

AUGUST 1996

POPULAR COMMUNICATIONS

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POPULAR COMMUNICATIONS

AUGUST 1996

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America's German Espionage Station 15

Sneak a peek at our nation's first high-tech intrigue case.

By Alice Brannigan

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The Dressler active receiving antennas.

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This month's cover: High above Los Angeles, Calif., the Mount Wilson transmitter site is home for antennas for TV and broadcast stations, as well numerous two-way radio, paging and microwave stations. Photo by Larry Mulvehill, WB2ZPI.

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Thoughtwaves

AN EDITORIAL

Family Radio Service Arrives—User Beware!

The new Family Radio Service has arrived. The Federal Communications Commission approved the notion in May and if all goes according to plan, you'll be able to buy FRS radios before the end-of-year holiday shopping season.

What is FRS? As defined by the rules adopted by the FCC, the Family Radio Service is a low-power, short-range UHF radio service established to meet the communications needs of families and groups. That's where the FCC fell short. Big time. And users of the General Mobile Radio Service interstitial frequencies at 462-MHz have reason to scream!

The FRS will utilize 14 UHF frequencies that are sandwiched between full-power channels used by GMRS at 462 and 467 MHz. The frequencies to be used by FRS are: 462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875, 462.7125, 467.5625, 467.5875, 467.6125, 467.6375, 467.6625, 467.6875 and 467.7125. The 462-MHz channels already are used by GMRS licenses for low-power communications that don't have wide-coverage requirements that the full-power channels allow at 462.575 through 462.725 MHz.

However, only individuals who hold GMRS licenses are eligible to operate on the interstitial GMRS frequencies, those that are squeezed between the full-power channels. Even if a business or organization still is grandfathered to operate on GMRS, it is not allowed to use the interstitial frequencies. They are reserved for individuals only.

In the FRS rules adopted by the FCC, there is a glowing problem! There is NOTHING to prohibit businesses from using FRS frequencies. This means GMRS users may not only have to deal with unlicensed FRS users on these frequencies, but businesses may start showing up on frequencies reserved exclusively for GMRS licensees who are individuals!

Why couldn't the FCC see the poten-

tial problem it created? In its report and order creating the FRS, the FCC acknowledged: "Small businesses...may be users of this service in their business activities." In the rules creating the radio service, the FCC defines the FRS as "a private, two-way, very short-distance voice communications service for facilitating family and group activities." Obviously, groups can be somewhat all-encompassing.

There will be nothing at all from stopping a large business in your neighborhood from going out buying a large contingent of inexpensive FRS radios and using all 14 frequencies for facilitating various forms of communications within its facility. This could present a genuine problem in urban and suburban areas. While the rules allow selective signaling of FRS units through technologies such as continuous tone-coded squelch systems (CTCSS), channels could become busy if businesses see FRS as a low-cost means of providing on-site communications.

Let's face it, if a business wants to use two-way radios in the business radio service, it usually will cost \$200 to \$1,000 per portable radio and additional costs associated with obtaining an FCC license and the coordination of the frequency among other business licensees. The FRS radios, which RadioShack says it expects to sell for between \$100 and \$180, would look real attractive to a business with short-range communications needs and the penetration power of UHF radio signals.

The FCC did, however, recognize the potential for interference by FRS stations to full-power GMRS stations, and thus, made the technical standards for FRS radios much more stringent. Due to these standards, it does not seem possible for GMRS radios to operate at low power on FRS frequencies, particularly at 467 MHz.

In the meantime, you can bet that not only RadioShack, which petitioned the FCC for the creation of this service, but also Motorola and Uniden are scrambling to get FCC type acceptance of FRS radios so they can have them on the shelves for



the holiday shopping season. The FRS radios could prove to be a hot item in view of the recent resurgence of CB and the popularity of sometimes cost-prohibitive cellular telephone service.

Do you have a need for FRS that can't be met some other way? I doubt I will use FRS. I've been a GMRS licensee for almost two decades and the service suits me fine. I have a tendency to keep low-power communications for my family on the full-power GMRS channels instead of the interstitial low-power channels. You can bet I will be avoiding those interstitials shared with FRS in the future so that I don't have to contend with half-watt unlicensed users, let alone commercial interests who don't give a darn that some family is trying to communicate. What do you think?

73, Chuck

Mailbag

LETTERS TO THE EDITOR

Each month we select representative reader letters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons and to edit to conform to style. All letters submitted must be signed and show a return mailing address or valid e-mail address. Upon request, we will withhold a sender's name if the letter is used in Mailbag. Address letters to: **Chuck Gysi, N2DUP, Editor, Popular Communications, 76 N. Broadway, Hicksville, NY 11801-2909, or send e-mail via the Internet to POPCOMM@aol.com.**

Is It Still Good?

I enjoyed Chuck Gysi's feature (July 1996) on the high-tech radio system that Motorola set up for use at the Summer Olympic Games in Atlanta. However, I can't help but think that once the Games are over, can this super system be used for anything else?

Jack Freeburg
St. Louis, Mo.
(via CompuServe)

Well, the rumor we're hearing is that because the system allows interoperability with public safety systems in metro Atlanta, Georgia state officials are making offers to purchase the system for public safety use.—Editor

Digital Dilemma

Flashing back to Steven Bellamy's article, "Cleveland To Disappear" (October 1995), I thought it might be fair to take a parting shot at digital public safety communications.

On Jan. 7, just before the blizzard, I tuned into all VHF/UHF local emergency channels in the central Massachusetts area expecting to hear all storm-related activity when I noticed an ambulance arriving to the apartment complex where I live. I immediately scanned the hospital and fire-rescue channels concerned for neighbors.

Anticipating hearing about a possible severe injury, I was shocked to find out that a woman I frequently see was being transported to the local hospital for an overdose of tranquilizers. Given that she apparently had swallowed more than 60 pills, I honestly did not think she would survive.

On the following day, I was fearful, but not surprised, to think when I saw police officers and the relatives of the woman arrive at her home, that possibly, she had died.

Wanting to confirm these thoughts, I tuned into the local police channel and couldn't believe that the police indicated the relatives were filing a missing persons report! Immediately, I called the realty office

and explained what I saw, relating what I had heard the previous day. Mystery solved—relieved, the woman's children received my information regarding the ambulance visit and subsequent report and proceeded to call the area hospitals and located her in a short period of time.

Thanks to analog public safety communications and the good-neighbor approach, there is a family nearby that no longer has to worry about a possible "missing person," and their mother is safe and stable in the hospital.

Tony Puzyn
Worcester, Mass.
(via America Online)

Collection Of Thoughts

I enjoy your magazine as usual and thought I would share a few thoughts.

The April editorial seems to be complaining about the simplification of the use of radio of recent years. Is there anything wrong with simplification? A hobbyist can make it as difficult for himself as he wishes. Any such hobbyist still can purchase all the components he wishes and build from scratch, if he is able. Or, he can be like me: Simply sit back and enjoy the hobby, listening and transmitting when the mood hits him.

Believe me, even in the simplification of recent years, sometimes there are overly complicated aspects of the hobby (for example, I have an Icom R1 that I do not think I have learned its full use yet). On the other hand, I have a Uniden Bearcat 200XLT that seems as easy as pie to use. The local radio shop wrote a pamphlet on the R1's use (evidently persons other than myself had problems), but the shop's pamphlet was as convoluted as the owner's manual.

One other comment I have is regarding Jock Elliott's criticism of the use of roger beeps and echo mikes. Many things in many walks are subject to abuse and aggravation: Guns, cars, transmitters, and yes, roger beeps each and all can be used in an abusive way. But I find that when a person is receiving a very weak signal that a roger beep is helpful in determining when he has finished transmitting. Did I need to say this? It seems that Jock failed to mention this, or did I miss it?

Last comment: A public relations person from the National Security Agency was on TV recently touting the "clipper chip." His antagonist was suggesting that the NSA wants a "clipper chip" in every telephone. Could this be true? Please keep us completely informed of NSA's progress in this awesomely big-brother phenomenon.

Tom King
Silver Spring, Md.
(via Prodigy)

POPULAR COMMUNICATIONS

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with Cooling Fan



PS-140y



PS-880

PS-140y

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Output Current: MAX: 40A MAX: 14A
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Conversion Ratio: 83% at 40A
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Tolerance:	10% at full scale		
SWR Detection Sensitivity:	5W		0.5W
Input/Output Impedance:	50Ω		
Input/Output Connector:	M-J	M-J	N-J
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Try HF SITOR Monitoring: It's Easy!

Thought RTTY Monitoring Was Complex? Not This Mode!

BY TOM KNEITEL, K2AES, SENIOR EDITOR

Only a dozen years ago, the HF ute bands were filled with the drone of radioteletype (RTTY) signals using the old standard Baudot mode. Newcomers often complained that the many possible combinations of signal shift, transmission speed, and *normal* or *reverse* polarity made each RTTY station a complex trial-and-error nuisance to properly tune in. This seemed to turn off some new listeners. They didn't want to go through all those adjustments and devote that much effort to monitor RTTY.

Here's good news. The majority of Baudot RTTY stations have been replaced by stations using more advanced digital teleprinter technologies. Tuning the HF ute bands carefully these days, you can encounter more than 40 different digital systems, but by far the most widely employed system is SITOR. All SITOR stations transmit at the same speed, use the same signal shift, and there's no need to worry about *negative* or *positive*. This means you zero in on stations almost instantaneously and without trying to figure out which combination of protocols apply.

Monitoring SITOR, you can be in on the very latest in-depth weather area information and forecasts, copy diplomatic traffic, read "raw" unedited news service dispatches, follow aeronautical, Interpol, military and ham comms, plus all sorts of other terrific things. The majority of business and personal telexes to and from cruise ships, passenger liners, cargo vessels and tankers are exchanged in SITOR mode. Some of the personal messages are pretty wild.

Best of all, you can get started in SITOR monitoring without spending much, and nary a single shred of tech know-how. SITOR is just what you've been looking for.

What Is This Thing?

The acronym SITOR stands for *Simplex Teletype Over Radio*, and it shows up in two types, SITOR A, and SITOR B. Standard SITOR transmission specs are a 100-baud data rate with a frequency shift of 170 Hz.

SITOR A (also known by some as AMTOR, ARQTOR or SPECTOR) is the

version used for two-way communications. SITOR A is a protocol that uses an ARQ (Automatic Repeat Request) format in which error detection and correction is employed. When a character is received in error at the station being communicated with, it requests a retransmission of the character from the other sending station. This feature makes SITOR A far more reliable than Baudot RTTY since it offers no error correction.

During each SITOR A two-way contact, at any given moment, there is a so-called master station (the one transmitting traffic). The other station is the slave, sending out a handshake signal on a different frequency. The master station sends data in three-character groups.

The slave station transmits instantaneously and advises the master station if there were errors (such as might have been caused by interference, fading, etc.) in each group. If so, the master station retransmits the three-character group. If no errors were found, the next three-character group is sent. The process takes a split second.

SITOR A signals are plentiful on the ma-



```
TO: SFAS, UNHCR HEADQUARTERS, GENEVA DATE: 00 FEB.
(ATTN: R. URASA)
FROM: UNHCR REGIONAL OFFICE, SAN JOSE, COSTA RICA
THIT0 INFORM YOU THAT THE FOLLOWING SHIPMENT HAS BEEN EFFECTED.
THE PROCEDURE TO BE FOLLOWED WHEN TAKING DELIVERY OF GOODS IS
CONTAINED IN IOM/86/86-FOM/73/86.
=====
PROJECT NO.: MC OPIN/NIC/LS470 CIAV PURCHASE NO. R
ITEM: GALVANIZED ROOFING ZINC
PURCHASE ORDER XSUPPLIER QUANTITY/DESCRIPTION TOT COST
COLONES
DC1990/4/NIC BATICA 2,475 ZINC 3XEX12 FT. 0NOYHNYTUMFP
=====
TOTAL ALUE OF MERCHANDIZE 1,92,657.00
====PACKING: BY FACTORY
C + F VALUE COST: USDLRS18,515.63
FREIGHT: USDLRS 750.00
VESSEL/FLIGHT: N/A
TRUCK NUMB: C-25034
DEPARTURE DATE: 3: 0W FEBRUAR
E.T.A. 0W FEBRUARY
INSURED FROM: SAN JOSE/COSTA RINSURED TO: ARA MXNICARA
B/L - AWB NO. N/A
HABILL. NO. TO ISSUED AT HE BORDER
CONSIGNEE: UNHCR, OUA/NICARA
SHIPPING MARKS: NONE
CC 80 MANAGUA, ICARAGUIN RATE OF EXCHANG: COLONES 106.00 V UD' .B 1.00 K00 FEB
```

An actual SITOR A intercept of diplo traffic from the UN's refugee office in San Jose, Costa Rica, to their office in Geneva, Switzerland.

rine mobile and point-to-point HF bands. You can pick out the signals because they have a very distinctive pulsating *chirp ... chirp ... chirp* sound. Monitoring traffic is possible only by listening to the signals coming from a master station. The slave station error acknowledgment signals sound slightly different, and do not offer any traffic to monitor. Of course, during the course of an exchange of communications, the roles of master and slave are continually being reversed.

Another Side of SITOR

A second aspect of SITOR is SITOR B, or as some call it, FEC (Forward Error Correction). SITOR B is a one-way broadcast method where every station tuned to the broadcast frequency with a capability to copy this mode receives the transmitted information. This is used for weather and press broadcasts, traffic lists, navigational advisories, etc.

The sound of a SITOR B transmission isn't nearly as distinctive as SITOR A because there's no *chirp*. It has been described as sounding like regular 75-Baudot RTTY, but with more of a "singing" sound. SITOR B is error-correcting in that the message is sent in time diversity; that is, it actually is sent twice.

The station sends a block of data, pauses, then retransmits the same block of data. This continues until the entire message is sent. The receiving station compares the first block with the second. If there are differences in any of the characters between the two blocks, that character is not printed, signifying an error. One note to this is that even though SITOR B transmits characters at 100 baud, the actual data rate is about 50 baud because all characters have to be sent twice.

Tuning In

A listing of some of the many bands and frequencies where you can expect to find abundant SITOR A and B activity is provided in Table 1. In the point-to-point bands, SITOR stations are mixed in with

Selected SITOR Bands & Frequencies

518 kHz	NAVTEX Maritime Safety & Weather Broadcasts SITOR B
2174.5 kHz	Maritime Distress & Calling SITOR A
4172.5 to 4180.5 kHz	Ships SITOR A
4177.5 kHz	Maritime Distress & Calling SITOR A
4202.5 to 4207 kHz	Coastal & Ships SITOR A
4210.5 to 4218 kHz	Coastal Stations SITOR A & B
4438 to 4650 kHz	Point-to-Point SITOR A
5060 to 5450 kHz	Point-to-Point SITOR A
5730 to 5900 kHz	Point-to-Point SITOR A
6263 to 6282 kHz	Ships SITOR A
6268 kHz	Maritime Distress & Calling SITOR A
6300.5 to 6311.5 kHz	Coastal & Ships SITOR A
6314 kHz	Maritime Safety Information SITOR B
6314.5 to 6328 kHz	Coastal Stations SITOR A & B
6765 to 7000 kHz	Point-to-Point SITOR A
8376.5 kHz	Maritime Distress & Calling SITOR A
8377 to 8393 kHz	Ships SITOR A
8396.5 to 8414 kHz	Coastal & Ships SITOR A
8416.5 kHz	Maritime Safety Information SITOR B
8417 to 8433 kHz	Coastal Stations SITOR A & B
9040 to 9400 kHz	Point-to-Point SITOR A
10150 to 11175 kHz	Point-to-Point SITOR A
11400 to 11600 kHz	Point-to-Point SITOR A
12100 to 12230 kHz	Point-to-Point SITOR A
12477 to 12530 kHz	Ships SITOR A
12520 kHz	Maritime Distress & Calling SITOR A
12560 to 12576.3 kHz	Coastal & Ships SITOR A
12579 kHz	Maritime Safety Information SITOR B
12579.5 to 12630 kHz	Coastal Stations SITOR A & B
13360 to 13570 kHz	Point-to-Point SITOR A
13870 to 14000 kHz	Point-to-Point SITOR A
14350 to 14990 kHz	Point-to-Point SITOR A
16683.5 to 16754 kHz	Ships SITOR A
16695 kHz	Maritime Distress & Calling SITOR A
16785 to 16804 kHz	Coastal & Ships SITOR A
16807 to 16872 kHz	Coastal Stations SITOR A & B

Table 1. These bands and frequencies should produce a bumper crop of SITOR stations to monitor.

stations using other modes including voice. NAVTEX is all SITOR B. Maritime frequencies using SITOR may show occasional interlopers, but not too often.

Selected prominent and reliable stations and their SITOR B skeds are shown in Table 2, though there actually are hundreds of SITOR stations in operation worldwide.

Those shown here will quickly demonstrate how plentiful, interesting and cinchy SITOR is to monitor.

A ute guide providing listings of SITOR stations around the world would be a definite plus to any ongoing monitoring effort. The current edition of Joerg Klingenfuss' *Guide to Utility Stations* is probably as



The Info-Tech M-600 decoder no longer is manufactured, but you can pick one up used for about \$250.



Universal Radio's M-400v3 decoder and reader brings up the messages right on its own front-panel LCD screen.

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With a range of up to 1 mile, the new XTL3000-EZ transmitter E-Z KIT outperforms any other unit available. Miniature battery and holder included on circuit board. Amazing audio sensitivity. Picks up sounds at the level of a whisper. Works with any VHF scanner or surveillance receiver at 143 MHz. XANDI's famous E-Z kit approach makes assembly a snap. Kit includes pre-assembled and tested surface mount module, microphone, antenna wire, and battery.

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Selected SITOR B Broadcasts

(Schedules and frequencies believed correct at press time but are subject to change. All times shown are UTC, except as otherwise noted.)

EAD, Madrid Spain. Traffic lists at the top of the hour, every odd hour on 6319, 6325, 8420, 8429, 12581.5, 12590, 12598, 16809.5 and 16826 kHz.

FFT, Saint Lys, France. Weather and traffic lists on the hour, 24 hours on 6320.5, 8420 and 12582.5 kHz.

GKE, Portishead, England. Weather at 0930 on 16807.5 kHz.

KEJ, Hoolehua, HI (Globe Wireless). Traffic lists at 15 minutes past every hour on 4214.5, 6326, 8431, 12611.5, and 16842.5 kHz.

KFS, San Francisco, CA (Globe Wireless). Hourly traffic lists on 4211.5, 6315.5, 8417.5, 12580.5 and 16829.5 kHz.

KLB, Seattle, WA. (Seattle Radio, Inc.). Traffic list at 2030 on 12590.5 kHz.

KMI, Inverness, CA (AT&T). Weather at 20 minutes past every odd hour, continuous traffic lists on 8431.5, 12630 and 16870 kHz.

KPH, San Francisco, CA (MCI International, Inc.) Traffic lists and weather at 0500 and 0900 on 4216, 6320, 8422.5, 12585.5 and 12600 kHz.

NMA, Miami, FL (US Coast Guard). NAVTEX every 4 hours starting at 0000 UTS on 518 kHz.

NMC, San Francisco, CA (U.S. Coast Guard). Weather and maritime information at 0000 and 1800 on 8416.5, 8426 and 16806.5 kHz.

NMF, Boston, MA (U.S. Coast Guard). Weather and maritime information at 0140 and 1630 on 8414.8 and 12577.3 kHz; also 0140 on 6312.3 kHz; 1630 on 16804.8 kHz. NAVTEX on 518 kHz every 4 hours starting at 0045.

NMG, New Orleans, LA (U.S. Coast Guard). NAVTEX on 518 kHz every 4 hours starting at 0300.

NMN, Portsmouth, VA (U.S. Coast Guard). NAVTEX on 518 kHz every 4 hours beginning at 0130. Also listen for their active two-way SITOR A comms on 6314.3 kHz (ships reply on 6264.5 kHz) between 2300 and 1100 UTC. They QSL reception reports sent to: Commanding Officer, U.S. Coast Guard CAMSLANT, 4720 Milepost Road, Chesapeake, VA 23322-4399. Attn: TC3 Michael L. Smith. You can even e-mail your reception report to ZUTSmitty@aol.com.

NMO, Honolulu, HI (U.S. Coast Guard). Weather and maritime information at 0330, 0130, 0430, 0730, 1330, 1730, and 2330 on 8416.5, 8429.5, 12579 and 12592.5 kHz. NAVTEX on 518 kHz every 4 hours starting at 0040.

NMQ, Long Beach, CA (U.S. Coast Guard). NAVTEX on 518 kHz every 4 hours beginning at 0045.

NMR, San Juan, PR (U.S. Coast Guard). NAVTEX on 518 kHz every 4 hours starting at 0200.

NMT, Astoria, OR (U.S. Coast Guard). NAVTEX on 518 kHz every 4 hours starting at 0130.

NOJ, Kodiak, AK (U.S. Coast Guard). Weather at 1500 on 16806.5 kHz. NAVTEX on 518 kHz every 4 hours beginning at 0300.

NOX, Adak, AK. (U.S. Coast Guard). NAVTEX on 518 kHz every 4 hours starting at 0340.

OST, Oostende, Belgium. Traffic lists 10 minutes past each hour on 7776.5 kHz.

PCH, Scheveningen, Netherlands. Traffic lists 15 minutes past odd hours on 8428.5, 12596.5 and 16839 kHz.

SAB, Goteborg, Sweden (Globe Wireless). Traffic lists on 4218.5, 6326.5, 8434.5, 12624, 12652 and 16851.5 kHz.

SPW, Warsaw, Poland. Traffic lists 0000, 0200, 0400 and 0600 on 7863.5 kHz; at 1400, 1600, 1800, 2000 and 2200 UTC on 14654.5 kHz.

VAE, Tofino, BC, Canada (Canadian Coast Guard). NAVTEX on 518 kHz every 4 hours starting at 0110.

VAL, Vancouver, B.C., Canada (Canadian Coast Guard). Weather at 0200, 02300, 0700, 0730, 1900 and 1930 on 16822 kHz.

VAJ, Prince Rupert, BC, Canada (Canadian Coast Guard). NAVTEX on 518 kHz every 4 hours starting at 0430.

VAU, Yarmouth, NS, Canada (Canadian Coast Guard). NAVTEX on 518 kHz in English every 4 hours starting at 0320, French every 4 hours starting at 0335.

VBA, Churchill, NB, Canada (Canadian Coast Guard). NAVTEX on 518 kHz at 0230 and 1430.

VBC, Wiarton, ON, Canada (Canadian Coast Guard). NAVTEX on 518 kHz every 4 hours starting at 0110.

VCK, Sept. Iles, QC, Canada (Canadian Coast Guard). NAVTEX on 518 kHz in French every 4 hours starting at 0035, English every 4 hours starting at 0020.

VCO, Sydney, NS, Canada (Canadian Coast Guard). NAVTEX on 518 kHz every 4 hours in English starting at 0240, every 4 hours in French starting at 0255.

VCT, Tors Cove, Nfld., Canada (Globe Wireless). Weather at 0451, 1051, 1651 and 2251 on 4217.5, 6329.5, 8435, 12610.5 and 16844 kHz.

VFM, Montreal, QC, Canada (Canadian Coast Guard). NAVTEX on 518 kHz in French every 4 hours starting at 0355, English every 4 hours starting at 0340.

VOK, Cartwright, NF, Canada (Canadian Coast Guard). NAVTEX on 518 kHz every 4 hours beginning at 0350.

VOM, Saint Johns, NF, Canada (Canadian Coast Guard). NAVTEX on 518 kHz at 1020, 1820 and 2220.

VRX, Victoria Harbour, Hong Kong. Traffic Lists at 0000, 0400, 0800 and 1200 on 8421.5 and 16821 kHz.

WIAW, Newington, CT (ARRL). SITOR on 3625, 7095, 14095, 18102.5, 21095 and 28095 kHz at 11 a.m. Eastern Time every Tu-W-Th, also 6 p.m., 9 p.m., & Midnight Eastern.

WLC, Rogers City, MI. Weather at 1330 and 1400 on 4212 and 6316 kHz.

WLO, Mobile, AL (Mobile Marine Radio, Inc.). Weather and traffic lists at 35 minutes past each hour on 4343, 8419, 8514, 8534 and 12581.5 kHz.

WNU, Slidell, LA (Globe Wireless). Traffic lists and weather on 4210.5, 6327, 8425.5, 12588.5, 12607.5 and 16834.5 kHz.

WOM, Fort Lauderdale, FL (AT&T). Weather at 40 minutes past even hours, also continuous traffic lists on 4215.5, 6327.5, 8432.5 and 12631 kHz.

WOO, Manahawkin, NJ (AT&T). Weather at 20 minutes past even hours, also continuous traffic lists on 4212.5, 6328, 8433 and 12623 kHz.

Table 2. SITOR B broadcasts from these stations should be easy to hear by listeners in North America. NAVTEX stations cover a service range of 400 miles.

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The company that has been setting the standards in premium-quality world band shortwave performance now puts top-of-the-line features and technology at your fingertips with the SW8... wherever you want to take it. Designed for both desktop use and easy portability, the

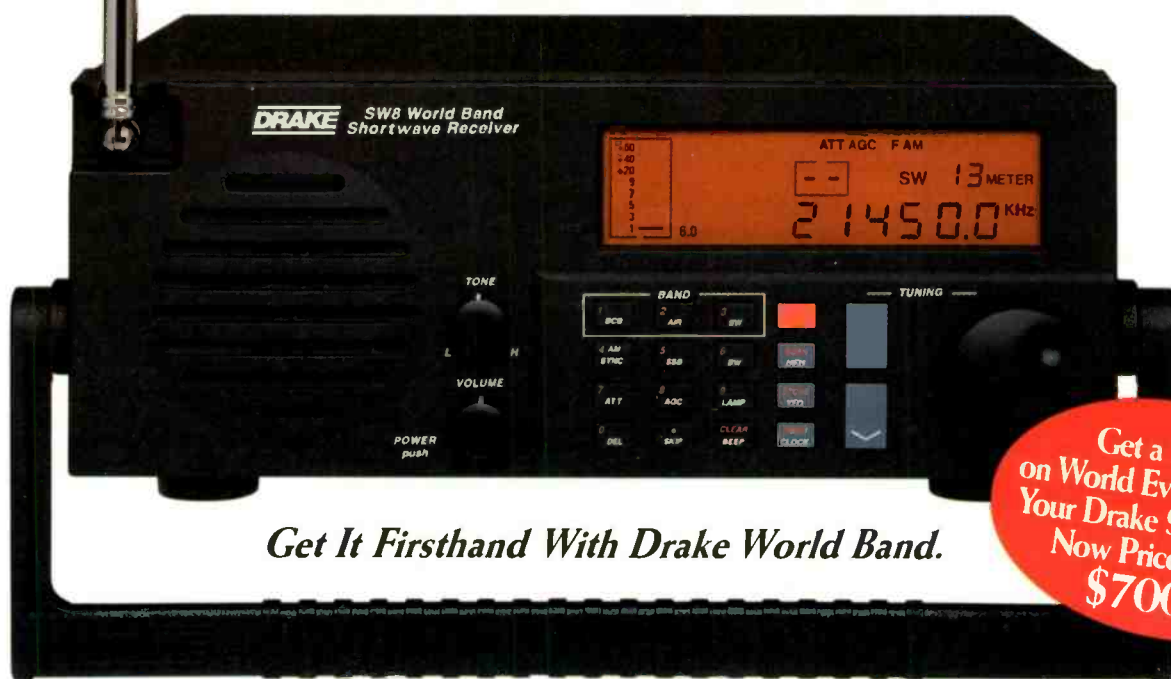
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WOO OCEAN GATE RADIO

AT&T station WOO in New Jersey offers this good-looking QSL for correct reception reports.

good a directory as any you could find for hobby use. You'll discover additional stations on your own.

The Equipment

SITOR reception requires a communications receiver with digital frequency read-out, good stability and sharp selectivity. If you already have such a receiver, then you are rounding second base and halfway home. Now all you need is a way to convert the digital SITOR signals into readable messages.

You can obtain a special decoder accessory that connects to your receiver. Good

news: These units activate by simply plugging a jack into a receiver's record-out socket, then connecting their power plug to 117 VAC. Hook-up doesn't require any internal receiver tinkering, rewiring, connecting or adjustments.

Bringing in SITOR traffic means tuning the receiver to the center of the desired signal. Typically, this is easily accomplished because front-panel LEDs on the decoder begin to flicker when the receiver is precisely tuned for best reception.

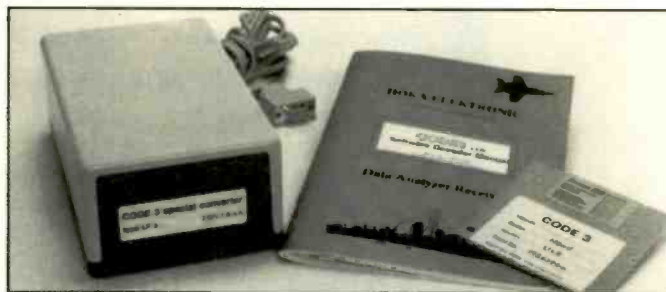
There is a wide selection of excellent decoder systems available to the hobbyist from a number of manufacturers, including Universal Radio Inc., MFJ Enterprises Inc.,

Computer Aided Technologies, Advanced Electronic Applications (AEA), HAL Communications and PacComm. In addition to SITOR A/B, most decoders are designed with the ability to decode a selection of additional modes because eventually you will wish to explore those, too. These could include, for instance, CW, Baudot RTTY, FEC-A, ASCII, FAX, ARQ-E, ARQ-E3, packet, and others. Depending upon the specific decoder system selected, the messages can be read out in a variety of ways.

Traffic might be read out on a decoder's own LCD screen. Some sophisticated decoders contain all of the circuitry required



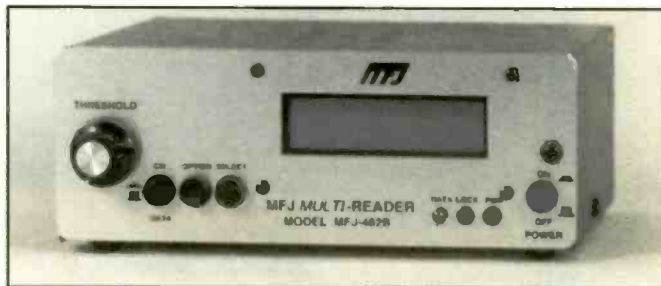
The Universal Radio M-900v2 VF decoder puts a full-screen display on your video monitor.



Hoka Code 3 is a multilevel system allowing the interfacing of a computer with a communications receiver to produce a number of benefits, including SITOR reception. It's from Computer Aided Technologies.



Full-screen display on your computer's monitor is possible via this MFJ Enterprises MFJ-1278B unit.



MFJ Enterprises' MFJ-426B has a front-panel screen for bringing you SITOR messages.

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Who Makes The Gear?

Here are addresses to keep in mind:

- Advanced Electronic Applications, Inc., P.O. Box C2160, Lynnwood, WA 98036; phone (800) 432-8873. Free catalog available.

- Computer Aided Technologies, P.O. Box 18285, Shreveport, LA 71138; phone (318) 687-2555, from 9 a.m. to 2 p.m. weekdays, or by e-mail to scancat@scancat.com. Their web page—<http://www.scancat.com>—displays a slide show of the Hoka Code 3 software in operation. Free floppy of slide show is available by phoning or writing.

- HAL Communications Corp., P.O. Box 365, Urbana, IL 61801; phone: (217) 367-7373.

- MFJ Enterprises Inc., Box 494, Mississippi State, MS 39762; phone (601) 323-5869. Order line: (800) 647-1800. Free catalog available.

- PacComm Packet Radio Systems Inc., 4413 N. Hesperides St., Tampa, FL 33614; phone (813) 874-2980.

- Universal Radio, 6830 Americana Parkway, Reynoldsburg, OH 43068; phone (614) 866-4267; order line (800) 431-3939. Free catalog.

to bring up the messages on a video monitor screen and can even make hard copies on a printer. Alternately, you have the option of interfacing your receiver with your computer by means of products from several companies.

A Closer Look

Looking at a few specific decoders to give a general idea of the delights that abound, you could get started at almost any price range. For about \$250, you could pick up a used Info-Tech M-600. This isn't being manufactured any longer, but it is very affordable and readily available from Universal Radio Inc. and elsewhere. It requires a composite video monitor.

- Universal Radio's M-400v3 reader is an entirely self-contained unit with its own built-in LCD display screen. It is priced in the \$400 range.

- Universal Radio's M-900v2 VF Decoder is a deluxe unit providing full-screen display on your video monitor, and it's simple to use. This is in the \$450 price range.

- MFJ Enterprises Inc. has a fine unit they call the MFJ-462B that does the job for around \$170. Read the messages right off its own internal LCD display.

- The MFJ Enterprises Model 1278-B costs around \$300 and is a multimode

decoder that will provide full-screen display on your computer's monitor.

- Hoka Code 3 consists of a basic PC software package enabling the user to decode more than 30 different transmission protocols. A unique built-in analysis mode enables the user to use on-screen tools to tune in the signal, then let Hoka Code 3 analyze and identify it, then automatically commences decoding text. Hoka Code 3 comes from Computer Aided Technologies and costs about \$595.

The Universal M-1200 Computer Card (about \$400) plugs into a PC and enables SITOR reception, and many other modes.

This gives you a general idea of the spectrum of SITOR decoding products available to the hobby user. More information can be obtained by checking ads in *POP'COMM*, or by writing directly to the manufacturers.

Ready, Set, Get Going!

I have now revealed information about amazing SITOR stations just begging for someone just like you to come along and intercept them. What more can I do? Your course of action should be clear. Get in on this rapidly growing area of DXing, then send your loggings along to the *POP'COMM* column that covers these stations, "Communications Confidential." ■

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America's German Espionage Station

Our Nation's First High-Tech Intrigue Case

BY ALICE BRANNIGAN

Some 60 miles east of New York City lies the suburban community of West Sayville, on Long Island's south shore. Few of today's residents realize that a 100-acre tract adjoining the railroad tracks was the site of the only direct link with northern Europe during the early days of World War I, and provided one of the first of the first big spy scares to threaten U.S. neutrality. So well kept was the secret of this wireless facility that even its engineers didn't know the station had one of the world's first magnetic recorders and used it as a coding device.

The Origins

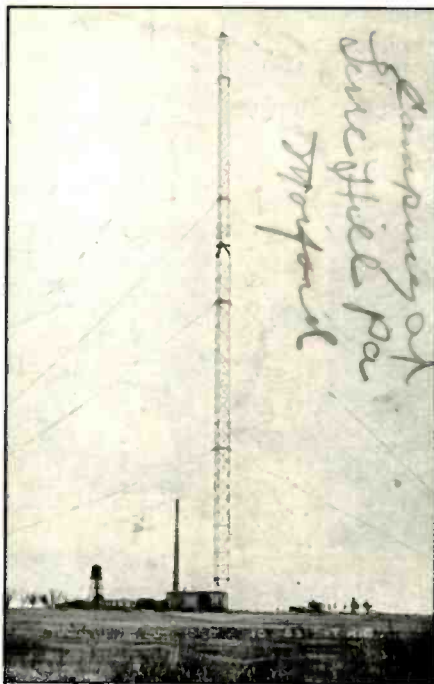
In the Germany of 1913, German electrical engineer Dr. H.G. Goldschmidt had formed and sold stock in The Goldschmidt Wireless Telegraph Co. to provide trans-Atlantic wireless communications. Most trans-Atlantic stations were owned by European firms such as Marconi and Pathe.

In those days, commercial wireless stations didn't require licenses. Goldsmith set about building his station in the marshes near Tuckerton, N.J. He erected an impressive 860-foot antenna tower and dubbed his station WGG. It would exchange commercial traffic with Telefunken's station, POZ, in Nauen, Germany.

Though Goldschmidt didn't say so, it was thought that Telefunken had supplied all of the expensive equipment used at WGG in exchange for stock in Goldschmidt's company. In other words, Telefunken actually was WGG's owner.

At about the same time, Telefunken was building its own American wireless station. Located in West Sayville, N.Y., this station had a 500-foot tower. An innovative design feature of both the Tuckerton and Sayville tower designs was mentioned in early literature about the stations. It noted that while radio towers usually were wide at the base, each of these rested on a single point where there was a ball and socket to provide flexibility for protection against wind. At the base of the Sayville tower, a huge billboard boldly displayed the Telefunken name in electric lights.

The Sayville facility announced it would communicate via quenched spark gap with



Station WGG in Tuckerton, N.J., with its innovative 860-foot tower.

ships on 500 kHz, but could shift to 88 kHz and 107 kHz for long-range, point-to-point work. Future plans included operation on 60 kHz.

By May 1913, Sayville was testing with POZ, followed in July by WGG's first trans-Atlantic tests. Sayville went into full commercial operation in January 1914, with WGG opening for commercial traffic in July. Both stations used Telefunken equipment exclusively. One notable exception was that when Tuckerton began, it was equipped with a magnetic recording device made in Springfield, Mass., by American Telephone Co.

A Problem Arises

When someone told U.S. Sen. Henry Cabot Lodge about the big Telefunken billboard at the Sayville wireless station, it caused him to wonder whether such a station eventually might be used for espionage against the United States or its interests.

Lodge then pressured Congress into passing a law requiring that all wireless stations be licensed. Under that law, licenses would be granted only to U.S. citizens or corporations. Messages would have to be sent in plain text without the use of ciphers or codes. The Bureau of Navigation would be allowed to inspect all licensed stations, and the president had the right to seize them during a national emergency.

Yet, when the Sayville station opened for operation, the Telefunken billboard remained on display for viewing by passengers aboard all passing trains. *The New York Times* questioned how a foreign station could continue to operate in this country. A spokesman for Telefunken's New York office said they had no interest in the station because it had been purchased by U.S. interests.

Investigation revealed that the new owner was Atlantic Communication Co. of New York City. Atlantic's manager reported that his firm was made up of American stockholders who had purchased the station "with some German capital." Atlantic's president was Herman Metz, then just ending his first term in Congress after making a fortune as an importer and manufacturer of dyestuffs and drugs. Most of his contacts were in Germany and in the United States he represented interests such as I.G. Farben and Agfa.

Under Metz, Atlantic installed two important devices at Sayville. One was a Telegraphone magnetic recorder like the one at Tuckerton. The other was a Morse code sender that operated from punched tape, allowing automatic high-speed keying.

Wired For Sound

The Telegraphone, ancestor of the modern tape recorder, was a wire-recorder. It had been patented by Valdemar Poulsen, a Dane, and was intended to increase the capacity of telephone circuits. Instead of a cassette, the Telegraphone used two spools of piano wire. The Webcor portable recorder of the late 1940s also used spools of wire.

Poulsen wanted to record messages at a slow speed and, by speeding up the wire and transmitting the rapid, high-pitched,

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Introducing the SF100 SOUND FEEDER™ MOBILE AUDIO CONNECTOR



SF100

MOBILE AUDIO CONNECTOR

The **SOUND FEEDER** Model SF100 Mobile Audio Connector is the most practical and convenient way to connect your portable compact disc player or cassette player to your car's existing FM radio speaker system. By simply plugging the **SOUND FEEDER** into your cigarette lighter,

connecting the audio input wire to your portable player, and setting it to the desired station, you can begin to enjoy the amplified **STEREO** sound of your portable music source without the bother of dangerous (and often illegal) headphones. As an added feature, the **SOUND FEEDER** also contains a specially designed DC-to-DC convertor which will provide 3V, 4.5V, 6V, or 9V DC power from the car cigarette lighter to most (but not all) models of portable players. The **SOUND FEEDER's** combination of stereo sound, easy installation, portability, and power supply feature make it the ideal accessory for every vehicle owner.



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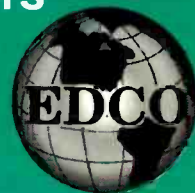
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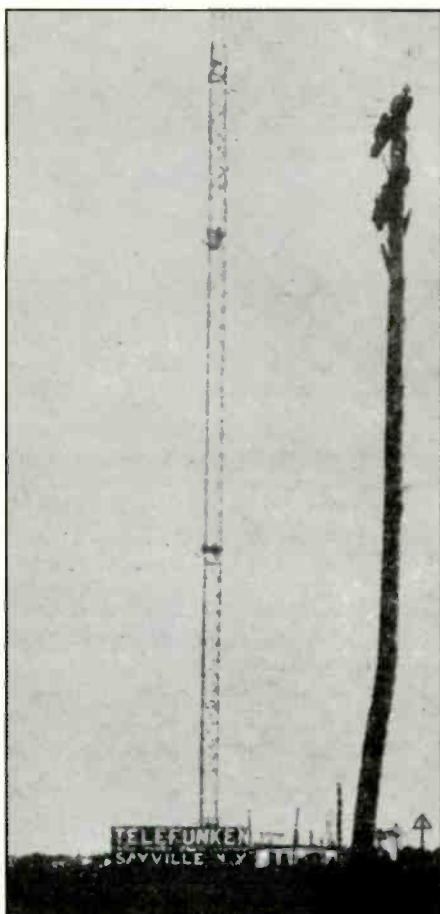
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CIRCLE 131 ON READER SERVICE CARD

NEVADA



SSE



The West Sayville station's Telefunken billboard and tower as seen by passing railway passengers. The station was a key player in a case of high-tech international espionage.

signal by wireless or landline to a similar unit, cram as much as eight times the amount of traffic into a single transmission. At the receiving end, the unit would record the indecipherable jumble at high speed, then play it back at normal speed while someone copied down the messages.

Poulsen saw the Telegraphone as a way of preventing eavesdropping, and also eliminating errors that plagued cable transmissions because any section of the recording could be replayed for clarification.

When American Telegraphone Co. was founded about 1904, the device was seen by the company merely as a business machine to sell for half the cost of Edison's cylinder Dictaphone. After four years, they had spent \$100,000 and failed to produce a practical working model. Then, industrialist Dexter Rood saved the day by providing \$188,000 in new capital, which also gave him controlling interest in the company. Years later, angry stockholders suggested Rood merely had fronted for the forces behind Atlantic Communication.

Rood, however, did produce several working machines for selected customers.



A close-up of the Telefunken billboard, and bird's-eye view of the buildings at the Sayville wireless facility.

Included in the list were Goldschmidt, the Imperial German navy and Atlantic Communication. When American Telegraphone's own sales organization couldn't get machines to fill orders, Rood told them there were flaws in the current model and a newer one was being designed. In 1917, after the United States entered the war, the U.S. Army Signal Corps wanted to purchase several for dictating, but they also were told to wait for a new model.

New Complications

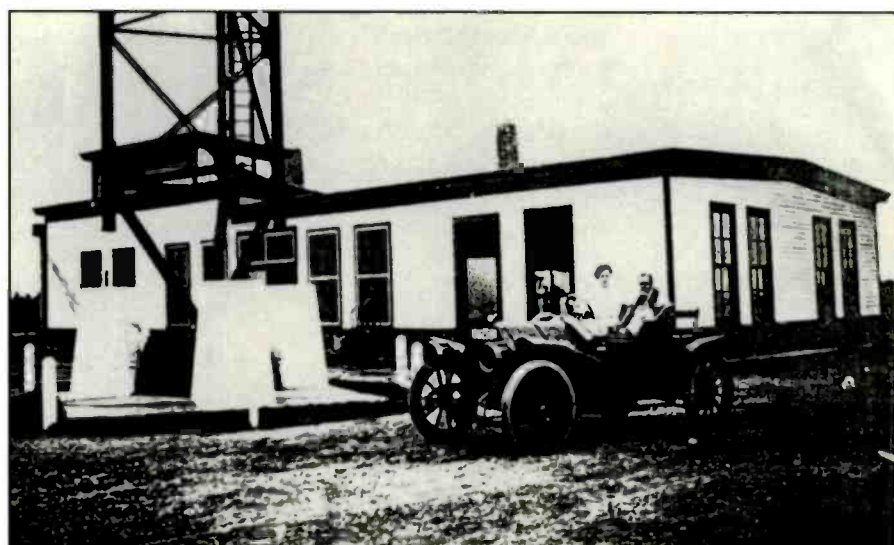
On Aug. 3, 1914, two supposedly unrelated events took place. First, the German Lloyd liner *Kronprinz Wilhelm* left her berth in New York City for her seemingly routine run to Bremerhaven. However, she carried provisions for six months at sea and was loaded with coal up to the level of her deck. On the main deck was a massive crate of what appeared to be electrical equipment. None of this created any comment until about 10 days later when it seemed as if the large liner had vanished from the face of the earth. She had not been spotted by other trans-Atlantic liners. Yet, the ship's owners appeared unconcerned.

The other event was the German invasion of France. England stepped in to support France and cut the extension of the trans-Atlantic cable between England and Germany. That would leave Tuckerton and Sayville the only direct link between the United States and northern Europe. The concerns that Sen. Lodge had a year earlier appeared to be coming true, and on Aug. 7 Washington felt justified in assigning two U.S. Navy wireless operators to duty at Tuckerton.

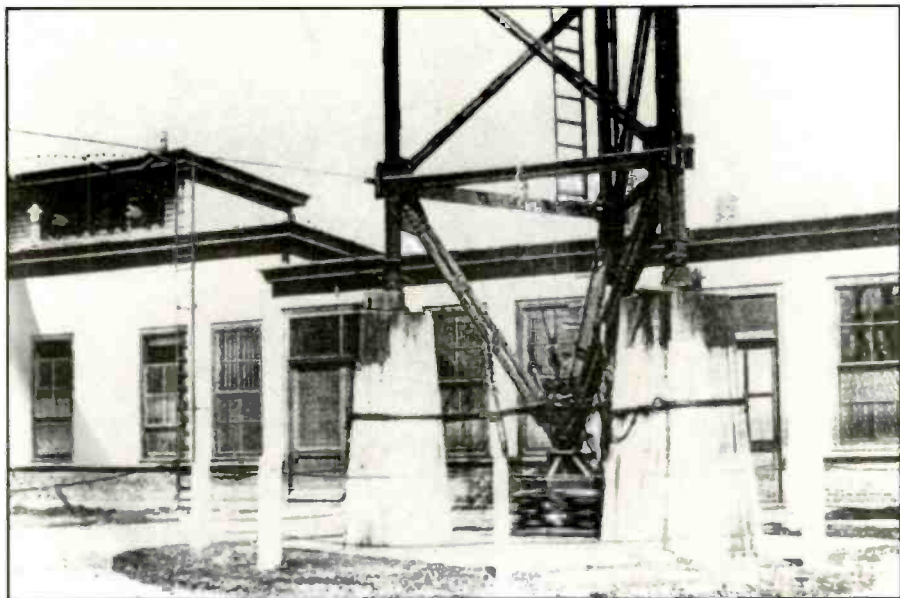
Meanwhile, Telefunken's Nauen station complained that signals from Sayville were unreliable, especially during periods of high solar activity. The solution to the problem was a mid-Atlantic relay station that would henceforth receive Sayville's signals and retransmit them to Nauen. When this information was given to the press, a reporter asked an official at Atlantic Communication whether the S.S. *Kronprinz Wilhelm* was being used for this purpose. "That is correct," was the reply.

Digging Deeper

Reporters then decided to look closer at the financial structure of Atlantic Commu-



The immense size of Sayville's tower can be realized by comparing it with the car at the right.



A close look at the interesting Sayville tower, showing the tapered base, terminating at a ball and socket. The cement footings remain to this day.

nication. Inasmuch as Atlantic appeared to be American-owned, it had received a license for Sayville. Investigation found that although Metz, the president, was an American, the secretary-treasurer and actual head of the firm was Dr. Karl G. Frank, a German national. Metz turned out to be the only American who owned stock in the company, and his holdings were only enough to qualify him as a corporate officer. The remainder of the stock was in held in Germany by Telefunken interests. In charge of the Sayville transmitter was Capt. Zenneck, a German naval officer.

By the end of August 1916, the U.S. Navy complained WGG in Tuckerton was operating without a license. The station was seized and shut down. On Sept. 10, the station reopened, staffed by U.S. Navy personnel, operating on 33 kHz with American naval call letters, NWW. A lid of secrecy was clamped on the station. Nobody knows whether the Germans took the Telegraph phone with them when they left.

At about the same time, amateur operators along the East Coast were detecting a high-pitched whine that appeared nightly at 11 p.m. when Sayville began sending traffic to Nauen. Nobody knew what it was, although hams agreed that it was coming from Sayville.

Sinking of RMS Lusitania

On May 7, 1915, German U-boats torpedoed the Cunard liner *Lusitania* off the Irish coast, taking with her 1,200 passengers (including many Americans) and a crew of 830. Within hours, reports were out that German newspapers had known in advance that the ship would be sunk, and where. The Berne correspondent of the *London Morning Post* wrote that they had

received the news by wireless from New York in advance of the sinking and had their stories all written.

In New York, Carl Schurz Jr., a spokesman for German interests, told the press that the Germans had been alerted by wireless to the presence on the *Lusitania* of war supplies for Britain when the ship left New York on May 1. He said that in view of the war situation, Germany only had been protecting herself by sinking the ship.

If the reports were correct, there was only one way U-boats could have gotten the message, and that was from Sayville. The next day, several anti-German newspapers were calling for the Sayville station either to be closed or else operated under strict controls.

SIGINT

However, strange signals continued to be received nightly by ham operators. After establishing contact with POZ in Nauen, the operator would begin sending so fast that the traffic became unintelligible. Not all transmissions fell into that category because there also was a full schedule of commercial messages at normal speed. The *Providence Journal* hired an expert telegrapher to transcribe every word Sayville transmitted.

In late June 1915, three U.S. Navy lieutenants were stationed at the Sayville station. They reported nothing amiss, but rumors persisted that while one of the Germans wine and dined the naval officer on duty, the other Germans would start sending coded traffic. One of the officers actually confirmed that, but later denied it.

The *Providence Journal* began publishing its series of Sayville transcripts on July 1. They charged that Nauen had start-

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CIRCLE 60 ON READER SERVICE CARD



Some of the Telefunken staff working on the Sayville tower.

ed requesting more repeats because of poor reception. But when the repeats came they often were strings of numbers that bore no relation to any previous transmission. Prices sent, supposedly from the stock and cotton exchange, didn't correlate to actual transactions in either. The newspaper reported the cotton orders actually were troop movements.

The newspaper wasn't the only signal sleuth tuned in on Sayville. Charles Apgar, a New Jersey ham, was experimenting with his Ampliphone invention. It allowed him to record signals off the air on an Edison Dictaphone. On June 7, he recorded that strange whining sound he had been hearing. He couldn't make any sense of it, even after playing it several times.

One night he was listening to the recording of the whine when the Edison machine began to slow down. Apgar listened intently as the whine resolved itself into dots and dashes. Taking a pencil, he wrote down what he heard, then got a German-English dictionary.

What he discovered sent him to the offices of the Bureau of Navigation, Edison Dictaphone in tow. He showed the messages and played a few of his cylinders for L.R. Krumm, the chief inspector of the New York office. Krumm quickly called William J. Flynn, head of the U.S. Secret Service. Together the three listened to the cylinders run at slowed speed, not realizing that they were hearing a Telephonograph used just as its inventor had envisioned.

It wasn't until after the war that anyone disclosed what Apgar had recorded. Even then, nobody would provide complete texts.



Stock certificate of the American Telephonograph Co. signed by millionaire Charles Dexter Road, president. The Germans realized this device was great for transmitting secret wireless messages. A ham monitoring its signals finally saved the day.

As an example, though, a spokesman cited what appeared to be a commercial message reporting a cargo of sugar had been shipped on a particular vessel and bills of lading were being forwarded by hand. Another announced the birth of a baby, the date, and that the child had been named Mercedes.

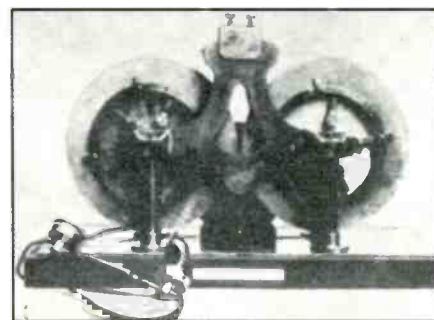
The Secret Service determined that there was no sugar aboard the ship mentioned, but there was a passenger named Mercedes. When the ship docked in Liverpool, Scotland Yard was waiting to arrest the two men waiting for its arrival, along with Mercedes and the documents ("bills of lading") he was delivering.

Pulling The Plug

On April 21, 1916, the U.S. Navy decided to tighten security measures at Sayville, so it dispatched 21 U.S. Marines to establish an encampment at the station. The following February, American relations with Germany had reached the point where the Germans were told to leave Sayville at once. On Feb. 25, U.S. Navy Capt. W.H.G. Bullard arrived with official orders to seize the station. Whether the Telephonograph was removed is a secret lost to history because Bullard's first official act was to impose tight security on the installation. By July 25, 1917, the Navy had installed a 100-kW transmitter there and given it the naval callsign NDD.

Telefunken reacted by replacing its Sayville station with a new one in Mexico, transferring its evicted Sayville staff there to operate that facility.

Sayville's fate had been sealed on Feb. 24 because British intelligence sent Washington a copy of a decoded German diplo-



Here's the actual Telephonograph magnetic wire recorder with its spools of piano wire. It possibly was the world's first high-tech electronic espionage device.

matic message discussing increased U-boat warfare and mentioning the possibility of an agreement with Mexico and Japan in the event of an attack on the United States. This message became famous to cryptanalysts and historians as the "Zimmerman Telegram."

After World War I, the Sayville site was turned over to Mackay Radio. In 1934, Mackay returned it to the U.S. government. It was put to use later as a remote site for the Federal Aviation Administration's Air Route Traffic Control system. The site most recently was used for a NOAA weather radar system, but the site is not used now.

Please send input in the form of old-time wireless and radio photos, clippings, picture postcards, QSLs, station listings, memories, questions and suggestions. Everything is appreciated and eventually gets used. See you on the road to Radioville! ■

Selected English Language Broadcasts

Summer 1996

BY GERRY L. DEXTER

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

Time	Country	Frequency
0000	China Radio International	9710, 11715
	(50) RAI, Italy	6005, 9645, 11800
	(30) Radio Vilnius, Lithuania	5910
	Radio New Zealand Int'l	15115
	(30) Radio Thailand	9655, 11890, 11955
	Radio Yugoslavia	9580, 11870
	Radio Canada Int'l	5960, 9755
	Croatian Radio	5895, 7370
	(30) HCJB, Ecuador	9745
	Radio Exterior de Espana, Spain	9540
	Radio Pyongyang, North Korea	11335, 13760
	(30) Radio Netherlands	6020, 6165, 9845
	VOIRI, Iran	6175, 7180, 7260, 9670
	BBC	5970, 7325
0100	(30) Radio Austria Int'l	9655
	(Mon) Radio Norway Int'l	9560
	Radio Havana Cuba	6000, 9820, 9830 USB
	Radio Slovakia Int'l	5930, 7300, 9440
	RAE, Argentina	11710
	(30) Vatican Radio	7335
	Swiss Radio Int'l	6135, 9905
	Deutsche Welle, Germany	6040, 6085, 6130, 6145
	(30) Voice of Greece	6260, 7448, 9420
	Voice of Russia	5940, 7105, 7125, 7180
0200	(30) Radio Austria Int'l	9870, 13730
	(50) Radio Botswana	3356, 4830 (4820)
	Radio Korea Int'l, South Korea	7275, 11725, 11810
	Radio Romania Int'l	5990, 6155, 9510, 9570, 11940
	Radio Budapest, Hungary	6190, 9850, 11870
	Radio Portugal Int'l	6095, 9570
	(30) Radio Tirana, Albania	6140, 7160
	Radio Cairo, Egypt	9475
	(50) Vatican Radio	6095, 7305
	Voice of Free China, Taiwan	5950, 9680
	(30) Radio Sweden	7145
	Radio Japan	5960
0300	China Radio Int'l	9690, 9710, 11715
	(30) Radio Budapest, Hungary	5965, 9850, 11870
	Radio Thailand	9655, 11890, 11905
	(40) Voice of Greece	6260, 7448, 9420
	Channel Africa, South Africa	5955, 7185, 9585, 11900
	(30) UAE Radio, Dubai	11945, 13675, 15400, 17890
	HRVC, Honduras	4820
	Radio Cultural, Guatemala	3300
0400	China Radio Int'l	9730
	(Mon) Radio Norway Int'l	7465
	Radio Romania Int'l	5990, 6155, 9510, 11940



Time	Country	Frequency	Time	Country	Frequency
	(30) Trans World Radio, Swaziland	3200, 5055, 6070		(30) All India Radio	11620, 13750
	Christian Voice, Zambia	4965, 6065		Polish Radio	7145, 7270, 9525, 11815
	(58) Radio New Zealand Int'l	9570		Radio Romania Int'l	11940, 15390, 17745
	Swiss Radio Int'l	6135, 9885, 9905		(30) Voice of Vietnam	9840, 12020, 15010
	Kol Israel	5885, 7465		FEBC, Philippines	11995
	(30) Radio Netherlands	6165, 9590			
	Voice of Turkey	9445			
	Voice of America	5995, 6010, 7200, 11965			
0500	(30) Radio Austria Int'l	6015	1400	China Radio Int'l	7405
	China Radio Int'l	9560		RAI, Italy	15245, 17780
	Voice of Nigeria	7255		(30) Radio Portugal	21505
	Radio Havana Cuba	6000		Radio Canada Int'l	19640, 11955
	(30) Adventist World Radio, C. Rica	5030, 6150, 9725		Radio Japan	11705
	Radio Exterior de Espana, Spain	9540		(45) Radio Ulaanbaatar, Mongolia	7290v, 9950
	Radio Japan	6110			
0600	(30) Radio Austria Int'l	6015	1500	Radio Vlaanderen Int'l, Belgium	13605, 15540
	(Sun) Radio Norway	7180, 7295, 9590		KTWR, Guam	11580
	(30) Radio Vlaanderen Int'l, Belg.	5985, 9925		Radio Jordan	11970
	Radio Korea Int'l	7205		(15) Radio Veritas Asia	11715, 11850
	Radio Kiribati	9825 USB		FEBC, Seychelles	9810, 11870, 12090
	(30) Vatican Radio	9660			
	(55) Voice of Malaysia	6175, 9750, 15295	1600	Herald Broadcasting	9355, 11550, 18930
0700	Solomon Island Broadcasting Corp.	5020, 9545		Radio France Int'l	11615, 11700, 15405, 15530
	(46) Voice of Greece	7450, 9425, 11645		Channel Africa, South Africa	15240
	(16) Radio New Zealand Int'l	6100		Radio Pakistan	11570, 17660
	HCJB, Ecuador	5900, 11615		UAE Radio, Dubai	13675, 15320, 15395, 17825
	Voice of Free China, Taiwan	5950			
	(30) Radio Netherlands	9720	1700	(45) All India Radio	7410, 9650, 9950, 11620, 11935, 13750
0800	Herald Broadcasting, USA	7535, 15665		Radio France Int'l	11615, 11700, 15330, 15405
	Voice of Indonesia	9525		Radio Jordan	11970
	Radio Korea Int'l, South Korea	7550, 13670		Voice of Russia	9890, 17880
	(30) Radio Slovakia Int'l	11990, 17485, 21705	1800	Radio Vlaanderen Int'l, Belgium	5910, 13645
	CKZN, Canada	6160		Radio Kuwait	11990
0900	Radio Vlaanderen Int'l, Belgium	6035, 15545, 17595		Radio Omdurman, Sudan	9025v (9000)
	CFRX, Canada	6070		Republic of Yemen Radio	9780
	Radio For Peace Int'l, Costa Rica	7385, 15050	1900	(30/M-F) RTE, Ireland, via WWC	12160
	HCJB, Ecuador	5900		RAE, Argentina	15345
1000	All India Radio	15050, 17387, 17890		Radio Miami Int'l	9955 (part)
	(M-F) RTE, Ireland, via WWC	5065		HCJB, Ecuador	15540
	Voice of Vietnam	9840, 12020, 15010		Kol Israel	7415, 7465, 9435, 9845
	UAE Radio, Dubai	13675, 15320, 15395, 17825		VOIRI, Iran	7260, 9022
	BBC	5965, 6195, 9515	2000	Radio Nacional, Angola	9535
	Voice of America	6165, 7405, 9590		(45) All India Radio	7410, 9910, 9950, 11620, 11715, 15225
1100	(30) Radio Austria Int'l	13730		Radio Portugal	6130, 9780, 9815, 15515
	NBC, Papua New Guinea	4890		Radio Algiers, Algeria	15160
	Voice of Asia, Taiwan	7445		(05) Radio Damascus, Syria	12085, 15095
	Radio Singapore	9530	2100	Radio Havana Cuba	9550
	HCJB, Ecuador	12005		(30) Latvian Radio	5935
	Radio Finland	11735, 15400		Radio Yerevan, Armenia	9965
	Radio Japan	6120		(30 -M/W/St) Radio Dniester Int'l, Moldavia	6205
	Radio Pyongyang, North Korea	6575, 9975, 11335		(10) Radio Damascus, Syria	12085, 15095
	Radio Pakistan	17900, 21520		BBC	5975
1200	(Sun) Radio Norway Int'l	9590, 13800, 15305	2200	Herald Broadcasting, USA	7510, 9430, 13770, 13840
	(30) Radio Bangladesh	7185, 9548		Radio Havana Cuba	6180, 9505 USB
	Radio Tashkent, Uzbekistan	5975, 6025, 9715		RAI, Italy	5990, 9710, 11815
	(30) Radio Korea Int'l, South Korea	9570, 9640, 13670		UAE Radio, Abu Dhabi	9605, 9695, 9770
	Radio Jordan	11910, 11940		(30) Radio Prague, Czech Republic	5930, 7345
	(30) Voice of Vietnam	9840, 12020, 15010		Radio Ukraine Int'l	5940, 6010, 6055, 6080, 6130, 7135, 7205, 7240
	Radio Australia	5995, 9560, 9580, 11800			
	Radiobras, Brazil	15445	2300	(30) Radio Vlaanderen Int'l, Belg.	9925, 11815
	(30) Radio Sweden	11650, 15240		Radio Sofia, Bulgaria	7480, 9700
	Radio Finland	11735, 15400		Croatian Radio	5895, 7370
	National Voice of Cambodia	11938v		(30) Radio Netherlands	6020, 6165, 9845
	(30) SLBC, Sri Lanka	9720, 15425		Voice of Turkey	9445
1300	(30) Radio Tashkent, Uzbekistan	5975, 6025, 9715			

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Books You'll Like

BY R.L. SLATTERY

Tune In Again Next Week

Here's an attractive 304-page hardcover book that turns out to be an A-to-Z encyclopedia of historic radio programs and personalities from 1920 to the present.

For decades, millions of people gathered every night to hear the latest installment of their favorite program, or to listen to the news of war and other major events. *The Shadow* entertained while Walter Cronkite read the news, and from coast to coast we screamed out answers to the quiz shows from our living rooms. "Give that gentleman five silver dollars and a Snickers bar," the announcer would say, and we envied that man for being so lucky.

In Ron Lackman's book, *Same Time... Same Station*, more than 1,000 entries cover legendary radio shows past and present, the performers, directors, producers, writers, theme songs, networks and sponsors. Supporting the text are 120 black-and-white photos.

The listings are presented in convenient alphabetical format. Each series program is accompanied by a chart providing information giving its network(s), length, days of the week and time slots over the years. Series programs are given a description, including type and basic overall plot themes, names of leading characters and cast members, production personnel, story locations, the years it played, and other relevant matters of interest.

Leafing through this book, you'll find comedy programs, quiz shows, news programs, dramas, kids' programs, musicals, mysteries, suspense, fantasy, talk, soap operas, sports, amateur hours, and the whole gamut of programs, plus, of course, the people who made them possible. It's a true celebration of the medium, as well as a fact-filled reference to its subject matter.



As a reference work, there are analyses of the influence of American novels on radio. It provides biographies of comedians, writers, directors and others who dominated the medium. There are histories of the major networks, their policies and those who called the shots. The book includes comprehensive logs of long-running anthology shows. An extensive bibliography and complete index is provided. We also liked the information regarding radio adaptations of classic films.

This is a terrific book for everyone who personally experienced the golden era of radio, as well as anyone who loves radio and is curious about the shows and personalities they have known about but never heard. It's great for the vintage radio buff, but just as useful for the historian, or student of American social history.

Same Time... Same Station is \$45 published by Facts on File Inc., 11 Penn Plaza, New York, NY 10001; call (212) 967-8800. You also may be able to order this via your favorite book store if you tell them its title, publisher and code number, which is: ISBN 0-8160-2862-1.

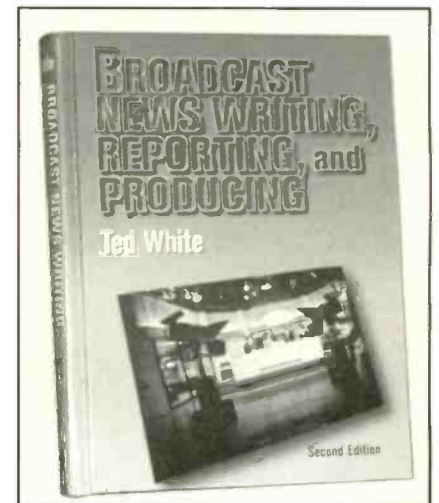
Turn Your Talent Into A Career

Interested in getting into broadcasting? It's a challenging and expanding field that offers many opportunities so long as you aren't pursuing the impossible dream. Let's face it, forget those network news anchor jobs. On the other hand, on-camera TV or on-air radio news jobs may be easier to land if you offer employers a complete package.

Consider that news directors don't need to hire one more pretty face. They are more likely to be interested in hiring someone who can do several jobs. Here's a book that shows you how to do this, therefore, becoming more appealing in the broadcast job market.

It is Ted White's *Broadcast News Writing, Reporting and Producing*, 2nd Edition. White's 408-page illustrated hardcover book examines the skills, techniques and challenges of broadcast writing, reporting and production. It contains the complete treatment of reporting techniques and scripts by professional correspondents in a broadcast news book. Eight of its 23 chapters focus on reporting topics ranging from basic skills to specialty reporting and ethics.

White's book provides samples from famous broadcast journalists such as Edward R. Murrow, Charles Kuralt, Walter Cronkite, Cokie Roberts, Charles Osgood, Paul Harvey, Richard Threlkeld, and oth-



ers. Many not only have provided their scripts, but also discuss how they write and report.

Supplementing this is the emphasis throughout on real-life situations, as well as details of the daily problems facing reporters, writers and assignment editors. Other topics covered include legal issues, ethics, interviewing techniques and the job market. Each chapter contains exercises for writing, review and discussion.

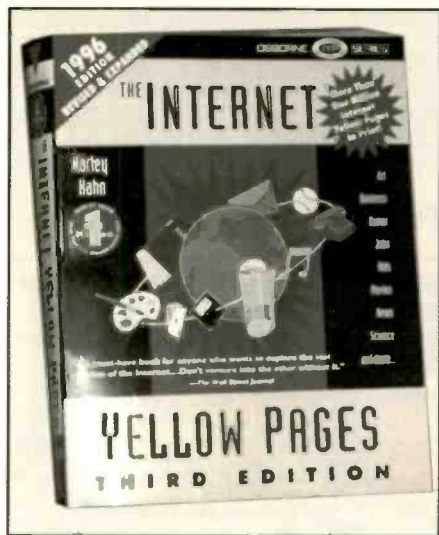
Along with coverage of the basics, the text presents examples and issues by means of actual scripts and interviews with people who bring us the news. Timely topics are discussed, such as the O.J. Simpson trial, cameras in courtrooms, Connie Chung's controversial interview with House Speaker Newt Gingrich's mother, looking at the Fairness Doctrine in light of radical, right-wing broadcasters, and the Oklahoma City bombing.

White's book is well-prepared, interesting and recommended for any person considering a career in broadcast news. It provides a well-rounded basic background in the three main components of broadcast news, which are writing, reporting and production. Once a person can demonstrate ability in those three areas, they enjoy employment advantages over folks who can't do more than scratch and grin while they read from scripts prepared by others.

Broadcast News Writing, Reporting and Producing is \$34.95 from Focal Press, Butterworth-Heinemann, P.O. Box 4500, Woburn, MA 01801; call (617) 928-2500.

Surfing in Style

The Internet Yellow Pages, 3rd Edition, by Harley Hahn, takes the work out of tracking down what you're seeking on



the Net. Hahn's massive 890-page guide has sold more than a million copies.

The book is designed like a classified telephone directory, and arranged in easy-to-reference alphabetical format according to topics. It begins at "agriculture" and goes straight to "zoology," covering 5,000 entries. But this is far more than a computer printout.

The author freely comments on most of the book's listings, offering his candid opinions, suggestions and observations in an offbeat and engaging style. Not only that,

the book is peppered with small "ads" for various Internet groups and sites. All of these "ads" are entirely fictitious and satirize phone book ads. They are clever, and often hilarious. In addition, there are many examples of curious and strange tidbits actually downloaded from the Net.

Listings make surfing the Net easier and more fun. Here, in one convenient reference authority, you are directed to many sources, including web sites, usenet newsgroups, Internet Relay Chat, Telnet, Gopher, Archie, FTP and listserv mailing lists.

It's so easy to locate things like scanner, shortwave radio, financial, travel, science, software, business, education, government, environment and other topics useful for yourself, your home, family, education or employment.

On the other hand, also wander off the beaten path and explore the edges of cyberspace. Look under hundreds of headings that direct you to things such as secret stuff, the bizarre, mischief makers, flammers, TV programs and networks, UFO groups, X-rated, celebrities, music performers, tasteless jokes, cryptography, intrigue, conspiracy theories, plus ever so many more odd or weird Net sites. You won't believe some of these things!

The front of the book has a 28-page table of contents, plus information about the Internet. In the back, there's a comprehensive alphabetical cross-index of all headings,

names, topics and subjects, making it a cinch to locate anything in jiffy time.

This is a well-organized and useful reference for every citizen of cyberspace. Except for the fact that it is nearly 900 pages thick, you might think of it as a cyberspace passport!

The Internet Yellow Pages, 3rd Edition is \$29.95, plus \$5 shipping (\$6 to Canada) from CRB Research Books Inc., P.O. Box 56, Commack, NY 11725-0056. New York State residents should add \$2.88 tax. Visa and MasterCard accepted. Toll-free phone orders: (800) 656-0056. Canada, Alaska and Hawaii orders: (516) 543-9169.

In Addition...

Emergency Scanning is a 62-page book by Tom Swisher that serves as a very basic introduction to the hobby of VHF/UHF scanning. The functions and features of scanners are explained. Various services, system types, major frequency bands and regularly encountered buzzwords are provided. Swisher's book provides a dependable roundup of fundamental facts for those starting out in the hobby. Best of all, it does this for only \$9.95, postpaid. Residents of Pennsylvania should include 60 cents tax. It's from Miller Inc., Box 360, Wagontown, PA 19376. Phone: (610) 273-7823. ■

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Activity Slow, But Still There

Things are a tad on the thin side this month, apparently reflecting a downswing in activity, after a few months of fast and furious action. Let's get to it.

Food Not Bombs (radio) is the first of several stations Dick Pearce has logged lately from his Vermont location. This was on 6955 at 1915 with a talk about micro radio. The woman—Neasha (?) somebody—had a program called *Freedom Is a Constant Struggle* canceled at KPFA in Berkeley, Calif., and was complaining about KPFA's lack of respect and cooperation. She urged cooperation among Bay Area micro broadcasters.

S. Wayland in Arkansas found a string of stations using 6955 from around 0400 one evening. First was Free Hope Experience, then KDED, then a broadcast by K-2000. All the stations were in upper sideband.

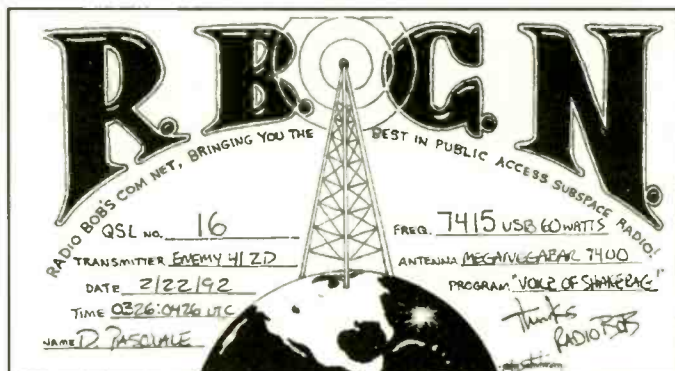
Omega Radio was heard at 2000 on 6955 by George Roberts in Pennsylvania, featuring host Dick Tator and giving the Blue Ridge Summit QSL address. Dick Pearce had them at 2052 and says that although the signal wasn't weak, the two men talking were hard to understand. The station's ID came through "crystal clear."

WKND had a "killer signal" says Pearce, who heard it on 6955 at 2105. But then it deteriorated to an unreadable level. The announcer was commenting in support of Steve Dunifer and community radio, and said Dunifer should be named "pirate of the year." He also read a long newspaper article about "2,000 Flushes Radio" and read some listener mail. The host was Eric Generic.

WPN was heard on 6954.9 lower sideband at 2318 with a Neil Diamond song and ID. It was too hard to copy to make out any of the talk, Pearce says.

Up Against the Wall Radio was found by Roberts on 6955 USB at 0205 with rock music, parodies on various subjects and an offer of a special "computer disk" QSL for \$3. They noted that preprinted report forms and QSL requests won't be accepted—they insist on listener comments and opinions on their broadcasts.

Bill Cooper in New York had WWWW (4W) Radio on 6955 USB at 1915 playing rock from the 1980s, including Loverboy and Quiet Riot. The host did not give his name. QSLs go to P.O. Box 452, Wellsville, NY 14895.



Radio Bob's Communications Network has been active for at least four years.

Pearce reports an unidentified that might have been Radio Barnyard on 6955 USB at 1927. He caught only the last 45 seconds on tape, which included mooing noises behind the talking.

Radio Bob's Communications Network was found by Roberts on 6955 USB at 2358 with lessons on QSL techniques, a commercial for "Spatula City" and other stuff.

Razorback Radio turned up for George Roberts on 13900 USB at 1501 with a program hosted by Daryll P. Hog "from the mountains of God's country—Arkansas." Then there was country music and fake commercials to sign-off around 1519.

Radio Airplane also was logged by Roberts on 6955.5 upper sideband at 2228 with Captain Eddy at the controls of his Piper Cub airplane and various parodies, including one on *Mister Rogers*.

Dick Pearce reports his first logging of KDED, on 6955 USB at 0035 with a mix of Grateful Dead music and comedy by Sam Kinison. Dick says either they modified their format to include other groups or the Dead did versions of songs by others he's not familiar with because he heard *Jerimiah Was a Bullfrog* and *Sergeant Pepper's Lonely Hearts Club Band*.

Jack Sheldon in Michigan surfaces with a log of Radio Azteca, heard on 6955 at 1610 with Bram Stoker and commercials for things such as the "Psychic Friends Guide to World Band Radio" and others. Closed by reading the "gospel according to Icom, Drake and the Holy Grove."

WRV showed for Pearce on 6955 at 1820 with a tune by Blind Melon and said Sharon Coombs, the lead singer, had died of a heroin overdose.

Sheldon also caught Outlaw Radio on 6955 USB at 0010 with audio clips of the Clintons followed by laughter, theme from *The Good, The Bad and The Ugly* and air-raid siren. This one uses an address of P.O. Box 28413, Providence, RI 02908.

George Roberts picked up Friday Radio on its first broadcast on 6955 USB at 2325, announcing the Providence address, noted above. The broadcast included several "classic" rock tunes, and said "it's the weekend—buy our souls from pawnbrokers and trade our souls like baseball cards (or something like that!)."

That wraps it up for this time. Remember to send your pirate pickings as regularly as you can. Copies of QSL cards also are always needed for use as illustrations. Thanks for your help and your continued support and enthusiasm!

See you next month!

WWWW

#13

Dear W. COOPER. We can confirm that you heard 4W RADIO on a frequency of 6955 kHz at a time of 19:15 UTC on 4 FEB. 1996 with a power of 100 watts.

FFFR! Billy Bener

4W RADIO

William Cooper got this QSL card from WWWW (4W) Radio.

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BY W.W. SMITH

POP'COMM REVIEWS PRODUCTS OF INTEREST

Dressler Active Receiving Antennas

If you had the pleasure of being a radio hobbyist back in the 1950s or 1960s, you may recall that great performance usually was linked to the possession of fairly large receivers coupled to the largest, longest and highest antenna you could create. The modern electronics of the 1990s has gifted us with high-performance receivers that will fit in our shirt pockets. Now it also is possible to achieve superior antenna performance with antennas that do not take up miles of real estate.

Amplified antenna designs have been around for quite a few years, benefiting most recently from developments in the area of low-noise field-effect transistors (FETs) to produce significant gain over most practical passive antenna systems. In most designs, the use of amplification allows for relatively high antenna performance from a significantly smaller antenna element. Such designs become ideal tools for radio hobbyists who do not have the ability to string longwires and dipoles on their property. Dressler's "ara" series represents the current state of the art in active antenna design. For this review, I prevailed upon the good folks at Gilfer Shortwave to give me a long look at the Dressler ara 60 shortwave antenna and the ara 2000 VHF/UHF antenna. I've discovered that good things do, in fact, come in small packages.

Does It Work?

Being a typical radio hobby curmudgeon with many years of experience at the dials, my first reaction when I opened the boxes these two antennas came in was: "That little thing can't work!" But even this old dog can learn a few tricks. First I did a bit of reading up on the theory and practice of active antennas. I compared this information with the Dressler specifications and my flat denial of possible performance was turned into a very strong "Hmmmm, maybe this little thing can work...but I want to hear it for myself!"

Let's start out by taking a look at the size of these units. The ara 60 shortwave antenna has a 6-1/2-inch by 2-inch tubular base topped with a 37-inch fiberglass whip. The ara 2000 VHF/UHF unit is a single 20-inch by 3-1/2-inch tubular design. Neither antenna is large enough to draw any significant attention to itself. Likewise, both are light and easy to mount



Dressler Antennas

Price:

ara 60 (HF)—\$269.95

ara 2000 (VHF/UHF)—\$269.95

Optional DC power supply for either antenna—\$19.95

Dressler:

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just about anywhere. The very nature of these designs make them ideal for apartment or condo dwellers, but they also can be of use to anyone trying to improve their overall antenna performance. In addition to the mountable antenna unit, each system is completed with DC-powered amplification that serves to overcome these units' small size and even surpass the performance of many larger antenna systems.

Testing

First I needed to scout out logical mounting locations for my testing. The instructions point out that these antennas could be mounted on any mast from approximately 30-50 mm. To translate this into U.S. measurement, the antennas mount on most standard masts—1.2- to 2-inch diameter—without any difficulty. For my experiments, I simply dismounted my 2-meter amateur radio vertical and individually placed each Dressler unit on the mast to see how they worked.

The units are supplied with a 12-meter length of RG-58 coaxial cable (the instructions suggest lower-loss coax for longer runs). This gives you a couple of inches over 39 feet of lead-in to work with. You should be able to mount these antennas on a second-floor roof line without any additional thinking. At the "house" end of the coax, you mount the unit's "remote interface unit." This little box allows the DC power (from a 12 volt power supply) to move up the coax to the antenna's active amplifier while allowing the improved signals to pass back down the same coax. This system allows the amplification to reside right at the antenna element, prior to the lead-in cable. This serves to prevent from picking up additional unwanted locally generated noise before the amplification occurs. Signals are boosted, but local noise is not. It's a great way to get this active antenna business done.

The remote interface units for both the ara 60 and ara 2000 also include a variable attenuator that operates from 0 to -20 dB to allow control over the antennas' overall gain. This is designed to prevent receiver overloading from strong signals. The antennas and their mast-mounted amplification units are weather resistant. They appear to be constructed to assure years of use in even severe climates as they are designed to be both waterproof and

shockproof. The antenna unit's coaxial cable connector is "hooded" by the underside of the amplification unit to further assure weather resistance. This arrangement, along with a good quality sealant, should assure that moisture stays out of the coaxial cable, reducing the chances of degradation. The manufacturer assures that these antennas even can stand up to severe marine use and their design would seem to be ideal for that environment.

The antennas are constructed with internal circuitry to protect them from static discharge, but I would also recommend appropriate discharge protection be added to the lead-in to protect the equipment that the antenna is hooked to.

Obviously, the long-standing tradition of "outside is better than inside" and "higher is always best" will apply to these or any other antennas. But I also tried the units mounted inside my home, secreted away in an upstairs hall closet just to see whether they still could do the job. This was a test to check these antennas for truly "hidden" applications. In theory, so long as the units are kept away from noise sources and shielding, they should be effective when hidden in this method.

The ara 60

This antenna was designed specifically for high-end receiving applications and is intended to deliver 10 dB of gain with an improved third order intercept point of +50 dBm. The 37-inch fiberglass whip feeds the incoming signal to a low-noise FET, followed by a wideband impedance transformer circuit to maintain a constant 50- to 75-ohm impedance across the entire frequency range. The signal then is amplified by an ultralinear final amplifier, resulting in a strong output signal with the lowest possible intermodulation products. The integrated amplifiers make up for the relatively small size of the receiving element, delivering signals equal to much larger passive antennas. Output impedance is a constant 50 to 75 ohms across the entire frequency range of the antenna, making an extra antenna tuner unnecessary.

The antenna's omnidirectional reception pattern makes the ara 60 antenna perform equally on signals coming from all directions. This is an advantage because longwire antenna designs exhibit some directionality. On shortwave, short vertical antennas like the ara 60 demonstrate quieter reception with less atmospheric noise than wire antennas, especially important on lower shortwave frequencies.

Installation of the unit took about 15 minutes with one trip up the tower. I must admit, testing any shortwave antenna at this lowest of sunspot cycles was quite a challenge. Still, the antenna was able to boost the level of many signals to readable when compared to my 80-meter inverted-V dipole. Digging

Why Put The Amplifier At The Antenna?

A seemingly obvious question to most folks is: Why would you want to hang a couple of hundred dollars worth of electronics out on an antenna mast when it could be warm and dry inside the shack?

The answer has to do with noise. In most installations, the lead-in cable from the antenna to the receiver is mounted in a more or less vertical position. This makes it susceptible to picking up all kinds of people-generated electrical noise because this noise also tends to have a predominantly vertical component. If you mount the amplifier at the receiver end AFTER the cable, you don't just increase the gain of the incoming signal, you also increase the gain of all that extra noise.

By mounting the amplification at the antenna itself, you give the incoming signal a boost OVER any noise that comes in through the cable. You get to hear more of what you want to hear and less of the unwanted garbage. The folks at Dressler went well out of their way to assure that their amplification units are sealed against moisture and weather.

— W.W. Smith

out pirate broadcasters in the neighborhood of 6955 kHz became a lot easier with the aid of amplification. Most pirates are relatively underpowered and anything that helps the signal along is a plus.

The operational frequency range of the ara 60 runs from 40 kHz through 60 MHz with somewhat reduced performance on 60-120 MHz. Of course, this made an excursion into the mediumwave broadcast band a must. The antenna performed well up to its design limits but did not give me as much help as might be useful on crowded frequencies where a directional loop would be preferred.

Still, it was kind of fun to park on one of the "graveyard" frequencies to see what surfaced out of the mud. On those local channels, sometimes you get only a brief whisper of a signal and a bit of amplification can help you hear something you might otherwise miss.

To check out the other end of the performance spectrum for this antenna, I ran up through the 10-meter amateur radio band to see what was up. While this is a place I usually wait around for E-skip and other phenomena to help the signals along, the ara 60's amplification showed that good listening may be possible in times of less supportive propagation. It's amazing

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how much help one or two S units can give to a signal.

I moved the antenna into the closet for some surreptitious work. Once I made a point of telling my son to turn off his television in the next room, the local noise was dissipated and I was able to enjoy a good number of signals coming down the wire. This may be just the antenna for folks who live with very restrictive covenants. It's overall height should allow it to exist in the rafters of most roofs, totally out of site of those old biddies who run the neighborhood beautification associations. With a little attention to location in relation to poten-

tial noise sources, this unit will work indoors and very well at that.

The ara 2000

A typical problem encountered with modern wideband VHF/UHF receivers is the choice of a suitable antenna. A common choice is the popular discone design. However, the major drawbacks of the discone are its size and its lack of a very wide frequency range. Also, on the VHF/UHF bands, a remote passive antenna such as a discone is subject to severe feedline losses, resulting in weaker signals at the receiver's

antenna input. The integrated low-noise amplifier of the ara 2000 increases signal strength before any cable losses are encountered, delivering much stronger signal levels to the receiver.

The ara 2000 offers additional advantages such as very good impedance matching to the receiver, plus a very wide frequency range of 50 through 2000 MHz. The engineers at Dressler have pointed out the fact that modern receivers are not as sensitive as we often would like them to be. They state that typically, most receivers have a noise figure of 5-8 dB, which describes their sensitivity.

The ara 2000 helps to improve the sensitivity by 2-4 dB, which is a remarkable increase in the signal-to-noise ratio. Depending on the cable length used, the additional improvement in reception can be 5-8 dB. This means signals normally below the noise floor now can be picked up and more clearly heard. The active section employs a state-of-the-art MMIC (monolithic microwave integrated circuit) preamplifier with a very low noise figure, followed by a high current final stage for maximum strong signal handling performance.

My tests showed that along with height above ground, gain is everything in the VHF/UHF world. Signals that were on the fringe of my scanner's range broke squelch as if they were at my neighbor's house. My place of work is more than 25 miles from where I live and the signals from the facility's relatively low-power repeater don't always make it to my home. (I like to keep tabs on the boss when I'm not there.) The ara 2000 made the difference and I can keep an ear on the job from home. I could get used to this really fast! I'm not personally plagued by any strong "paging" transmitters near my location, but I assume folks with this problem will benefit from the adjustable attenuator.

With an overall length of under 20 inches, this unit begged to be mounted all over the place; I even was tempted to try it mobile but because I needed to return the unit back to Gilfer in one piece, I didn't conduct that study. Still, this is an ideal design for folks who take their hobby out in an RV or trailer. Also, the unit's small size make it a potentially great travel antenna. Just ask for a room on the top floor and hang this puppy off the balcony. And again, this antenna can hide in doors or in the attic and give you a lot of signals you wouldn't get otherwise.

Summary

Depending on your listening habits and location, either of these antennas are well worth considering. Maybe I can talk Gilfer into one of those "long-range" tests like they do in car magazines. Wouldn't you like to read about a five-year, 50,000-mile check on the ara 2000? Hmmm. ■

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BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

At Long Last, A Low-Tech Solution?

Scientists are tuning in on signals left over from the Big Bang that created the universe. Spy satellites 22,000 miles high eavesdrop on telephone conversations. An IC smaller than a sugar cube does more than a bulky vacuum-tube radio made only 25 years ago. Your beeper brings you messages, plus news headlines and sports scores. Communications technology is constantly pushing forward.

With more than \$600 million in fraudulent cellphone calls being placed each year, you would certainly think that by now the industry would have come up with a high-tech way of ending that nightmare problem. What's the matter? Why, for a piddling \$25 million, they could easily hire five savvy hams, and in six months have a practical fraud-proof system.

Cellular industry rules and federal laws intended to protect cellphone customers from being defrauded haven't worked. The cellular industry unleashed the U.S. Secret Service on crooks who steal cellphone numbers and illegally clone them into phones, though it hasn't stopped the practice. Intensive media blitzes suggesting ways cellphone users might prevent their numbers from being stolen have neither educated consumers, nor impressed crooks.

By the time they were caught, two Maryland wiseguys had siphoned about 40,000 cellphone numbers out of the airwaves from vehicles driving along busy Interstate 95.

They programmed the stolen numbers into phones they peddled on Baltimore streets. They sold about 100 a month, usually to drug dealers, for as much as \$1,000 each. Their activities racked up \$650,000 worth of fraudulent calls, most billed to numbers registered to cellphones from mid-Atlantic states (other than Maryland). Cellphone companies do not force subscribers to pay for fraudulent calls made when their numbers are stolen.

Working together, Baltimore police and Secret Service agents tracked down and caught both men, who had been operating since at least 1994. When the case went to court, Edward L. Harrison and Stephen T. Baldwin both pleaded guilty to charges of federal conspiracy. Harrison received 10 months in prison, while Baldwin got a year. But it doesn't end there, because here's the industry's newest weapon, and it's strictly low-tech.

Bell Atlantic NYNEX Mobile, the com-



"And the winner is..." Each major Oscar winner was presented with one of these engraved special-edition Motorola cellphones. We wonder if any of the recipients used them to promptly call their agents to demand more money for their next films.

pany that bore the brunt of the swindle, filed a federal suit against Harrison and Baldwin in U.S. District Court. This is a civil action seeking \$130,965. It's the first time this approach has ever been attempted, so it is being watched carefully by other cellular companies. A representative for Bell Atlantic said that the company intends on becoming "very aggressive with people who are trying to defraud us."

Apparently the theory is that if there's no technology to do the job, the specter of a civil lawsuit will accomplish the mission. If they considered the cost of good legal counsel to press those actions, they'd realize it might cost less to finally figure out a high-tech solution. Not only that, but it's now long past time for one to be operating.

Don't you agree that it's rather chintzy of this multibillion-dollar industry to continue to side-step the issues when their customers are so readily put-upon because of easily-robbed systems?

It's interesting how cellphone service suppliers were quick to push through the Electronic Communications Privacy Act to stop hobbyists from tuning their frequencies. This meaningless law was supposed to protect cellphone customers. Do they really want to protect cellphone privacy? Then let's establish a federal law mandatory for

cellphone service suppliers to protect customers by providing numbers that can't be ripped off by on-the-air monitoring.

Thanks to my friend, Ron Bruckman, editor of *The Radio Monitors Newsletter of Maryland*, Hampstead, Md., (e-mail to RBscan@aol.com) for passing along the information on the Baltimore crooks. Ron notes that Bell Atlantic NYNEX didn't attempt to bash them with the ECPA in this case even though it involved a violation of that law.

Ron brings up a good point. The Department of Justice has been less than vigorous about enforcing the ECPA. Because they are understaffed, the ECPA may well be considered a lower priority than their investigative and enforcement efforts relating to organized crime, bank robberies, espionage, national security, drug trafficking, terrorism and other matters.

Your thoughts and opinions on all of these things are sought. Please write to me at the column, or you can e-mail me directly at K2AES@aol.com.

Out of Place?

Norman A. Means Sr. of Ocean Park, Maine, scans on a RadioShack Pro-2035. While searching around the bands.



RadioShack's new CT-355 flip phone is a design that the public seems to prefer.

Norman came upon something he felt rather unusual, so he wrote to bring it to our attention. Actually, many scanners have written about something similar.

Norman noticed that he could pick up cellphone calls when the scanner was operating between 1105.24 and 1113.97 MHz. This isn't where cellu-lars are supposed to be and, as a matter of fact, the known 869.04 to 893.97 MHz cellphone band was locked out by the factory on the Pro-2035. So what's going on?

It's interesting to note that Norman's stop frequency (1113.97 MHz) is shifted precisely 220.0 MHz higher than the top end of the actual cellular band at 893.97 MHz. I checked Norman's experiences on a Pro-2035 and can confirm that cellphone calls do come in just as he reported, although it does not produce coverage of the entire band. To do that, cellular calls would have to come in down to 1089.04 MHz, and they don't. Other communications are heard, but they're standard UHF two-way.

The phenomenon Norman reported has been known and used within the scanning hobby for several years. There's no point here in going into an involved technical explanation. Suffice it to say that the design of the intermediate-frequency (IF) stages in many modern scanners is such that stations from certain bands may be reproduced as phantom image signals at some offset frequency point. Where they will show up relates to the frequencies used in the design of a particular scanner model, so there is no standard offset. More often than not, the images are offset higher than the original frequency.

When the cellphone band is locked out at the factory, there always is hope that the phantom image of that band still may be able to be intercepted. Put your scanner into search mode at about 900 MHz and let it stumble along upwards as far as it will go. If you discover cellphone images, pass along the frequencies as well as the make and model of your scanner so we can share the information here.

Oscar Phones

We are roughly midway between this year's and next year's motion picture Oscars. All the commotion finally has simmered down about Sharon's black T-shirt, and Brad's missing tux. Now it's safe to let you in on juicy behind-the-scenes communications gossip.

Bet you didn't know that Motorola presented some of the Academy Award winners with a unique award of its own, a special limited edition StarTAC cellular phone. Each of the phones was engraved with the winning Oscar category and the date.

The phones were presented for the categories of Best Director, Actor and Actress, as well as Supporting Actor and Actress.

Motorola is well aware that their cellular phones have appeared in numerous motion pictures and TV programs over the years. This was a nice gesture.

You'll Flip For This

RadioShack's new CT-355 handheld offers popular flip styling in a package weighing in at only 7.9 ounces with a standard battery installed. It's small enough to snuggle right inside your shirt pocket or a small purse.

Wait until you hear what's inside! It stores up to 98 names and numbers, automatically locating a number based only on the first two characters of the name being entered. Answer incoming calls by touching any key. Auto-redialing of any of the last five numbers called, and four one-touch memory storage locations for emergency or priority numbers. There's dual NAM to save on roaming charges, and an electronic keyboard lock to prevent unauthorized use (except calls to 911).

Another feature of interest here is the "supertwist" LCD display that can be read from sharp angles. Accessories include a hands-free speakerphone car kit, desktop quick charger, car charger, plus an extended-life battery. Look for this at local RadioShack stores. RadioShack's Internet site is: <http://www.tandy.com>.

Meet Your CellMate

AEA introduced the CellMate Antenna Analyst, an antenna diagnostic unit designed as a handheld. It provides comprehensive antenna performance information in an easy-to-read graphic for all cellular test purposes.

The frequency range is 806 to 960 MHz, graphically displaying antennas' Voltage Standing Wave Ratio (VSWR) vs. frequency plots on an LCD screen over a range of 1:1 to 10:1. The LCD display plots the SWR curve over the entire frequency range, and on individual frequencies. CellMate provides measurements of relative signal strength, and return loss in dB. A transmitter is not required as the CellMate has a built-in RF source.

The keypad allows users to select the desired frequency, frequency range, step size and other parameters. For quick and easy operation there are five function keys giving on-screen menu-driven control of the unit, including extensive on-screen help. Up to 15 plots can be named, saved and stored in the device for transfer to a computer. All settings remain saved, even after the unit is turned off.

CellMate comes with a serial interface for a PC. With optional AEA PlotCon software, users can store VSWR plots in a PC for later reference. You even can upload plots from a PC into this thing, and even remotely control it from the PC.

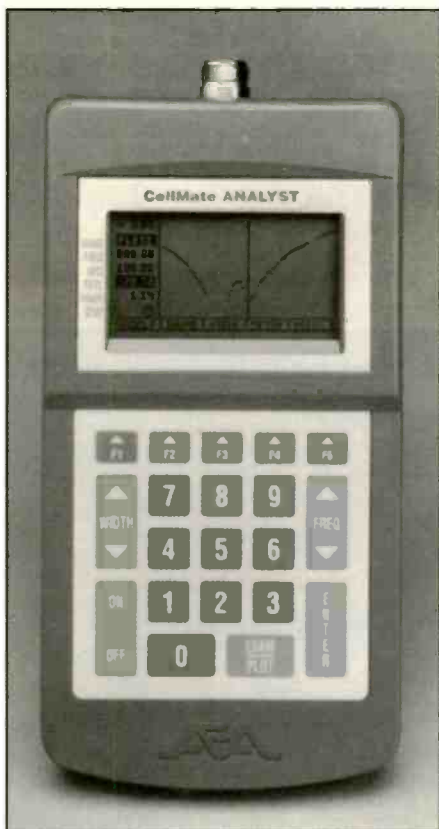
It runs on either alkaline batteries or rechargeables. If you use NiCds, the CellMate will charge them while they remain installed. You also can power it from an external 12-volt DC source.

For more information about the CellMate, contact Advanced Electronic Applications Inc., P.O. Box C2160, Lynnwood, WA 98036; phone (206) 774-5554.

A Band Of Their Own

The FCC decided to designate 1919-1930 MHz exclusively as the stomping ground for low-power unlicensed Personal Communications Service (UPCS) devices. These operate under FCC Part 15, Subpart D. That means, experimental microwave licensees currently authorized to operate there no longer are welcome in the band.

Many experimental stations run considerably higher power than FCC Part 15 allows. Potential problems loom should the two services attempt to share one band. For example, some holders of broadband PCS licenses want to conduct propagation



The CellMate from AEA checks out antennas operating in the 806-960 MHz range.

testing in the band because of the lower concentration of microwave stations present in that band. The FCC has appointed UTAM Inc. to manage the orderly transition of the band from a microwave service to its use by UPCS devices.

At least one UPCS device has been certified by the FCC's lab, and several other certifications are pending. The sale of these units is beginning. UTAM pointed out that testing of equipment that doesn't conform to the "spectrum etiquette developed for UPCS" could cause legal UPCS devices to shut down.

UTAM is concerned that, "particularly during the early period, public perception of the utility and reliability of UPCS products is critical. Random shutdowns or microwave-incumbent complaints...could cause irreparable harm and prevent this industry from bringing its full benefits to the public."

For starters, the FCC has stopped granting licenses for experimental operation in the 1910-1930 MHz band, except if they use low power or relate to UPCS. Existing experimental activities in the band will have to end all operations that are inconsistent with use of the spectrum for UPCS.

It's not easy rearranging chunks of spectrum, but UTAM's point is well taken. If the public's first impression of this service is

marred by disappointing equipment performance, that could put a crimp in the future popularity of UPCS. About 40 years ago, that's what happened to 5-watt Class B CB radio on 465 MHz; it never got off the ground. Even though there were only a few hundred licensees, they complained loudly about how poorly the equipment worked. Yes, I was one of those people.

Let's hope the kinks are ironed out of

UPCS before it opens for business.

We seek input from readers in the form of information about cellphones, radio pagers, PCS and other personal communications systems, services and devices. Send us news clippings, news releases, new product listings, questions, comments, suggestions and opinions. Please indicate "For Telephones Enroute" in the address of mail sent to this column. ■



World's Most Powerful CB and Amateur Mobile Antenna*

**Lockheed Corp. Test Shows
Wilson 1000 CB Antenna Has
58% More Gain Than The
K40 Antenna (on channel 40).**

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

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

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We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it.

In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

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

The Best You Can Buy

So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel; the whip is tapered 17-7 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will outperform any CB antenna (K40, Formula 1, you name it) or your money back!

*Inductively base loaded antennas
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Wilson Antenna Company Inc.
3 Sunset Way, Unit A-10
Green Valley Commerce Center
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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K40**

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Scanning VHF/UHF

BY J.T. WARD

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

A New Cordless Ruling

Reader Fred Terry of Westport, Wash., sent along a newspaper clipping about a decision by the Washington state Supreme Court banning the use of scanners to monitor cordless telephone conversations.

In ruling that cordless phone conversations are protected by the state's privacy law, the high court threw out the convictions of three drug dealers because the state's case stemmed from information provided by a neighbor who had eavesdropped on the dealers' cordless phone with a scanner.

The ruling also overturned a lower court ruling that the state's privacy law does not apply to communications using radio waves.

Much has been said and written about monitoring cellular and cordless telephone conversations, and legal restrictions notwithstanding, telephone monitoring continues to be a popular pastime for many scanner owners. There's a case to be made for the arguments that the airwaves are a public resource and that a person should be allowed to intercept and monitor any radio waves that enter their home. Still, I've got mixed feelings about the whole issue.

Sure, I used to spend plenty of time listening to telephone conversations. But recently I've come to believe that monitoring any type of telephone conversation really is an invasion of privacy.

Actually, I feel much the same way about monitoring radios used by private businesses. Like telephone conversations, those too are often (inaccurately) assumed to be private by the radio users.

Now, I'm not advocating more laws banning monitoring, or new requirements that reception of additional parts of the radio spectrum be blocked in new scanners. But I am advocating the idea that scanner listeners take personal responsibility for their listening habits and stop monitoring private conversations, whether the equipment in use is cellular, cordless or the old VHF/UHF radiotelephone systems. It's just not a nice thing to do. I guess it comes back to the good old Golden Rule—"Do unto others as you would have them do unto you."

Personally, I'd hate to think of my neighbors eavesdropping on my conversations when I use my cordless telephone. And I figure that if I don't like it, then why should I expect others to feel differently.



The pilots and technicians of the U.S. Air Force Thunderbirds team perform with as much precision in the air as on the ground. Radio communications between the aircraft makes for some exciting airshow monitoring. (Photo by J.T. Ward)

All I'm asking is that you think about it and follow your own conscience.

On The Guard

It's always especially nice when a professional in the field takes time to respond to a reader's question.

"Regarding your May column, the Coast Guard traffic copied on 416.620 MHz most likely is the control circuit for a remote transceiver. We call them hi-sites. A group office actually may monitor six or eight sites as part of the Coastal VHF Monitoring Net.

"Sometimes these (sites) are controlled by leased telephone lines. Here in the 13th District (Washington and Oregon), they are run by microwave link. Although I can't guarantee it, it's likely your reader was picking up the control frequencies.

"My area of expertise is boat operations, not electronics, but if your reader really wants to know, he should contact the local Coast Guard group electronics shop or TTIC (Telecommunications Technician in Charge). Good Luck." Thanks to Chief Tom Doucette, U.S. Coast Guard Station Cape D, Ilwaco, Wash.

Itinerant Inquiry

I received e-mail recently from Paul J. VanDruner of Navakre, Fla. Paul wants to know what the "itinerant frequencies" are and what they are used for. And, is there a fee for using them?

Paul, itinerant frequencies are the business band equivalent of General Mobile Radio Service (GMRS) frequencies. They're used by companies that move from area to area—construction crews, for example. This month they may be building a road in one county, and next month they might be working in another part of the state.

A license to operate on an itinerant frequency costs \$60 and is good for five years. No frequency coordination is required. According to the FCC, three of the most widely used itinerant frequencies are 35.04, 151.625 and 464.500 MHz. Other itinerants include 27.49, 464.550, 469.500 and 469.550 MHz.

Antenna Tip

Big Bill of Bakersfield, Calif., sent in a tip on how to make a \$3 scanner antenna.

Bill says to buy a BNC-to-phono adapter

at RadioShack (part No. 278-254) and pick up a piece of 1/8-inch (.125-inch) metal rod at your local hardware store. Cut the rod to match the frequency you want to monitor, insert the rod into the phono end of the adapter and attach the BNC connector to the back or top of your scanner. That's it!

For a more professional appearance, Big Bill suggests slipping a piece of heat-shrink tubing over the rod and shrinking it down tight.

By the way, Bill says one method of determining the proper length for the rod is to divide 234 by the frequency in MHz and then multiply by 12 to get inches.

Bill, this is a really neat idea, and one I plan to try myself very soon. Thanks a lot.

In The Air

Paul Carlson of Boise, Idaho, says his primary scanning interest is aviation monitoring, and he's lucky to live close enough to Boeing's Seattle manufacturing plant to see the occasional B-777 practicing instrument approaches at the Boise airport.

Paul said he's observed a longwire with a small drag chute attached trailing from the top of the rudder/vertical stabilizer on the B-777s. He assumes this is an HF antenna of some sort, but isn't certain.

Paul, that may be a good guess, but I'm afraid I can't offer a more definitive answer.

To listen in on Boeing's flight test communications, try monitoring 123.200, 123.225, 123.250, 123.275, 123.325, 123.350, 123.375, 123.425, 123.450, 123.475, 123.525 and 123.550 MHz.

If you have a shortwave radio capable of receiving single-sideband transmissions, try listening for Boeing test comms on 2852.4, 3004, 3005.4, 3443, 3444.4, 5451, 5452.4, 5469, 5470.4, 5572.4, 5710, 6550, 6551.4, 10045, 10046.4, 11288, 11289.4, 11306, 11307.4, 13312, 13313.4, 17964, 17965.4, 21931 and 21932.4 kHz.

Paul also said he's having trouble with his M-400 decoder causing interference when plugged into his scanner. He said he's tried several different patch cords, and has moved the scanner away from the decoder but the problem persists.

Paul, have you contacted the manufacturer? Perhaps there's a problem with your decoder. Anybody have any other ideas?

Getting High

How high is high enough?

That's what reader Larry Fisher wants to know before he installs his new discone antenna to go with his Uniden Bearcat BC855XLT.

While it's easy to say "the higher the better," in some cases lower is better. It all depends on what you're trying to listen to, how far away they are and in many cases, where you live in relationship to high-

power television, AM/FM radio or paging transmitters.

If you live out in the boonies and the communications you're trying to hear are from communities several miles away, then a well-elevated antenna may be just the trick. But if you live in an urban area where there are lots of high-power transmitters nearby, then an elevated antenna can lead to increased problems with intermodulation and false images.

Also, an elevated antenna may allow you to pick up another agency many miles away transmitting on the same frequency as the local agency you're trying to monitor, making your listening more difficult.

The key here is experimentation. Try gradually increasing the height of your antenna until you either can hear the agency you want to listen to, or spurious signals make your listening more difficult.

Mystery Signals

In the February scanning column, reader Lawrence Earl asked about carriers he heard years ago between 30 and 50 MHz. His letter reminded Stan Head of a signal he first heard when he was a shortwave listener and a novice ham in West Virginia.

"At various times and frequencies between 6 and 16 MHz from 1958 until at least 1962, I often heard a CW station

"J8S." I was confused by the configuration of such a call. They never had any plain text; I never heard anyone sending to them, at least on their transmitting frequencies. I have asked old U.S. Air Force 292XX operators and others, over the decades, but I am, apparently, the only person on earth who ever heard that station.

"I would love to know who/where those signals came from. Perhaps a reader will drop a note to you.

"Thanks for your time and keep up the great magazine; it is fun for this old-timer."

Stan, while your inquiry is about a signal a few megahertz below the bands this column normally covers, I'm happy to include it here, and hopefully another "old-timer" will have an answer for you.

Write In

Keep those cards and letters coming, folks. Reading about the neat ways in which many of you practice your scanning hobby keeps this job interesting. And don't forget to include photographs of your monitoring post or interesting uses of VHF/UHF communications systems in your area.

Send your letters to J.T. Ward, Scanning VHF/UHF, *Popular Communications*, 76 N. Broadway, Hicksville, NY 11801-2909, or write via the Internet to JTWard@genie.com. ■

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CIRCLE 67 ON READER SERVICE CARD

You Should Know

BY CAPT. WILLIAM MAULDIN, WG4R

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

Weather Does Change

For those of you who monitor aviation weather reports in verbal or in written format, you probably have wondered what is going on. The hourly weather reporting sequences that have been easy to read and understand are gone. What happened to the easily understood "scattered, broken and overcast" sky condition reports on the local airport ATIS (Automatic Terminal Information Service) VHF recordings? Why is there a change? For those of you who are weather buffs, the reporting formats on CompuServe and other aviation weather reporting services all have changed. What happened and why?

The changes are an effort by the United States to once again bring us more in line with the formats and scales used by the rest of the world. The new hourly weather reporting format is almost the same as that used in the other weather reporting countries of the world. ICAO, the organization that establishes formats and standards for aviation in the world, finally has convinced the USA that we need to change to the same format that everyone else is using. By having the same general format, computers can better handle the reports worldwide. Pilots will not have to refer to their weather manual when flying international routes just to understand the local airport weather conditions.

ICAO won the battle, but not the war. The U.S. weather reporting format has been changed. Remember the massive effort some years ago to convert the hearts and minds of the American people to the meter and kilometer? Speedometers on new cars and road signs were changed to show meters and kilometers in addition to feet and miles. The effort was a partial success, but as we all know, the USA still is using inches, feet and miles for measurement. The same thing happened when ICAO talked the U.S. weather people into changing the weather reporting format. They changed the format, but our weather reports still will be using feet and miles instead of meters and kilometers.

Without an official key to the ICAO weather reporting format, most pilots and weather buffs are not going to be able to easily understand this new format. There is an official document available from the government to help pilots with this change. Airlines already have passed copies to their line pilots. A copy can be obtained at the local weather reporting station or at the FAA Flight Service Station. Knowing that many of you are not close to one of these

facilities, here is a brief key on the new format and how to understand it.

How It's Coded

The ICAO surface weather reporting format is broken down into sections. Here is a summary of each section and what it represents:

1) ICAO weather station identifier: This is a four-letter code for each station. The first letter is a country identifier. The letter K is the letter for the United States. In the internationally distributed weather reports, all USA weather reporting cities will have K as a prefix. For example, KJFK will continue to be used to clearly identify New York's John F. Kennedy International Airport. If Kennedy is reported on a local U.S. system, JFK will be used. On an international weather report, Kennedy will continue to be identified as KJFK.

2) Time and date group: The computer format will show this information in a DDHHMM format. This is not hard to understand.

3) Message type: METAR will indicate a routine, standard, hourly weather report from a reporting station. SPECI will indicate a special weather report, triggered by an important weather condition change. In some international weather reports, this item can precede the station identification letters.

4) This item is a number series that represents the time of the weather report issuance: It always will be a four-digit number and in UTC rather than in the local time for the reporting station.

5) Wind: The first three digits indicate the true wind direction or average variable direction. The report will show something like 180V250 if the wind varies more than 60 degrees. The next two digits will show the wind speed. Remember, in reports from other than U.S. reporting stations, this speed is in kilometers. On U.S. reports, again, we refused to make a total ICAO change. Our reports will be shown in knots. Calm winds will be shown as 0000KT. An example of a wind report would be 23015G25 190V270. This would mean wind from 230 degrees at 15 knots with gusts to 25 knots. The wind direction is variable from 190 degrees to 270 degrees.

6) Horizontal visibility: First, the prevailing visibility (PV) will be shown in statute miles and fractions in U.S. reports. International reports will continue the four-digit minimum reporting format, showing the

horizontal visibility in meters. The second part of this report will indicate the RVR or "runway visual range" for low visibility conditions. RVR is the visibility down the runway. It can be broken into zones if the airport has the proper reporting equipment. These zones are known as "touchdown zone," "midzone" and "rollout zone," and are so noted. The report sometimes will have a letter added that will indicate a weather visibility trend. The letter U is used for up or improving visibility, D for down or lowering visibility, and N for no change.

7) Present weather condition: This is going to be the complicated part that will require the most study for full understanding. Letter codes are used, like in older reports, however, they have changed considerably.

Intensity will be shown in four categories: light, moderate, heavy and vicinity. The new two-letter codes will be added to show additional information. Precipitation will be shown with BC for patches, BL for blowing, DR for drifting, FZ for supercooled, MI for shallow, SH for showers and TS for thunderstorm.

Precipitation conditions and forms will be shown using these new coded letters: DZ for drizzle, GR for hail (larger than pea size), GS for small hail or snow pellets, IC for diamond dust, PE for ice pellets, RA for rain, SG for snow grains and SN for snow.

Obscuration will use these letters for conditions: BE for mist (less than five-eighths of a mile), DU for dust, FG for fog, FU for smoke, HZ for haze, SA for sand and VA for volcanic ash.

Other conditions will be indicated by these letters: DS for duststorm, FC for funnel clouds, PO for dust or sand whirls, SQ for squalls and SS for sand storms.

8) Sky cover: This is broken down into three sections. The first will indicate the amount of sky cover. SKC means sky clear; NSC means no significant clouds; SCT will continue to mean scattered clouds; BKN means a mostly cloudy or broken sky condition; and OVC means overcast. Height will be shown in hundreds of feet in U.S. reports. International reports will continue to use meters. Types of clouds will be indicated by letters also. For example, CB will indicate the standard cumulonimbus. TCU will indicate the towering cumulonimbus, thunderstorm-type clouds.

Visibility: CAVOK is a commonly seen ICAO term that means "cloud and visibility OK." (This term is not now planned for use on U.S. reports unless the weather people continue to get us more into the

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Rival

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The Super Hi-Q Loop™ is a professional quality remotely tuned 10-30 MHz high-Q antenna.

It's very quiet and has a very narrow bandwidth that reduces receiver overloading and out-of-band interference.

High-Q Passive Preselector

MFJ-956

\$39⁹⁵



The MFJ-956 is a high-Q passive LC preselector that lets you boost your favorite stations while rejecting images, intermod and other phantom signals. Covers 1.5-30 MHz. Has preselector bypass and receiver grounded position. 2x3x4 in.

Mobile Scanner Ant.

Cellular MFJ-1824BB/BM look-a-like. Covers 25-1300 MHz. High

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MFJ 12/24 Hour LCD Clocks

MFJ-107B

\$9⁹⁵



MFJ-108B

\$19⁹⁵

MFJ-105B

\$19⁹⁵

MFJ-108B, dual clock displays

24 UTC and 12 hour local time simultaneously. MFJ-107B, single clock shows you 24 hour UTC time.

3 star rated by *Passport to World Band Radio!*

MFJ-105B, accurate 24 hour UTC quartz wall clock with large 10 inch face.

MFJ Antenna Switches

MFJ-1704

\$59⁹⁵



MFJ-1702B

\$21⁹⁵

MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection device. Good to 500 MHz. 60 dB isolation at 30 MHz. MFJ-1702B for 2 antennas.

World Band Radio Kit

MFJ-8100K

\$59⁹⁵ kit

MFJ-8100W

\$79⁹⁵ wired



Build this *regenerative* shortwave receiver kit and listen to shortwave signals from all over the world with just a 10 foot wire antenna.

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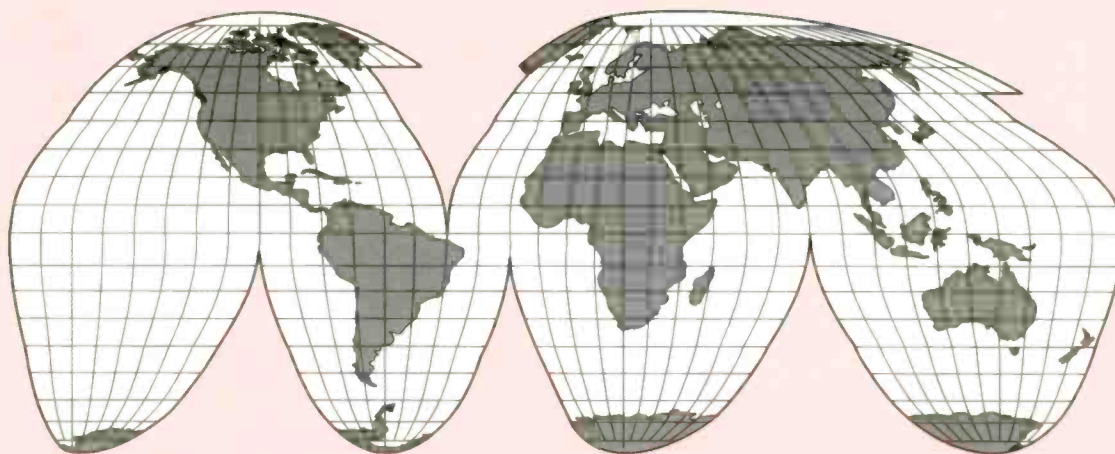
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POP'COMM's World Band Tuning Tips

August 1996



BY GERRY L. DEXTER

This POP'COMM feature is designed to help you hear more shortwave stations. Each month this handy pullout guide shows you when and where to tune to hear a wide variety of local and international broadcasters on the shortwave bands. The list includes broadcasts in languages other than English. Most of the transmissions are not directed to North America. Keep in mind that stations make frequent changes in their broadcast times and frequencies.

Changes in propagation conditions from month to month and season to season may make some stations difficult or impossible to hear. Your location and receiving equipment also will have a bearing on what you are able to pick up.

Note: EE, FF, PP, RR, etc., are abbreviations for English, French, Portuguese, Russian and so on. Some frequencies may vary slightly. All times are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST.

Freq.	Station/Country	UTC	Notes	Freq.	Station/Country	UTC	Notes
2360	Radio Maya, Guatemala	0000		4805	Radiodifusoras Amazonas, Brazil	0200	PP
3200	Trans World Radio, Swaziland	0400		4815	Radio Burkina, Burkina Faso	0700	FF
3245	Radio Clube, Varginha, Brazil	0900	PP	4820	La Voz Evangelica, Honduras	0200	
3250	Radio Luz y Vida, Honduras	1100	SS	4830	Radio Tachira, Venezuela	0300	SS
3270	Namibia Broadcasting Corp.	0300		4835	Radio Tezulutlan, Guatemala	0200	SS
3280	La Voz del Napo, Ecuador	0200	SS	4845	Radio Fides, Bolivia	0400	SS
3300	Radio Cultural, Guatemala	0300		4865	Radio Alvorada, Brazil	0700	PP
3320	SABC, South Africa	0200		4890	NBC, Papua New Guinea	1130	
3330	CHU, Canada	0200		4895	La Voz del Rio Aruca, Colombia	0230	SS
3356	Radio Botswana	0300		4905	Rdf. Nationale Tchadienne, Chad	0600	FF
3365	Radio Milne Bay, Papua New Guinea	1100	Pidgin	4905	Ecos del Orinoco, Colombia	0300	SS
3380	Radio Chortis, Guatemala	1100	SS	4910	RTV Guineenee, Guinea	0600	FF
3935	Radio Reading Service, New Zealand	0700		4914	Radio Cora, Peru	0300	SS
3995	Deutsche Welle, Germany	0500	GG	4915	Ghana Broadcasting Corp.	0600	
4460	Radio Norandina, Peru	0200	SS	4920	Radio Quito, Ecuador	0400	SS
4600	Radio Perla del Acre, Bolivia	0200	SS	4930	Radio Internacional, Honduras	0200	
4760	ELWA, Liberia	0600		4934	Radio Tropical, Peru	0400	SS
4765	Radio Rural, Brazil	0200	PP	4950	Voice of Pujiang, China	1100	CC
4770	Radio Nigeria	0500		4955	Radio Nacional, Colombia	0200	SS
4780	Radio Cultural, Coatan, Guatemala	1100	SS	4965	Christian Voice, Zambia	0400	
4790	Radio Atlantida, Peru	0300	SS	4980	Ecos del Torbes, Venezuela	0200	SS

Freq.	Station/Country	UTC	Notes	Freq.	Station/Country	UTC	Notes
4990	Radio Nigeria	0430		9715	Radio Tashkent, Uzbekistan	1430	
5004	Radio Nacional, Bata, Eq. Guinea	0430	SS	9720	SLBC, Sri Lanka	1500	
5020	La Voix du Sahel, Niger	0600	FF	9725	Adventist World Radio, Costa Rica	2300	
5025	Radio Rebelde, Cuba	0400	SS	9755	Radio Canada Int'l	0300	
5030	Adventist World Radio, Costa Rica	0230		9770	Radio Australia	0800	
5047	Radiodiffusion Togolaise, Togo	0530	FF	9780	Republic of Yemen Radio	0300	AA
5055	Faro del Caribe, Costa Rica	1030		9805	Radio France Int'l	1200	
5075	Caracol Colombia	0200	SS	9810	FEBC, Seychelles	1530	
5275	Family Radio, via Taiwan	1100	CC	9840	Voice of Vietnam	1300	
5770	Radio Miskut, Nicaragua	2300	SS	9870	BC Service of Kingdom of Saudi Arabia	2230	AA
5900	HCJB, Ecuador	0700		9900	Radio Cairo, Egypt	0000	
5930	Radio Prague, Czech Republic	0000		9925	Radio Vlaanderen, Belgium	2330	
5960	Radio Japan, via Canada	0300		9930	KWHR, Hawaii	1000	
5975	BBC, via Antigua	0000		9955	WRMI, Florida	1400	SS/EE
5995	Radio Australia	1200		9965	KHBN, Palau	1500	
6000	Radio Havana Cuba	0400		9977	Radio Pyongyang, North Korea	1100	
6010	Radio Inconfidencia, Brazil	0800	PP	10010	Voice of Vietnam	1200	
6015	Austrian Radio, via Canada	0530		10330	All India Radio	1400	
6020	Radio Netherlands, via Bonaire	0100		11570	Radio Pakistan	1600	
6025	Radio Amanacer, Dominican Republic	0300	SS	11615	Radio France Int'l	1230	
6035	Voice of America	0300		11645	Voice of Greece	1800	GG/EE
6040	Deutsche Welle	0100		11660	Radio Australia	1500	
6065	Christian Voice, Zambia	0400		11685	Kol Israel	1600	
6070	CFRX, Canada	0500		11705	Radio Havana Cuba	2000	
6080	Radio Australia	0800		11715	China Radio Int'l, via Mali	0000	
6100	Radio New Zealand	0800		11715	RAE, Argentina	0200	
6115	Radio Union, Peru	0300	SS	11735	Radio Finland Int'l	1230	
6120	Radio Japan, via Canada	1100		11740	Radio Havana Cuba	1700	SS
6135	Radio Santa Cruz, Bolivia	0900	SS	11750	Qatar Broadcasting Service	1500	
6143	Radio Mauro Nunez, Bolivia	0100	SS	11770	Radio Free Europe/Radio Liberty	1700	
6150	Caracol Colombia	0600	SS	11780	Radio Nacional Amazonas, Brazil	2300	PP
6155	Austrian Radio	0600		11800	Radio Australia	1200	
6170v	La Voz de la Selva, Colombia	0900	SS	11815	Radio Brazil Central	2200	PP
6180	Radio Nacional Amazonas, Brazil	0800	SS	11830	KTWR, Guam	0900	
6185	Radio Educacion, Mexico	0400	SS	11855	Voice of America	2000	
6250	Radio Nacional, Malabo, Eq. Guinea	0500	SS	11870	FEBA, Seychelles	1500	
6260	Voice of Greece	0100	GG/EE	11900	Channel Africa	1800	
6576	Radio Pyongyang, North Korea	1100		11915	Radio Canada Int'l	1400	
7105	Voice of Russia	0100		11939	Radio Encarnacion, Paraguay	0100	SS
7115	Radio Yugoslavia	0030		11960	HCJB, Ecuador	2000	
7125	Radio Japan	1200		11970	Radio Jordan	1200	
7140	Trans World Radio, Swaziland	0400		11990	Radio Kuwait	1800	AA
7155	Radio Free Europe/Radio Liberty	0000		11995	FEBC, Philippines	1400	
7170	Qatar Broadcasting Service	0300	AA	12000	Radio Ulaanbaator, Mongolia	0910	
7185	Channel Africa, South Africa	0500		12015	Radio France Int'l, via Gabon	1600	
7185	Radio Bangladesh	1200		12035	Radio Exterior de Espana	1200	SS
7270	Polish Radio	0600		13580	Radio Prague, Czech Rep.	1400	
7345	Radio Prague, Czech Republic	0100		13620	Radio Kuwait	1200	AA
7370	Croatian Radio	2300	EE/Cr	13675	UAE Radio, Dubai	1600	AA
7465	RTT, Tunisia	0500	AA	13730	Radio Austria Int'l	1400	
7504	CPBS, China	1100	CC	15060	Bc Service of Kingdom of Saudi Arabia	1400	AA
9022	VOIRI, Iran	1930		15095	Radio Damascus, Syria	2110	
9370	KSDA, Guam	1000		15170	Radio Norway Int'l	1100	NN
9420	Voice of Greece	0100	GG/EE	15240	Channel Africa, South Africa	1630	
9445	Voice of Turkey	0400		15260	BBC, via Canada	1500	
9505	Radio Havana Cuba	0500		15265	Radiobras, Brazil	1800	
9515	BBC	1300		15345	RAE, Argentina	1900	
9540	Radio Exterior de Espana, Spain	0000		15390	Radio Romania Int'l	1300	
9560	Radio Ethiopia	1200		15400	Radio Finland	1230	
9570	Radio Korea Int'l, South Korea	0900		15400	BBC, via Ascension	1900	
9580	Radio Australia	1400		15530	Radio Australia	1100	
9590	Radio Netherlands	0500		15650	Voice of Greece	1500	
9605	UAE Radio, Abu Dhabi	2300		17575	Radio France Int'l	1400	
9615	Radio Portugal	0900	wknd	17585	Vatican Radio	1300	
9625	CBC Northern Service	0200		17630	Africa Number One, Gabon	1400	FF
9645	Faro del Caribe, Costa Rica	0700		17795	Radio Australia	2300	
9655	Radio Austria Int'l	0000		21455	HCJB, Ecuador	1400	
9685	Radio Gazeta, Brazil	2200	PP	21605	UAE Radio, Dubai	1300	
9705	Radio Mexico Int'l	0200	SS	21615	Radio Portugal	1430	

ICAO format.) VV reports will deal with vertical visibility in hundreds of feet. When you see a report with VV ///, this will mean a vertical visibility report is not available.

9) Temperature and dewpoint: This report will show the temperature as the first series of digits. The dewpoint will be shown as the second two digits. Any temperature number preceded by the letter M will indicate a below-zero temperature condition.

10) Altimeter setting: This reading will continue to show the altimeter setting for the reporting station. The letters QNH mean altimeter setting.

11) Supplementary information: RE will indicate recent weather conditions, and will be followed by related weather codes; WS will indicate windshear, and will be followed by letter codes to detail the report; TKOF/LDG for takeoff and/or landing; and RWY will indicate runway, and will be followed by the runway identifier.

RMK is an added remark that will add such information as: AO for automatic weather observations (AWOS or ASOS), and AOA for automated weather assisted by an observer.

Finally, severe condition comments can include things like tornado or water spout.

Still Changing

The entire weather reporting format was scheduled to change July 1. As this



article is being written, the National Weather Service, airlines and others that use the hourly weather reports are scrambling to educate and train personnel. Interlinked computers and their reporting programs are being updated and changed to allow the information to be fully understood and utilized to a high degree.

The weather forecast format for aviation also is being changed. The space for this article does not allow me to break down that format for you.

If you need more detailed information on the major changes in the U.S. aviation weather reporting format changes, by all means make a trip by your local weather reporting office or an FAA Flight Service Station. The new, easy-to-read government information folder will give you an excellent guide for full understanding of this most interesting information. Pilot and aviation magazines also are displaying ads for video training tapes on this new weather-reporting format.

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Note: Std. COPYCAT Does Not Support Radio Interface

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- Control BOTH your TNC and radio simultaneously! Send commands to TNC and at same time, send frequency and mode to radio!
- NEW! Multiple pop-up windows for HELP, frequency files, and text editor. Instantly go between any of three windows with single keystrokes.
- Supports ALL SCANCAT frequency file formats, or create your own!
- NEW, easier, "Plain English" MACRO language for control of all radio and TNC functions.
- RADIO SUPPORT for most AOR, JRC, KENWOOD, ICOM, YAESU, plus LOWE's HF-150 and Watkins Johnson's HF-1000.

Discover our revolutionary COMPUTER CONTROL PROGRAM for the M-7000 and M-8000. Let COPYCAT free you FOREVER from remembering all those buttons and keys. COPYCAT does it all! Simple "PULL-DOWN" menus control all functions. No more looking through complicated manuals or searching for buttons. ALL commands are in plain English. "PLUS" COPYCAT has a fully editable text buffer, with cut & paste. Save/load/edit/print files. PROGRAMMABLE macros and much more. COPYCAT supports ALL the above units within ONE program. Simply select your units from COPYCAT's EASY-TO-USE menu and GO!

COPYCAT-PRO \$79.95, COPYCAT (std) \$59.95

upgrades to COPYCAT-PRO \$24.95 S/H \$5.00 (\$7.50 Foreign)

(If you don't have the specially wired cable for the M-7000/8000, be sure to order our serial adapter @ \$24.95)

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HOKA CODE-3 USA Version

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"The Standard Against Which All Future Decoders Will Be Compared"

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

There are some well known CW/RTTY Decoders but then there is CODE-3. It's up to you to make the choice, but it will be easy once you see CODE-3. CODE-3 has an exclusive auto-classification module that tells YOU what you're listening to AND automatically sets you up to start decoding. No other decoder can do this on ALL the modes listed below - and most more expensive decoders have no means of identifying ANY received signals! Why spend more money for other decoders with FEWER features? CODE-3 works on any IBM-compatible computer with MS-DOS with at least 640kb of RAM, and a CGA monitor. CODE-3 includes software, a complete audio to digital FSK converter with built-in 115V ac power supply, and a RS-232 cable, ready to use.

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- SWED-ARQ-ARQ-SWE
- ARQ-E/ARQ1000 Duplex
- ARQ-N-ARQ1000 Duplex Variant
- ARQ-E3-CCIR519 Variant
- POL-ARQ 100 Baud
- Duplex ARQ
- TDM242/ARQ-M2/4-242
- TDM342/ARQ-M2/4
- FEC-A FEC100A/FEC101
- FEC-S • FEC1000 Simplex
- Sports info 300 baud ASCII
- Hellsreiber-Synch/Asynch
- Sitor • RAW (Normal Sitor but without Synch.
- ARQ6-70
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- Pactor
- WEFAK

EXTRA OPTIONS

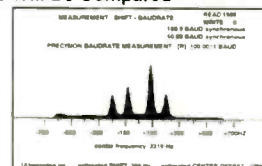
- Option 3 Piccolo.....\$85.00
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- All modes in typical baud rates with possibility of changing to any desired value of speed and shift.
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- HURRY! For a limited time the Standard CODE-3 package includes FOUR options: 1. OSCILLOSCOPE 2. ASCII STORAGE 6. AUTO CLASSIFY 7. PACTOR

STANDARD CODE-3 PACKAGE \$595.00 ALL FOUR EXTRA OPTIONS - \$199.95

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How I Got Started



Here is Phill repairing one of those classic units.

Popular Communications invites readers to submit in about 150 words how they got started in the communications hobby. They preferably should be typewritten, or otherwise easily readable. If possible, your photo should be included. Each month we will select one entry and publish 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 selected 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 N. Broadway, Hicksville, NY 11801-2909, or e-mail to POPCOMM@aol.com.

Our August Winner

This month's winner contacts us from Glendale, Ariz. Meet Phill Reyes:

"As a young boy living in New York, my family decided to move to a small island named Puerto Rico. Homesick, with no friends and in a strange place, I got my first CB radio as a gift. Needless to say, it was love at first sight. I found out soon enough I could DX with the States, and I had the tallest beam in the neighborhood. With that I added SW radios and ham skills, and immediately I was the area's local radio tech.

"In school, I spent hours taking accelerated classes so I could DX on the school radio. I shared the experience throughout the school using the local virtual station we created with PA speakers. I drove my mother stir crazy—my room looked more like an electronics shop than a bedroom (I had to shift things off the bed to go to sleep). I always believed that true radios glow in the dark and I still buy and repair old pre-1920s radios and batteries.

"Now, at 34, I'm a military veteran and proud owner of an electronics business, and I delight my customers with my old radios. Still homesick, I always try to keep in touch with the Big Apple. I guess being homesick paid off!

"As I say goodbye for now to POP'COMM, I'll be relaxing by tuning in my old Arvin FT-101, lit only by the glow of its tubes."

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SCANCAT 6.0 FEATURES

- Search between any 2 frequencies.
- Search by ANY increment.
- Create Disk files.
- Import from most text formats to a working SCANCAT file.
- Log found frequencies to files while scanning.
- Scan Disk Files Frequencies.
- Spectrum Analysis to Screen OR Printer.

SCANCAT - GOLD FEATURES

We simply don't have the space to tell you ALL the new GOLD features

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- Link up to 15 frequency disk files.
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PLUS - POWERFUL COMMERCIAL FEATURES SUCH AS:

- Demographic search for frequency co-ordination and 2-way Usage Analysis.
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- Exclusive "MACRO" control by frequency of Dwell, Hang, Resume, Sig, Threshold and even 6 separate programmable, audible alarms.
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Satellite View

BY DONALD E. DICKERSON, N9CUE

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

Speak Up

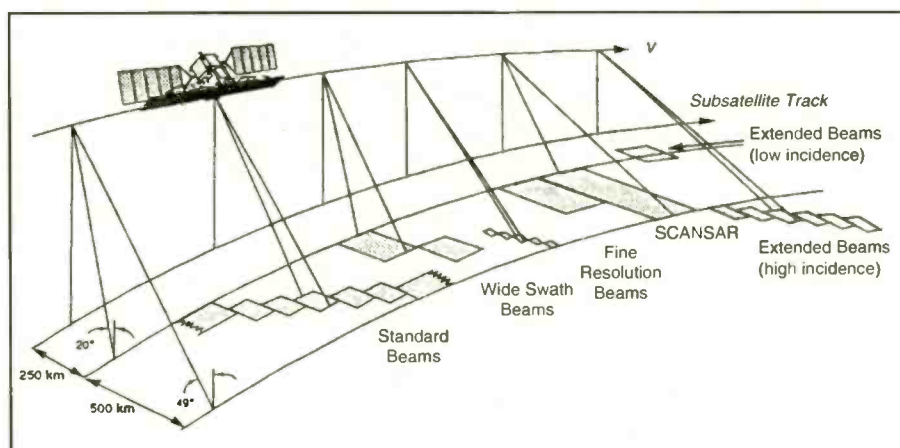
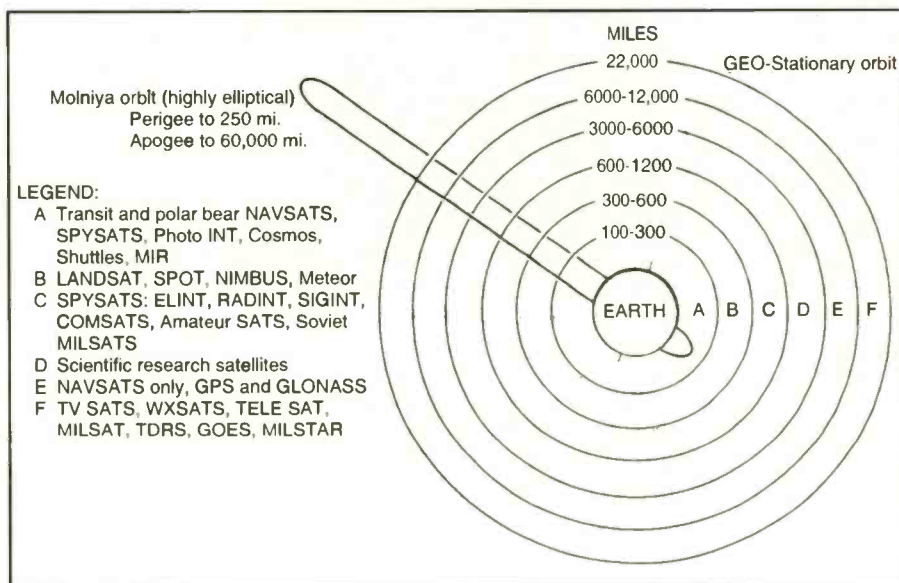
The search-for-the-shuttle bug has bitten more than a few readers, I fear.

One such reader, Bruce Seemon of New Jersey, writes, "I want to thank you for your great article on the shuttle and amateur radio. I am currently listening to the shuttle Columbia working on a software program." Bruce was listening to a simulcast of shuttle audio on 146.610 MHz. He uses a Uniden Bearcat 148XLT and a RadioShack Pro-50 scanner.

Next up is S.B.C. of California. S.B.C. sent along an article from *The Press-Enterprise* about March Air Force Base, which is eight miles from his home. March is the new home of the Armed Forces Radio and TV Network. It is from that location that a team of Army scouts went to Bosnia. These scouts weren't recon in the typical Army sense of the word. They were not looking for enemy forces, but rather a site for their dish antennas. These antennas will bring troops in Bosnia their favorite TV programming, news and sports. There are about 750,000 U.S. troops on board ships and in more than 150 countries of the world. It's nice to know that even our troops in the field have satellite TV. S.B.C. has been an SWL for more than 23 years. He uses a RadioShack DX-380 an active filter and a 100-foot-long wire antenna. Thanks for the info and write again.

Robert Hall of South Africa is an avid weather satellite sleuth and *POP'COMM* reader. He sends along a great photo of a hurricane near Madagascar. The photo was pulled off the Russian Meteor 3-5 spacecraft, which transmits on 137.850 MHz. Good to hear from you again, Robert.

Next, James Viele, N8IRL, of Ohio saw our photo of the Primestar antenna site near Denver, Colo. James states that the

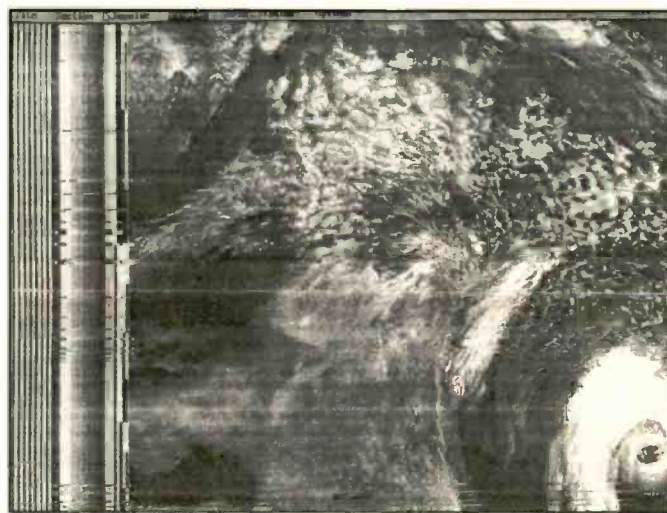


Orbit Parameters

Altitude (local)	793 - 821 km
Inclination	98.6°
Ascending node	1800 hours
Period	101 min
Repeat cycle	24 days
Sub-cycles	7 & 17 days
Re-observation	3+ days

Imaging modes

Mode	Resolution (R ¹ x A, m)	Looks ²	Width (km)	Incidence (degrees)
Standard	25 x 28	4	100	20 - 49
Wide (1)	48-30 x 28	4	165	20 - 31
Wide (2)	32-25 x 28	4	150	31 - 39
Fine resolution	11-9 x 9	1	45	37 - 48
ScanSAR (N)	50 x 50	2-4	305	20 - 40
ScanSAR (W)	100 x 100	4-8	510	20 - 49
Extended (H)	22-19 x 28	4	75	50 - 60
Extended (L)	63-28 x 28	4	170	10 - 23



cable companies, has to pay fees to have its signals converted to digital formats. It also must carry all TV channels, public service-type programming and has to replace U.S. commercials with Canadian commercials on any U.S. programming used.

In a second article in the *Ottawa Citizen*, Canada reportedly is receiving some pretty incredible pictures of earth from their new Radarsat spacecraft. The \$642 million satellite takes radar images of the earth, which is not too uncommon, you say. This satellite can see through clouds, rain, fog, trees and even darkness. The satellite orbits the earth at 800 kilometers altitude and takes about 72 hours to image all of Canada,

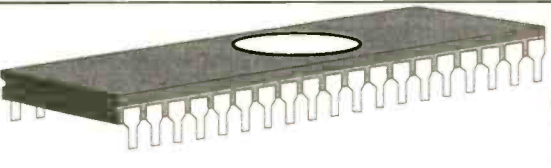
according to the Canadian Space Agency. Thanks for the update, Trevor.

One final note: There is a new publication that might interest the hardcore satellite sleuth. Published in Germany, *TeleSatellite* covers worldwide TV satellites, not just European satellites. It also has articles on spy satellites, hidden signals on satellites, SCPC and more. It is full of charts and has frequency lists and a large English language section. Even the more interesting news items are translated into English. Check it out on the Internet at <http://www.TELE-satellit.com> or write TELE-satellit GB, P.O. Box 1124 ASCOT, Berkshire, GB-S15 OXH, England. ■

site "is immediately adjacent to Interstate 25 just south of Denver on the east side of the highway." It just goes to show that it is hard to find an antenna site in the lower 48 that has not already been seen by some other POP'COMM reader.

Our good friend from Edmonton, Alberta, Trevor Fletcher, sent along a couple of interesting articles about TV and satellites in Canada. The first story is from the *Edmonton Journal*. In one story, it appears that one of Canada's three direct-to-home satellite companies, Power DirectTV, is throwing in the towel. Citing an over-regulated satellite industry and too much red tape and fees, PDTV is leaving the market. Competition from unlicensed U.S. companies in Canada has, according to the article, siphoned off more than \$100 million Canadian dollars. DTH in Canada, unlike







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CIRCLE 70 ON READER SERVICE CARD

Emergency

COMMUNICATIONS FOR SURVIVAL

BY GORDON WEST, WB6NOA

462.675 MHz Works!

As an emergency communicator traveling outside of your normal response area, you should always carry portable radio equipment to meet the needs of any communications situation. You also should have a variety of portable-type licenses which allow you to legally transmit on a variety of channels that might be available in an area you don't usually frequent. And as emergency responders, chances are you may be sent to a new county, state, or possibly across the country where your portable handheld will see some new frequency action.

The Equipment

In a life-and-death emergency situation, dual-band amateur radio handheld equipment may be operated on frequencies outside of normal ham band limits. FCC Rule 80.311 applies to marine channels, 90.75 applies to itinerant channels for the business radio service, and FCC Part 95.143 applies to the General Mobile Radio Service.

A portable marine radio license is available by applying on FCC Form 506, Item 10. This would allow you to use a handheld marine transceiver on any type of boat. Handheld use on marine channels from shore requires FCC Form 503. You could apply for shore-to-ship communications in an unspecified area.

For Part 90 land mobile itinerant operation on VHF or UHF dual itinerant (simplex) channels, FCC Form 600 will lead to a license good throughout the United States. And for operation on the UHF GMRS emergency and travelers aid channel, 462.675 MHz duplex, FCC Form 574 along with specific licensing instructions will complement your portable emergency communications. GMRS licensing instructions are available from the following: Personal Radio Steering Group, P.O. Box 2851, Ann Arbor, MI 48106, (313) MOBILE3; or REACT International Inc., P.O. Box 998, Wichita, KS 67201, (316) 263-2100.

Your handheld portable transceiver would be a commercial model, encompassing type-acceptance for commercial radio services covered under Part 80, Part 90 and Part 95. You would choose a set with an active keypad for frequency selection, and the ICOM America synthesized commercial VHF or UHF handhelds meet

these FCC requirements. ICOM America can be reached at (206) 454-8155. Of course, in an actual emergency, a modified dual-band amateur radio handheld could be used on frequencies for which you are properly licensed.

Under no emergency circumstances would you ever transmit on police channels or other frequencies for which you do not hold a license!

As an example of being communications-prepared, last January during the Blizzard of '96, my plane was forced to land at a snow-covered Detroit airport, nearly out of jet fuel. We were told it would be a six-hour wait before we could taxi from the tarmac to a gate for refueling. Air channels were clogged, and there was no available air-phone system up and operational. No cellular phone onboard would roam in this area.

I figured I could get some communications out on local amateur radio repeaters,

but couldn't find any repeater activity that I could break into from the inside antenna. Error No. 1—not having a cellphone with roam; Error No. 2—not having a repeater directory with me.

My handheld was programmed for REACT emergency and travelers assistance channel 462.675/467.675 duplex. UHF frequencies have a much better shot in getting out of a tiny airplane window. The captain gave me permission to use my handheld onboard, so I gave it a try and immediately brought up a repeater after trying several different CTCSS tones. I was greeted by a friendly Detroit REACT operator who promptly handled some priority messages to my distant Red Cross assignment, and also gave me the up-codes for accessing several repeater systems that could easily reach our stranded position at the Detroit airport. Switching over to the Edison Amateur Radio Club repeater system on the 440 MHz ham band, local radio



Many marine rescue personnel are licensed GMRS operators with 462.675 portable capabilities.



This specific commercial ICOM VHF handheld may be legally operated on Part 90 and Part 80 frequencies, plus VHF ham 2 meters

operators took turns handling incoming and outgoing traffic to those of us stuck out in the snow.

But without the universal "675" GMRS system for travelers aid and emergencies throughout the country, it would have been extremely difficult to get hooked into someone who was knowledgeable about the local radio network. When you apply for your GMRS license, you not only receive one channel of your choice, but also receive this travelers assistance channel for use throughout the country for information and emergencies. And so you don't need to fumble for which tone to encode, obtain a copy of the GMRS National Repeater Guide through the Personal Radio Steering Group computer bulletin board system at (313) 995-2100. The data is in both full-sized text files and in PKZIP compressed files organized by state. PRSG updates the "675" and all repeater listings every other week. All emergency responders are encouraged to join and receive their bi-monthly newsletter, *Personal Radio Exchange*, for \$30 a year.

So next time you head to a new area, take along that FCC type-accepted commercial frequency-agile handheld, and prepare for any communications challenge. ■



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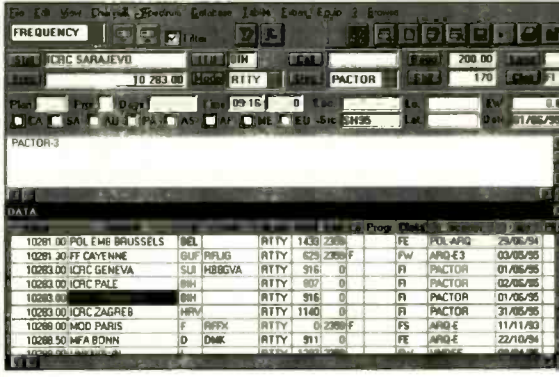
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CIRCLE 64 ON READER SERVICE CARD

THE MONITORING MAGAZINE

August 1996 / POPULAR COMMUNICATIONS / 47

Broadcast DXing

BY TIM KRIDEL

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Second Station Takes To Expanded AM Band

A second U.S. broadcast station has made the move to the expanded AM band—and then moved again. Vallejo, Calif.'s KXBT began testing on 1640 kHz on March 12, and started regular broadcasts on March 19. But that move proved to be short-lived. A few days after regular broadcasts began on 1640 kHz, the station was notified by the Federal Communications Commission that its channel in the revised allotment plan had been changed to 1630 kHz, station manager Diane DuBose told *POP'COMM*.

KXBT had started up on 1640 kHz as the revised allocations were being finalized, with the belief that it would be their channel assignment when the allotment plan was released. "What it (the FCC) gives you is a contingent possibility that this is where you will be," DuBose explained. "When we went up on 1640, about four days later the FCC let us know that we're going to be changing to 1630." The switch to the new frequency was expected to take place as soon as the transmitter could be retuned, probably by mid-May.

The expanded-band outlet will continue to simulcast "solid gold soul" music format from 1190 kHz, and DuBose said no pro-

gramming changes are planned. Daytime power for the expanded-band broadcasts will be 10 kW, with 1 kW for night.

KXBT applied for a channel in the spectrum between 1605 kHz and 1705 kHz because it was the only way for the station to expand to 24-hour service. "The only chance we had to do that in the (San Francisco) Bay Area was to be lucky enough to be one of the few chosen for the new expanded band," DuBose said. "It has been about a three-year project of very hard work to get there." The station will keep its 1190 kHz outlet for five years, the maximum the FCC allows expanded-band broadcasters to use both their old and new frequencies.

When the FCC released its original expanded-band allotment plan in October 1994, KXBT was allocated 1620 kHz. That list was scrapped a year later because of flaws and omissions in the data used to calculate which stations could move. WJDM in Elizabeth, N.J., was the only station from the list granted special temporary authority to move to the expanded band, and the only station guaranteed a channel in the revised allocation plan. KXBT's sudden appearance in the expanded band—and on a different frequen-

cy than it was originally allocated—caught most DXers by surprise, with only a few days warning on the Internet.

The expanded band is providing DXers with the possibility to log states that otherwise might not be heard in the crowded original band. KXBT's broadcasts have been reported as far away as Australia, according to DuBose, and WJDM is regularly heard by DXers on the West Coast, among them *POP'COMM* reader Gary Jackson of Sacramento, Calif. Broadcasting in the expanded band means true clear channels—something that hasn't been experienced in more than a generation.

Reception reports are welcome, and can be sent to Alan McCarthy, KXBT, 3267 Sonoma Blvd., Vallejo, CA 94590.

You Can Go Home Again

"I can't find myself," the young Russian immigrant sings. "I cannot find what I had over there." It's a common plight of emigres—a stranger in a strange land, overwhelmed by feelings of isolation and homesickness. But for this young man and others like him, there's now a chance to regain a sense of community, thanks to radio. In fact, his lament—performed impromptu

It's official: Gary Jackson of Sacramento, Calif., was the first to report USA Digital Radio's 100-watt test broadcast from Cincinnati, Ohio. →

Jack K. Adams of Iberia, Mo., received this QSL card from Mexican powerhouse XEG-AM. Jack says that although the address on the QSL is Apartado 118, he received an immediate reply by using the address given on the air, Apartado 1311. ↓



1050 KHZ, 100,000 WATTS
APARTADO POSTAL 118 C.P. 64000
MONTERREY, N.L. MEXICO
QUERIDO RADIO ESCUCHA:

Gracias por haber reportado la recepción de esta estación el día 16 DE ENERO a las 9:15 horas.

Nuestros 100,000 watts no direccionales en AM Canal Libre Internacional, opera en 1050 KHZ conocido como La Ranchera de Monterrey, transmitiendo desde Monterrey, N.L. México, cuna del Cerro de la Silla.

Esperamos continúes escuchándonos.

Atentamente
LIC. TEOFILO RICHARA Z.
DIRECTOR GENERAL.

XEG-AM
LA RANCHERA
DE MONTERREY



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**USA
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RADIO**

Gary V. Jackson

April 13, 1995

QSL # ***001***

This letter is to confirm the reception of the USADR AM-DAB IBOC signal at 1660kHz.

Your log indicates reception of the signal on September 21, 1994 at 0658EDT. The signal content indicates John Phillip Souza and mellow type music.

On September 21, 1994, USADR transmitted the AM-DAB IBOC signal to test the overall system performance. The signal from the AM-DAB IBOC exciter is fed to a Sunair Amplifier and the reduced output (100W) is fed to a Kintronics Desert Storm top-loaded 40FT vertical. The IBOC exciter and transmitter are located at Xetron Corporation, 460 West Crescentville Road, Cincinnati, Ohio 45246.

The AM-DAB IBOC signal contains the digital information under the existing analog AM signal.

Thank you for tuning in USADR AM-DAB IBOC and keep DX'ing!

Timothy W. Huster
timh@xetron.com

Applied For Permits to Construct New FM Stations

AL	Addison	105.7 MHz	
AL	Columbiana	101.5 MHz	
AL	Dora	92.5 MHz	
AL	Killen	90.5 MHz	9 kW
AL	Pine Hill	96.7 MHz	
AR	Maumelle	96.9 MHz	
AZ	Nogales	99.1 MHz	
AZ	Pinetop	106.7 MHz	
CA	Los Molinos	101.7 MHz	
CO	Estes Park	102.1 MHz	
CO	Grand Junction	100.7 MHz	
CO	Limon	103.1 MHz	
IA	Madrid	96.1 MHz	
IL	Farmington	96.5 MHz	
IN	Charlestown	104.3 MHz	
IN	Evansville	107.5 MHz	
KY	Clinton	102.1 MHz	
KY	Glasgow	94.1 MHz	
LA	Jackson	104.5 MHz	
LA	Lake Arthur	107.3 MHz	
MN	Roseau	103.5 MHz	
MO	Brookline	102.1 MHz	
MO	Cuba	107.3 MHz	
MO	Scott City	93.9 MHz	
MS	Tunica	96.1 MHz	
MT	Billings	105.1 MHz	
NC	Nashville	99.7 MHz	
NC	Ocean Isle Beach	93.5 MHz	
NV	Sun Valley	93.7 MHz	
NY	Ogdensburg	98.7 MHz	
OH	Piketon	100.1 MHz	
PA	Cambridge Springs	104.5 MHz	
PA	McConnellsburg	103.7 MHz	
TX	Winona	102.7 MHz	
VI	Charlotte Amile	93.1 MHz	
WA	Clarkston	102.9 MHz	
WA	Mabton	98.7 MHz	
WA	Omak	104.3 MHz	
WI	Balsam Lake	104.9 MHz	

Granted Permits to Construct New FM Stations

FL	Indian River Shores	97.1 MHz	6 kW
GA	Ludlow	100.1 MHz	25 kW
HI	Umikoa	93.9 MHz	40 watts (KLUA booster)
IL	Carlinville	90.1 MHz	3 kW
IL	Colfax	92.9 MHz	6 kW
IN	Chandler	93.5 MHz	2.24 kW
IN	Marion	90.9 MHz	2.4 kW
MO	Festus	89.3 MHz	2.4 kW
MO	Portageville	91.5 MHz	8 kW
MT	Kalispell	90.9 MHz	2.4 kW
ND	Carrington	98.3 MHz	100 kW
NE	Omaha	88.9 MHz	3 kW
NJ	Cape May C.H.	90.3 MHz	2 kW
NY	Syracuse	90.3 MHz	1 kW
OH	Spencerville	88.1 MHz	150 watts
OR	Burns	92.7 MHz	750 watts
SC	Myrtle Beach	88.9 MHz	100 watts
TN	Dickson	91.5 MHz	6 kW
TX	Amarillo	90.7 MHz	1 kW
TX	Decatur	91.3 MHz	8 kW
TX	Waco	94.5 MHz	3.2 kW
UT	Park City	97.9 MHz	850 watts (KBZN booster)
VA	Richmond	101.1 MHz	3 kW
VT	St. Johnsbury	90.5 MHz	1 kW
WA	Moses Lake	91.5 MHz	7.2 kW
WI	Allouez	106.7 MHz	10.5 kW

Canceled

KAFB	Marksville, LA	1370 kHz	1 kW
KCTO	Columbia, LA	1540 kHz	1 kW
KJOE	Slayton, MN	106.1 MHz	3 kW
KMAR	Winnsboro, LA	1570 kHz	1 kW
WCLB	Camilla, GA		
WGTL	Kannapolis, NC		(License expired)
WVKY	Louisa, KY	1270 kHz	1kW/100 watts

into a telephone receiver for a radio audience of fellow immigrants from the former Soviet Union—is part of what has made the Russian-language program *New Horizons* a vital link among members of Chicago's Russian community, according to a *Chicago Tribune* article sent in by Elmer Wallesen of La Grange Park, Ill.

The 10-hour-a-week program, heard on WTKA-AM, features everything from operas by Tchaikovsky to live reports by correspondents in Russia to discussions about how to adapt to life in America. While ethnic programs like *New Horizons* are considered narrowcasting, targeting a specific segment of the population, that doesn't necessarily mean their audiences are small, especially in a major metropolitan area. In Chicago, for example, there are hundreds of thousands of Russian-speaking immigrants, one of the show's co-founders estimates.

The success of *New Horizons*—which this spring entered its 10th year with plans

to expand to 20 hours a week—and shows like it bucks a trend over the past decade in which many small AM stations dropped ethnic programming in favor of revenue-generating, satellite-delivered programming, and when many shortwave broadcasters cut back or eliminated foreign-language and external services. The locally produced shows regularly add listeners who are overjoyed to find that what was over there is over here, at least to some extent. And ethnic narrowcasting is thriving as a result—another Russian program on WKTA, *New Life*, has begun simulcasting in Philadelphia, and the Chinese Metropolitan Radio Network has member stations in several major U.S. cities. As *New Life* operations manager told the *Tribune*, listeners can “get good information and there are lots of feature stories they won't get anywhere else.”

Ethnic narrowcasting isn't confined to the United States, either. In western Canada, immigrants from India, Pakistan and

Bangladesh can catch up on news and issues that concern their ethnic communities, thanks to FM subcarrier services in British Columbia and Alberta. The Apna Sangeet Radio Network is the brainchild of radio entrepreneur Sukhdev Dhillon, who is preparing to expand to Calgary after finding success in Surrey, British Columbia, and Edmonton, Alberta. Apna Sangeet—“your music”—is available only on FM subcarriers, requiring listeners to purchase special radios that can tune in the piggybacked signals. In Edmonton alone, 1,000 radios already have been sold, according to Dhillon. “Our aim in Alberta is to have the radios in every target household as soon as possible,” Dhillon said in an Edmonton Journal article sent in by Trevor Fletcher of Edmonton.

Old Friends

“Your Big Friend in the Midwest.” That's how WNAX-AM describes itself, and for many DXers it is—the 5-kW sta-

New FM Call Letters Issued

KAPU	Amarillo, TX
KAPV	Elma, WA
KAPW	Beaumont, TX
KAQA	Kilauea, HI
KNMZ	Alamogordo, NM
WAPJ	Torrington, CT
WXGL	Apalachicola, FL

Pending FM Call Letter Changes

New	Old	
KFGI	KVBR-FM	Brainerd, MN
KIGN	KFBQ	Cheyenne, WY
KOLZ	KKAZ	Cheyenne, WY
WCIG	WCMG	Latta, SC
WKYA	WWHK	Greenville, KY

Modified FM Facilities

KIOL-FM	Lamesa, TX	100.3 MHz	Moved to Tahoka, 48 kW.
WCMG	Marion, SC	94.3 MHz	Moved to Latta, 10.5 kW.

Changed FM Call Letters

New	Was	
KCFM	KTHK	Okmulgee, OK
KCSE	KRUN-FM	Ballinger, TX
KEWS	KSNN	Dallas, TX
KEZE	KSPO	Spokane, WA
KGGK	KZZP	Winner, SD
KJMN	KNRX	Castle Rock, CO
KKCB	WAVC	Duluth, MN
KKHK	KVOD	Denver, CO
KLDJ	KLXX	Duluth, MN
KMLA	KHUL	El Rio, CA
KMXV	KMKE	Grand Junction, CO
KNET-FM	KLDZ	Lincoln, NE
KOND	KEYH-FM	Cleveland, OH
KQLM	KADM	Does, TX
KQZZ	KAOB	Devil's Lake, ND
KRZY-FM	KOLT-FM	Santa Fe, NM
KSPO	KWQL	Dishman, WA
KVLO	KEZQ-FM	Sheridan, AR
KVOD	KZDG	Greely, CO
KZBR	KTDX	Mountain Pine, AR
KZZK	KLSN	New London, MO
WBKY	WUSX	Portage, WI
WFGA	WHFX	Waycross, GA
WGAB-FM	WJPS-FM	Newburgh, IN
WGSS	WAOT	Kingstree, SC
WICT-FM	WICT	Grove City, PA
WIMX	WYHK	Gibsonburg, OH
WJPS-FM	WNTC	Chandler, IN
WKSX	WAIL	Thompson, OH
WKXK	WLS-FM	Chicago, IL
WLIR-FM	WMRW	Westhampton, NY
WLYC-FM	WPGY	Williamsport, PA
WMGV	WKQT	Newport, NC
WNBX	WUVR	Lebanon, NH
WNRN	WANJ	Charlottesville, VA
WGBB	KAWA	Kaukauna, WI
WPTR	WCDA	Voorheesville, NY
WRCC	WELL-FM	Marshall, MI
WRQM	WESQ	Rocky Mount, NC
WTRV	WSPL	La Crosse, WI
WTSM	WNDB-FM	Ormond-by-the-Sea, FL

WWLD	WRZK	Tallahassee, FL
WXNR	WTND	Grifton, NC
WXRW	WIXI	Naples Park, FL
WZRW	WZMP	Marion, MS

Changed AM Call Letters

New	Was	
KDBS	KRRV	Alexandria, LA
KCHC	KSSQ	Conroe, TX
KELE	KCMG	Mt. Grove, MO
KFFN	KKND	Tucson, AZ
KFLP	KAWA	Floydada, TX
KGIR	KCGQ	Cape Girardeau, MO
KHHO	KMTT	Tacoma, WA
KINF	KICI	Denton, TX
KKNX	KOOK	Eugene, OR
KOSR	KEZO	Omaha, NE
KTFS	KTWN	Texarkana, TX
KXMG	KXED	Los Angeles, CA
WAMO	WYJZ	Pittsburgh, PA
WDWZ	WRLD	West Point, GA
WFNO	WADU	Norco, LA
WHWD	WQHK	Fort Wayne, IN
WICT	WRQQ	Farrell, PA
WKBQ	WKAU	Saint Louis, MO
WKXI	WOAD	Jackson, MS
WLMX	WCVT	Rossville, GA
WNSS	WNDR	Syracuse, NY
WVOZ	WRAI	San Juan, PR
WWKN	WELL	Battle Creek, MI
WZTM	WNZE	Largo, FL

Pending AM Call Letter Changes

New	Old	
WCTX	WCNX	Middletown, CT
WIOL	WUTK	Knoxville, TN
WSNR	WLLS	Hartford, KY

Applied to Modify AM Facilities

KSKY	Balch Springs, TX	660 kHz	Seeks night increase to 660 watts.
WADS	Ansonia, CT	690 kHz	Seeks increase to 3.5 kW/33 watts.
WREN	Topeka, KS	1250 kHz	Seeks move to Kansas City, 15/3.7 kW
WKPG	Ft. Gibson, MS	1320 kHz	Seeks to change freq. and power.
WWIS	Black River Falls, MS	1260 kHz	Seeks to reduce power.

Modified AM Facilities

KCPL	Olympia, WA	920 kHz	Reduced days to 3 kW; moved from Lacey, WA.
KFNN	Mesa, AZ	1510 kHz	Operating with 22 kW/100 watts.
KYLR	Huntsville, TX	1400 kHz	Increased to 600 watts.
WJML	Petoskey, MI	1110 kHz	Added nights with 28 watts.
WRFD	Worthington, OH	880 kHz	Increased days to 23 kW.
WSQR	Sycamore, IL	1560 kHz	Added night service.

tion has long been an opportunity to log South Dakota. In spite of its recent sale to a Michigan firm, WNAX appears ready to continue that 74-year tradition, according to a report by POP'COMM reader Terry Jones of Plankinton, S.D.

Saga Communications purchased both WNAX-AM and WNAX-FM in March for \$7 million—a bargain, says its new owner. "It's not a Yankton radio station," Saga President Ed Christian told the Sioux Falls *Argus Leader*. "You don't pay \$7 million for a Yankton radio station. You pay \$7 million for an agribusiness franchise." Saga, reportedly happy with the current management, has no plans to change anything.

WNAX-AM currently uses a 927-foot tower for non-directional broadcasts at night. A dogleg three-tower array for directional daytime broadcasts allows the station to cover some 220 counties in five states, which helps make it a key source for agriculture news in the region. WNAX-FM runs 97 kW into an antenna 981 feet high.

Terry says he remembers listening to WNAX-AM in the 1940s on an Atwater Kent radio, complete with a rechargeable wet-cell A battery and two dry-cell B batteries. While he isn't sure whether his radio also could tune in police calls, some models at the time did.

Old Times

Speaking of radio's history, if you want to take a trip down memory lane, Radio Spirits Inc. might be able to help.

The Chicago-based archive and mail-order retailer is "dedicated to preserving and popularizing vintage radio shows," according to their latest catalog, sent in by WLUP late-night host Ed Schwartz. Included are hundreds of tapes of everything from Jack Benny and *The Cisco Kid* to BBC productions of *King Lear*, as well as replicas of vintage radios, memorabilia and reference books with synopses of thousands of radio shows. The company also publishes the quarterly *Past Times* newsletter and produces the syndicated *When Radio Was* show.

More information is available by writing to: P.O. Box 2141, Schiller Park, IL 60176-2141, or by calling (800) RADIO-48. Blind DXers take note: The catalog also is available on Library of Congress four-track tape and ASCII-format disks.

Radio Knows No Borders

For listeners in much of the U.S. Southwest, the XTRA calls are as familiar as those of any local station, and for good reason—the station runs a whopping 77.5 kW on 690 kHz. That's 27.5 kW more than the legal limit for U.S. AM stations, which can seem like even more when the signal's range is multiplied by propagation. If that weren't enough, XTRA is simulcast in the

Los Angeles area on KWNK-AM.

This combination—along with an English-language sports format—made POP'COMM reader Len Malena of Trabuco Canyon, Calif., wonder whether XTRA actually is a U.S. station with an unusual set of call letters and a lot of power. It isn't. XTRA is a powerful station, pumped up even more by some clever marketing. XTRA—actually XETRA, because Mexican AM stations begin their calls with the prefix XE—is licensed to Tijuana in Mexico's Baja California Norte. But there is a solid U.S. connection—the station is

owned by Noble Broadcasting, one of the largest group owners in U.S. radio.

But 77.5 kW is small potatoes compared with another Mexican station, XEG, which runs 100 kW on 1050 kHz—twice the legal limit for U.S. AM stations. XETRA and XEG are blowtorches that make their own clear channels. The closest any U.S. station has come to that kind of power was WLW's experimental broadcasts with 500 kW in 1934, and an unsuccessful movement in 1961 by some clear-channel stations to protect their status by seeking FCC approval to increase to 750 kW.



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"The Bear" is CFBR, a 100-kW rock station in Edmonton, Alberta. Their sister station is 50-kW CFRN-AM. (Courtesy Trevor Fletcher, Edmonton, Alberta)

Broadcasting across a common border isn't unique to Mexican stations. U.S. broadcasters regularly cater to audiences in both Mexico and Canada. But held by FCC rules to a 50-kW and 100-kW maximum for AM and FM, respectively, U.S. stations have to rely more on finesse than force, sometimes taking license with their calls in order to blend in with stations in the other country. WCIZ-FM in Watertown, N.Y., for example, routinely IDs as "CIZ," making Canadian listeners think that the upstate New York station

actually is broadcasting from Canada—complete with calls beginning with a "C."

In Brief

- The first-ever radio simulcasts of TV's *60 Minutes* by KNX-AM in Los Angeles prompted dozens of letters supporting the experimental broadcasts, *Broadcasting & Cable* magazine reports. Management at the CBS-owned station is so pleased with the response to the March 24 and 31 broadcasts that they will make the show a

permanent Sunday feature if CBS-TV will allow it. KNX's aim is to capture some of the estimated 2 million people on the road during the show's 7-8 p.m. air time.

- A new station is up and running on the FM radio dial in Columbus, Ohio, Franklin D Fulk of Wharton, Ohio, reports. WCJZ has a format of smooth jazz on 104.3 MHz, and asks listeners "to tell your friends about us." Jack says that he can receive them in stereo at his QTH, about 85 miles north of Columbus, using a RadioShack Optimus receiver and a RadioShack Yagi antenna, located on a rotor some 30 feet in the air.

- If your monthly dose of POP'COMM isn't quite enough to satisfy your passion for radio, here's a couple of readers who can help you survive between issues. Trevor Fletcher (14757 25 St., Edmonton, Alberta, T5Y 2E8, Canada) would like to trade stickers from stations in the United States and Canada, and Eric Calhoun (P.O. Box 1003, Inglewood, CA 90308) would like to start a pen-pal correspondence—in Braille, on cassette or typewritten—with other AM and FM DXers, especially those who are in the know about the radio job market in Ohio.

- News clippings, station and shack photos, bumper stickers and QSLs always are welcome, as are questions and comments.

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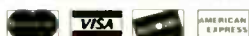
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The Ham Column

BY KIRK KLEINSCHMIDT, NTØZ
AMERICAN RADIO RELAY LEAGUE

GETTING STARTED AS A RADIO AMATEUR

Linear Amplifiers: Who Needs Them?

The contest season is almost upon us! As summer makes a graceful transition into fall, our attention turns to falling leaves, falling temperatures, rising antennas and rising power outputs.

Contest operation demands a big signal—and everyone knows that to be competitive, or to work DX, an amplifier is a must. Right?

Wrong!

Let's set the record straight right from the start. If you have a typical shack (100-watt transceiver, antenna tuner and a wire antenna farm), you'll get a lot more signal for a lot less money if you upgrade your antenna system before (or instead of) shelling out the bucks for an amplifier.

The Price of Power

Let's boost our signal a step or two at a time and see how the decibels stack up against the greenbacks.

If your amplifier budget is modest, a smaller solid-state or single-tube amplifier (3-500Z or similar) will boost your 100-watt output signal to about 500 watts. That's enough to be noticed—but just how noticeable is it?

Here's the law every amplifier has to measure up to: Every time you double your power output, stations that are receiving your signal hear a 3-dB increase in strength. That's less than a half an S-unit! To twitch the needle a full S-unit more you need to quadruple your power output (a 6-dB increase!)

The power output progression looks like this: 100 watts doubled to 200 watts equals a 3-dB increase. Also, 200 watts doubled to 400 watts equals a 6-dB increase. Then, 400 watts doubled to 800 watts equals a 9-dB increase (exceeding the output power of our entry-level amplifier). Finally, 100 watts times 10 equals 1000 watts, a 10-dB increase in power output.

Our 500-watt output amplifier gives us a smidgen more than a 1 S-unit boost on the other end. That's not much—especially when an amplifier in this class costs between \$900 and \$1,500.

So, you wanna run a bit more power?

Using our calculations from before,

boosting our signal to a kilowatt output provides a 10-dB shot in the arm. That's just under 2 S-units on the other end—S3 to S5, S7 to S9, etc. That's enough of a difference to be noticed, but still not enough to “burn down the barn.” And by the way, the most affordable kilowatt amplifiers cost about \$1,700 (typically using a pair of 3-500Z tubes).

If you really go for the gusto and buy a legal-limit amplifier, your 1,500-watt signal will be about 12 dB stronger than your “barefoot” transceiver (because of the price of power, 1,500 watts is still only two full S-units stronger!). And a legal-limit amplifier is not a casual purchase, either. It'll set your wallet back at least \$3,000.

There's More

Don't think you can get away with just an amplifier! The power output curve often is deceptive. For example, above 300 watts output or so, you'll need a beefier antenna tuner. Expect to spend about \$500 for a good one.

And don't forget about the AC mains, either. You can get away with running a 500-watt output amplifier on 117 volts AC, but beyond that, it's 240 volts all the way. (Don't believe me? A 500-watt output amplifier runs about 1,000 watts input power. That's 8.5 amps at 117 volts. With your rig added in, that's more than 10 amps. Believe me, the lights in your house will “jump” to the rhythm of your code key or your spoken words!)

Chances are good that you won't know how (or want to) install that 240-volt line yourself, either. The materials and an electrician to install them likely will total \$300 to \$500. Many first-time amplifier users don't consider the beast's power supply requirements until they've set up the amp up and started “browning out” the rest of their house!

A Better Way?

To save wear and tear on your fellow hams, your wallet and even your house wiring, improve your antenna system before investing in an amplifier.

One almost universal way to get out more signal is to get your antenna(s) farther up in the air (your present antenna or a new one). Build a taller mast, find a taller tree or put up a tower.

If that dipole just isn't cutting it, put up a contest-winning and DX-catching secret weapon: a full-wave horizontal quad for 40 or 80 meters (up as high as possible, of course!). Feed it with coax and use a tuner on bands above the fundamental frequency. That's a “cheap ‘n’ dirty” way to snag an extra 2 to 10 dB, depending on frequency.

For about half the price of an entry-level amplifier, you can buy a multiband beam antenna and a decent rotator. This dynamic duo, mounted reasonably high or better, will offer a 6- or 7-dB steerable improvement to your signal. (The horizontal loop and a multiband beam make a fabulous combo!)

On SSB, learn to correctly use your rig's speech processor. There's another 3-dB improvement, this time in the modulation department! No purchase necessary!

Of course, amplifiers do have their uses—especially after you've tweaked your antenna farm. Add a 12-dB amplifier to a 7-dB beam antenna and you've got a whopping 17-dB improvement in signal strength! That will put you on the map—if you need that strong a signal, that is.

Should your quest for power momentarily short out your common-sense circuit, remember that the FCC—and good amateur practice—insists that you use the minimum power necessary to effectively communicate. And remember, better antennas help you hear better, too. Not so with amplifiers.

So, do you still need an amplifier? Only you can answer that, of course. I've used them off and on over the years, and even when I had one I rarely flipped the “stand-by” switch to the “operate” position. Given the choice, I'd take a “killer” antenna instead of a “rock crusher” any day!

Keep your photos, letters and column suggestions coming to me at ARRL, Department PCN, 225 Main St., Newington, CT 06111, or send e-mail to kirk@uslink.net. ■

Clandestine Communique

WHAT'S NEW WITH THE CLANDESTINES

New Star Returns To Air

That strange Chinese language numbers broadcaster has been logged again recently. The New Star Broadcasting Station was heard on 8300 around 1600 with a woman reading numbers in Chinese until sign-off at about 1625. Other loggings have been at 1500 and 2230.

New Star is believed to broadcast from Mainland China. It has been active for perhaps 20 years, although we can't say how consistent that activity is. Certainly the broadcasts, which include station ID, are aimed at Taiwan (or vice versa if the broadcasts are coming instead from the Republic of China). The station doesn't adhere to a set schedule; broadcasts begin on the hour or half-hour, run for less than 30 minutes, and are likely to occur at any hour of the day.

Recent reports have been for reception on 8300, although the station has used frequencies such as 9725, 11430 and 15388 in the past. Your best bet is to monitor 8300 on the hour or half-hour during our early mornings. Let us know if you pick 'em up!

Oromo

The Voice of Oromo Liberation is using 5960 from sign-on just prior to 1600. This, apparently, is direct from a site in Africa rather than via the relay arrangement they had with a U.S. religious broadcaster for a while. It's not likely to be heard with this time and frequency combination during our summer months.

Guatemala

Rarely reported, even though it broadcasts from not all that far away, is Voice Popular, the station of Guatemalan National Revolutionary Unit (URNG). The station is on the air only twice a week—on Tuesdays and Fridays from 2315-0020, operating on 7000 kHz. This one has been heard and verified by a few U.S. DXers over the years so, although it's a tough one, it's worth going after.

Mojahed

Voice of the Mojahed has verified via this address: Mr. Majid Taleghani, Mojahedines de Peuple d'Iran, 17 rues des Gords, F-95430 Auvers-sur-oise, France.

Sudan

Jill Dybka in Tennessee reports a tentative logging of the Voice of Sudan on 8000 kHz, in Arabic from 0410 tune-in to past 0445. This station is sometimes deliberately interfered with by the government radio station. It also operates during our morning hours and has been known to include station IDs in English and even an occasional feature in English.

Afghanistan

Radio Message of Freedom, which supports the Islamic Party of Afghanistan, is using 6240. Broadcasts are at 0230-0400 and 0730-0900.

Palestine

The Voice of Palestine/Voice of the Palestine Islamic Revolution is said to operate from Iran. It is scheduled on 5995

A Guatemalan Jungle Radio

The Popular Voice, Canadian tours

Julia Batres Lemus

A lieutenant, guerrilla women combatant is a member of the Popular Voice (La Voz Popular) a jungle radio in Guatemala. The Popular Voice is the official underground radio of the Guatemalan National Revolutionary Unity (URNG). The radio operation is in the jungle of the Tajumulco volcano in Guatemala and from there it spreads alternative information, those under censure in Guatemala. Julia Batres, will share information of URNG-government peace process negotiation, free expression, human rights, and guerrilla struggle under the army dictatorship in Guatemala.



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Guatemalan clandestine "Voz Popular" may not have much power or much of a schedule, but it works at getting its message out in other ways; in this case a talk by a female member of the guerrilla group given in London, Ontario.

and 9670 from 0400-0430, 11745 from 1230-1300 and 6025//7070 from 1830-1930. The transmitters used belong to the Iranian government and probably see use for other Iranian broadcast services as well.

Cambodia

Another rarely heard clandestine also has been reported to North America. Radio of the Provisional Government of National Union and National Salvation of Cambodia (pause here to catch your breath!) operates just a hair above 5407 with programs in Cambodian. Try them around 1100 UTC.

Iraq

The Voice of the Iraqi People broadcasts on 9568 and 11713. It signs on at 1300 and runs through 2200 closing. Station headquarters are thought to be in Saudi Arabia. The station also may transmit from Saudi Arabia, but it uses the broadcast facilities of a number of other nations in the area, including Bahrain, Oman, Kuwait, the UAE and Qatar. There's another station using the

same name. It is operated by the Iraqi Communist Party.

Another Iraqi clandestine, Voice of Iraqi Radio, operates from Syria. It is using 9950 to 2130 sign-off in Arabic.

Secret's Out

Every now and then a technical problem will reveal a secret of some clandestine station. That happened earlier this year when it seems that both the Voice of Iraqi Kurdistan (4070) and the Voice Iranian Kurdistan went off the air at the same time and in midbroadcast, apparently because of a local power failure. That means, of course, that the two stations are probably at the same location.

Cuba

A hiccup from La Voz del CID: This well-known anti-Castro broadcaster was off the air for a few days, with no explanation given for its silence. At this writing, however, CID (Cuba Independiente y Democratica) continues normal operations on 6305, 7341 and 9941. Cuba continues to run a jamming operation against this and other anti-Castro broadcasters. It's easy to spot, although not much more than an irritant at your editor's Midwest listening site. The jammer, however, really does a number on Radio Miami Internacional (9955), which carries several anti-Castro programs.

Write In

That covers the news on the secret broadcasting scene for this month. Please remember that your input is always welcome. That includes log reports of clandestine and related broadcasts, QSL news, addresses, background information on the stations and the groups that operate them. Anything you run across is of interest, so please check in when you can.

Until next month, good hunting!

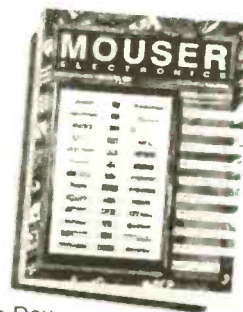
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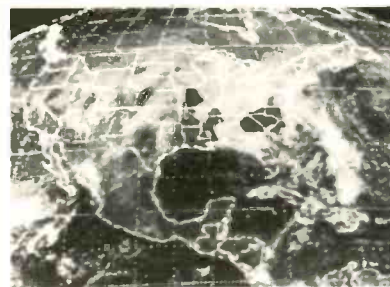
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YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Beacon Callsigns

Ralph C. Craig, a retired FAA employee, writes, "I would like to mention that all American aeronautical beacons with two-letter identifications are low-power LOMs (locator outer markers). These are low-power, limited-range (20-30 miles) beacons, utilizing very short inefficient antennas, and colocated with the outer marker of the Instrument Landing System (ILS). To hear one over a long distance is real DX. The two-letter identification is the first two letters of the three-letter identification code of the ILS for that particular runway. Thus, it is possible to have two identical IDs at widely separated airports, while the LOM is associated with an airport (usually 5 miles) and may have a name different from the city."

Additional comments have been received regarding the photo of the Coast Guard ship (*POP'COMM*, January 1996, Page 82). Matt Yeager of Virginia advises: "I believe that 'Upper M' antenna on the port yard arm is an IFF (identification friend or foe) transponder antenna. The actual antenna is covered by a weatherproof cover. 'Upper I' antenna is a HF vertical whip, similar to antenna H. Antenna bases for these usually are painted red (transmit) or blue (receive) to distinguish them and alert personnel where there might be RF hazards. Antenna D—or at least the object at the end of the line from antenna D—is a windbird, which senses wind speed and direction. There is another windbird house, which appears to be a fire control radar dish antenna (pointing straight up) used in conjunction with the deck gun on the fore-castle. The antenna distinguished by 'Lower I' probably is the mast for J antenna."

Here are a couple more language aids to add to those mentioned in the June column. RadioShack has a credit card-sized translator (catalog number 63-666RF) that translates words and phrases between English, German, Spanish and French. It sells for less than \$20. You may find a computer-based language program is more to your liking. Transparent Language offers courses in Spanish, French, German, Italian and Russian. Write them at P.O. Box 575, Hollis, NH 03049.

Global Wireless and Bahrain Telecommunications Co. (Batelco) agreed to establish a node in the Middle East. "The station, Bahrain Radio (callsign A9M), will enhance the coverage of the Global Radio Network in the Indian Ocean and Arabian

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TIME	CALL	ID	GRP	1ST FREQ	2ND FREQ	NOTE
1300	BAR	00135		18128		50 BAUD
1400	YBU	00148		16228	18805	
1410	KUL	00142		12193	10584	
1445	WFO	00125		14736		74 BAUD RTTY/CW TO MIG MAY QSY TO 12192 OR 12196 CW TO WFO
1445	MIG			13382		
*1500	VKX	00166		14605	12180	(REVERSE KEYING) MAY ALSO USE 14352 1ST FREQ 50 BAUD
1515	BPA	00116		14727	10424	
1600	SPK	00168		21867	18846	
1645	GMN	00119		20733	18187	
1735	KRN	00178		16448	14467	
1815	WFO	00125		14736		CW TO MIG CW TO WFO
1815	MIG			13382		
1900	WNY	00139		20588	16448	
2050	KAC	00128		16283	14236	
2115	WFO	00125		14736		100 BAUD RTTY/CW TO MIG CW TO WFO
2115	MIG			10841		
2200	YBU	00148		20140	17480	
2230	JMS	00127		16843	13621	
2240	PSN	00126		19957	18228	

Bunky of IL has provided this updated schedule/frequency listing for the suspected Russian MFA Network. MIG is the HF relay site believed to be located at Guineo, Cuba. Although not part of this network, VKX is included because it is heard frequently in the U.S. The other calls are those of the recipients of the Western Hemisphere broadcasts.

Gulf. The radio facility will be provided, and operated, by Batelco under a partnership arrangement with Global Wireless."

Perry Crabill Jr. of Virginia sent in the World Wide Web address for Coast Guard communications: <http://www.navcen.uscg.mil/marcomms/marcomms.htm>

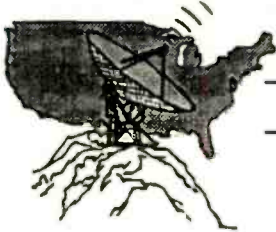
A note from Rick Baker of Ohio indicates that he "heard the Irish navy, German navy, Italian navy, U.S. Navy, Australian navy, U.S. Army Transportation Corps and the U.S. Coast Guard this month. It was a good month for warship fans like me. Noted several major SARs, including the shooting down of the Brothers to the Rescue aircraft and the B-757 crashed in the Caribbean."

Takashi Yamaguchi of Japan is a chief

surgeon at a Nagasaki hospital. His equipment position includes an RG-55A and NRD-72. He said he would like to upgrade his equipment with the addition of a Watkins Johnson HF-1000. His ham activity went QRT in the early 1970s.

From Al Hemmalin of Rhode Island, we learn "FLR on 406 kHz, Fall River, Mass., was decommissioned on Feb. 17, 1996. It was located at a municipal airport owned by the city. The city sold the airport land to a landfill operation and the call of that location is now gone forever."

"We have lost several local beacons. Every time one is removed, there is always the expectation that it was covering up some rare calls. This time it paid off as I got a Brazilian 405—BVI—that I never



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VERIFICATION OF RECEPTION

TO: EDWARD RAUSCH III
17 VANDERBERG PLACE
CEDAR GROVE, NJ 07009 USA

DATE: 16/12/95 FREQ: 6224 MODE: USB
XMTR: RD-10N HF 1000 ANTNA: ANDREW TYP 3000
POWER: 15W WATTS LOCATION: 38-50.45 176-26.136
REMARKS: NEW ZEALAND

(Station Seal)

Ed Rausch
NOC MANAGER

Ed Rausch of NJ shares this PFC.

would have heard if FLR was active. Most of the calls that were heard occasionally with great conditions are quite regular now on 4063 kHz and adjacent frequencies."

The following U.S. Coast Guard items were forwarded by Perry Crabill Jr., who obtained them from the Web:

- Listings of radiofax broadcast frequencies for New Orleans (NMG) have been corrected. Correct frequencies are 8503.9, 12789.9 (night) and 17148.3 (day) kHz. Although these frequencies provide good long-range coverage, they do not provide adequate short- to medium-range coverage. To correct this, the Coast Guard is considering transmitting broadcasts on a frequency near 4 MHz, to replace those made on 12789.9 and 17148.3 kHz.

- Mobile Marine Radio has terminated HF single-sideband voice broadcasts of the Gulf of Mexico offshore marine weather forecast. This information is still broadcast by the Coast Guard over NAVTEX and 2670 kHz SSB. Caribbean area forecasts also are broadcast on HF radiotelephone channels by CG CAMSLANT/ NMN.

- USCG NAVTEX broadcasts now include these subject identifiers: "V"—notice to fishermen; "W"—environmental.

- A new transmitter may be installed in Georgia, closing the current coverage gap between CAMSLANT, Portsmouth, Va., (NMN) and Miami, Fla., (NMA).

- The Coast Guard plans remote operation of its communications stations to Communications Area Master Station Atlantic (NMN), and Communications Area Master Station Pacific (NMC), before the year 2000. The Coast Guard has remoted Communications Station Guam radiotelex and radiotelegraphy service to NMC, and remoted Communications Station Miami

NAVTEX and HF radiotelephone service to NMN. Services from Communications Station Boston (NMF) will be remoted to NMN in November 1996.

- The Coast Guard plans to begin guarding HF radiotelephone channels 1205 and 1625 from its remote transceiver site in Miami, Fla., in 1996. This increase in service will provide improved radio communications coverage to the mid-Atlantic and Caribbean area.

Tom Severt of Kansas forwarded a print-out from the Miami NAVTEX station regarding the Brothers to the Rescue flotilla that held a memorial service outside Cuban waters. Tom pointed out "I think paragraph D falls into the 'no kidding' category." Here is what it said: "D. Mariners are reminded that vessels entering Cuban waters without prior authorization may be subject to arrest by Cuban authorities and may place themselves and others at serious personal risk."

Randy Stewart of Missouri reports: "I just received an interesting letter from Arthur Williamson, manager-telegraph services, at Bahamas Telecommunications Corp. regarding my reception of beacon ZLS, 526 kHz. The assumed QTH of the beacon is Stella Maris, Bahamas. Williamson says he has logged ZLS as well, but it's NOT one of the Batelco stations...in fact, he doesn't even think it's in the Bahamas. He suggested the Turks and Caicos Islands. He also enclosed a list of Bahamian beacons that follows:"

- Governors Harbour: latitude 25.17 N, longitude 76.19 W, Eleuthera, 224 kHz, callsign ELJ.

- Freeport: latitude 26.33 N, longitude 78.42 W, Grand Bahama, 379 kHz, callsign ZFP.

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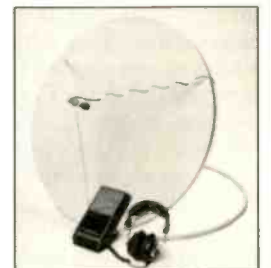
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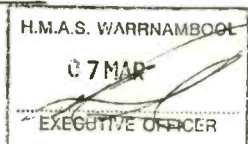
VLRM HMAS WARRNAMBOOL (P-204)

THIS WILL VERIFY RECEPTION OF:
ROYAL AUSTRALIAN NAVY SHIP HMAS WARRNAMBOOL (P-204)
ON: 8237.0 KHZ USB AT: 0647 Z DATE: 26 MARCH 1994

TRANSMITTER/POWER: N/A

ANTENNA: 35 FOOT Whip

*LOCATION: 31 40 S - 154 10 E
VERIFYING OFFICIAL AND STAMP:



*IF CLASSIFIED, MARK N/A

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
trc	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)

Here is the PFC Rick Baker, OH used for his Australian warship verification.

- San Salvador: latitude 24.04 N, longitude 74.31 W, 281 kHz, callsign SSJ.
- Nassau: latitude 77.22.30 W, longitude 25.05.00 N, 251 kHz, callsign ZUA.
- Rock Sound: latitude 24.56 N, longitude 76.11 W, 302 kHz, callsign RSD.
- Grand Bahama: latitude 26.37 N, longitude 78.22 W, Gold Rock Creek, 326 kHz, heading 330 degrees, 124 statute miles out of Nassau.
- Bimini: latitude 25.42 N, longitude 79.17 W, 396 kHz, callsign ZBB.

The list forwarded by Mr. Williamson shows the Nassau beacon callsign as ZUA. The Beacon Guide and the U.S. Department of Defense flight information publication, *Supplement—Caribbean and South America* show the callsign as ZQA.

The callsign for the 326 kHz beacon was missing from the list. It is BHF.

Beacon ZLS, 526 kHz, formerly operated on 320 kHz. It is listed in *The Beacon Guide* as a private beacon located at Stella Maris, Long Island, Bahamas (23.35 N, 75.16 W). This information is confirmed by the DOD publication.

It appears that Williamson simply is not aware of the existence of the private beacon at the Stella Maris airport.

Simon Mason of England advises the numbers stations CD release has been delayed. After Havana Moon died this past January, it was decided to include some of his recordings in the CD as a tribute to his long-term efforts in monitoring numbers transmissions. As soon as those recordings are incorporated with the others, the CD will be released. When further details are received, they will be passed on to readers.

Can anyone help David C. Williams? His QSL letters to Cape Radio at Cape Canaveral and to the U.S. Air Force-Antigua Radio both were returned. The Cape Radio envelope was marked "insufficient address" and the Antigua Radio envelope was

marked "forwarding order expired." If any reader has valid QSL addresses for these activities, please contact David at 804 N. Watford St., Sterling, VA 20164-3731.

UTE Loggings SSB/CW/RTTY/SITOR/etc. All Times in UTC

- 201: Beacon GV, Granville, Texas, at 0619. (PC)
- 204: Beacon LCQ, Lake City, Fla., at 0644. (PC)
- 206: Beacon LA, Lansing, Mich., at 1839. (RH2)
- 209: Beacon MT, Chibougamau, Quebec, Canada, at 0113, 591 miles. (AH)
- 215: Beacon MVQ, Malvin, Ark., at 0715. (PC)
- 218: Beacon DRM, Drummond Island, Mich., at 0732. (PC)
- 219: Beacon EV, Evansville, Ind., at 0727. DSB. (PC)
- 224: Beacon BH, Birmingham (Municipal), Ala., at 0352. (WP)
- 228: Beacon BCZ, Butler, Ala., at 0355. (WP)
- 230: Beacon RDK, Red Oak, Iowa, at 0823. (PC)
- 232: Beacon GT, Grand Turk Island, British West Indies, at 0837, 1,389 miles. (AH)
- 240: Beacon N, u/i, sends 30 seconds fast, then pauses. Hrd at 0402. (WP)
- 242: Beacon EFK, Newport, Vt., at 0548. (PC)
- 245: Beacon EZI, Kewanee, Ill., at 0500. (PC)
- 248: Beacon UL, Montreal, Quebec, Canada, at 0350. (WP)
- 252: Beacon SMS, Sumter, S.C., at 0538. (PC)
- 257: Beacon TZ, Gibraltar Point, Ontario, Canada, at 0313. (RH2)
- 276: Beacon YHR, Chevery, Quebec, Canada, at 0330. (WP)
- 278: Beacon OS, Los Angeles International Airport, Calif., 25 miles, hrd 24 hours. (DT)
- 281: Beacon EWK, Newton, Kansas, at 0501. (PC); Beacon L, Charlo, New Brunswick, Canada, at 0258. (RH2)
- 283: Beacon PT, Pelee Island, Ontario, Canada, at 0330. (WP)
- 284: Beacon BT, Baton Rouge, La., at 0507. DSB. (PC)
- 286: Beacon A, Sault Ste. Marie, Ontario, Canada, at 0449, 1000 Hz. (PC)
- 287: DGPS ex-PI, Pigeon Point, Calif., 346 miles, hrd at 1240. (DT)
- 290: Beacon YFF, Penticton, British Columbia, Canada, 1,093 miles, at 0910. (DT)
- 293: Beacon GHJ, Gastonia, N.C., at 0101. (RH2); Beacon IKV, Ankeny, Iowa, at 0514. DSB. (PC)
- 296: Beacon LGD, La Grange Municipal, Ore., 807 miles, at 0920. (DT)

320: Beacon BAR, Banner Elk, N.C., at 0158; Beacon HTN, Mile City, Mont., at 0908. (RH2)

323: Beacon CO, Indianapolis, Ind., at 0818. DSB. (PC)

326: Beacon VV, Warton, Ontario, Canada, at 0240. (WP); Beacon RUV, Belle Fountain, Ohio, at 0531, 649 miles. (AH)

329: Beacon PMV, Plattsmouth, Neb., at 0513. (PC)

332: Beacon QT, Thunder Bay, Ontario, Canada, at 0415. Long dash after call. (WP); Beacon FIS, Key West, Fla., at 0213. (HS)

335: Beacon YLD, Chappleau, Ontario, Canada, at 0308; Beacon CDH, Candeno, Ark., at 0245. (WP)

341: Beacon CCJ, Springfield, Ohio, at 0605, 663 miles. (AH); Beacon ADV, Ava, Mo., at 0705. (RH2)

342: Beacon CXE, Chase City, Va., at 0936, 507 miles; Beacon Y, Gallantry Head LS, St. Pierre and Miquelon, at 0755, 831 miles. (AH)

343: Beacon GR, Bromont, Quebec, Canada, at 0337; Beacon DNT, Dyersburg, Tenn., at 0331. (RH2)

344: Beacon FCH, Fresno, Calif., at 0645. (RG)

346: Beacon YXL, Sioux Lookout, Ontario, Canada, at 0453, 1,150 miles. (AH)

348: Beacon M, Montreal, Quebec, Canada, at 0330. (RH2)

350: Beacon RG, Oklahoma City, Okla., at 0300. (WP); Beacon NY, Enderby, British Columbia, Canada, at 0659. (RG)

353: Beacon ZES, Cape Scott, British Columbia, Canada, at 0930, 1,292 miles. (DT)

356: Beacon HEU, Schenectady, N.Y., at 1116, 163 miles; Beacon MVB, South Hill, Va., at 0640, 421 miles. (AH)

360: Beacon PI, St. Petersburg, Fla., at 0123. (HS); Beacon BFI, Beef Island, Virgin Islands, at 0739, 1,640 miles. (AH)

365: Beacon DYB, Summerville, S.C., at 0047. (RH2); Beacon FT, Fort Worth, Texas, at 0633. (RG)

366: Beacon CYO, Circleville, Ohio, at 0649, 629 miles. (AH)

367: Beacon HA, Hao Atoll, French Polynesia, at 0940, 3,881 miles. (DT)

371: Beacon IPT, u/i. Hrd at 0116, 600 Hz. Peaks N/S. Possibly Cuban; that's the only country I have hrd using 600-Hz modulating freq. (PC)

373: Beacon MF, Medford, Ore., at 0520, 661 miles. (DT)

375: Beacon BUN, Buenaventura, Colombia, at 0715, 2,630 miles. (AH); Beacon GGL, Titusville, Fla., (Cocoa) at 0230. (WP)

376: Beacon BHC, Baxley, Ga., at 0150. (PC)

377: Beacon EHA, Elkhart, Kan., at 0344. (RH2)

383: Beacon SEF, Sebring, Fla., at 1252. (WP); Beacon PI, Pocatello Municipal, Idaho, at 1305, 705 miles. (DT)

386: Beacon OQW, Maquoketa, Iowa, at 2320. (RH2)

390: Beacon UCA, Ciego de Avila, Cuba, at 0703. (AR)



Equipment layout of Dr. Takashi Yamaguchi of Japan.

JHOK		
FISHERIES RESEARCH SHIP ---- M/V FUJI MARU		
VERIFICATION OF RECEPTION		
CALL SIGN JHOK	FREQ KHz 12443	LOCATION - POS'N 41°38'N 163°27'E
DATE Aug. 27, 1995	TIME-UTC 0355	ANTENNA 60 ft. Long Wire
HMTR POWER 500 W	MODE A1A	
SIGNATURE: MASAYOSHI MASUDA RADIO OFFICER		

PFC from the collection of Steve McDonald of BC, Canada.

394: Beacon YB, North Bay, Ontario, Canada, at 0215. (WP); Beacon ENZ, Nogales, Ariz., at 1050. 444 miles. (DT)

395: Beacon L7, Estevan, Saskatchewan, Canada, at 0414; Beacon YL, Lynn Lake, Manitoba, Canada, at 0251. (RH2)

397: Beacon LLJ, Challis, Idaho, at 1055, 774 miles. (DT)

400: Beacon XW, Flemingsburg (Fleming-Mason), Ky., ex-FGX. Hrd 0335. (WP); Beacon HIV, Santo Domingo, Dominican Republic, at 0207. (WP); Beacon NHK, Patuxent River Naval Air Station, Md., at 0841, 352 miles. (AH); Beacon BEC, u/i, 1,000 Hz, peaks E/W, hrd at 0705; Beacon FO, Westhampton Beach,

N.Y., at 0521. (PC)

404: Beacon MOG, Montague, Calif., at 0535, 607 miles. Ex-382 kHz. (DT); Beacon CKI, Kingstree, S.C., at 0352. (RH2)

405: Beacon BVI, Boa Vista, Brazil, at 0753, 3,138 miles. (AH)

407: Beacon H, Montreal, Quebec, Canada, at 0155. (WP)

408: Beacon HBD, Youngstown, Ohio, at 0140. (RH2)

411: Beacon RD, Roberts Field, Ore., at 0540, 750 miles. (DT)

413: Beacon MC, McComb, Miss., at 0208. (WP)

414: Beacon PYD, u/i since 11/11/93. (DT);

Beacon CSS, Washington Court House, Ohio, at 0932. 648 miles. (AH)

427: KPH, San Francisco, Calif., in CW w/wx at 0530. (RG)

428: Beacon EEJ, Sanford, N.C., at 0320. (WP); Beacon COQ, Orange, Va., at 0403. (RH2)

453: Beacon UEK, u/i, hrd at 0230. (WP)

512: Beacon HMY, Lexington, Okla., at 0953, 1,476 miles. (AH)

515: Beacon RRQ, Rock Rapids, Iowa, at 0726, 1,270 miles. (AH)

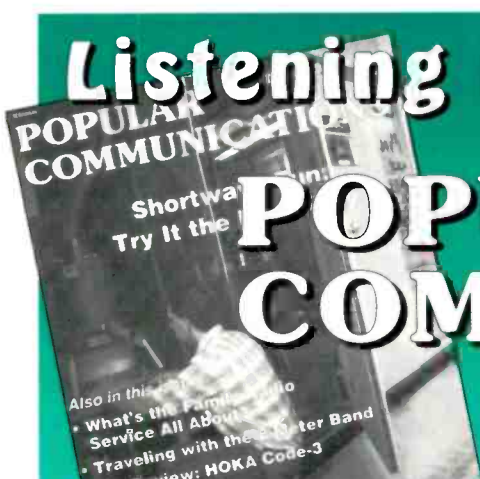
521: Beacon TVX, Greencastle, Ind., at 0255. (WP)

530: Beacon F9, Chatham, New Brunswick, Canada

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This will verify your reception of vessel:

ZIM AMERICA

Type: Container carrier Tonnage: 37209
 Frequency: 8225 kHz Call sign: 4XGR
 Date: December 2, 1994 Time: 1354 UTC
 Location: 41.02N 67.28W Course 293 Spd 15.0
 Antenna: WPA + wire Power: 1500 watts
 Verified by: R.C. IGER
 Skip's stamp:



↑ Russ Hill, MI used this PFC for his reception verification.

PFC used by Jim Navary of VA for his report to NRWH. →



To: Radio AA4JN

This confirms your reception of radio transmissions from the US Naval Vessel

USS HAYLER (DD-997)

Callsign: NRWH

Date: 10 Aug 94 Time: 1245 Z Mode: USB Freq: 7535 kHz
 Vessel Type: DESTROYER Homeport: NORFOLK VA
 Approx. Location: VACAFES
 Remarks:

Signature
 Signature/Title

da, at 1026, 476 miles. (AH)

2150: YL/EE Mossad, sending SYN2 at 2100. Also on 4165 kHz. (SM)

2182: NMY42, USCG Group Moriches, N.Y., at 0120 w/announcement re 405 EPIRB (405 MHz Emergency Positioning Indicating Radio Beacon) activation from the F/V Jason M. Danielle, a 93-foot fishing vsl. Requests vsls in area to keep sharp lookout, assist if poss. At 0523, NMRI, GANTSEC, USCG Greater Antilles Section, San Juan, Puerto Rico, "CG San Juan," wkg tug Tropic Sea Horse, which was pulling a 110-foot barge taking on water north of Cuba. QSY 2670. Both in USB. (RB)

2598: VCP, CCG, St. Lawrence CG rdo, Quebec, Canada at 0306 in USB w/pan-pan re man overboard from M/V Infra, 3EPS3, requests any sightings be reported to RCC NY or RCC Halifax. (RB)

2670: WCE5063, R/V Endeavor, at 0302 in USB wkg NMA10, USCG Group Mayport (Florida), w/DTG msg to be relayed 1st CG District re departure from restricted fishing area. This research vsl is run by University of Rhode Island, and used callsign WVFQ in the past. (RB)

2806: IGJ41, Italian navy, Augusta, Sicily, w/Vs and ID in CW at 0150. (B)

2815: IDR8, Italian navy, Rome, Italy, w/Vs and ID in CW at 0150. (B)

2899: Shanwick, Ireland, (NAT-B MWARA) at 0525 in USB wkg TWA 885 w/posn report. (RB)

2998: Naha ATC Japan wkg Navy ND 149 at 1610. (TY)

3373: 4XML, rptng V 6FR7 DE 4XML (both u/i) at 1138 in CW. (TY)

3419: Station sending three musical notes in ascending scale at 2100 followed by "Achtung, achtung" and into 5F grps. In LSB. (SM)

3447: 2RC8 clg 8L6S at 1357 in CW. Both u/i. (TY)

3451.5: OA, Irish navy, Dublin, Ireland, at 0707 in SITOR-A wkg u/i navy vsl w/acknowledgement of msgs being sent (5L grps). (RB)

3802: Time signal station at 2150 sending "0050" in CW. Updated to "0051" about 20 secs later. Keeps UTC plus three hours time zone (Moscow?). Used to be under the "buzzer" on 4625 kHz. (SM)

3923.7: Station playing old Radio Caroline theme by the Fortunes, over and over at 2220. (SM)

4018.5: YRR4, Bucharest Meteo, ROU at 0325 in 50/425 RTTY w/AMXX meteo reports. (RB)

4025: YL/EE in AM at 0300 rptng 170. Sent 238 238 111 111 and into 5F grps. Signed down w/00000. (TS)

4030: At 0200 YL/EE rptng 534 until 0205. Then 069 069 121 121 and into 5F grps. Pronounced zero as "zeeroh." (SM)

4154.5: DRDG, FGSU-28 (S-177), German navy attack sub, at 0414 in USB concluding RTTY tlc w/DHJ59, Wilhelmshaven Naval, Germany. (RB)

4165: Mossad YL at 1745 with "SYN81." (SM)

4179: 3EJO9, MSC Maria Laura at 2354 in SITOR-A w/AMVER/FR, vsl bound Wilmington,

Charleston, Miami, Nola Houston. (RB)

4206: UYOQ, TKH Rostov at 2325 in SITOR-A w/log-In, 55246 UYOQ after sending selcall KYVV (UGC, St. Petersburg Radio). (RB)

4271: 8L6S DE 2RC8, both u/i, at 1143 in CW. (TY)

4321: PPO, Olinda, Brazil, at 0435 in CW w/mkr. (RG)

4372: "Giant Killer," USN FACSAC, Virginia Capes, at 0100 in USB wkg OYN re scheduled areas of event V27016, req change from W72A to W72B. (RB)

4425.9: NMC, San Francisco, Calif., USCG w/maritime wx at 0445 in USB. (RG)

4470: YL/EE 3x2 nhrs stn 159x3 then 10 count at 0100 Tuesday in USB. //5046 kHz. (B)

4479: YL/SS in AM at 0417 w/5F grps. New freq and time. (TS)

4509: NE0021 wkg MO0940 in 300-baud packet at 0243. (TS)

4594: YL/GG at 2000 rptng Golf Kilo w/electronic tones til after which YL sent 5F grps for 571. (SM)

4627: "Sooner 26" in USB closing Oklahoma CAP net at 0057. (TS)

4665: At 2045 YL/EE Mossad w/CIO-13B22A14P25R39MII. (SM)

4721: Hershey, Joint Interagency Task Force, Eastern Operations Center, Naval Air Station, Key West, at 0737 in USB wkg 2YM w/link to coordination comms. (RB)

4888: The last 2L YL/GG station is Golf Kilo. All the rest ended in February 1996. The final ones were CD, KW, HK, SB, WL, JW. YL/EE Mike Delta still is active, however. On a Sunday, Golf Kilo was sending 5F grps for 316/73 groups. On following Thursday, it was on 4594 kHz w/5F grps for 316/73 and 856/14. (SM)

5071.6: RFFA, MOD Paris, at 0535 in ARQ-E3 192/425 idling. (RB)

5090.1: U/i stn in CW at 0301 w/647 sign-on. Then Into 5L grps (118). Off w/589 589 113 113. +20db signal. (PS)

5205: Army MARS AAT3TFC wkg AAT3TVW, AAT3TDE and AAA3USA in 300-baud packet at 0438. (TS)

5222: TYE, ASECNA Cotonou BenIn at 0654 w/RYS and ID in RTTY 50/380. Unlisted channel. (PS)

5230: At 1545, Mossad YL rptng VLB14B88. Next day at 1800, VLB sent a msg and at 2030 was sending VLB14D03. (SM)

5315: BJ227, Hangzhou, Peoples Republic of China, in RTTY 75/425 at 1300 w/wx. (B)

5320: EHM5, Guardia Civil, JECOR Albacete, E at 0633 in 100/425 SITOR-A sending selcal and tlc for TYME, JESUBSTRA Madrid; at 0720 TXXX for Jebhema II; and at 0750 w/TYMT for JECOR Toledo. (RB)

5418: U/i sent DDMRG ATT at 0100, then cut nhrs at 0104 A2A mode. Sent SK at 0110. (B)

5440: Speech-inversion scrambling in USB at

0446. (TS)

5547: ATC comms QRM'd by OM/SS on 5546.5 USB. (TS)

5696: CAMSLANT Chesapeake in USB at 1621 wkg Rescue 6030. Group is requesting information if you hoisted PIWs or from fishing vessel, times you hoisted souls aboard, and time persons abandoned ship. At 1629, CAMSLANT wkg November 6 Yankee. Group Key West is requesting if known if vessel submerged or still afloat and any possible danger to mariners. (WC)

5731: XSV6, Tianjin, China, in RTTY w/CQ mkr and RYs at 0910. (TY)

5905: YL/SS in AM at 1105 w/5F grps. Down at 1118. (SW)

6267.5: 3ESE9, M/S Sensation, Carnival Cruise Lines cruiseship, at 0157 in SITOR-A w/tlx to T/SS Seabreeze. (RB)

6303: UKVD, TKH Novokubyshevsk at 2126 in 50/170 RTTY w/RYS and then into crew TGs to UGC, St. Petersburg. (RB)

6316: LSD836, Buenos Aires, Argentina, at 0634 in SITOR-B, w/Lista de trafico (tlc list). (RB)

6318: UFL, Vladivostok, Russia, in SITOR-A w/tlc list at 1039. (TY)

6319: NOJ, Kodiak, Alaska, in CW at 0340 w/mkr. (RG)

6338: CBV, Valparaiso, Chile, in CW at 0342 w/mkr. (RG)

6639.8: Delta 1977 talking to maintenance re cargo door problems at 0505 in USB. (RG)

6640: TWA 840 at 0530 in USB. 75-year-old male on board feeling very weak, uncomfortable and has vomited but stable, using on-board oxygen. 840 gave vital signs to MEDLINK radio opr (doctor) said no abnormal vital signs to warrant diverting but can have medical attn at gate. Destination is Rome, ETA 0900. (WC)

6683: Air Force I w/president on board at 1722 wkg Andrews w/comm cks. At 1826, SAM 201, USAF C-20B tail 85-0201 wkg Andrews w/req for active runways and parking assignment, followed by pp Andrews meteo. Both in USB mode. (RB)

6730: SPAR 67, VIP flight from 58th ALS, Ramstein Air Base, Germany, at 1726 wkg Andrews w/pp LOWDOWN. (RB)

6779: DRDG, FGS U-13 (S-192), German navy attack sub, at 0149 wkg DHJ-59, Wilhelmshaven Naval, w/RTTY coordination tlc. At 2349, DRAV, FGS Karlsruhe (F-212), German navy type-12 frigate, wkg DHJ59, w/QL for RTTY tlc. Both in USB mode. (RB)

6797.3: YL/SS w/7782 150 callup. Scratchy audio. Hrd at 0200. (PS)

6825: Army MARS station AAT4TFL wkg AAA3USA, AAA0USA and AAT4TFC in 300-baud packet at 0236. (TS)

6873.5: IHBA, ITS Basento (A-5356), Italian navy water replenishment tanker, at 0713 in USB wkg ICS, Italian navy La Spezia, w/immediate tlc, mixture EE phonetics/Italian. My first Italian warship. (RB)

6951: OTH radar here w/CW "O" ID at 0259.

(TS)

6953: YL/SS in AM at 0133 rptng Atencion 41852, then stopped. Came back on at 0200 w/same callup and msg. This is a new sked as well as a new callup number. (TS)

6956: Stone Wall (CINCPAC) in USB at 0309 clg Boomer (A6 from Naval Air Station, Moffet, Calif.) w/no reply. Also data burst transmissions on freq. (TS)

6970: YL/EE w/1-0 count and 221 between 1800-1810. After 10 tones, "Count 124" and into 3/2F grps. (SM)

7002: SLHFM "V" at 1200 In CW. (TY)

7039: SLHFM "F" at 1020 in CW. (TY)

7535: SESEF, Norfolk, Va., hrd during month: NREH, USS Hawes (FFG-53), at 1715 re canceling TACAN testing because of distance away. At 1716, NUSA, USS America (CV-66), re HF xmtr No. 5. The America scheduled to be decommissioned in the summer of 1996 and had returned from last deployment. At 1741, NGGD, USS Mississippi (CGN-40), w/HF tests. At 1748, NOTH, USS Halyburton (FFG-40), w/kg SESEF for rdo ck. At 1857, NJFY, USS Platte (AO-186), w/request to go green and ANDVT testing. Primary mode is USB. (RB)

7547: YL/EE rptng 742 for 4 mins then 5F grps X2 at 0200 on Tuesday in AM mode. (B)

7600: YL/EE w/1-0 count and 824 from 1500-1510. After 10 tones, "Count 112" and into 3/2F grps. (SM)

7610: Speech-inversion scrambling in USB at 0240. (TS)

7658: YZD, Belgrade, Yugoslavia, w/TANJUG nx in EE at 2135 in RTTY 50/425. (B)

7784: Air Force Weather Service w/KAWN wx in RTTY 75/850 at 2250. (B)

7959: 9BC23 IRNA Teheran, Iran, at 1520 In RTTY 50b w/nx in EE. (TY)

8010: YL/SS in AM at 0800 rptng Atencion 28926 and into 150-5F grps. New time for this stn. (TS)

8031.5: At 0048 NNN0CEI, USS Camden (AOE-2); NNN0NZN, USS Mount Vernon (LSD-39); and NNN0CYF, USS California (CGN-36), w/kg NNN0GVV for pp tlc in rotation. NAVMARCOMARS in USB. (RB)

8043: OM/RR at 1600 rptng 805 805 805 00000 then off at 1603. (SM)

8085: At 1500 YL/EE w/1-0 count and 078 from "Cynthia" voice At "510," 10 tones, "Count 208" and into 3/2F. Also on 10247 kHz. (SM)

8122: VLRK, HMAS Geraldton (PTF-213) at 0905 in USB w/kg Canberra Control, Australia, req QSY to D5. (RB)

8131: Secure comms (Parkhill) at 0751 in USB, sounded Spanish. QTH unknown. (PS)

8187: U/i w/RYS and numbers In RTTY 50/500 at 2340. (B)

8192: 9MR, Malaysian navy Johor Baharu, Malaysia, in RTTY 50b at 1100 w/RYS. (TY)

8198/8722: WOM, Pennsco, Fla., in USB on Channel 802 at 0247 w/pp to Royal Princess. Later Lady Alice, WTC4765, on freq requesting pp, QSY'd to Channel 810 (8222/8746). (TS)

8207: WOM, Fort Lauderdale, Fla., at 0434 in USB, ship-to-shore telephone call via AT&T Channel 805 HSD. (TS)

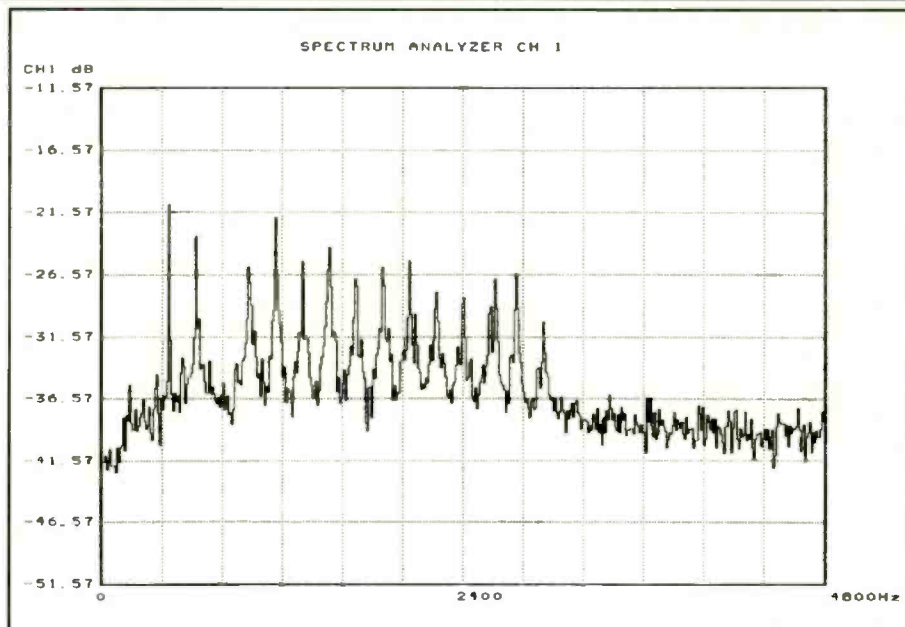
8294: ADMP, USAV five Forks (LCU-2018) at 0422 clg RAIDER, 1097th TRANS CO, Rodman Naval Station, Panama, no Joy. At 0424, WTDF, NOAAAS Townsend Cromwell (R-443) w/kg CAMSPAC Point Reyes, NMC, re medico on board F/V Red October. LATER Rescue 1714, USCG HC-130H, w/kg NMC re on-scene w/vsls re Red October, also NMC w/kg u/i vsl 3EXJ8, which also is on-scene assisting. All in USB. (RB)

8297: AAEF, USAV LTG William B. Bunker (LSV-4) at 0233 in USB w/kg ADMO w/request if they can raise ADMM. This is a Logistics Support Vessel from 1099th Trans Detachment, Fort Eustis, Va. (RB)

8304: LOR, Puerto Belgrano, Argentina naval, at 0640 in RTTY 75/170. Unclassified tlc and 5L grps. (PS)

8368: IAR, Rome, Italy, In CW at 0353 w/call-sign sent over and over, didn't sound like mkr tape. (RG)

8495: SLHFM "F" at 1006 in CW. (TY)



Kevin Tubbs of VT copied this signal on 10415 kHz, USB. He then determined the signal to be a VFT-F8A.

8514: WLO, Mobile, Ala., in TOR-B at 2240 w/gulf wx bcst. (B)

8525.7: WNU33, Slidell, La., in CW at 0355 w/mkr. (RG)

8691: XST, Qingdao, China, in CW at 0508 w/mkr. (TY)

8694: PKM, Bitung, Indonesia, in CW at 0922 w/mkr. (TY)

8705.4: PKC, Palembang, Indonesia, in CW at 0925 w/CQ mkr. (TY)

8827: Honolulu, Hawaii, in USB at 0401 w/wx. (RG)

8942: Hong Kong ATC at 0830 in EE; Manila ATC at 0304 in EE; Singapore ATC at 0355 In EE. All three w/kg various aircraft. (TY)

8971: Ticking signal here at 0412, about 1 per sec but not exact. Also, random lengths of white noise on freq, would start and stop on the ticks. Sig also on next night. (TS)

9032: Aero comms in SS at 0745 in USB. Miami mentioned several times. (PS)

10046: 4XZ, Haifa naval, Israel, w/5L grps at 0335 then VVV DE 4XZ at 0346. CW mode. (B)

10090: Khabarovsk Volmet Russia at 0906 w/wx in EE. (TY)

10121: U/i sent WNNMW AWD at 0100 Tuesday. Then cut numbers in A2A mode. (B)

10215: HZN48, Jeddah Meteo, Saudi Arabia, at 0018 w/wx code in RTTY 100b. (TY)

10247: Every Tuesday at 1500 YL/EE w/1-0 count and "191." At 1510 after 10 tones "Count 215" and into 3/2F. Counting stns can be hrd same day at 1300 on 10529 kHz and at 1400 on 12221 kHz. The 1500 bcst also is on 8085. (SM)

10247.5: 8BY, U/i, at 2142 rptng 958/020/689/097/058/487/311/784. (JJ)

10529: YL/EE w/1-0 count and "457" at 1300. After 10 tones at 1335, YL said "Count 212" and went into 3/2F grps. (SM)

10830: OM/RR at 1330 w/501 501 501 00000. (SM)

11114.5: CMU967, Havana, Cuban naval in CW at 2125. ID followed by "OK? K." (PS)

11139: BPXL, u/i at 2130 in RTTY 75/850, encryption. In 1994, hrd BPXL on 16126.5 kHz, RTTY 50/370. (PS)

11175: Albrook Air Force Base, Panama, (I believe) clg and w/kg numerous planes. When attempted contact ABFV, QSY'd to 15016.8 and 6739 kHz. Hrd him on all freqs, USB at 2005-2025. Extremely active

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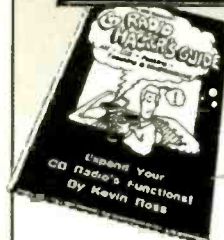
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Air Force channel during day. (WP)

11214: SENTRY 51, USAF E-3 AWACS at 1745 wkg Trenton Military, Ontario, Canada, w/pp to u/i DSN, then IDs as DARKSTAR NOVEMBER, re training scenario. HAMMER 71 is flight of 4 Canadian CF-18s involved. At 1749, BANDSAW INDIA, USAF E-3 from Tinker Air Force Base, wkg Trenton Military w/pp Tinker Mete. At 2121, SENTRY 30, USAF E-3 AWACS, wkg RAYMOND 24 re SatComm down. All USB. (RB)

11411: GXQ, London (Stanbridge), England, at 1700 in RTTY 50/425. (B)

11470: YL/EE at 1511, 3/2F grps. (TY)

11632: RFTJ, FF Dakar, Senegal, at 0330 in ARQ-E3 192/340. Circuit (TJI). Unlisted channel. (PS)

12443.5: U/i in CW sending EE at 20 wpm. Msg was re Navy Tech School compared to civilian colleges. Msg sent in five-minute blocks w/one-minute between blocks. Ran for at least a half-hour or more. Signed down w/BT FINISH. (JJ)

12494: ELRT2, reeler M/V Polar Argentina at 1759 in SITOR-A, w/BBXX w/ obs to Mete. Hamburg, log-In 24783 ELRT. (RB)

12565: EMPK, BATM Kapitlan Buga at 1906 in RTTY 50/170 w/RYS to UTSW, RTMKs Kapitlan Orlikova, and into crew TGs and admn t/c in apparent relay. (RB)

12580.5: KFS, Palo Alto, Calif., in FEC at 2127 w/t/c list. (TS)

12647: LPD, General Pacheco, Argentina, rptng LPD at 0809 in CW. (TY)

12780: D3E, Luanda, Angola, in CW at 2213 w/coded wx. (TS)

13092: WOM, Miami, Fla., w/t/c list and wx on USB using synthesized voice at 2300. (B)

13509: Halifax CGS w/wx FAX. USB at 2013. (SW)

13526: At 1521 SLHFM C and S were xmtng. The S dots were very raspy. (SM)

13531: KAWN at 2203 in RTTY 75b w/poss sunspot data. Class M 01/01/01, Clas X 01/01/01, Proton 01/01/01 adn PCAF, green. Into aviation wx at 2204. (SW)

13536: ZRO3, Pretoria Mete. South Africa, at 1515 in FAX 120/FAX w/good wx chart. (RH)

13542: ZRO3, Pretoria, South Africa, at 1838 in RTTY 75/428, aero wx. (PS)

13563: 3MA22, CNA, Taipei, Taiwan, at 0914 in RTTY 50b w/news in EE. (TY)

13572: RFFXL, FF Beirut, Lebanon, at 1300 in ARQ-E 72/340. CDV. Circuit (XXL). (PS)

13574.2: U/i in RTTY 72/499 at 1513 w/5L grps, unsigned. (RH)

13870: OM/EE at 1215 rptng 942 for five minutes. Then 736 736 101 101 and into 5F grps. Ended w/00000. (SM)

14356: GFL24, Bracknell Mete. United Kingdom, in RTTY 75b at 0940 w/wx code. (TY)

14441.5: NNNOCUQ, USS Frank Cable (AS-40) at 1759 wkg NNNQJHR, QSY 14391.5 for pp t/c. At 2037 NNNOCVL, USS Shreveport (LPD-12) wkg NNNQJHR w/QSY to 14470 for same. At 2207 NNNOCUB, USS Arthur W. Radford (DD-968), wkg NNNQJHR w/QSY 14477 for pp t/c. NAVMAR-CORMARS in USB mode. (RB)

14457: Poss CLP? in RTTY 50/300 at 2205 w/crypto t/c to EMBACUBA Angola. QSY'd to 14433 kHz at 2215, sent RYs then went to CW. (B)

14639: KPL, Vientiane, Laos, at 0910 in RTTY 50b w/news in EE. (TY)

14727: COY851, Cuban allocation, testing at 133Q w/stn on 13863 kHz at various speeds, mostly 110b ASCII. (B)

15642: At 1500 CW stn in DSB sending 364 364 364 1 til 1505 when it went into very rapid CW w/zero sent as letter T. Rptd at 1520 on 14442 kHz. (SM)

15731: (SUNA), Khartoum, Sudan, at 1603 in RTTY 50/220 w/ religious msg in FF followed by freq sked and RYs. // on 19463 kHz much weaker. (PS)

15962: RFLI, FF Fort de France, Martinique, at 1746 in ARQ-E3 192. CDV on Circuit (BFL). (PS)

16220: YL/EE rptng Mike Delta from 1330-1335. Then "Message for 296 296 87 Groups, Attention" and into 5F grps. (SM)

16268: German Embassy, Brazil, at 1400 in ARQ-E 96/124. T/c in GG to DMK, Bonn (Elmshorn),

Germany. (PS)

16802.6: URRD, Sovship RTMS Zvesda at 1315 in RTTY 50/170 w/fish catch report to K'grad. (RH)

16843: JMS, suspected RR MFA stn at 2230 in RTTY 75/525. After call-up "QTA NR 066" sent twice. Then Into 5L grps. At 2237 slg drops, back up 30 seconds later w/mark tone, drops again no return. (PS)

16958: FUJ, French Naval Noumea, New Caledonia, at 0559 in RTTY 75b w/RYS and testing. (TY)

17036.1: UCE, Archangelsk, Russia, at 1155 in RTTY 50/170 w/t/c in RR for several ships. (RH)

17080: UAI, Nakhodka, Russia, at 0825 in RTTY 50b, Cyrillic characters. (TY)

17139.4: U/i at 1135 in RTTY 100/832, crypto, good tune strong sigs. (RH)

18046.7: Gblt t/c in Portuguese. Hrd at 1110 in SITOR-A. Prev logged as MFA Lisbon w/Kinshasa Embassy. (RH)

18223.8: Zaire bank circuit at 1055 in SITOR-A w/t/c in FF. (RH)

18264: XVN48, Hanoi, Vietnam, VNA News in EE at 0610 in RTTY 50b. (TY)

18268.1: U/i, unlisted at 1200 in SITOR-A. Msg of 788 grps (5L grps) ending w/"end of message." (RH)

18275.2: CNM78, MAP Rabat, Morocco, at 1530 in RTTY 50/405. Another u/l freq. //18295.2 kHz. (RH)

18303: U/i in CW at 1520 w/continuous stream of numbers plus odd letter. (RH)

18319.1: OMZ, MFA Prague, at 1110 in RTTY 10/437 w/nx in FF. (RH)

18411.7: MFA Jakarta, Indonesia, at 0812 in FEC 96b w/5L grps. (TY)

18412.1: CLPI, MFA, Havana, Cuba, at 2000 in RTTY 50/443 w/Dipl Circulars (MINIREX) to missions abroad in SS. (PS)

18415: SAB83, Goteborg, Sweden, at 1150 in SITOR-A w/msg "FM MARCL JOHANNESBURG TO MASTER AFRISZTRADER." (RH)

18472.2: U/i at 1155 in RTTY 75/497 w/many 5L grps. (RH)

18597.6: EAE220, MFA Madrid, at 1210 in SITOR-A w/t/c/SS crypto. (RH)

19295: U/i, poss CLPI at 1830 in RTTY 50/425 w/nx/EE re Havana. (B)

19361.2: USAF AWS Omaha, Neb., at 1240 in FAX (120) w/fair chart. (RH)

19337: U/i, unlisted, prob II/diplo from MFA Rome to Amb. Lagos. Hrd at 1218 in ARQ-E 96/17n. (RH)

19860.4: MGJ, Faslane Naval, Scotland, at 1210 in RTTY 75/819 w/availability tape. (KH)

20140.4: YBU, suspected RR MFA stn at 2200 in RTTY 75/525 w/5F grps. (PS)

22381: 9VG84, Singapore, at 0137 in SITOR-B w/t/c list. (TY)

22461: FUJ, French Naval, Noumea, New Caledonia, at 0455 in RTTY 75b w/RYS and testing. (TY)

22474: VIP, Perth, Australia, at 0717 in CW w/CQ mkr. (TY)

22664: FUM, French naval, Papeete, Tahiti, at 0130 in RTTY 75b w/RYS and xmsn. (TY)

This month's contributors are: AH—Al Hemmalin, Rhode Island; B—Bunky, Illinois; RB—Rick Baker, Ohio; PC—Perry Crabill Jr., Virginia; WC—William Cooper, New York; RG—Rodney Grussling, Idaho; RH1—Robert Hall, South Africa; RH2—Russ Hill, Michigan; JJ—Jerry Johnson, Missouri; SM—Simon Mason, England; WP—Walt Petersen, Florida; AR—Allen Renner, Pennsylvania; HS—Hans Schellenbert, Florida; PS—Paul Scalzo, Quebec, Canada; TS—Tom Severt, Kansas; DT—Donald Tomkinson, California; SW—Sue Wilden, Indiana; TY—Takashi Yamaguchi, Japan. Thanks to all.

Handi-Chat

BY TED LISLE, KD4EXK

FOR THE HANDICAPABLE COMMUNICATIONS HOBBYIST

TV Services Make It Easier

Hello again, and welcome. Having trouble coping with the dog days of August? Then you'll be glad to know that three out of four users surveyed report that reading HandiChat is "as refreshing as a mountain stream," and "even better than running through the lawn sprinkler!"

Once again, this month's lead features FCC Chairman Reed E. Hundt on the issue of assistive technology—specifically closed-caption services for hearing impaired, and video description services for visually impaired. Regular readers of this column know about closed captioning. As an established technology, it has been regulated since 1976, when the commission first codified technical standards; while 1991 saw the implementation of the Television Decoder Circuitry Act, which mandated that all sets with screens measuring 13 inches or larger be able to decode closed captions. The video description service, on the other hand, is far less familiar. A brain child of PBS station WGBH in Boston in the late 1980s, it furnishes a special commentary on the secondary audio program (SAP) channel of an MTS-equipped television set (the letters stand for multichannel TV sound) or hi-fi VCR, describing key visual elements, or actions not implied by the dialog. Until now, there has been no attempt to regulate this relatively new process.

Speaking to the Universal Access Projects Forum on Universal Design on Oct. 27, 1995, Hundt called upon Congress to pass legislation providing for both closed captioning and video descriptions. Noting that the House and Senate recently had passed separate bills, he said: "There should be no partisanship when it comes to doing the right thing for Americans with disabilities."

He cited statistics showing that 50 percent of non-primetime network programs were captioned, while only 4 percent of basic cable programs were (for premium cable, the total rose to 33 percent). Accordingly, some sort of guarantee was needed, because "to the extent the commercial networks are captioning on a voluntary basis, there is no assurance that it will continue." Furthermore, 40 percent of the cost of captioning was defrayed by the Department of Education, and given the current fiscal environment, those

funds could be reduced or discontinued without notice.

Hundt also took the occasion to announce the drafting of a notice of inquiry (NOI), to assess the current availability, costs and uses of these two special services in the hope that the responses elicited would aid in expediting the pending legislation, if passed.

The NOI, released on Dec. 1, 1995, sought comments in seven general areas: the public-interest benefits of the two technologies; their current overall availability; how this availability could be affected by any projected technological advances; the cost, combined with current supply and funding; market incentives—primarily the availability of appropriate consumer hardware; what role, if any, should be played by the commission in promoting the services; and if mandatory requirements are deemed necessary, what form should they take.

Discussing these issues during a speech on Dec. 4, 1995, the chairman took his usual emphatic position on equal access. He stated that, given our ever-increasing orientation toward dependence on information, "The FCC may be the... government agency with the greatest ability to help people with disabilities to participate in our society."

Furthermore, equal access was implicit to the American credo of equal opportunity. Stressing our obligation to the young, he emphasized that the message to all children with disabilities must be "this is a country of true equality." Summing it up, he said, "The opportunities of the communications revolution are limitless. There should be no limit on who has these opportunities."

The chairman appears to have grasped the crux of the paradox. Today's whiz-bang VLSI technology has made life easier and more productive for the handicapped, while at the same time such innovations as graphical user interfaces and on-screen menus pose an entirely new set of challenges. (For earlier discussions on this point, see the February and August 1994 installments of HandiChat.) As I said in February 1994, stay tuned and keep that powder dry.

Net Note

Now let's take a peek inside the mailbox. While perusing a copy of the 1995-1996

ARRL Net Directory, Douglas Stingley ran across a net he thought might be of special interest to our readers. The Kansas City Association for the Blind in Missouri runs a weekly traffic net, at 8 p.m. Central Time on Mondays on 147.085 MHz.

The net control is listed as NOIWA. Thanks for the information, Douglas, and for taking the time to drop us a line.

Ham Groups

We heard from John Ormsby, N0PTD, of Fisk, Mo. John is co-founder, along with Pete Green, N8WGE, of WATCH (We Are The Christian Hams), an international, non-denominational, non-profit ministry "dedicated to sharing the Gospel and Christian fellowship through ham radio."

He further notes the formation of a new subsidiary organization, ICAN, or the International Christian Amateur Network, which should be active by the time this column appears. No on-air schedules or frequencies are mentioned, but membership perks include literature, club newsletters and membership lists. Membership is free, and "only postage stamps are accepted as donations." For further information, write to: P.O. Box 33, Kurten, Texas 77862.

Antenna Help

Paul A. Hartman has a question: "Can you suggest someone who can help me hook up my indoor antenna? There must be someone in Long Island, N.Y., who dabbles with shortwave receivers."

Well, Paul, I am sure there is; but, as it happens, I don't live in or near Long Island. Of course, we always list the address for POP'COMM, but several of us live in other parts of the country, and keep in touch with the magazine's office by mail and phone. Much will depend on the nature of the antenna—is it a random wire, an active (usually a tunable preamp with a whip), or some other configuration—and the receiver. You said you had a Panasonic (no model designation) and a Grundig 700. Because I have no hands-on experience with either model, I must restrict myself to generalities.

Many receivers feature either a 50- or 75-ohm coaxial connector, or 300-ohm screw terminals designed to accept ribbon twin-lead. Many Sony portables have a standard 1/8-inch phone jack designed to

(Continued on page 76)

Listening Post

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Asian Station About To Sign On

Remember a couple of years ago when the U.S. government decided it would put a Radio Free Asia on the air to combat communism in Asia? Quite some time has gone by without hearing anything more about it. Indeed, one might have thought that with worries about balancing the budget, and cutbacks in funding for the Voice of America and Radio Free Europe/Radio Liberty, that Radio Free Asia never would see the light of day. How naive. The idea is not only very much alive, it's about to become reality.

Instead of Radio Free Asia, it will be called the Asia Pacific Network and it probably will be on the air quite soon. The station will broadcast in several Asian languages, using VOA transmitters as well. RFA will have its own staff, broadcasting from studios in Washington, D.C. (not from the VOA building). The programming will be mostly news and commentary. The VOA reaches the same target countries in the same languages Radio Free Asia is to use. Which TV network's nightly news show is it that has that "Fleecing of America" feature?

Stand By For St. Helena!

It's been two years since the last special

broadcast from Radio St. Helena was heard on shortwave. Mark your calendar right now for Oct. 27, a Sunday. Radio St. Helena's special broadcast with host Tony Leo will air from 1900 to 2300. There's no reason to think the frequency will be anything but the one they've used in the past: 11092.5 upper sideband. Previous broadcasts have been heard well into the midwestern parts of North America.

If you haven't logged St. Helena yet, here's your chance. Otherwise you may have to wait for another year or even two (assuming they continue at all). Radio St. Helena confirms reception reports with a very nice QSL card. The address is: Radio St. Helena, Broadway House, Jamestown, St. Helena, South Atlantic Ocean. Include an International Reply Coupon for return postage.

Sinful Move

If you do much shortwave listening at all, you probably have noticed the latest shortwave outrage: U.S. religious broadcaster WEWN has parked itself on 9580 in the mornings. That obliterates reception from Radio Australia. Over the years, other broadcasters have pretty much left this frequency alone during our morning hours because it provides the most reliable recep-

tion of Radio Australia. Some years ago, even the VOA got off the frequency when it became aware of the conflict. Hopefully by now this has been resolved. Gary Gagnon is listed as frequency manager for WEWN (address: P.O. Box 100234, Birmingham, AL 35210; or e-mail to 71163.1735@compuserve.com).

Also from the United States, WVHA, rumored to be having trouble making payments on the purchase of the former Herald Broadcasting (Christian Science) station in Maine, says it has a "claim" on some property in Hawaii that would be the site of a proposed second station to broadcast to Asia and the Pacific.

BBC Relay

There's another new BBC relay station in the works. The BBC relay at Masirah Island—off the coast of the Oman—is becoming obsolete and will be closed down in 2001. The BBC will install four 300-kW shortwave and one 600-kW mediumwave transmitters at Al-Ashkarah, on the coast of Oman. The site will be used to target listeners in the Middle East, Indian subcontinent and Central Asia. Don't start tuning for it yet though. It won't be on the air until at least the year 2000.



◀ This nice red, white and dark blue QSL from the Red Cross Broadcasting Service was received recently by Andy Johns in Texas.

▼ This recent HCJB QSL features "the Empanada," called the fast food of Latin America. (Courtesy of Adam Smith)



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CIRCLE 124 ON READER SERVICE CARD

Here And There

- The Australian Tourist Information Service has applied for a low-power short-wave station that would operate in the tropical bands from Australia's east coast. No word on when it might come on the air, but it sounds as though it would be a nice DX target!

- Radio Copan, the Honduran station owned by Radio Miami International, has resumed broadcasting. It's discontinued its 19-meter band frequency, now uses 4760. Check for it during the evening hours.

- All three of the long-awaited 250-kW transmitters in Indonesia are now active. One is being used for the Voice of Indonesia's foreign service on 9525; the other two for the Radio Republik Indonesia domestic service from Jakaria on 9680 and 15130.

- South Africa is in the process of adding four 100-kW transmitters to its Meyerton site. It seems much of the available time on the new units already is being eagerly sought by broadcasters who want to improve their coverage of southern Africa.

- Egypt is to add a new 500-kW transmitter at its Abis site, near Alexandria.

- There may be a Deutsche Welle Ethiopian relay in our future. DW is talking with the Ethiopian government, responding to an offer by their president to lease time to DW on Radio Ethiopia's transmitters.

When Is A Station A Station Or Not A Station?

Michael Yohnicki of London, Ontario, poses that "heavy" question, on which those of us who've thought about it for years are still fumbling with.

Many years ago, when it created its official country list, the North American Shortwave Association also set some "rules" for counting stations. They decided that a radio station isn't a radio station if it doesn't have a transmitter; the transmitter is the fundamental element (or, more correctly, the transmitter site, because some sites have multiple transmitters and it is seldom possible to know which one you are hearing). Transmitters, then, are what the station counting guidelines are based upon. If you and I collect marbles or teacups or matchbook covers or antique cars, we can only count each one once. Ditto transmitters.

Thus, if DW does get relayed by Radio Ethiopia's transmitters, you'd count only one or the other.

It was much easier to deal with such situations 20 years ago when everybody wasn't relaying each other and seemingly dozens of independent programs and program services weren't on the air. The fact that most of these can be QSL'd increases our urge to count them as something.

With all that said, however, the bottom line hasn't changed: SWLing is a personal hobby and no one is going to kick you out of it if you don't follow the rules set by some club. Even people who pay close attention to keeping a count of stations heard and verified still log and QSL broadcasts that don't fit the definition of a station. However, if you are seeing DX awards offered by a club or have your name on a club scoreboard or ranking ladder of DX achievements, then it's only fair to follow the same rules as the others.

Loggings

Your shortwave station loggings are continually welcome! Please list your items by country, leave some cutting room be-



This is the shack of Trevor Fletcher in Edmonton, Alberta, Canada, who says, "Thank goodness for radio. The winters are long here in Alberta.."



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This is a model of the new headquarters for China Radio International, which will open next year in Beijing. The building also will house the Ministry of Radio, Film and Television and the domestic Chinese radio networks.

← One of Radio Australia's QSL cards features the hostesses of Soundabout. (Courtesy of Trevor Fletcher)

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tween each and add your last name and state abbreviation after each. We also welcome shack photos, spare QSL cards, station schedules and pamphlets. Your input always is very much appreciated!

Here are this month's logs. All times are in UTC, which is five hours ahead of EST, i.e. 0000 UTC = 7 p.m. EST. The broadcast language is assumed to be English (EE) unless otherwise indicated by abbreviations such as FF for French, RR for Russian, etc.

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	Religious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel Frequencies

ALBANIA - Radio Tirana, 7270 at 0047 in Albanian, mentioning telephone numbers. (Williams, TX)

ANGOLA - Emissora Provincial da Huila, 4820 in unidentified language with music and ID "Emissora Provincial da Huila." (Jeffery, NY) (In PP most likely.—Ed.)

ANTIGUA - BBC relay, 5975 at 0147. (Williams, TX)

Deutsche Welle relay, 17765 in GG to South America at 1520. (Williams, TX)

ARGENTINA - Radio Nacional, 6060 in SS at 0633. (Miller, WA)

ASCENSION ISLAND - RAI, Italy, via Ascension, on 11765 in II at 0218. (Williams, TX)

BBC relay on 9600 in African program stream at 0427. (Jeffery, NY) 17880 to Central Africa at 1517. (Williams, TX)

AUSTRALIA - Radio Australia, 5995 at 1305. (Northrup, MO) 5995 at 1250, 6050 in CC at 1255. (Williams, TX) 6080 at 1545, 9615 at 1600. (Miller, WA) 9610//11695//11800 at 1500. (Yohnicki, ON)

AUSTRIA - Radio Austria International, 6015, via Canada, at 0530. (Pedraza, OH) 9655 at 2334. (Miller, WA) 13730 at 1330 in GG. (Northrup, MO)

BELGIUM - Radio Vlaanderen International, 13675 at 1335 with news. (Northrup, MO)

BOLIVIA - Radio Santa Cruz, 6135 in SS at 1000. (Pedraza, OH)

BRAZIL - Radiodifusora Maranhao, Sao Luis, 4755 in PP at 0430. (Miller, WA)

Radio Cancao Nova, Cachoeira Paulista, in PP at 0415 on 4825. (Miller, WA)

Radiodifusora Boa Vista, 4875 at 0325 in PP. (Miller, WA)

Radio Clube do Para, Belem, 4885 at 0331 in PP. (Miller, WA)

Radio Nacional Amazonas, 11780 in PP at 2323. (Miller, WA) At 2210. (Pedraza, OH) 0131. (Williams, TX)

Radio Anhanguera, 11830 at 1253 with news in PP. (Williams, TX)

Radio Clube Paranaense, 11936 at 1724 in PP. (Williams, TX)

BULGARIA - Radio Bulgaria, 7334 at 0208 in SS.



INTERNATIONAL AUDIENCE CORRESPONDENCE

Mr Trevor Fletcher

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FAX 0171 257 8258

20/02/1996

Dear Mr Fletcher

Thank you for your recent letter and reception report to the BBC World Service.

We very much appreciate your interest in the BBC World Service, and our engineers are interested in the material listeners send them about their reception conditions, but we regrettably do not have the staff resources to acknowledge every reception report with a QSL.

We are sorry if you find this disappointing, but we hope that you will nonetheless find the enclosed publicity material, of some interest, and that you will continue to enjoy listening to the World Service.

With best wishes,

Yours sincerely

Mariana Edmonds
International Audience Correspondence

We love most everything about the BBC, except for this standard "no QSL" letter—their official line for decades. (Courtesy of Trevor Fletcher)

QRM from CHU. (Williams, TX) 9700 at 0542. (Miller, WA)

CANADA - CHU time station, 7335 at 0209. (Williams, TX)

Radio Japan, via Canada, 11705 at 1457 with news. (Williams, TX)

BBC relay, 5965 at 1245. (Williams, TX)

Radio Canada International, 11940 in SS at 0500. (Pedraza, OH) 15275 at 1937 with Canadian Forces Magazine. (Jeffery, NY)

CFVP, relay CKMX, Calgary, 6030 at 1746. (Miller, WA)

CHINA - China Radio International, 6140 at 1353 in CC, 7405 at 1412 to North America in EE. (Williams, TX) 9690 (via Spain) at 0400 and 11715 (via Mali) at 0150. (Pedraza, OH)

CHILE - Radio Esperanza, Temuco, 6090 in SS at 0646. (Miller, WA)

COLOMBIA - Radio Buenaventura, 4836 in SS at 2236 with what sounded like news. (Jeffery, NY) (Very rarely heard!—Ed.)

Radio Nacional, 4955 in SS at 0435. (Miller, WA) 0200. (Pedraza, OH)

Caracol Colombia, 5075 in SS at 0442. (Miller, WA) 1000 (Pedraza, OH)

La Voz del Llano, Villavicencio, 6110 in SS at 0207. (Miller, WA) 6115 at 1045. (Pedraza, OH) (Nominal 6115.—Ed.)

La Voz del Rio Aruca, 4895 at 1100 in SS. (Pedraza, OH)

COSTA RICA - Adventist World Radio, 5030 at 0437 in SS/EE. (Miller, WA)

Faro del Caribe, 9645 at 0112 in SS. (Williams, TX)

Radio Exterior de Espana relay, 5970 in SS at 0027. (Williams, TX)

Radio For Peace International, 7385 at 0051 in SS. (Williams, TX)

CROATIA - Croatian Radio in unidentified language (Croatian—Ed.) at 1833 on 13830. (Miller, WA)

CUBA - Radio Rebelde, 5026 at 1243 in SS. (Williams, TX)

Radio Havana Cuba, 6070 at 1343 with recipes for drinks with various tropical fruits. (Williams, TX)

11760 in SS at 1305. (Northrup, MO)

CYPRUS - BBC relay, 7325 at 1410 in AA. (Williams, TX)

CZECH REPUBLIC - Radio Prague, 7345 at 0211 in SS. (Williams, TX)

DENMARK - Radio Denmark, via Norway, 5965

at 0608 in DD. (Miller, WA) 9480 at 2030-2055 in DD, then monthly magazine program in EE. (Paszkiwicz, WI) 9595 at 1428 in DD. (Williams, TX)

ECUADOR - Radio Buen Pastor, presumed, 4830 in SS at 0301. (Miller, WA) 2334 in SS with ID and music. (Jeffery, NY)

Radio Quito, 4920 at 0434 in SS. (Miller, WA) 0500. (Pedraza, OH)

Radio Jesus del Gran Poder, presumed, 5050 at 1328 in SS. (Williams, TX)

HCJB, 15140 at 2300 in SS. (Pedraza, OH) 0225 in EE. (Williams, TX)

EGYPT - Radio Cairo, 9900 in EE at 2332. (Miller, WA)

ENGLAND - BBC, 5875//6175 at 0516. (Miller, WA) 7325 at 0050 with news of England and Wales. (Williams, TX)

FINLAND - Radio Finland, 11735 at 1255 in EE, 1310 in Finnish. (Northrup, MO)

FRANCE - Radio France International, 9790 at 0125. (Williams, TX)

FRENCH GUIANA - Radio France International relay, 5920 in SS at 0512. (Miller, WA) 13640 in SS at 1310. (Northrup, MO) 17575 // 17860 at 1515. (Williams, TX) 17630 in PP at 2238. (Pedraza, OH) Swiss Radio International relay, 9905 at 0128 ending *Newsnet* program. (Williams, TX)

Radio Japan relay, 11895 at 0219 in JJ. (Williams, TX)

China Radio International relay, 13685 at 0230 in SS. (Williams, TX)

GABON - Africa Number One, 9580 at 2117 in FF. (Miller, WA)

GERMANY - Bayerischer Rundfunk, 6085 at 2200 to 2300 in GG with music. ID. (Yohnicki, ON) Deutsche Welle, 9650 in GG at 1433. (Williams, TX) 11795 in GG at 2353. (Miller, WA)

GREECE - Voice of America relay, 5965 at 0440 in AA. (Jeffery, NY)

Voice of Greece, 7448 at 2300. (Pedraza, OH) 9420 in Greek at 1417. (Williams, TX) 1530. (Miller, WA)

GUAM - Trans World Radio/KTWR, 9430 at 1420 to Southeast Asia in unidentified language. (Williams, TX)

GUATEMALA - AWR/Union Radio, 5981 at 1248 in SS with ID "La Voz de Centroamerica." Religious music. (Williams, TX)

Radio Maya de Barillas. Huehuetenango on 3325 with SS at 0302. (Miller, WA)

Radio Tezulutlan, 4836 at 1324 with marimbas and chorus. SS. (Williams, TX)

Radio K'ekchi, 4845 in SS at 1327. (Williams, TX)

HAWAII - KWHR, 9930 in CC at 1453. (Williams, TX)

HONDURAS - Radio Internacional, San Pedro, 4930 in SS at 0445. (Pedraza, OH)

La Voz Evangelica, 4820 in SS at 1240. (Williams, TX) 0259 in SS with EE ID. (Miller, WA)

HONG KONG - BBC relay, 5990 at 1333. (Williams, TX)

HUNGARY - Radio Budapest, 7220 at 0045 in Hungarian. (Williams, TX)

IRELAND - Irish Overseas Broadcasting Co., via WWCN (USA), 12160 at 2100-2130. (Yohnicki, ON)

ISRAEL - 9435 at 1606, unidentified language. (Miller, WA)

ITALY - RAI, 11800 in II at 2350. (Miller, WA) 15245 in II at 1839 with ID. (Jeffery, NY)

JAPAN - Radio Tampa, 6055 at 1252 in JJ. (Williams, TX)

Radio Japan, 6150 in JJ at 1756. (Miller, WA) 9535 at 1715 with language lesson. (Williams, TX) 11895 in SS at 0335. (Pedraza, OH)

KAZAKHSTAN - Kazakh Radio, 5035 at 0507 in unidentified language and music. (Jeffery, NY)

LIBYA - Radio Jamahiriya, 15235//15415 at 1600 with AA talk, ID. (Yohnicki, ON) 15435 at 1513 in AA. (Williams, TX)

MADAGASCAR - Radio Netherlands relay, 9895 at 1453. (Williams, TX)

MALAYSIA - Radio Malaysia, Sib, 6050 in unidentified language at 1548. (Miller, WA)

Voice of Malaysia, 6100 at 1346 in unidentified language. (Williams, TX)

MALI - China Radio International relay, 9710 at 0123 in CC. (Williams, TX)

MAURITANIA - Radio Mauritania, 4845 in AA, with Mideast music at 2247. (Jeffery, NY)

MEXICO - Radio Educacion, 6185 in SS at 0157. (Williams, TX) 0527. (Miller, WA) 0815. (Pedraza, OH) Radio Mexico International, 9705, in SS at 1445. (Williams, TX)

Radio Mil, 6010 in SS at 2335. (Miller, WA)

MOROCCO - RTV Marocaine, 15345 in AA at 1510. (Williams, TX)

Radio Medi Un, 9575 at 0506 in AA with Mideast music. (Jeffery, NY)

NETHERLANDS - Radio Netherlands, 6020 in DD at 0140. (Williams, TX)

NEW ZEALAND - Radio New Zealand, 9700 at 0800 with news, *Pacific Media Workshop* and headlines. (Pedraza, ON)

NORTHERN MARIANAS - Far East Broadcasting/KFBS, 5810 in unidentified language at 1550. (Miller, WA) 9495 in CC at 1422, also 9670 in unidentified language at 1437. (Williams, TX)

NORWAY - Radio Norway International, 5910 in NN at 0024. (Williams, TX) 11840 at 1305 in NN. (Northrup, MO)

PALU - KFBS, Koror, 9965 in unidentified language at 1855. (Miller, WA)

PARAGUAY - Radio Nacional, 9735 in SS at 0013. (Miller, WA) 0110. (Williams, TX) 0900. (Pedraza, OH)

PERU - Radio Madre de Dios, 4950 in SS at 0018. (Jeffery, NY)

Radio Cora, 4914 in SS at 0416. (Miller, WA)

Radio Atlantida, Iquitos, 4790 in SS at 1015. (Pedraza, OH)

PHILIPPINES - VOA relay, 6110 at 1349. (Williams, TX)

FEBC, 9400 in CC at 1414. (Williams, TX) 2228 in SS. (Miller, WA)

Radio Veritas Asia, 9520 at 1425 in unidentified language. Also 11715 at 1458 with EE ID at 1459. (Williams, TX)

POLAND - Polish Radio, 6135 at 1350 in Polish, but with some EE. Also 7270 in RR at 1408. (Williams, TX) 11815 in SS at 2330. (Pedraza, OH)

PORTUGAL - Deutsche Welle relay, 9670 at 0119. (Williams, TX)

Radio Free Europe/Radio Liberty, 15370 at 1511 with symphonic music. (Williams, TX)

Radio Portugal International, 9569 at 0007. (Williams, TX)

QATAR - Qatar Broadcasting Service, 11750 at 1412 in AA with Mideast music. Soon faded. (Jeffery, NY)

ROMANIA - Radio Romania International, 9570 at 0007 in SS. QRM from Portugal. (Williams, TX)

RUSSIA - Voice of Russia, 7105 at 0000 with news. (Pedraza, OH)

Golos Rossii, Vladivostok, 12000 at 0235 in RR. (Williams, TX)

SAUDI ARABIA - BSKSA, tentative, 9555 at 1802 in AA. (Miller, WA)

SEYCHELLES - Far East Broadcasting Association, 9810 at 1857. (Miller, WA)

SINGAPORE - Radio Singapore/Radio One in EE at 1530 at 6155. (Miller, WA) Radio Corp. of Singapore, 7250 in unidentified language at 1406. (Williams, TX)

BBC relay, 6195 at 1359 with ID, IS, time pips and news. (Williams, TX)

SOUTH AFRICA - Channel Africa, 15240 at 1600 with news, comment, markets, music. (Wallesen, IL)

SPAIN - Radio Exterior de Espana, 11815 at 2225 in SS. (Pedraza, OH) 1510 in SS at 1507. (Williams, TX)

SUDAN - Republic of Sudan Radio, 7200 at 0519 in AA, female, then male announcer and Mideast music. (Jeffery, NY)

SURINAM - Radio Apintie, 4991 at 0346 in unidentified language.

Brief "Radio Apintie" ID at 0358. (Jeffery, NY)

SWAZILAND - Trans World Radio, 4760 at 0301 with hand bells. (Miller, WA) 4775 at 0359 with IS, ID "This is Trans World Radio, Swaziland" and into GG. (Jeffery, NY)

SWEDEN - Radio Sweden, 11650 at 1456 with news in EE. (Williams, TX)

SWITZERLAND - Swiss Radio International,

1207 at 1506 to East and Central Asia. (Williams, TX) 13635 at 1315. (Northrup, MO)

TAIWAN - Voice of Free China, 5950 via WYFR, at 0600. (Pedraza, OH)

Central Broadcasting System, 6180 in CC at 1356. (Williams, TX)

TURKEY - Voice of Turkey, 9445 at 0011 in TT with Mideast music. (Williams, TX)

UKRAINE - Radio Ukraine International, 4820 at 2337 in Ukrainian, male announcer and music. (Jeffery, NY)

VATICAN - Vatican Radio, 7305 in SS at 0206. (Williams, TX) 9940 at 1531. (Miller, WA)

VENEZUELA - Radio Tachira, 4830, in SS at 0230. (Pedraza, OH) 0344 with a speech. (Jeffery, NY)

Ecos del Torbes, 4980, in SS at 0313. (Miller, WA)

YUGOSLAVIA - Radio Yugoslavia, 7115 at 0041 in Slavic language. (Williams, TX) 0105 in EE. (Pedraza, OH)

And there ends our story for this month. A mighty roar of approval to the following folks who provided the logs this month: Michael Yohnicki, London, Ontario; Steve Williams, Corpus Christi, Texas; Miguel A. Pedraza, Springfield, Ohio; Michael J. Miller, Issaquah, Wash.; Mark A. Northrup, Gladstone, Mo.; Elmer J. Wallesen, LaGrange Park, Ill.; Dave Jeffery, Niagara Falls, N.Y., and Sheryl Paszkiewicz, Manitowoc, Wis. Thanks to each of you! Until next month, good listening! ■

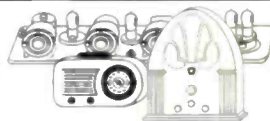
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CB Scene

BY JOCK ELLIOT, SSB-734

27 MHz COMMUNICATIONS ACTIVITIES

CBERS in Lincoln County, Ky.

Ron Goodpastor of Lincoln County, Ky., was a man with a mission and a problem.

He's the Amateur Radio Emergency Services (ARES) coordinator for the county. His mission: to bring amateur radio services into play when an emergency strikes, when Skywarn needs to be activated for a weather emergency, or anytime when extra communications would be helpful to the county citizens. This kind of help is especially important in Lincoln County, which is a rural county. There are no four-lane highways in all of the area, and much of its weather activity cannot be seen on weather radar. As a result, the extra eyes and ears of folks with radios are invaluable when disaster strikes.

But Goodpastor's problem was even more daunting: There are only seven licensed amateur radio operators in all of Lincoln County. That's not nearly enough to provide significant coverage in an emergency. Goodpastor was puzzled over how to solve the problem when he read an article by your humble columnist that appeared in *QST*, a ham radio magazine. In it, I described how the Tri-County network in the Albany-Schenectady-Troy area of New York was handling nearly 4,000 traffic-related incidents with a mixed network of licensed hams and CBers.

"When I read that," Goodpastor says, "the light bulb went on. I decided we'd see whether CBers wanted to help out." Goodpastor's own earliest radio roots go back to citizens band radio. His dad brought home the family's first CB radio in 1973. In 1974, he met the lady who was to become his wife through CB radio.

Knowing that hams and CBers could work together, Goodpastor publicized the idea and held an organizational on-the-air net one night. "We had 128 check-ins on that first night," he says with a grin, "so we knew the interest was there."

Of course, Goodpastor wanted to make sure that only CBers who were genuinely interested in providing emergency communications would participate. "So we established some rules and regulations, drafted a memorandum of understanding that participants would have to sign, performed some screening on the initial applicants, and established a trial period that they must go through before full membership," Goodpastor says.

The group was named Citizens Band



Trevor Fletcher took this photograph of Wes Simpson at DX Communications in Martensville, Saskatchewan.

Emergency Radio Service, or CBERS for short. Every member gets a handsome membership certificate and is assigned a unique identifier number.

The group conducts weekly training networks on Channel 15, but when the group

is involved in an actual emergency situation, such as activation of the Skywarn weather-spotting network, they operate on Channel 9. When an emergency strikes, there is also a phone-tree activation system.

At the time of this writing, there are 37



Trevor Fletcher captured this truckers cafe in Edmonton, Alberta. CB is spoken here.

CBERS members, four of whom also hold amateur radio licenses. "Everybody gets along tremendously," Goodpastor says. "There is no distinction between the two groups. Instead, there is a genuine feeling that we are all in it together." The camaraderie between the CBers and hams in Lincoln County is so great that on Field Day, CBers and hams operate side by side, much to the shock of hams in adjacent counties.

But the real worth of the Lincoln County network was demonstrated in January. A blizzard clobbered the county, leaving people in need of food, water and medicine. "The network operated 24 hours a day for four days straight," Goodpastor says. "They did a tremendous job, and we couldn't possibly have done it without the participation of the CBers."

Book Reveals CB Secrets

A new book has been published by CRB Research Books Inc., the folks who brought us that CB classic, *Tomcat's Big CB Handbook*. The new book is *CB Modification Secrets* by Kevin Ross, author of *The CB Radio Hacker's Guide*.

CB Modification Secrets shows how to expand, enhance and add to the usefulness of current and recent AM and SSB equipment. Simple instructions, including large clear pictorials, are geared to the average hobbyist using readily available tools and equipment. Tech tips make everything as straightforward as possible. You don't need a doctorate in electrical engineering to attempt some of these modifications.

Enhancements include things such as frequency expansion, SSB clarifier and voice-lock mods, VOX, VFO, anti-theft

transmitter disabler, IF gain control, mic sensitivity control, switch to change "Instant Channel 9" to "Instant Channel 19," roger beep, receive preamp, channel display auto dimmer and shut-off, plus much more in this 206-page handbook.

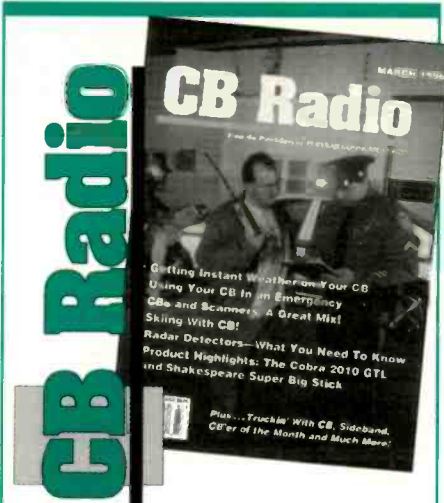
Some mods are designated for specific radios. Others are virtually generic and, to the extent that these models are modifiable, are applicable to more than 200 radios from Cobra, Courier, GE, Midland, RadioShack, SBE, Uniden and Wards. I've cruised through this book, and it's a dandy. I highly recommend it for any serious CBER's bookshelf.

You can order *CB Modification Secrets* from CRB Research Books Inc., P.O. Box 56, Commack, NY 11725-0056 for \$21.95, plus \$5 shipping and handling (\$6 to Canada; New York state residents add \$2.22 tax.) Visa/MasterCard accepted. Call (800) 656-0056 or (516) 543-9169.

Cornbinder Finds Shop

Trevor Fletcher from Edmonton, Alberta, Canada, also known as Cornbinder, is a frequent contributor to this column. As he puts it, "I travel a fair bit with my job," and he makes a hobby out of tracking down CB-related locations. Among his recent finds: a pair of Big 10-4 Cafes—one in Edmonton, the other on the Yellowhead Trail, Highway 16.

Fifteen minutes north of Saskatoon, Saskatchewan, in the tiny burg of Martensville (population 600), Cornbinder found DX Communications, a CB shop located in the basement of Wes and Lorna Simpson's place. The shop is no bigger than a bedroom, but it's packed with new CB radios,



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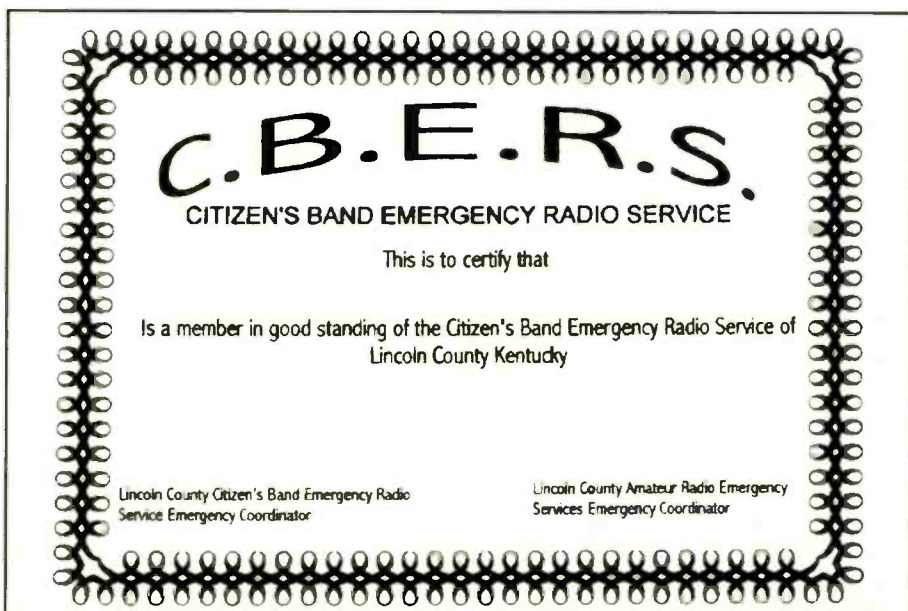
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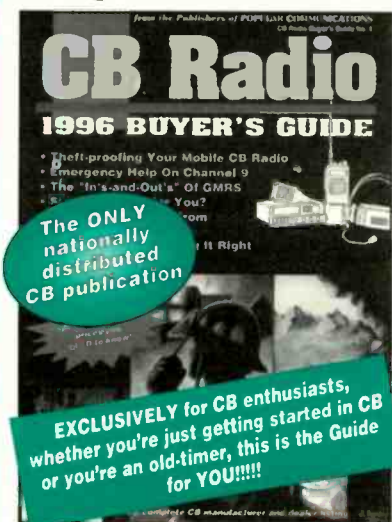
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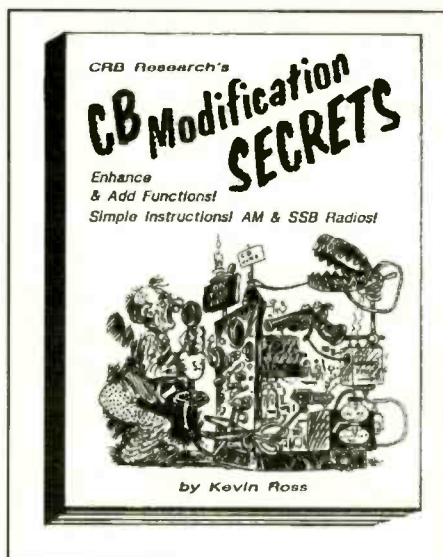
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mics, antennas, and other goodies. What a find, Trevor! It seems to me that DX Communications is definitely worth a visit.

Trevor also asked, "Are you going to stop CB Scene because of the new CB Radio magazine? Let's hope not." Well, thanks for the vote of confidence. The short answer is definitely not; CB Scene will continue as a part of POP'COMM. Personally, I see our sister publication, the new CB Radio magazine, and CB Scene as being complementary to each other; they're both about the same subject, CBing, but approach it from slightly different angles. Incidentally, I was asked to write a column for the new magazine, but I simply don't have the time to do so. Many of the writers for CB Radio are my friends, and I wish them the best of luck.

Roger Beeps, Again

I got a very nice, intelligent and well-written letter from Randy Waters of Vancouver, Wash., defending roger beeps. Randy created his own roger beeps as a CBER and had a lot of fun doing so. Now, as a ham, he still can see the value in a tone or other signal that indicates "end of transmission."

He adds, "...you seemed to be a bit biased against these kinds of noises on CB radio. The power of the media always prevails to create the heroes and the bad guys, and you could have inadvertently dissuaded any potential writers from responding for fear of being ridiculed."

He also says, "In this writer's opinion, CB radio is for entertainment, which would explain echo chambers. If safety communications would be the intended use for a person with a CB, then keep it on Channel 9 or at least off the noisy channels; better yet, go cellular. If an individual wants to get serious, get a ham license."

To respond, first I would agree that there are cases in which an end of transmission beep can prove useful. The problem with roger beeps arises mainly from their intensity. When a roger beep is much louder than the signal that it accompanies, it can be a significant source of adjacent channel interference when the same operator's carrier and voice signal are not.

For example, in my area, there are Cbers on Channel 13 whose roger beeps routinely wipe out communications on Channel 9, yet their voice and carrier signals can be squelched out at a much lower level. If their end of transmission beeps were turned down by about 50 percent, I think the problem would largely go away. So, to use an analogy, if I want to have a party at my house, that's fine. If, however, I want to play my stereo so loud that it keeps you up in the middle of the night, then I've overstepped my bounds. In my view, overly loud roger beeps step on the rights of Cbers using adjacent channels.

In addition, I would agree that one purpose of CB is entertainment, but that is not the only purpose. It is also intended to be a useful communications tool. Two million to three million CB radios are sold each year in this country (total installed base, 45 million to 50 million), compared with 600,000 licensed amateur radio operators. The Cbers have the numbers, and, as the folks in Lincoln County, Ky., have ably demonstrated, CB can really work for people. In my opinion, if you want to "get serious" about helping people with radio, start with CB. As for cellular phones, they're nice, but many people can't afford the cost, and there is no reasonable way of broadcasting an emergency alert as there is with CB and ham radio.

Finally, and most importantly, one of the very best things about this column—perhaps the best thing—is the feedback from readers. I read every card and letter. Occasionally, I may disagree with a person's ideas or with their request, but you can write to me and say what you want, without fear of being ridiculed. Randy, my warmest thanks for your letter.

New Firefly Antennas

Firestik Antenna Co., well-known for its heavy-duty fiberglass antennas, has come out with a new line of lightweight Firefly CB antennas. Available in 3-foot and 4-foot versions, the Firefly models are more than 40 percent lighter than the heavy-duty Firestik II models and feature the same high-efficiency coil design and bare-hands tunable tip. For more information, call Firestik at (602) 273-7151.

Well, that's it until next time. Thanks for those cards and letter—and shack photos! Please keep them coming to me here at POP'COMM.

Washington Pulse

FCC ACTIONS AFFECTING COMMUNICATIONS

New Experimental Stations

The Federal Communications Commission has granted the following experimental licenses:

KE2XCZ, Detection Systems Inc. Fixed and mobile in continental United States. Operate on 310.050 and 304 MHz to develop Part 15 transmitters for personal safety on college campuses.

KE2XBB, University of Maine. Mobile in Gulf of Maine. Operate on 401.806 MHz (GOES satellite) for collection of data related to ocean current research.

KE2XCJ, Microwave Data Systems. Fixed in Rochester, N.Y. Operate on 902-928, 2400-2483.5 and 5725-5850 MHz to develop spread-spectrum radios.

KE2XZE, Brigham Young University. Mobile in New Mexico, Utah and Wyoming. Operate on 923.250 MHz for transmitting video from air to ground for research purposes.

KA2XUN, Loral Corp. Fixed in Chicopee, Mass. Operate on 1030 MHz, 1090 MHz, 2715 MHz, 2785 MHz and 2835 MHz.

KA2XPF, Texas Instruments Inc. Fixed in McKinney, Texas. Operation in selected bands between 1427 and 40000 MHz to evaluate performance of prototype microwave antennas.

KC2XAO, Tampa Electric Co. Fixed and mobile nationwide in United States. Use 1626.5-1646.5 MHz, INMARSAT-B, for emergency communications.

KC2XJO, Toko America Inc. Mobile nationwide in United States. Use 1626.5-1646.5 MHz, INMARSAT, for demonstrations.

KA2XCA, AT&T Corp. Fixed and mobile in continental United States, Alaska and Hawaii. Operate two INMARSAT-M terminals on 1626.5-1660.5 MHz for emergency communications when normal means of communications are disrupted.

KA2XZJ, Mid-City Machine Corp. Mobile nationwide in United States. Use 1626.5-1660.5 MHz, INMARSAT, for tests.

KB2XDL, Mobile Telesystems Inc. Mobile nationwide in U.S. Use 1626.5-1660.5 MHz, INMARSAT-M, for demonstrations.

KC2XIX, Sensor Systems Inc. Mobile in continental United States. Use 1626.5-1660.5 MHz, INMARSAT-M, for demonstrations.

KA2XBZ, Alascom Inc. Mobile in Alaska, Hawaii, continental United States and international. Operate 12 INMARSAT-M terminals on 1631.5-1660.5 MHz for emergency communications when normal means of communications are disrupted.

KA2XBR, Ameritech Wireless Comm Inc. Fixed and mobile in the Indianapolis and Cleveland areas. Perform field and propagation testing in order to evaluate equipment in the 1850-1910 and 1930-1990 MHz bands.

KA2XBT, Bellsouth Personal Communications Inc. Fixed and mobile in Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee. Perform propagation testing in the 1865-1870, 1885-1910, 1945-1950 and 1965-1990 MHz bands.

KG2XAK, Viasat Inc. Fixed in Acton, Mass. Withheld from public inspection.

Policy For Handling Interference Complaints

Each year the FCC receives thousands of complaints of interference to televisions, radios, audio systems, telephones and other home electronics equipment. In most instances the FCC cannot resolve the problem because the cause of this interference is the design or construction of these products and not a violation of any FCC rule.

To help consumers deal with these interference problems, basic information concerning interference solutions now is available on the Internet through the FCC Compliance and Information Bureau home page. This basic information includes the CIB Interference Handbook and the CIB Telephone Interference Bulletin. The CIB Interference Handbook includes a list of equipment manufacturers who provide specific assistance with interference problems. The list also is available through the commission's fax-on-demand service at (202) 418-2830. Callers should request document 6904.

Involving dealers and manufacturers in the resolution process should give them knowledge of the problems and provide both the opportunity and incentive to protect their products through customer service.

At the same time, however, it should be emphasized that the Compliance and Information Bureau will continue to take appropriate enforcement action where it has been determined that interference is caused by violations of the Communications Act or the commission's rules or policies.

Eight Years Proposed For Station Licenses

In order to implement new statutory provisions of the Telecommunications Act of 1996, the commission has proposed rules that would extend the license terms for television and radio stations to eight years, with the exception of experimental broadcast station license terms, which would remain one year.

The lengthened license terms would reduce the burden to broadcasters seeking periodic renewal of their licenses, as well as reduce the associated burden on the commission, and eliminate the current difference in license terms between radio and television stations.

The Telecom Act provides that broadcast licenses may be granted for terms "not to exceed" eight years for both television and radio stations, but does not require the commission to use the maximum permissible time. The commission proposed granting broadcast licenses for the maximum term, consistent with past practice. Current commission rules provide five-year license terms for television stations and seven-year license terms for radio stations, the previous statutory maximum terms.

Also consistent with past practice, the commission proposed to continue issuing licenses for experimental broadcast stations for a term of one year. The commission noted that a longer term would not be warranted for this class of station.

The commission also proposed a method to

incorporate license term changes into the existing schedule of renewal cycles without disrupting the synchronization of the process. Broadcast license renewal applications granted after the effective date of a decision in this proceeding would be for a term of eight years, and renewal applications filed as part of the current renewal cycle, and that have been granted only the maximum seven-year license term, would be extended to a term of eight years.

Expanded AM Band Plan Revised

As part of the commission's plan for the overall improvement and revitalization of the AM broadcast band, the FCC has announced the revised allotment plan providing for 87 AM radio stations in the AM expanded band. The expanded band is that spectrum between 1605 and 1705 kHz. The FCC's public notice also announces the revised improvement factors that were used to generate the allotment plan.

On Sept. 1, 1995, the commission rescinded the Oct. 14, 1994, public notice listing stations that were potentially eligible to apply for authorizations associated with specific allotments in the expanded AM band. The commission also rescinded a Dec. 3, 1993, public notice that set forth interference improvement factor rankings of existing AM licensees who had petitioned to migrate to the expanded band.

That order set forth the technical procedures that would be used to generate new improvement ranking factors and a revised allotment plan. Interested parties were afforded a 30-day period to comment on the procedures. The commission has released a memorandum opinion and order, FCC 96-113, "In re Comments in Response to Reconsideration of Implementation of the AM Expanded Band and Allotment Plan," which denies the requests raised in the comments filed in response to the Sept. 6, 1995, order.

After the allotment plan becomes a final commission action, the FCC will issue a further public notice announcing that each licensee that was allotted a frequency, and thus selected for migration to the expanded band, will be afforded a 60-day period in which to file an application for construction permit authority on the allotted channel.

Such licensees also will be notified individually by letter. Applications will be subject to petitions to deny but not to competing applications. Application procedures will be set forth in the further public notice. Licensees selected for migration to the expanded band are reminded that construction of the new facilities cannot commence until issuance by the commission of a construction permit for the allotted frequency.

Minor Mods Sought For Broadcast Stations

The commission has adopted a notice of proposed rulemaking to modify portions of Section 73 and 74 of the rules to permit broadcast stations to implement certain types of minor modifications of their facilities without

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Handi-Chat (from page 65)

accept a special interface cable. One end of the cable plugs into the receiver, while the other accepts the center conductor of a coaxial feed line. Of course, some portables have no standard input for an external antenna. The simplest solution I ever heard about for such a unit was to simply alligator-clip a random wire to the tip of the built-in whip. I got this from Radio Canada International's old *SWL Digest*, so I presume it's reliable.

Overall, getting information on antennas should be no problem. After all, every hobbyist has at least one, and most of them will talk about it at the drop of a hat. I would start by talking to friends who are amateurs or SWLs. Local radio clubs are a good source for information, as are local computer bulletin board services. You mentioned making your purchase from Grove Enterprises, so they also should prove a valuable source of information.

Write In

Well that's it for another installment; it's time to pack the grip and make tracks until October. Remember to keep in touch. Write us at HandiChat, *Popular Communications*, 76 N. Broadway, Hicksville, New York 11801-2909. Until next time, take care, stay well and keep listening. ■

first obtaining a construction permit authorizing the modifications.

The commission's rules generally require that modifications of broadcast licenses and permits may be accomplished only through a two-step process: first, the station files an application for a construction permit, and second, after the facilities are modified, the station files an application for a license for the modified facilities. However, because certain types of minor modifications are unlikely to have any impact on other stations, the requirement of prior review and authorization of the change by the commission staff often involves redundant analysis and unnecessarily delays the implementation of such changes.

Pursuant to a request from the commission, Congress included in the Telecommunications Act of 1996 a specific provision—Section 403(m)—that authorized the commission to allow certain types of minor modifications without the need for a construction permit.

With this new authority, the commission has proposed in the notice of proposed rulemaking that the types of minor license modifications discussed below be permitted without first obtaining a construction permit. In addition, in the notice, the commission explicitly seeks suggestions from the public and the broadcast industry as to additional types of minor modifications that could be effectuated through a one-step licensing process without prior approval of the commission. The notice also proposes some additional changes to relevant rule sections to make clarifications and to conform the rules to existing policy.

The notice proposes that the following types of minor license and permit modifications would be permitted to be implemented without the prior authorization of the commission, provided that the licensee or permittee file a modification of license application, using FCC Form 302, within 10 days of effectuating the change:

- Commercial FM stations would be permitted to increase effective radiated power up to the maximum level for the class of station.
- FM and television stations would be permitted to replace one directional antenna with another.
- FM stations would be permitted to delete contour protection status under Section 73.215 of the rules where the stations they are providing contour protection move to fully spaced locations.
- FM stations would be permitted to use formerly licensed main transmission facilities as auxiliary broadcast facilities.
- FM and television stations would be permitted to change vertically polarized effective radiated power.
- FM and television stations would be permitted to make slight changes in antenna radiation center height.

In addition, the notice proposes that requests for waiver of the main studio location rule be made by letter with supporting documentation rather than by filing a construction permit application; and that commercial stations seeking to change to non-commercial status file a one-step modification of license application rather than a construction permit application followed by a license application. In both of these cases, prior commission approval still would be required before the proposed change could be implemented. In addition, the notice proposes that directional FM stations would be allowed to commence automatic program tests at reduced power upon completion of construction without the prior approval of the commission.

Barrett Steps Down As FCC Commissioner

Andrew Barrett has stepped down from the Federal Communications Commission after serving seven years as an FCC commissioner.

During his tenure at the commission, Barrett was recognized for his role in commission decisions involving personal communications services (PCS), universal service, price caps, equal employment opportunity, cable television rate regulation and broadcast ownership.

"It is with mixed emotions that I am leaving the FCC," Barrett said. "While I am looking forward to the new professional challenges that lie ahead, I have enjoyed serving at the commission and feel fortunate to have done so during this momentous time in telecommunications history.

"Andy's contributions as a member of this commission will be long remembered and long valued," FCC Chairman Reed Hundt said. "He played an active role in all issue areas, encouraging the introduction of competition into communications markets while still recognizing the need for protection of the public interest. Andy's background as a member of the Illinois Commerce Commission provided him with a tremendous base of knowledge from his first days here at the FCC. His awareness and understanding of issues from the state perspective always have ensured that the commission recognized and incorporated those principles into our own decision-making. Andy has become a personal friend and I will continue to seek his advice and guidance on all appropriate matters as he enters the private sector."

Barrett was nominated to the commission by President Bush in 1989.

Policy For Handling Interference Complaints

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Involving dealers and manufacturers in the resolution process should give them knowledge of the problems and provide both the opportunity and incentive to protect their products through customer service.

At the same time, however, it should be emphasized that the Compliance and Information Bureau will continue to take appropriate enforcement action where it has been determined that the interference is caused by violations of the Communications Act or the commission's rules or policies. ■

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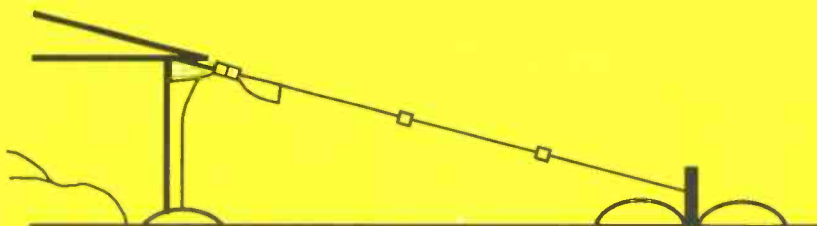
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FEATURES

- High Speed FM Communications Nearfield Receiver sweeps range of 30MHz to 2GHz in less than one second
- Two line character LCD displays Frequency and either All Mode Decoding (CTCSS, DCS, DTMF), LTR-Trunking, Relative Signal Strength, Latitude and Longitude, or FM Deviation with automatic backlight
- NMEA-0183 GPS Interface provides tagging data with location for mapping applications*
- CI-V compliant Serial Data Interface with both TTL and RS232C levels
- Frequency Recording Memory Register logs 500 frequencies with Time, Date, Latitude, and Longitude information
- Real Time Clock/Calendar with battery back-up
- Frequency Lock Out, Manual Skip, and Auto or Manual Hold capability
- Tape Control Output with Tape Recorder Pause control relay and DTMF Encoder for audio data recording
- Rotary Encoder for easy selection of menus for setup
- Internal Speaker, Audio earphone/headphone jack
- Miniature 8-pin DIN Serial Interface port for PC connection
- Relative ten segment Signal Strength Bargraph Mode
- Numerical Deviation Mode with 1-10kHz and 10-100kHz ranges
- Includes Built-in Rapid Charge NiCad Batteries with 8 hour discharge time and a Universal Power Supply

*Software for mapping applications is planned by third party Software Design Companies. Inquire about the availability and specific Companies to contact.

The Xplorer offers All Mode Communications Decoding.

461.725 MHz
CTCSS: 103.5 Hz

CTCSS Mode

461.725 MHz
DCS: 047

DCS Mode

461.725 MHz
DTMF: 8003275912

DTMF Mode

Additional Display Modes:

- Latitude/Longitude Mode
- Signal Strength Mode
- Deviation Mode
- LTR-Trunking Mode



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