in the heart of federal monitoring—the metropolitan Washington, D.C., area.

Ted Sorge of Converse, Texas, checks in to say he collects older Realistic scanners. He recently picked up a PRO-2002 radio and is looking for an owner's manual for it. If you can help out Ted, his address is listed later on here. He also picked up a

PRO-2021 that he found after a lot of searching. He likes the older crystal scanners, too, however, he makes a point to say that it gets expensive getting crystals cut for all those scanners. Ted lives about 10 miles from downtown San Antonio and with his Radio Shack discone on a 10-foot mast on his roof, he can hear up to 175 miles and more. Ted wants to know if there are any scanner groups in the San Antonio or surrounding areas. If so, he'd be interested in hearing from you. If one isn't already in operation, he'd be interested in helping to start a club. You can write to Ted at: 514 Erna Drive, Converse, Texas 78109.

Here is a list of frequencies for San Antonio police on their 800 MHz trunked system: prefixes—856, 857, 858, 859 and 860, suffixes—.2375, .2625, .4625, .4875, .7375, .7625, .9625, .9875. For instance, all the prefixes and suffixes are put together to get all combinations, i.e., 856.2375, 856.2625, 856.4625, etc., up to 860.9875. Some additional frequencies for Randolph Air Force Base: 163.4875, base security; 413.000, security police; 173.5875, fire/crash; 138.077 and 138.175, Office of Special Investigations; 149.325, town patrol; 406.975, Army CID. In addition, here are frequencies for Bexar County, Texas: 155.790, Police F-1; 155.985, Police F-2; 155.625, Police F-3; 155.370, Police F-4; 153.770, Fire; 154.250, Fire; 154.

295, Reserves; 155.700, local.

Jay Bellew of Marcus Hook, PA says that the emergency services in Delaware County, which are the suburbs west of Philadelphia, are moving to the 506 MHz band. He sends along a list of channel assignments for the system, which still is being installed: Police M-1, 506.6625; Police M-2, 506.6375; Police M-3, 506.7875; Police M-4, 508.8125; Police Sector 1, 506.7625; Police Sector 2, 506.8375; Police Sector 3, 506.8625; Police Sector 4, 508.0875; Police Sector 5, 508.1125; Police Sector 6, 506.5625; Detectives-East, 506.5875; Detectives-West, 508.0625; Constables, 508.1625; Sheriff/prison, 506.6875; Data, 508.4375; Tactical, 508.2375; Upper Chester Township, 506.6125; Marple Township, 506.7125; Media Borough, 506.7375; Radnor Township, 508.1875; Fire Zone 1, 508.1375; Fire Zone 2, 508.0375; Fire Zone 3, 508.3375; Fire Zone 4, 506.3625; Fire Dispatch, 507.8125; Fire paging, 508.6625; Fireground, 506.5125; EMS 1/Med 1, 507.9875; EMS 2/Med 2, 506.4125.

What are you hearing on your scanners? What questions do you have about scanning? Why not send in a list of your favorite frequencies, photos of antenna sites, and your monitoring posts. Write to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 N. Broadway, Hicksville, N.Y. 11801-2909.

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BROADCAST DX'ING

BY ROGER STERCKX, KVT1JH

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

A Tale Of Two Stations: Within the past few months, two of the nation's most well known radio stations have undergone the most complete changes any broadcaster could ever face. Both stations are 50 kW broadcasters in New York City. One is WNEW/1130, and the other is WQXR/1560.

WNEW, established in 1934, was the station that (over the years) originated famous musical programs such as the *Make Believe Ballroom*, *Robbins' Nest*, and *The Milkman's Matinee*. Over the years, the WNEW microphones had been home to legendary New York City air personalities the likes of Al Collins, Art Ford, Martin Block (W2MGE), William B. Williams, Freddy Robbins, Dee Finch (W2SJH), Gene Klavin, Gene Rayburn, and Ted Brown. WNEW-AM long remained New York City's last major outpost of big band and traditional pop standards. It was where you heard Sinatra, Mathis, Ella, Peggy Lee, Satchmo, Tony Bennett, Sarah Vaughan, Patti Page, Como, Doris Day, Judy, Bing, Clooney, Basie, Glenn Miller, Nat King Cole, Liza, Torme, Ellington, and other favorites. In recent years, the most popular studio personality on WNEW has been Jonathan Schwartz.

WQXR also began in 1934. Originally, it was W2XR, an experimental AM high fidelity station. Since its inception, WQXR has primarily played classical music and operas, plus a sprinkling of show tunes and folk music.

Several ownership changes during the 1980's at WNEW brought about management changes. It was the old story. It resulted in unfortunate front office meddling with the station's successful program format. WNEW lost its identity and direction, soon followed by much of its audience. The ratings of WNEW-AM took a nose-dive.

WNEW was recently sold again to owners who decided to silence the music and run an all-talk business-information format. The new owners also ditched the WNEW call letters and replaced them with WBBR. Between the end of the WNEW originated programming and the start of the new WBBR call letters and format on 4 January, WNEW simulcast other stations, including a country music feed from local WYNY/103.5. The WBBR call letters weren't very original. New York City has already had a WBBR. According to the *POP'COMM* archives, New York City's original WBBR went on the air in 1934 and populated 1330 kHz for more than twenty years. Let's hope the new one lasts that long.

WQXR decided that the WNEW-AM pop standards music format was too good to go silent, and should be restored to its

original glory. WQXR-AM therefore took up the old WNEW format. Wisely, WQXR hired WNEW's Jonathan Schwartz. WQXR-AM also changed its call letters to WQEW, thus capturing and retaining some of the old WNEW-AM flavor. Interestingly, WQEW was one of the stations simulcast over WNEW for a few weeks while WNEW was waiting for its new talk format to kick in. For pop standards fans, the new station was a boon because WQEW's signal is better at night than WNEW's. And WQXR's former classical music programs were no major loss to AM listeners. Classical music fans prefer to tune to WQXR's FM outlet in order to hear that programming.

Nevertheless, it was sad that two great old stations, WNEW and WQXR, had faded into oblivion on the AM band.

Helping To Spread The Word: We note that recently, several stations have decided to extend their signal coverage by the use of additional transmitters. For example, station KCBR/1340, in Kansas City, Kans. wants to put up a 200 watt synchronous booster transmitter on 1340 kHz at Amoret, Missouri to operate simultaneously with the main transmitter.

All Quiet On The Western Front: Station WDVA/1250, a 5 kW station in Danville, Virginia has gone dark. WDVA had a C&W format, and had been downsizing for more than a year in an effort to



Logo of the new WQEW/1560, which took over the old format of New York's former WNEW/1130.

try and keep afloat amidst a three-year rising tide of red ink. In the summer of '91, six staff members were let go and an automated programming system was put in. When that didn't help, the station went up for sale last October. The hope was to keep

Applications Filed For New FM Stations

AL E. Brewerton	95.7 MHz	6 kW
AL Eva	99.9 MHz	6 kW
AS Fagaitua	103.1 MHz	30 kW
CO Silverton	103.7 MHz	25 kW
GA Douglas	92.5 MHz	6 kW
IN Clinton	93.9 MHz	2 kW
IN Knightstown	90.7 MHz	400 watts
MI Mio	93.9 MHz	50 kW
MI Oscoda	95.7 MHz	50 kW
MN Hibbing	90.1 MHz	100 watts
MN St. Joseph	92.9 MHz	25 kW
MO New London	105.9 MHz	25 kW
OH Whitehall	91.5 MHz	250 watts
OK Elk City	94.3 MHz	
OR Rogue River	94.7 MHz	2.4 kW
TX Benavides	107.7 MHz	50 kW
TX Goliad	95.9 MHz	6 kW
VA Winchester	89.7 MHz	100 watts

Permits Issued To Construct New FM Stations

AK Houston	94.3 MHz	6 kW
AL Centre	105.9 MHz	
AZ Tucson	104.1 MHz	3 kW
AZ Yuma	88.1 MHz	
FL Zolfo Springs	106.9 MHz	
GA Macon	92.3 MHz	
GU Agana	89.3 MHz	2.8 kW
IL Bushnell	104.7 MHz	

IL Fisher	102.5 MHz	6 kW
IL Kankakee	95.1 MHz	
KY Danville	88.1 MHz	
KY Williamstown	106.5 MHz	
ME Fort Kent	106.5 MHz	3 kW
ME Kittery	105.3 MHz	
MN Cloquet	96.5 MHz	
MO Bourbon	96.7 MHz	3 kW
MP Garipan, Saipan	100.3 MHz	1 kW
ND Jamestown	91.5 MHz	19 kW
ND Minot	106.9 MHz	
NM Angel Fire	99.1 MHz	
NM Grants	105.5 MHz	100 kW
NY New Paltz	93.3 MHz	350 watts
NY Olean	91.3 MHz	115 watts
OH Archbold	89.5 MHz	
OH Manchester	101.3 MHz	
OH Maumee	89.3 MHz	
PA Meyersdale	93.3 MHz	
SC Florence	91.7 MHz	10 kW
TX Junction	93.5 MHz	3 kW
TX Victoria	89.3 MHz	19 kW
VA Dillwyn	93.7 MHz	6 kW
VT Vergennes	96.7 MHz	3 kW
WA McCleary	96.9 MHz	
WI LaCrosse	106.3 MHz	12 kW
WY Rock Springs	90.5 MHz	100 kW

Permits Granted For New AM Stations

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NM Santa Fe	1260 kHz	

Requests To Modify AM Facilities

KBUF	Holcomb, KS	1030 kHz	Seeks drop to 1 kW.
WCCF	Punta Gorda, FL	1580 kHz	Seeks drop to 106 watts.

Modified AM Facilities

KBCN	Fairbanks	1300 kHz	Increased to 5 kW.
------	-----------	----------	--------------------

Requests to Change FM Frequencies

KVST	Huntsville, TX	103.5 MHz	Seeks 103.7 MHz.
KZUS-FM	Toledo, OR	107.1 MHz	Seeks 100.7 MHz, 2.5 kW.

Changed FM Frequencies

KALU	Langston, OK	90.7 MHz to 89.3 MHz,	151 watts.
WUOY	Wilmington, NC	105.3 MHz to 104.5 MHz,	4.5 kW.
WXZY	Ruckersville, VA	92.1 MHz to 101.9 MHz.	

the station operating without interruption. However, after advertising for buyers, WDVA's owners said that they had received no serious offers. Even with its small staff of three, the owner felt he did not wish to continue subsidizing the operation without viable buyers on the horizon. Therefore, he closed the station after 48 years of broadcasting. The present owner purchased WDVA in 1987. The station's physical assets include four towers and 10 acres of property.

This information sent to us by Phil Wade, Leasburg, N.C.

Change of Image: In Philadelphia, Penna., they had this nice little religious and ethnic station, WIBF-FM/103.9. Then one day the station startled the local broadcasting scene by announcing that it would drop that format and run a full schedule of modern rock music simulcasting with WDRE on Long Island. The programs would be fed in from WDRE on Long Island, and the Philadelphia station would become known as WDRE. Its FCC call letters would officially remain WIBF, and they would be announced once an hour (as required), but the WDRE identification was the one being sold to listeners.

Disenfranchised WIBF listeners com-

plained to the FCC, demanding that the agency step in to prevent the ethnic programming from being dumped. They claim it is WIBF's obligation to continue to serve the ethnic market. The FCC turned down the petitions, saying that no single station must bear the obligation to offer the ethnic programming to an entire market.

Local programming from studios in Jenkintown, Penna. was also to be offered after the new format took hold with the programming imported from WDRE in Westbury, New York.

We appreciate this information sent in by Bill Hastings, N1IXS, Haverford, Penna. Bill adds that the WDRE rock programs are excellent.

Northward, Ho! Maybe things could be getting ready to take place at WZON/620, Bangor, Maine. That's the opinion of Don Hallenbeck, Registered Monitor KME1-CW, Pittsfield, Maine. He wrote to us that most of the air personalities seem to have left, for one strange reason or another. WZON is now programming from a satellite. There may be some question regarding who owns the station, as there seem to be several possibilities. At one time this station was once owned by horror author Stephen King, but he sold it several years

ago. It has been sold again several times since then.

Away From The Big City: Many people dream of the pleasures of moving away from a big city and into a quaint homespun community, then opening up a local broadcasting station.

Residents of the sparsely populated Methow Valley area of Okanogan County, Washington will soon be hearing hometown station KMTW, located in Twisp. It took its four local owners two years to obtain a permit to put the FM station on the air. There is only one traffic light in the county, and it's 30 miles away in Omak.

The radio station is located in the Winthrop Palace, which is a restaurant and nightspot in Twisp. *Methow Radio*, as KMTW is known, is a community station, and will be offering a diverse assortment of local topics and talent. The station's address is *Methow Radio*, Box 160, Winthrop, WA 98862.

This information was furnished by Scott Laster, of Twisp, Wash. Scott observes that he has never attempted driving through the intersection in Omak where the traffic light is and not had to wait for it to turn green.

Call Me: The number of changed call letters looks to be constantly growing, doesn't it? Since 1984, there were more than 6,200 call letter changes. The FCC confirms what we have reported here several times, that when a station changes its program format there is usually a change in call letters to mark the occasion.

Actually, the FCC doesn't care. And they don't find keeping up with the changes very much of a bother, nor particularly time consuming. The agency's system for handling broadcast callsign changes was simplified and streamlined in 1987. For the most part, the process means finding out if a desired callsign is available, and then applying for them. Few requests are denied. If two stations ask for the same call letters, the callsign is usually



The studios at CBC Stereo/106.9, St. John's, Newfoundland. (Photo by Carl R. Davis, St. John's, Newfoundland, Canada.)



Mobile studio ("Ramblin' Red") of WHUT/1470. (Snapped by R. C. Watts, Louisville, Kentucky.)

awarded to the station that has been operating the longest.

The agency is willing to accommodate. Media Consultant Jay Mitchell questions the wisdom of stations that are prone to constantly switching their callsigns. He feels people begin to think of stations as interchangeable. Essentially, the fear is that the public could lose the understanding that broadcasters are continuing individual business entities that exist over many years within their communities, not unstable temporary businesses that come and go in the wink of an eye.

Your continuing interest in this column is appreciated. Send along any news clippings, bumper stickers, station photos, station news, etc., relating to AM/FM broadcasting activities.

Changed AM Call Letters

New	Was	
KDCC	KEDD	Dodge City, KS
KKPL	KHDL	Opportunity, WA
KQSB	KKJZ	Santa Barbara, CA
KSTE	KRDY	Rancho Cordova, CA
KTID	KAPX	San Rafael, CA
KVCK	KTYZ	Wolf Point, MT
WBBR	WNEW	New York, NY
WHGS	WHOU	Houlton, ME
WIAN	WJPD	Ishpeming, MI
WKZV	WKEG	Washington, PA
WQEW	WQXR	New York, NY
WQSE	WJKZ	White Bluff, TN
WXLZ	WSPC	St. Paul, VA
WYIS	WDAX	McRae, GA

New FM Call Letters Issued

KDTP	Twisp, WA
KDTK	Prescott Valley, AZ
KLBA-FM	Albia, IA
KPRJ	Jamestown, ND
KQVN	Royal City, WA
KRBZ	Reedsport, OR
KUDO	Tucson, AZ
KUWZ	Rock Springs, WY
KXLL	Paradise Valley, AZ
WBWZ	New Paltz, NY
WDPG	Greenville, OH
WLMW	Manchester, NH
WLMY	Garapan, Saipan, MP
WLNZ	Lansing, MI
WMEF	Ft. Kent, ME
WOLN	Olean, NY
WVSZ	Chesterfield, SC
WWLW	Carlisle, KY
WXZR	East Lyme, CT

Requesting Changed FM Call Letters

Now	Seeks	
KQLH	KCKZ	Riverside, CA
WBBS	WAMQ	Great Barrington, MA
WXMH	WSPJ	Mt. Carmel, PA

Changed FM Call Letters

New	Was	
KAJZ	KBJZ	Santa Monica, CA
KBJZ	KAJZ	Newport Beach, CA
KBLK	KGZG	Burnet, TX
KCPW	KBQA	Salt Lake City, UT
KCUL-FM	KEEP	Marshall, TX
KDNI	KDNW	Duluth, MN

KEXX	KSGO	Tracy, CA
KFMD-FM	KCLG	St. George, UT
KGGY	KDFX	Dubuque, IA
KHMS	KXGV	Victorville, CA
KHSL-FM	KCHH	Paradise, CA
KIXA	KOUI	Lucerne Valley, CA
KIXF	KBXY	Baker, CA
KKBE-FM	KJQN-FM	Ogden, UT
KKER-FM	KFAS-FM	Casa Grande, AZ
KLUB	KVMK	Bloomington, TX
KLXQ	KBMB	Hot Springs, AR
KMXZ	KHIP	Hollister, CA
KNFR	KKPL-FM	Opportunity, WA
KOAI	KCDU	Ft. Worth, TX
KONY-FM	KCKK	Kanab, UT
KOUT	KBBU	Las Lunas, NM
KQTX	KCGR	Portland, TX
KSNN	KODZ	Arlington, TX
KVCK-FM	KTYZ-FM	Wolf Point, MT
KXOK-FM	KHTK	Florissant, MO
KYHT	KNKG	Yermo, CA
KZKK	KZTS	Huron, SD
WXHZ	WHEY	Harlem, GA
WFGI	WGGI	State College, PA
WHCY	WHMV	Blairtown, NJ
WHRS-FM	WLFX	Winchester, KY
WJPD	WJPD-FM	Ishpeming, MI
WKAZ	WLZT	Miami, WV
WKJL	WLWX	Clarksburg, WV
WLYZ	WRDQ	Greer, SC
WNBX	WNTK-FM	Lebanon, NH
WNNX	WAPW	Atlanta, GA
WQIC	WUFM	Lebanon, PA
WRNN	WKOA	Murrells Inlet, SC
WROZ	WNCE	Lancaster, PA
WSTF	WUVU	St. Augustine, FL
WUSD	WOTC	Wiggins, MS
WVSJ	WXZY	Ruckersville, VA
WXLZ-FM	WXLZ	St. Paul, MN

Answers! Answers! Answers!

New hams—Novices, Techs, Generals or whatever ticket you start with—have questions. What do I look for in an HT? How should I operate on the local repeaters? What's it like to get on HF? How do I set up a station? How do I use an SWR bridge? These questions and a hundred more. As important as these questions are, there's one other question that's more important: Who's going to answer these other questions?

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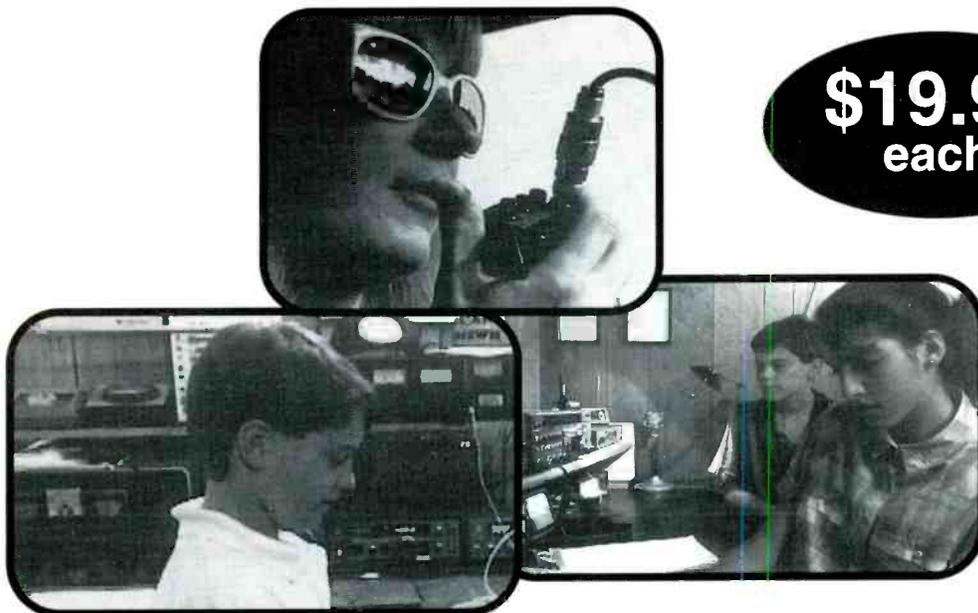
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PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

Another month with a full mailbox so here we go:

WEED Radio—7415 USB at 0303 with rock and ID's such as "Smoking and stroking, this is WEED" (Ken Evans, SC). to 0126 close including "Radio Hobby OnLine" feature (Pat Murphy, VA). On several occasions with program repeats, gave a phone number and requested messages be left in area 5 of the message section. Host sounds like Blackbeard of Jolly Roger International (Skip Harwood, CA). Heard at 0045, announced a prize for the first to get a QSL (Joe Cruzan, MO).

WKIK, 7416 USB at 0045, 7415 at 0117 and 7422 at 0236 with rock, pop and rap music. Wellsville address and claiming Jacksonville, FL location. Phone number 1-800-925-3786, ext. 555 given out, which had message from Voice of the Night. WKIK said the number is shared between the two stations. Frequency drifts (Cruzan, MO; John Gilroy, MA; Murphy, VA).

WSKY, 7417 at 0114 to 0155 close. Announcers were Mike Richards and Doug Barley. Offered a pennant for \$!. (Murphy, PA) 7418 at 0524 (Eddie McClure, FL). 0245 (Harwood, CA).

Voice of the Night, 7415 USB at 0056 giving 1-800-925-8786, ext. 444 (which didn't work). On and off several times over the next hour. (Cruzan, MO) 0048-0145 with Wellsville address. (Lont Mann, OH) 0045 with political talks, music (Gilroy, MA).

Anarchy One, 7417 USB at 0330 supporting organic farmers. Played "Attack of the Killer Tomatoes." (Harwood, CA) Host Captain Anarchy and Earth Safe Corporation. Address as 770 Sycamore Ave, #J193, Vista, CA 92083 (Cruzan, MO).

Radio Okochobie, 7415 USB at 0106-0109. A few ID's, gave Wellsville address (Gilroy, MA).

Radio Esoterica, 7415 at 1350-1404 close with international music. ID (Murphy, VA). 1255 noting was a relay by CSIC and noted was their first broadcast (Gilroy, MA).

WARI—Alternative Radio International, 7415 USB with alternative music, Wellsville address (Gilroy, MA). 0155 with Dr. Lobotomy and reggae-sounding music. (Murphy) 0220 to 0330 when lost (Harwood, CA).

Radio Strange, 7415 at 0129 "this is Radio Strange broadcasting from North America on LW, MW, SW and rubber bands" (Cruzan, MO).

Radio USA, 7417.5 at 0200 with Radio Bob Communications Net and "The Radio



This, according to the caption on the photo someone sent, is a picture of the studios at He Man Radio!

Bob Show coming to you in DX surround-sound." (Murphy, VA) 7416 USB at 0230 "broadcasting over the free skies of North America" (Harwood, CA). 7415 USB at 2318 with Mr. Blue Sky and Joe King. (Mann, OH) 2322 sign on 7418 LSB (Cruzan, MO).

Radio Freedom, 7417 at 0155, very strong, no address announced (Harwood, CA).

WMAD, 7415 at 0228 sign on, show of humorous bits and satire. Gave the Wellsville address (Cruzan, MO).

KCMR—Magic Carpet Radio, 7417 at 0200, announced their return after many months. Magic Mike not there; his female sidekick Wanda B. English acted as DJ. No address but used Blue Ridge in the past (Harwood, CA).

Radio Revival of the Airwaves, 7415 at 0116 with old TV show soundtracks. Mentions of "Plan 9" (or 10 or 15) at times (Gilroy, MA).

Radio North Coast International, 7415 at 1800 with Captain Willy giving a QSL address in Hilo, Hawaii, Crystals music, spoofs (Murphy, VA). 2300 on 7426 with oldies (Bauer, NY).

Mystic Voice of the Western Prairie, 7415 at 2206 with country music and country-sounding DJ. Blue Ridge address (Murphy, VA).

Live Wire Radio, 7475 at 0100, claimed to be in the UK and mention of "if you're in 'Nam we really want to hear from

you. Said they also had a 19mb frequency and gave address in Dublin (Murphy, VA).

Radio Blandx, 7414 at 1723 with rock music, takeoffs on offers for world band radios and shortwave directories. Blue Ridge address given (Mann, OH).

Jolly Roger, 7415, 0555 sign on. Congrats to A*C*E on their 10th anniversary, ads for A*C*E and Pirate Radio Directory, read pirate loggings. Wellsville address (Cruzan, MO).

Radio Azteca, 7415 at 2253 via North American Pirate Relay service. Wellsville address. Humor and "Dr. Radio" program (Mann, OH).

EBO Radio, 7415 USB at 2209 with country music, Wellsville address (Mann, OH).

Here are several other abbreviated logs made by Pat Murphy in Virginia: The Fox on 7417 at 0011; WDRR on 6799 at 2035; WLIS on 7405 at 2330 with lots of interval signals; CSIC 7425 at 2258 with Pirate Rambo and Blue Ridge address; NAPRS—North American Pirate Relay Service, 7415 at 0145; Radio Free America on 7415 at 2345 offering a free pocket constitution with QSL; Radio Gemini, 7414.9 at 0318 giving address in Edinburgh; Radio Scottish Montreal, 7425 at 2300 with Scottish-sounding music.

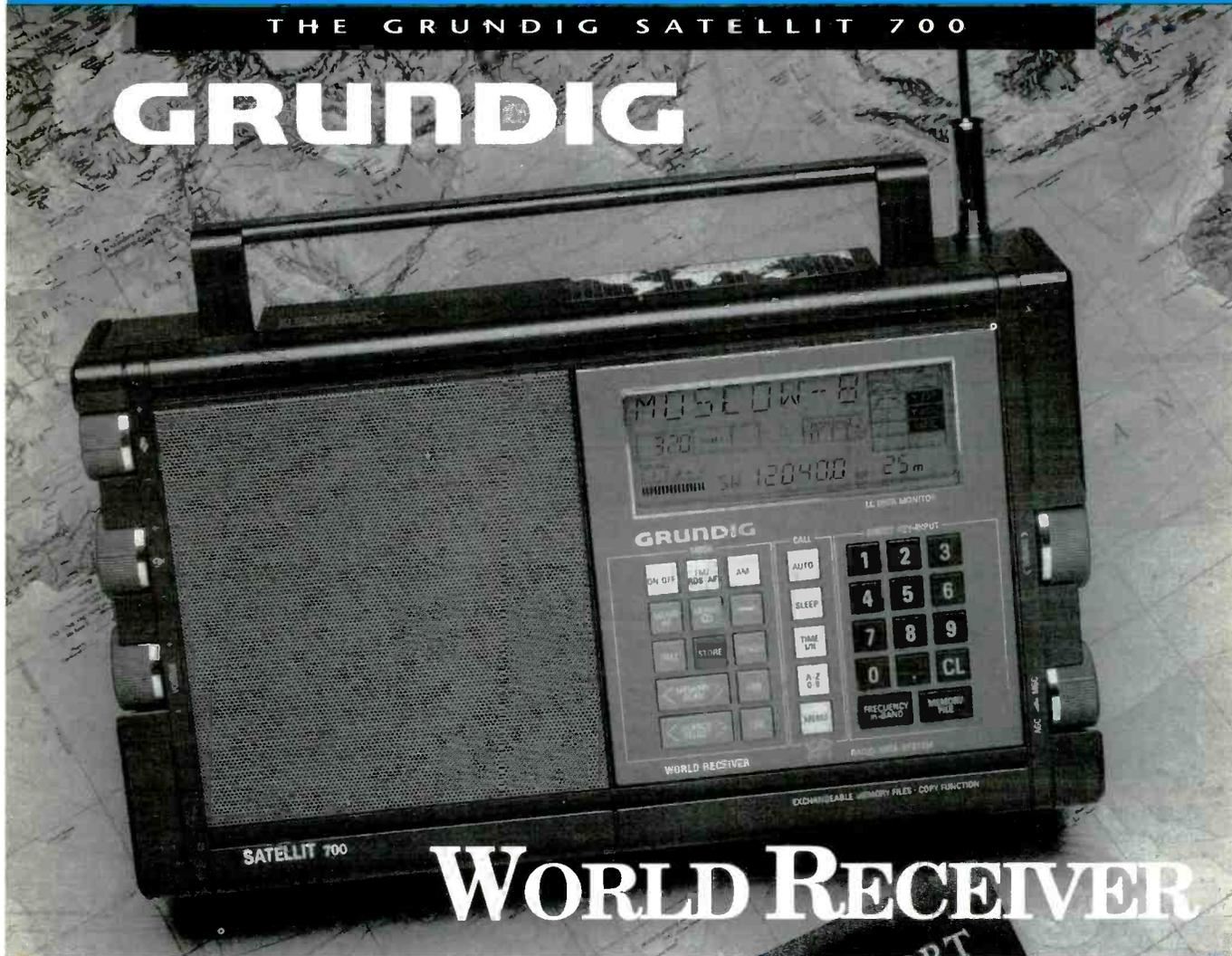
Thanks for the great contributions, gang—and keep 'em coming! More next month! ■



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CIRCLE 3 ON READER SERVICE CARD

Beaming In

(from page 4)

out for help only in the form of short *chirps*, *blips*, and *beeps*. It's one thing to know that such transmissions exist, although it takes a certain quirky curiosity to find any purpose or interest in actually monitoring them. Sorry, just can't help myself. I love this stuff.

When you come to think of it, someday transducers could be attached to virtually everything you didn't want lost or stolen—like the TV remote control, the house keys, the eyeglasses, books you loan to friends, the family pooch. You call a toll-free number and that causes the missing stuff to *click*, *buzz*, or otherwise reveal itself. I'd probably buy one of those. Definitely I'd listen for it on my scanner.

The Latest Privacy Law

The latest attempt by the cellular phone industry to attain communications security is as gross and selfish as we have come to expect from these greedy people. As you may know from the overkill of media coverage, the FCC will soon be refusing to permit the manufacture or importation of scanners that can receive cellular frequencies, or that can be converted to do so.

With millions of scanners that receive these frequencies already in the hands of the public, the amount of actual communications security that can reasonably be expected because of this law is somewhere between zero and nil. They can't seriously expect to gain any privacy because of the law. Even after the law goes into effect, most scanners with permanently blocked cellular frequencies will still be able to receive the calls via image reception, converters, or other means.

After five years of the previous phony communications privacy law that the cellular industry shoved through Congress (the Electronic Communications Privacy Act of 1986), the public finally realized that the ECPA was meaningless for assuring privacy. It was reported in the media a thousand times over that cellular calls could be easily monitored. However, the cellular industry attaches enormous importance to selling the expectation of privacy to all of the naive souls who seem anxiously willing to buy the fantasy that privacy can somehow exist over an open analog circuit. Therefore, the cellular industry went into total panic mode when it became apparent that the ECPA was not going to provide any privacy whatsoever.

With the ECPA having lost all of its flavor, the cellular industry desperately needed another piece of legislation to convince the public anew that there's a federal law that will ensure communications privacy.

They hope that it will be at least several years before the public realizes that the new legislation is as useless as the ECPA was. Years from now, the cellular industry hopes to be completely digital. At that point, existing analog scanners will become ineffective for monitoring cellular calls, and they figure no laws will be needed. But it looks as though digital will be a slow phase-in, and analog will be around for many years to come.

Analog cellphones can be converted to scan the cellular bands. The digital phones will certainly be able to be modified to do the same. So, with or without standard scanners, those who want to monitor cellular calls will find a way of accomplishing this, despite laws intended to thwart eavesdropping.

We are not so irritated at the greediness of the cellular industry, nor annoyed about how the gullible public believes the hype about privacy laws. What does not go down so well is the rubble that the cellular industry's two meaningless privacy laws will have left in their wake after the industry goes all-digital and mostly transcends the need for the ECPA and the law that prohibits the manufacture of scanners that receive scanner bands.

The two laws were passed strictly as a federal accommodation to private industry using the public airwaves. The airwaves are a natural resource. For the first time, a law was passed that forbids you and I from tuning in to monitor certain frequencies. For the first time, another law was passed that forbids the manufacture of radios that have the ability to receive certain frequencies.

What such laws open the door for are quite scary when you pause to think over their long-term potentials. Who next steps forward to lobby for receivers that don't pick up certain bands—and who steps up to the plate after them? These clowns in Congress are obviously not against legislating chunks of spectrum out of the public realm and dispatching them into the private property Twilight Zone—illegal to monitor, and no longer even included in receivers.

Purged from existence, it's almost as if the frequencies had never been there. In future centuries, archaeologists will pry an ancient scanner out of the debris of the 20th Century American civilization. They will wonder what hideous or marvelous event might have taken place to cause these frequencies to be banished from our equipment. Were the frequencies deemed evil? Did our holy men proclaim them to be sacred? Nobody will ever guess the idiotic truth.

One more baffling mystery of a sudden, complete, and totally unexplainable disappearance; dinosaurs, Atlantis, the Easter Island civilization, the Druids, Montezuma's gold, leisure suits, Jimmy Hoffa, the Nixon tapes, and the 869 to 894 MHz frequency band. ■

RTTY

(from page 61)

19140.0: CLP1, MFA, Havana, Cuba, w/5L msgs to Guyana at 1507.50 baud. (Ed.)

19385.0: GFH, British Mil., Hong Kong, w/"can u QSY F26 to F14, F30 to F10, F10 to F12. Could not resync, signal is very poor," Piccolo, 0932-0936. (Bartlett, AUS)

19682.0: "Kings" asks "RCCS" to QSY 12183 kHz, Piccolo at 2026. (Bartlett, AUS)

19865.0: YZJ4, Tanjug, Belgrade, Yugoslavia, w/mid-East nx in SS, 50 baud at 1630. (Manthey, NY)

19921.7: Egyptian Emb., Washington, DC, w/tfc to MFA, Cairo, ARQ at 1737. (Ed.)

19976.0: "Pekin" w/crypto ending w/"XBXB" to "Darwi" (Darwin, Australia—Ed.), + s/off msg at 2327, Piccolo. (Bartlett, AUS)

19977.0: "Pekin" w/crypto ending w/"XBXB" to "Darwi" (Darwin, Australia—Ed.), + s/off msg at 2327, Piccolo. (Bartlett, AUS)

20011.7: Pakistani Emb., Rabat, Morocco, w/5L msgs to MFA, Islamabad, at 1438, ARQ. (Ed.)

20067.8: HGX59, Budapest, Hungary, w/RURY + ID, 50 baud at 1310. HGX21 also uses this freq. (Hall, RSA) HGX59 is the c/s for a Hungarian Emb., QTH unknown; & HGX21 is the c/s for MFA, Budapest—Ed.

20326.5: RFFA, Mindefense, Paris, France, w/Telexes in FF to RFLIG, Cayenne, French Guiana (on 20758.0), ARQ-E/96 at 1425. (Ed.)

20402.0: MFA, Jakarta, Indonesia, w/Telexes in Indonesian to Lagos, Nigeria, ARQ at 1625. (Ed.)

20444.5: CLP1, MFA, Havana, Cuba, w/5F msgs to Conakry, Guinea, 50 baud at 1830. (Ed.)

20617.3: OMZ, MFA, Prague, Czechoslovakia, w/diplo nx bulletin in Czech at 1409, 100 baud. (Ed.)

20628.0: CLP5, Cuban Emb., Algiers, Algeria, relaying encrypted tlc from Iraq to MFA, Havana, 50 baud at 1725. (Ed.) Same sta. w/encryption at 1600, foll by a msg in SS at 1634. (Hetherington, FL)

20638.5: "SECOMBANAR" w/manually typed msgs in SS to "T-64," 75 baud at 1443. (Ed.)

20807.5: FDY, French Air Force, Orleans, France, w/10 count, RURY & le bricks at 1530, 50 baud. (Manthey, NY)

20839.3: CLP1, MFA, Havana, Cuba, w/crypto after ZZZZZ & circulars in SS to Angola, 50 baud at 2116. (Ed.)

21859.0: DFZG, MFA, Belgrade, Yugoslavia, w/nx in EE at 1530, 75 baud. (Ed.)

21992.5: Un-ID w/5L grps at 1505, FEC-A/192. (Hetherington, FL)

22359.0: Un-ID coastal sta. w/nx in RR on a ship RTTY channel, 50 baud & ending 2033. One story from "Petersburg." At end of sev. items was "Lista Budet Fotogazette." S/off in CW with 3-letter c/s sign beginning w "U." The other two letters were covered by noise. C/S not repeated. (Hetherington, FL)

22930.4: SAM, MFA, Stockholm, Sweden, w/5L grps for "ambassaden windhoek," Swed-ARQ at 1247. (Hall, RSA)

22941.0: "RCCS," Darwin, Australia, w/manually typed msg re link quality, at 0627, Piccolo. (Bartlett, AUS)

23013.0: GXQ, British Army, London, England, w/RURY, foxes, & 10 count, FDM, 50 baud, at 1615. (Ed.)

23048.0: Possibly CLP1, MFA, Havana, Cuba, w/5L grps to Embacuba Guinea, 50 baud at 1420. (Manthey, NY)

23052.3: Cuban Emb., Luanda, Angola, w/crypt after ZZZZZ, 75 baud at 1625. (Ed.)

23548.1: SAM, MFA, Stockholm, Sweden, w/tlc to Nairobi, Kenya, SWED-ARQ at 1149. (Hall, RSA)

24756.0: Un-ID in RS-ARQ/228.65 mode at 1524. Can't decode w/present RTTY gear. (Ed.)

24851.8: FUF, French Navy, Fort de France, Martinique, w/"controle de voie," ARQ-E3/192 at 1548. (Ed.)

25227.0: HBD20, MFA, Berne, Switzerland, w/nx in FF & GG at 0920 & 1122, ARQ. (Hall, RSA)

25460.0: French Emb., Kinshasa, Zaire, w/four 5L msgs at 1423, ARQ6-90/200. (Ed.)

30521.0: Un-ID w/encryption, 75 baud at 1937. Yep, the freq. is 30521.0 kHz. (Ed.)

Ham Column (from page 46)

tle off, they may not find your contact and you'll wind up in the dreaded position of being "not in the log."

Claiming Your Prize

Well, I worked one, so what do I do now? If you first discovered the event in a magazine, it probably listed what the award was (a special QSL card, a certificate, or both), and how to obtain it. Usually, you send in your QSL card with all of the information about the contact (the day, time, the call sign you worked, the band and the signal report you gave. If the op mentioned a contact number, make sure you display it prominently on the card. And make sure you've included an SASE.

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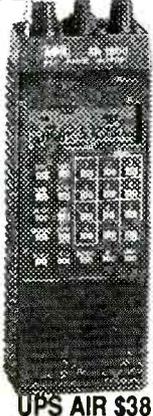
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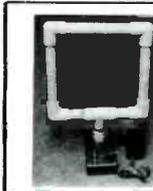


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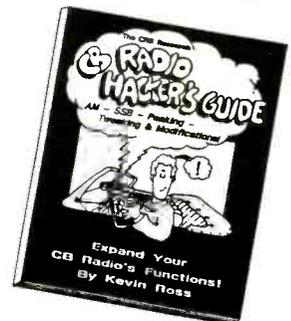
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WANTED: Service manuals for Realistic PRO-2021, Uniden, Bearcat BC 400XLT/560XLT. Manual and schematic for Realistic DX-160 shortwave receiver. Glenn, Rt. 1 Box 580-B, Reserve, LA 70084.

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Advertisers' Index

AMC Sales, Inc.	60
A.R.R.L.	74
Ace Communications	47,80, Cov III
Advanced Electronic Applications	21
Amateur Electronic Supply	33
Antenna Supermarket	6
Antique Radio Classified	77
Atlantic Ham Radio	75
BMI, Inc.	50
Barry Electronics Corporation	77
CB City International, Inc.	29
CRB Research	29,42,78
Cellular Security Group	60
COMMtronics Engineering	22
Communications Specialists	76
Consumertronics	67
Counter Intelligence Applications	76
DECO	77
Datametrics, Inc.	50
Delta Research	49
Drake, R.L. Company	5
EDE	77
ECHOTRAK	76
Electron Processing	75
Electronic Equipment Bank	1,73
Fort Worth Computers	27
GRE America, Inc.	23
Gilfer Shortwave	4
Grove Enterprises	59,61,63,65
HR Bookstore	34
ICOM America, Inc.	42, Cov IV
Intensitronics Corporation	67
J & J Enterprises	17
JPS Communications, Inc.	31
Japan Radio Company, Ltd.	Cov II
Jo Gunn Enterprises	22
L & L Electronics	76
Lentini Communications, Inc.	52
MFJ Enterprises, Inc.	12
MARYMAC Industries, Inc.	37
Marine Electronics	43
Microcraft Corporation	32
MoTron Electronics	32
National Amateur Radio Assoc.	4
OPTOElectronics	13,15
REACT International	37
Radio Shack	7
Republic Cable Products, Inc.	78
S Unlimited	45
SGC, Inc.	45
Satman, Inc.	78
Scanner World USA	8
Scrambling News	78
Signal Engineering	52
Software Systems Consulting	43,49
Systems & Software, Int'l., Ltd.	32
Universal Radio, Inc.	3
Vanguard Electronic Labs	37
Viking International	19
Wilson Antenna, Inc.	29
Xandi Electronics	67,75
Your State On Microfiche	75

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- Backlighted LCD display.
- 10 Scan Banks, 10 Search Banks.
- Selectable Priority Channel.
- Delay, Hold Features.
- Selectable Search Increments, 5-955KHz.
- Permanent memory backup.
- 4 AA Ni Cad batteries included.
- AC adaptor/charger.
- Carry Case.
- Cigarette Lighter Charger.
- Belt Clip.
- Earphone.

Options:

External Speaker. Mobile Mount. MS190 \$19.50
 Extended Warranty. 2/3 yrs \$45/\$55

Specifications:

Coverage: 500KHz-1300MHz
 Sensitivity: .35uV NFM, 1.0uV WFM, 1.0AM
 Speed: 20 ch/sec. scan. 40 ch/sec. search
 IF: 561.225, 58.075, 455KHz or 10.7MHz
 Increments: 5 to 955KHz selectable/ 5 or 12.5 steps.
 Audio: .4 Watts
 Power: Input 9 - 13.8 V. DC
 Antenna: BNC
 Display: LCD
 Dimensions: 6 7/8H x 1 3/4D x 2 1/2W. 12oz wt.

100 Channels. Low, Air, High, UHF & 800MHz.

Standard Features:

- Extremely compact size.
- Unrestricted 800MHz coverage.
- 100 channels permanent memory.
- Earphone Jack.
- Delay, Hold features.
- Channel 1 Priority.
- 5 Scan Banks, 5 Search Banks.
- Two antennas included.
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- NiCad battery w/ chgr adapter. (AR900)
- One Year Limited Warranty.

Options:

Base type antenna	
25 to 1000MHz w 50' coax.	AS300 \$59.95
Mag Mnt Mobile Antenna. 15' coax.	MA100 \$25.00
Cigarette Lighter power adaptor.	CP100 \$5.00
Wide band preamp	GW-2 \$89.00
Extended Warranty. 2/3 yrs	\$40/\$55

Specifications:

Coverage: 27-54, 108-174, 406-512, 830-950MHz
 Sensitivity: .4uV Lo,Hi. .8uV Air. .5uV
 UHF. 1.0uV 800
 Scan Speed: 15 ch/sec.
 IF: 21.4MHz, 455KHz
 Increments: 10,12.5,25,30
 Audio: 1W
 Power: 12.8VDC, 200MA
 Antenna: BNC
 Display: LCD w/backlight
 Dimensions: 2 1/4H x 5 5/8W x 6 1/2D. 14oz wt. (AR950)
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2016 Channels. 1 MHz to 1500 MHz

Standard Features:

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- AM, FM, wide band FM, & BFO for SSB, CW.
- 64 Scan Banks.
- 16 Search Banks.
- RS232 port built in.
- Includes AC/DC pwr crd. Antenna, Mntng Brckt.
- One Year Limited Warranty.

Options:

Earphone.	EP200	\$2.00
External Speaker. Mobile Mount.	MS190	\$19.50
Extended Warranty. 2/3 yrs.		\$65/\$75
Mobile Mounting Bracket.	MM1	\$14.90
RS232 Control Package (software & cable) offers spectrum display and database.	SCS2	\$295.00
Wide band preamp	G-W2	\$89.00

Specifications:

Coverage:	1MHz-1500MHz
Sensitivity:	.35uV NFM, 1.0uV WFM, 1.0AM/SSB/CW
Speed:	38 ch/sec. scan. 38 ch/sec. search
IF:	750.00, 45.0275, 5.5MHz 455KHz
Increments:	5,12,5,25 KHz
Audio:	1.2 Watts at 4 ohms
Power:	Input 13.8 V. DC 300mA
Antenna:	BNC
Display:	LCD, backlighted
Dimensions:	2 1/4H x 5 5/8W x 6 1/2D Wt. 11lb.

AR3000

\$1095



400 Channels. 100KHz to 2036MHz.

Standard Features:

- Extremely compact size.
- Continuous coverage.
- Attenuation Programmable by Channel.
- Manual tuning knob.
- Tuning increments down to 50Hz.
- AM, FM, wide band FM, LSB, USB, CW modes.
- Backlighted LCD display.
- 4 Scan and Search Banks, Lockout in Search.
- 4 Priority Channels.
- RS232 control through DB25 connector.
- Delay, Hold Features.
- 15 band pass filters, GaAsFET RF amp.
- Sleep and Alarm Features.
- AC adaptor / charger. DC power cord.
- Telescopic Antenna
- One Year Limited Warranty.

Options:

Earphone.	EP200	\$2.00
External Speaker. Mobile Mount.	MS190	\$19.50
Extended Warranty. 2/3 yrs.		\$65/\$75
Mobile Mounting Bracket.	MM1	\$14.90
RS232 Control Package (software & cable) offers spectrum display and database.	SCS3	\$295.00
Wide band preamp	G-W2	\$89.00

Specifications:

Coverage:	100KHz-2036MHz
Sensitivity:	.35uV NFM, 1.0uV WFM, 1.0AM/SSB/CW
Speed:	20 ch/sec. scan. 20ch/sec. search
IF:	736.23, (352.23) (198.63) 45.0275, 455KHz
Increments:	50Hz and greater
Audio:	1.2 Watts at 4 ohms
Power:	Input 13.8 V. DC 500mA
Antenna:	BNC
Display:	LCD
Dimensions:	3 1/7H x 5 2/5W x 7 7/8D Wt. 21lb 10oz.

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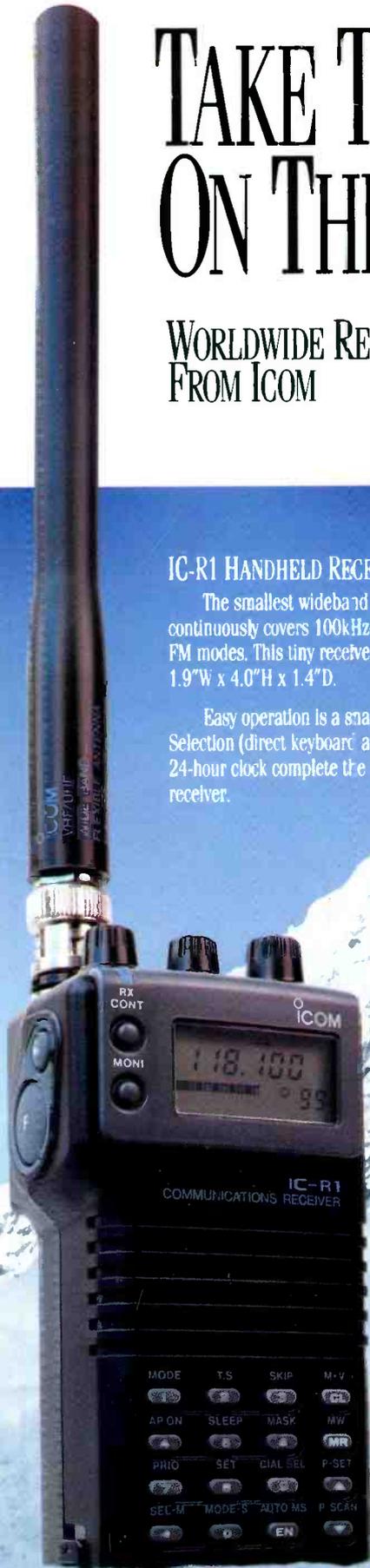
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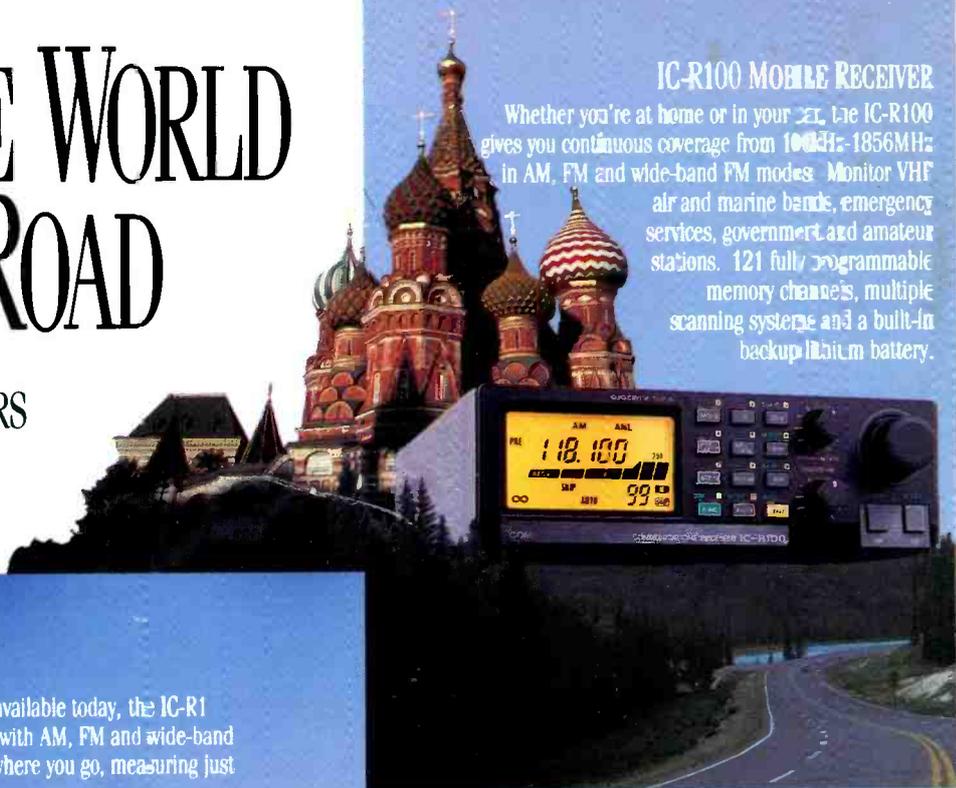
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