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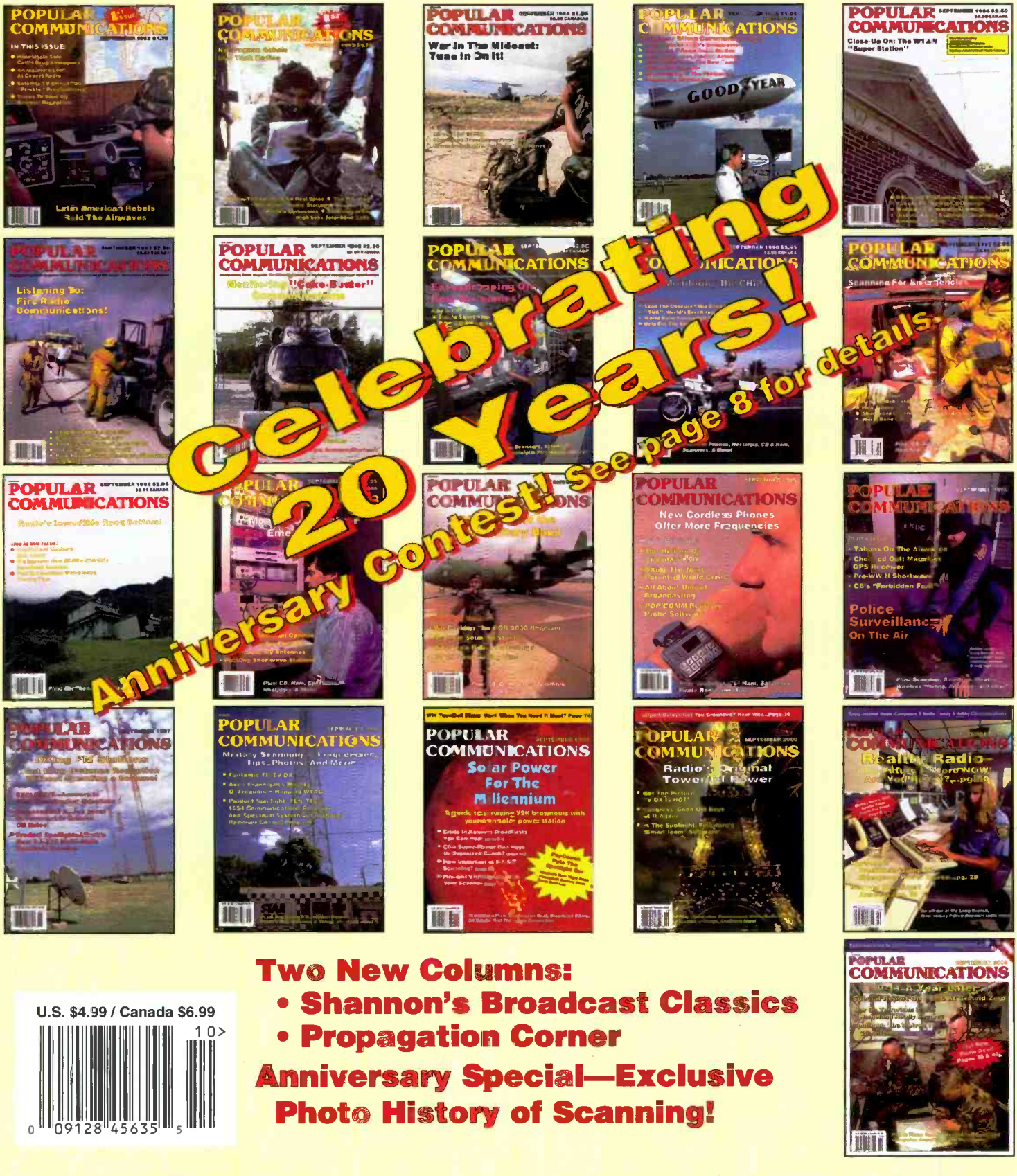
POPULAR COMMUNICATIONS

OCTOBER 2002



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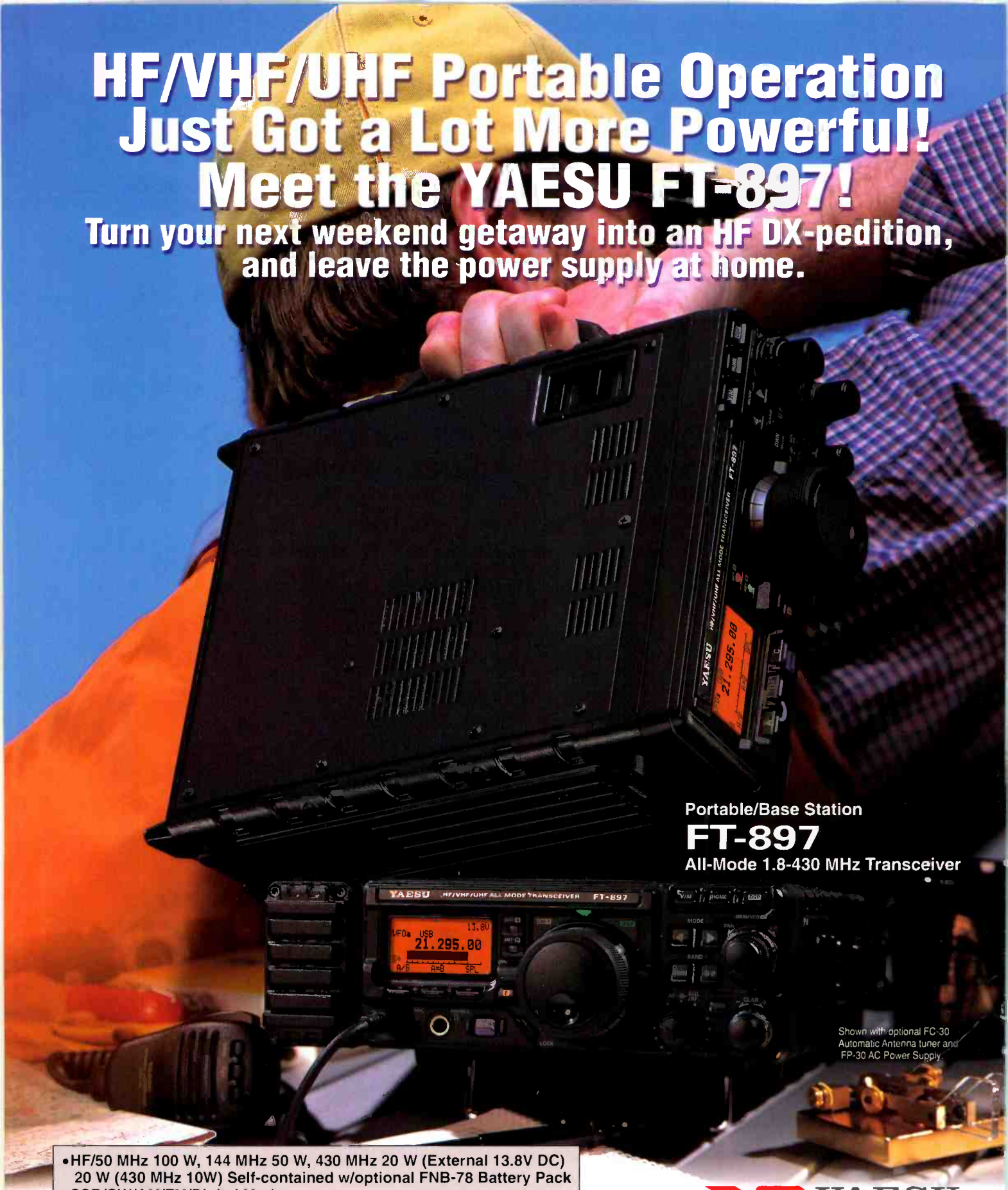

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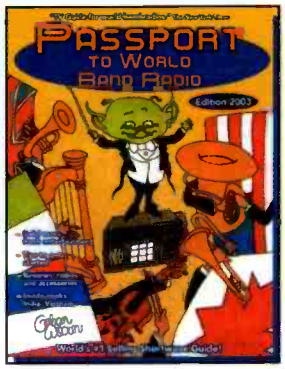

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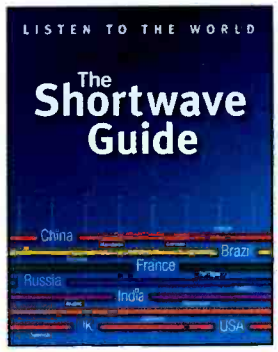

● **The Shortwave Guide- Listen to the World**
By N. Hardyman - WRTH. This guide uses color bar charts printed on smooth, matt paper to provide a simple and effective tool for the shortwave listener and DXer. It is easy to see what is being broadcast in a particular language at any time. Plus addresses for shortwave stations and radio clubs. ©2002 *WRTH Publishing* 208 pages. *#3145* **$17.95**

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- Free 100 page catalog on request.

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Departments

On The Cover

Twenty years of PopComm's covers all the way back to Issue No.1, September 1982. We begin our next 20 years with two new columns and tons of your monitoring logs!

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IC-PCR1000

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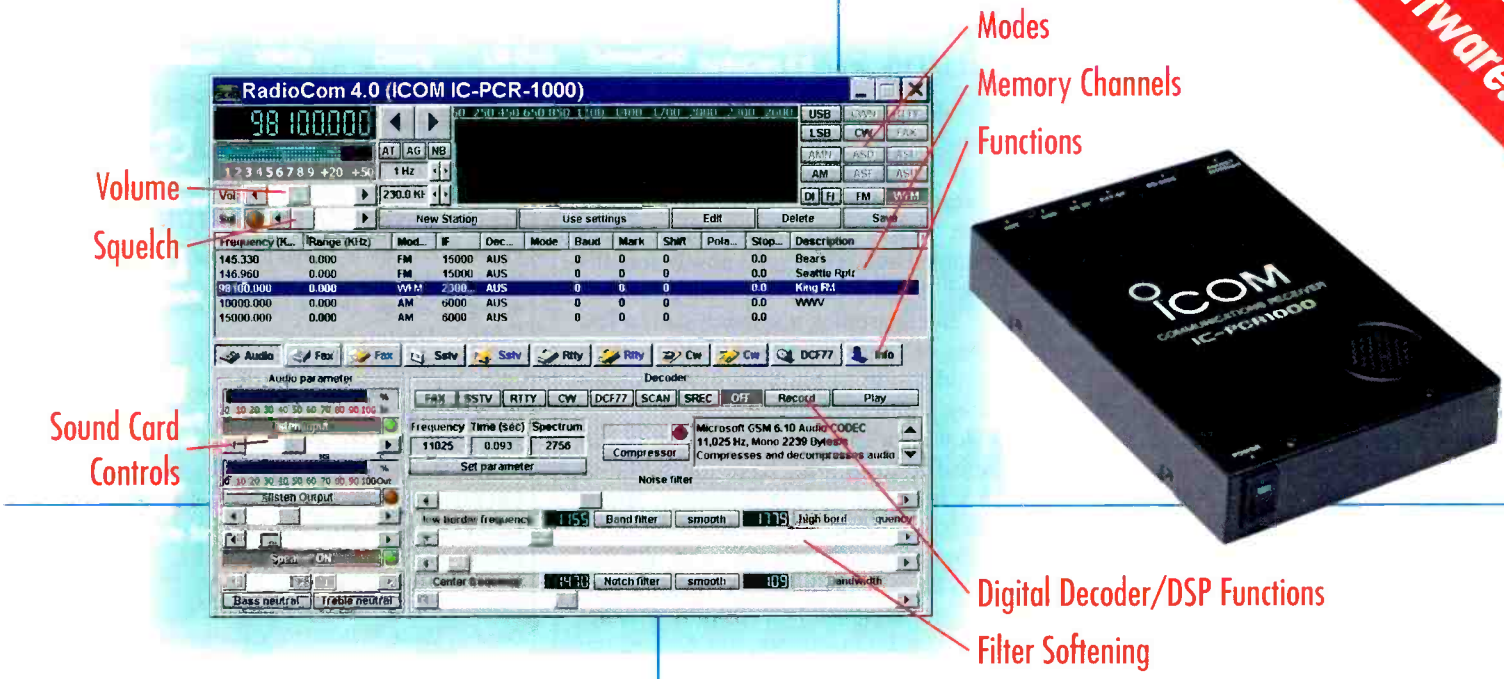
Now with Bonito Software!



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Filter Smoothing for the upper and lower ends of the audio spectrum

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tuning in

by Harold Ort, N2RLL, SSB-596

an editorial

Pop'Comm Turns 20!

This month marks a milestone in the radio hobby world—we're celebrating 20 super years as *your* source for radio news, information, and entertainment, unequalled anywhere else in the hobby! And to recognize the most important part of the radio hobby—YOU—we've put together a special issue. In this month's *Pop'Comm* you'll be treated to a look back at our radio roots in Ken Reiss' "Overheard" column with Part I of a photo essay of our scanning history. Hold on, because in celebration of our 20th we've got *TWO* brand new columns: "**Shannon's Broadcast Classics**" and "**The Propagation Corner**."

"Shannon's Broadcast Classics" is your new monthly nostalgic radio column with **Shannon Huniwell** at the keyboard. Let's face it, even though Alice Brannigan's long hiatus from writing continues, you've been asking for her to return. While that's not in the cards right now, our longtime friend and radio colleague Shannon Huniwell emerged as just the right person for the job. Please welcome her to the *Pop'Comm* team with your cards, letters, and e-mails!

Also new to *Pop'Comm* this month is **Tomas Hood**, NW7US, Mr. Propagation himself. Tomas' new column, appropriately titled "The Propagation Corner," will give you the best up-to-the-minute propagation forecasts to help you get the most out of the radio spectrum. Understanding how radio signals get from here to there can be a pretty complicated subject. Tomas has a way of bringing it all down to earth so we can all understand the phenomenon of radio wave propagation! A hearty welcome to both Shannon and Tomas!

How many of you have that first issue of *Popular Communications*, dated September 1982? I do, and I vividly remember seeing it on the newsstand at Uncle Ben's Rest Home—the somewhat affectionate name Army troops have for Fort Benjamin Harrison, Indiana. A quick run to the Post Exchange in between classes at the old Defense Information School was a must. The smell of coffee, a quickly devoured donut, and newspaper were life's staples. But that Monday morning was different. I wandered to the magazine rack, picked up the paper and over to the left two words grabbed my attention: "***Popular Communications***." There were only three left. The words practically screamed out, "Hey, get it now before it's gone!" Finally radio enthusiasts had not just an electronics magazine with a few pages of radio monitoring information tucked inside, but an *entire* radio monitoring publication!

Now, I'm sure the exhilaration is still there for folks who have the first—or early issues of—*Field & Stream, Sports Illustrated*, and any number of other hobby magazines, but if you're like me, radio has always been my favorite pastime. Remember *S-9*? Tommy Kneitel was the main man there, too. So you can imagine my excitement when I opened the cover of that first *Pop'Comm* and saw his name at the top! I knew this was a must-read, cover to cover!

Now, some 240 issues later we're on to another 20 years of radio excitement! Like a friend once told me about résumés, "It's not always the past that's important, it's where you're going that counts." And where we're going is a new world of radio communications—and yes, much of it can be monitored! I remember when public safety agencies began moving from VHF to UHF; the cry—even from some of the hobby "elite"—was that once they all make the move there'll be nothing to listen to except tow trucks. Then the move to 800 MHz began and we heard the same thing. And as more and more agencies went to trunked systems, trunked scanners became commonplace, and now we've got digital comms, and of course digital scanning.

The "bad" news is the seemingly endless legislation aimed at radio enthusiasts from the likes of Tauzin and the other bureaucrats who have somehow confused the radio spectrum with a bank vault. I make no apologies for comparing these greedy people to the corporate likes of Enron, WorldCom, and others who are all take and no give. Anti-monitoring legislation has no place in American society, period. If you believe otherwise, go stand in the line, take a number, and relinquish whatever freedoms your grandparents

(Continued on page 78)

POPULAR COMMUNICATIONS

EDITORIAL STAFF

Harold Ort, N2RLL, SSB-596, Editor
(Internet e-mail: Popularcom@aol.com)
Tom Kneitel, K2AES/SSB-13, Senior Editor
Edith Lennon, Assistant Editor
Richard S. Moseson, W2VU, Online Coordinator
(Internet e-mail: W2VU@amsat.org)

CONTRIBUTING EDITORS

Peter J. Bertini, K1ZJH, Restoration/Electronics
Bruce Conti, AM/FM Broadcasts
Joseph Cooper, Utility & Computer Assisted Radio
Gerry L. Dexter, Shortwave Broadcast
Alan Dixon, N3HOE/WPUC720 Personal Radio
Bill Hoefer, KBØULJ, Aviation Communications
Shannon Huniwell, Classic Radio
Kirk Kleinschmidt, NTØZ, Amateur Radio
Tomas Hood, NW7US, Propagation
Bill Price, N3AVY, Humor/Communications
Laura Quarantiello, Legislative Affairs
Ken Reiss, Technical/Scanning
Keith Stein, Space Comms
Edward Teach, Pirate and Alternative Radio
Gordon West, WB6NOA, Radio Resources

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Arnold Sposato,N2IQO, Advertising Manager
Emily Leary, Sales Assistant
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Elizabeth Ryan, Art Director
Barbara McGowan, Associate Art Director
Dorothy Kehrwieder, Production Manager
Emily Leary, Assistant Production Manager
Hal Keith, Technical Illustrator
Larry Mulvehill, WB2ZPI, Photographer

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25 Newbridge Road
Hicksville, NY 11801-2953 USA

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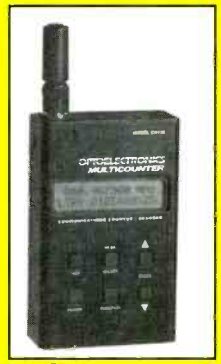

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- 10MHz-1GHz
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- 1000 memories
- Built-In PC Interface
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- 30MHz-2GHz FM
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- 500 memories
- 1000 lockouts
- 10 frequency blocks: Lock Out/In 10 separate ranges
- Speaker Audio
- Built-In PC Interface
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- Control IC PCR1000
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our readers

speak out *letters to the editor*

Each month, we select representative reader letters for our "Our Readers Speak Out" 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 "Our Readers Speak Out." Address letters to: Harold Ort, N2RLL, SSB-596, Editor, Popular Communications, *25 Newbridge Road, Hicksville, NY 11801-2909, or send e-mail via the Internet to <popularcom @aol.com>.*

Tallest Tower?

Dear Editor:

I got my June *Pop'Comm* and read Patrick Griffith on the tale of the tallest tower. Wrong, Patrick. The 560 out of Detroit is really in Monroe, Michigan, south of Monroe. The four towers are at MI 25 and between US 24. They are on the right side of the road. If you are coming up US 24 from Toledo land, the towers on the right side of the road are near a junkyard. 560 is now a religious station.

The station on 560 AM, WLLZ was WHND, an oldies station. The WLLZ callsign was at 98.7 FM in Detroit. The tallest tower I have seen is WLW AM, Cincinnati, Ohio.

Sincerely,
Larry Hay, Toledo, Ohio

Built The Antenna

Dear Editor:

What a great article by Rick Littlefield in the June magazine! I built the antenna and, in a nutshell, it's one heck of a performer. Here in the wilds of North Dakota the winters can be brutal so I've sealed the feedpoint with lots of silicone and quality electrical tape. Thanks, Rick for an excellent article.

Sincerely,
Joe Maas

Problems With Pirates

Dear Editor:

Your magazine's "Pirate & Alternative Radio" column talks about the renegade side of radio and I therefore don't think it's right. Everyone knows that there are pirates and foul-mouthed people out there on the radio, but telling the world about it every month in *Pop'Comm* is not responsible writing.

Yours truly,
Kenny Burns

Dear Kenny,

I suppose all newspapers, magazines and TV media should then immediately shut down and only print the *good* news stories, right? If we were telling folks how to set up a pirate station (it's not rocket science, really) we'd be guilty of something - but certainly not high treason as many of the Internet newsgroups would have you believe. We *report* on pirate radio every month because it's part of the radio landscape and for many people, it's just as entertaining and chase-worthy as international DX. I personally know many hams who, while they deplore illegal radio in any form, pick up *Pop'Comm* specifically to read Teachs' column and break away from the ordinary. Kenny, we report on pirate radio much like other publications would report on news events and community goings-on; we all know the characters are out there - whether or not we agree with their actions - and most folks derive a sense of fun from reading the about the antics and tuning in from time to time. And for those who say that "well, reporting on illegal activity is no different than performing that illegal activity," please call the New York Times and Tom Brokaw insisting they stop reporting the news.

Finding The Time

Dear Editor:

You were very correct in telling readers the new breed of clocks—the radio-controlled clocks that receive the WWVB signal—must be positioned correctly in order to receive the signal. One would think that being radio enthusiasts we'd realize this fact, but unbelievably I understand most of the so-called "technical" questions received by many of these clock manufacturers and dealers have more to do with positioning the clock properly than anything else. And, yes, they're radio receivers; some are indeed better than others. Thanks for a good review of the Atomix clock in the June *Pop'Comm*.

Regards,
Bill Bartholomew, Nebraska

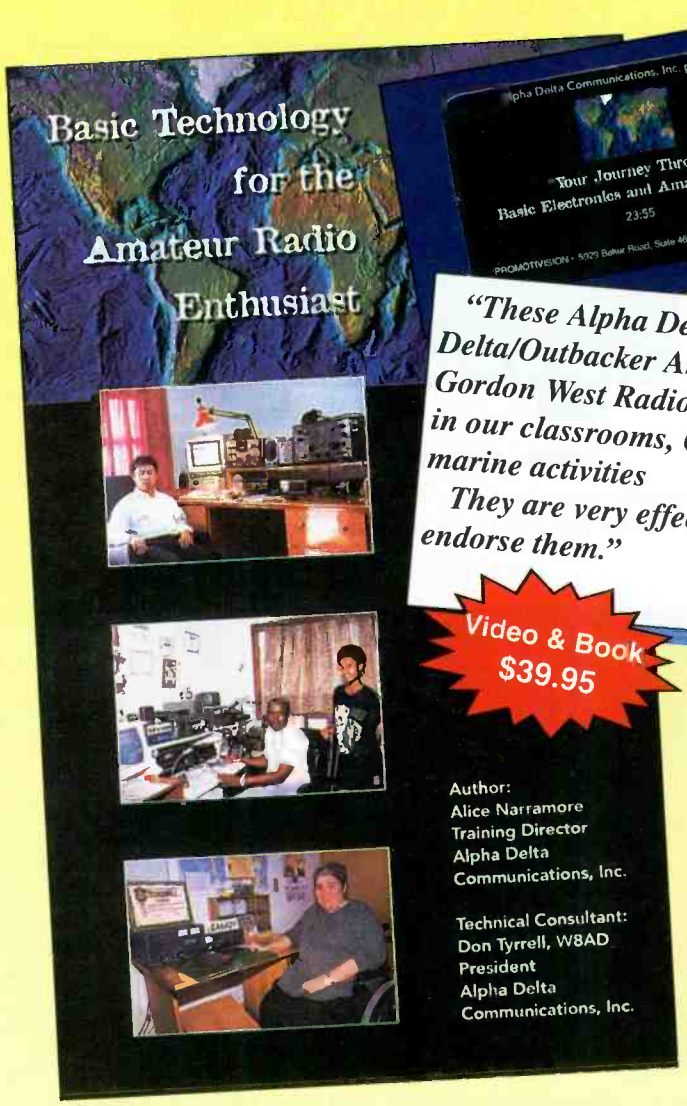
The Phonetics Of It All

Dear Editor:

I enjoyed the "Readers Speak Out" in August titled, "Phonetic Alphabet." Knowing when and where to use phonetics can be very important. I was a member of the Coast Guard Auxiliary and trained to be a radio operator—a "Watchstander." Their business is search and rescue and knowing proper procedure and language is very important. Considering hams as professional radio operators, yes if they are MARS or RACES units, but they are the biggest group of stuffed shirts on earth, heading for extinction if they hadn't made it easier to become one. "0" + "2" may be OK for calling ball and strikes at a baseball game. But remember in phonetics "O"s are in the alphabet and zeros are numbers. Listen to the Coast Guard civilian and military pilots to hear phonetics in use.

Yours truly,
James Ashe

Come With Us On a Fascinating Journey to Explore the Excitement of Amateur Radio and the Mystery of Basic Electronics



The Alpha Delta *video/book* production "Basic Technology for the Amateur Radio Enthusiast" is a simple straightforward program that takes you on this journey, explaining the wonderment of the hobby along the way.

• The ***video*** shows how radio waves are formed and how electrons move to do work, and explains terms like voltage, current, power, resistance and other terms you'll hear relating to the hobby. You will even go with a miniature **"tour guide"** on a walk through a receiver printed circuit board. He will show you how amplification, power supplies, radio frequency and audio amplifiers and other parts of a radio work. He will also explain what "semiconductors" are all about. Neither the video nor the book get into math or formulas--**we've kept it simple**.

• The ***book*** is designed for the non-technical person interested in joining the hobby or the amateur operator who would like to know more about "what's behind the dials", and explains the fascination of the hobby in detail. The book is ideal as a support tool for someone who is being mentored by an "Elmer", and for amateurs involved with **school system programs**. The program was designed by our Training Director who formerly did college course development and was director of training for a major electronics company.

This **video/book program** is not a study guide for a specific license class but bridges the gap between study guides and programs that go into technical detail with formulas, math, circuits and theory. In fact, it is a great support program for license study guides, and the **new FCC License restructuring. Every aspiring or existing amateur should have this wonderful program in his or her collection!**

"Basic Technology for the Amateur Radio Enthusiast" video & book $39.95

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Our 20th Anniversary Contest With Super Prizes!

Before we ask the questions, you'd probably like to know the prizes. Our **Grand Prize** is a brand new **AOR AR-8600 Mark II** and **Ten-Tec RX-320 PC Radio.** The AR-8600 Mark II is a superb, great-performing handheld receiver covering 530 kHz to 2040 MHz (less cellular of course). With improved RF sensitivity and a whopping 1,000 memories this is a full-featured receiver you'll be proud to own! Ten-Tec's RX-320 is a so-called "black box" HF receiver covering 100 kHz to 30 MHz. It easily connects to your PC with one serial port.

Like they say, "wait, that's not all" because also *included* in the Grand Prize is an **MFJ Enterprises, Inc.** MFJ-1026 **Deluxe Noise Canceling Signal Enhancer** and MFJ-1704 **Heavy Duty Coax Antenna Switch**. The Grand Prize winner will also receive a two-year gift subscription (or extension) to *Popular Communications*!

Second Prize comes from **C.Crane Company**. The great folks at Crane have donated their superb **CCRadio**—a must-have for all serious radio monitors, especially if you're interested in great broadcast band DX! Again, there's more: Second Prize also includes the **Justice AM Antenna, VersaCorder,** and **FM Transmitter**! We're also including a free one-year gift subscription (or extension) to *Popular Communications*.

Third Prize is from **OptoElectronics, Inc.** of Fort Lauderdale, Florida. It's their new **Digital Scout**, which covers 10 MHz to 2.6 GHz and captures digital and analog frequencies! You can even interface this little gem to a compatible receiver and watch it automatically tune it to the captured frequency. With 1,000 memories and more features than you can imagine, it's a unit that'll make your day!

Fourth Prize is a package of outstanding books from **Universal Radio, Inc.,** in Reynoldsburg, Ohio. Fred Osterman has graciously provided copies of ***Receivers Past & Present*** and ***Buying A Used Shortwave Receiver***. These books are *the* source of information that can't be found anywhere else! And our company, **CQ Communications, Inc.,** is pleased to add a complete set of seven **amateur radio videos** and a book package that includes the new ***Mobile DXer***, ***New Shortwave Propagation Handbook***, and both of our CQ Amateur Radio **calendars**!

So, what do you have to do to see any of these great prizes arrive on your doorstep? It's easy. Below we have a total of 10 questions—all having to do with radio and *Pop'Comm*. All answers can be found in either this (October 2002) issue of *Pop'Comm* or the past 12 months. We'll be randomly drawing **four lucky winners** who've answered ***all 10*** questions correctly. The winners will be announced in our **January 2003** issue, so you've got plenty of time to get your answers in. For this contest we're only accepting mailed entries. Use the entry form provided on page 69, or create your own. Be sure to include your name, address, phone number and indicate how you receive *Pop'Comm* (as a subscriber, purchase off the newsstand or purchase from a dealer). **All entries must be received by Wednesday, October 31, 2002.** Good luck—here are your questions!

GRAND PRIZE-*ALL* Three

Here's AOR's AR-8600 Mark II receiver. This full-featured high-tech radio can be yours!

Tons of great shortwave listening is just a mouse click away with a new Ten-Tec RX-320 receiver.

This Deluxe Noise Canceling Signal Enhancer from MFJ Enterprises, Inc. is a top-notch station accessory and part of our Grand Prize box!

C. Crane's Digital FM Transmitter lets you send a signal from any audio source to any radio easily and without wires.

The VersaCorder from C. Crane records up to four hours on one side of a regular 120-minute cassette tape.

OptoElectronic's new Digital Scout is a state-of-the-art frequency counter—and the only one in the world capable of locking onto digital modulated signals.

1. *Who was the author of "Buying That First Radio" in the January 2002 issue of* Pop'Comm*?*

2. *What's the manufacturer's name and model of the small PC radio in the advertisement on page 13 of the February 2002 issue of* Pop'Comm*?*

3. *In this issue of* Pop'Comm *(October 2002) who is the author of the new "Propagation Corner" column?*

4. *In this issue of* Pop'Comm *(October 2002) which amateur transceiver does writer Alan Dixon recommend as a good VHF/UHF scanner?*

5. *In this issue of* Pop'Comm *(October 2002) writer Ken Reiss' Anniversary Special photo feature shows several scanners and receivers from the past. What was the UHF frequency coverage of the Patrolman 6 receiver?*

6. *In this issue of* Pop'Comm *(October 2002) the "Homeland Security" column lists several common public safety interoperability frequencies. What's the National Law Enforcement Interagency frequency?*

7. *In this issue of* Pop'Comm *(October 2002), writer Gerry Dexter mentions that HCJB's new station in Australia will soon take to the air. What does Gerry report as the target date it will be broadcasting?*

8. *From the April 2002 issue of* Pop'Comm, *what's the nationwide frequency used by most railroads for EOT (End of Train telemetry)?*

9. *According to information found in the May 2002* Pop'Comm, *what AM broadcast station in Detroit was initially news station 8MK?*

10. *According to an article in the July 2002* Pop'Comm, *what small Southeast Asia country uses shortwave relay sites in Russia and Canada?*

PopComm's 20th Anniversary Contest Rules

No purchase necessary to enter or be a winner in the Popular Communications 20th Anniversary Contest. CQ Communications, Inc., guarantees that all prizes will be awarded. Odds of winning depend on the number of entries received. Entries must be received no later than October 31, 2002.

To qualify, send an official entry form or photocopy including your name and full mailing address to: PopComm 20th Anniversary, c/o CQ Communications, Inc., 25 Newbridge Road, Hicksville, NY 11801 USA. CQ Communications, Inc., will not be responsible for lost, late, misdirected, damaged, incomplete, illegible or postage due mail.

The Popular Communications 20th Anniversary Contest is void where prohibited or restricted by national, international, state, local or provincial laws. Employees of CQ Communications, Inc., and their families are not eligible to win. Winners will be randomly selected under the supervision of CQ Communications, Inc., management. All prize winner selections are final and all entry forms become the property of CQ Communications, Inc. Winners will be notified within 30 days of drawing date and may be required to sign an affidavit of eligibility and release. Entry constitutes permission to use winners' names and likenesses without additional compensation.

CQ Communications, Inc., will arrange for or supervise delivery of prizes, but taxes (if any) on all awarded prizes are the sole responsibility of each prize winner. Manufacturers claims, guarantees and warrantees apply. CQ Communications, Inc., makes no claims, guarantees or warrantees with regard to any prize.

A list of winners will be published in Popular Communications, will be posted on the Popular Communications web site <www.popular-communications.com> and will be available in printed form after December 1, 2002, by sending a stamped self-addressed envelope to: Winners, CQ Communications, Inc., 25 Newbridge Road, Hicksville, NY 11801.

A Short History Of Japan's Monitoring Services

Listening To Foreign Broadcasts Is As Important Today As It Was 50 Years Ago!

by Hideharu Torii <torii@inv.co.jp>

Major countries have their own monitoring services to collect, analyze, and report open sources from abroad. In the case of the United States, it is the Foreign Broadcast Information Service, and BBC Monitoring for Britain. And what about Japan?

Their Japanese counterpart is Radiopress Inc. Located on the top floor of a five-story building in Shinjuku Ward, Tokyo, the news agency monitors broadcasts from China, Russia, North Korea, and Vietnam. The agency also intercepts radioteletype transmissions of Pyongyang's Korean Central News Agency and the KPL of Laos. On the rooftop, two log periodic antennas are fixed to receive broadcasts from Pyongyang and Hanoi. Five other doublet antennas are suspended to receive shortwave signals and two dish antennas are installed to catch Chinese and Russian satellite TV broadcasts. Although the building is a five stories, the rooftop commands a fine view because it is situated at the highest level above the sea within Tokyo's 23 wards.

A dish antenna on the rooftop of Radiopress receives TV from a Chinese satellite.

The Agency

The agency has some 50 staff members and some 20 shortwave receivers, mostly Japan Radio's NRD-525 and NRD-535. Three teams for China, North Korea, and Russia are on duty on an around-the-clock basis. The Chinese team monitors the First and the Second programs of China National Radio, China Central Television, and the Japanese-language service of China Radio International, while the Korean unit listens to Korean Central Broadcasting Station, Radio Pyongyang and the Japanese-language service of the Voice of Korea. The Russian desk monitors the Voice of Russia, Radio Russia, Mayak Radio, Sakhalin Radio, and ORT TV. The agency also tunes to BBC and Taiwan's broadcasts when it needs.

The news agency also receives wire services of East European news agencies via Kyodo News.

Radiopress provides news based on monitoring to government ministries and agencies including the Foreign Ministry, major newspapers, TV stations, and foreign media bureaus in Tokyo by FAX.

Radiopress's predecessor — The Foreign Ministry's wartime Radio Office — established in 1946, the agency is a nonprofit corporation supervised by the Foreign Ministry. Like the FBIS and BBC Monitoring, Radiopress traces its antecedents to World War II. Its predecessor is the Radio Office set up in 1941 within the Foreign Ministry's information department. The Foreign Ministry began monitoring of foreign broadcasts with a radio set after the Sino-Japanese War broke out in 1937. A 132-square meter bombproof underground listening room was completed within the ministry's compound shortly after Japan's surprise attack on the Pearl Harbor in 1941. The Radio Office was staffed with some 50 members and had about 20 shortwave receivers, including Hallicrafter-Diversity, Hallicrafter-SX28, Hammarlund-Super Pro, and National HRO. More than 90 percent of foreign broadcasts the unit monitored were English-language transmissions and most of the monitors were Nisei or second-generation Japanese-Americans.

Most of Nisei who worked at the listening post were graduates of Heisikan, an educational institute for Nisei set up by the

Foreign Ministry in 1939. The unit was headed by Sukehide Kabayama, a diplomat and radio amateur, who urged purchase of communications receivers from the United States in 1940 when he was assigned to the department. Following Kabayama's recommendation, Japanese diplomats brought back U.S.-made communications receivers every time they returned home from the U.S.

According to "Propaganda History" written by Norizane Ikeda, the unit monitored BBC, Radio New York, the Voice of America, Radio Australia, the domestic services of the Australian Broadcasting Commission, New Delhi Radio, Karachi Radio, Chungking Radio, Saigon Radio, Ankara Radio, Radio Moscow, Berlin Radio, Leopoldville Radio, Brazzaville Radio, Buenos Aires Radio, and Rio de Janeiro Radio. The Radio Office also listened to the Japanese-language service of the VOA over KGEI. Ikeda, who joined the unit in 1942, moved to the General Staff Office the following year. The unit used U.S.-made Dictaphone recording machines with wax cylinders and published daily "Shortwave News" compiled from monitoring the Cabinet, the Army and the Navy and government ministries.

In autumn 1943, the unit's staff members went to Kujukuri coast in Chiba Prefecture to try to receive American domestic broadcasts on mediumwave. Using a 600-meter long antenna, they found they could receive U.S. mediumwave stations, including KGO in San Francisco and KSL in Salt Lake City, during three hours after sunset. In the same year, the Radio Office set up a branch in Kukuryo, Chofu, the western suburbs of Tokyo, and began monitoring American broadcasting stations on mediumwave in order to gather information on U.S. domestic affairs as well as shortwave stations. A three-meter high and 400-meter long wire antenna was installed. Some 20 medium stations from the U.S. were audible, including KGO, KPO in Oakland, KNX and KFI both in Los Angeles, KIRO, KPSC and KOMO all in Seattle, and KSL, which was the strongest among them. The mediumwave stations were only audible during a period from late September to April.

U.S. stations that the branch could hear also included those in Phoenix, Oklahoma City, Minneapolis-St. Paul, and as far as Baton Rouge to the east. The distribution of news obtained through mediumwave monitoring was limited within the Foreign Ministry as top secret.

The Atagoyama Facility

Before and during the war, ordinary Japanese were prohibited from possessing shortwave receivers. The number of shortwave receivers in Japan was estimated at 500 during the war.

China was the first country to have the Japanese-language service with inauguration of the station with callsign XGOY from Nanjing in 1932. The Chinese Communist Party followed suit in December 1941 with XNCR from a cave in Yanan, Shaanxi Province. The VOA, Radio Moscow, and Radio Australia began Japanese-language services in 1942 and BBC in 1943.

The Communications Ministry, Navy, and Army had also their monitoring posts. Japan received the Potsdam Declaration on July 26, 1945, which defined the terms for Japanese surrender, through such monitoring posts.

Antenna of Radiopress from the back of the news agency.

The Kyodo News building with two log periodic antennas seen on the roof.

The Communications Ministry began monitoring foreign broadcasts in 1940 at a building formerly used by Japan Broadcasting Corp. (NHK) on the top of the 26-meter high Atagoyma, Minato Ward, central Tokyo, Japan's birthplace of broadcasting. Domei news agency and NHK provided staff and equipment for monitoring. Iva Toguri, later known as Tokyo Rose, who was sent to the facility from Domei, was among them.

Using nine communications receivers, including five Hammarlund-Super Pro receivers, the Atagoyama listening post tuned into English-language broadcasts from San Francisco, London, Manila, Sydney and New Delhi, German broadcasts from Berlin, French broadcasts from Saigon, Dutch broadcasts from Indonesia, Russian service from Khabarovsk, and Chinese and Japanese services from Chongqing. It also monitored wireless texts of the Associated Press, the United Press, TASS, Reuters, and Havas.

The Cabinet Information Bureau, a wartime propaganda machine, controlled distribution of information. From the information the Atagoyama facility gathered, only information that the government allowed to release was distributed to newspapers and NHK through Domei. Special bulletins were distributed to a limited number of government officials as confidential.

After being bombed in WWII by the Allied forces in May 1945, the unit moved to a school in Kawagoe, Saitama Prefecture, just north of Tokyo. Domei also set up a small monitoring post in Setagaya, Tokyo, in July 1945 to receive Morse casts by news agencies.

The Army's Monitoring Post For American Mediumwave Stations

The Army set up a special unit at the Eighth Section of the General Staff Office in Kamifukuoka, Saitama Prefecture, in 1942 to monitor U.S. broadcasts on mediumwave. Some 200 Nisei were employed at the unit and engineers were dispatched to Aomori, northern Japan, during summer when reception of mediumwave stations in Kami-fukuoka were difficult. More than 10 mediumwave stations were monitored in Kami-fukuoka, including those in Sacramento, San Antonio, Los Angeles, Salt Lake City, Portland, and San Francisco.

An antenna on the roof of the Korea News Service building.

The General Staff Office used news gathered through monitoring U.S. mediumwave stations for "Zero Hour," one of programs beamed to Allied troops in the Pacific, according to "Memories of Psychological Warfare" written by Shigetsugu Tsuneishi, who was in charge of propaganda at the General Staff Office.

Monitoring Services Focusing On China, Russia, And North Korea

Shortly after the end of World War II, Domei was dissolved and two news agencies — Kyodo News and Jiji Press — were created. The Cabinet Information Bureau was also abolished. Unlike the United States and Britain, Japan has had no government-funded monitoring services since the end of the war. Nisei who worked at the Foreign Ministry's Radio Office established Radiopress in January 1946. It inherited receivers and other equipment of the Radio Office.

In addition to Radiopress, several news agencies have existed to monitor broadcasts from a specific country. Among them is Soviet News established in 1948 to monitor Russian broad-

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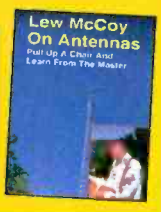

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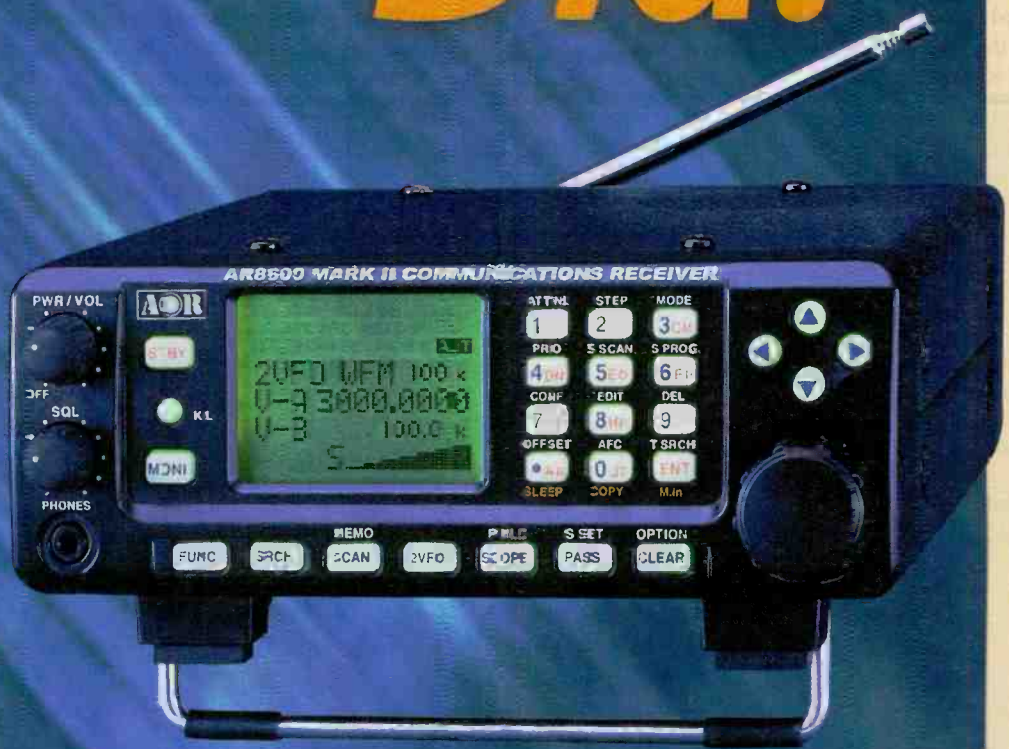

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casts, but the news agency was disbanded in 1978 due to financial difficulties.

The Tokyo-based Korea News Service, affiliated with the pro-Pyongyang General Association of Korean Residents in Japan, monitors broadcasts from North Korea. The news agency, set up in 1948, provides news of the Korean Central News Agency coming through a dedicated line between Tokyo and Pyongyang. Kyodo News and KCNA exchange news through the line.

Radiopress primarily monitored English-language broadcasts from the VOA, BBC, and Radio Australia after its launch. But it later shifted its focus to broadcasts from China, the Soviet Union, North Korea, and Vietnam. In 1950, Radiopress began monitoring the Chinese-language service of Radio Beijing and in 1953 the Russian-language service of Radio Moscow. The agency also started receiving transmissions of the Korean Central News Agency, Vietnam News Agency, Xinhua News Agency, and TASS.

In 1977, Radiopress also began monitoring the Korean-language broadcasts from North Korea.

Kyodo News set up its own 50-hectare monitoring post in Noda, Chiba Prefecture, in 1955 to receive radioteletype of news agencies with 16 antennas and 22 receivers but closed it in 1975 in line with shifting of transmission means from radioteletype to satellite and cable by major news agencies. On the rooftop of Kyodo's building, two rotary log periodic antennas are installed for occasional receptions of shortwave signals.

NHK began monitoring foreign broadcasts in 1953, using the Atagoyama facility. News gathered through monitoring at the NHK facility was also provided to the Cabinet Research Office, an intelligence agency and predecessor to the Cabinet Information Research Office. The public broadcaster built a monitoring facility in Yokoshiba, Chiba Prefecture, on the Pacific coast in 1957. In 1960, NHK formed the foreign broadcast monitoring department. The department, which had some 60 staff in its heyday, monitored broadcasts from Russia, China, and North Korea on a 24-hour basis. It also listened to English-language broadcasts of the VOA, BBC, and Radio Australia.

In 1969, NHK completed a large-scale unmanned-monitoring facility in Yachiho, Nagano Prefecture, central Japan, some 130 kilometers northwest of Tokyo. Located 1,325 meter above the sea level, there are 13 high rhombic antennas and a 700-meter long wire antenna in the 165-hectare site. The 20 receivers and antennas are remotely controlled from Tokyo. NHK still maintains the Yachiho facility although it abolished the monitoring department in 1977. The public broadcaster uses the facility in case of emergency such as the Persian Gulf War and for regular assessments of reception conditions of foreign broadcasts.

Radiopress moved out its office from the Foreign Ministry compound in 1947 and moved several times before settling in the current site in 1989. Reception conditions deteriorated as it is situated in downtown Tokyo and Radiopress requested NHK to use the Yachiho facility. In 1985, NHK allowed Radiopress to use six of its receivers in the facility. The receivers are controlled from Radiopress's office in Tokyo. In 1989, it started to receive satellite TV broadcasts from China and Russia.

On July 9, 1994, Radiopress broke the news of the death of North Korean leader Kim Il Sung through monitoring of Pyongyang Radio. As no Western correspondents are allowed to station in North Korea, listening to broadcasts from the secretive country will remain one of most important tasks for Radiopress.

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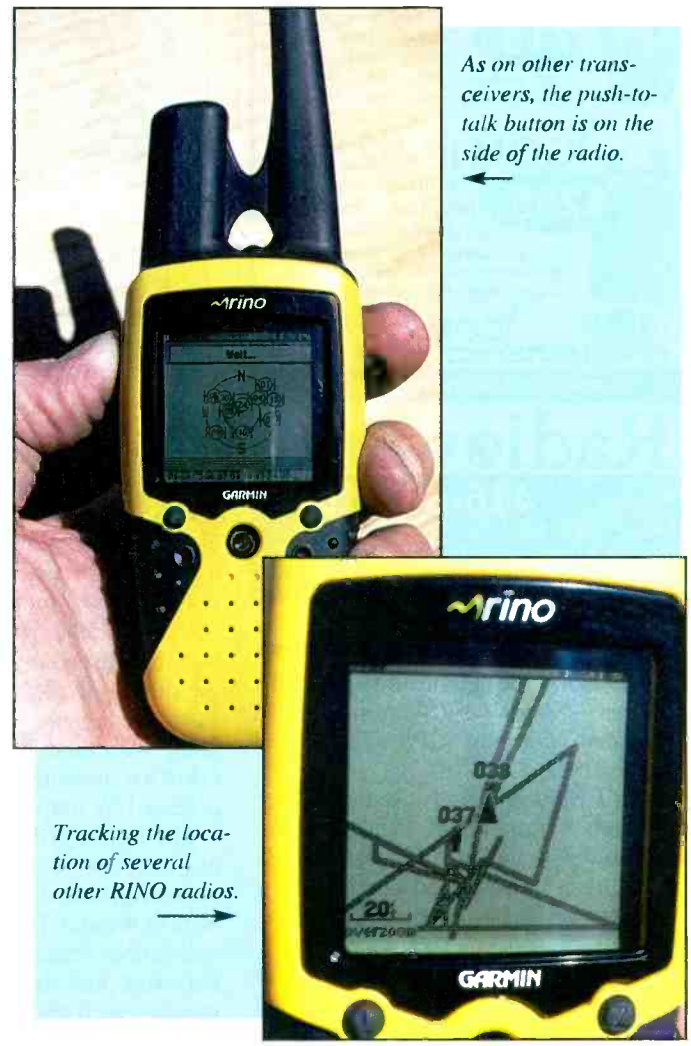
by Gordon West, WB6NOA

Getting Lost Is A Thing Of The Past: Family Radio Service Map Location Radio

It's a steep climb, and the kids are well ahead of you but constantly in touch over Family Radio Service channel 4. But you know they're getting further ahead because their signal is beginning to chop in and out. Typical range of the 500-mW FRS equipment is around one to two miles, max.

A half-hour later, a dilemma: the kids describe their location as up on a hilltop, but well off the beaten path. It's getting dark, and your OWN location is about a half a mile away from the trail head.

There are certainly plenty of menu items to select on the Garmin RINO.



As on other transceivers, the push-to-talk button is on the side of the radio.

Tracking the location of several other RINO radios.

A Radio Solution!

If you are operating a pair of Garmin RINO (Radios Integrated with Navigation for the Outdoors), you simply ask the kids to call in their position and, by responding—either by talking or pushing the "location send" button—their bright yellow FRS radio picks up this databurst. Your radio now shows the bearing of your wayward hikers in magnetic or true degrees north and their distance in miles, with a graphic presentation of where they are with reference to magnetic north.

While all of this position sending sounds like a gee-whiz fairytale, the equipment and the authorization from the FCC for this service is here!

"Garmin has patented the position-reporting feature and has received a waiver from the Federal Communications Commission making it possible for the company to provide position reporting on the RINO series using the FRS channels," says Peter Brumbaugh, Garmin International, Inc.

"You can transmit your location to a friend or family member, and they can see the distance and bearing from your position to their position on a RINO display. In short, this could be a lifesaving feature in an outdoor emergency by helping rescuers pinpoint your location, or it could be used simply for rounding up the family out on the hiking trails," added

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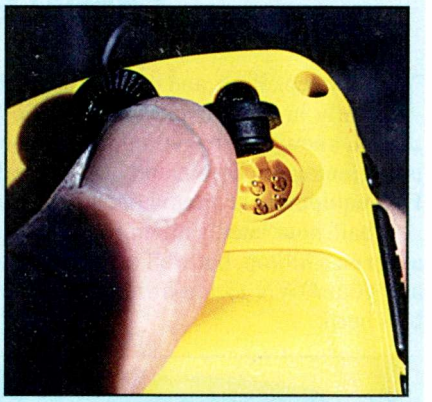
The small antenna is a Quadra filer for 1575-MHz GPS reception.

Here's the GPS output jack allowing interfacing with ham radio ARPS.



Brumbaugh, as he demonstrated all of the features of a tiny FRS radio with an imbedded Garmin GPS 12-channel receiver.

That's right, a Family Radio Service 14-channel, waterproof, handheld two-way radio with included 12-channel GPS capabilities. I tried it, and as you can see by the photos that accompany this article, IT WORKS!

"Our rugged RINO handheld is for everyone who prefers to travel light, but who wants the safety and comfort offered by a GPS device with FRS/GPS capabilities," adds Gary Kelley, Garmin's Director of Marketing. And while the actual RINO radio from Garmin appears a bit different with two strange-looking antennas, it is the first radio to offer the logical marriage of GPS position finding and a combination of Family Radio Service and general mobile radio service channel capabilities.

The Garmin RINO 110

The equipment I tested was the Garmin RINO 110, offering 14 synthesized FRS channels plus 22 simplex output GMRS "talkaround" channels. The common 38 CTCSS tones for encode and decode are also available, along with capabilities of a headset for external voice activation (VOX). Power output is 400 mW on the FRS channels, with additional power output measured by a field strength meter on the eight GMRS output channels. Since the antenna (by law) is not removable, we could only assume that the GMRS transmitter is probably delivering at least 1 W output.

The bright yellow Garmin RINO 110 has a heavy professional feel. When I opened up the battery compartment on the back of the unit, I could see that the inside was further sealed from the battery compartment, and the battery compartment was also well sealed to protect the equipment from an accidental drop in a stream. If the unit actually goes underwater, you simply open up the battery compartment, dry off the damp batteries, put them back into their stainless steel holder, and you are back on the air. Two watertight chambers in one!

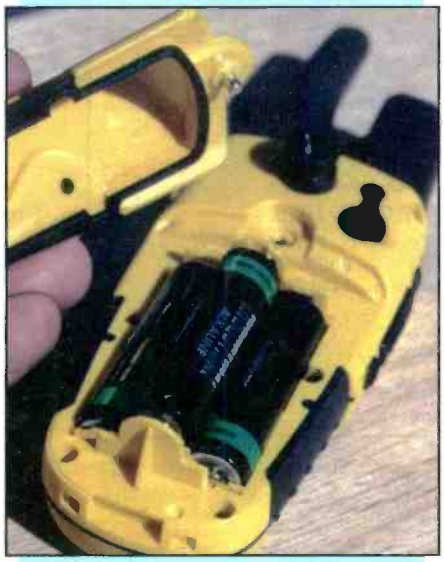
The 110's GPS receiver is a 12-channel Garmin chip set including more precise measurements by the Wide Area Augmentation System (WAAS). I tested the unit both out on the water and in town, and typical repeatability accuracy was better than 10 feet—close enough to get us back to our parking space after the ballgame!

Garmin's RINO Model 110 has standard navigation features like extensive waypoint storage, TracBack technology, multiple position formats, and a built-in hiking trip computer. You can store up to 500 waypoints with graphic identification and 20 reversible routes. There were more than 10 position formats and over 100 map datums depending on what type of local charting you are using out on the trail.

The 8-ounce, yellow RINO 110 sells for around $200 each. The RINO step-up model #120 adds a base map of North and South America, including major cities, highways, thoroughfares, rivers, lakes, coastlines, and national borders, plus railways. The step-up model may also take 8 megabytes of internal memory for downloadable cartography from Garmin's exclusive line of MapSource CD-ROMs. This means you could download your local city map, and the kids can watch you drive them home all the way to your driveway! All of this extra mapping capability costs an extra $100 for the Model 120.

But out on the trails, we created our OWN trail locations by constantly memorizing trail bends and curves as a route. Each time we would radio our fellow hikers to send their position, they would instantly pop up on the screen with a unique icon so we could clearly see which way we had to hike to catch up with them.

I can see this technology will be a big



The battery compartment is double sealed against water intrusion.

hit out on the ski slopes, on the water and lakes and rivers, plus at amusement parks. But forget about trying to locate the kids in the big shopping mall; without a clear shot at the sky, the GPS function won't be able to position-find unless it picks up a minimum of satellites out 10,800 miles. These signals won't make it through metal buildings, so the positioning feature of this equipment won't work inside. However, the two-way radio side of this equipment, including built-in scrambling capabilities, should work great inside the big malls.

For the licensed ham radio operator, automatic position sending is proven life-saving technology. Hams call it the Automatic Position Reporting System, and much of Garmin's research points to a thorough understanding of what it takes to send a databurst over the airwaves. The same type of position reporting is also found in marine VHF transceivers incorporating digital selective calling (last month's column).

Garmin says they should be shipping these sets into distribution by the time you read this story. Let's hear your feedback and some additional ideas about the multiple uses for these superb Garmin RINO radios. ■

You just got your ham ticket, the club has been looking at increasing 6 Meter activity or it's just time to get away from 2 meters. You look at the ads, check the bank account and figure, maybe next year...Not anymore!

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Shannon's Broadcast Classics

a look back at radio & TV's golden years

by Shannon Huniwell

A New Broadcast History Column In The Pop'Comm *Tradition!*

During the past two decades, *Popular Communications* has provided broadcasting buffs with several hundred pages of classic radio station history. Longtime Pop'Comm columnist Alice Brannigan might scold me for saying so, but I first enjoyed her easy writing style while doing research for a 7th grade social studies paper. Our school library director happened to be a broadcast band DXer and equipped the magazine shelf with *Pop'Comm* from issue number one. He seemed to think it cute that a girl was becoming fluent in wavelengths, callsigns, and locales of ancient stations, so he quizzed me with old radio trivia gleaned from our favorite publication.

My father has always been an avid AM radio listener, too, driving my mom crazy on trips by frequently changing stations just to check what the local stations—in towns noted on the exit signs we sped by— were doing. It was my job to thumb through an ancient dog-eared copy of the now long-defunct *Radio-TV Experimenter/White's Radio Log* to keep Dad supplied with stations and dial positions all along the way. Its margins were filled with scribbles about call letter changes and stations on new dial positions. To this day, I best relate to North American geography primarily via a sort of kilohertz code. You know, 1000 is Chicago, 1010 equals Toronto or New York, 1020 is Pittsburgh, 1030 means Boston, 1040 for Des Moines, etc. And, somewhere, I still have the bulbous, brown bakelite, late 1940s Zenith AM/FM set (capable of pulling the "45 and 100 m.c. bands") he joyously found for me at a garage sale. It was through one of Alice's articles that I learned that the "42–50 megacycle" band on the old radio's elaborate faceplate had once tuned in FM's original (circa 1940) broadcast frequencies.

Admittedly, my actual broadcasting career was remarkably brief, but nonetheless a heady experience for a teen visiting her grandparents in Lancaster, New Hampshire. At the tail end of a mid-1980s summer vacation there, I finally mustered enough courage to ask the manager of the community's new AM station if he might consider allowing an enthusiastic novice on the air. Actually, it had been my dad's idea. He predicted it'd be great fun, and he even put together a little dowry consisting of a shoebox of his vintage Top-40 records which he figured the nascent station would be more than happy to add to its meager music rotation.

My tenure as junior DJ on that peanut whistle, headquartered in a motel, lasted through Labor Day. Its staff—the owner and two other part timers—gave me a nice "retirement cookout," (in the motel parking lot) saying they really hated to see me go. But, they'd especially miss my dad's 45-rpm tunes! Turned out, the AM went dark a year or so later, thus becoming a faded footnote of broadcast history.

W C R W
CHICAGO—1926

Frequency: 1240 Kc.	Power: 100 Watts
Owned-Operated By	Clinton R. White
Address	2756 Pine Grove Ave.
Phone Number	EAstgate 7-6860
General Manager	J. A. White

W E D C
CHICAGO—1926

Frequency: 1240 Kc.	Power: 250 Watts
Owned-Operated By	Emil Denemark, Inc.
Address	3860 W. Ogden Ave.
Phone Number	CRawford 7-4100
Air Time	Full Time
News Service	UP
President	Emil Denemark
Gen.-Station-Comm. Mgr.	Frank J. Kotnour
Program, Publicity Director	Bill Mack

W S B C
CHICAGO—1925

Frequency: 1240 Kc.	Power: 250 Watts
Owned-Operated By	Radio Station WSBC
Business-Studio Address	2400 W. Madison St.
Phone Number	Monroe 6-9060
News Service	UP
Transcription Service	SESAC
Representative	Stars Nat'l. Inc.
Gen., Sta. Mgr., Pgm. Dir.	Robert O. Miller
Commercial Manager	Julius Miller

Here's what our Chicago timeshare trio looked like in the 1954 edition of The Radio & Television Annual.

Shortening a long story, an account of the previous radio outlet I'd penned—with Alice Brannigan's column in mind—was forwarded to *Pop'Comm* editor, Harold Ort, who suggested I might try stepping into Alice's shoes. My hope is that over the next two decades, you'll enjoy my broadcast history column as much as you have Alice's. I promise to deliver results of interesting radio—and maybe some vintage TV —research, photos of classic stations, QSL cards, music surveys, and broadcast history book reviews. Alice received my pledge to always invite *Pop'Comm* readership to send in photocopies of radio station ephemera (from old newspaper clippings about station events, to sales brochures, QSLs, etc.) for use in the column. She also wanted me to thank you for enjoying her several hundred pages of broadcast history in *Pop'Comm* since 1982. Then she suggested we inaugurate this columnists' switch with the history of some tiny Windy City stations that

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ICF-SW07	CALL$$	RCI-2950 DX	$319.00
ICF-SW77	CALL$$	RCI-2970 DX	$449.00
		RCI-5054 DX 6M Mobile	$319.00
MAGNUM		RCI-5054 DX 100 New 100W 6M	$439.00
MAGNUM 257		RCI-6300 FTB 10M Mobile 100W	$439.00
30W 10 M Mobile	$199.95	RCI-6900 FTB 10M SSB 100W	$479.00

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switched on and off several times daily: the shared-time trio of WEDC, WSBC, and WCRW.

A Look At The Timeshares

Although a rarity today, placing several co-located or nearby stations on the same frequency is theoretically quite equitable. In practice, though, it seldom left station operators very satisfied. That's because human nature typically leads those with some power to figure out ways to acquire more. But, there are notable long-running timeshare examples that the casual radio broadcast audience might think were worked acceptably. The Fort Worth/Dallas, Texas duo of WBAP/WFAA comes to mind. For years, each spent part of its schedule on the 50,000-watt 820-kHz spot and the rest over a 5-kilowatt 570 AM dial position. Eventually, WBAP spent big money to get the bigger power on a 24-hour basis. Classic timeshares, however, occupied a single frequency or channel, as was the case in the early 1950s with Kansas City's WHB-TV and KMBC-TV on Channel 9. (There, the latter eventually bought out the former.)

Through the 1940s, many American electronic communication regulators figured timesharing to be an amicable way to accommodate situations where a community had more than one worthy station operator, but a limited number of available frequencies. Typical of this lot were those seemingly content with low-power facilities. On the FM side, a handful of small, school-owned outlets still use the airwaves on a checkerboard (or share-time) basis.

The Broadcasting Boom

As broadcasting began blooming in the 1920s, Chicago flowered with small, timeshare radio stations. By the summer of 1925, officials at the World Storage Battery firm were authorized to build a 200-watter on 1430 kHz. Their WSBC hit the air in October after bumping up the transmitter to 500 watts. Its route wound through numerous frequency and power-level changes, though none over a kilowatt. The outlet operated every evening from 6:30 to 8:30 with a 5:00 sign-on on Mondays.

Interestingly, one of the many stations with which WSBC shared time was a short-lived WKBA, also owned by the battery people. Logic begs the question: Why a second set of call letters for the WSBC owners, rather than just seeking additional broadcast time for WSBC? Other WSBC neighbors in the mid-1920s included an obscure WWAE in Chicago and Gary, Indiana's WJKS (which later became Westinghouse Broadcasting Company's WIND Chicago).

During the fall of 1928, WSBC began what Broadcast Pro-File terms, in period vernacular, "Chicago's first all-Negro [radio] program catering to the Colored trade." WSBC's owners took a laudable stand for integrating the midwestern airwaves and, according to Federal Radio Commission statistics, seem to have been rewarded by getting downgraded to 100-watts. By Thanksgiving, the FRC parked WSBC on the then-crowded 1210-kHz locale along with WCRW, a station that began operation in 1926 in a spare room of the home of a Clinton R. White, and another 1926-debut peanut-whistle, WEDC, founded by Windy City car dealer, Emil Denemark. This owner specialized in transmitting to "an ethnic class of people." That quote came from an FRC inspector noting WEDC's penchant for foreign language fare.

WSBC transitioned from its battery company affiliation in 1933 when it was sold to a gentleman who, three years later,

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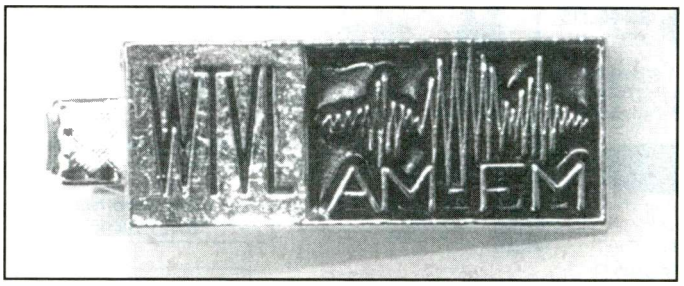
obtained Federal Communications Commission (the FCC had replaced the FRC in 1934) permission to build a "189-foot Truscon-brand steel vertical radiator atop an eight-story [downtown] building." With this new stick and a jump to 250-watts, "The Friendly Voice of Chicagoland" fired up its transmitter from 6:00 to 8:30 a.m., 10:00 to 11:00 a.m., 2:00 to 3:30 p.m., 8:00 to 10:00 p.m., and 11:00 to midnight. Meanwhile, timeshare WCRW, dubbed "The Gold Coast Station," ran from 11:00 a.m. to 2:00 p.m. and 5:00 to 7:00 p.m., with WEDC occupying 8:30 to 10:a.m., 3:30 to 5:00 p.m., 7:00 to 8:00 p.m., and 10:00 to 11:00 p.m. This era saw none of the trio on overnight.

Regarding WSBC's 189-foot tower, it's interesting to note that WEDC had a 210-foot version on Mr. Denemark's single-story auto dealership, while the WSBC antenna was a long wire strung between a pair of 125-foot towers atop a Pine Grove Avenue-based Chicago hotel. This primitive rig wasn't dropped until 1959 when an 85-foot vertical radiator and soon thereafter a 205-foot model (equipped with "top hat" electrical loading) added to the skyline.



Here's what the snappy Kennedy-era WTVL Radio management and sales staff wore to accent their neckwear.

The ubiquitous 1941 AM radio dial revamp found the three little stations shoved into the low-power/local or Class IV "graveyard" 1240-kHz frequency. Over the decades, they rode the Class IV power elevator from 250 to 1000 watts daytime/250 watts night and then coming to rest with 1000 watts day/night. As is a common condition of most every radio outlet, WSBC underwent several subsequent ownership changes, each happily catering to an ethnic and/or minority listenership. It was rightly assumed that people seeking such niche programming would more patiently endure the tiny timeshares' conundrum of callsigns, personalities, and operating schedules than would a general audience used to middle-class consistency. Along the way, one of WSBC's most enterprising owners (perhaps then figuring that FM wasn't ideal, but at least provided for a station it didn't have to share) established a frequency modulation sister for WSBC which morphed in the legendary Chicago rock outlet WXRT (FM).

In 1996, a year after selling that subsequently lucrative FM, WSBC ownership bought out and closed down WCRW. While it's a bit unclear about WSBC's arrangement with its remaining timepartner, WEDC, no doubt some quid pro quo led to WEDC abandoning the 1240 spot so that WSBC could begin 24-hour broadcast operation in 1997. This paved the way for WSBC officials to collect over five-and-half million dollars when they decided to sell their Chicago-based 1240 survivor several months later.

Nowadays, WSBC maintains the legacy its original owners, as well as those of timeshare neighbors WCRW and WEDC. That is to say, the 1000-watter still serves a vibrant ethnic audience, thus making remarkably efficient use of the slice of vintage AM radio spectrum at 1240 kilohertz.

Thanks very much to Jan Lowry of Broadcast Pro-File for providing us with historical data used in this report. If, like me, you're a real radio buff, you should drop a postcard to Jan (Broadcast Pro-File, 28243 Royal Road, Castaic, CA 91384-3028) to request a catalog. You'll be pleased with the available array of the hyper-detailed station histories it offers. At $12 apiece, any one tale is worth many times that!

Finally, I'd like to close with an arcane broadcast history nugget. Check out the late 1950s/early 1960s WTVL AM/FM tie clasp. Along with just a few others, it was a deluxe accessory for management and advertising salesmen at the Waterville, Maine, stations. And now, as they've said thousands of times on thousands of small stations: "and so ends another broadcast day..."

See you next month! ■

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homeland security

by Alan Dixon, N3HOE / WPUC720 / KST8678

your guide to staying safe—news, communication, power, and products

Essential Mobile Hardware For High-Mileage Road Warriors

Many of us are "Road Warriors." We spend at least four hours a day during the week behind the wheel, whether rolling many miles down the road or sitting steaming in stop-and-go traffic on the many urban "clog ways." We travel between home, work, meetings, as well as social and club activities.

Some of us don't even realize the amount of time we put in on the road until we stop to add it up. Many drive for hours to a distant city to be at work Monday morning, stay the weeknights at a local hotel, then drive the same lengthy hours to a distant place called home. Then there are those of us who have jobs that specifically keep us on the road all day. We spend more time driving to our destinations than we do actually getting business done while there.

The multi-talented Yaesu FT-7100M.

Road Warriors seem to fit either one of two mindsets. A surprising number of us pay little mind to the vast amount of time spent in our cars. We simply do what we must, perhaps using our drive time to contemplate the goings-on of the day or to mentally plan ahead for whatever is next on our schedule. At the end of the day, if we go to recall what we've done, we tend to remember our various activities at various locations, not our road time.

For most of us though, operating our car or truck is a distinct activity in itself. We are acutely aware of the traffic, weather, and time, as well as how far we have traveled compared to how much further we have to go. And why shouldn't we be? Paying attention to our driving and to the collective road conditions is our number one priority when behind the wheel.

We don't tend to travel *light*. We have our coffee or soft drink sitting in one of the cup holders. Maps are stuffed into an overloaded glove box or slipped into a door pocket, and change for tolls, parking meters, and pay phones rattles around in an ashtray. The cellphone is snapped into its dashboard holder, coiled cord charger plugged into a three-way cigar lighter power outlet. A small CB set teeters in its bracket mounted far back under the dash, forgotten until the expressway comes to a grinding halt and we really must know, right away, what to avoid ahead.

A number of us are ham operators, and we have our 2-meter rig recessed into one of those extra map pockets in the dash or console, or maybe mounted where an ashtray used to be. On our AM/FM radios, we're more interested in the news, weather, and especially in those traffic reports from broadcast news choppers and squirrelly field reporters. Music, mindless DJs, and numb commercials merely serve to fill in those annoying gaps between reports. We're secure with ourselves being on the road, and we have the hardware to show for it.

Highway Security

All Road Warriors now have two separate security aspects to consider in our everyday activity, regardless of which of the two mindsets above may befit any of us. The obvious first aspect is our *own security*, as well as the safety of those around us on the road. Nobody wants to be stuck in a broken-down car. We especially don't want to be stuck at night, in the cold, or worse, in the wrong part of town.

The security-conscious driver has one or more devices with which to call for assistance. A wireless phone can call home and can call the auto club for assistance. A ham VHF or UHF mobile rig can bring up the club repeater and friends on the air can either summon help or respond directly themselves. Every serious Road Warrior is aware of this and has been utilizing various forms of communications equipment for this very reason, all along.

The second aspect has been put upon us since the enemy attacks of September 11 last year. We are at war. Albeit a strange new manifestation of that distressing old institution, we remain at war. When we're out and about each of us is expected to be vigilant.

Homefront vigilance is the key to Homeland Defense. Since Road Warriors, by definition, spend so much time on the road, we are naturally outstanding candidates for *maintaining vigilance* and for reporting suspicious persons or activities. In crossing many miles over time, we have rolled right through any

number of everyday situations in thousands of towns and neighborhoods we have passed, often observing very little. Now, we need to be cognizant of out-of-the-ordinary circumstances that we may witness. Likewise, we need the means to report certain peculiarities. If we have the first aspect, *our own security*, covered as far as wireless communications equipment goes, then we can easily have the second aspect, *maintaining vigilance*, covered as well.

To maintain security on the road, both security aspects above must be considered and implemented. As Road Warriors, we need to know that these two aspects of communications preparedness are *not* options from which to choose. Vigilance is not an option. Neither is preparedness.

For most of us, a third security aspect remains for consideration, nonetheless. Among those spending a great deal of time on the road, we who are emergency communications service workers or disaster volunteers have special communications equipment needs for our own personal cars, trucks, and SUVs. It is one matter to be prepared to request assistance when needed or to report any emergency situation that we may happen upon while driving about. It is another matter entirely to be caught out of town in our travels when a major emergency breaks.

What are the chances of being at the location of a disaster situation on the precise dates of our stay in that city or town? Just ask all of the stranded travelers last year on September 11! Of course, those stranded that day were airline passengers, but how many *motorists* on either vacation or business were in New York City or Washington, D.C., that day? At least thousands, we can be certain. And as outsiders, unwittingly motoring through a disaster area when the disaster occurs, licensed hams and other emergency volunteers certainly want to have appropriate communications equipment on board. As communications volunteers in such a situation, we may elect to stay several days to assist, or we may find ourselves unwittingly stuck within the affected area if travel restrictions have been put into place, or if the gasoline supply becomes questionable in the region around the disaster.

Types Of Radios

There are two particular types of rigs that hams *and other* communications operators going mobile in an emergency commo situation seriously want to consider, in addition to other non-amateur equipment and capabilities on board. One is a good, versatile 2-meter/440-MHz ham mobile transceiver with greatly extended receive (RX) and scan capabilities. The other is a versatile all-band, all-mode HF (shortwave) mobile transceiver, with substantial channel memory slots, and scan capability.

For those of us who are not licensed hams, please pay close attention here. With the right selection of equipment, **these two radio hardware items can be quite valuable and useful to non-hams** when used in the *receive* mode as mobile scanning and tunable receivers.

Have you ever considered using transceivers as scanners? You should. Some emergency response personnel relying on mobile VHF/UHF/800-MHz scanners may feel that you would be paying extra for transmit (TX) capability that you may never use. Consider though, that you might be spending not very much more, and that you might be getting other features not found in inexpensive consumer-grade scanners.

Additionally, have you ever tried to find an HF mobile scanner? Has anyone actually found one on today's market? Probably not. If you did, it probably wasn't inexpensive, in any event. An appropriate HF receiver, in addition to VHF and UHF capabilities, is essential for *serious* disaster mitigation work. This month though, let's look at what we need for the higher bands.

The Vertex Standard FT-7100M Transceiver

The Vertex Standard FT-7100M VHF-UHF transceiver, sold under the Yaesu name, is one to consider for a good *dual-band* amateur transceiver capable of operating as a good VHF/UHF scanner, with at least modest 800-MHz scanning capabilities. Vertex Standard is a major manufacturer of land mobile two-way equipment and professional-grade ham gear.

I use the term "dual-band" loosely, since when considering RX scanning capabilities, we are going far beyond just amateur operation on two of the ham bands. The receive frequency range of the FT-7100M as stated in the unit's operating manual is an impressive 108–180 MHz, 320–480 MHz, and 810–999.990 MHz (minus the U.S. Part 22 Cellular frequencies, of course).

Think of how many of your own scanning needs fall within just the covered ranges up to 480 MHz. Take a frequency inventory. You will find that many of the mutual aid and multicast public safety agency channels are in the VHF-High band, in the approximately 150–173 MHz range. Additionally, nearly all of the newer 800-MHz national calling/mutual aid/interagency tactical channels are within the FT-7100M's specified receive range. How many of us are aware that these specially designated 800 channels are intended for non-trunked, 12.5-kHz bandwidth FM operation *only*? All 800-MHz scanning equipment disaster responders have should have these frequencies plugged in.

We need to be aware first that no ham rig of which we are aware is available with any trunk-tracking or APCO P-25 digital audio capability. If you need those scanning modes, then you are going to need a separate, preferably dedicated, scanner for that purpose. But the vast majority of us in disaster response and mitigation, when we take inventory of our own response communications needs, will see that the bulk of disaster response and regional interagency comms will be occurring on conventional FM VHF and UHF channels. This is because *today*, this is where most mutual aid channels are found.

Additionally, a number of 800-MHz trunked systems continue to multicast dispatches and sometimes large-scale tactical comms on their previous VHF/UHF frequencies, sometimes on a selective basis. Why? To ensure interoperability among local and regional agencies using incompatible trunking frequencies and formats! Public safety and relief agencies can then operate on a common frequency, or cross-band with other agencies. At a minimum, agencies can then monitor each other on conventional scanners!

Incidentally, the scenario described here represents the outcome of some hard-learned lessons by overzealous high-ranking public officials who insisted on migrating their communications to essentially proprietary transmissions modes. The rush to trunking and to digital audio has not been without pain and frustration on the part of all involved.

Figure 1 shows a sampling of nationally licensed public safety interoperability frequencies that we programmed into our FT-7100M evaluation unit. Not only can you expect these channels to "light up" during a large-scale emergency, most

A Few Common Public Safety Interoperability Channels

Frequency	Use
154.265	Regional Fire-Rescue Mutual Aid RED
154.280	Nat'l Fire-Rescue Mutual Aid WHITE
154.295	Regional Fire-Rescue Mutual Aid BLUE
155.280	Nat'l EMS-2
155.295	Nat'l EMS-3
155.340	Nat'l EMS-1
155.475	Nat'l Law Enforcement Interagency
462.950+	Nat'l EMS CALL-1 (Med-9)
462.975+	Nat'l EMS CALL-2 (Med-10)
866.0125	Nat'l Public Safety Mutual Aid CALL
866.5125	Nat'l Public Safety Mutual Aid TACT-1
867.0125	Nat'l Public Safety Mutual Aid TACT-2
867.5125	Nat'l Public Safety Mutual Aid TACT-3

Figure 1.

A Few Common Universal Interoperability Channels

Frequency	Use
121.50	Aircraft Emergency & ELT
122.75	Aircraft Air-to-Air UNICOM
123.10	Air Search & Rescue
146.52	Ham VHF FM Calling-Nat'l Simplex "52"
147.42	Ham Support-Red Cross/Skywarn, Etc.
148.15-	Civil Air Patrol Operations Ch. 1
156.80	USCG/Maritime Calling Ch. 16
157.10	USCG Working-Ch. 22
406.0250	EPRIB Location Beacons-(Old)
406.0280	EPRIB Location Beacons-(New)
446.0000	Ham UHF FM Calling "446"
462.5675	FRS Common Calling Channel 1
462.6750	GMRS Distress & Traveler Assist "675"

Figure 2.

of those shown are in moderate to heavy use on a day-to-day basis. The 800-MHz channels are only just beginning to see some use in certain parts of the country.

Figure 2 shows a sampling of interoperable emergency channels outside of public safety use, also compatible with the FT-7100M. Here again, many of these are in daily use. Only some of these would be active for any particular emergency, for obvious reasons. Some are aviation channels, others are marine, and still others are in the amateur and the personal radio services.

The FT-7100M is set up with two "bands" capable of simultaneous RX. Although one is intended to be VHF and the other UHF and 800 MHz, both bands can be set for either one. However, in the standard setup, we get a total of 262 memory channels. These include 120 scanning channels and 11 scan-range-defining channels for each of the two bands. In case you have more VHF than UHF/800 channels to store, or vice-versa, you will be pleased to know that the total number of memory slots can be allocated between the two bands.

As the user manual states, we could set 190 VHF channels stored with 50 remaining for UHF/800 channels. If we like, Smart Search will search a user-specified range of frequencies and automatically store up to 50 active channels per band. The FT-7100M covers the VHF civil aviation band in AM mode, of course. All "regular" scanning channels can be given five-character alpha tags. We can actually store six characters, but the sixth character is not always visible in the display.

Both bands can receive simultaneously, and both can scan simultaneously, in ascending or descending order! We get the customary scan lockouts that can be enabled or disabled. We also get a fully functional VFO tuner in the FT-7100M, with direct keypad frequency entry. Double-conversion superheterodyne VFO scanning will search for active frequencies in the area, too, and channel step size can be configured separately for each

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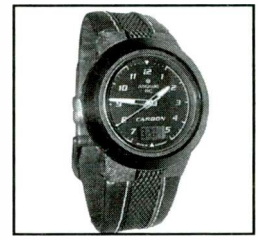

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So what *else* does the FT-7100M offer that less expensive scanners don't? Tired of scanner lockups due to a hung carrier, birdies, and local RFI? This fine rig can be configured for either carrier-operated-squelch or *time*-operated squelch. In time mode, scanning stops on each active channel for five seconds or for the duration of the signal, whichever is less.

Want more? Each and every memory channel can be set for a separate CTCSS tone code or Digital Coded Squelch (DCS) talk-groups. *(Note: this is not the same as trunking talk-groups.)* That is correct—each and every channel! When monitoring agencies and entities using coded squelch, we can accomplish some serious reduction of unwanted signals and RFI. And with the FT-7100M, we can scan a channel to detect the CTCSS tone or DCS code in use.

That's still not all. Hung channels can be easily and temporarily locked out. This temporary lockout essentially remains effective for the current scanning "session." These lockouts go back into active scanning whenever we manually stop the scan. We especially liked this feature here at *Pop'Comm*. You can also "mask" selected channels to hide them while tuning memory channels and scanning. When needed, masked channels can be individually restored. Imagine covert uses for this feature! Like any state-of-the-art professional-grade radio set, the FT-7100M can be cloned in order to instantly set up multiple identical units.

How many other scanners can do all these things? We need to be aware, however, that the FT-7100M does not provide for memory channels to be arranged in banks. But our aim here is to configure our memory channels for a disaster, widespread emergency, or mass-casualty incident, so grouping the appropriate channels by frequency works well in our example.

Also, in locking out the cellular frequencies, I discovered that a few 800-MHz public safety frequencies near the cellular band edges cannot be tuned or stored into memory. For example, I tried to tune 868.0750 MHz, which is not a cellular frequency. The tuner on our evaluation unit stopped at 868.0000 MHz before jumping past the cellular downlink band near 900 MHz. So, if you wish to put any 800-MHz channels into memory for scanning, make sure none are within an even (integer) megahertz of the edge of a cellular band. This is the only serious drawback I noted with the FT-7100M, and I would hope that Vertex Standard will address this issue in future production runs. If I happen to hear from the manufacturer, I'll be sure to let *Pop'Comm* "Homeland Security" readers know.

Now remember, the FT-7100M is an amateur transceiver, a fact I've nearly overlooked. Small wonder, with its outstanding "professional" scanning capabilities! Transmit range is specified at 144–148 MHz and 430–450 MHz. Transmit power levels can be set to 5, 10, 20, or 50 watts on VHF. Same goes for UHF, except TX high power on UHF is 35 watts. These are excellent mobile power levels, and the FT-7100M's built-in cooling fan will run when needed during higher power transmissions.

I got good RF and audio signal-level reports in testing the evaluation unit. The chassis is rugged cast aluminum, and it really feels as if the FT-7100M is solid as a rock. There is a single duplexed SO-239 antenna port for use with a single dual-band antenna. The manufacturer notes that the FT-7100M is not intended to function as a cross-band repeater, a fact that is of no consequence in normal mobile amateur operation or to those using this unit primarily as a scanner.

For those of you who are not licensed hams and who do intend to use the FT-7100M as the first-rate scanning receiver it is, Vertex Standard has conveniently provided a menu-programmable PTT lock function. The "RX-only" operator can safely lock out the transmit function in such a manner that it is virtually impossible to accidentally transmit by pressing the Push-To-Talk key on the hand mic. The TX functionality can always be quickly restored by a few key strokes and dial twists.

The hand mic on the FT-7100M, by the way, has a beautifully backlit DTMF keypad with four user-programmable function buttons. I highly advise unlicensed personnel to use this lock, especially since the FT-7100M has a hair-trigger PTT button. It keys with the slightest touch! Scannists will find the hand mic very useful as a wired local remote control when operating the rig mobile. Like most ham mobile VHF/UHF hand mics, this one looks more like a mini-control panel than it does anything like a microphone.

I wholeheartedly recommend the Vertex Standard FT-7100M for non-amateur scanning use, if the unit's RX capabilities meet your scanning needs. Having a full-featured and fully functional high-power ham rig in your car or truck just might serve as motivation to get that no-code Technician ham radio license, for those of us who haven't bothered taking care of that rewarding aspect of emergency communications work.

For more information on this exciting product, check the Vertex Standard Yaesu amateur products' website at <www.yaesu.com/amateur/ft7100m.html>. To view or print the FT-7100M operator's manual go to <www.yaesu.com/amateur/pdf/manuals/ft_7100m.pdf>. At press time, suggested retail on the FT-7100M was $449.99. Shop around! Look for a street price *substantially* lower than list. We ordered our evaluation unit from AES, Amateur Electronics Supply, Inc. in Orlando. Florida. Be sure to check out AES at <www.aesham.com>, or call the AES main store in Milwaukee at 1-800-558-0411.

Coming Next Month

Next month, we will be seeing the second piece of essential radio communications hardware for serious emergency communications personnel Road Warriors. Suppose I point us to an excellent HF multi-mode scanner, readily available by special order from any number of radio website/mail order houses? It can be ordered from your familiar local neighborhood radio retail chain outlet, as well. You know the store. And, this radio is a well-respected name brand. We will consider a nearly over-featured, and nearly unnoticed HF scanner. Oh—and yes, it transmits on all of the HF amateur bands, too! Join us in November and see.

Always bear in mind that when faced with a serious widespread emergency, all affected persons will suddenly find themselves on either side of an invisible divide. And this certainly includes passing motorists caught up in the pandemonium: We can choose to be either a *victim* or we can choose to be the *relief*. To avoid an unfortunate choice between these two sides of a situation, please let me remind you once again: Preparedness is *not* an option. ■

on-the-go radio

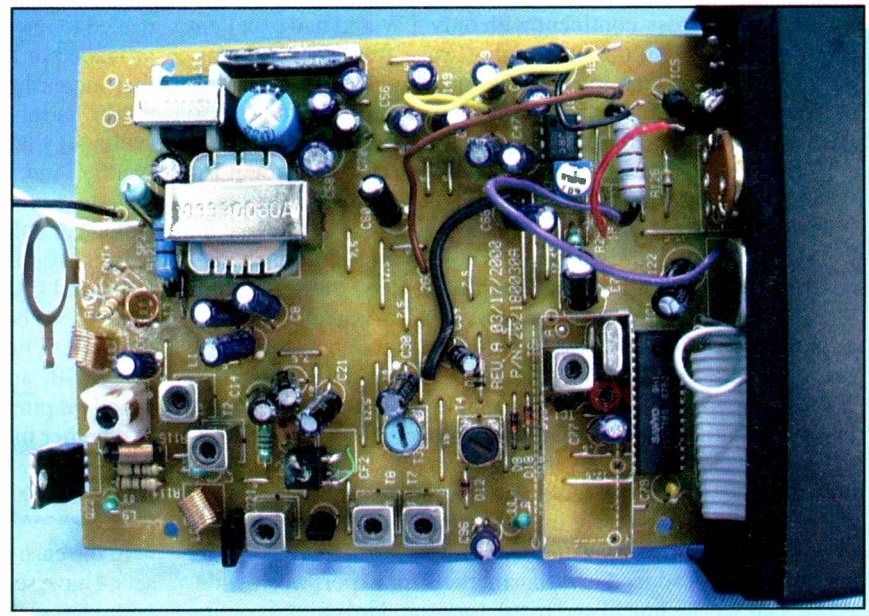
around the block, around the world-personal radio keeps YOU in touch

by Alan Dixon, N3HOE/WPUC720/KST8678

Lifesaving CB Radio, AM And FM Secrets Unlocked, And Pulling The Plug On One Illinois CBer

In recent months, this column has given *Pop'Comm* readers information regarding telematics, as a regular part of our broad personal communications services coverage. This month, it's high time we get around to some readers' letters and notes! I need to mention that you can find even more telematics tidbits in this month's "Homeland Security" column, right here in this same issue of *Pop'Comm*. Look there for concepts on the more specialized aspect of mobile scanning receivers.

Pop'Comm fan Gerald in Palmyra, Virginia, faxed me a nice note saying he enjoyed the first "On-The-Go Radio" since I have taken the helm. He tells me that he is particularly interested in MURS and GMRS radios and in anything "telematics." Judging by Gerald's fine comments, in addition to a good bit of e-mail received from various readers, it appears that we do have "O-T-G Radio" going in the right direction. Thanks, Gerald, and I will try to have more Multi-Use Radio Service "MURS" news in upcoming issues!



The component side of a CB radio printed circuit board showing the main CPU chip—the black rectangle in the lower right, just to the left of the short, fat ribbon cable. (FCC website file photo)

CB—A Tool, Not A Toy

As to be expected in having just taken over someone else's desk, I received some postal mail addressed to this column, but not necessarily addressed to me personally. Well, those who wrote in prior to this past summer had no way of knowing that the reins were in the process of being handed over from one veteran *Pop'Comm* staffer to another. One such letter comes from the northernmost tier of Washington State where reader Mike tells us that in his area CB radio is tool and not a toy. Looks like Mike is deep inside logging country, where folks in the area, including drivers of log trucks, county snow plows, and sand trucks, congregate on CB channel 10. During a forest fire about two years back when 37 homes were destroyed, Mike tells us these same folks used Channel 10 as an emergency guard channel. I will add that it's rewarding to see that a number of folks really appreciate the value of CB radio and take this particular communications mode seriously.

Mike also included a newspaper clipping telling about a local CBer whose transmissions allegedly interfered with TV, telephones, and computers last March. According to official police and court records reported in the March 13, 2002, edition of the Okanogan County *Chronicle*, local authorities "contacted" the suspect who agreed to stop his allegedly illegal transmissions or face unspecified charges. Excessive wattage from an illegal transmitter was believed to be the cause of the problem. Mike's own additional comments indicate that he gets as bugged about over-power operators as I do. I'm with you on that one, Mike!

This is just the kind of letter that we like to receive. Mike was kind enough to put in a few good personal comments and a really neat hand-drawn map of his "Home-20" area. And Mike's no newcomer: he tells us that he and his wife have been using CB since 1973. That's about two years longer than I have been using CB, I almost hate to admit! I want Mike to know that I too have CB radio in common with him as well as my fine predecessors here at "On-The-Go Radio" and at the former "CB Scene." I hope Mike will write to us again soon.

We have a special request from Tony in Wartburg, Tennessee. Tony is a licensed ham and needs a schematic diagram for a Texas Star Modulator Plus amplifier for 10-meter ham use. If you can possibly help Tony out, please contact me at my e-mail address below, or write to the *Pop'Comm* Hicksville offices. I will either put you in touch with Tony, or forward the information to him directly.

It's always an honor and a pleasure to hear from one of our most loyal fans, from across The Pond. Michael Bartholemew, TW26, in Newbury, England, has been previously featured in our September 2000 issue. You can see his smiling face on page 30 of that issue. (That's an interesting CB setup you have there Michael, tucked in beside your easy chair.) Michael's rooftop antenna is also shown on the same page. As regular readers may recall, Michael seems to have stirred up a bit of a controversy in that issue with the claim of his ability to make contact with U.S. stations while transmitting only 4 W in FM mode, the legal

mode in the UK. Michael was said to have been successfully cross-communicating with U.S. CB stations usingAM mode, running completely legal CB equipment—no tricks! This certainly raised the question of technical feasibility among some naturally skeptical CBers. Additional discussion of Michael's feats followed in our February, 2001, "CB Scene" column.

Michael is a really great guy! He has been in frequent touch with me to corroborate his story. But he really didn't need to. I will be pleased to speak for him. There are two points at issue here: The simpler one is whether a mere 4 W can make it across the Atlantic. Without a doubt, it certainly can! I have worked 10-meter ham cross-continent with only 5 W and had excellent signal reports. With the higher shortwave frequencies, ionospheric conditions tend to run either hot or cold, with little "in-between" or marginal conditions. So, when it's "hot," it's *hot*. And if it works for 10 meters, it will work for 11-meter CB.

Consider also that CB is slightly lower in frequency than 10-meter ham. This puts the band closer, however slightly, to the lower HF bands with the more reliable propagation. That's right, 27-MHz CB has slightly *better* worldwide propagation characteristics than the 10-meter amateur band. Read the solar propagation reports on any amateur radio website. As a rule of thumb, anytime the 10.7-centimeter solar flux is above about 140, look for worldwide signals from stations on 10 and 11 meters.

This leaves us with the curious matter of AM and FM modes intercommunicating on the same frequency. How is this possible? How can an FM receiver pick up an AM transmission, and how can an AM radio receive an FM transmission?

The answer lies entirely in the engineering of nearly all CB radios manufactured over the last 15 years or so. These units are invariably produced in Asian markets for export worldwide. As we can see, technical and regulatory standards for CB radios vary from one region of the world to another, sometimes from country to country. Manufacturing and product distribution costs can be kept minimal if CB sets of the same engineering model can be shipped to all markets. And this can be accomplished if one design, or one set of boards, can be manufactured with only the most minor modifications needed to satisfy the changes needed for each market. In the case of the receiver circuit design, it is simple enough to design a single receiver type that will demodulate both AM and FM signals. There is only one part of an FM receiver that prevents it from demodulating AM signals. That is the *limiter* circuit. Remove the limiter, and not only does production cost decrease slightly, but this same receiver now works for both AM and FM. Mystery solved.

Why, then, not do this for all FM receivers so that they can be multimode units, simultaneously working both modes as each is encountered in operation? The answer to this is also quite simple: It is precisely the limiter circuit that defines FM reception, as we know it. The limiter performs the "magic" of removing (theoretically, at least) all of the pops and static from FM reception. While tolerating some static in FM mode may serve to increase the functional range of FM mode two-way transmissions, it would be unacceptable in high-fidelity broadcast receivers for music and entertainment.

I should also point out that CB radio transceivers have for some years now been microprocessor or "CPU"-based. So has just about every amateur, commercial, and consumer radio transceiver, including wireless phones, produced since at least the 1980s. This means that your CB radio is controlled by an integrated circuit chip containing all of the firmware needed not only for its own technical and regulatory operational compliance in your part of the world but for modes and frequencies used elsewhere, as well! You see, the *software* (the operating parameters) of your CB radio has been programmed into its *hardware* (that CPU chip). The two together are known as "firmware." Okay. The software in your CB radio is configured by the chip pinouts, specifically how each pin is terminated. Typically, a number of the CPU pins are correlated to either logic states or to analog values.

In a purely hypothetical example, a specific CPU chip pin terminal controls the RF transmit power output. The pin is connected to one end of a resistor, with the other end of the resistor grounded to the chassis. Let's say that this chip design is such that increasing the value of the resistor will increase transmit power. In this example, the specified pin reads an analog value (voltage) that is inversely related to its RF output parameter (watts). And, let's say that another pin on this same chip controls operating modes. This particular pin is connected to one end of a diode and the opposite side of the diode is grounded.

In this configuration, the transceiver will step through AM, USB, and LSB modes when the MODE button is pressed. If the pin were to be instead left open (clip the diode!), then pressing the MODE button on the transceiver would cycle through AM, FM, USB, and LSB. In this second part of our example, the specified pin reads a logic or "digital" state as its instruction as to whether the FM mode is to be available.

You Can Receive Both!

In the case of the receiver hardware in use in a number of CB sets, I have seen that a "common" receiver mode is used in some popular transceivers to receive both AM and FM modes. In other words, it makes no difference which of these two modes your CB is equipped with, you will be capable of receiving both AM and FM mode signals! One particular CPU chip used in CB transceivers configured this way is the Hygen HWA YUNG P516 8995 processor.

Another very popular and versatile CPU is the Sanyo LC7233 series chip, using the Seung Yong CPU system 501 (105). This CPU can be mask-programmed for manufacturing production. Among other things, it contains LCD display drivers and frequency controllers up to 150 MHz. It is used in CB sets, and I have seen it used in 2-meter amateur transceivers. And, of course, it supports both AM and FM mode operation. Aside from factory mask-programming, various operating parameters are controlled in a manner similar to that of our example above.

Lately, the FCC has been discussing and actually crafting new equipment type certification rules for what they see as the radio design of the future—*software-defined radio* or "SDR." But I've got news: Software-defined radio has been around for a number of years already! The FCC actually wants to make it easier to update, or change, radio software in two-way radios and wireless communications devices. This will pertain particularly to radios with programmable chips that can be "flashed," or uploaded with new operating software (changed parameters) in the field; that is, while in the users' hands. This does seem to be a strange turn of events coming from a Commission that up until now was nearly threatening to "pot" circuit boards in epoxy so that they *couldn't* be modified. Never attempt to second-guess the FCC.

So now my friend Michael can relax, assured of the legitimacy of his claim. Incidentally, he tells me that the UK does

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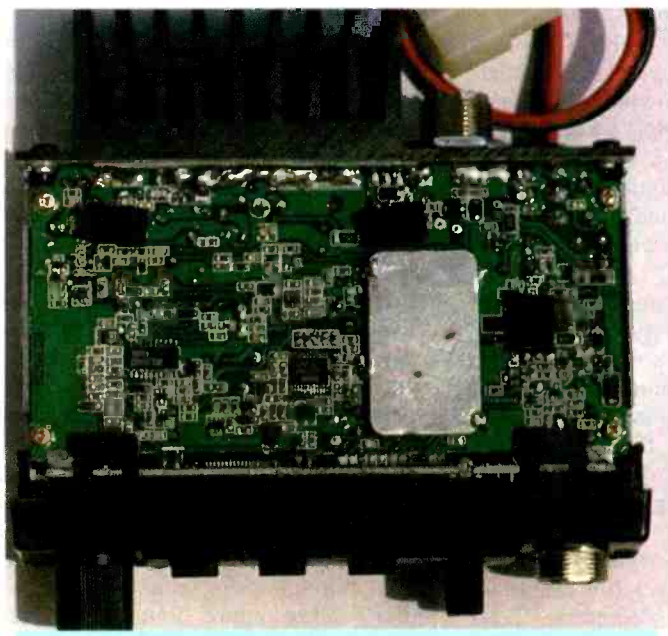

An amateur 2-meter transceiver using the Seung Yong system 501 on its CPU chip, visible edgewise on the control panel SMT circuit board. (FCC website file photo)

not prohibit DX contacts on CB. He can legally be received here in the U.S. (but don't even think of transmitting back!). So if you copy his 4-W FM signal, be sure to send him a QSL card to acknowledge the legitimate one-way contact.

Mike, AE352, of the American Eagle Single Sideband CBers' Club urges CB operators to take a look at their club website at <http://american-eagle. tripod.com>. I see that Mike is a club officer as well as the club's official Internet diplomat. The club is based in the northeast U.S., so CB operators in that part of the country especially will want to check it out. Way to go, Mike—nice site!

Channel 9 Comes Through

Finally in the mailbag, the CQ Communications staff received a well-written letter from CB operator Charles, SSB-734 of South Carolina. Charles is a dedicated Channel 9 CB monitor, even when on his live-aboard boat. He tells of a dark rainy day in the Cape Fear River area when he heard a "Mayday" call, not on his marine radio on Channel 16 but on his CB on Channel 9. A pleasure craft had run aground on a sandbar, with a man and his wife and son on board. It was a 25-foot sailboat with an aluminum mast or "lightning rod" as Charles more accurately describes it. The errant sailor was facing a terribly stiff wind, very heavy seas, and an unfavorable tide. He had no marine radio (he should have had one in any event!), and was instead relying on CB.

By the grace of God or, "Someone from 'above,'" as he appropriately notes, Charles had kept his rig tuned to CB Channel 9 that day. Charles was instrumental in relaying the message to the Coast Guard on Marine Channel 22-A, and ventured out into the storm to see what he could do to assist. It turns out that he was able to free the distressed vessel and tow it back to its dock, single-handedly. The Coast Guard was then advised that the three passengers in question were all on shore, safe and dry.

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Charles, you really are a hero. Let me remind our readers that Charles' letter, though well detailed, was written in quite modest terms. He simply wrote us to share his experience in emphasizing the importance of monitoring CB Channel 9. Charles has clearly aspired to the spirit of former *Pop'Comm* columnist Jock Elliott's "Order of the Lightkeeper," if I may say so. I bring this up because Charles does mention Jock and his most excellent Lighthouse principle of CB radio vigilance.

The Night The Lights Went Out In Indiana?

At least, could that have happened to a CB operator in Evansville, Illinois? An FCC records search reveals some interesting truths about the confusing CB radio-related bust of Gary White of Evansville. On July 26 of 2000, Mr. White received City of Evansville Summons #345973, charging him with "disorderly conduct," allegedly in connection with his operation of a CB radio station. White was subsequently convicted on the disorderly conduct charge under §35-45-1-3 of the Illinois Criminal Code. White appealed his case to the Federal Communications Commission on January 28, 2001.

What then, was the problem? This is the part that we may never know for certain. The FCC acknowledges White's assertion that, in the FCC's words, "The citation was based on interference of White's CB radio equipment with a neighbor's telephone and television, and was not based on his use of illegal equipment or illegal power." Nonetheless, the disorderly conduct charge was based on the Vanderburgh County Chief Deputy Prosecuting Attorney's contention that, "Conversation that is unreasonably loud, offensive, or harassing or threatening to anyone who receives the transmission will not be tolerated."

Regardless of the disputed nature of the alleged offense, the FCC dismissed White's appeal in a *delegated authority* action at the bureau level. It is important to understand the Wireless Telecommunication Bureau's reasoning for its dismissal. In docket DA 01-3011, Mr. White had hoped to have his appeal heard on the basis of newly enacted federal statute H.R. 2346 (PL 106-521) which amended the Communications Act of 1934 (Title 47 USC). Specifically, according to FCC documents, White made his appeal pertinent to §302a(f) of the Act. This section allows, said the Bureau, "a person affected by the decision of a State or local government agency enforcing a statute or ordinance *under paragraph (1) of Section 302a(f)* to appeal such a decision to the Commission on the grounds that the State or local government had acted outside the authority provided *in such subsection*." (Emphasis added.)

Acting on what could arguably be called a technicality, the Bureau dismissed the appeal on two points. First, the Bureau notes, "White was not convicted on the basis of using "unauthorized CB equipment" or on "unauthorized operation of CB equipment in the 24–35-MHz" range, covered by Section 302a(f). Second, the Bureau added, "The disorderly conduct statute under which White was convicted was *not* passed pursuant to Section 302a of the Act..." In short, a layman could reasonably surmise that, since the alleged offense is said to have involved personal *conduct* rather than equipment, interference, or even RF power levels, the FCC felt the charges were outside of its jurisdiction. White received a 60-day suspended sentence and a fine of $225.

Till Next Time

As we close for this month, I want to thank the special individuals at the FCC Enforcement Bureau who provided information for this article. They really had to do some digging. Remember that the Wireless Telecommunications Bureau handled the White case, not Enforcement.

I always welcome reader comments and ideas here at *Pop'Comm*, of course. Send your e-mail to me at <n3hoe@juno.com>. Due to a plurality of spam, viruses, and other garbage we all face on the Internet, I am receiving only text messages and a few limited types of attachments, such as JPEG photos and PDF document files. Seems this is starting to become standard office procedure in a number of places. So if any particular e-mail message didn't seem to make it to me, please try it again in plain text.

We're still looking for photos of base and mobile CB radio setups, and we do prefer good resolution digital photos, so please go ahead and e-mail them to the address above. Unfortunately, we cannot guarantee that hard-copy photos or documents will be returned.

Hey—the weather is starting to get cooler and those leaves are beginning to turn again. Time to get out that jacket, and maybe turn that climate control in the mobile on just one notch warmer. See you in November! ■

v.i.p. spotlight

how you got started in radio

Congratulations To Alan Hill Of New Mexico!

Popular Communications invites you to submit, in about 150 words, how you got started in the communications hobby. Entries should be typewritten, or otherwise easily readable. If possible, your photo (no Polaroids, please) should be included.

Each month, we'll select one entry and publish it here. Submit your entry only once; we'll keep it on file. All submissions become the property of *Popular Communications*, and none will be acknowledged or returned. Entries will be selected taking into consideration the story they relate, and if it is especially interesting, unusual, or even humorous. We reserve the right to edit all submitted material for length, grammar, and 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: "VIP Spotlight," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801 or e-mail your entry to popularcom@aol.com, letting us know if you're sending photos. Please print your return address on the envelope if using the postal mail system; not doing so will delay your submission being processed. If you're e-mailing photos, please send them in a separate e-mail with your name in the "subject" line.

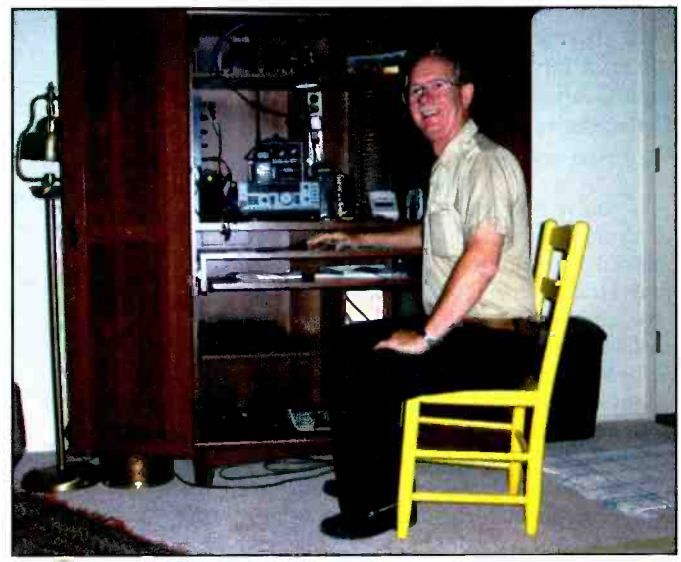
"One night as a 10-year-old listener in the attic, I heard Mars! I was hooked! Of course, later I realized that it was MARS radio service of the military."

Our October Winner: Alan Hill Of Santa Fe, New Mexico

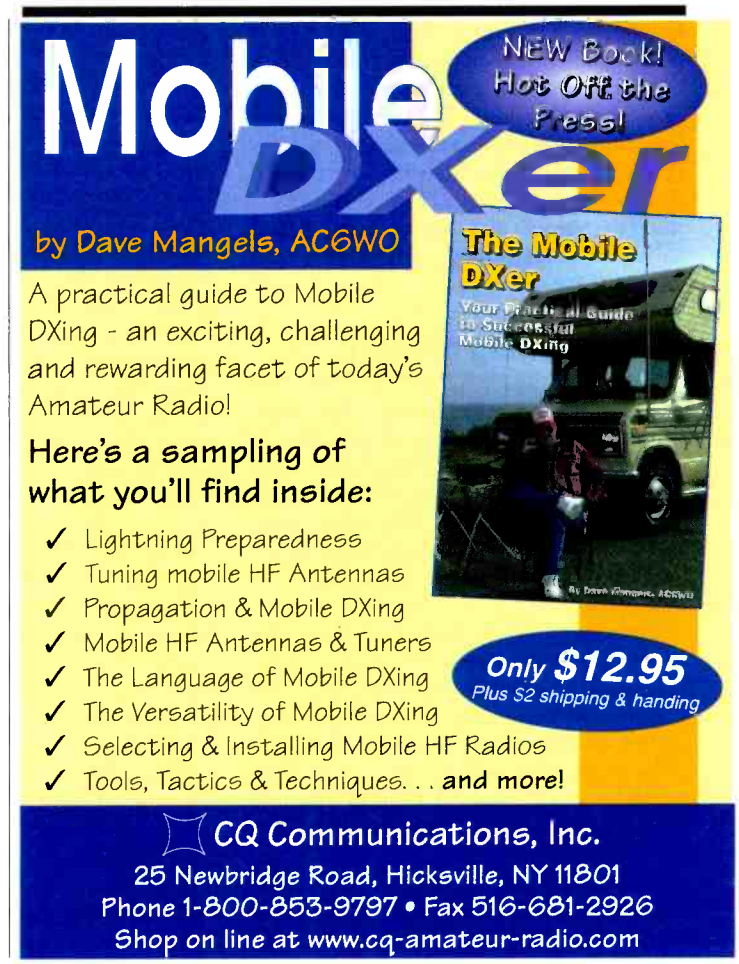
Pop'Comm reader Alan Hill of Santa Fe reports, "My father owned a general store and repaired televisions in the 1950s. I followed in his footsteps in the electronics field. He bought me a crystal receiver that I assembled in the mid-1950s. This is the one with the cat's whisker and Galena crystal about the size of a pencil eraser.

"One night as a 10-year-old listener in the attic, I heard Mars! I was hooked! Of course, later I realized that it was MARS radio service of the military.

"I mostly monitor VHF/UHF within New Mexico. I have an amateur Extra class license and a great HF radio (Kenwood TS-860 S) with general coverage receiver and 160–6 meters. I have several HTs and scanners, including a Uniden 780. I use a Trunk Tracker 2 to listen to the local PD. I am active in APRS and repeater building."



Radio enthusiast Alan Hill at his listening post in New Mexico.



the wireless connection

a look behind the dials

by Peter J. Bertini, <radioconnection@juno.com>

Testing And Rating Salvaged Power Transformers

This month I'm turning the reins over to Ed Engelken, who has kindly offered to provide the topic and material for this month's column. Ed's topic is rating and determining ratings for replacement transformers. Here's what Ed has to say:

If you've ever looked over the parts list of an old radio in a Rider or Beitman repair manual I'm sure you've noticed that the power transformer is one of the more expensive components listed. In the 1930s a replacement power transformer cost around $3 or $4. A hefty sum in the depression era. Today a small replacement costs around $30, and larger ones go for $40 to $60 or more. Salvaging power transformers from old equipment—and using them for replacements in sets that need them—makes a lot of sense for both economic and esthetic reasons.

Many old radios are not worth $60 when fixed up so it isn't logical to put a new $60 power transformer in one of them. And, a new shiny transformer can look out of place in a vintage chassis. But using salvaged transformers presents a few problems: How do you know that a transformer salvaged from an old set is good? How do you determine the voltage and current ratings of the salvaged transformer? I'll attempt to answer these questions.

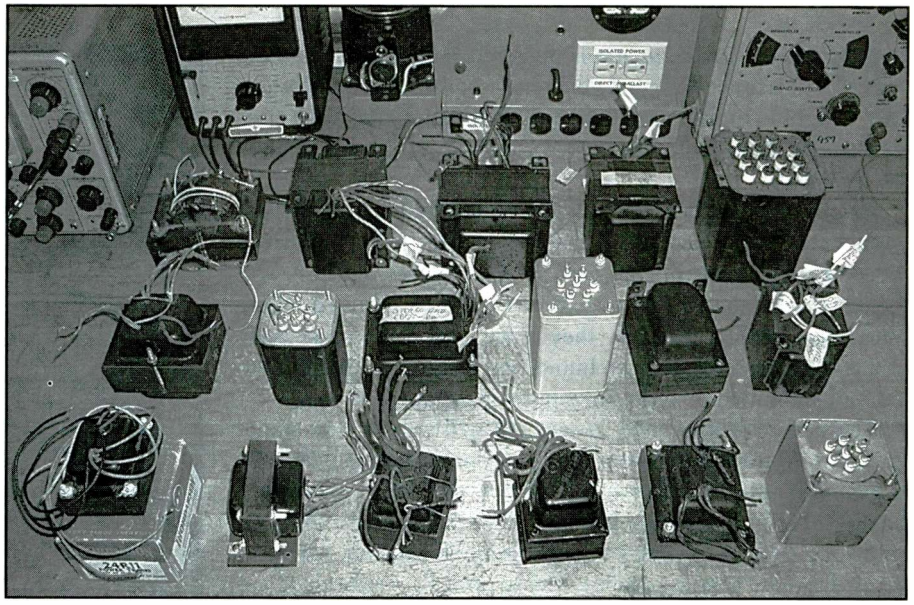


Photo 1. A selection of power transformers. One is new, most of the others were salvaged from old electronic gear and a few unused military surplus items.

Getting Started

Photo 1 shows a sampling of power transformers, ranging from a small one capable of supplying 250 Vdc at 50 mA, to a large one that can supply 350 Vdc at 250 mA. The small transformer (lower left, sitting on its box), is a new one; all the others are either salvaged from old equipment or are military surplus.

The first problem you'll encounter with a salvaged transformer is determining what leads go to what windings. Most radio handbooks show a standard color code for transformer leads that was generally followed by most transformer manufacturers, but unfortunately you'll also find many original equipment transformers that use a non-standard lead color code.

I recently repaired a little RCA Model 5Q55 radio with a bad power transformer (see **Photo 2**). The primary leads were red rather than the standard black! The high-voltage secondary leads were brown, and the winding had a brown-black center tap. The 5-volt rectifier filament leads were green, and the 6.3-volt leads were blue. Applying the standard color code to this transformer would result in chaos. Adding to the confusion are those power transformers that use numbered soldered lugs instead of flying leads. What is needed is a procedure to determine the leads (or lugs) for the primary and the other windings without depending on color codes or numbering systems.

Ohmmeter To The Rescue

My experience, based on replacing dozens of power transformers, has produced some useful rules for decoding the leads of an "unknown" transformer. First, you need to determine which sets of leads show continuity, then draw a diagram of the windings. This is easily done with an analog ohmmeter.

Besides the primary winding, most radio power transformers have a center-tapped high-voltage winding, a 5-volt rectifier filament winding (sometimes with a center tap), and a 2.5- or 6.3-volt filament winding for the other tubes (and perhaps a center tap). Sometimes there are other windings whose function will have to be determined after further research.

Many power transformers have an electrostatic shield between the primary and the secondary windings. Usually the shield is grounded internally to the transformer case, but sometimes it is brought out on a lead or lug that doesn't show continuity to any other lead or lug. That "odd" lead or lug can be confusing and cause one to believe that a winding is open. If you find only one "odd" lead (or an uninsulated lead), it is probably the electrostatic shield. The shield is normally connected to the radio's chassis. The key to identifying the leads is to first find the primary and power up the transformer. Once powered up, voltage readings can be taken and the various secondary windings identified as to voltage output.

Finding The Primary

Measuring the winding resistance of the transformers in **Photo 1** produced the following results:

1. The filament windings all measured less than 0.2 ohms.

Photo 2. The RCA Model 5Q55 radio. The transformer is the defective original RCA transformer. Note the odd color codes used on the transformer leads.

2. The high-voltage windings measured between 75 and 500 ohms from end-to-end. All the high-voltage windings had a center tap.
3. The primary windings all measured between 1.2 and 15 ohms.

This result indicates that the primary can be identified by a simple resistance measurement. For the range of transformers generally found in 4- to 12-tube radios, the primary resistance should fall between 1 and 15 ohms. The other windings have resistance readings outside this range.

Once identified, it is time to power up the primary winding. The tools needed to do this are simple. I use a setup that includes a lamp cord, a light socket with a 40-W bulb, and an AC outlet (see **Photo 3**). These items should be connected so that anything plugged into the AC outlet has the 40-W bulb in series with the AC line. I use another line cord terminated with insulated clips to make connections to the transformer. The 40-W bulb limits the maximum current to 333 mA and provides a visual indication of current draw.

The series-bulb setup is better than a *Variac* for testing transformers because the bulb acts as a current limiting device. The "cold" resistance of the bulb is around 25 ohms, and the "hot" resistance is 360 ohms. If the transformer under test draws too much current, the lamp will glow and the resistance will increase to help limit the current.

Never apply 120 Vac directly to an "unknown" transformer. The inadvertent application of full line voltage to a filament winding will result in a spectacular fireworks display. The turns-ratio between the high-voltage winding and a filament winding is 100 to 1 or more. Applying 120 Vac to a filament winding will generate an astronomical voltage in the high-voltage and primary windings of the transformer and may cause internal arcing and destroy the windings. The current flow through the filament winding will be sufficient to trip a 15- or 20-A circuit breaker. ***Always use a 40-W series lamp when powering up a transformer for the first time.***

The no-load current draw of small transformers in the 40- to 60-W range will produce little or no glow in the bulb. Larger transformers have a larger no-load current due to the larger volume of iron in the core and will produce a modest glow in the bulb. Transformers with shorted turns will produce a bright glow.

Photo 4 shows the results of wrapping three turns of hookup wire around the windings of a transformer and twisting the bare ends together producing three shorted turns. The 40-W bulb glows at almost full intensity with only three out of several thousand turns shorted! That simple lamp bulb arrangement is an amazingly sensitive shorted-turns detector. This setup can be used for testing a

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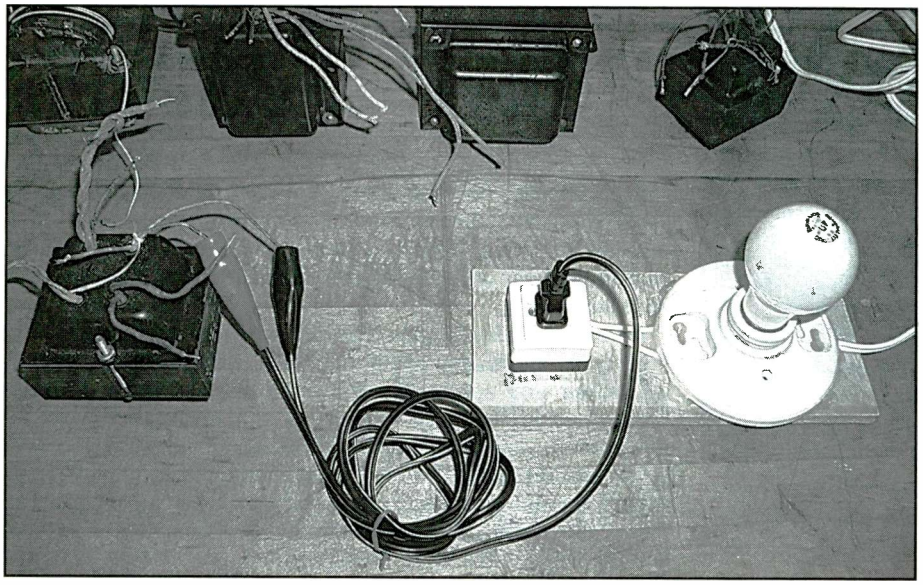


Photo 3. The transformer test setup consists of a 40-W lamp bulb in series with an AC outlet. A line cord terminated in insulated clips feeds power to the transformer being evaluated.

power transformer in a radio without removing the chassis from the cabinet. Just remove all the tubes and dial light, then power up the set using the 40-W series lamp. No or low glow is good news; bright glow is bad news. If you try the series-lamp test on a few known-good transformers you will quickly learn what to expect when testing "unknowns."

One complication that sometimes arises is that the primary winding has taps for various line voltages. You will find a winding that has the proper primary resistance between a "common" end and taps that are closely spaced on the other end. Powering up the transformer with the series-lamp and then measuring the voltages between the "common" and the various taps will establish the sequence of the taps and the operating voltage that corresponds to each one.

Measuring The Voltages

With the primary identified and energized, it is time to measure the voltage output of the other windings. I usually make the initial measurements using the series lamp in the circuit, then apply full line voltage for the final measurements. It is easy to distinguish between the 5-volt and 6.3-volt windings by making voltage measurements, but remember that the unloaded voltages will be a bit higher. I generally measure the high-voltage winding from the center tap to each end rather than from end-to-end. That cuts the measured voltage in half thereby reducing the exposure of the voltmeter and the user to high voltage. I recommend using clip-leads to connect the voltmeter to the transformer before powering it up. This allows a complete hands-off measurement of the transformer voltages. At this point, you should write the voltages you measure on the diagram of the transformer that you made up from your initial continuity measurements.

The remaining problem will be to determine the current ratings of the windings. This will require some assumptions and a bit of guess work.

Mr. Harris Determines Current Ratings

A fellow named Darwin H. Harris published an article entitled "Rating Power Transformers" in the December 1953 issue of *Radio-Electronics*. I was so impressed by Harris's article since I first read it in 1953 that I've have kept it on file for almost 50 years now.

Harris proposed a theory that the current rating of the high-voltage winding of a power transformer could be determined by a simple measurement of open-circuit voltage and resistance. His reasoning went like this: The voltage output of the winding is proportional to the number of turns and that is directly related to the length of wire in the winding. The resistance of the winding is related to both its length and the wire size (cross sectional area). So, if we divide the open-circuit voltage by the resistance, we will get a number proportional to the wire size. Knowing the wire size will permit an accurate estimation of current capacity. Harris measured the voltage and resistance of a number of known-rated transformers and came up with the following relationships:

For a capacitor input filter:
DC Current Rating = 25 X Vo/R

For a choke input filter:
DC Current Rating = 35 X Vo/R

Where Vo is the open-circuit voltage from the center tap to one side of the high-voltage winding and R is the resistance between the center tap and one side. The DC current rating is given in mA.

In my experience with dozens of transformers, I have found that these formulas seem to underestimate the capacity of small transformers while *overestimating* the capacity of the larger ones. But, overall, the formulas seem to work well and are useful when no other information about the transformer is available.

Figuring out the current ratings of the filament windings is difficult and, in most cases, unnecessary. Transformers designed for use in radios usually have a proportional relationship between the B+ current that can be supplied and the number of tubes that the filament windings can power. If a salvaged transformer can supply the proper B+ voltage and current for a given radio, it probably has sufficient filament current

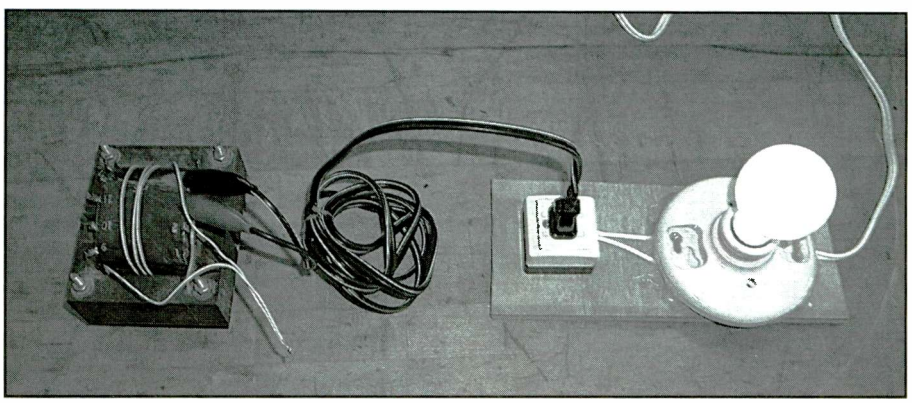


Photo 4. Three turns of hookup wire wrapped around the winding simulate shorted turns in this transformer. The test lamp glows at full brilliance.

capacity to light up the tubes. Generally, a transformer that can supply up to 90 mA of B+ will have a 5-volt, 2-A rectifier filament winding. Transformers rated for 100 mA or more will usually have a 5-volt, 3-A rectifier winding. The 2.5-volt or 6.3-volt current capacity will be in proportion to the B+ current rating.

Selecting The Proper Replacement Transformer

The information given above will help in determining if a salvaged transformer is suitable for replacement in a given application. The voltage requirements for a specific radio can usually be found in the Rider or Beitman repair manuals, but current requirements are not always given. If the manual fails to disclose the current requirements, they can be computed by looking up the radio's tubes in a tube manual and adding up the currents. Both the filament current and B+ current requirements can be estimated. If the ratings of one of the salvaged transformers you have on hand matches the radio's requirements, you are in business.

A simple, although not very elegant, approach in selecting a replacement is to use the fact that the power capacity of a transformer is directly related to the cross-sectional area of its core. Thus, the bigger the transformer, the greater its capacity. This leads to a useful substitution rule: If the replacement transformer produces the correct voltages and is as physically as large or larger than the one you are replacing, it should work OK. This rule should only be used when the salvaged transformer was taken from another radio. Transformers taken from signal generators, oscilloscopes, or other equipment may not have the proper relationships between the high-voltage and filament windings and may have other windings that are not required in a radio application. These differences may invalidate the size comparison.

Sources For Transformers

Most of the transformers in my junk box were salvaged from old radio gear; a few are military surplus. In the past, Fair Radio Sales (<www.fairradio.com>) had an extensive list of surplus power transformers. Unfortunately, their list has gotten smaller in recent years.

In the late 1970s people were tossing out a lot of tube-type HI-FI and stereo gear. I grabbed every one I could get and salvaged the tubes, power, and output transformers. Power transformers from audio power amps make great replacements for radio transformers, but tube-type audio gear is highly collectable now! But, you can still find transformers at hamfests and radio club flea markets. It is worthwhile to pick up an old cannibalized chassis if the power transformer is there and the price is right. I have a good supply of transformers, and I am always looking for more. I never pass up a chance to pick up another one that I am sure I will need someday.

Thanks, Ed!

I'd like to believe that many of you are saving these columns for future reference. My greatest contribution would be to produce something of lasting value in the space allocated to the "Wireless Connection" each month. Ed's contribution is the sort of material that has such enduring value. Ed was the gentleman behind the Hallicrafters TW-2000 and S-40 receiver modifications that we ran in past columns.

I'd like to suggest that you consider using an isolation transformer whenever exposed AC line voltages may be present. I'd also suggest carefully checking vintage transformers for leakage resistances between the transformer shell and windings, and between the individual windings themselves. Until next month, 73! ■

Pop'Comm Survey - October 2002

Editor's Note: I must apologize for the long delay in reporting our survey results to you. Clearly we've had a lot of interesting articles and rather lengthy columns lately which took precedence over providing the survey results. Next month we'll have a very extensive report on what you've told us over the past few issues. I sincerely appreciate your patience.

Circle Survey Card

My concerns about the radio hobby are... (please mark all that apply):

Cost of equipment	1
Availability of equipment	2
Anti-monitoring legislation	3
Antenna restrictions	4
Fast-moving technology making my equipment obsolete shortly after purchase	5
Possible loss of amateur frequencies to commercial or public safety interests	6
People operating radios illegally	7
Broadcasters leaving shortwave and using satellite and Web radio	8
Non-hobbyists who believe we have no business listening to public safety comms	9
Unfair media portrayal of radio hobbyists	10

If money wasn't a major concern, I would... (please mark all that apply):

Buy a top-of-the-line general coverage receiver	11
Completely upgrade my antenna system	12
Buy a top-of-the-line multi-band HF antenna for my ham activities	13
Shop for the best price on a new multi-mode ham or CB transceiver	14
Buy a top-of-the-line handheld scanner	15
Buy a separate scanner, shortwave receiver, and new antenna system	16
Buy nothing and keep my present equipment	17

My last major radio purchase (receiver, scanner, or transceiver) was:

Within the past week	18
Last month	19
More than a month ago, but less than six months	20
Between six months and a year ago	21
Between one and two years ago	22
Between two and three years ago	23
More than three years ago	24

overheard

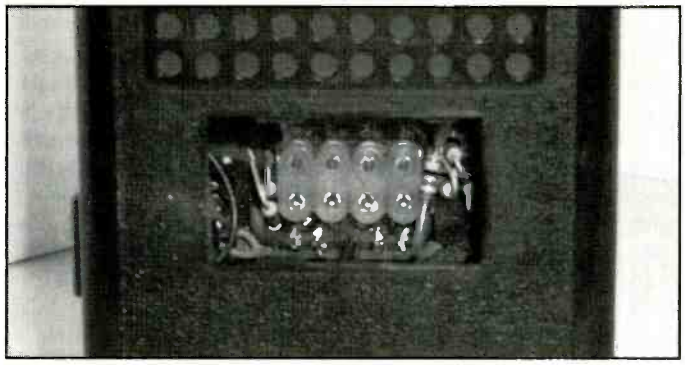
by Ken Reiss, <armadillo1@aol.com>

strategies and techniques to keep YOU informed

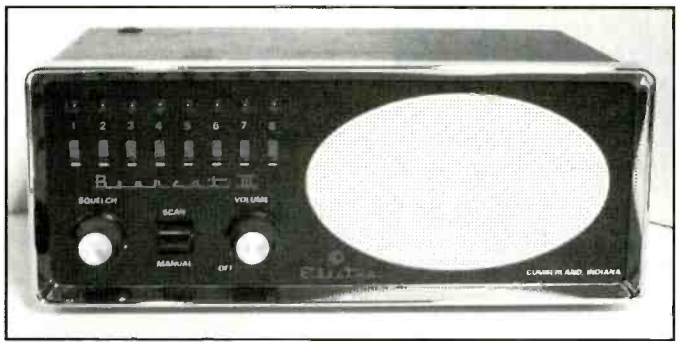
Anniversary Special: Part I—A Brief Photo History Of Scanning

Can you believe it? *Popular Communications* is 20! Wow—in celebration, I thought we'd take a photo-look back at the path scanning has taken. If you think about it, scanners and scanning are not all that much older than us.

This multiband Patrolman 6 receiver is the one that started it all for me. AM, FM, VHF-Low, -High, Air, and UHF were the six bands. I don't know if you'll be able to tell from the photo, but UHF ran from 450 to 470 MHz, and that's all you needed. I've had pictures of this radio in the magazine before, and I always get letters from people saying they started with one of these too, and how many memories it brings back. It certainly does for me. Scanners were available in 1974 when I got this one, but were out of my reach. Actually, this was my second radio—the first was a Hallicrafters S-108 that really started this whole radio thing. The Patrolman 6 was the first "public safety" receiver, so it opened up a whole new range of frequencies. That magic is still there for both of us, or you wouldn't be reading this article!



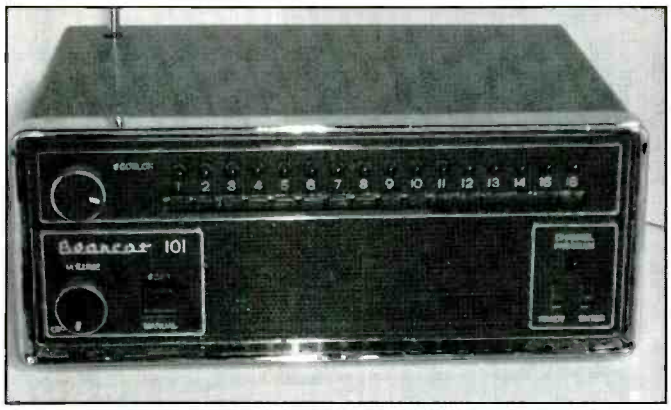
The Pocket Scan receivers required crystals (as they all did in those days). Four VHF-High band crystals could be loaded at one time, although we found that an extra could be taped inside the cover so it was handy when the need arose. A 4-1/2 channel scanner?



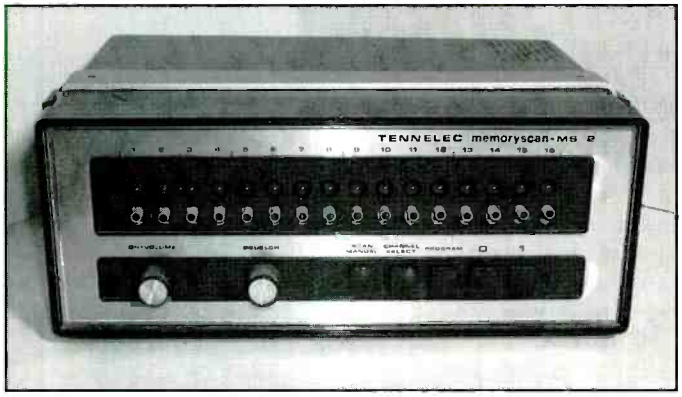
Bearcat has to be given credit for the early scanner designs, as it was Bearcat that first brought a scanning receiver to market. This Bearcat III was their third generation unit. This receiver could be configured with two frequency modules (this one has VHF-High and VHF-Low) and then crystals installed for up to eight channels. The addition of lockout switches was a recent invention, although I believe that was actually done on the Bearcat II. If you have a Bearcat I that you'd like to find a home for, please let me know!

This is the first actual scanner that I used. Four channels covered 148–174 MHz. It was relatively compact (for its day) and had great audio. One unique feature is that it came with both a mini-pin plug rubber duck (note the antenna connector in the top right corner) and a piece of wire. The wire worked great and could be wrapped inside a jacket quite easily.

The Patrolman PRO9 VHF scanner represented one way around the five-dollar crystal problem by adding one tunable memory channel. The problem was that once you had found a frequency that you were interested in listening to, the tuner was no help in determining what crystal to buy...you couldn't tell what frequency you were on closer than about 500 kHz.



The more popular receiver, because Bearcat was a much better known manufacturer, was the BC-101. This radio was programmed by putting it into the program mode, then setting the channel lockout switches up or down according to a code you had to look up in a reference guide. Once the switches were set, you pressed the ENTER button to set the frequency. If one switch was off, you could be listening to a dead channel while all the action was taking place around you. It was a neat radio in its day because it let you try all sorts of channels without buying crystals!



No history of early scanning would be complete without this receiver. The Tennelec Memory Scan 2 was a second-generation programmable receiver. You set the frequency with a series of 1 and 0 pushbuttons. Performance was "mediocre" at best, but the stage was set for bigger and better advances with computers.

In 1977, RadioShack had their own version of a switch programmable receiver in the COMP-100. It too was set with 1 and 0 switches. Performance on this unit was not all that great, and it was only on the market for a very short time before being replaced with much more exciting technology.

Listening is only half the fun.

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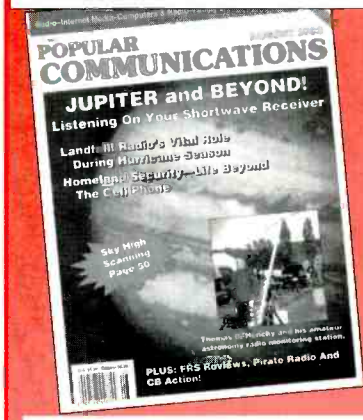

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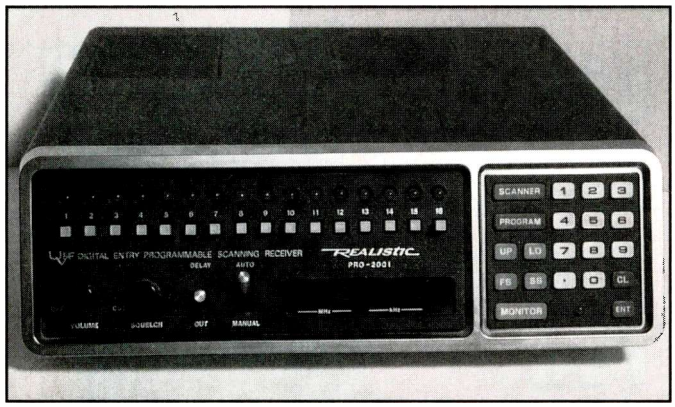
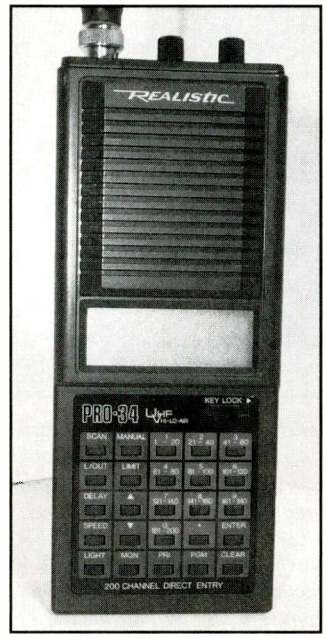


A Keyboard! I don't remember being as excited about any scanner as I was with this radio when it hit the streets in 1978. Direct entry right from a keyboard. Sixteen completely programmable channels, so no crystals! What more could we want?



When Pop'Comm *was first entering the market, this handheld was state of the art. Frequency coverage included 30-54, 108-136, 136–174, 380–512 and 896–960. It was one of the first handhelds on the market to include 800-MHz coverage, but it was very susceptible to overload. If you were close to a cell tower, you were going to hear phone calls no matter what frequency you were tuned to in the 800-MHz range.*

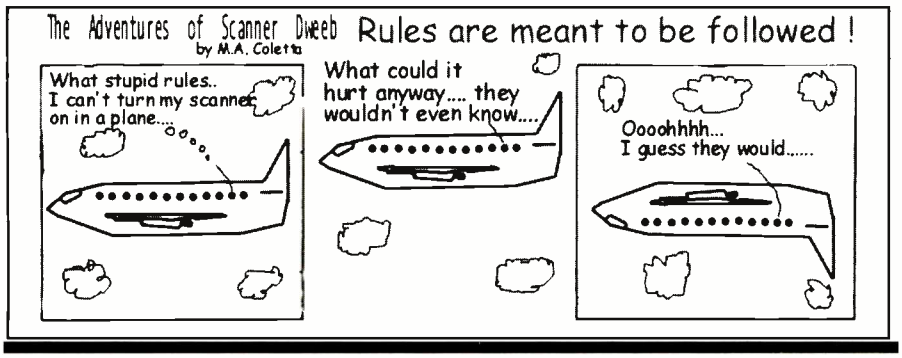
Alas, we're out of space for this month. Next month, we'll take a look at the development from this point forward. That should include a few more radios you'll recognize, unless you're as old as Harold.

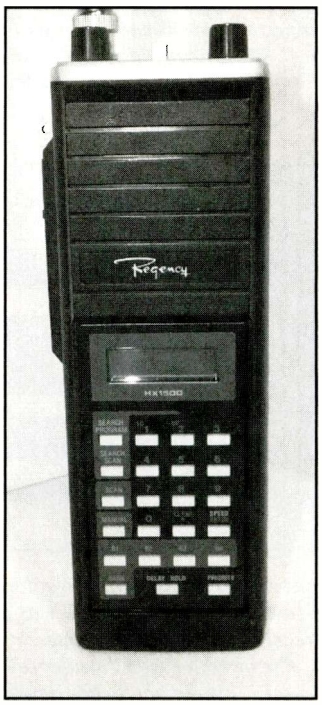
Frequency Of The Month

Instead of a frequency this month, let's go with your favorite receiver, or your first receiver. Bonus points if you can send in a picture! Send in your vote for your favorite all-time scanner, or a nostalgic story of your first receiver and we'll have a special drawing for a one-year extension to your *Popular Communications* subscription in honor of our 20th Anniversary. Everyone has a first radio and a favorite radio, so there's no excuse not to enter!

In the meantime, the Frequency of the Month winner is Robert Cole of Cincinnati, OH. Congratulations, Robert!

Please note that I have a new e-mail address effective immediately. The old AOL address will still work, but please send all entries and questions to the new address which is radioken@earthlink.net, or via snail mail, at ever-increasing rates, to Ken Reiss, 9051 Watson Rd, #309. St. Louis, MO 63126. Here's to 20 more years of *Pop'Comm* and 20 more years of good listening to us all! See you next month. ■





Regency was a leading scanner manufacturer through the '70s, and many of their receivers were top notch. This HX-1500 handheld is a second-generation version of their programmable handheld. Six AA batteries would power the beast for a few hours—but it was programmable, and it was portable! Unfortunately, this was also one of their last models.

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Turn mysterious signals into exciting text messages with the MFJ MultiReader™!

Plug this self-contained MFJ *MultiReader*™ into your shortwave receiver's earphone jack.

Then *watch* mysterious chirps, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR (FEC) turn into exciting text messages as they scroll across an easy-to-read LCD display.

You'll *read* interesting commercial, military, diplomatic, weather, aeronautical, maritime and amateur traffic . . .

Eavesdrop on the World

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

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

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

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime -- all over the world -- Australia, Russia, Japan, etc.

MFJ-462B **$179.95**

Printer Monitors 24 Hours a Day

MFJ's exclusive *TelePrinterPort*™ lets you monitor any station 24 hours a day by printing transmissions on an Epson compatible printer.

Printer cable, **MFJ-5412**, $9.95.

MFJ *MessageSaver*™

You can save several pages of text in an 8K of memory for re-reading or later review.

High Performance Modem

MFJ's high performance *PhaseLockLoop*™ modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference -- greatly improves copy on CW and other modes.

Easy to use, tune and read

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

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

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

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

Use 12 VDC or use 110 VAC with MFJ-1312B AC adapter, $14.95. 5¼Wx2½Hx5¼D inches.

No Matter What™ One Year Warranty

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

Try it for 30 Days

If you're not completely satisfied, simply return it within 30 days for a prompt and courteous refund (less shipping). Customer must retain dated proof-of-purchase direct from MFJ.

Super Active Antenna

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

Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz-30 MHz.

MFJ-1024 **$139.95**

Receives strong, clear signals from all over the world. 20 dB attenuator, gain control, ON LED. Switch two receivers and auxilary or active antenna. 6x3x5 inches. Remote has 54 inch whip, 50 feet coax. 3x2x4 inches. 12 VDC or 110 VAC with MFJ-1312, $14.95.

Indoor Active Antenna

MFJ-1020B **$79.95**

Rival outside long wires with this *tuned* indoor active antenna. *"World Radio TV Handbook"* says MFJ-1020B is a *"fine value... fair price... best offering to date... performs very well indeed."*

Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as a preselector with external antenna. Covers 0.3-30 MHz. Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, $14.95.

Compact Active Antenna

MFJ-1022 **$49.95**

Plug this *compact* MFJ all band active antenna into your receiver and you'll hear strong, clear signals from all over the world, 300 KHz-200 MHz including low, medium, shortwave and VHF bands.

Detachable 20 inch telescoping antenna. 9 volt battery or 110 VAC MFJ-1312B, $14.95. 3⅛x1¼x4 in.

Eliminate power line noise!

MFJ-1026 **$179.95**

New! ***Completely*** eliminate power line noise, lightning crashes and interference *before they get into your receiver!* Works on all modes -- SSB, AM, CW, FM, data -- and on all shortwave bands. Plugs between main external antenna and receiver. Built-in active antenna picks up power line noise and cancels undesirable noise from main antenna. Also makes excellent active antenna.

MFJ Antenna Matcher

MFJ-959B **$99.95**

Matches your antenna to your receiver so you get maximum signal and minimum loss.

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Select 2 antennas and 2 receivers. 1.6-30 MHz. 9x2x6 in. Use 9-18 VDC or 110 VAC with MFJ-1312, $14.95.

Dual Tunable Audio Filter

MFJ-752C **$99.95**

Two separately tunable filters let you peak desired signals and notch out interference at the same time. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 in.

High-Gain Preselector

MFJ-1045C **$99.95**

High-gain, high-Q receiver preseletor covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Push buttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18 VDC or 110 VAC with MFJ-1312, $14.95.

CW, RTTY, ASCII Interface

MFJ-1214PC **$149.95**

Use your computer and radio to receive and display brilliant full color FAX news photos and incredible WeFAX weather maps. Also RTTY, ASCII and Morse code. Frequency manager lists over 900 FAX stations. Auto picture saver.

Includes interface, easy-to-use menu driven software, cables, power supply, manual and *JumpStart*™ guide. Requires 286 or better computer with VGA monitor.

High-Q Passive Preselector

MFJ-956 **$49.95**

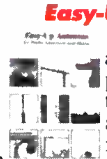
High-Q passive LC preselector boosts your favorite stations while rejecting images, intermod and phantom signals. 1.5-30 MHz. Preselector bypass and receiver grounded positions. Tiny 2x3x4 inches.

Super Passive Preselector

MFJ-1046 **$99.95**

New! **Improves** any receiver! Suppresses strong out-of-band signals that cause intermod, blocking, cross modulation and phantom signals. Unique Hi-Q series tuned circuit adds super sharp front-end selectivity with excellent stopband attenuation and very low passband attenuation and very low passband loss. Air variable capacitor with vernier. 1.6-33 MHz.

Easy-Up Antennas

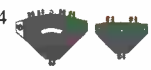


MFJ-38 **$16.95**

How to build and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before. Antennas from 100 KHz to 1000 MHz.

MFJ Antenna Switches

MFJ-1704 **$64.95**



MFJ-1702C **$24.95**

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. Good to 500 MHz. 60 dB isolation at 30 MHz. **MFJ-1702C** for 2 antennas.

World Band Radio Kit

MFJ-8100K **$69.95** *kit*
MFJ-8100W **$89.95** *wired*

Build this regenerative shortwave receiver kit and listen to signals from all over the world with just a 10 foot wire antenna. Has RF stage, vernier reduction drive, smooth regeneration, five bands.

21 Band World Receiver

MFJ-8121 **$39.95**

MFJ's new 21 Band World Receiver lets you travel the world from your armchair! Listen to BBC news from London, live music from Paris, soccer matches from Germany and more! Covers 21 bands including FM, Medium Wave, Long Wave and Shortwave. *Sony*® integrated circuit from Japan, multicolored tuning dial, built-in telescopic antenna, permanent silkscreened world time zone, frequency charts on back panel. Carrying handle. Operates on four "AA"s. Super compact size!

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Tech Help: (662) 323-0549

Prices and specifications subject to change. (c) *1998 MFJ Enterprises, Inc.*

world band tuning tips

your monthly international radio map

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

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

UTC	Freq.	Station/Country	Notes
0000	6105	Radio Cultura Filadelphia, Brazil	PP
0000	15520	Far East Broadcasting Co. Philippines	unid
0000	5905	Radio Ukraine Int'l	
0000	4717	Radio Yura, Bolivia	SS
0000	11820	Radio Veritas Asia, Philippines	unid
0030	4460	Radio Norandina, Peru	SS
0030	6536	Radiodifusora Huancabamba, Peru	SS
0045	15485	Radio Pakistan	Urdu
0100	9745	HCJB, Ecuador	
0100	4052	Radio Verdad, Guatemala	SS
0100	5940	Radio Bethel, Peru	SS
0100	4830	Radio Tachira, Venezuela	SS; irreg
0130	13760	Voice of Korea, North Korea	
0130	4832	Radio Litoral, Honduras	SS
0130	5930	Radio Slovakia Int'l	Slovak
0200	15425	Sri Lanka Broadcasting Corp.	
0200	9650	Radio Korea Int'l	
0200	6957	Radio La Voz del Campesino, Peru	SS
0200	3300	Radio Cultural, Guatemala	SS
0200	9865	Voice of Russia via Armenia	SS
0200	6215	Radio Maranatha/ Balurate, Argentina	SS/PP
0200	11710	Radiodifusora Argentina al Exterior, Argentina	
0200	6135	Radio Aparecida, Brazil	PP
0200	9795	Wales Radio , via England	
0200	5010	Radio Cristal Int'l, Dominican Republic	SS
0230	12040	Radio Ukraine Int'l	
0230	9490	Radio Sweden	
0230	11920	RTV Marocaine, Morocco	AA
0230	9570	Radio Budapest, Hungary	
0230	7160	Radio Tirana, Albania	
0230	4985	Radio Brazil Central, Brazil	PP
0230	6973	Galei Zahal, Israel	HH
0300	9605	Vatican Radio	
0300	7120	BBC via South Africa	
0300	7290	Voice of America Relay, Sao Tome	
0300	3215	Adventist World Radio via Madagascar	
0300	9705	Radio Mexico Int'l	
0300	12045	Deutsche Welle	unid
0300	6458	Armed Forces Network via Puerto Rico	USB
0300	7265	Sudwestrundfunk, Germany	GG
0300	9735	Egyptian Radio	
0300	7345	Radio Prague, Czech Republic	
0300	4820	Radio Botswana	
0300	4800	Radio Lesotho	
0300	17780	Adventist World Radio via UAE	RR/EE
0300	9970	RTBF Int'l, Belgium	FF
0300	7475	Voice of Greece	Greek
0330	7310	Radio Voice of the People via Madagascar	
0330	6265	Radio Zambia	unid
0330	6175	Voice of Vietnam, via Canada	
0330	12005	RTT Tunisienne, Tunisia	AA
0330	9895	Voice of Islamic Rep. of Iran	AA
0330	11930	Radio Japan via Gabon	JJ
0330	6940	Radio Fana, Ethiopia	unid
0330	4875	Radio Difusora Londrina, Brazil	PP
0330	6180	Radio Nacional, Brazil	PP
0330	4005	Vatican Radio	various
0400	4976	Radio Uganda	
0400	11955	BBC Relay, Thailand	
0400	4775	Trans World Radio, Swaziland	unid
0400	11940	Radio Romania Int'l	
0400	17735	Radio Romania Int'l	
0400	9665	Voice of Russia via Moldova	
0400	9900	Radio Cairo, Egypt	
0400	7255	VOA/Radio Sawa via Morocco	AA
0400	4950	Radio Nacional, Angola	PP
0400	11690	Voz Cristiana, Chile	SS
0400	11670	Middle East Radio Network, via Sri Lanka	AA
0430	9885	Voice of America Relay, Botswana	
0430	4770	Radio Nigeria	
0430	6137	Radio Unamsil, Sri Lanka	
0430	9925	Voice of Croatia, via Germany	
0500	15230	Voice of Mesopotamia (clandestine)	AA
0500	11820	Radio New Zealand Int'l	
0500	6185	Radio Educacion, Mexico	SS
0500	5025	Radio Rebelde, Cuba	SS
0500	6250	Radio Nacional, Equatorial Guinea	SS
0600	4845	Radio Mauritanie, Mauritania	AA
0600	4760	ELWA, Liberia	
0600	7210	RTVB Benin	FF
0630	6005	BBC Relay, Ascension Is.	
0630	7125	RTV Guineenne, Guinea	FF
0645	3300	CHU time station, Canada	

UTC	Freq.	Station/Country	Notes
0700	5020	Solomon Is. Broadcasting Corp.	
0700	9820	Radio Netherlands Relay, Bonaire, NWI	DD
0700	9595	Radio Tampa, Japan	JJ
0700	6090	World University Network, via Anguilla	
0700	6070	CFRX, Canada	
0700	6010	Radio Mil, Mexico	SS
0730	9885	Radio New Zealand Int'l	
0745	9660	Radio Australia	
0800	6350	Armed Forces Network via Hawaii	
0800	5975	Radio Autentica, Colombia	SS
0830	11675	Radio New Zealand Int'l	
0830	15160	Voice of America Relay, Northern Marianas	CC
0900	7260	Radio Vanuatu	FF
0900	13670	Radio Korea Int'l	
0900	5965	Radio Nova Visao, Brazil	PP
0900	6040	Radio Clube Paranaense, Brazil	PP
0900	6025	Radio Amanecer, Dominican Republic	SS
0930	12060	Radio Netherlands via Russia	
0930	4755	Radio Educacao Rural, Brazil	PP
0930	3205	Radio Sanduan, Papua New Guinea	
0930	3290	Voice of Guyana	
0945	4835	Radio Mar anon, Peru	SS
1000	11840	Radio Rossii, Russia	RR
1000	12015	Voice of Mongolia	
1000	3315	Radio Manus, Papua New Guinea	
1000	13685	Voice International, Australia	
1000	6085	Radio San Gabriel, Bolivia	SS
1030	5954	Radio Casino, Costa Rica	SS
1100	7260	Radio Thailand	VV
1100	3325	Radio Maya de Barillas, Guatemala	SS
1100	4725	Radio Myanmar, (Burma)	unid
1100	3265	Radio Republik Indonesia, Sulawesi	
1130	15565	BBC, England	
1130	4950	Voice of Pujiang, China	CC
1145	4781	Radio Oriental, Ecuador	SS
1200	7130	Radio Taipei Int'l	
1200	4890	National Broadcasting Corp., Papua New Guinea	
1200	4845	Radio Malaysia, Sarawak	
1200	4753	Radio Republik Indonesia, Makassar	II
1200	11940	National Radio of Cambodia	
1200	13590	High Adventure Ministries, via Russia	
1230	6150	Radio Singapore	
1230	15535	Far East Broadcasting Assn., Seychelles	
1300	9335	Voice of Korea	KK
1300	12105	BBC via Russia	CC
1330	17775	Radio Tashkent, Uzbekistan	
1330	18960	Radio Sweden	
1330	12095	Far East Broadcasting Co., Philippines	unid
1330	17820	Radio Canada Int'l	
1330	18940	Radio Afghanistan via Norway	unid
1330	7145	Lao National Radio, Laos	
1330	17870	Voice of Afghanistan via Austria	Pushtu
1345	11605	Far East Broadcasting Assn., Seychelles Is.	JJ
1400	11765	Radio Free Asia	CC
1400	15265	Radio Taipei Int'l	
1400	15375	Radio Exterior de Espana, Spain	SS
1400	11890	Radio Canada Int'l, via Japan	CC
1400	13362	Armed Forces Radio via Guam	
1430	9660	Radio Veritas Asia, Philippines	RR
1500	11570	Radio Pakistan	
1500	21660	BBC Relay, Cyprus	
1530	17525	Radio Denmark, via Norway	DD
1530	9635	Voice of Islamic Republic of Iran	
1600	15435	UAE Radio, Dubai	AA
1600	17680	RDP International, Portugal	PP
1600	9525	Channel Africa, South Africa	
1600	15140	All India Radio	RR
1600	17680	Voz Cristiana, Chile	SS
1615	15595	Vatican Radio	
1700	15125	VOA Relay, Thailand	
1700	17605	Radio France Int'l	
1700	15110	Radio Kuwait	AA
1700	15365	Radio Romania Int'l	
1730	15210	Radio Free Afghanistan	Dari
1730	21700	Radio Exterior de Espana, Spain	SS
1800	17670	Egyptian Radio	AA
1800	15760	Kol Israel	HH
1900	11605	Kol Israel	
1900	12125	Radio Jakada (clandestine)	
1900	15230	Broadcasting Service of the Kingdom, Saudi Arabia	AA
1900	15445	Voice of Russia	FF
1900	15390	Deutsche Welle Relay, Rwanda	
1900	15240	RAI Int'l, Italy	unid
1930	17735	Swiss Radio Int'l	
1930	17850	Radio Exterior de Espana Relay, Costa Rica	SS
2000	13610	Radio Damascus, Syria	
2000	15120	Voice of Nigeria	various
2000	15150	Voice of Indonesia	
2000	11990	Radio Kuwait	EE
2000	11620	All India Radio	Hindi
2030	11840	Voice of Islamic Rep. of Iran	AA
2030	11787	Radio Iraq Int'l	AA
2030	11955	Radio France Int'l, via Gabon	FF
2100	15775	Family Radio, USA, via Germany	
2100	15435	Radio Jordan	AA
2200	11960	Voice of Turkey	
2200	11905	Swiss Radio Int'l	FF
2200	13680	Radio Japan	JJ
2200	21740	Radio Australia	
2230	15500	China Radio Int'l, via Mali	CC
2230	17510	KWHR, Hawaii	
2230	17535	Adventist World Radio, Guam	CC
2230	15545	Radio Prague, Czech Republic	
2230	17705	Radio Havana Cuba	PP
2230	15345	Radio Nacional, Argentina	SS
2230	9550	Broadcasting Service of the Kingdom, Saudi Arabia	AA
2300	17860	Deutsche Welle Relay, Rwanda	GG
2300	17820	Voice of America Relay, Philippines	
2300	17835	Radio Canada Int'l, via Japan	CC
2300	13730	Radio Austria Int'l	
2300	9400	Radio Bulgaria	
2300	11780	Radio Nacional do Amazonia, Brazil	PP
2330	15550	Radio Free Asia	CC
2330	9875	Radio Vilnius, Lithuania	
2330	4825	Radio Mam, Guatemala	SS
2345	17625	China National Radio	CC

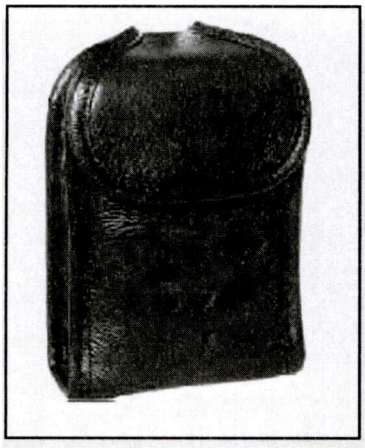
power up:
radios & high-tech gear

by Harold Ort

review of new, interesting, and useful communications products

PowerPort VX-7R Radio Glove

Once again, Cutting Edge Enterprises comes through with a well-designed, high-quality leather pouch for the hottest new radio. It coddles your VX-7R in protective leather and provides a secure pocket for an extra antenna tip. The spring-steel, leather-covered belt clip forms a bond with your belt and holds it in place better than any clip we've tried!



The newest addition to Cutting Edge's product line is their Radio Glove for the VX-7.

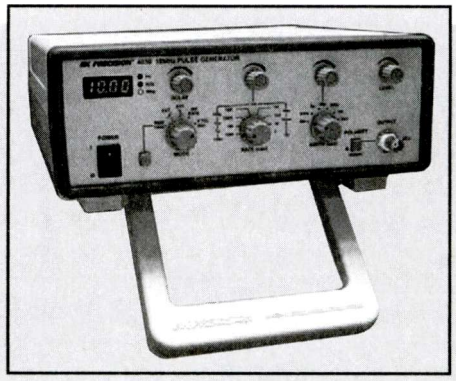
This is genuine craftsmanship—nothing beats the feel or the smell of fine glove-quality leather. The pouch's Velcro-style closure provides easy access to the display. The PTT button is still fully accessible while the radio is in the pouch. It's a classy look that just gets better over time!

The VX-7R Radio Glove sells for $19.95. For more information, contact Cutting Edge Enterprises, 620 Highland Avenue, Santa Cruz, CA 95060 or phone 800-206-0115. You can also visit them on the Web at <www.powerportstore.com>. Tell them you read about their pouch in *Pop'Comm*!

B+K Precision Introduces An Easy-To-Use, Low-Cost 10-MHz Pulse Generator

B+K Precision Corporation has just added Model 4030 to their ever-expanding line of test equipment. Using a standard 115-Vac power source, the 4030 is capable of producing pulsed waveforms with variable symmetry and amplitude to test for a variety of applications, including testing and troubleshooting digital logic circuits, interfacing between different logic families, testing response time of opto-isolators, and testing shift registers. The B+K Precision Model 4030 has several unique features, including manual mode that allows one pulse to be generated each time a pushbutton is pressed, making it convenient for stepping a circuit, one pulse at a time.

This moderately priced, full-featured pulse generator is perfect for engineers, technicians, and students engaged in digital and pulse electronics. Available for immediate delivery, the 4030 is priced at $355 and comes with B+K Precision Corporation's warranty, line cord, and user manual.



B+K Precision's new Model 4030 pulse generator.

For over 50 years B+K has designed and manufactured high-quality, reliable, and cost-effective test and measurement products. Their products are available worldwide through a global network of authorized distributors. For more information or the name and location of an authorized distributor near you, contact B+K Precision Corporation, 22820 Savi Ranch Parkway, Yorba Linda, CA 92887, or phone 714-921-9095, or visit them on the Web at <www.bkprecision.com>.

2003 Police Call Books To Include Updated CD-ROM 4.0

The decision to include a nationwide CD-ROM with *each Police Call Frequency Guide* was so successful last year that the 2003 Edition of *Police Call* will include Version 4.0 of the *Police Call* CD-ROM at no extra cost, as was announced by Editor Rich Barnett.

Police Call, known as the "scanner user's bible," now in its 40th year of publication, includes radio frequencies for emergency agencies and 18 other categories of radio users, such as federal government, public utilities, transportation, sports, education, entertainment and aircraft. Additionally, there are sections on trunked systems with their talkgroup codes, an exclusive Consolidated Frequency Usage List and much more.

Police Call, in both book and CD-ROM form, is updated annually to reflect the thousands of changes made during the year. The one CD-ROM includes the data from all seven volumes, plus additional features of interest to radio listeners.

Police Call is sold by selected retail electronics dealers and mail order firms (many of which can be found on the Internet) as well as in all RadioShack stores. Look for the familiar cover, which will be green for 2003. The suggested retail price of each regional volume is $19.99, including the CD-ROM.

SETI League Launches Free Web-Based Journal

The SETI League, Inc., grassroots leader in the privatized search for life in space, announced *Contact In Context*, a new

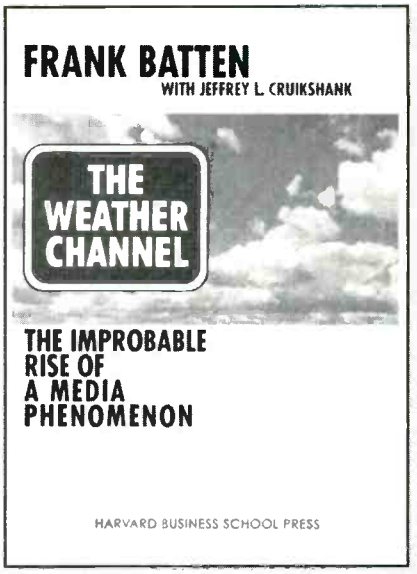
peer-reviewed, Web-based academic journal intended as a scientific forum for research in astrobiology and in the search for intelligent life in the universe. *Contact In Context* will cover microwave spectrometry, optical spectrometry, electrical engineering, technology development and assessment studies, chemistry, physics, mathematics, and statistics. Papers and SETI-related hardware, software, search strategies, and philosophy are also welcome submission topics.

The journal will be published semiannually by the SETI League and distributed without charge through the Web. One need not be a SETI League member to submit or subscribe. Full details, including submission guidelines for authors, may be found online at <http://cic.setileague.org>. The journal will be published in English, but is intended for a global audience of professional and amateur scientists, academics from a variety of disciplines, and anyone interested in the scientific Search for Extra-Terrestrial Intelligence, popularly known as SETI.

The Weather Channel: Good Read From Harvard Business School Press

Even some business folks were sure the idea of a 24-hour-a-day weather channel would fail. But now, some 20 years later, The Weather Channel has over 85 million subscribers and reaches 95% of the total cable universe.

Who hasn't followed developing storms or had this fascinating medium touch their lives in some way? It's founder, Frank Batten details the major struggles the parent company, Landmark Communications went through to launch The Weather Channel in his new book "The Weather Channel: The Improbable Rise Of A Media Phenomenon." We received a copy of this outstanding book and couldn't put it down! He gives you the complete inside story of The Weather Channel which is his own personal account and case study of large media business experiencing and driving technological change.



Batten's cut-right-to-it writing style and thorough knowledge of the media makes this 320-page book perfect for young business leaders and radio hobbyists who want to expand their knowledge of the global media, and learn what it takes to make it happen in the real world of TV broadcasting. The Weather Channel: The Improbable Rise of a Media Phenomenon by Frank Batten with Jeffrey L. Cruikshank is $29.95. It's ISBN No. 1-57851-559-9.

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Announcing Scancat-Gold for Windows Version 8.25

We've added a lot of new features to our latest Scancat. AND...We have made it EASIER than EVER!

Scancat-Gold for Windows-New Features for Ver 8.25

TRUNK TRACKING SUPPORT FOR BC780, BC895, BC245, Pro2052

Supports all radios in ONE program - share files with all radios.

- Two Scanning modules:
  - A Simple Basic Module - for beginners
  - Plus
  - An Advanced Scanning System for the "experts".
- New "Folder Tabbed" GUI puts everything at your fingertips
- Faster scanning speeds
- Extensive on screen help
- Completely revised printed manual - Over 160 pgs.
- EXPANDED trunking support for BC780, BC895, BC245 and Pro2052
- Monitor and log all TalkGroup activity - Export to other files.
- Completely revised trunking database management with expanded capabilities. Makes programming your radio a breeze!
- Expanded import from databases such as EXCEL.
- NO ONE supports your "Trunk Tracker' with more features!

STILL THE SAME GREAT PRICE:

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broadcast technology

terrestrial AM, FM–and satellite radio news

by Bruce Conti <baconti@aol.com>

Night Work Pays Off For DXers

Experienced mediumwave DXers have a different take on the old radio contest adage that it pays to listen. Radio stations will sometimes go off the air during the early morning hours without notice for maintenance of studio and transmitter facilities. The payoff is a rare opportunity for reception of exotic signals. Here are some excellent examples:

March 16: 660 WFAN and 880 WCBS New York were both off the air for transmitter maintenance, leaving these clear channel frequencies open for rare east coast reception of New Mexico, Canada, and Mexico. Upon returning to the air, WFAN's overnight sports talk host said, "We were off the air since a little after midnight, and the engineers have done a good job I hope. They're workin' on the transmission. I understand it might happen overnight on Saturday and Sunday as well perhaps. We had a lot of calls in the newsroom: Where are you? Where's the signal? What's goin' on? Just maintenance with the transmitter, so we're back!"

June 19: 690 CBU Vancouver was momentarily off the air and later returned at low power after experiencing power grid problems at the transmitter site. Announcements indicated that CBU would be off again for repairs.

June 23: 1500 WTOP Washington D.C. was off the air during the early morning hours for maintenance work. WTOP has also been taking sister station 820 WXTR off the air at times for testing of IBOC digital broadcasting, while testing IBOC on 1500 as well.

August: 1130 WBBR New York planned to be off some nights for testing of a new transmitter. "We are in the process of replacing our auxiliary transmitter, a Continental 317C, with a new Nautel XL-60. This will become our main transmitter, and the current main transmitter, a Nautel Ampfet 50, will become the auxiliary transmitter," said Chief Engineer Bob Janney.

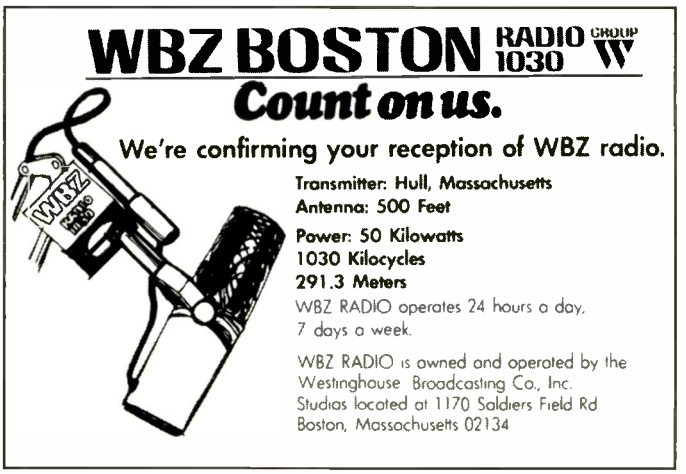
September: 710 WOR New York was expected to take some time off overnight during relocation of their transmitter site. Down time was expected to be minimal while engineers tested the new site.

Not all radio stations need to go off the air for maintenance. Many of the higher-powered AM stations have back-up antennas and transmitters. For example, 1030 WBZ Boston has two distinctly separate transmitter sites. At the main site in Hull, Massachusetts, engineers cycle between two 50-kW transmitters into their two-tower directional antenna array. When the antennas need service, WBZ switches to its 10-kW omnidirectional site at the Boston studios during daylight hours.

Those radio stations that do plan on some downtime are usually unable to provide much advance notice to DXers, as much as some engineers have tried their best. Weather conditions, delivery of hardware, or a busy news night can easily nix plans. Thanks to the Internet, DXers can be instantly informed when radio stations go off the air.

There are numerous radio broadcasting bulletin boards on the Internet worth checking periodically for postings of late-breaking inside information. Visit the Radio-Info.com Web Directory or Radiotalkink's biz.at/radio for links to local radio forums. Broadcast DX clubs host "list server" e-mail reflectors where DXers send and receive messages about current events. Among those specializing in mediumwave DXing are the International Radio Club of America (www.geocities.com/Heartland/ 5792), National Radio Club (www.nrcdxas.org), and Ontario DX Association (www.odxa.on.ca). Visit their websites for e-mail discussion group subscription information.

And there's nothing wrong with doing an old-fashioned band-scan of local and clear channel frequencies on a sleepless night—you never know when a unique opportunity will arise.

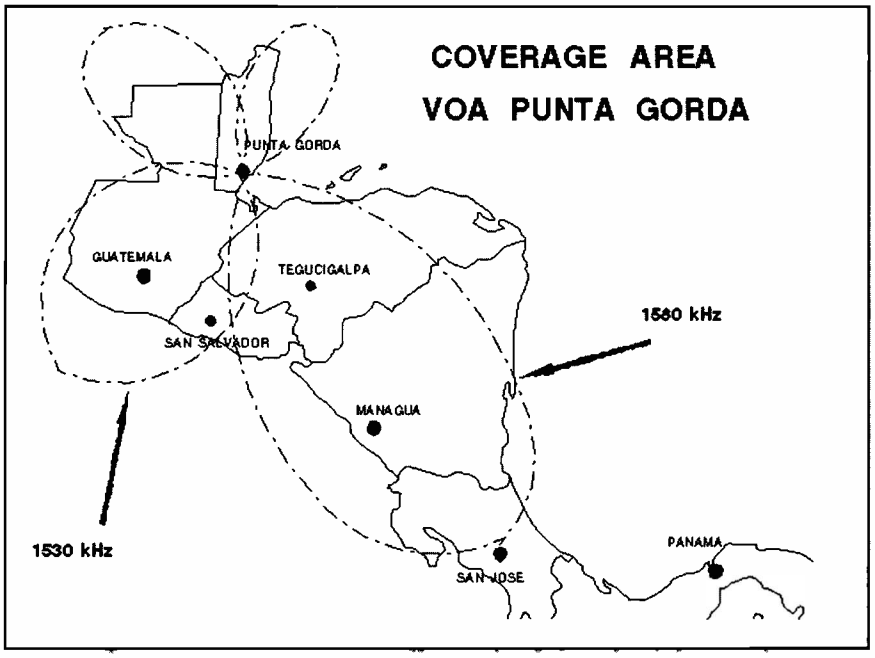


Check Out DXING.INFO

Speaking of Internet message boards, a new website, www.DXing.info is open for business. "The content is aimed mainly at DXers interested in mediumwave and shortwave broadcasting stations, but also FM listeners, other radio hobbyists and broadcasting professionals should find useful material," according to moderator Mika Makelainen, a Finnish broadcast journalist and DXer for over 22 years. The site receives a variety of information from contributing DXers in several countries and represents the rebirth of "Freeze! DXing Arctic Style!". Makelainen writes, "DXing.info promotes cooperation and partnership among players in international radio. At <http://www.dxing.info/community/> you can join the DXing.info Community to share the latest DX information and exchange opinions on DXing and broadcasting in real time."

Belize Denies VOA Radio Marti

The government of Belize has denied changes in the directional patterns of Voice of America (VOA) transmissions to



VOA Belize 1530 and 1580 coverage map.

expand Radio Marti coverage aimed at Cuba. The VOA broadcasts daily on **1530** and **1580 kHz** from Punta Gorda, Belize, providing VOA programming as well as leased time for independent broadcasters. Belize did not want to become involved in the conflict between the United States and Cuba.

Radio Marti has been broadcasting on **1180 kHz** from Marathon Key, Florida, since 1985 as a result of the Radio Broadcasting to Cuba Act of 1983 in which Congress sought to counter Cuban censorship. The power of the 1180 signal was recently increased from 50 to 100 kW to overcome interference caused by jamming and the competing Radio Rebelde Cuba broadcasts on the same frequency.

Canada's First AM X-Bander

CJWI Montreal is on the air at **1610 kHz** with 1000 watts. This is Canada's first official full-time AM expanded band radio station. Identifying as "CPAM Radio Union.com," French-language broadcasts will serve Haitian and various other Caribbean ethnic communities of Montreal. Their address is CPAM Radio Union.com Inc, 10 St-Jacques Street, Suite 807, Montreal QC H2Y 1L3.

QSL Information

740 CHWO Toronto, Ontario, a beautiful classy full-color QSL card and bookmarks, along with info about CHWO, history, etc. in 19 days for taped report and $1 return postage, signed Brian Smith-QSL Manager. Address: C/O ODXA, P.O. Box 61, Station A, Willowdale ON M2N 5S8. I am really pleased with this! (Martin, OR)

1220 CJRL Kenora, Ontario, a nice verification letter in 22 days for a taped report and $1 return postage, signed Hugh Syrya-Manager. Address: 128 Main Street, South Kenora ON P9N 1S9. Ontario QSL #29. (Martin, OR)

1680 KRJO Monroe, Louisiana, after a long wait, KRJO has their QSL forms now, a black and yellow form, signed Russell Kendrick-CE, and a bumper sticker. (Martin, OR) Nice computer printed three-color QSL letter and "Rejoice" bumper sticker in 23 days, mentions that they are AM stereo, signed Russell Kendrick, CE. Address: The Radio People, 1109 Hudson Lane, Monroe LA 71201. (Griffith, CO)

1700 WSJZ Des Moines, Iowa, received handwritten QSL letter in 11 days, signed Jack O'Brian-Operations Manager. Mentioned they had the WSJZ calls for a week then switched back to KBGG, and they were surprised as their signal on 1700 barely gets out of town! I don't know if they meant day or night or both. I do know 1640 KPBC gets out poorly at night in the Portland area. Address: 4143 109th, Urbandale IA 50322. Besides KBGG, they also have KGGO 95, The Hawk 97.3, The River 98.3, and Great Country KJJY 92.5 FM. (Martin, OR)

Broadcast Loggings

A number of changes noted in this month's selected logs. All times are UTC.

549 United Christian Broadcasters, Monaghan, Ireland, at 0205 religious folk female vocal in a style much like that of Maddy Prior's "Gaudete"; over/under Algeria, completely wiping out the domestics on 550. (Connelly, MA)

585 RNE1 Madrid, Spain, heard at 0200 parallel 855 kHz with Stan Getz-style samba jazz, then 5 short pips and 1 slightly longer one, and "Radio Nacional Espana" ID; huge, comparable in strength to adjacent WEZE and VOCM on 590. (Connelly, MA)

690 CBKF1 Gravelbourg, Saskatchewan, fair on top of CBU with jazz at 0520, mention of CBC and French announcer. (Martin, OR)

710 KXMR Bismarck, North Dakota, at 0625 an unbelievable signal totally wiping out KIRO at times (KIRO directs about 80-kW ERP at me) and Sporting News Radio, IDs as "North Dakota's information leader, News/Talk 710" and "News/Talk 710, KXMR Bismarck-Mandan." Several Midwest stations were strong tonight with the solar flux and sunspots dropping. (Martin, OR)

981 R. Star Country, Emmyvale, Ireland, at 0115 this one strongly suspected here with U.S.-style country music and bits of English talk; through WCAP and WOFX slop. First reception of this in USA? (Connelly, MA)

1170 KFAQ Tulsa, Oklahoma, good signal on top of KPUG with new format and call, formerly KVOO. At 0800 tuned in just in time to catch "Talk Radio 1170 KFAQ Tulsa," into CBS

News. Many IDs, "Talk Radio 1170 KFAQ is the talk station that does news." Odd to hear this format on the old KVOO that was country music for so many years. (Martin, OR)

1206 France Bleu, Bordeaux, France, at 0030 techno-disco, Bleu jingle, a woman gave a time check, into a slow romantic vocal; huge local-like signal. (Connelly, MA)

1230 KOBB Bozeman, Montana, heard at 0600 on top briefly with ID, "Thanks for joining us. With great music and wonderful memories, we're KOBB Bozeman." Sounded like ABC News followed. Never logged before under these call letters, the last time I heard this station was about 1969. KKEE was off. (Martin, OR)

1249.5 WKBR Manchester, New Hampshire, at 0036 still off-frequency, should be widely heard. (Connelly, MA) Recently changed format from Real Country to news/talk.

1260 KWYR Winner, South Dakota, at 0605 a PSA for Winner Crime Stoppers, ABC News, and country music, with slogans *Country 1260*, *Real Country*, and *Radio for the Heartland*. At 357 miles on 146 W these guys always sound surprisingly good. (Griffith, CO)

1270 KDJI Holbrook, Arizona, at 0547 a good signal with special coverage of the wildfires in the area. Issued several warnings, lists of evacuation centers, and plea for donation of personal hygiene items. Mentioned that they were staying on full power 24 hours a day during the emergency. (Griffith, CO)

Broadcast Call Letter Changes

CHANGES

New Call	Location	Freq.	Old Call
KNRC	Littleton, CO	1510	KDKO
WSJZ*	Des Moines, IA	1700	KBGG
KBGG	Des Moines, IA	1700	WSJZ
WGOP	Poolesville, MD	700	WWTL
KSGF	Springfield, MO	1260	KTTF
WVXY	Fair Bluff, NC	1480	WNCR
KPIR	Granbury, TX	1420	KPAR
KCDQ	Douglas, AZ	95.3	KEAL
KQKL	Selma, CA	88.5	New
KXDC	Estes Park, CO	102.1	KXUU
KQEO	Idaho Falls, ID	105.5	KOSZ
KEGR	Fort Dodge, IA	89.5	New
WXXM	Reserve, LA	94.9	WSJZ
KBVS	Billings, MT	90.1	New
KLMT	Billings, MT	89.3	New
KLRV	Park City, MT	89.7	New
KPPL	Poplar Bluff, MO	92.5	New
KOSZ	Rio Rancho, NM	101.7	KQEO
KJKL	Selma, OR	88.7	New
KHCK-FM	Denton, TX	99.1	KHCK
KSOC	Gainesville, TX	94.5	KTXQ-FM
WFMP	New Richmond, WI	107.1	WIXK-FM
KIGN	Burns, WY	101.9	KMUS-FM
KQLF	Cheyenne, WY	97.9	KIGN

**WSJZ was used for only a week before reverting to KBGG.*

1510 KNRC Littleton, Colorado, at 2400 on the first day of regular programming under new call letters (formerly KDKO) after being dark for several weeks. Now with a talk/sports/news format, including Enid Goldstein (formerly of KGO) with a live call-in show in the afternoon rush hour slot, on-air telephone number (303) 297-1510. Slogans "Where Denver talks" and "The new station you can talk to." (Griffith, CO)

1530 VOA Pinheira, Sao Tome e Principe, at 0407 parallel 7290 kHz with English talk about a meeting between Fidel Castro and former U.S. president Jimmy Carter; poor, in a mix with a second station with WSAI phased. (Connelly, MA)

1700 WSJZ Des Moines, Iowa, fair on top with CNN news at 0655, then an ID at 0700, "CNN Headline News...This is AM 1700 WSJZ Des Moines, all news all the time," formerly KBGG, and an easy way to log another W call. (Martin, OR) The new call letters supposedly signified a format change to smooth jazz, but were only used for a week, apparently assigned in error by the FCC.

Thanks to the threesome of DXperts, Mark Connelly, Patrick Griffith, and Patrick Martin for their contributions this month. Now's the time to join the fun by sending in your logs for the next edition! 73 and Good DX! ■

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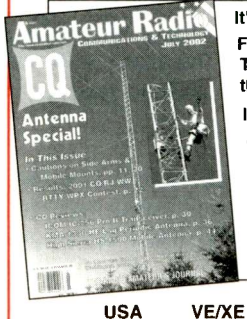

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clandestine communiqué

tuning in to anti-government radio

by Gerry L. Dexter

Challenge: Can You Hear Ashur Radio Broadcasting To Iraq?

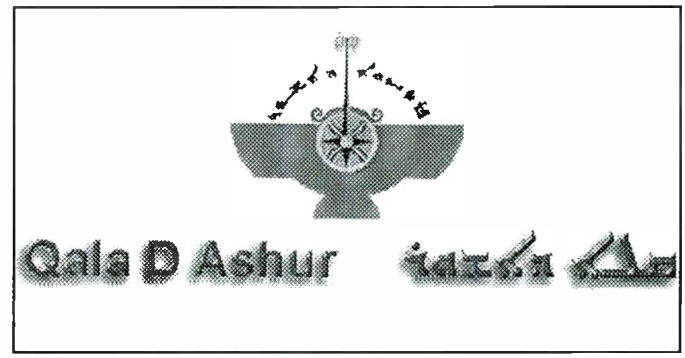
Like a mail order book club, the world of clandestine broadcasting seems to generate a new station every month. This time it's Ashur Radio, mouthpiece of the Assyrian Democratic Movement. Actually, the station has been on the air for more than a year, but has only recently been noted and an ID picked out. The broadcasts, mostly in Assyrian dialects (plus some Arabic), are beamed to Northern Iraq. The station uses **9155**. The schedule hasn't been fully determined, but runs until 1900, an awful time for North American reception. We also do not know where the transmitter is located. The station does have a website, though – at zowaa.com. The offices may very well be located in Sweden. If you live within radio range of Detroit, Michigan you can also hear Ashur Radio on WPON-1460 Sundays at 2100.

The **Voice of Tibet** has added another broadcast, this one via Tashkent on **21560** from around 1430. VoT is doing a lot of "adjusting," trying to escape from the Chinese "music jammer," which now seems to be used against other Chinese-related broadcasters, not just Radio Free Asia. In addition to the Voice of Tibet we've heard what we believed to be Fang Guang Ming Radio (ex-Radio Falun Dafa) underneath one of these jammers. These things are sometimes mistaken for Radio Free Asia, but RFA is largely talk (they have a message to promote, after all. The jammers, in contrast, don't say a word.

The US military-operated broadcasts to **Afghanistan** continue on **8700**, using a mobile broadcast system. In North America these transmissions are most likely to be heard from 0030 sign-on.

The **Radio Free Europe/Radio Liberty**-operated **Radio Free Chechnya** is on the air from 1700 – 1800 (via Kavala, Greece), **11760** (Biblis, Germany) and **15350** (Lampertheim, Germany). And again at 0400-0500 on **9850** (Biblis), **11760** (Kavala) and **15355** (Holzkirchen, Germany). The decision to go ahead with Radio Free Chechnya was not a hit with the Russian government.

Radio Rainbow, one of a handful of broadcasters that targets Ethiopia and/or Eritrea, is currently on the air Fridays from 1900-2000 on **15565** and Saturdays from 0800-0900 on **6180**, both via Julich, Germany.



Ashur Radio uses 9155 during the late morning and early afternoons in North America, making it next to impossible to hear.

Radio Target: Iran

Radio International broadcasts in Farsi to Iran via Moldova from 1630 to 1715 on **9940**. Iran is also the target of **Radio Avaye Ashena** (Radio Familiar Voice) via Lithuania at 1000-1100 on **9710**.

One of many Kurdish clandestines is the **Voice of Mesopotamia**, which broadcasts via Tashkent (Uzbek) transmitters from 0400 to 1200 on **15675** and from 1200 to 1600 on **11530**, the latter via Moldova.

The **Voice of Islamic Palestinian Revolution**, broadcast over VOIRI (Iran) transmitters operates from 0330 to 0427 on **9610 and 11870**; 1930 to 2030 on **6025, 6200, 9705, 9860, 11740 and 11840**. The two frequencies in use at 0330 have both been heard in North America at fairly good levels.

The **Voice of Kampuchea Krom**, aimed at Vietnam from Vladivostok, now broadcasts on Tuesdays from 1400 to 1500 on **15690**. Que Hong Radio, also targeted at Vietnam is on the air daily except Sundays, from 1300 to 1400 on **9930**, over KWHR in Hawaii.

It's a tight squeeze, but some evenings the **Voice of the People**, beamed to Robert Mugabe's confused government in Zimbabwe, can be heard on **7310**, signing on at 0329, but it takes a real pounding from one of the US religious broadcasters using 7315 at the same time.

That's it for this time. Hope you'll join us next month for more news from the world of clandestine broadcasting. Meantime, remember we always greatly appreciate your input, whether in the form of loggings, copies of clandestine QSLs or background info on these stations and the groups, which operate them.

Good hunting! ■

FARC (Fuerzas Armadas Revolucionairo de Colombia) operates La Voz de la Resistencia. This station's main transmitter was hit by the Colombian military some months ago and it's unclear whether this station is still active.

technology showcase

new product performance analysis

by Harold Ort, N2RLL, Editor

Vector Manufacturing's Multi-Function AC/DC Power System

It's been a while since we reviewed a portable power supply, and when we saw this professional-looking unit from Vector, called the "Start-It" VEC021AC, we couldn't resist taking it for a test drive.

If you're used to half-pint, small power supplies that only power a small light bulb for a few minutes, you can now toss 'em, because this is a potent supply with a hefty 200-watt inverter included! This unit's power source is a beefy 12 volt, nine amp hour lead acid battery. I've used a ton of these supplies/jump-starters over the years and this one is near the top, not only in performance, but in thoughtful features as well. Take for example the super heavy-duty 12 Vdc battery clamps at the end of the No. 4 welding quality jumper cables that tuck neatly onto the side of the unit until ready for use. And when they are, it's a simple procedure to jump start your car. It even includes a reverse polarity alarm. The alarm requires at least two volts to activate, so if your vehicle's battery has completely bought the farm, and you've reversed the polarity, the alarm may not sound. It's possible, but highly unlikely because as Vector's well-written small manual says, "because all dead batteries rarely go below four or five volts." But regardless, always double-check all your connections before turning on the Safety Switch. Thankfully I didn't experience a dead car battery and have to use the Vector Start-It unit to get back on the road, but I'm confident it's got enough power to get you going when necessary.

"As with other manufacturers' portable power supplies, it will power your small DC appliances. The Vector unit will power DC radios that draw under 23 amps."

As with other manufacturer's portable power supplies, it will power your small DC appliances. The Vector unit will power DC radios that draw under 23 amps. The unit has a top-mounted 12 Vdc receptacle that's got a nifty plastic plug that keeps out moisture and dust. The relatively high available amps means it'll operate my Ranger 2970 amateur rig, so I gave it a try at about 50 watts RF, making solid contact with a couple of DX stations — one in Europe and another in Canada. There was no noise reported on my signal, and received signals were also clean. Output at the DC receptacle was 12.8 volts. I'd estimate my total on-air time (transmit) was about three or four minutes. A couple of days later I used a Cobra 148 GTL CB on USB for about an hour, connecting a mag-mount antenna to a railing outside the office. Total on-air (transmit) time with the Cobra was 40 minutes. That night I plugged in a small automotive fan into the 12 V receptacle for a few minutes before recharging the supply.

Powering Other Radios And Lights

If your power goes out and you think you've got to sit there with dangerous kerosene lamps or candles, think again. The

The top-mounted LED status lights.

If you need to get the hefty 200-watt inverter closer to an AC device, it easily removes from the main unit.

The 200-watt removable inverter has an easily accessible fuse on the back.

Vector unit has a built-in emergency light. It's actually designed for changing a flat tire or working on a broken down vehicle instead of holding a flashlight in one hand and removing the tire with the other — a near impossible task. I used the Vector Start-It during a two-hour power failure recently — and it worked flawlessly! For some reason I haven't yet been told, even without a major electrical storm or car striking a utility pole, parts of our city are blessed with unusual power failures — and when you'd least expect them. Last month it happened again, so I calmly walked upstairs, removed the Vector unit from the charging adapter and within three minutes we were able to at least see each other using a 25 watt table lamp. The power came back on a couple of hours later, but I'd say the Vector supply could have easily powered that lamp another three or four hours.

The Vector manual doesn't give typical running times for either AC or DC products. Perhaps this is a wise decision, because everybody does things differently. In my opinion, today it's tricky enough dealing with peoples' expectations, let alone if you come right out and say you'll likely get x hours operating time for appliance or lamp y or z. What they did do in their manual is explain how the unit operates and how you can approximate running time for either AC or DC products.

Getting back to my 25 watt lamp that we operated about two hours using the supplied inverter, I figured it was a great time to review the unit, so that night I kept the unit unplugged from the wall charger. The next morning I used my PRO-43 handheld scanner with the Vector Start-It. To say I couldn't run this supply down is an understatement! I tried everything including keeping the scanner on over nine hours continuous, then I measured the DC voltage — 11.85 volts. Excellent — this means there's much more available power if I needed it in an emergency! So, I created my own "emergency" by plugging one of those small 7.5 watt nightlights into the AC inverter, and just let it sit there in the living room. Five hours later — the next morning — the light was flickering as if the unit was finally exhausted from the runs. Indeed it was, but look at the length of that complete run: Two plus hours using the 25 watt lamp, over nine hours using a handheld scanner and five hours using the small nightlight!

Is this a power supply you're going to carry around on a family outing? Hardly. Although it weighs in at 17 pounds and has a sturdy plastic carrying handle, it's not a product you'll take with you for a walk downtown with your handheld scanner or CB. But it certainly is the power supply for you if you're caught in an emergency — at home, in the office or on the highway, or if you're a camper or the outdoor enthusiast who doesn't want to go through five tons of alkaline batteries. Check it out — at $49.95 and available online at the company website at www.vectormfg.com, or at retail outlets nationwide, it's a *Pop'Comm* Best Buy. At that price, buy TWO — one for home and the other for powering your radios and tools in the backyard, garage or on the go!

For more information on the Vector Multi-Function AC/DC Power System, model VEC021AC, contact Vector Manufacturing directly at 4140 S.W. 28th Way, Ft. Lauderdale, FL 33312 or phone 954-584-4446 or toll free 866-584-5504. Visit them on the web at www.vectormfg.com. As we always ask, please be sure to tell them you're calling after reading our review in *Popular Communications*. ■

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the propagation corner

by Tomas Hood, NW7US,
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up-to-the-minute forecasts helping you get the most from the radio spectrum

Autumnal Equinox: Get Ready For Long DX Openings!

September is the starting point of an exciting shortwave DX season. The shortwave doldrums of summer are behind us. After the Autumnal Equinox, September 23, we slowly move back into a season with longer hours of darkness. During an equinox (spring and fall), daylight and darkness are about equal. This makes September an interesting DX month. There will continue to be days when the propagation will be like that of summer, but after the equinox, propagation will slowly become like that of winter.

During an equinox, the condition of the ionosphere is equal over large areas of the world, making radio signal paths between regions of the northern and southern hemispheres more likely to open and stay reliable. The Maximum Usable Frequencies (MUFs) rise on average above those of summer. And as we move into October, the daily propagation will become less like that of summer and more like that of winter.

We will see the higher shortwave bands (22 meters up through 11 meters) improving with more frequent short-path openings from mid-September through mid-October between North and South America, the South Pacific, South Asia, and southern Africa. The strongest openings will occur for a few hours after sunrise and during the sunset hours. Many international shortwave broadcast stations will soon change from their summer schedule to a winter schedule, taking advantage of this change in propagation.

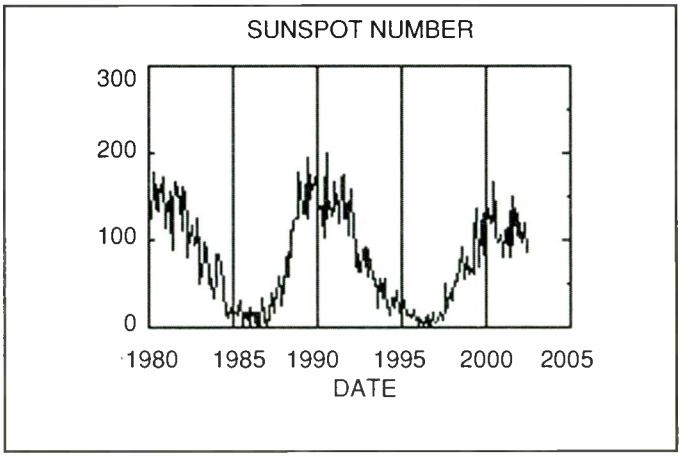

Figure 1. Recent solar cycles (NASA).

Current Solar Cycle 23 Progress

The current Solar Cycle, the 23rd since daily telescopic observations of the sun began in the late 18th century, began during 1996, and has had two maximum peaks. Since the second peak, which took place in the autumn of 2001, the smoothed sunspot and flux numbers show a slow decline in solar activity. The Royal Observatory of Belgium, the world's official keeper of sunspot records, reports an observed monthly mean sunspot number of 89 for June 2002, down from 121 for May. The 12-month running smoothed sunspot number centered on December 2001 is 115, one point down from November.

You may also see this slow decline in activity by looking at the trend of the 10.7-cm Solar Flux. The 10.7-cm observed monthly mean solar flux was 149 for June, down from May's 178. The observed monthly mean geomagnetic **planetary A (Ap)** index for June 2002 is 11. A smoothed sunspot level of 84 and a smoothed 10.7-cm solar flux of about 137 are predicted for September 2002. A seasonal rise in geomagnetic disturbances and storms is expected through September and into October. The geomagnetic Ap will rise a bit this month and through October, before slowly decreasing through the winter. (See **Figure 1** for a view of recent Solar Cycle activity.)

September Propagation

Propagation on the higher frequencies will fluctuate drastically through September. The 10.7-cm flux daily values will range from the low 90s to possibly as high as 150 or so. As the flux rises near or above 150, the MUF will support 22 meters through 11 meters over many paths. But these openings will still be sparse until we get to the winter. However, September is full of surprises, including an increase in long-path conditions. A number of long-path shortwave openings on 31 and 22 meters will be possible around sunset and again around sunrise. You should look for southern Asia and the Middle East, even Africa. Also look for signals from the Indian Ocean region and the South Pacific via a long-path opening over the North Pole starting late afternoon to early evenings, extending later to Russia and Europe. Look for these possible long-path openings on 31, 41, 49, 60, and 75 meters.

High Frequency

Let's take a look at what can be expected of propagation of the shortwave bands this month. Starting at the highest band, it looks like we will have marginal conditions for 11 meters, though this will improve later in the winter. Long distance reception, up to 2,000 miles, will become possible later in the fall, while north-south paths are common during this equinoctial month. Reception on 11 meters is better in southern and tropical regions. However, few broadcast stations use this band.

Thirteen and 16 meters will open daily, and more reliably, by the end of September. Paths from Europe and the South Pacific as well as from Asia, at least during days of higher solar flux levels, will become common, especially on 17 MHz (16 meters). Openings should be possible from all areas of the world, with conditions best from Europe and the northeast before noon, and from the rest of the world during the afternoon hours. Reception from the South Pacific, Australia, New Zealand, and the Far East should be possible well into the early evening. Many broadcasters will be using the 17-MHz band, so expect

more congestion there during days of higher flux levels.

Conditions on these higher bands may still be marginal during much of the month, but as we move into longer hours of darkness in the Northern Hemisphere, these higher bands are certainly coming alive. There will be less polar propagation as we move toward winter, though, making some parts of the world difficult to hear over these paths. To catch the openings over high latitudes, get on these bands shortly after sunrise, or watch for polar signals as they close for the evening. Otherwise, the paths on the higher bands will begin to favor east-west signal paths over daylight regions.

Nineteen and 22 meters compete with 16 for the best daytime DX band during September. They will open for DX just before sunrise and should remain open from all directions throughout the day, with a peak in the afternoon. Nighttime conditions will favor openings from the south and tropical areas. Look for grayline propagation from Asia, with long-path common from southern Asia, the Middle East, and northeastern Africa, as well as the Indian Ocean region via the North Pole.

Shortwave listeners who enjoy an evening with the family gathered around the radio will have plenty to hear on the 25- and 31-meter bands. These all-season bands have an incredible amount of activity since many broadcasters choose these, targeting their audiences during prime times (morning and early evenings). Eleven MHz is expected to be an excellent band for medium distance (500 to 1,500 miles) reception during the daylight hours. Longer distance reception (up to 2,000 to 3,000 miles) should be possible for an hour or two after local sunrise and again during the late afternoon and early evening. Heavy congestion will occur here, too, as many international and domestic broadcasters make use of 25 meters. Thirty-one meters, the backbone of worldwide shortwave broadcasting, will provide medium distance daytime reception, ranging between 400 and 1,200 miles. During September, reception up to 2,500 miles is possible during the hours of darkness, and until two to three hours after local sunrise. This band, too, will be highly congested, making reception of weak, exotic signals a bit more of a challenge.

Expect an improvement in nighttime DX conditions on 41 through 120 meters during September and October, since

The Ap Index And Understanding Propagation Terminology

The Ap index, or Planetary A index, is a 24-hour averaging of the Planetary K index. The Planetary K index is an averaging of worldwide readings of earth's geomagnetic field. High indices (Kp > 5 or Ap > 20) means stormy conditions with an active geomagnetic field. The more active, the more unstable propagation is, with possible periods of total propagation fade-out. Especially around the higher latitudes and especially at the Polar Regions, where the geomagnetic field is weak, propagation may disappear completely. Extreme high indices may result in aurora propagation, with strongly degraded long distance propagation at all latitudes. Low indices result in relatively good propagation, especially noticeable around the higher latitudes, when transpolar paths may open up. Maximum K-index is 9, and the A-index can exceed well over 100 during very severe storm conditions, with no maximum.

Classification of A-indices is as follows:

A0–A7 = quiet	A30–A49 = minor storm
A8–A15 = unsettled	A50–A99 = major storm
A16–A29 = active	A100–A400 = severe storm

Solar Flux (SFI): This flux number is obtained from the amount of radiation on the 10.7-cm band (2800 MHz). It is closely related to the amount of ultraviolet radiation, which is needed to create the ionosphere. Solar Flux readings are more descriptive of daily conditions than the Sunspot Number. The higher the Solar Flux (and, therefore, the higher the Sunspot Number), the stronger the ionosphere becomes, supporting refraction of higher frequencies.

Ionosphere: A collection of ionized particles and electrons in the uppermost portion of the earth's atmosphere, which is formed by the interaction of the solar wind with the very thin air particles that have escaped earth's gravity. These ions are responsible for the reflection or bending of radio waves occurring between certain critical frequencies with these critical frequencies varying with the degree of ionization. As a result, radio waves having frequencies higher than the Lowest Usable Frequency (LUF) but lower than the Maximum Usable Frequency (MUF) are propagated over large distances.

Sunspot Number (SSN): Sunspots are magnetic regions on the Sun with magnetic field strengths thousands of times stronger than the earth's magnetic field. Sunspots appear as dark spots on the surface of the Sun. Temperatures in the dark centers of sunspots drop to about 3700° K (compared to 5700° K for the surrounding photosphere). This difference in temperatures makes the spots appear darker than elsewhere. Sunspots typically last for several days, although very large ones may last for several weeks. They are seen to rotate around the sun, since they are on the surface, and the sun rotates fully every 27.5 days.

Sunspots usually occur in a group, with two sets of spots. One set will have positive or north magnetic field while the other set will have negative or south magnetic field. The field is strongest in the darker parts of the sunspots (called the "umbra"). The field is weaker and more horizontal in the lighter part (the "penumbra").

Galileo made the first European observations of sunspots in 1610. The Chinese and many other early civilizations have records of sunspots. Daily observations were started at the Zurich Observatory in 1749; continuous observations were begun in 1849.

The sunspot number is calculated by first counting the number of sunspot groups and then the number of individual sunspots. The "sunspot number" is then given by the sum of the number of individual sunspots and 10 times the number of groups. Since most sunspot groups have, on average, about 10 spots, this formula for counting sunspots gives reliable numbers even when the observing conditions are less than ideal and small spots are hard to see. Monthly averages (updated monthly) of the sunspot numbers show that the number of sunspots visible on the sun waxes and wanes with an approximate 11-year cycle.

For more information, see <http://prop.hfradio.org>.

there is a seasonal decrease in the static level as we move into fall and winter. Forty-one and 49 meters should be best for worldwide DX from sunset to sunrise. During the day, excellent reception of stations of 750 miles away is common. Early evening and into darkness, increasingly longer paths develop, up to several thousand miles. Propagation conditions don't change much on these bands through the solar cycle, so a high number of HF broadcasters rely on them. International and domestic broadcasts compete with amateurs on the 41-meter band and with each other on both. This makes for a lot of interference, especially during the late afternoon and evening hours.

The 5-, 3-, and 2-MHz shortwave bands are used mostly in designated tropical areas for domestic broadcasting. The entire 4-MHz band is set aside for domestic broadcasting in Asia, and some of this band is used throughout Europe. On all these bands, during daylight, reception should be possible from up to 500 miles away. After sunset until an hour or so after sunrise, reception of signals from 1,000 to a possible 2,000 miles away is possible. There will still be a high level of static during September, so these bands will be a challenge to those looking for long-distance DX of exotic tropical stations. The best time to search for these would be just before sunrise and an hour or so after daylight.

Mediumwave

Signals below 120 meters will also improve, with the night-paths growing larger in the Northern Hemisphere. Seasonal static, which makes it difficult to hear weak DX signals, will decrease little by little as we move away from the Autumnal Equinox. Stretch out those beverage antenna runs and start looking for signals along nighttime paths. In the months to come, I will cover mediumwave propagation in more depth.

VHF And Above

The month of September statistically has the lowest amount of Sporadic-*E* propagation activity. Aurora is a much more probable mode. Toward the end of September Trans-equatorial (TE) propagation will begin to occur between southern North America and northern South America. Openings will generally occur in the late afternoon to early evening. F_2 activity may occur during the day on the VHF TV bands, though the 10.7-cm flux levels are not going to support reliable propagation at these higher frequencies. Don't expect any east-west paths to be open. Tropospheric conditions are generally very good for many of the VHF bands during September with the appearance of different weather fronts. This will be the primary mode for working up to 300 miles. Continue to expect a high number of solar flares and coronal mass ejections, possibly triggering Aurora during September and October.

Wanted: Your Feedback

This is the first of a regular, monthly look at propagation conditions. In future issues, I will explain the basics of propagation, what the many numbers (like the 10.7-cm Solar Flux, or the Ap Index) mean and how to use them in your daily radio activity. If there is something you would like me to cover in an upcoming issue, please write me an e-mail or drop a letter to P.O. Box 213, Brinnon, WA 98320-0213. I look forward to hearing from you. Enjoy the many signals coming your way this month. ■

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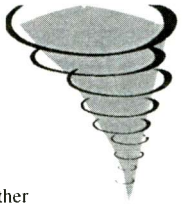

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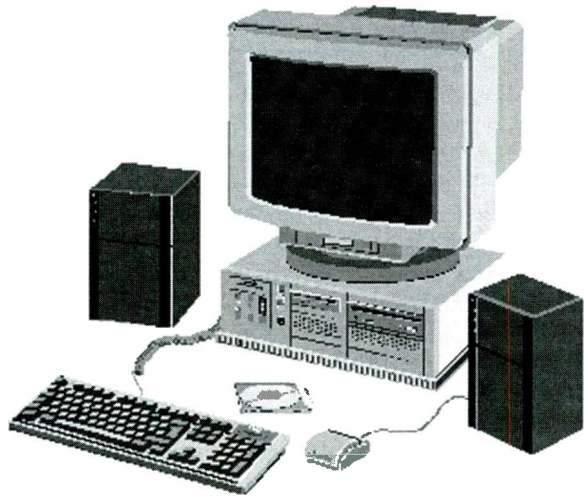
computer-assisted radio monitoring

by Joe Cooper <joe@provcomm.net>

DSP Applications: Part II



Last month I began the first of a series of six columns that will give you the basic information you need to set up a radio monitoring station that uses a personal computer effectively. To review, the topics to be covered will be (in order of appearance):

- Digital Signal Processing (DSP) using a SoundBlaster-compatible soundcard
- Direct software control of compatible monitoring radios
- Software-based radio-monitoring logs

This month is Part II of the column looking at PC-based DSP. I am doing this by showing you how to digitally reduce noise and interference in the audio output of Broadcast Band (BCB) radio using two free DSP software packages that control a SoundBlaster-compatible sound card to process the sound. The benefit of this application of DSP technology is that it allows you to hear distant stations with greater ease by cutting down noise and interference.

As I mentioned before, the same techniques that I will be outlining for Broadcast Band radio DXing can also be applied to other types of radio monitoring, such as longwave, shortwave, and scanning. However, because each of these types of radio monitoring its own particular noise and interference problems, I will look at them separately in future columns. At this point, if you followed the instructions from last month's column, you should have built your passive loop and Lazy Susan for the proper operation of the BCB radio. Likewise, you should have also properly installed the DSP software described in the column, as well as hooked the radio up to the soundcard via an appropriate audio cable.

Again, as with any electronic or computer project of this type, success is attained through good planning and design. Take your time, make note of what you do in what sequence, and make certain that you have a clear goal towards which you are working. There is nothing to be gained by racing to finish a project, so take your time and enjoy the process of working and learning.

Some Background Info

In last month's column I suggested two free DSP software packages for use in the BCB radio-monitoring project: DSPFIL by Michael Keller, DL6IAK (www.qsl.net/dl6iak/projects/dsp-filter.htm) and DSP SWL by Bernhard Reiser (www.wh2.tu-dresden.de/~bernd109/amateur funk/amateur.html).

Let's briefly review both programs' main characteristics. They are designed specifically for radio monitoring use, have effective frequency range coverage of between 0 and 4000 Hz, and support "on-the-fly" changes to the amount of filtering available at any given time.

I found that the design of these two software packages was superior to other types of DSP software (even some commercial packages) because they did not lock the user into one predefined filtering characteristic. Likewise, they do not require you to work with a series of pre-defined filters that you cannot modify, but must select and hope will work. Plain and simple, these two programs allow you to remain in control of your radio monitoring, while others don't.

The reason you need such control is to adapt to the rapidly changing signal and atmospheric/noise conditions you will encounter. This is particularly true with BCB DXing, where you have an overlap of different signal characteristics that make that band a rather interesting one to tackle. This is mainly because the range of frequencies that the BCB covers is midpoint between the upper end of the Low frequency (LF) bands and the beginning of the high frequency (HF) bands.

The resulting radio wave propagation that you encounter when listening to the BCB is characterized by short-range ground wave transmission during the day and long-distance transmission due to the phenomena of "skip." "Skipping" of the radio waves occurs when they encounter ionized layers of the atmosphere at heights anywhere from 50 to 500 km.

During the day, specific ionized layers (called the "D" Layer by scientists) of the atmosphere absorb the radio waves transmitted in the frequency range of the BCB, allowing only ground waves to move out from the radio station's transmitter. This is ideal for this type of broadcast service as it is designed for coverage over a relatively small geographic area.

At night, however, the situation changes. Rather than absorbing the radio waves, the ionized layers begin to *reflect* them back to earth. A radio wave that "hits" these ionized layers at the right angle can skip off them like a stone off of water. When this happens the radio signal can travel great distances (DX) and be heard far outside of the normal daytime coverage area.

People who like to monitor distant radio stations have been exploiting the phenomena of radio waves skipping off of the ionosphere for decades. Despite all the advances that have taken

place in radio design and filtering we are still faced with the same problems of listening to distant stations as people in the 1920s encountered. These are (see sidebar for more information):

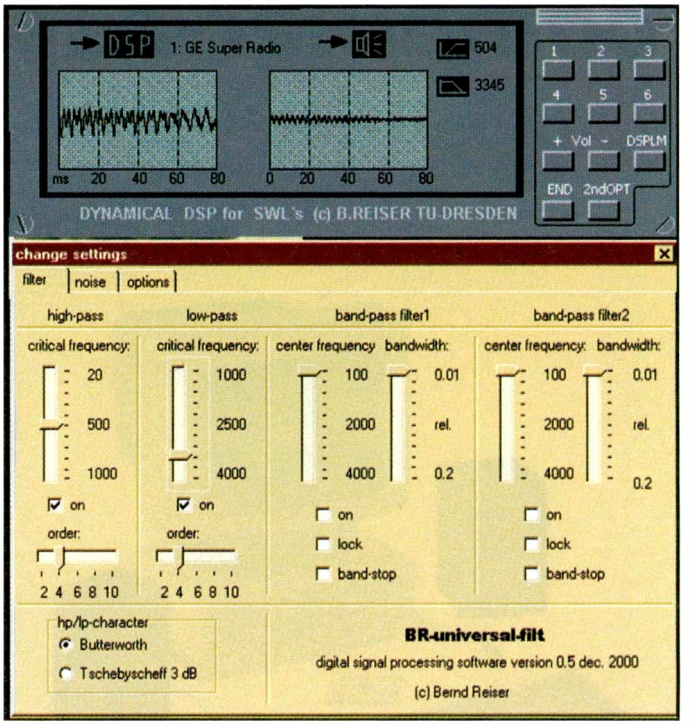
- Noise (both natural and human made)
- Signal fading (due to Ionosphere changes)
- Low signal strength (due to distance)
- Flutter (phasing when sky wave and ground wave meet)
- Interference from strong stations (splatter)
- Interference from multiple stations (Heterodynes)

Each of these phenomena produces its own result in the signal heard on the BCB monitoring radio. Sometimes the radio itself is able to help overcome whatever difficulty the person has in monitoring a signal. Other times one will need some extra assistance, and it is here that the DSP software can help.

Remember though, there is no computer DSP software that can make all noise and interference disappear from the speaker or headphones. All that can be accomplished with the devices we're discussing is the reduction of noise and interference, in combination with some improvement in signal strength and selectivity through the use of the passive loop and Lazy Susan.

More importantly, the use of all of the techniques I'll describe is a combination of art and science, where knowledge and practice is the real key to the results that you achieve (which may vary according to your location, equipment, and ability). What is important to remember is that if at first you don't succeed keep on trying.

If you are not familiar with the unique demands of BCB DXing, take a look at the information in the accompanying sidebar. Tuning in a distant broadcast station takes a little planning, along with some good knowledge of mediumwave radio propagation. Using the information and techniques provided in those sources will help you considerably in getting the most out of the passive loop, Lazy Suzan, and software described here.



This shows the open control panel of the DSP SWL program by Bernd Reiser. The upper screen is the user interface showing the audio being input into the sound card on the left and the processed speaker output on the right. The filter that has been set up cuts off low-frequency audio below 504 cycles and high-frequency audio above 3345 cycles. This should allow the intelligence of the radio signal to come out of the speaker, while keeping low- and high-frequency noise out.

Setting Up The Software

So why do you use DSP software? What does it provide to help you monitor a radio station better than by using your radio alone? What should you expect to hear while using the software? What changes will you have to make to your current radio monitoring practices to include the DSP software?

These are some of the questions you ask yourself before you undertake new computer-assisted monitoring techniques. If you just jump in and start to play with DSP without any real strategy you are not going to be satisfied with the results. Yes, you will be able to change the sound that comes out of the speaker, but will it really be an improvement?

What you need to do is first understand what it is that you are trying to accomplish, and then apply that to the set-up of the DSP software you are using. What you are trying to accomplish is the creation of a set of pre-defined filters that will block out noise and interference, while at the same time increasing the amount of signal getting through to you.

Put into the simplest terms: what you are attempting to do with your DSP software is to increase the amount of usable signal, while decreasing the amount of noise that is preventing you from hearing the amount of signal available. To put it into technical terms: you are trying to optimize your signal-to-noise (or S/N) ratio.

Your goal is to increase and maintain the greatest amount of signal so you can go about listening for the "intelligence" (e.g., the music and/or words) that is being carried on that signal. At the same time you are also trying to reduce the amount of noise that is either being constantly heard (called background noise) or heard intermittently (true interference, such as caused by natural sources like lightning, or by man, such as electricity or electrically run machines).

So what you are trying to do with your DSP software is to set up those options which control the creation of optimal S/N ratios for particular listening situations. To understand this let's first take a look at the features found in the two software packages being used.

DSPFIL is a sound frequency filter that is designed to allow "on-the-fly" changes, while DSP SWL (also called the BR Universal Filter) provides complex noise reduction and smoothing algorithms. Knowing that, one can see that you would use the first program in general radio monitoring where you would need flexibility, while the second program would be used more strategically, based upon a specific monitoring situation.

If you take a look at the user interface for DSPFIL, you will see that it is made up of controls for shaping the upper, middle, and lower limits for the signal that is heard through the speakers or headphones. The strategy here is to judge where the maximum amount of intelligence is to be found in what is being heard, which will contain a mix of noise and signal.

Generally speaking, the noise that we hear when listening to a signal will be a mixture of both specific noises, which will have defined frequencies of sound, and what is known as "white sound" which is a random mix of sounds of constantly changing frequencies. What DSPFIL will allow you to do is center

your filter in the middle of the intelligence of the signal, and then cut out the noise that is above and below it. Your strategy then is to judge what the upper and lower frequencies of the filter will be, ensuring that you leave enough signal to be able to hear the intelligence (message) found there.

Obviously if you are dealing with a signal that has very simple intelligence (such as the on/off message of a digital signal; the dits and dahs of Morse code, for example) you can have a very narrow filter of only a few hundred hertz in width. Audio signals, whether they're music or voice, require a much wider bandwidth of frequencies if you are going to understand the message. The trick then when choosing the upper, lower, and center limits is to choose values that your ear can hear and understand.

Simply putting limits over upper and lower ranges of audio frequencies may not be enough to really filter out noise. As mentioned before, noise can be made up of random frequencies, which are difficult to filter out in discreetly defined filters. In this case alternative-processing methods must be employed.

DSP SWL has a special optional filter that can be used to clean both random and background noise. This is an adaptive function (e.g., it responds to the specific type of noise it encounters) and is used in conjunction with pre-defined upper-, lower-, and center-defined audio filters.

The strategy that is employed when using the DSP SWL software package is to pre-define up to six different filters according to a specific scenario. For example, you could have one filter designed for a narrow range of audio frequencies and no random noise filter. Another could filter out low frequencies and have the random noise filter on.

Additionally, the software is also able to monitor the specific characteristics of the receiver that it is monitoring, make suitable adjustments in its signal processing, and then store the results for future use. The important thing to understand is that it will only be through experimentation and application that you will find the "optimum" settings for both software packages.

I strongly suggest that you keep notes of the settings you employ and the results you encounter with their use. Over time you will find that you have built up a larger library of settings than can be saved in the software itself. Don't be stuck in a situation where you have to reinvent the wheel, so to speak, simply because you forgot to write down what turned out to be a good combination of values.

Conclusions

DSP techniques are not a cure-all for noise and interference, but when properly used they *can* help you to dig out a DX station that might otherwise be missed. Again, what is important to remember is that DSP is as much an art as it is a science and, therefore, requires knowledge, skill, and practice to master.

The most important change to make in your radio monitoring technique when you use DSP is to slow down when tuning across the radio dial so the sound card in your computer can properly process the audio being presented. The next most important thing is to understand how the DSP software actually works and how to use the features properly. This is necessary to create optimum filter settings that

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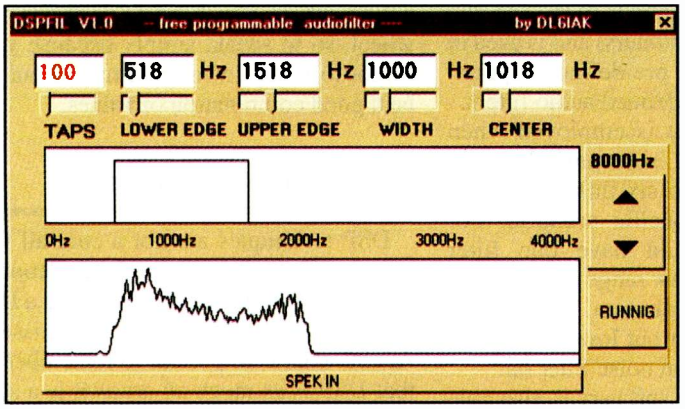
DSP Monitoring Techniques



This is the user interface for DSPFIL, showing it in operation. In this case, a filter of roughly 1000 cycles has been created with a center frequency of 1018 cycles. As with the DSP SWL software, the aim here is to allow the audio frequencies containing the most intelligence pass through, while cutting off the upper and lower frequencies containing noise. You can see the result on the "oscilloscope" screen below the filter display.

Now we come to the point where we are actually ready to use the radio, its passive loop, and Lazy Susan, as well as the software, in a "real world" situation. What do we need to know in order to be successful?

The most important thing to keep in mind is that the monitoring techniques used with DSP are very different than when using your ears alone. Remember that you have to allow the computer and sound card time to process the signal properly. If you tune too quickly you won't allow either the card or the computer to sample the sound on a particular frequency properly. You also risk either losing the intelligence of the signal that is processed or having more than one signal being processed at a given time, producing garbage at the speaker rather than a properly filtered sound.

Because of the need for proper processing time, many people who use DSP filtering tend to listen for a signal first, then apply the DSP when they have reached their ear's limit of ability to understand the information it hears. Often going between filtered and unfiltered sound will help the ear process information better.

Let's take a look at some of the techniques that can be used to overcome the main audio problems involved in monitoring BCB radio signals. Remember, though, in each case what is being described is just as much an art as a science, so none of the techniques described here are absolute solutions. For that you will have to practice with your own radio and computer combination to find the best combination of settings and practices for best results for your radio monitoring needs.

Noise—Natural And *Human Made*

Noise is one of the most difficult and fatiguing aspects of radio monitoring. It is particularly true with radio noises created by electrical equipment or machinery. Natural noise is often seasonal in nature, and can be random when in the form of lightning.

Because noise is made up of many random audio frequencies it can be difficult to filter out the full range of signals. What one often has to do is use the software to create a filter that cuts off the upper and lower audio frequencies because they tend to "color" sound and give it character, rather than carry information. By only allowing the middle range of frequencies to reach the speaker, you restrict what you hear to those audio frequencies that are useful to you.

Selecting the middle frequency, then restricting the bandwidth is fairly easy with DSPFIL, where you can employ the simple to use controls to set the values you want very quickly. Just tune in to the frequency of the signal you want to monitor, then tweak what you hear using the software.

In the case of DSP SWL you will simply select the most appropriate pre-defined filter and listen to the results. The important feature that you can employ is the noise-reduction option, which often proves effective in the reduction of random noise.

You can also use the Lazy Susan to either turn the radio away from the noise or towards the radio signal, thereby increasing the strength of the audio signal at the speaker. Likewise the passive loop can be used to peak the signal you are listening to and achieve the same results.

Fading Due To Ionospheric Changes

It is very difficult to really overcome the effects of fading, other than by increasing the signal level received so that when it is heard it is clear and understandable. The reduction of the upper and lower frequencies of a signal in order to emphasize the middle range where most of the intelligence of the signal is found is still the best overall technique. Turning the radio toward the signal and peaking the ferrite antenna with the passive loop is also effective in increasing the signal level.

Low Signal Strength Due To Distance

Same as with fading, try and make the signal as strong as possible by peaking the signal strength and then lower-

will work properly when applied. Likewise you will need to be familiar with the user interface so you can operate the software properly along with all the other tasks you must perform while monitoring.

With this in mind, I suggest you keep your computer/radio setup simple. Nothing will frustrate you more than having too many things to control while at the same time trying to listen to a radio station that is already difficult to hear because of noise and interference. Likewise, make note of the settings you have used that are successful, as you will want to be able to employ them again sometime.

Most important of all, try and set up your monitoring session with a specific goal, rather than simply tuning across the dial and fishing blindly for a station. Always have an up-to-date logbook of current stations handy so you can either identify a station by its callsign, or have a planned target station based on frequency. Some suggested sources for these logbooks *are North American Radio TV and Logbook* (www.geocities.com/

ing the amount of background noise in order to "dig" the signal out.

Flutter—Phasing When Skywave And Groundwave Meet

Here the use of the Lazy Susan and passive loop can help overcome some of the effects of phasing. Often by changing the angle of the passive loop antenna you can tune directly into the groundwave or skywave, choosing whichever is strongest. Likewise you can point the radio a little bit off the groundwave, making the skywave stronger.

You can also try and use the filters to isolate that portion of the audio signal that is part of either the groundwave or skywave. The key thing here is to experiment with all of the tools you have available to see what effect each has upon the problem. Remember to keep note of the techniques used so you can start to build up a repertoire of settings and methods for future use.

Splatter—Interference From Strong, Nearby Stations

Using the software filters in conjunction with the passive loop can also reduce the effects of strong adjacent signals. The main technique here is to de-tune the radio's ferrite antenna, rather than peaking it. What you are trying to do is reduce the amount of signal coming into the radio from the strong signal.

You can use DSP FIL to create a filter with a very narrow frequency that will allow you to put up a wall (so to speak) between the weak station you want to hear and the stronger one that is covering it up. You will have to tune into the sidebands of the stronger station to do this so you are going to need to be patient as you distinguish the weaker stations behind the stronger signal.

Heterodynes—Annoying Interference From Multiple Stations

When you have multiple stations you will need to pinpoint the location of the strongest signal using the Lazy Susan, then peak it using the passive loop. Once you have done that you can fish it out using the filters to isolate the intelligence of the signal and minimize the noise surrounding it. The trick, again, is to determine the approximate center frequency then employ the optimal bandwidth to remove as much extraneous sound and noise as you can without losing the intelligence of the signal.

amlogbook/main.htm); National Radio Club (www.nrcdxas.org/); DxmidAMerica.com (www.angelfire.com/wi/dxmidamerica/index.html); and International Radio Club of America (www.geocities.com/Heartland/5792/index1.html)

Coming Next Month

Next on the list is a two-part column on direct software control of those radios that are compatible with such operation. The columns will focus on a hot topic in software control: the files of frequencies that are either created or used with these programs. These files can either be the logs of the frequencies of the stations encountered while listening, or banks of frequencies that are placed into the program in order to scan for specific stations or services.

From the letters I have received, managing these files is a big frustration for many people and I hope to provide a clear understanding of how to create files, save them, transfer the information, and so forth. It will not be the last time I will be looking at this topic, as it is the real core issue of radio control and logging.

Don't forget that you can e-mail or write to me with ideas, comments, and suggestions. The e-mail is joe@provcomm.net and the mailing address is "Computer-Assisted Radio Monitoring" C/O Joe Cooper, PMB 121, 1623 Military Rd., Niagara Falls, NY 14304-1745

Don't forget that I cannot answer general questions about computers, software, or operating systems, but will do my best for any questions about the content of the columns or computer-assisted radio in general. Thanks again and enjoy experimenting with the software and hardware described here. ■

Good News for the VHF/UHF Enthusiast

CQ VHF is back!

After a two-year absence, the all-time favorite magazine for the VHF/UHF enthusiast - **CQ VHF** - is back to serve you. The new **CQ VHF** will look familiar to former readers. After all, the basic mission of the magazine is the same, but with editorial at a somewhat higher technical level than before. Within the pages of the New **CQ VHF** you'll find more meaty reading for the really serious VHFer than before. That's what our surveys told us you wanted, and that's what you'll get.

Take advantage of our special introductory offer for Charter Subscriptions to the new CQ VHF. The regular rate will be $25 for four information-packed quarterly issues, but subscribe now, and we'll give you the first issue FREE – five issues for the price of four. That's a 25% bonus over the regular four issue subscription. Enter your Charter Subscription for two years, and the introductory offer is ten issues for $45, a 25% bonus over the regular two year offer. And as always, every subscription comes with our money back guarantee.

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washington beat

Capitol Hill and FCC actions affecting communications

by Laura Quarantiello <lauraq@cts.com>

New Coast Guard Frequency Assignment

A new frequency has been assigned for use by the **U.S. Coast Guard's Ports and Waterways System (PAWSS)**. The National Telecommunications and Information Administration has approved the use of VHF Channel 88B (162.025 MHz) in Automatic Identification Systems (AIS) and related safety systems in support of PAWSS. Though AIS is not yet available in the United States, carriage requirements were approved by the International Maritime Organization Maritime Safety Committee and the system was to begin phase in by July 1, 2002.

FCC Chairman Announces Formation Of Spectrum Policy Task Force

Chairman Michael K. Powell recently announced the formation of a Spectrum Policy Task Force to "assist the Commission in identifying and evaluating changes in spectrum policy that will increase the public benefits derived from the use of radio spectrum." Dr. Paul Kolodzy, Senior Spectrum Policy Advisor, Office of Engineering and Technology, has been appointed to head the cross-bureau and multi-disciplinary task force, which will be composed of senior staff from several Commission Bureaus and Offices, including attorneys, engineers, and economists. "The government has an almost impossible task trying to keep pace with the ever increasing demand for spectrum and continuing advances in wireless technology and applications. In this fast-moving world, the Commission cannot rely on outmoded procedures and policies. We must establish new ways to support innovation and the efficient, flexible use of spectrum," according to Powell. For more information on the Task Force, visit www.fcc.gov/SPTF.

FCC And Canada Sign Band Agreement

The FCC and Industry Canada have reached an agreement to enhance delivery of V-band spectrum services to consumers. The arrangement establishes principles to govern use of the 37.5- to 42.5-GHz band and will allow development for cross border wireless services between the United States and Canada. Both countries have licensed high-density broadband wireless applications in this band and the agreement will protect these systems by limiting power flux density levels.

Medical Telemetry Devices Get Power Increase

The FCC has approved an increase in power permitted for medical telemetry devices operating on certain TV broadcast channels [ET Docket No. 95-177], subject to minimum separation distances between such devices and co-channel TV broadcast operations. The Commission also dismissed a petition for reconsideration filed by the Cellular Phone Taskforce (CPT) concerning the effects of radio frequency (RF) radiation on "electro sensitive" individuals, and denied a petition for partial reconsideration concerning separation distances filed by the National Association of Broadcasters (NAB).

FCC Amends Spread Spectrum Rules

The FCC has approved changes to the rules governing how fixed-wireless companies use spread spectrum technologies. The commission modified Part 15 of its rules to permit new digital transmission technologies operating in the 902- to 928-MHz (915 MHz), 2400- to 2483.5-MHz (2.4 GHz), and 5725- to 5850-MHz (5.7 GHz) bands under the current rules for spread spectrum systems. They also provided flexibility in the design and operation of frequency hopping spread spectrum (FHSS) systems in the 2.4-GHz band and eliminated the processing gain requirement for direct sequence spread spectrum (DSSS) systems. The agency also permitted the use of as few as 15 hopping channels for FHSS in the 2.4-GHz band, with channel bandwidth up to 5 MHz wide; however, they must reduce output power to 125 mW if fewer than 75 hopping channels are used.

Wireless Companies Fined For Missing E-911 Deadline

Cingular Wireless must pay a fine of $100,000 for missing an October 1, 2001, deadline to begin deploying network-based location technology on its Time Division Multiple Access (TDMA) network. As part of a consent decree, Cingular will not only pay the fine, but is also required to commit to a timeline for deployment of the technology that would enable emergency services to receive the location of callers who dial 911 from a cellphone. Cingular also must make automatic payments to the U.S. Treasury should it fail to meet the

deployment benchmarks, and submit quarterly reports to the commission on its progress.

In a related action, **AT&T Wireless Services** may be held liable for a $2.2 million fine for the same infraction. The FCC's Enforcement Bureau said that AT&T failed to begin selling and activating location-capable cellular phones by the deadline, didn't implement any network or infrastructure upgrades to provide the service, and didn't tell the FCC that it had begun deploying its GSM network without location-capable phones.

On a happier note, **Verizon Wireless** said that it has met FCC Phase II E-911 requirements and has also introduced a wireless phone with embedded GPS capability that enables it to send the location of the cellphone used to make a 911 call. Unfortunately, only a few areas have upgraded their PSAP (Public Safety Answering Point) equipment to interpret this data.

Another One Bites The Dust

The FCC's San Juan Office has announced the seizure of an unlicensed broadcast station. The radio station, operating on 99.5 MHz, from Jayuya, Puerto Rico, was seized by agents of the FCC, U.S. Marshal's Service, and Office of the U.S. Attorney for the District of Puerto Rico, after the operator refused to obey several notices to cease and desist. **Amil Lugo-González** violated Section 301 of the Communications Act of 1934 and may be subject to monetary penalties of up to $11,000 per violation, as well as criminal sanctions.

Ham Jammer Convicted

A Florida area CB operator has been convicted of jamming Amateur Radio transmissions and operating without a license (see the August 2001 "Washington Beat"). **William Flippo** of Jupiter was convicted in federal court on eight misdemeanor counts: four counts of operating without a license and four counts of deliberate and malicious interference. He was also remanded to custody and ordered to undergo psychiatric evaluation prior to his sentencing. Flippo's original capture was credited to the work of several Amateur operators who helped gather evidence, including Ed Petzolt, K1LNC, Bert Morschi, AG4BV, Dave Messinger, N4QPM, and Chuck Mulligan, N4SDW. "This is a very good day for Amateur Radio, and a very good day for justice," Petzolt said following the trial. "Let the word go out that we will not tolerate this sort of thing on our frequencies, and you will be caught." Flippo is scheduled for sentencing within a month and faces a maximum of eight years in prison and up to $80,000 in fines.

GAO: NTIA Can't Manage Federal Spectrum

Officials of the General Accounting Office have told the U.S. Senate Commerce Committee that the National Telecommunications and Information Administration (NTIA) "lacks the staff and funding to do an efficient job of managing the spectrum used by U.S. government agencies." NTIA, which is responsible for promoting efficient use of 270,000 federal frequency assignments, has not be able to clear a significant amount of federal spectrum for commercial use because of Defense Department opposition. The Commerce Committee hearing is only the first in a series of meetings that will address spectrum issues. ■

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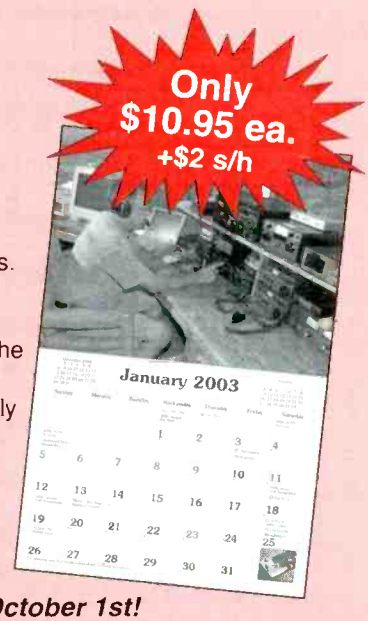

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global information guide

listening to what your world says every day

by Gerry L. Dexter

240 Columns—We Celebrate Our 20th Anniversary!

No, no, no! This cannot be! Some sort of cosmic computational error has occurred. Maybe we were Star-Trekked into a different dimension, re-patterned into a parallel universe running on faster time and we were never aware of it.

Well, no. Guess not. It seems that 20 years really have past since the first issue of *Popular Communications* hit the newsstands and the first logs appeared in what was then "The Listening Post." Back in 1982 we were listening to "Argentine Annie" trying to demoralize the British forces in the Falklands War. Princess Grace of Monaco was killed in a car crash. Crotchety old Soviet leader Leonid Breshnev died. The LA Lakers won it all in the NBA. (Ho hum!) The first artificial heart transplant took place. And our TV screens were showing us *Hill Street Blues, Taxi*, and *M*A*S*H*.

And we had our fingers crossed; good luck charms at the ready, hoping readers would take to this new column and support it with their logs and other information. As things turned out there was nothing to worry about, because you certainly did support it. And you've kept it going through an astonishing 240 columns! All those gazillions of words have, at various times, expressed sadness at the loss of too many shortwave broadcasters, but also celebrated the arrival of many, many new ones. We've seen a host of snazzy new shortwave radios and accessories, not to mention the Internet explosion and the powerful effect it has had on shortwave.

And the next 20 years? Who knows what they will bring? But we have no qualms about predicting that, when *Pop'Comm* celebrates its 40th anniversary, there will still be broadcasters using shortwave radio to reach a worldwide audience or a hard-to-reach domestic population. We also predict some of the stations on the air then will be returnees who've seen the error of their ways, kissed off their hot-shot, out-of-house consultants and returned to broadcasting's most exciting and challenging medium! So thank you for your super support over the past 20 years and hang on—we're in for plenty of shortwave action and excitement in the years ahead!

In fact, one of the silent shortwavers has already taken the first step on the road back to common sense. Greenland's state radio, **Kalaallit Nunaata Radioa**, has come back on the air, although just barely. Word is that the powers that be in Greenland are contemplating a move back into shortwave, since their AM and FM services aren't providing the coverage they'd hoped for. Meantime a 100-watt transmitter at Tasiilaq, using **3812 upper sideband**, is carrying on KNR shortwave. They are on the air from 1330 to 1430 and again from 2000 to 2200 through the end of daylight time, after which the broadcasts shift to an hour later. This will be a tough one to pull in but East Coasters may have a slight chance around 1330 or just before 2200 as the days start to shorten before the time change takes effect. The rest of us will have to wait and hope KNR becomes more fully involved.

And here's some more good news. **Radio TV Hong Kong** will again carry coverage of the Hong Kong Yacht Races on shortwave. The broadcasts run from October 12 to 19 on **3940**. This, of course, is in the middle of the 80-meter amateur band, so it's a given that you're going to have to deal with interfering ham chatter. Nonetheless, many in North America have heard these broadcasts in past years so it is definitely worth a try. Check the channel in the early morning hours on through to sunrise at your location. This annual event is your only chance to hear broadcasts from Hong Kong on shortwave.

By the time this issue sees daylight it could well be that a major increase in the **Sudan National Broadcasting Corporation's** transmitting infrastructure will be in play. There are a number of new or restored frequencies about to become active, including **4995, 6150, 9505, 11835,** and **15170**, with powers ranging from 20 kW to 120 kW.

Radio Lesotho (4800) is off the air at this writing, awaiting the arrival of some needed replacement parts. Once they're in hand, the station expects to be back on the air with its regular schedule.

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Hello! Welcome to The Listening Post. Come in! Sit down, have a cup of coffee and let's talk shortwave.

That's what we're going to be doing each month. We'll bring you a listing of some of the things that are being heard on the short wave bands. However, it's important to remember the time delay between the writing and the reading because no two days are ever exactly alike on shortwave. Frequencies and times change often, and stations come and go thanks to the propagation gods and sometimes individual station fortunes.

In addition, we'll have features on stations, countries, certain areas of the world, news events, a dash of utility action, technique tips, QSL information, words about DX clubs and publications, questions from you, the readers, and more. We hope you'll join us each month in The Listening Post.

For the past few months, a lot of shortwave news has been generated in a most unlikely country—The United States. Normally, little seems to happen in this country relative to shortwave broadcasting.

The Voice of America was much in the general news as a result of the Reagan Administration's desire to make the Voice more of a propaganda vehicle than it has been in the past. This caused a great deal of discussion and may have been the cause of at least one VOA official's resignation. The dust has not completely settled on this question of whether the VOA should emphasize more of the positive and devote less time to the negative side of things in this country.

The Administration announced plans sometime ago to build a new station in Florida, tentatively called "Radio Marti," which would beam anti-Castro programming to Cuba. Again, this was a controversial move and there is still much opposition to it. Although proposed for the medium wave band, the action does have ramifications for shortwave since it could affect Radio Havana's actions as well as those of the several anti-Castro groups in the Miami area which run clandestine broadcasts to Cuba on shortwave.

WYFR, the religious US shortwave broadcaster with headquarters in California and transmitters in Florida, made a sudden, surprising, and unique move. It now trades airtime with the Voice of Free China in Taiwan. WYFR programs are carried over VOFC to China from 1205 to 1605 GMT on 15370 and to India from 1400-1700 GMT on 9600. In exchange, VOFC is aired over WYFR from 0000-0400 on 5985, 0200-0500 GMT on 11740, 0400-0600 on 11855, and 2100-2300 on 15130.

In addition, the first totally new shortwave station in the United States in many years came on the air early this year—WRNO World Wide, broadcasting from New Orleans. So far, the programs have just been a relay of their local services, with the exception of commercials and other inserts. The station, calling itself the Rock of New Orleans, is scheduled from 1800-2200 GMT on 15420, 2200-2400 on 11915, 0000-0200 on 9725, 0200-0600 on 6155, and on Sundays 0600-1000 on 6115 and 1000-1100 on 9715.

Finally, the Federal Communications Commission received an application for a commercial shortwave station to operate from Florida. An application was also received from a religious broadcaster for an outlet in Alaska.

Normally, very little happens in this country relative to shortwave. But, with all the aforementioned, the United States has seen a flurry of news and activity over the past several months!

Gmt Conversion Chart

GMT	EST	CST	MST	PST
0000	7.00pm	6.00pm	5.00pm	4.00pm
0100	8.00pm	7.00pm	6.00pm	5.00pm
0200	9.00pm	8.00pm	7.00pm	6.00pm
0300	10.00pm	9.00pm	8.00pm	7.00pm
0400	11.00pm	10.00pm	9.00pm	8.00pm
0500	12.00M	11.00pm	10.00pm	9.00pm
0600	1.00am	12.00M	11.00pm	10.00pm
0700	2.00am	1.00am	12.00M	11.00pm
0800	3.00am	2.00am	1.00am	12.00M
0900	4.00am	3.00am	2.00am	1.00am
1000	5.00am	4.00am	3.00am	2.00am
1100	6.00am	5.00am	4.00am	3.00am
1200	7.00am	6.00am	5.00am	4.00am
1300	8.00am	7.00am	6.00am	5.00am
1400	9.00am	8.00am	7.00am	6.00am
1500	10.00am	9.00am	8.00am	7.00am
1600	11.00am	10.00am	9.00am	8.00am
1700	12.00N	11.00am	10.00am	9.00am
1800	1.00pm	12.00N	11.00am	10.00am
1900	2.00pm	1.00pm	12.00N	11.00am
2000	3.00pm	2.00pm	1.00pm	12.00N
2100	4.00pm	3.00pm	2.00pm	1.00pm
2200	5.00pm	4.00pm	3.00pm	2.00pm
2300	6.00pm	5.00pm	4.00pm	3.00pm

DX Library

The rudiments of a shortwave listening post require three things: a receiver, an antenna, and a copy of the current edition of the *World Radio TV Handbook*. The 1982 version runs nearly 600 pages and includes listings of the world's shortwave and medium wave stations, along with schedules, frequencies, addresses and so on.

Again this year, the book features a lengthy review of receivers by Larry Magne. While it has become a bit expensive over the years, now at $16.50, it is still the basic book for the shortwave listener and DXer. It is available from Gilfer Associates, P.O. Box 239, Park Ridge, NJ 07656. It can also be found in some larger bookstores or ham radio outlets.

Club Focus

One of the major shortwave clubs in the United States is SPEEDX, which issues 12 monthly bulletins per year covering listings of stations heard by continent, schedules, QSLs, utility loggings, and brief feature articles. Full membership is something which must be earned by regular reporting to the bulletin or other club work through which points towards full membership are awarded. When you start out, you are considered an associate member. Dues are $16 per year, first class mail in North America. Sample copies may be obtained by writing SPEEDX, P O Box E, Lake Elsinore, CA 92330. Please include $1 to cover costs.

The Grand Tour

*All times and days are Greenwich Mean Time

Afghanistan Although not one of the world's powerhouses, it is certainly possible to tune in broadcasts from this much-in-the-news country. Radio Afghanistan is scheduled in English from 1530-1600 on 9550 and 6230. Other frequencies used are 15077, 9665, and 7290. The local languages you'll hear are Pashto and Dari. Some of the transmitters used are actually in the Soviet Union.

Antarctica Radio Nacional Arcangel San Gabriel (RNASG for the lazy) has been providing good reception on 15476 in Spanish up to around 0100 sign off. It is easily identifiable by the use of a howling wind sound effect near sign-off time.

Argentina 11710 is a much-used frequency for Radio Argentina (Radiodifusion Argentina al Exterior) in a variety of languages including English, Spanish, Portuguese, Japanese, French, German, Italian, and so on, mostly in half hour blocks. From 2300 on, the station also operates on 9690. Occasionally, it relays other Argentine stations

THE MONITORING MAGAZINE

September 1982 / POPULAR COMMUNICATIONS / 39

The first "Listening Post," in the October 1982 issue.

The Money Monster strikes again! **Russia's Radio Station Pacific Ocean** (Radiostansiya Tikhiy Okean) has been closed down. It had been active since 1963.

December 22 is the target date for HCJB's new station to take to the air from its new site at Kununurra in Western Australia. The Australian broadcasts will focus on Asia as well as the South Pacific, with some very limited attention paid to Ethiopia. Frequencies and times have yet to be announced.

Here's another new one out of Peru: **Radio Paz Peru Internacional**. It's on **4769** from Chiclayo.

Colombia has a new entry as well. **La Voz de Conciencia** is operated by the Oregon-based Pan American Mission and is using **6065** with 5 kW, although they may have moved to 6060 by now. (You may also hear IDs for "Sistema Radial de Alcarabanga. The transmitter is located near the town of Puerto Lleras, in Meta Department. Letters should go to Apartado Aereo 95.300, Bogotá, Colombia.

RDP International (Portugal) has just fired up at least one new 300-kW transmitter, which is now in action from 0500 to 0755 on **9840**, 1600 to 1900 (or later) on **15455** and 2300 to 0200 on **15295**. RDP had been using 100 kW, apparently still in use for their broadcasts on Saturday and Sunday.

What's with these European governments, anyway? Now we hear that **Radio Finland International** is going to discontinue all of its foreign language broadcasts (English, French, and German) and restrict itself to Finnish only.

Remember the flap about **Kol Israel** dumping all languages except Arabic and Hebrew? Forget it. The Israel Broadcasting Authority has backed away from the idea and will continue with foreign services on shortwave. The number of protests it received from listeners and concerned Israelis apparently made the difference.

So shortwave is a dying medium? Not as far as **China Radio International** is concerned. The summer issue of "The Messenger" reports that back in the 1960s CRI received about 20,000 letters a year. By the early 1980s, when China began to open up, the number climbed to100,000 per year. Ten years ago CRI was receiving about 320,000 pieces of mail each year. In 2001 that number had passed 900,000!

Pete Becker in Washington is our book winner this month. Universal Radio is sending Pete a copy of the *Shortwave Guidebook* by Harry Helms. Also in the package Pete will find a copy of Universal's fantastic catalog of radios and radio-related goodies. If you don't have a copy, you should. You can get one by calling Universal at (614) 866-4267, writing them at 6830 Americana Parkway, Reynoldsburg, Ohio 43068 or e-mailing dx@universal-radio.com.

Remember, your reception logs are always wanted, too. We make every effort to use most, if not all, of the logs sent in, so don't be shy or feel yours aren't good enough. They are! Just be sure to list your logs by country and leave enough space between them so we can navigate scissors easily. Logs are cut into strips and then sorted by country, so be sure to use only one side of the paper otherwise some of your logs won't survive. Also include your last name and state abbreviation after each logging. As always, thanks so much for your continued interest and participation.

Here are this month's logs. All times are in UTC, which is five hours ahead of EST, i.e., 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 5 p.m. MST, and 4 p.m. PST. Double capital letters are language abbreviations (FF = French, AA = Arabic, SS = Spanish, etc.). If no language abbreviation is included, the broadcast is assumed to have been in English.

Abbreviations Used In This Month's Column

//	—	Parallel frequency
ABC	—	Australian Broadcasting Corporation
AFRTS	—	Armed Forces Radio Television Service
AFN	—	Armed Forces Network
AIR	—	All India Radio
anncr	—	announcer
anmt(s)	—	announcement(s)
BSKSA	—	Broadcasting Service of the Kingdom of Saudi Arabia
CNR	—	China National Radio
GOS	—	General Overseas Service
ID	—	identification
Int'l	—	international
IS	—	interval signal
Lang	—	language
LSB	—	lower sideband mode
NBC	—	National Broadcasting Corporation
OA	—	Peru, Peruvian
PBS	—	People's Broadcasting Station
Pgm	—	program
RRI	—	Radio Republick Indonesia
sked	—	schedule
SIBC	—	Solomon Islands Broadcasting Corporation
TOH	—	Top of the Hour
unid.	—	unidentified
USB	—	upper sideband mode
vern	—	vernacular (any local dialect or language)
VOA	—	Voice of America
VOIRI	—	Voice of the Islamic Republic of Iran

ALBANIA—Radio Tirana, **6115//7160** at 0227 with IS, ID, and schedule. (Burrow, WA) 7160 at 0240. (Brossell, WI) 0251 with Balkan music. (Miller, WA)

ANGOLA—Radio Nacional, **4950** with Afro-pops at 0315. (Strawman, IA)

ANGUILLA—World University Network, **6090** with Gene Scott at 0704. (Becker, WA)

ANTIGUA—Deutsche Welle relay, **9690** at 0720 in GG to Australia and the Pacific. (Becker, WA) BBC relay, **5975** at 0436 and **15190** at 1446. (Newbury, NE)

ARGENTINA—Radio Maratha (tentative) **6215** in PP at 0010, possible ID at 0028 but too poor to copy. Female with long talk at 0033. (Montgomery, PA) Radio Balurate (presumed) 0239 to possible sign off at 0315. Group vocals but almost impossible to make out language or hear an ID. (D'Angelo, PA) *(Same station, different names depending on whether programming is in Portuguese or Spanish.—gld)*

Radio Nacional, **15345** with SS talks and pops heard at 2240. (Brossell, WI)

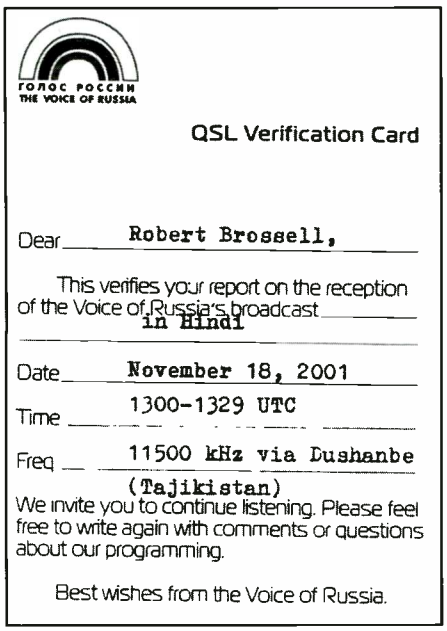
Radio Argentina al Exterior (RAE), **11710** in EE at 0200 with schedule, music, current events. (Burrow, WA)

ARMENIA—Voice of Russia relay, **9965** at 0219 with songs and talks in SS. (Brossell, WI)

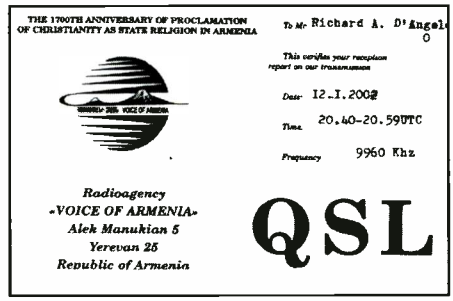
ASCENSION ISLAND—BBC relay, **6005** at 0655 with ID, news. (Becker, WA)

AUSTRALIA—Radio Australia, **5995** with news at 1400. (Northrup, MO) **6020** from Brandon at 1206 and **9660** (also Brandon) to SE Asia at 0718. (Becker, WA) **9580** with jazz and letters program at 1443. (Newbury, NE) **11650** at 1235. (Brossell, WI) **17750** with sports news at 0314. (Burrow, WA) **21740** at 2126 with "AM," news, and religious report. (Jeffery, NY) 2159 with IS, ID, "Australia Today." 2302 with news. **//15240//17715//17795**. (MacKenzie, CA)

Voice International (Christian Voice), **17725** in CC at 1242 with mailing address in Darwin. (Brossell, WI)



Robert Brossell of Wisconsin worked his way through a lot of postage stamps to get the Voice of Russia to confirm their broadcast via Tajikistan.



This Voice of Armenia QSL found its way into Rich D'Angelo's mailbox a few months after he reported reception on 9960.

AUSTRIA—Radio Austria Int'l, **13730** at 2259 with ID and news in GG. (Brossell, WI)

BOTSWANA—Radio Botswana, **4820** at 0254 with barnyard IS, choral anthem, instrumental anthem and into opening anmts at 0300. (Strawman, IA) VOA relay, **9885** at 0426 with sports news. (Newbury, NE)

BRAZIL—Radio Difusora Roraima, Boa Vista, **4875** with PP anncr and program of big band music. Apparent sign off at 0407 after ID. (D'Angelo, PA) Radio Brazil Central, **4985** in PP with Brazilian music at 0250. (Miller, WA) **11815** with pops at 0240. (Brossell, WI) Radio Aparecida, **6135** at 0202 with jingle ads, ID, PP talk, and news at 0415. (D'Angelo, PA) Radio Nacional, **6180** with pops at 0226. (Miller, WA) ID and PP songs at 0329. **11780** at 2316. (Miller, WA)

BULGARIA—Radio Bulgaria, **9400** heard at 2300 with IS, schedule, ID, news. (Burrow, WA)

CANADA—Radio Canada Int'l, **9515** heard at 1313 and 9560 at 0416, //9790 with ID, news. (Newbury, NE) **17820** at 1330. (Northrup, MO)

CHU time station, **3300** at 0645 and 7335 at 0709. (Becker, WA) CFRX, **6070** with local news at 0703. (Becker, WA)

CHILE—Voz Cristiana, **6070** in SS at 0730. QRM from CFRX. (Becker, WA) **11690** with religious music in SS. (Newbury, NE) **17680** at 1600 with ID and talk in SS. (Burrow, WA) **21500** with Christian music in SS at 1325 (Northrup, MO) **21550**, //**17680** at 2205 with SS news and music. (MacKenzie, CA)

CHINA—China Radio Int'l, **5145** at 1203. Listed Mongolian. (Strawman, IA) **15205** at 1748 with program notes, comments, and CC lesson. (MacKenzie, CA) **15500** via Mali in CC at 2250. (Brossell, WI) Voice of Pujiang, **4950** at 1153 with talk in Mandarin. (Strawman, IA) Voice of Jinling, **5860** at 1200 with CC talks over music. (Becker, WA) China National Radio, Beijing 1 net, **5880** in CC at 1202. (Becker, WA) Beijing Network 6, **11000** with pops at 0945. (Barton, AZ) Beijing Network 2, **17625** in CC at 2345. (MacKenzie, CA) Chinese Music Jammer, **11590** at 1235, **13800** at 2300 and **17640** at 1630. (Brossell, WI) *(Bet you can't QSL this one, Bob!—gld)*

COSTA RICA—World University Network/Gene Scott, **5030** at 0652 and **6150** at 0705. (Becker, WA) Radio Exterior de Espana relay, **17850** at 1940 with live SS sports. (Brossell, WI)

CROATIA—Voice of Croatia, via Germany, **9925** at 0340 with multi-lingual ID and comments in Croatian, possible newscast, woman with ID and frequencies, then EE and SS IDs. (MacKenzie, CA) 0340 with multi-lingual ID and schedule. (Burrow, WA) 0443 with news in EE. (Newbury, NE)

CUBA—Radio Havana Cuba, **17705** at 2230 in PP/Guarani at 2230. (MacKenzie, CA) Radio Rebelde, **5025** in SS at 0650. (Becker, WA)

CYPRUS—BBC relay, **9410** at 0220. (Jeffery, NY) **12095** at 0308. (MacKenzie, CA) 0335. (Brossell, WI) **21660** at 1515. (Barton, AZ)

CZECH REPUBLIC—Radio Prague, **7345** in Czech at 0300. (Weronka, NC) **9870** at 0302 with ID, report on corruption. (Burrow, WA) **15545** at 2233 with news. (Miller, WA) Sign off at 2255 with "This has been Radio Prague. If you have questions, please write to us at Radio Prague, Prague, Czech Republic," then anthem and IS. (Brossell, WI)

DENMARK—Radio Denmark via Norway, **7490**, //**9960**, and **13800** at 0335 in DD; man and woman with comments. (MacKenzie, CA) 9960 in DD at 0330. (Brossell, WI) **17525** with news in DD at 1534. (Miller, WA)

ECUADOR—HCJB, **9745** at 0058 with "DX Party Line." (MacKenzie, CA)

EGYPT—Radio Cairo **9755** in AA at 0312. Also **15285** at 0315, in AA. (Brossell, WI) **9900** closing at 0428. (Newbury, NE) 2214 with comment, ID, and news. **17670** in AA at 1820. (MacKenzie, CA)

ENGLAND—BBC, **9740** (*via Singapore—gld*) at 1250; **15190** (*Antigua—gld*) at 1415; **15220** (*Antigua—gld*) at 1520; **21640** at 1345 in unid language and **21740** at 1330. (Northrup, MO) **15565** at 1130. (Jeffery, NY)

ETHIOPIA—Radio Fana, **6210** at 0331 with talk in unid language. Poor. (Brossell, WI) **6940** at 0329 with IS and man with several IDs. Carrier varied down to **6938** at times. (Montgomery, PA)

FRANCE—Radio France Int'l, **11955** via Gabon with ID, talks and music in FF. (Brossell, WI) **15300** at 2145 with music program in FF. Also **17605** with EE news at 1723. (Jeffery, NY) **17620** with correspondent's reports at 1415. (Barton, AZ) **21580** in FF at 1350. (Northrup, MO)

FRENCH GUIANA—Radio France Int'l relay, **17860** in FF at 1325 and **21685** in FF at 1335. (Northrup, MO)

GERMANY—Deutsche Welle, **12045** at 0313 in unid African language. (MacKenzie, CA) **13780** in GG to North America at 2207. 0534 in GG. (Newbury, NE) **15515** via Canada in GG at 1415 and **21745** via Rwanda in FF at 1225. (Northrup, MO) Sudwestrundfunk, **7265** in GG with U.S. pops at 0320. (Brossell, WI)

GREECE—VOA relay, **9835** at 0353 in unid Asian language. (MacKenzie, CA)

GUAM—Trans World Radio/ KTWR, with preacher at 0910. (Newbury, NE)

Adventist World Radio/KSDA, **11980** at 1630. (Barton, AZ) **17635** in CC at 2343. (MacKenzie, CA)

GUATEMALA—Radio Cultural, **3300** with soft SS music and tentative IDs at 0214 and 0217. (Montgomery, PA) Radio Maya de Barillas, **3325** at 1230 in Quechua with religious music. (Miller, WA)

HAWAII—Armed Forces Radio, **6350** with news features at 0822. (Newbury, NE) KWHR//World Harvest Radio, **11565** with a sermon at 1233. (Brossell, WI) **17510** with religious music at 2240. (Jeffery, NY)

HUNGARY—Radio Budapest, **9570** at 0250 with cultural reports, IDs. (Burrow, WA)

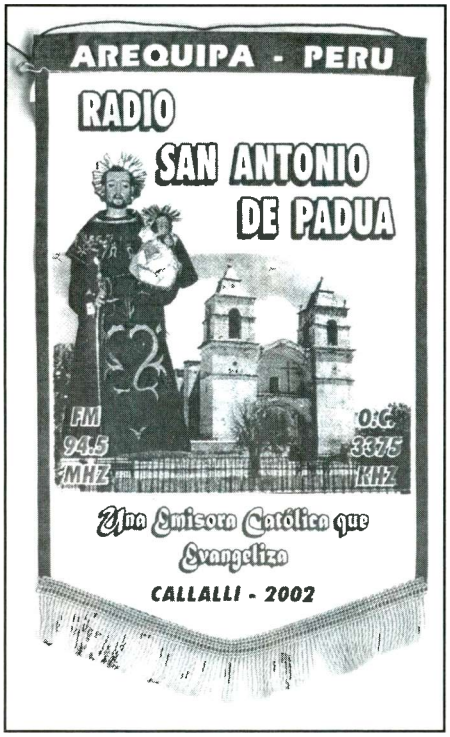
INDIA—All India Radio, **11620** in Hindi at 2039. ID 2045. (Brossell, WI) **15140** at 1613 with news in RR. (Miller, WA) 1710 in RR. (Strawman, IA)

INDONESIA—Radio Republik Indonesia, **4753**, Makassar, Sulawesi at 1230 with anthem-like music, woman anncr in II. (Barton, AZ) Voice of Indonesia, **15150** in EE at 2000 with ID, schedule, ID and into news. (Burrow, WA)

IRAN—Voice of the Islamic Republic of Iran, **9895** with talks and AA music monitored at 0346. Also **15084** in Farsi at 0133. (MacKenzie, CA) **11840** very strong in AA at 2050. (Brossell, WI)

IRAQ—Radio Iraq Int'l, **11787** in AA at 2049. Poor, with an annoying whistling QRM. (Brossell, WI)

ISRAEL –Kol Israel, **11585** in HH at 0323. (Brossell, WI) 0306 relaying the domestic Reshet Bet service in HH with news, Israeli pops, IDs, and commercials. Switched to **11590** at 0326. Still audible past 0430. (Lamb,



If one can only get Peruvians to reply, chances are pretty good you'll also get a nice pennant, like this one Rich D'Angelo received recently from R. San Antonio De Padua.

NY) **15640** at 0404 with EE news. (Burrow, WA) 2107 in HH with news on terrorist attacks. //**11585, 15670, 17535. 15760** in HH at 1810, //**17535. 17535** with telephone interview in JJ at 2235. (Brossell, WI) **13680** in JJ to SE Asia at 2204. (Becker, WA) Radio Tampa, NSB-1 on **9595** in JJ at 0714 and **9760** NSB-2 in JJ at 0722. (Becker, WA)

KUWAIT—Radio Kuwait, **11675** at 0249. Man with Koran, man annor, time pips, ID, and news at 0300. (Lamb, NY) **11990** at 1900 with ID and "Page From the History of Kuwait." (Burrow, WA) 2059 closing with "It is time for Radio Kuwait to shut down its English service," then gave frequencies and then "This is Radio Kuwait signing off." (Brossell, WI)

LITHUANIA—Radio Lithuania, **9875** at 2330 with ID, program notes, news, Lithuanian history. (Burrow, WA)

MADAGASCAR—Adventist World Radio, **3215** at 0306. Woman with some brief items, music interludes, more talk. Considerable splatter from WWCR-3210. (Montgomery, PA)

MALAYSIA—Radio Malaysia, **4845** with local music at 1245. (Miller, WA) **7295** with EE simulcast of Radio 4 domestic service at 1518. (Burrow, WA)

MAURITANIA—Radio Mauritanie, **4845** heard at 0054 with Koran recitations, another man with AA ID and apparent sign off annt followed by instrumental anthem. (D'Angelo, PA)

MEXICO—Radio Mexico Int'l, **9705** at 0310 thanking listeners for their letters and support. "We are even getting letters from Cuba." (Brossell, WI) Radio Educacion, **6185** at 0707 with its usual eclectic music. One of my favorite stations. (Becker, WA) *(You should let them know that, Pete!—gld)* 0835 in SS with classical music. (Newbury, NE)

MOLDOVA—Voice of Russia via Moldova, **9665** with classical music, man and woman hosts. (Newbury, NE)

MONGOLIA—Voice of Mongolia, **12015** at 0959 sign on with IS, woman with "welcome to the Voice of Mongolia in English." Discussion and mailbag programs followed. (D' Angelo, PA)

MOROCCO—RTV Marocaine, **11920** at 0250 with annts and songs. Also on **15345** in AA at 1915. (Brossell, WI) **11920** at 0352. (MacKenzie, CA)

NEW ZEALAND—Radio New Zealand, **9885** at 0725 to Western Pacific with sports news. (Becker, WA) **11675** at 0834 and **11820** at 0517. (Newbury, NE) **17675** at 0000 with New Zealand news. (Burrow, WA) 0200 with domestic news, weather. (Jeffery, NY) 0310 with talk on the Prime Minister's relationship with parliament. (Brossell, WI)

NORTH KOREA—Voice of Korea, **9335** in EE with reports on the world's admiration of Kim Jung Il. (Burrow, WA) **11710** in KK at 1915 and in EE on **13760** at 0150. (MacKenzie, CA)

NORTHERN MARIANAS—VOA Tinian relay, **9545** heard at 1300 opening in Korean. (Strawman, IA) **15160** in CC at 0830. (Barton, AZ)

NETHERLANDS ANTILLES—Radio Netherlands Bonaire relay, **9820** in DD to Australia at 0724. **15155** in DD to North America at 2217. (Becker, WA)

PAKISTAN—Radio Pakistan, **11570//15100** at 1511 with talk of Pakistan-India situation. Off abruptly at 1514. (Burrow, WA) **15485** at 0045 with Urdu choral music, 3 pips at top of the hour and into news. (Strawman, IA)

PAPUA NEW GUINEA—National Broadcasting Corp., **4890** with EE talk at 1145. (Becker, WA) 1253 in EE with folk music. (Miller, WA)

PERU—Radio Maranon, **4835** heard at 0940 with SS annor and OA music. (Montgomery, PA) Radio La Voz del Campesino, **6956.7** heard at 0235 with rustic

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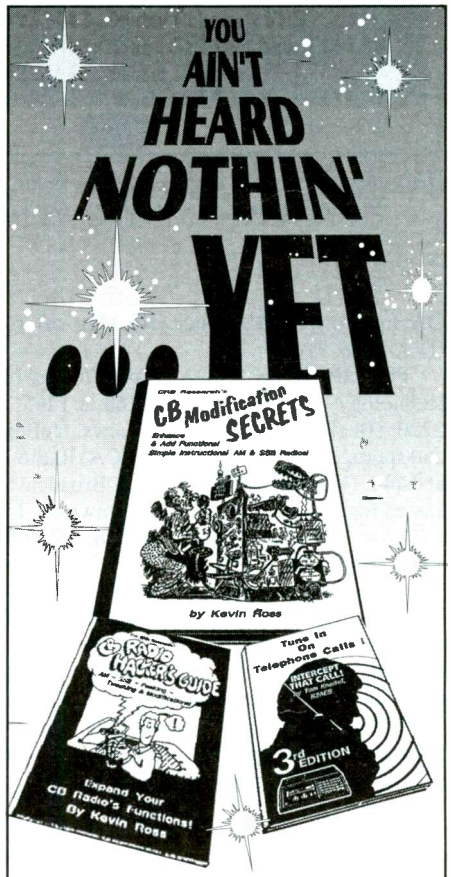

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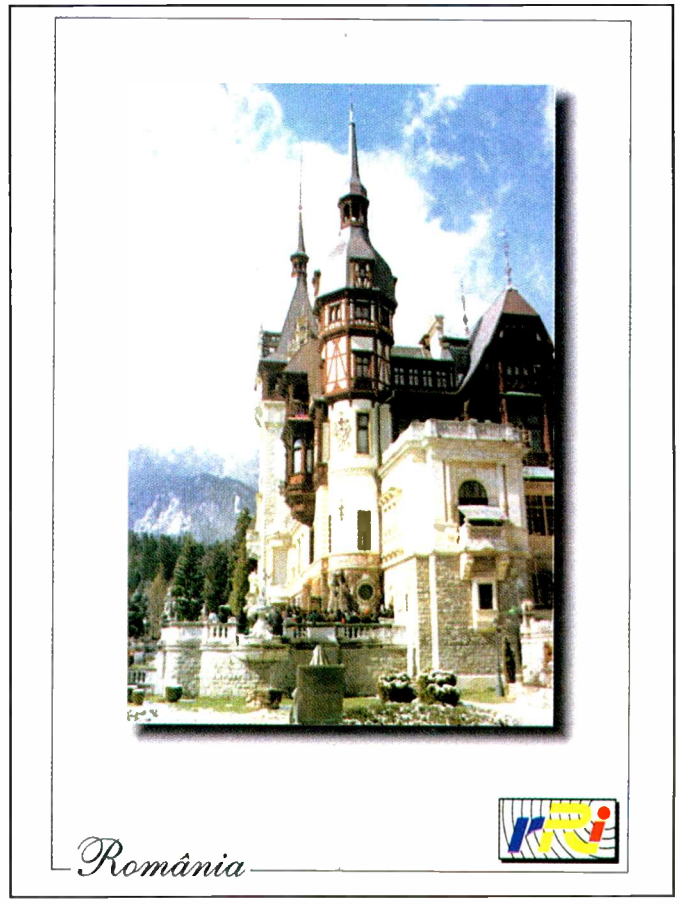
This neat color view of Prague graces the face of—what else?—A Radio Prague QSL card. (Tnx: David Weronka, NC)



Not to be out done, Radio Romania International sent this color scene to Dave Weronka.

OA music, man SS anncr. No sign off routine at 0308 closing. (D'Angelo, PA)

PHILIPPINES—VOA relay, **9760** at 1437 on electronic visual technology. (Newbury, NE) **15160** at 1245. (Brossell, WI) **17820** at 2220. (Becker, WA) 2304 with news. (Jeffery, NY) 2324 with news and sports. **//17740**. (MacKenzie, CA) Radio Veritas Asia, **9660** in RR at 1440. (Newbury, NE) Far East Broadcasting Co., **12095** at 1157. Listed for Laotian at this time. (Strawman, IA) 1328 with IS and into an Asian language at 1330. (Barton, AZ) **15095** in unid language at 1516. (Miller, WA) **15520** in unid language at 2358. IS, ID by woman, into religious vocals. (MacKenzie, CA)

PORTUGAL—RDP Int'l, **17680** in PP at 1556 with ID, anthem, talk, ID again at 1605. (Burrow, WA)

PUERTO RICO—Armed Forces Network, **6458 USB** at 0309 with various informational segments, ID, PSAs. (Jeffery, NY)

ROMANIA—Radio Romania Int'l, **11940** at 0240 with talk on Romanian culture. (Weronka, NC) Here and **//17735** at 0410 with economic news. (Burrow, WA) **11940** at 0415 with talk on European Union. (Linonis, PA)

RUSSIA—Voice of Russia, **15455** in FF at 1922, ID 1930. (Brossell, WI) Radio Rossii, **9530** in RR at 1905. (MacKenzie, CA) **11840** via Sakhalin Islands at 1005 with various RR features, numerous IDs and music between segments. (D'Angelo, PA)

RWANDA—Deutsche Welle relay, **15390** with program on Alzheimer's, dementia and treatments. (Brossell, WI) **17860** in GG at 2316. (MacKenzie, CA)

SAO TOME—VOA relay, **7290** signing on at 0300. (Brossell, WI)

SAUDI ARABIA—Broadcasting Service of the Kingdom, **15170** in AA at 0313 and **15230** in AA at 1908. (Brossell, WI)

SEYCHELLES—Far East Broad-casting Assn., **11605** in JJ at 1345. (Northrup, MO) 0215 with talk and Middle-eastern sounding music, mention of postal and e-mail addresses, FEBA IS several times before going off at 0228. Their website says the language at this time is Persian. Best I've ever heard them. (Lamb, NY) Unid at 0200-0230 in AA-type language. Chime at beginning and end. (Linonis, PA) *(It's FEBA, Jack—gld)* **11885** in possible RR at 0345. (Linonis, PA)

SINGAPORE—Radio Singapore, **6150** at 1246 with changing role of the media in Malaysia. **//9660**. (Newbury, NE) 1508 relaying local "Perfect 10–97 FM." (Burrow, WA) **9600** with EE at 1339. (Miller, WA)

SOLOMON ISLANDS—Solomon Islands Broadcasting Corp., **5020** at 0949 with a report on the Solomon Islands' Football Federation, "This is the national service of the Solomon Islands Broadcasting Corporation—Radio Happy Isles, coming to you from our studios in Honiara—Radio Happy Isles, keeping you informed of news from around the world." (D'Angelo, PA) 0727. Even stronger at 0805. (Becker, WA)

SOUTH AFRICA—Channel Africa, **9525** at 1614 with news feature, ID at 1624. (Burrow, WA) BBC via Meyerton, **7120** at 0301 with news. (Brossell, WI) **11765** with news report at 0512. (Newbury, NE)

SOUTH KOREA—Radio Korea Int'l, **9560** heard at 0200 with talk about soccer. (Linonis, PA) Presumed them on **13670** at 0930. (Barton, AZ)

SPAIN—Radio Exterior de Espana, **15110** in SS at 2216. (Becker, WA) **15375** in SS at 1415, **21570** in SS at 1330; **21610** in SS heard at 1330 and **21700** in SS at 1130. (Northrup, MO) **21700** in SS at 1745. (Barton, AZ)

SRI LANKA—Sri Lanka Broad-casting Corp., **9770//15425** in EE at 1519, off at 1525. (Burrow, WA) 0770 at 0005 with unusual ID as "Radio Sri Lanka" at 0115, also mentioning frequency and meter band, **//15425** was better. (Montgomery, PA) 15425 at 0200 in EE with mostly instrumental music, several IDs, greetings to listeners in Singapore. (Linonis, PA)

SWAZILAND—Trans World Radio, **4775** at 0358 with clear EE ID with IS, then short talks in unid language, African music. (Montgomery, PA)

SWEDEN—Radio Sweden, **9490** at 0254 with program on the most popular magazines in Sweden. Address and web URL at 0256. (Brossell, WI) **18960** in Swedish at 1345. (Northrup, MO)

SWITZERLAND—Swiss Radio Int'l, **11905** *(via French Guiana—gld)* at 2155 with IS, ID at 2200 and into FF. (Burrow, WA) **17735** via French Guiana at 1731 with news. (Jeffery, NY) 1731 with news in EE. (Jeffery, NY)

SYRIA—Radio Damascus, **13610** at 2005. Strong carrier but weak

Elijah being taken up to heaven. A painted ceiling by Winter Carl Hansson, 1777—1805, in an old farmhouse near Rättvik.

Among the strangest blossoms of Swedish popular art are the paintings made a hundred years ago by peasant painters in the province of Dalecarlia, in the heart of Sweden. Their motifs were most often taken from the Old Testament, whose dramatic tales they pictured as happening in their own everyday surroundings. The naive art of the Dalecarlian painters flourished in a geographical isolation which has long been broken down. Yet in the midst of the busy present the past lives on in Sweden — the country which sends you this greeting from Scandinavia through **RADIO SWEDEN.**

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Radio Australia's ultra-modern facilities grace the front of this QSL. The back has room to confirm five different reports.

audio. ID at 2011 during newscast, weather at 2020. (Burrow, WA) 2201 with AA music. (Becker, WA)

TAIWAN—Radio Taipei Int'l, **7130** at 1251 with "Let's Learn Chinese." **//9610**. (Newbury, NE) **15265** with ID, news at 1405. (Northrup, MO) **15465** in CC at 1245. (Brossell, WI) **17805** via WYFR in SS at 2326. **//17750**. (MacKenzie, CA)

TANZANIA—Radio Tanzania, **5985** in unid language at 1307. (Miller, WA)

THAILAND—VOA relay, **15125** in Hindi at 1732. **//11695, 12040**. (MacKenzie, CA) BBC relay, **11955** heard at 0040. (Strawman, IA)

TUNISIA—RTT Tunisienne, **12005** with Holy Koran at 0330. (Brossell, WI)

TURKEY—Voice of Turkey, **11960** with EE discussion at 2245. (Linonis, PA) End of EE program at 2249, IS at 2250, off 2253. (Burrow, WA)

UGANDA—Radio Uganda, **4976** with sign on and IS at 0258, man with ID, a couple of short announcements and into African music. (Montgomery, PA)

UKRAINE—Radio Ukraine Int'l, **5965** at 0008. Woman with EE news, then music to 0015. Beamed to Western Europe. (Montgomery, PA) **12040** at 0245 with talk in RR. (Weronka, NC) 0302 with world news; 0305 "That was the news from Radio Ukraine International. Next in line is 'Ukrainian Diary'" (Brossell, WI) 0302 with domestic news, ID at 0309 and into "Ukraine Today." (Burrow, WA) 0318 with news, music. (MacKenzie, CA) 0330 with domestic folk music. (Linonis, PA)

UNITED ARAB EMIRATES—UAE Radio, Dubai, **12005** in AA at 0430. (Linonis, PA) 12005 at 0324 with AA songs. *(IDs? Tunisia is here at this time—gld)* **15435** in AA at 1619. (Miller, WA)

UZBEKISTAN—Radio Tashkent, **17775** at 1340 with Middle east-type music, program on Special Olympics, woman at close: "Goodbye—everyone at Radio Tashkent." (Barton, AZ)

VANUATU—Radio Vanuatu, **7260** at 1002 with music, woman and man annors in FF. Not listed for this time slot. (Montgomery, PA)

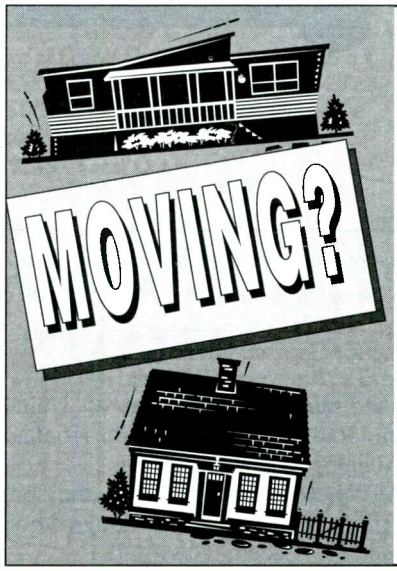
VATICAN RADIO—9605 at 0305 with hymns. (Brossell, WI) 0310 in SS. (Weronka, NC) **12055** via Chita, Russia in VV at 1325. (Strawman, IA) **15595** with World and Vatican news at 1627. (Burrow, WA) 1529 in AA. (Miller, WA)

VIETNAM—Voice of Vietnam, **5035** with Hmong service at 1156. (Strawman, IA) **5955** via Austria with VV news at 1303. (Miller, WA) **6175** in EE via Canada at 0351. (Burrow, WA)

ZAMBIA—Radio Zambia, **6265** at 0332 with talks in unid language. (Burrow, WA)

And that's it for another round. Time to raise your glass in salute to the following who provided all the good stuff this time: Jack Linonis, Hermitage, PA; Stewart MacKenzie, Huntington Beach, CA; David Weronka, Benson, NC; Richard D'Angelo, Wyomissing, PA; Mike Miller, Issaquah, WA; Bruce R. Burrow, Snoqualmie, WA; Ed Newbury, Kimball, NE; Mark Northrup, Gladstone, MO; Jerry Strawman, Des Moines, IA; David Jeffery, Niagara Falls, NY; Pete Becker, Clarkson, WA; Rick Barton, Phoenix, AZ; Robert Montgomery, Levittown, PA; Marie Lamb, Brewerton, NY, and Robert Brossell, Pewaukee, WI.

Thanks to each one of you! Until next month, good listening! ■



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Unlocking The Secrets Of Pirate Madness!

Here we go with what some of you have been hearing on the pirate frequencies lately. Have you sent in your pirate findings?

Voice of the Tiki, 6925 USB opening at 0155 with "Mudda Maxwell" playing what must be original Hawaiian guitar and vocal. I think this was relayed over KIPM. (Rick Barton, AZ)

KMUD, 6951.75 in AM mode at 0335 with music and a CW ID. It was very under-modulated. (Barton, AZ)

KDAZE, 6925 USB signing off with their e-mail address, <KDAZE6955 @yahoo.com> at 0430. (Barton, AZ)

KIPM, 6925 USB at 0600 with Alan Maxwell doing a sci-fi drama about discovering a fallen meteorite, which is really a giant glowing polyhedron. He and his astronomer friend try to unlock its secrets in an episode called "The Accursed Galaxy." (Barton, AZ)

Seattle Free Radio, 6955 USB at 0230 with a theatrical program featuring street music, talk of war, Radio Mystery Hour sketch, music, "Taps," and the theme from the Art Bell show. (Barton, AZ) (Good to have you on board, Rick!)

Psycho Radio, 6955 at 0230 with "We want Psycho, We want Psycho." (Mike Gaukin, OH) 6955 USB from 0124 to past 0137. (Lee Silvi, OH)

WHYP, 6925 at 2235 with Bozo, Kulpsville SWL Fest References and Poncho Villa. (Gaukin, OH) 0000 with Kulpsville retrospective show. Perhaps a relay by Radio Metallica? (William T. Hassig, IL) **6950** as "the new WHYP—pirate radio's only '80s station." Very strong on two different evenings. (Jeffrey Wyatt, MI) (Welcome! But please remember to include UTC times.)

Slim Shady Radio, 6950 at 0115 with Vicodin, "Bing, Bing, Bing."

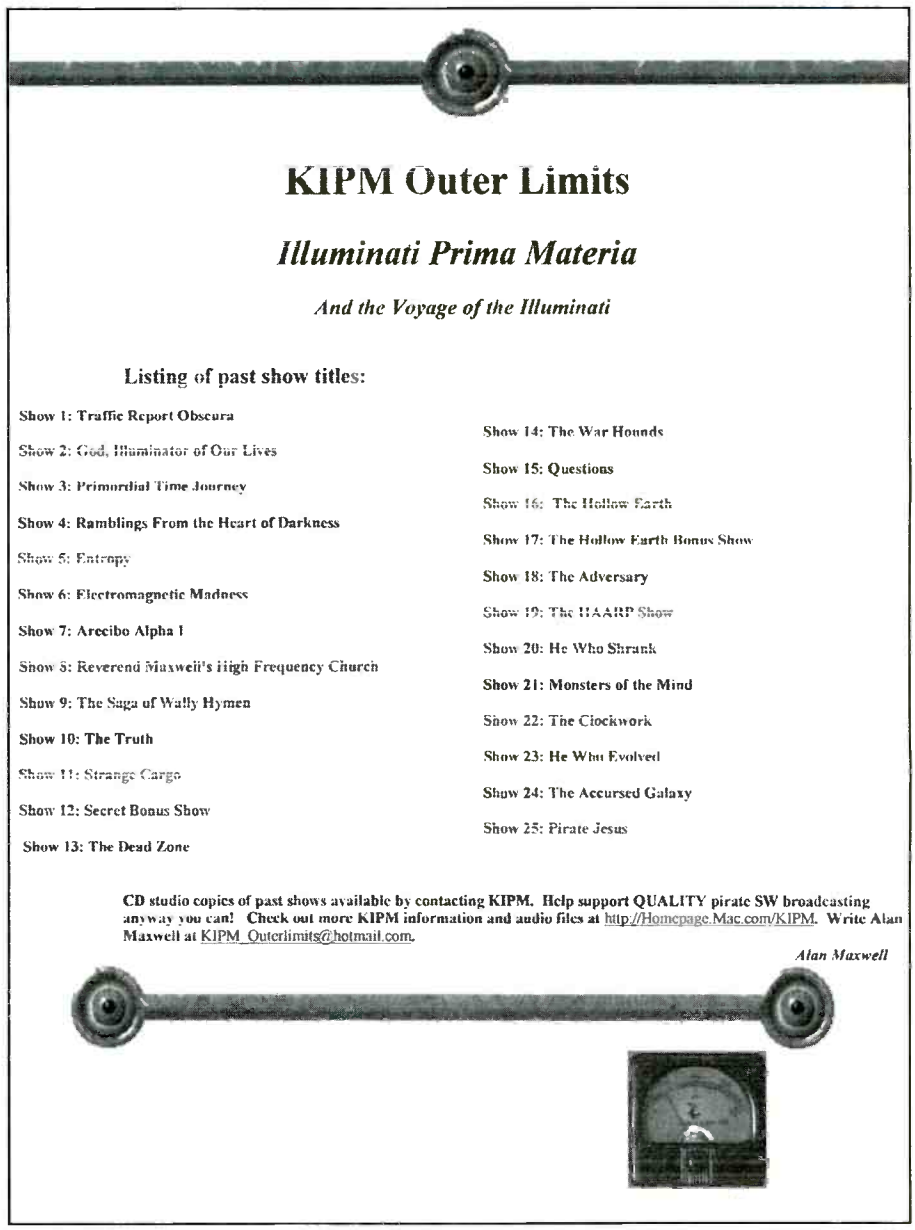
Oxycontin Radio, 6950 at 0140 with various rock things. And another day at 0115 with "Turning Japanese" and "Secret Agent Man." (Gaukin, OH)

United Patriot Militia Bingo, 6925 at 0205 raging on Steve Anderson, Waylan Jennings, Dukes of Hazard theme. (Gaukin, OH) (Welcome to you, also, Mike!) 0208 with ID, Dukes of Hazard theme, numerous parodies of United Patriot Radio's Steve Anderson. (Richard D'Angelo, PA)

WPN, 6955 at 0113 with the song "Turning Japanese" and songs about Osama Bin-Laden. (Hassig, IL)

Radio Bingo, 6950 with a song called "Anderson on the Run." Announced a mail drop somewhere in Ontario and "see everyone at 8 Monday." Signed off with a piano tune at 0240. (Wyatt, MI)

Unidentified—6950 at 0016 sign on



If you operate a pirate station, I'll bet you're tired of seeing all these KIPM illustrations, but they send stuff in—and you don't

with several IDs for Radio Nonsense and mention of the Belfast drop, but not sure if this was a new one; it seems to me this operator isn't around any more. (Lee Silvi, OH)

Unidentified—6950 after the above signed off, a station came on with what sounded like "Attention 69" followed by several sexual references, so possibly the same relay source as the one above? (Silvi, OH)

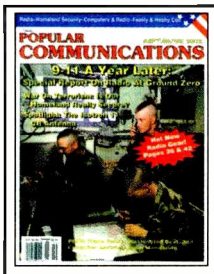
Voice of the New World Order noted after the above unidentified, with IDs, news, and music in **USB**. (Silvi, OH)

Voice of the Night (or Knight), 6925 at 0120 with IDs and a mail drop in Cornelia, Georgia. (Silvi, OH)

Radio Urantia, 6925 at 0050 with phonetic spelling of "Woodbury Parr, we know where you are." And "Are we having fun yet, Bob?" Also many IDs. (Silvi, OH)

Radio Borderhunter, 15795 with music, IDs, and drop address from 0022–0110. (Silvi, OH)

That's a pretty good run we had this month, yes? Let's keep it rolling fellows. I await your loggings with great anticipation! See you next time! ■



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PopComm's 20th Anniversary Contest

Complete Contest Info and prize listings on pages 8 & 9!

Here Are the 10 Questions

1. Who was the author of "Buying That First Radio" in the January 2002 issue of Pop'Comm*?*

2. What's the manufacturer's name and model of the small PC radio in the advertisement on page 13 of the February 2002 issue of Pop'Comm*?*

3. In this issue of Pop'Comm *(October 2002) who is the author of the new "Propagation Corner" column?*

4. In this issue of Pop'Comm *(October 2002) which amateur transceiver does writer Alan Dixon recommend as a good VHF/UHF scanner?*

5. In this issue of Pop'Comm *(October 2002) writer Ken Reiss' Anniversary Special photo feature shows several scanners and receivers from the past. What was the UHF frequency coverage of the Patrolman 6 receiver?*

6. In this issue of Pop'Comm *(October 2002) the "Homeland Security" column lists several common public safety interoperability frequencies. What's the National Law Enforcement Interagency frequency?*

7. In this issue of Pop'Comm *(October 2002), writer Gerry Dexter mentions that HCJB's new station in Australia will soon take to the air. What does Gerry report as the target date it will be broadcasting?*

8. From the April 2002 issue of Pop'Comm, *what's the nationwide frequency used by most railroads for EOT (End of Train telemetry)?*

9. According to information found in the May 2002 Pop'Comm, *what AM broadcast station in Detroit was initially news station 8MK?*

10. According to an article in the July 2002 Pop'Comm, *what small Southeast Asia country uses relay sites in Russia and Canada?*

20th Anniversary Contest Entry Form

All entries must be received by Wednesday, October 31, 2002

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Mail entry to: Winners, CQ Communications, Inc.
25 Newbridge Road, Hicksville, NY 11801.

utility radio review

by Joe Cooper <ur-review@provcomm.net>

news, information, and events in the utility radio service between 30 kHz and 30 MHz

Tons Of Military Logs!

This month I'm highlighting reader's logs and putting out a request for some assistance. In the past I've asked the readers of this column for help sending in logs, sending along reports, and writing articles. Frankly I've got to ask again, as contributions have been slowing down.

Part of the reason is the time of year when this column is being written, which is the middle of summer. The reports that I have been getting back are that record heat was driving many of you out of the radio-monitoring shack and into cooler pursuits. Others have been busy with work, school, or family obligations.

While these reasons are legitimate, it makes for a far too short column. So here is the deal; I need some volunteers to help me with the column on a regular basis. What I am looking for is subject matter experts (or SMEs as they are often called) who will look up what is happening in specialized areas of the utility radio world and report back. What I need are people who have expertise in military, government, spy, or commercial radio who can share their knowledge and information.

All contributors will be given credit for their work and effort, unless they specifically wish to remain anonymous (which many do). Those who make a commitment to monthly contributions may even get byline status with the column.

Logs are still needed, even though I am now receiving a good flow every month. Likewise new contributors are still welcome. This is not an exclusive club or group, and everyone is welcome to send in what they have heard. I still encourage people who are new to utility monitoring to try their hand at logs as every one counts.

Likewise, letters from you, the readers, are still more than welcome. Send me your views, ideas, monitoring experiences, and gripes about things in general or specific about this column or the world of UTE monitoring.

So there is the situation. As I have always said, this is *your* column, so please help make it as successful as it can be. And to those who have helped in the past, again may I express my thanks and invite you to try your hand again at making a contribution.

Oh, and if you remember last month I finished off by saying that I would be covering changes in the U.S. Coast Guard due to the events since 9/11. I found some new and interesting information at the last moment so I decided to hold off until I could get all of the details. Believe me, there have been some big developments that will provide some new and interesting monitoring opportunities, and I want you to have the best information and frequency lists.

So on to the reader's logs.

Reader's Logs

As always there is a good representation of logs from a wide range of UTE activities. Craig Rose, who lives in the Silicone Valley area of California is back with us after a brief pause due to school responsibilities. Craig, as you know from previous columns, specializes in monitoring commercial aircraft, and his current contributions reflect that fact.

There are lots of military, naval, and government logs, possibly reflecting the increased tensions in the world these days. Are there any specialists in military monitoring out there who would like to send in a report on what the hot frequencies are, especially in the Middle East?

Remember that all frequencies are in kilohertz and times are Universal (Z).

0000: STATION, Anytown, USA, summary of traffic heard in MODE at 0000 Z (Z), personal comments here. (JC)
1732: UNID, UNID CW Slow, weak, difficult to read thru static. Inc accentuated ltrs. (DW)
2177: UNID, Irish Navy Ship DSC// 100/E/170I/ship dsc call to MMSI 250099000 (fm 2500088000) rq qso on rt on 5254/USB. No response. (DW)
2187.5: UNID, GMDSS ALERT CHANNEL DSC//100/E/170. Two packets in 15 mins. 2129—exchange of Safety/Test packets btwn Spanish c/stns Malaga and Coruna. (DW)
2362: UNID CW (F1A-125HZ) Slow keying, regular intervals. Idles on mark. (DW)
2461.5: 0A, Irish Navy HAULBOWLINE SITOR/A//100/E/170 Cancellation of nav wng. (DW)
2463: IDR, IN Rome RTTY//75/N/850 CARB. "/IGJ41 /IGJ42 /IGJ43 /IDR2 /IDR3 /IDR8 /IDR5." (DW)
2474: PBC32, DN GOEREE ISLAND RTTY//75/N/850 CARB. Chan 08a active. (DW)
2608.4: FUO, FN TOULON RTTY//75/ N/850 Marker "oo FAAA de FUO znr uuu testing ry's sg's figs nnnn." (DW)
2618.5: GYA, RN NORTHWOOD FAX// 120/576/N/800 48 hrs sfc prog. (DW)
2789: FUE, FN BREST RTTY//75/ N/850 Marker "FAAA de FUE ry's sg's figs int zbz kkkk." (DW)
2793.5: FDG FAF BORDEAUX RTTY// 75/N/400 Marker "Test de FDG voyez le brick figs ry's." (DW)
2813.3: MTI RN PLYMOUTH VFT//2 chan VFT on USB. (DW)
2813.9: MTI RN PLYMOUTH RTTY// 75/R/200 Chan 1 in VFT. CARB "02 02a MTI." (DW)
2829.5: SPB28 SZCZECIN RADIO SITOR/ B//100/E/170 Tfc list. Blind tfc in Polish. (DW)
2829.5: UNID, UNID GERMAN CG SITOR/ A//100/E/170 Tfc in GG. S/off 2207z. (DW)
2845: PBB, DN DEN HELDER RTTY// 75/N/850 CARB. (DW)
4210.5: A9M, BAHRAIN RADIO CW Chan free marker "de A9M tlx." QRN fm IAR. (DW)
4210.5: IAR, Rome RADIO CW Chan free marker "IAR." QRM fm A9M. (DW)
4213: VIP, GW NODE PERTH CW Chan free marker (Globe) "VIP." QSX 4175. (DW)
4214: IDR, IN Rome RTTY//75/N/850 CARB. Poor copy, hvy QRM. (DW)
4214.5: CBV, VALPARAISO RADIO CW Chan free marker "CBV." (DW)
4216: TAH, Istanbul Radio CW Chan free marker "TAH." (DW)
4216.5: IAR, Rome Radio CW Chan free marker "IAR." (DW)
4218: OST, OOSTENDE RADIO CW Chan free marker "OST." (DW)
4218.5: LZW, VARNA RADIO SITOR/ B//100/E/170 WX fcst in EE. Hvy QRM in adj chan. Tfc list. Blind tfc bdcst. (DW)
4219: TAH, Istanbul Radio CW Chan free marker "TAH." (DW)
4241: 4XZ, IN HAIFA CW Marker "VVV de 4XZ==." (DW)
4244: DAO4, KIEL MAIL CW "CQ de DAO4" every three mins, otherwise marker for PactorI/II/III. (DW)

4262: LFI, GW NODE ROGALAND CW Chan free marker (Globe) "LFI." QSX 4194.5. (DW)
4273: SAA, KARLSKRONA RADIO CW Marker "CQ de SAA QSX 4,6 MHz." Continuous but sounding like hand keyed—fm recording rather than electronic or tape generation? (DW)
4280: PBC32, DN GOEREE ISLAND RTTY//75/N/850 CARB. Chan 17a active. (DW)
4295: FUE, FN BREST RTTY//75/ N/850 Marker "FAAA de FUE ry's sg's figs int zbz k." (DW)
4320: IAR, Rome Radio CW Marker "VVV de IAR K 4 8 12 16 22 MHz—we lsn 22 and reply on 17206.1 khZ." (DW)
4320.3: MGJ, RN FASLANE VFT//4 chan fleet bdcst vft on USB. (DW)
4322.1: MGJ, RN FASLANE RTTY// 75/N/340 CARB. (DW)
4331: 4XZ, IN HAIFA CW Marker "VVV de 4XZ ==." (DW)
4403.4: LSD836, GW NODE BUENOS AIRES CW Chan free marker (Globe) "LSD836." Wkng ship in Globedata/dataplex on 4111.4. (DW)
4430.4: 9MG, GW NODE PENANG CW Chan free marker (Globe) "9MG" and wkng ship in Globedata/dataplex on 4138.4. (DW)
4566.4: VCT, GW NODE TORS COVE CW Chan free marker (Globe) "VCT." Wkng ship in Globedata (QSX 5289.4). (DW)
4583: DDK2, HAMBURG MET RTTY// 50/N/450 Met tfc. AAXX/ BBXX. (DW)
4601.5: 0A, Irish Navy HAULBOWLINE SITOR/A//100/E/170 Selcals CVVD/76. "76 de 0A int qrv zbo" then tfc in offline encrypt. (DW)
4601.5: 37, Irish Nvy Ship SITOR/ A// 100/E/170 Tfc in offline encrypt. (DW)
4601.5: 27, Irish Nvy Ship SITOR/ A// 100/E/170 "OA de 27. Rgr 5/5 also sunray this request copy of 5 day WX pse." (DW)
4601.5: 44, Irish Nvy Ship SITOR/ A// 100/E/170 discussing testing of dsc on 2177 kHz with '27.' (DW)
4601.5: 86, Irish Nvy Ship ORLA SITOR/A//100/E/170 Tfc fm OC Orla to OCNOC and info OCNSC. (DW)
4601.5: UNID, Irish Nvy Ship UNID SITOR/A//100/E/170 Selcals XSFC/ Haulbowline, then tfc in offline encrypt. (DW)
4610: GYA, RN NORTHWOOD FAX//120/ 576/N/800 (12z) sfc analysis, 1536 ocean frontal (Thurs only). 1548 Gale summary (textual)—nil in force. Note: All GYA charts currently starting 2min 45secs AHEAD of schedule. (DW)
4610: GYA, RN NORTHWOOD FAX// 120/576/N/800 End of sport winds 250hPa prog. 1100z sfc analysis (06z). (DW)
4721: 170031, USAF AIRCRAFT C-5 87-0031 MIL.STD 188-141A ALE on USB. Sounding. (DW)
4721: HAW, USAF ASCENSION MIL.STD 188-141A ALE on USB. Sounding. (DW)
4721: CRO, USAF CROUGHTON MIL.STD 188-141A ALE on USB. Sounding. Also 0940Z. (DW)
4721: PLA, USAF LAJES MIL.STD 188-141A ALE on USB. Sounding. Also 2111Z. (DW)
4721: MPA, USAF ?LOC MIL.STD 188-141A ALE on USB. Sounding. (DW)
4782.5: UNID, GAF ?LOC ARQ/E/ 85.7/ I/170 4rc. Betas No app tfc thru 1829z. (DW)
4841: OWI, DAF AALBORG MIL.STD 188-141A ALE on USB. Clng OWP/? (DW)
4841: OWD, DAF VAERLOESE MIL.STD 188-141A ALE on USB. Clng ?/UNID. Also 2019z. (DW)
4925.7: RFHJ FF Papeete OCE 0820 ARQ-E3 100/400 CdV to RFHI Noumea, cct HJI. (ML)
5019: HSP, UK MIL/DIPLO HANSLOPE PARK MIL.STD 188-141A ALE on USB. Sounding. (DW)
5159: 4XZ, IN HAIFA CW Marker "VVV 4XZ ==" then tfc in offline encrypt. (DW)
5224: UNID, UNID CW Occ slow/brief opchat. Vry weak. (DW)
5465.8: R, CISN USTINOV CW Single letter [R] HF beacon. (DW)
5547: PACAF 01 with position report and request for secondary ARINC frequency followed by SELCAL check on PREL via San Francisco ARINC in USB 1344Z. (CR)
5547: Dynasty 318 (B747-409F, reg. B18706) wkg San Francisco ARINC (CEP-2) with position report and SELCAL check on ALMP in USB 0608Z. (CR)
5547: United 862 (B747-422, reg. N715UA, YSSY to SFO) working San Francisco ARINC (MWARA CEP-2) is advised to make new primary 5.574.0 in USB at 1352Z. (CR)
5547: Singapore Air Cargo 7962 (B747-412F/SCD, reg. 9V-SFH en roUTE LAX) wkg San Francisco ARINC (MWARA CEP-2) with SELCAL check on KS-FC in USB at 1252Z. (CR)
5574: N94AE (Gulfstream IV-National Express) wkg San Francisco ARINC with position report in USB 0419Z. (CR)
5574: New Zealand 15 (B747-419, reg. ZK-NBU) working San Francisco ARINC (MWARA CEP-1) for SELCAL check in USB at 0542Z. (CR)
5643: United 842 (B777-222/ER NZAA to LAX reg. N226UA) with SELCAL check on KM-FP via San Francisco ARINC (MWARA SP) in USB at 1249Z. (CR)
5643: Hawaiian 466 (Pago Pago to PHNL) wkg San Francisco ARINC (MWARA SP) with position report in USB at 1251Z. (CR)
5643: Qantas 10 (B747-438 LHR to SIN to MEL to SYD) working San Francisco ARINC (MWARA SP) is advised to make new primary 8.867.0 for next position report in USB at 1410Z. (CR)
5659: SPB, Szczecin, Poland 18.35 CW/?? Marker tape with ID in CW and PACTOR like tones spaced 400 hz, no tfc heard. (PT)
5667: VIPER 81 wkg San Francisco ARINC (MWARA NP-3) to provide position report and is advised to call Anchorage Center on 119.100 in USB at 1236Z. (CR)
5708: CRO, USAF CROUGHTON MIL.STD 188-141A ALE on USB. Sounding. Also 1352. (DW)
5753.4: FDI8, FAF NICE CW Marker "VVV de FD18 AR" (DW)
5852: HSP, UK MIL/DIPLO HANSLOPE PARK MIL.STD 188-141A ALE on USB. Sounding. (DW)
5858.5: UNID, UNID CW Weak, signing off. (DW)
5930: LFI, GW NODE ROGALAND CW Chan free marker (Globe) "LFI." QSX 5855 kHz (DW)
6316: LSD836, BUENOS AIRES RADIO CW Chan free marker "LSD836." (DW)
6322.5: UDK2, MURMANSK RADIO CW Chan free marker "de UDK2" then into ARQ. Wkng ship, gives QSL. Reverts marker. (DW)
6330: LZW34, VARNA RADIO CW Chan free marker "de LZW LZW." (DW)
6340.5: NMF, USCG BOSTON FAX// 120/576/N/800 End of grainy chart. Start of part 2 of N/Atlantic sfc analysis. (DW)
6348: FUE, FN BREST RTTY//150/ R/850 Marker "(F)AAA de FUE testing ry's sg's figs kkkkkilo." (DW)
6358.5: PBC36, DN GOEREE ISLAND RTTY//75/N/850 CARB. Chan 04b active. (DW)
6360.3: GYA, RN NORTHWOOD VFT// 4 chan vft on USB. (DW)
6361.1: GYA, RN NORTHWOOD RTTY// 75/N/340 CARB. Chan 3 in vft. Chans 03p 04p active. (DW)
6467: LFA, GW NODE ROGALAND CW Chan free marker (Globe) "LFI" then wkng ship on 6250.5 kHz in Globedata/dataplex. (DW)
6483: PBB, DN DEN HELDER RTTY// 75/N/850 CARB. (DW)
6493.5: HEC, GW NODE BERN CW Chan free marker (Globe) "HEC" then wkng ship on 6289.5 in Globedata/dataplex. (DW)
6496: CFH6, CF Halifax 0610 fax 120/576 Fair chart //10536.0. (RH2)
6640: United 63 calling San Francisco ARINC (LDOC) for p/p to dispatch at with no response then returns to 5.574.0 and is advised to call ARINC on 131.950 to attempt patch in USB at 0309Z. (CR)
6721: 230601 USAF AIRCRAFT MIL.STD 188-141A ALE on USB. Sounding. (DW)
6721: CRO, USAF CROUGHTON MIL.STD 188-141A ALE on USB. Sounding. Also 1103. (DW)
6721: PLA, USAF LAJES MIL.STD 188-141A ALE on USB. Sounding. (DW)
6778.5: B01, Norwegian MIL? MIL.STD 188-141A ALE on USB. Clng S03 [cmd] Z12 [Data] 401107 117030 509Y3B. 1550 Clng S02 [cmd]Z12 [Data] 601107 117030 509Y39. 1600 Clng S01 [cmd]Z12. Continues sounding every 5 mins. (DW)
6834: GYA, Northwood, UK 18.45 FAX 120/576 WX chart for eastern Europe and Middle East. (PT)
6913: U.S. ARMY MARS net with many check-ins including AAA9CE, AAA9MA, AAA9CS and AAA6NM in LSB 0339Z. (CR)

7810: T, UNID MIL.STD 188-141A ALE on USB. Clng CDD (Venezuelan Navy?). (DW)
7810: Monteca, Venezuelan Navy? MIL.STD 188-141A ALE on USB. Clng CDDA. 0056 clng u/known [AMD] ...A@@. 0103 ditto to CDD. (DW)
7810: Maracay, Venezuelan Navy? MIL.STD 188-141A ALE on USB. Clng CDDA. Also 0143. 0222 Clng CDD [CMD Noise report]. (DW)
7810: MQQ, Venezuelan Navy? LOC MIL.STD 188-141A ALE on USB. Clng CDDA/Ciudad Guyana. (DW)
7981.4: KZN508, Rockhill, S. Carolina, USA 23.00 Pactor 2 SailMail station working yachts WCI4172—Thirty Something, OS6764—Chaparral, WDA2608—Likeke, WCY4144 - Cat Sass and DD3718—un-ID. (PT)
8191.7: 9MR, Malay Nacrad 1553 RTTY 50/850 RY/ID/SG. (RH2)
8383: UGDZ TH Brest 1109 ARQ msg to Vladivostok. (ML)
8383: XUJA3 M/V Gladness 1042 ARQ msg to Vladivostok. (ML)
8496: CLA, Havana radio, 0345, CQ marker in CW. (RW) 15000: UNID, UNID, rapid repeating "beep" over WWV at 0150. (RW) Note: this sounded something like an old fashioned busy signal. Interesting! (ColDX)
8500: VTH, IN Mumbai 1540 RTTY 50/850 Tri-word Callsigns + 4LG. (RH2)
8503.9: NMG, USCG New Orleans FAX// 120/576/N/800 Sfc analysis, fuzzy due m/path. (DW)
8503.9: NMG, New Orleans 0630 fax 120/576 Good WX chart! (RH2)
8503.9: NMG8, New Orleans Met 0730 fax 120/576 Nice clean chart! (RH2)
8834: SA0051, Johannesburg-8 1459 HFDL 15.48S - 28.18E. (RH2)
8867: N987GK (Mystere Falcon 900 reg'ed to Shadowfax LLC) working San Francisco ARINC (MWARA SP) with position report and is advised that upon arrival customs will be conducting a complete inspection of aircraft in USB at 1236Z. (CR)
8867: Hawaiian 466 (DC-10 NSTU to PHNL) working San Francisco ARINC (MWARA SP) to advise they are established back on course after deviation for WX in USB at 1320Z. (CR)
9025: 2000183, USAF A/CRAFT C-17 MIL. STD 188-141A ALE on USB. Sounding. (DW)
9025: CRO, USAF CROUGHTON MIL.STD 188-141A ALE on USB. Sounding. (DW)
9025: PLA, USAF LAJES MIL.STD 188-141A ALE on USB. Sounding. (DW)
9050: PAR, ROCKWELL-COLLINS Paris MIL.STD 188-141A ALE on USB. Sounding. (DW)
9057: 2000183, USAF A/CRAFT C-17 MIL.STD 188-141A ALE on USB. Sounding. (DW)
9080: TS2, ISRAELI AF ?LOC MIL.STD 188-141A ALE on USB. Sounding. (DW)
9110: NMF, USCG FAX//120/576/N/800 Sfc analsysis—N/Atlantic (East). M/path smearing. (DW)
9110.3: NMF9, USCG Boston 0750 fax 120/576 Nice chart. (RH2)
9130: MGJ, RN FASLANE RTTY// 75/N/340 CARB. Channels 02q 03q 16q all active. (DW)
9130: MGJ, RN Faslane 1656 RTTY 75/330 "de MGJ QRT" etc w VMGH & VMGA & "Night Freqs." (RH2)
9157: HEC, GW NODE BERN CW Chan free marker (Globe) "HEC." Wkng ships in Globedata (QSX 9064kHz). (DW)
9185: UNID, SWISS DIPLO ? MIL.STD 188-110A Two stns alternating on USB. Using 600L/75L, leadin ."q." Poor sync due m/path. Occ underlying ALE bursts. Offair 1109z. (DW)
9212: QUADRAN, R+S NET MIL.STD 188-141A ALE on USB. Clng NOMADE2. Also at 110 1104 1107. (DW)
9212: Nomade2 R+S NET, MIL.STD 188-141A ALE on USB. Clng QUADRANTS with [CMD AMD] ?P=]. Also heard at 1113 and 1115. (DW)
9212: Ctpe4hf R+S NET PORTUGUAL MIL.STD 188-141A ALE on USB. Sounding. (DW)
9212: Al11j, Algerian MOI ?LOC MIL.STD 188-141A ALE on USB. Clng FK11J. (DW)
9360: OXT, Copenhagen MET FAX// 120/576/N/800 ice chart. (DW)
9949: UNID, poss Antarctic Station 1700 LSB Unclear voices, This is a published LSB Fax freq but loc? (RH2)
9951: LSB9, Marambio Station 1705 USB Voice chats heard but unreadable. (RH2)
9996: RWM TS Moscow CW time signals. (DW)
10555: VMC BOM CHARLEVILLE FAX// 120/576/N/800 Test transmission. Weak, fuzzy. QRM 1816z fm Crowd36 on 10554/U. 1917z chart hded "Message(?) of the day testing testing testing testing." Also 1930, 1945, 2000, 2015, 2045 (w/bckgnd voices). (DW)
10555: VMW BOM WILUNA FAX// 120/576/N/800 Test transmission. Carrier on 1556 causing qrm. First chart Indian Ocean, sfc analysis. Grainy. 0750Z also fair/grainy. (DW)
10923.5: Nales, UNID MIL.STD 188-141A ALE on USB. Clng ER1. 2209Z clng ER1MR. 2236 clng ER1MSZ(?). (DW)
11030: AXM34 CANBERRA MET FAX// 120/576/N/800 100 HZ high. Weak/noisy. Sig WX chart? (DW)
11039: DDH9 Hamburg MET RTTY// 50/N/440 WX in GG. Then reverts to marker "CW de DDH47 DDH9 DDH8 frequencies 147.3 kHz 11039 kHz 14467.3 kHz RY's." (DW)
11043.7: RFTJD, FF LIBREVILLE ? ARQ/E3//192/E/400 8rc. Betas. Variable/ no sync. No app tfc thru 2238Z. (DW)
11086.5: GYA, RN NORTHWOOD FAX//120/576/N/800 Sfc chart. Weak, grainy. (DW)
11090: KVM70, Honolulu Met 1600 fax 120/576 Nice chart! (RH2)
11090: KVM70, Honolulu Met 0620 fax 120/576 Fuzzy chart. (RH2)
11116: RKP7, CISN ?LOC CW(F1A-200HZ) "VVV de RKP7 qsv" then into F1b 36/50 for short spells. (DW)
11125: HZN, JEDDAH MET RTTY// 100/R/850 100Hz high. 8bit. Met tfc, poor copy. (DW)
11130: V3, ALGERIAN MOI ?LOC MIL. STD 188-141A ALE on USB. Clng O1. (DW)
11130: GF5, ALGERIAN MOI ?LOC MIL.STD 188-141A ALE on USB. Clng O2. (DW)
11136: UNID, UNID CW Tfc in figs without spaces. Starts msgs with "LDBO qtc." 0900z period of VVV's but no ID. (DW)
11145: LFI, GW NODE ROGALAND CW Chan free marker (Globe) "LFI." QSX 10415. (DW)
11156.7: UNID, Egyptian Emb Algiers SITOR/A//100/E/170 Encrypted tfc in 5 char grps of letters and figs. Further tfc in AA(ATU80). (DW)
11168.6: KMN94, US DOS FT LAUDERDALE MIL.STD 188-141A ALE on USB. Sounding. Also at 0112 0142 0211 0241 0311 0410 0440 0510 0539 0609 0639. (DW)
11168.6: KMN, US DOS ?LOC MIL.STD 188-141A ALE on USB. Sounding. Also 0340. (DW)
11175: SENTRY 26 (E3-C, 552d ACW, Tinker AFB) with p/p via GHFS Puerto Rico to RAYMOND 24 (Tinker CP) to pass coded traffic followed by p/p to Tinker Metro for en roUTE weather from KJAC and forecast for Tinker at 0500Z in USB 0356Z. (CR)
11175: EAGLE 22 (B-1B, 77th BS "War Eagles," Ellsworth AFB) with p/p via GHFS McClellan to DSN 675-xxxx (EAGLE OPS) to advise of multiple malfunctions and request repair upon arrival back at Ellsworth in USB 2251Z. (CR)
11175: SPAR 55 with p/p via GHFS McClellan to Hickam Metro for 0645Z arrival WX followed by p/p to Hickam Base Ops with request for active runway and score of Kings/Lakers game (official business you know) in USB 0450Z. (CR)
11175: JAPAN NAVY 93 (P-3) with p/p attempt via GHFS Elmendorf to DSN 257-xxxx that is never completed due to language barrier in USB 0023Z. (CR)
11184: UNID, AIRCRAFT FLIGHT LH8272 HFDL// on USB. (DW)
11184: UNID, AIRCRAFT FLIGHT SV7595 HFDL// on USB. Posn 22.52N 41.33E. (DW)
11184: 03, ARINC REYKJAVICK HFDL// on USB. Squitters. Active on 6712, 8977 and 11184 kHz. (DW)
11226: 170032, USAF AIRCRAFT MIL. STD 188-141A ALE tuned on USB. Sounding. (DW)
11226: ADW, USAF ANDREWS MIL.STD 188-141A ALE on USB. Sounding. (DW)
11226: CRO, USAF CROUGHTON MIL.STD 188-141A ALE monitored on USB. Sounding. (DW)
11226: PLA, USAF LAJES MIL.STD 188-141A ALE on USB. Sounding. (DW)
11282: OCEAN 77 (C-130E, 115th AS, CA-ANG, NB Ventura County, CA) with position and altitude report for San Francisco ARINC in USB 1834Z. (CR)

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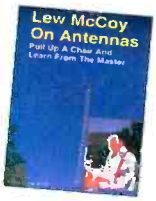

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11282: N888WS (CL-600 Corporate Jet owned by Williams-Sonoma) wkg San Francisco ARINC with position report in USB 0318Z. (CR)
11282: NAVY LT 628 (P-3C, VP-62, NAS Jacksonville) requests clearance to climb to flight level 240 from San Francisco ARINC then cleared via ATC in USB 2043Z. (CR)
11282: AIREVAC 010 with position and altitude report then is advised by San Francisco ARINC to contact Oakland Center on 134.150 at 127 west in USB 1949Z. (CR)
11282: PETRO 01 with position and altitude report then advises San Francisco ARINC they are established in the block from 240 to 260 with FEUD 51, 52, 53, 54, 55 and 56 in USB 2038Z. (CR)
11282: NAVY PF 605 (UP-3A #150605, CINCPAC) with HF radio check after departing NASNI for Honolulu in USB 1906Z. (CR)
11282: GUCCI 52 (KC-10A, 60th AMW, Travis AFB) is cleared for direct Travis at 270 after conducting mission on AR-5 low in USB 1952Z. (CR)
11282: NAVY RG 641 (C-20G, VR-51, MCAF Kaneohe Bay) working San Francisco ARINC (MWARA CEP-2) with request for clearance to climb and maintain the block from 410 to 450 in USB at 1850Z. (CR)
11315: UNID, AIRCRAFT FLIGHT AY2415 HFDL// on USB. Posn 50.19N 76.34W. (DW)
11315: UNID, AIRCRAFT FLIGHT CO0210 HFDL// on USB. Posn 41.31N 79.27W 2332 41.3N 78.34W. (DW)
11315: N526A, AIRCRAFT FLIGHT TZ0073 HFDL// on USB. ACARS msg also at 2329, 2330z. (DW)
11315: 04, ARINC RIVERHEAD HFDL// on USB. Squitters. Active on8912 and 11315 kHz. 2328 ACARS msg to Flight TZ0073. (DW)
11318: N329U, AIRCRAFT FLIGHT UP6199 HFDL// on USB. Posn 49.41N 76.52W. (DW)
11318: 13, ARINC SANTA CRUZ HFDL// on USB. Squitters. Active on 11318, 13315 kHz. Acars msg to UP6199. (DW)
11384: AIREVAC 968 with position and altitude report to San Francisco ARINC (MWARA CWP-2) and is advised to call Guam on 118.700 in USB 1414Z. (CR)
11384: Qantas 22 (B747-338 Tokyo to Sydney) wkg San Francisco ARINC (CWP-2) with position report and SELCAL check on CEAB then advised to call Guam Center on 118.700 in USB 1412Z. (CR)
11384: Asiana 601 (B777-28E/ER Seoul to Sydney) wkg San Francisco ARINC (MWARA CWP-2) to accept clearance to climb and maintain flight level 370 in USB at 1615Z. (CR)
11384: NAVY PD 922 (P-3C, VP-9, MCAF Kaneohe Bay) wkg San Francisco ARINC (MWARA SP) with request to remain on frequency as new primary of 2.998.0 is unusable in USB at 1316Z. (CR)
11384: 07, ARINC SHANNON HFDL// on USB. Squitters. Operating on 8942 and 11384 kHz. (DW)
11386.6: Sydney VOLMET (VJN 385) with aero WX broadcast for various locations throughout Australia while off frequency of 11.387.0 in USB 1423Z. (CR)
11396: Qantas 2 (B747-438 EGLL to BKK) wkg Jakarta Radio (SEA-3) with position report and SELCAL check on CEAB in USB 1355Z. (CR)
11396: Qantas 88 (B767-338/ER Honk Kong to Melbourne) wkg Jakarta Radio (SEA-3) with position report and SELCAL check in USB 1434Z. (CR)
11396: Qantas 78 (B767-338ER HKG to SIN to QSY) working Jakarta Radio (SEA-2/3) with position report and SELCAL check in USB at 1323Z. (CR)
11425: ZUP, Romanian Emb ?LOC MIL.STD 188-141A ALE on USB. Sounding or [TO] unknown. 1447z clng CENTR6. (DW)
11428: 5QI, UNID MIL.STD 188-141A ALE on USB. Clng 4WV. (DW)
11428: 4VW, UNID MIL.STD 188-141A ALE on USB. Responds to 5QI. Then short msgs on 39(?) tone system, followed by brief encrypted voices. 0824 clng 5QI. (DW)
11428: 7EU, UNID MIL.STD 188-141A ALE on USB. Responding to 5QI. (DW)
11428: 5QI, UNID MIL.STD 188-141A ALE on USB. Clng 7EU. 1657 clng 4RV. 1825 clng 7DD. (DW)
11428: 7DD, UNID MIL.STD 188-141A ALE on USB. Clng 5QI. (DW)
11443: S97, SWEDISH EMB ABIDJAN MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
11475: MAE, MFA ALGIERS MIL.STD 188-141A ALE on USB. Clng TNS/Tunis then tfc using Racal MSM1250. (DW)
11489: DEPT, MOROCCAN MOI ?LOC MIL.STD 188-141A ALE on LSB. Sounding. Also at 2125. (DW)
11489: DG, Moroccan MOI ?LOC MIL. STD 188-141A ALE on LSB. Sounding. (DW)
11518.2: UNID, FF PARIS ? ARQ/342// 200/E/400 8rc. 2 chan tdm. Chans A: B: betas thru 1041. (DW)
11523: CYP, UK MIL/DIPLO EPISKOPI MIL.STD 188-141A ALE on USB. Sounding. (DW)
11564.5: FDY, FAF Orleans RTTY// 50/R/400 Marker "test de FDY voyez le brick figs RY's." Rough signal accompanied w/much buzzing. (DW)
11638: DDK8, HAMBURG MET RTTY//51.2/N/450 8bit frame. Marker "CQ de DDK8 frequencies 11638 kHz" until 1118z. Offair, restart 1202z with marker. 1215z Met tfc. Not in // with 10100.8 and 11039 svc Only AAXX/ BBXX/Mrkr thru 1540Z. (DW)
11642: HSP, UK MIL/DIPLO HANSLOPE PARK MIL.STD 188-141A ALE on USB. Sounding. (DW)
12101: S92, Swedish Emb MANAGUA MIL.STD.188-141A ALE on USB. Sounding. (DW)
12203: UNID, UNID CW (F1A-500HZ) Slow "vv's." 1337z "qsv""qsa3" in fast Morse. (DW)
12225: S94, Swedish Emb Guatemala City MIL.STD 188-141A ALE on USB. Sounding. (DW)
12370: NALES, UNID MIL.STD 188-141A ALE on USB. Sounding. (DW)
12370: ERLMR, UNID MIL.STD 188-141A ALE on USB. 2035 clng NA1ES. (DW)
12419: UNID, UNID CW "DXVS 740 32" "qyt1 zxa zrk zrh." (DW)
12489: UABA M/V Nadezhda 1007 ARQ UABA log on & tfc to Vladivostok. (ML)
12489: UACO M/V Kichiga 1020 ARQ crew msg to Vladivostok, 53976 UACO log on. (ML)
12489: UBKM TH Bijsk 0950 ARQ msg to Vladivostok, UBKM log on. (ML)
12489: UBWR NIS Akademik M A Lavrentev 1056 ARQ crew msg to Vladivostok. (ML)
12489: UGOJ TK Al'fa Marin 0915 ARQ svc msg to Vladivostok. (ML)
12489: XUGA9 M/V Yang 1028 ARQ tfc to Vladivostok. (ML)
12491: UDFJ BATM Kaptian Bolsoundovsky 1110 ARQ crew msgs to Kholmsk, UDFJ log on/off. (ML)
12495: UFJR TH Leonid Sobolev 0850 ARQ w/KYXX selcal & UFJR log on to Novorossiysk, then off air. (ML)
12510: UAVK TSM Orchik-2 1127 ARQ msg to Vladivostok, UAVK log off. (ML)
12510: UHHN UNID RKMRT 1123 ARQ w/UHHN log on & part msg to Vladivostok, then selcal KYPS & off the air. (ML)
12565: UNID, SHIP UNID 3SC// 50/R/170 Tfc in 3sc. Corrupt. (DW)
12566: UROK, SHIP BMRT FOROS 3SC//50/R/170 Tfc in 3sc, end of msg. (DW)
12570: UCZK PR Oleg Zverev 1039 ARQ msgs to Vladivostok, UCZK log on. (ML)
12570: UDCX SRTM Eleninsk 0950 ARQ crew mgs to Vladivostok. (ML)
12570: UIWU TH Vostok-1 1055 ARQ w/UFZ DE UIWI & msg to Vladivostok. (ML)
12574.5: UNID, SHIP UNID SITOR/ A//100/E/170 Selcals VBBS, and "yes still here...but freq...." then off air. (DW)
12581.5: WLO, MOBILE RADIO CW Chan free marker "WLO." (DW)
12582: VIP, GW NODE PERTH CW Chan free marker (Globe) "VIP" and wkng ship in Globedata. Just audible. (DW)
12584: VIP, GW NODE PERTH CW Chan free marker (Globe). Just audible. (DW)
12584.5: WLO, MOBILE RADIO CW Chan free marker. (DW)
12586: UDK2, MURMANSK RADIO CW Chan free marker. (DW)
12586.5: XSV Tianjin rdo 1000 FEC nil tfc list. (ML)
12588: HEC13, BERN RADIO CW Chan free marke. (DW)
12589: NMO, USCG HONOLULU CW Chan free marker . Just audible. (DW)
12591.5: UFL Vladivostok rdo 1033 ARQ mailbox ops to XUGA9 M/V YANG on 12489.0. (ML)
12592.5: NMN, USCG PORTSMOUTH CW Chan free marker. (DW)
12593: ESA, TALLINN RADIO CW Chan

free marker "de ESA." Barely audible. (DW)
12594: IDR5, IN Rome RTTY// 75/N/850 CARB. Chan /IDR4 active. 1043z "r4 -c-imi page 01." (DW)
12597.5: UFN, NOVORROSSIYSK RADIO CW Chan free marker "UFN." (DW)
12599.5: UAT MOSCOW RADIO CW Chan free marker "UAT." (DW)
12600.5: HEC BERN RADIO CW Chan free marker "HEC." (DW)
12602.5: IAR Rome RADIO CW Chan free marker "IAR." (DW)
12603.5: SVO OLYMPIA RADIO CW Chan free marker "de SVO." (DW)
12606: UIW KALININGRAD RADIO CW Chan free marker "de UIW KLD." (DW)
12634.5: TAH, Istanbul Radio CW Chan free marker "TAH." (DW)
12634.5: TAH, Istanbul Radio SITOR/ A//100/E/170 Wkng ship TCFW/ *Findikli*, then chan free marker "TAH." (DW)
12639.5: OST, OOSTENDE RADIO CW Chan free marker "OST." (DW)
12654: TAH, Istanbul Radio CW Chan free marker "TAH." (DW)
12756.5: A9M, Hamal R 1625 ARQ Marker. (RH2)
12789.9: NMG, USCG NEW ORLEANS FAX//120/576/N/800 Sfc analysis, tropical, East. Wind/sea prog. (DW)
12789.9: NMG12, USCG New Orleans 1250 fax 120/576 Good wind speed chart! (RH2)
12856.7: 6WW, FN Dakar 1629 RTTY 75/850 RY/ID/SG. (RH2)
12983: 4XZ, IN Haifa 1632 CW VVV/ID + Crypto + 5FG. (RH2)
13022: SPB, Szczecin R 1639 FEC Nx\Pol. (RH2)
13270: New York Radio VOLMET (WSY 70) with aero WX in USB 0347Z. (CR)
13282: Honolulu Radio VOLMET with aero WX broadcast in USB 0457. (CR)
13354: N117GL (Gulfstream IV G-1159C G&L Aviation) wkg San Francisco ARINC with position report in USB 0058Z. (CR)
13443.2: RFQP, FF Jibouti 1546 ARQ-E3 100/400 CdeV on DJ1 cid. (RH2)
13460: 1002 UNID user poss in Manggawitu, Adi Island, Irian Jaya PACKET 300 bd w/*** Pls send your massage *** Manggu stby.... (ML)
13460: DWIB UNID user Jakarta 0630 PACKET 300 bd w/zipped msg to 1002. (ML)
13886.5: UNID, Moscow-13 1640 fax 120/576 Marvellously clear chart! They must be putting out some power! (RH2)
13954: RFFXC FF Paris 0731 ARQ-E 185/400 svc msg PP KOSOVO DE RFFX-CCS ZAH RTC 010 on cct CRT. (ML)
14353.5: S94, Swedish Emb Guatemala City MIL.STD 188-141A ALE on USB. Sounding. (DW)
14360: BGD, Slovakian Emb Baghdad MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
14360: CSB UNID MIL.STD 188-141A ALE on USB. Sounding. (DW)
14395: LN2A SVEIO BEACON Composite data signal on USB with "LN2A" CW ID. Offair 0844. (DW)
14400: ALG, Slovakian Emb Algiers MIL. STD 188-141A ALE heard on USB. Sounding. (DW)
14424: UIW, Kalingrad Radio CW Spur - channel free marker "de UIW KLD signal." Weak. (DW)
14461.7: RFTJF, FF PORT BOUET ? ARQ/E3//192/E/400 8rc. Betas. Variable sync. No app tfc thru 2240z. (DW)
14486: RFGW, MFA Paris FEC/ A// 192/E/400 TFC in offline encrypt. "c" substitution procedure. Poor copy. (DW)
14490: OLZ65, CZECH EMB ?LOC MIL.STD 188-141A ALE on USB. Clng OLZ88/Prague. (DW)
14550: P2, Algerian MIL/MOI ? MIL. STD 188-141A ALE on USB. Clng 01. Also at 1049 1115. (DW)
14550: 02, Algerian MIL/MOI ? MIL.STD 188-141A ALE on USB. Clng J501. 1054 clng Y301. 1104 clng GLOBAL. (DW)
14550: 204, Algerian MIL/MOI ? MIL.STD 188-141A ALE on USB. Clng EC6. (DW)
14550: U7, Algerian MIL/MOI ? MIL. STD 188-141A ALE on USB. Clng 01. (DW)
14550: PAR, ROCKWELL COLLINS PARIS MIL.STD 188-141A ALE on USB. Sounding. (DW)
14556: RIW, CISN Moscow CW Tfc in 5-fig grps. (DW)
14575: RFGW, MFA PARIS FEC/ A// 192/E/400 Tfc in offline encrypt. "c" substit. proc. Tfc to Bucharest/A9C and s/off. (DW)
14580: DKL, UK MIL/DIPLO DHEKELIA MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
14580: CYP, UK MIL/DIPLO EPISKOPI MIL.STD 188-141A ALE monitored on USB. Sounding. (DW)
14580: KUW, UK MIL/DIPLO KUWAIT MIL.STD 188-141A ALE tuned on USB. Sounding. (DW)
14580: PRI, UK MIL/DIPLO PRISTINA MIL.STD 188-141A ALE on USB. Sounding. (DW)
14621.7: UNID, MFA CAIRO SITOR/ A//100/E/170 Selcals XBVY/London. Synched up 1528z, brief opchat then irs till offair (no s/off) 1535. (DW)
14636.7: RFLI, FF FT DE FRANCE ARQ/E3//192/E/400 8rc. Very slow transfer (almost stopped) thru 1028Z. (DW)
14670: CHU, TS OTTAWA USB// Time sigs (+1000 Hz), periodic data bursts, announcements, unreadable due QRM. (DW)
14670.7: UNID, FF LIBREVILLE ? ARQ/E3//192/E/400 8rc. Variable sync, eventually (2150Z) nil. (DW)
14689: CENTR6 MFA BUCHAREST MIL.STD 188-141A ALE on USB. Clng ZOW. Then into Mil.std 188-110A 300bps/short and 140bps/short. On line encrypt opening "xxxxp\." (DW)
14719: OST53, OOSTENDE RADIO SITOR/B//100/E/170 Tfc list. (DW)
14812: BRA, MFA BRATISLAVA MIL.STD 188-141A ALE on USB. Sounding. Also 1201 1207. (DW)
14812: BGD, Slovakian Emb Baghdad MIL.STD 188-141A ALE on USB. Sounding. (DW)
14812: KAH, Slovakian Emb Cairo MIL.STD 188-141A ALE on USB. Sounding. Also 1238. (DW)
14814: CYP, UK MIL/DIPLO EPISKOPI MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
14814: KUW, UK MIL/DIPLO KUWAIT MIL.STD 188-141A ALE monitored on USB. Sounding. (DW)
14814: PRI, UK MIL/DIPLO PRISTINA MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
14848: BASE4, TURKISH MIL ?LOC MIL.STD 188-141A ALE on USB. Clng UNID. Also again at 2211 [AMD]Dial4. 2214/16z clng UNID. 2219 clng Base9 [AMD]Dial4. (DW)
14926.7: RFTJ FF Dakar 0809 ARQ-E3 192/400 svc msg ZFX JDJ319 to RFTJD Libreville, cct TJD, spurious emissions on 14922.5 & 14930.8. (ML)
14926.7: RFTJ, Dakar, Senegal 23.23 ARQ-E3 192/400 CdeV to self on TJD cct to Libreville (PT)
14959.7: RFTJ, FF Dakar 1651 Arq-E3 192/400 Betas V. sigs! (RH2)
14996: RWM, TS MOSCOW CW time signals. (DW)
15016: TIGER 13 FLIGHT (B-1B, 7th BW, Dyess AFB) with p/p via GHFS Hickam to RAYMOND 33 (Dyess CP) requesting immediate tanker deployment in USB 0256Z. (CR)
15600: CDDA, Venezuelan Navy CUIDAD GUYA MIL.STD 188-141A ALE on USB. Clng GUASDUALITO. (DW)
11080: KVM70, Honolulu Met 0736 FAX120/576 Poor chart! (RH2)
11125: HZN, Jeddah Meteo 1549 RTTY 100/850 WX groups. (RH2)
15615: AXI15, Darwin Met 0715 fax 120/576 Good chart! (RH2)
15794: UNID, Brit Mil Cyprus 1735 MFSK 195.3/300. (RH2)
15847.2: 701, loc un-ID 20.15 Pactor Encrypted tfc to 601(thanks for tip DW). Same net as 18507.2, 20507.2 and 20907.2 (PT)
15961.7: ANTILLES, Fort de France, Martinique 10.40 ARQ-E3 192/400 CdeV to self on BFL cct to Paris (PT)
16013.7: yfjlmk, Egy Emb. Bamako 1530 arq Msg\AA to Cairo. (RH2)
16051.7: UNID, EGYPTIAN DIPLO SITOR/A//100/E/170 AA(ATU80) but hvy corruption. Tfc in offline encrypt. (DW)
16185.2: UNID, FF UNID ARQ/342// 200/E/400 4rc. 2 chan tdm. A: B: betas. Variable sync. No app tfc thru 0645z. (DW)
16256.7: exp- kdzywr, MFA Cairo 1623 arq Msg\AA to 16 Emb callsigns. (RH2)
16260: RFGW, MFA PARIS FEC/A //192/E/140 Tfc in FF. Cct [NKT] to Z4D/ Nouakchott., then tfc in offline encrypt. (DW)
16260: RFGW, MFA Paris 1620 FEC-a 192/400 'C' code msg\ff to H6L/Algiers. (RH2)

16260: P6Z, MFA Paris 1633 FEC-a 192/400 Clg H6L/Algiers. (RH2)
16278.9: UNID, FAPSI 1545 Crowd36 40/700. (RH2)
16344.7: UNID, US Intel Europe? 1606 Mode? 108.9/170 Logged previously and ID by Leif (I think) Baud speed always very precise! (RH2)
16621.5: UNID, Total Oil Rig, Bulgaria? 1732 CW Personal Msgs\RR Love & Kisses etc. (RH2)
16713: UDTT TH Sourgut 0830 ARQ svc msg, headed TH SURGUT/UDTT, to Vladivostok. (ML)
16808: XSV Tianjin rdo heard at 0407 FEC nil tfc list. (ML)
16914.7: SPB83, Sczecin R 1645 FEC-a Program Schedules. (RH2)
17016.5: KPH, Bolinas sending VVV at 2105 then traffic with unk station, all CW. Also 12808.5 and 22477.5 (RW)
17066.5: A9M, GW NODE BAHRAIN CW Chan free marker (Globe) "A9M" and wkng ship in Globedata/dataplex on 16557.5 kHz. (DW)
17069: JJC, KYODO Tokyo FAX// 60/576/N/800 Press, Japanese characters. in split or encrypted format. (DW)
17117.6: PBC, DN GOEREE ISLAND RTTY//75/N/850 CARB. Active on chans 02a 04b 12b. (DW)
17132: XSV, GW NODE TIANJIN CW Chan free marker (Globe) "XSV" and wkng ship in Globedata/dataplex on 16675.5. (DW)
17147: URL, SEVASTOPOL RADIO CW Tfc, fast CW. Revert to marker "CQ de URL ans 12458.5/16669.5." (DW)
17148.5: URL, Sevastopol R 1704 CW Tfc\List. (RH2)
17175.5: A9M, BAHRAIN RADIO CW Marker "CQ de A9M." (DW)
17180: FUG, FN LA REGINE RTTY// 75/N/850 Marker "FAA de FUG ry's sg's figs." (DW)
17206.1: IAR, Rome RADIO CW Marker "VVV de IAR k 4 8 12 16 22 MHz—we lsn 22 and reply on 17206.1 kHz." Spur on 17204.4. (DW)
17230: CWA, CERRITO RADIO CW Marker "CQ de CWA QSX 4/6/8/ 12/16/22 MHz c3/4/9/10 k." (DW)
17234.5: VCS, GW NODE HALIFAX CW Chan free marker (Globe) "VCS." Tfc in Globedata/dataplex to ship on 16672.5. (DW)
17234.5: LSD836 GW NODE BUENOS AIRES CW Chan free marker (Globe) "LSD836." (DW)
17278: PKX, JAKARTA RADIO CW Marker "CQ de PKX QRU? k." (DW)
17384.4: CPK, GW NODE SANTA CRUZ CW Chan free marker (Globe) "CPK." QSX 16502.4. (DW)
17408.4: HEC, GW NODE BERN CW Chan free marker (Globe) "HEC" and wkng ships in Globedata/dataplex. (DW)
17414: RFGW, MFA Paris FEC/A// 192/E/400 Poor copy. Tfc in offline encrypt. (DW)
17415: S31, Swedish Emb Algiers MIL.STD 188-141A ALE on USB. Sounding. Also 1633 1724. (DW)
17415: S94, Swedish Emb Guatemala City MIL.STD 188-141A ALE on USB. Sounding. Also 1600. (DW)
17415: S84, Swedish Emb Washington MIL.STD 188-141A ALE on USB. Sounding. Also 1722z. (DW)
17430: 9VF209, KYODO Singapore FAX// 60/576/N/800 Japanese text print. (DW)
17904: AUSSIE 725 wkg San Francisco ARINC (MWARA SP) to provide current altitude per ATC request in USB at 0445Z. (CR)
17904: AUSSIE 734 wkg Brisbane Radio (MWARA SP) to accept clearance to deviate up to 35 nautical miles either side of course due WX in USB at 0447Z. (CR)
17946: American 129 (B777-223/ER SJC to RJAA) working San Francisco ARINC (MWARA NP-2/3) to accept ATC clearance to climb and maintain flight level 370 in USB at 2337Z. (CR)
17946: United 851 (B777-200/ER ORD to ZBAA) working San Francisco ARINC (MWARA NP-2/3) with initial position report and SELCAL check in USB at 2331Z
18003: 290061, USAF AIRCRAFT C-17 99-0061 MIL.STD 188-141A ALE on USB. Sounding. (DW)
18003: HAW, USAF ASCENSION MIL. STD 188-141A ALE on USB. Sounding. (DW)
18003: HAW, USAF ASCENSION MIL.STD 188-141A ALE on USB. Sounding + [AMD] "Ourhave 1st rnd at termination." (DW)
18003: JDG, USAF DIEGO GARCIA MIL.STD 188-141A ALE on USB. Clng JTY/Yokota. 1453 sounding. (DW)
18003: PLA, USAF LAJES MIL.STD 188-141A ALE on USB. SOUNDING. (DW)
18003: OFF, USAF OFFUTT MIL.STD 188-141A ALE on USB. Sounding. (DW)
18003: JNR, USAF ROOSEVELT ROADS MIL.STD 188-141A ALE on USB. Sounding. 14457 sndng + [AMD] "ouryr msg we like beer thanx." 1502 Sounding. (DW)
18003: CEF, USAF WESTOVER MIL.STD 188-141A ALE on USB. Sounding. (DW)
18003: JTY, USAF YOKOTA MIL.STD 188-141A ALE on USB. Sounding. (DW)
18060: VMC, BOM CHARLEVILLE FAX//120/576/N/800 Test transmission. Weak grainy, S Hemispheric chart, 2331z further grainy chart. (DW)
18060: VMW, BOM WILUNA FAX// 120/576/N/800 Test transmission. First chart good with slight rapid fading. 0732. Very weak, and only vauge outlines in noise. (DW)
18060: GYA, RN NORTHWOOD FAX// 120/576/N/800 Listening for Charleville/VMC tests but rcving obvious Northwood spur, plus backgnd voices. At one point signal broken by another FAX chart. (DW)
18183.4: UNID, MFA ALGIERS COQ/8// Tfc in FF. (DW)
18183.4: 7RQ20, MAE Algiers 1551 Coq8 26.66 Super Flash Msg\FF to Ambalg Niamey. (RH2)
18183.4: 7RQ20, MAE Algiers 1930 Coq8 26.66 Msg\FF to Ambalgs Abuja, Niamey, Luanda,Tachkent (!?), Conakry, Gao, Agades, Sebha (?). & Nouachibou. (RH2)
18183.4: 7RQ20, MAE Algiers 1620 Coq8 26.67 Clg Luanda - mni rpts! (RH2)
18183.4: UNID, Ambalg Pretoria 1600 Coq8 26.67 Long Msg\FF to MAE & toUTEs Ambalgs en Afrique re "UN World Conference on Sustainable Develop-ment" in Johannesburg next month. (RH2)
18183.4: UNID, Ambalg Accra heard at 1609 Coq8 26.67 Msg\FF to MAE cc Ouga & Abuja. (RH2)
18183.4: MGJ, RN aslane 1610 RTTY 75/320 CARBS. (RH2)
18201.7: Egyptian Emb Pyongyang (FROM BOSTAN PYONG YANG) 1105 ARQ 5LG msgs to Cairo. (ML)
18220: JMH5, Tokyo MET FAX// 120/576/N/800 Very weak, only vague outlines. (DW)
18236: ZSJ, SAN Capetown FAX// 120/576/N/800 Sfc analysis. Weak, grainy, vague outlines. (DW)
18277: ASI, UK MIL/DIPLO ASCENSION MIL.STD 188-141A ALE tuned on USB. Sounding. (DW)
18277: CYP, UK MIL/DIPLO EPISKOPI MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
18277: KUW, UK MIL/DIPLO KUWAIT MIL.STD 188-141A ALE on USB. Sounding. (DW)
18277: KUW, UK MIL/DIPLO KUWAIT MIL.STD 188-141A ALE on USB. Sounding. (DW)
18277: PRI, UK MIL/DIPLO PRISTINA MIL.STD 188-141A ALE on USB. Sounding. (DW)
18320: BRA, MFA BRATISLAVA MIL. STD 188-141A ALE on USB. Sounding. (DW)
18320: 4XZ, IN HAIFA CW Tfc in offline encrypt. 1353 reverts to marker "VVV de 4XZ==." (DW)
18464.7: UNID, EGYPTIAN DIPLO ? SITOR/A//100/E/170 Tfc in offline encrypt, then s/off in AA(ATU80) at 1434z. (DW)
18480: OLZ69, Czech Emb Cairo MIL.STD 188-141A ALE on USB. Sounding. (DW)
18480: CS5, US CUSTOMS ?LOC MIL.STD 188-141A ALE on USB. Sounding. (DW)
18480: CS1, US CUSTOMS ?LOC MIL.STD 188-141A ALE on USB. Sounding. (DW)
18594: PR1, US CUSTOMS ?LOC MIL.STD 188-141A ALE on USB. Sounding. (DW)
18594: CS6, US CUSTOMS ?LOC MIL.STD 188-141A ALE on USB. Sounding. (DW)
18686: S00, MFA Stockholm MIL.STD 188-141A ALE heard on USB. Sounding. 1329z clng ? (DW)
18686: s53, Swedish Emb AMMAN MIL.STD 188-141A ALE on USB. Clng ? 1327 Clng S00/Stockholm. 1333 clng ? 1356 clng ? (DW)
18756: S00, MFA Stockholm MIL.STD 188-141A ALE on USB. Sounding. (DW)
18756: S72, Swedish Emb KINSHASA MIL.STD 188-141A ALE heard on USB. (DW)
18789: UNID, Brit Mil Cyprus 1605 mfsk 195.5/300 //13565.0 kHz. (RH2)

18940: BDF2, Shanghai MET FAX// 120/576/N/800 Weak, vague outlines. (DW)
18945: S97, Swedish Emb ABIDJAN MIL.STD 188-141A ALE on USB. Sounding. (DW)
18945: S94, Swedish Emb Guatemala City MIL.STD 188-141A ALE monitored on USB. (DW)
18945: S84, Swedish Emb Washington MIL. STD 188-141A ALE on USB. Sounding. (DW)
18945: S84, Swedish Emb Washington MIL.STD 188-141A ALE on USB. Clng S94/Guatemala City. (DW)
18966.7: RFHJ, FF PAPEETE ARQ/ E3//96/E/400 8rc. Betas. 1708 cct[HJL] Controle de v svc Antilles de Antilles. 1809z Controle de v svc. (DW)
18974: PRI, UK MIL/DIPLO PRISTINA MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
19026.7: MFA Cairo 0340 ARQ clg Kuala Lumpur w/OOVS selcal, op chat & s/off. (ML)
19036.4: UNID, ALGERIAN EMB ABIDJAN COQ/8//-/l/- Tfc in FF then s/off. (DW)
19043: 055, E ASIAN NET ? MIL.STD 188-141A ALE on USB. Sounding. (DW)
19048.8: UNID, FF PARIS? ARQ/ E3// 192/E/400 8rc. Betas. No tfc thru 1415z. (DW)
19101.7: RFLI, FF FT DE France ARQ/ E3//192/E/400 8rc. Betas. No tfc thru 1445z when offair. Resestablished link after short break. (DW)
19204.7: RFLI, FF FT DE FRANCE ARQ/ E3//192/E/400 8rc. Betas. 1549z Cde de v svc RFTJ de RFTJ. 1555z Cde de V svc Antilles de Antilles. Cct corrupt both occasions. Offair 1558z. (DW)
19216.2: S00, MFA Stockhom MIL. STD 188-141A ALE on USB. Clng S31/Algiers. (DW)
19216.7: RFLI, FF FT DE France ARQ/ E3//96/E/400 8rc. Betas. 1620z cct [LIH] tfc in offline encrypt. (DW)
19309: 055, E ASIAN NET ? MIL.STD 188-141A ALE on USB. Sounding. (DW)
19359.7: UNID, MFA CAIRO ? SITOR/ A//100/E/170 Op chat in AA(ATU80) and s/off. (DW)
19464: DKL, UK MIL/DIPLO DHEKELIA MIL.STD 188-141A ALE monitored on USB. Sounding. (DW)
19464: KUW, UK MIL/DIPLO Kuwait MIL.STD 188-141A ALE on USB. Sounding. Also 1820. (DW)
19464: PRI, UK MIL/DIPLO PRISTINA MIL.STD 188-141A ALE on USB. (DW)
19554: 055, E ASIAN NET ? MIL.STD 188-141A ALE on USB. Sounding. Also 1729z. (DW)
19554: 172, E ASIAN NET ? MIL.STD 188-141A ALE on USB. Sounding. (DW)
19655: HEC, GW NODE BERN CW Chan free marker (Globe) "HEC" and wkng ship in Globedata on 19299 kHz. (DW)
19696.5: 8PO, GW NODE BARBADOS CW Chan free marker (Globe) "8PO" and wkng ship in Globedata on 18886 kHz. (DW)
19698: OST69, OOSTENDE RADIO CW Chan free marker "OST." (DW)
19699: UFN, NOVOROSSIYSK RADIO CW Chan free marker "UFN." (DW)
19706: LSD836, GW NODE BUENOS AIRES CW Chan free marker (Globe) "LSD836" and wkng ship on 18850.5 in Globedata/dataplex. (DW)
19726: A9M, GW NODE BAHRAIN CW Chan marker (Globe) "A9M" and wkng ships in Globedata/dataplex on 18853.5. (DW)
19741.4: 8PO, GW NODE BARBADOS CW Chan freemarker (Globe) "8PO." QSX 18862.5. (DW)
19751: 9MG, GW NODE GEORGETOWN CW Chan free marker (Globe) "9MG." Just audible. Definative rasping note to signal. QSX 18814.4. (DW)
19754: LSD836, GW NODE BUENOS AIRES CW Chan free marker (Globe) "LSD836" and wkng ships in Globedata/ dataplex on 18856.5. (DW)
19762.4: CPK GW NODE SANTA CRUZ CW Chn marker (Globe) "CPK" and wkng ship in Globedata/dataplex on 18787.4. (DW)
19945: MAE, MAE Algiers 1453 ALE/ USB to GAO & TRP (Tripoli) SNG. (RH2)
19945: MAE, MAE Algiers 1530 ALE/USB to Gao/RBT(Rabat) & GRK(Garankoula) SNG. (RH2)
19977: DKL, UK MIL/DIPLO DHEKELIA MIL.STD 188-141A ALE on USB. Sounding. (DW)
19977: KUW, UK MIL/DIPLO KUWAIT MIL.STD 188-141A ALE on USB. Sounding. Also 1722. (DW)
19977: PRI, UK MIL/DIPLO PRISTINA MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
20107: HHS, US DHHS ROCKVILLE MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
20460: UNID, UNID CW Series of five dashes, short pause then repeated. (DW)
20631: ADWNPR, USAF ANDREWS ? MIL.STD 188-141A ALE monitored on USB. Sounding. (DW)
20631: MPA, USAF UNID MIL.STD 188-141A ALE on USB. Sounding. (DW)
20698: S53, SWEDISH EMB AMMAN MIL.STD 188-141A ALE heard on USB. Sounding. (DW)
20716.7: UNID, FF PARIS ? ARQ/ E3//192/E/170 8rc. Betas. Poor sync. No app tfc thru 1710Z. (DW)
20805.2: RFQP, FF DJIBOUTI ARQ/ 342//200/E/400 4rc. 2 chan tdm. Weak, variable sync. Tfc in FF and offline encrypt thru 1400Z. (DW)
20805.2: PR1, US CUSTOMS ? MIL.STD 188-141A ALE on USB. Sounding. (DW)
20917.5: S72, Swedish Emb KINSHASA MIL.STD 188-141A ALE monitored on USB. Sounding. (DW)
20942: S00, MFA Stockhom MIL.STD 188-141A ALE on USB. Clng S97/Abidjan. (DW)
20942: S97, Swedish Emb ABIDJAN MIL.STD 188-141A ALE on USB. Clng S00/Stockholm. (DW)

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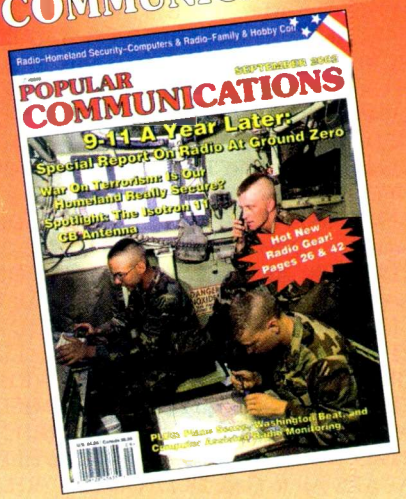

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20958: S94, Swedish Emb Guatemala City MIL.STD 188-141A ALE monitored on USB. Sounding. (DW)
20958: S84, Swedish Emb Washington MIL. STD 188-141A ALE heard on USB. Sounding. (DW)
21925: Dynasty 202 (B747-400 RCTP to PANC to BNA) wkg San Francisco ARINC (NP-1/2) with position report and is advised to contact Anchorage Center in USB 2259Z
21949: UNID, AIRCRAFT FLIGHT LH8424 HFDL//Posn 45.33N 22.27E. (DW)
21949: UNID, AIRCRAFT FLIGHT UP6803 HFDL//Posn 30.50N 39.52E. (DW)
21949: 08, ARINC Johannesburg HFDL// Squitters. (DW)
21949: 08, ARINC Johannesburg HFDL// Log-on confirm to ICAO 99EEA5 as Air ID 11. ACARS msg to Air ID10 (D-ALCI). (DW)
21949: LH8273, Johannesburg-8 1327 HFDL;ID D-ALCF Lat/Longs at 0000! (RH2)
21949: LH8419, Johannesburg-8 1240 HFDL ACARS Air to Gnd 24.52N/63.28E. (RH2)
21949: SV1048, Johannesburg-8 1306 HFDL ACARS Air to Gnd; 28.17N/44.00E. (RH2)
21949: UP6803, Johannesburg-8 1309 HFDL ACARS Gnd to Air & Reverse. No Lat/Longs. (RH2)
21982: UNID, AIRCRAFT FLIGHT LH8297 HFDL//Posn 22.38S 29.11E, 1533 22.01S 29.30E, 1538 21.26S 29.43E. (DW)
21982: 15, ARINC BAHRAIN HFDL// Squitters. (DW)
21982: 15, ARINC BAHRAIN HFDL// Squitters. (DW)
21982: 13, ARINC SANTA CRUZ HFDL// Squitters. Operational on 21997 13315. 1745 ACARS msg to Flight N331UP. (DW)
21982: CO0921, Muharraq-15 1233 HFDL 24.39N - 124.46E. (RH2)
22321.8: VTP62 Indian Nvy Vishakhapatnam 0720 RTTY 50/850 w/RYR foxes figs DE VTP62 INT ZBZ tape, then off air. (ML)
22887: V5G, MFA Bucharest 0840 Rou-FEC 164.5/400 Online crypto—good sigs! (RH2)
23016.7: Egyptian Emb Beijing (JG YWSG) 1010 FEC clg Cairo for QSX of 05902 ie 20951.7 khz; 1015 msg in ATU-80, sent twice in, unusually, FEC. (ML)
23214: CS9, US CUSTOMS? MIL.STD 188-141A ALE on USB. Sounding. (DW)
23214: D49, US CUSTOMS? MIL.STD 188-141A ALE on USB. Sounding. (DW)
23214: PRL, US CUSTOMS? MIL.STD 188-141A ALE on USB. Sounding. (DW)
23370: HZN50, JEDDAH MET RTTY //100/R/850 Met tfc. Poor copy. (DW)
23523: JMH6, Tokyo Met 1040 FAX 120/576 Surface Prog-FSAS24—exceptionally clear & comprehensive—all characters readable (for a change!) This seems a daily sked as on screen same time 29/Jun. (RH2)
23523: JMH6, Tokyo Met 1240 fax 120/576 Super Streamline chart FUXT—great clarity! (RH2)
23523.1: JMH6, Tokyo Met 0845 FAX 120/576 Clear WX chart. (RH2)
24268: KUW, UK MIL/DIPLO KUWAIT IL.STD 188-141ALE on USB. Sounding. (DW)

This month's contributors are:

Colonel DX (RCW)
Craig Rose (CR)
Day Watson Col DX (DW)
Murray Lehman (ML)
Peter Thompson (PT)
Robert Hall (RH2)

Thank you all for your contributions. As always, they are greatly appreciated. Please keep them coming. And new contributors are always welcome.

Next Month

Next month I will be presenting the column I promised last month, which is looking at the role of the Coast Guard in the post 9/11 period, and I'll point you in the direction of some very interesting monitoring activity that has been taking place over the past few months.

Don't forget what I said at the beginning of the column: You are welcome to make your own contributions as well, including letters, logs, and articles. Remember that I am here to fix up any problems, so don't be worried about making the first draft perfect. I don't care, and I'll work with you to make the project a success.

In the meantime, continue to say a prayer for our security forces—local police and fire fighters and the military services over seas. Each and every one of them is appreciated for what they do. ■

Tuning In *(from page 4)*

cherished—but remember, if you let Uncle do all your thinking and talking it's no longer America.

Remember a few years ago when folks were saying shortwave was soon going to be a thing of the past? Hogwash! Not long ago Kol Israel decided to drop shortwave, then just a few weeks ago in an abrupt 180-degree turnaround, the powers-that-be decided that shortwave deserves a second look. Surprise! Folks, we've said it for years and will say it years from now: Shortwave is still a very reliable method for reaching the masses; it's cost-effective for the broadcaster, easy to use (and portable in emergencies!) for the listener, and is free from airtime charges.

"In our changed world, radio is more important than ever. Radio is our link to the rest of our world, whether it's shortwave from the Middle East or your neighbors and family using CB and FRS to stay in touch."

In our changed world, radio is more important than ever. Radio is our link to the rest of our world, whether it's shortwave from the Middle East or your neighbors and family using CB and FRS to stay in touch. A world without the many forms of radio wouldn't be an easy place to live. Think about it for a moment: It's been proven time and again that *whether the chips are down or not*, cellular phone service just isn't there yet. Get in a traffic jam or hit with bad weather and try making—or completing—a cell call. The system quickly overloads (or goes down completely) and you're stuck. It's called putting all our eggs in one basket. When that basket breaks, it's free scrambled eggs!

Not so with good old dependable ham and CB radio. Sure, there's the ever-finicky ionosphere playing tricks with our signals and sometimes even clowns trouncing our legal signals, but basic radio, whether it's ham, CB, FRS, GMRS, or MURS is there for your use—no airtime charges, period. And it's tons of fun, too! That fact alone is what makes our radio hobby—whatever aspect we enjoy—so rewarding. I get asked all the time by non-hobbyists—even by members of the mainstream media—"why listen?" and "what makes it interesting?" Well, the answer is in the magazine and with you every month. Thank you for being part of this great radio hobby, and for making *Pop'Comm* a resounding success. Remember, it's *your* magazine.

The editorial success and name recognition of *Pop'Comm* is primarily due to Tommy Kneitel's hard work, expertise, unmatched wit and humor, and the big guy, publisher, Richard Ross, K2MGA. My thanks to both of them for their guidance and encouraging words! ■

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loose connection

radio communications humor

by Bill Price, N3AVY

73, K3IBN

Editor's note: John Bosak, K3IBN was only 61 years old and was a great friend to many people. John was the Director of Engineering at WITF-TV and FM in Harrisburg/Hershey, Pennsylvania. He was also this year's Broadcaster of the Year as chosen by the Pennsylvania Association of Broadcasters - the first ever from the engineering discipline to receive that award. He was a major force in the amateur radio community and will be missed by his many friends and colleagues. Thank you, John for your dedication to the radio hobby.

My friend John Bosak, K3IBN, has always been on the "techie" side of ham radio. When repeaters matured and become "transparent" to their users, John showed me how they worked. Showed me the ones he maintained in the Harrisburg, Pennsylvania, region. When packet radio on 2 meters was new, he showed me how it worked, and gave me a packet controller so that I might try it for myself, if I ever get a 2-meter rig.

"We played with radios, ate crabs, told jokes and stories, and laughed."

John always looked to the future in amateur radio; I always looked at the past. He was FM; I was CW. Even with my Advanced class license, I have never owned an FM or SSB rig—just some HF CW stuff. "When ya gonna get a microphone?" he would ask.

"As soon as you get a Vibroplex," I answered.

For as long as I have known John, he has always been a part of WITF-TV (and FM) in the Harrisburg/Hershey, Pennsylvania, market—the PBS outlet in the state capital. He was also involved in frequency coordination and worked with state officials in many capacities to ensure better communication throughout the Commonwealth of Pennsylvania. When I met him, he was my customer. I sold him 2-GHz instructional television transmitters, antennas, and all of the periphery that went along with the system.

We became friends without ever trying, and one day he called to ask if I knew where his son could get a small guitar amplifier. Sure. I gave him one that I was using as a footrest. He helped me get a deal on a telescope. We lived a couple hours apart then, but visited enough to enjoy each other's company, and we found obscure gadgets for each other for as long as we've been friends.

My family spent a weekend with his family at their retreat on a lake, a million miles from nowhere. We played with radios, ate crabs, told jokes and stories, and laughed. Their "lake house" had perhaps a thousand bats living between the roof and the ceiling, and they would fly out every night at dusk to feast on the mosquitoes that never bit us, even when we sat on a brightly lighted porch.

"We became friends without ever trying..."

When I began writing for *Pop'Comm*, which seems so very long ago, John called to tell me he had read my column. He had been a *Pop'Comm* reader and I didn't even know it.

Through various phases of our friendship, we "hung out" at the NAB (National Association of Broadcasters) convention, the Dayton Hamvention, and a few hamfests here and there. We have stood in one another's driveways, hotel rooms, and dining rooms. Always playing with something—usually radios, but also with the latest technology in scanners, CD-burners, digital cameras, and computers.

We were once so famished after a day at Dayton, that we sat in his room eating slices of Vidalia onions with salt and sipping gin. John is the only person who has ever gotten me to eat a piece of raw onion, even if it was a Vidalia.

John coined—and then demonstrated—the phrase, "If you put enough butter and salt in it, *anything* will taste good" by serving me "clam broth," which until that point had merely been "water that we cooked clams in."

It seems like a few weeks ago, but it was likely more than a year ago that John's wife Bev told me that John had some pretty serious health problems. I was more in denial than he was, and we kept up normal communications (usually e-mail) with just as many jokes as ever. A few weeks ago, I got to see John for what would be our last time together.

Tonight, when I arrived home, I found this message from Bob Marzari, W3PT, a friend of John's whose mailing list John put me on:

From "Bob Marzari"
To "N3AVY" (and many, many others)
Subject K3IBN sk
Date Thu, 25 Jul 2002 200601-0400

After a valiant battle with cancer, John Bosak went to a better place this morning. More information about memorial services will be sent as soon as available.

W3PT

There was also a private message from Bev. It is both fitting and painful that I must write a column tonight for an early morning deadline tomorrow. I am glad that I might mention John here to his friends, and my friends, and tell you that I will miss him very, very much. I would rather be in bed, crying over the loss of a great friend, and soon, I will be doing just that.

For now, I want to see to it that a whole lot of people know that John Bosak was a wonderful, wonderful friend who read this column along with you every month. ■

73 K3IBN DE N3AVY

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