

45635

POPULAR COMMUNICATIONS

DECEMBER 2002

**Aircraft And Government
Frequencies:**

The World At Your Fingertips!...p. 74

Inside Alaska's KFAR:

A Pop'Comm Exclusive!...p. 10

Emergency Power For Your Home!...p. 27

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Use either the PA-30B/C/U AC Adapter or E-DC-15 DC Cable to power your VR-120D.



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*Optional accessories

*Cellular / image / restricted frequencies Blocked

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*Cellular blocked



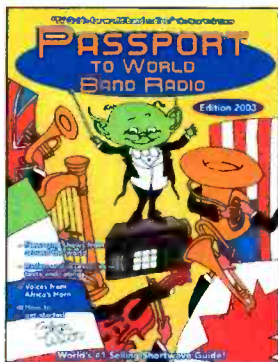
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JRC

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RX-350
RX-340

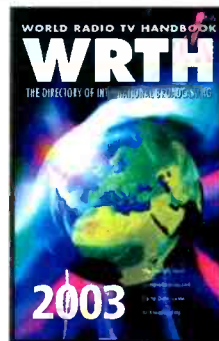
Ten-Tec is offering a \$100 rebate on their popular RX-340 and RX-350 DSP receivers, valid to December 15, 2002. Visit our website for full details.



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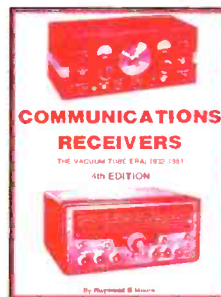
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AOR

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Universal carries an extensive line of scanners and wideband receivers from all major manufacturers including AOR, Alinco, ICOM, Yaesu and Uniden-Bearcat. New **AOR AR8200Mark3B** shown right.



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On The Cover

Every month "Utility Radio Review" columnist Joe Cooper compiles dozens of your military, aircraft, Coast Guard, and government loggings so you're prepared with the frequencies and information when world powers move from words to action. The Long Distance Operational Control Facilities frequencies used by aircraft, civilian, and military—also offer a multitude of monitoring excitement you won't find anywhere except on shortwave! This month, Joe's "Utility Radio Review" is on page 74. (Photo by Larry Mulvehill)

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IC-PCR1000 The original black box

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- Noise Blanker
- Digital AFC
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IC-R75 Pull out the weak signals

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- 101 Alphanumeric Memory Channels
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- Commercial Grade
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- Large Display
- Well Spaced Keys and Dials
- PC Remote Control with ICOM Software for Windows® (RSR75)

"A versatile HF/6-meter receiver that offers a good measure of performance in a compact package. All mode capability for the ham and utility listeners and synchronous AM for the SWLs should make the IC-R75 a popular choice for a wide variety of radio enthusiasts." — QST, 1/00

TUNE IN THE WORLD WITH ICOM



IC-R8500 The experts choice

ICOM technology brings you super wide band, all mode coverage from HF to 2GHz, including shortwave and VHF/UHF, while maintaining a constant receive sensitivity. The IC-8500 is not simply a scanner - it's a professional quality communications receiver with versatile features from high speed scanning to computer control.

- 100 kHz - 2.0 GHz†
- AM, FM, WFM, USB, LSB, CW
- 1000 Alphanumeric Memories
- Commercial Grade
- IF Shift
- Noise Blanker
- Audio Peak Filter (APF)
- Selectable AGC Time Constant
- Digital Direct Synthesis (DDS)
- RS-232C Port for PC Remote Control with ICOM Software for Windows®

"If you want a receiver that is both a superior world band radio and a solid scanner, the new ICOM IC-R8500 is the best choice."

— Passport to World Band Radio, 1998

COMING SOON!

IC-R5 Winning Performance

The "R5's compact size, only 2 1/4" wide by 3 3/8" high by 1" thick, allows you to have a "world of listening" in the palm of your hand. Large internal speaker delivers loud, clear audio - so you can hear everything.

- 150 kHz – 1.3 GHz†
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- 1250 alphanumeric memory channels
- CTCSS/DTCS Decode
- Weather Alert
- Dynamic Memory Scan
- Preprogrammed TV & Shortwave
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- Includes 2 AA Ni-Cds

This device has not been approved by the FCC. This device may not be sold or leased, or offered for sale or lease, until approval of the FCC has been granted.

"With live video reception of broadcast and amateur television, and short range RF based video systems, Icom has opened up a new frontier for the progressive wide spectrum scanner enthusiast." — QST, 2/01

IC-R3

See & Hear all the action

Wide tuning range allows you to see and hear the excitement behind the scenes. Large easy to read color display for frequency settings and video reception.

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- AM, FM, WFM, AM-TV, FM-TV
- 450 Alphanumeric Memories
- CTCSS with Tone Scan
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- Telescoping Antenna with BNC Connector
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- Lithium Ion Power

IC-R10

Advanced performance

With the "R10 you can tune in the world where ever you go. With a Real-Time bandscope and Voice Scan Control to make it easy to find all the action.

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- 1000 Alphanumeric Memories
- Attenuator
- Alphanumeric Backlit Display
- VSC (Voice Scan Control)
- 7 Different Scan Modes
- Beginner Mode
- Band Scope
- Includes AA Ni-Cds & Charger

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Beyond America's Borders

By the time this issue hits the newsstands, it's anyone's guess just how deep we'll be into Iraq, but as sure as radiowaves travel around the world, Mr. Bush will have troops in building-to-building combat—if not in Iraq, certainly somewhere. The fact that there'll be what's called "collateral damage" is of minor concern to some world leaders (except when it's in *their* country).

The news "over there" will focus on it, I'm sure, as we would if it were happening here. Question is: who's listening? Unfortunately for us, because too often we're so narrow-minded (largely because our own media is that way), America will be even more hated in many places than before. Ordinary folks "over there" are listening and, whether we understand it or not, have a different take on us than we'd prefer. No one tries to be disliked, but the fact is not everyone likes us. Well, it's not really "us" they detest. And contrary to popular opinion, it's not our freedoms and our way of life they don't like. I remember listening to Radio Moscow and Vietnam during the '60s. Talk about hair-raising broadcasts! But even then as a young teenager I didn't dislike Russians or Vietnamese people. Like us, they can't always help what their governments decide.

We really don't deserve it. Most Americans are kind, open-minded folks who, truth be known, don't really like sending troops off to far-flung corners of the globe, we just somehow get caught up in it all. Then, before you know it, there we are, wondering how we got in another tangled mess. It happens every time, no exceptions. But, where we fall on our sword is when we forget. Like it or not, we make mistakes—or, perhaps more accurately, our leaders make the mistakes and we pay the price.

I've got nothing against the family in Iraq, Iran, Libya, North Korea, or anywhere else that's just trying to make ends meet. They laugh, they cry, and basically want the same things we do—really. The difference is in many cases, all they know is what they hear and see, either

firsthand or through their one-sided TV and radio news.

We're not like that here. We're different. International shortwave radio listeners here are able to listen to what we want, when we want, where we want, for as long as we want. From the BBC to North Korea we get, as Paul Harvey would say, "The rest of the story." If there's anything I absolutely love about radio, it's that—the fact that when I hear what I suspect is pure unadulterated BS on the evening news or in a White House news conference, I can shake my head and cry foul because there's always three or four sides to every story, and radio let's me in on the world's dirty little secrets. Since this is still a democracy it's reassuring to know that we don't have to take anything from anyone for face value.

Take for example the recent drum-beating against Iraq. Now you and I know that ol' Saddam probably isn't long for this world, and few people, even within his own family, will miss him. But as bad as this tyrant is, I can't help wondering who will rise in his place. So does the rest of the civilized world.

I was listening to Deutsche Welle, Radio Cairo and the Voice of Turkey this past week and despite what the average American is hearing on the 30-minute evening news, these voices say we're heading down a bumpy road that won't be as clean as Desert Storm. Other broadcasts—many from our allies—aren't so kind. These aren't all Arab states that have cautious words for us, undoubtedly based on their past experiences.

In these flag-waving, patriotic times we're urged to go about our daily business while the Vice President frequently hunkers down in a bunker for days at a time. Perhaps it's for his own good because out in the light of day much of our government's public relations leaks and rhetoric don't play as well in Moscow or Budapest as they do in Peoria, or in the bunker. And in today's world, perhaps more than any other time in our history,

(Continued on page 60)

POPULAR COMMUNICATIONS

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- LCD w/EL backlight
- Control IC PCR1000
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our readers

speaking 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>.

Mutual Milestone

Dear Editor:

Congratulations! On behalf of REACT Lake Simcoe and many other REACT Teams everywhere, I extend our very best wishes on *Pop'Comm's* 20th anniversary.

REACT is celebrating its 40th anniversary this year, so REACTers around the world know how excited you and your staff must be. It is quite an achievement for any publication to survive 20 years in these times. We wish *Pop'Comm* another 20 years of success so we can continue to benefit from the good information each issue contains.

Thank you for your interest in REACT's safety efforts over the past 20 years. Your support of our REACT volunteers has been tremendously helpful. The roles of REACT Teams are changing with advances in radio technology. However, our work in the public interest is as exciting and challenging as ever.

If your readers are keen to help REACT in providing volunteer safety communications wherever they live, they can visit our website for details at <www.REACTIntl.org>.

Again, REACT is pleased indeed to share this mutual milestone with *Pop'Comm*. May we both enjoy many more.

Ron McCracken, President
REACT Lake Simcoe
Ontario, Canada
Past President
REACT International, Inc.

Thanks For The Goods!

Dear Editor:

Hi—thanks for all the years of a great radio magazine.
Loyal Reader in Eden, NC

Anniversary Contest

Dear Editor:

I have subscribed to *Popular Communications* for a few years. It is a good magazine. When I read an article that I find particularly interesting or that may be useful in the future, I cut it out and put it in a folder. I don't keep the entire issue. Because of this, I find your contest a rip off. I think it is unreasonable to have five of the 10 questions from previous issues. Maybe this is meant to eliminate those of us who don't carry numerous radios on our belt or crawl into a car that has overload springs

because of all the communications equipment installed. I reckon you would consider me a casual hobbyist. I only have five scanners. I don't know anyone who keeps copies of all of any magazine they read! It makes me angry you have a contest that obviously is meant for a select few: those who have stacks of past *Popular Communications* magazines and probably use them for a coffee table.

David Sharpes
Hoodsport, WA

Dear David:

We don't think it's at all "unreasonable" to have a few questions from previous issues. In making the decision to include only the past 12 months' magazines, I considered what most of our readers tell us; that they keep the magazines for at least a year for reference. I don't believe having 12 *Pop'Comms* as a "stack" of magazines will weigh down your car's load springs, unless you drive an old Chevette. Many readers also do as you indicate—clip out those articles that are of long-term use and either file them or place them in a protective plastic sleeve in a three-ring binder.

For the record, you've got three more scanners in your radio arsenal than I do. Good luck with the contest!

AOR Explains AR-ONE Position

Dear Editor:

AOR USA is pleased to advertise its products in *Popular Communications* as we find there are many informed and astute readers who purchase and use our quality receivers.

We recently received a message from a *Pop'Comm* reader asking why we have advertised (in your publication) the AR-ONE receiver, a unit that is available only to qualified users, because there is no "cellular blocked" version of this radio.

There are several answers to the question. First, there are many from government agencies and the military who read *Pop'Comm* and hopefully examine the advertising for products useful to their missions, particularly those that pertain to homeland security. Second, we understand *Pop'Comm* is read by an international audience that may purchase and use unblocked receivers such as the AR-ONE outside the U.S. Third, we at AOR would like to believe that *Pop'Comm* readers enjoy staying up with the latest product releases and technological developments. While we cannot offer the AR-ONE to retail clients in the U.S. at present (and we wish we could), it is possible that the technology found in the AR-ONE may someday find a place in some of our other product offerings.

Just as there are many different types of cars and trucks advertised in the marketplace, buyers ultimately make a choice that suits their specific needs. AOR will continue to develop many different products that may be used for a variety of applications. Chances are, with exciting designs in the pipeline, including an APCO 25 converter and trunking units, we may now, or soon, market a high-quality receiver that fits the specific needs of our valued customers.



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ICOM

PCR1000 BON

Receiver For computer
Now With Bonito Software



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HF Receiver
Call For \$\$



IC-R10
Wideband
All Mode RX
Special
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UPS Included



IC-R3
Receiver
2" TFT Display
Call For \$\$



IC-R2
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We sincerely thank *Pop'Comm* and its readers for their ongoing dedication to the monitoring arts.

Taka Nakayama, KW6I
Executive Vice President
AOR—Authority On Radio
Torrance, California
www.aorusa.com

Vector Clarification

Dear Editor:

I've been a *Pop'Comm* subscriber since the magazine's first issue and am very happy to still see it being published! Please keep them coming.

In the 20th Anniversary issue, your "Technology Showcase" has a great article about the Vector Manufacturing Multi-Function AC/DC Power System. As soon as I could, I went to the company's website to order one. As you said, at that price (\$49.95) order two. Well, to say the least, I was very disappointed that the site does not sell new products such as this item. There are some discontinued products sold that are new items, but everything else, including this power system, is refurbished equipment. Also, the price shown is \$69.95, not \$49.95 as was in your article. Maybe still a deal, but it's not new.

Perhaps you may want to print a clarification in the next *Pop'Comm*.

Dennis Dura, K2DCD

Dear Dennis:

Many thanks for your letter—not the only one we received. In our October review of the Vector Manufacturing VEC021AC Multi-Function AC/DC Power System the price shown was

incorrect. The correct suggested retail price is \$79.99, and the unit is available from hardware stores nationwide. For remanufactured Vector portable power products and deeper discounts please visit the company on the Web at <www.vectormfg.com>.

Radio Repairs

Dear Editor:

I'm writing to ask your help in getting my out-of-warranty transceiver repaired (it fell to the floor and now I notice the "receive" is somewhat degraded). Any help you can provide will help me tremendously—and many of your other readers as well.

Jorge Russo
Miami, FL

Dear Jorge:

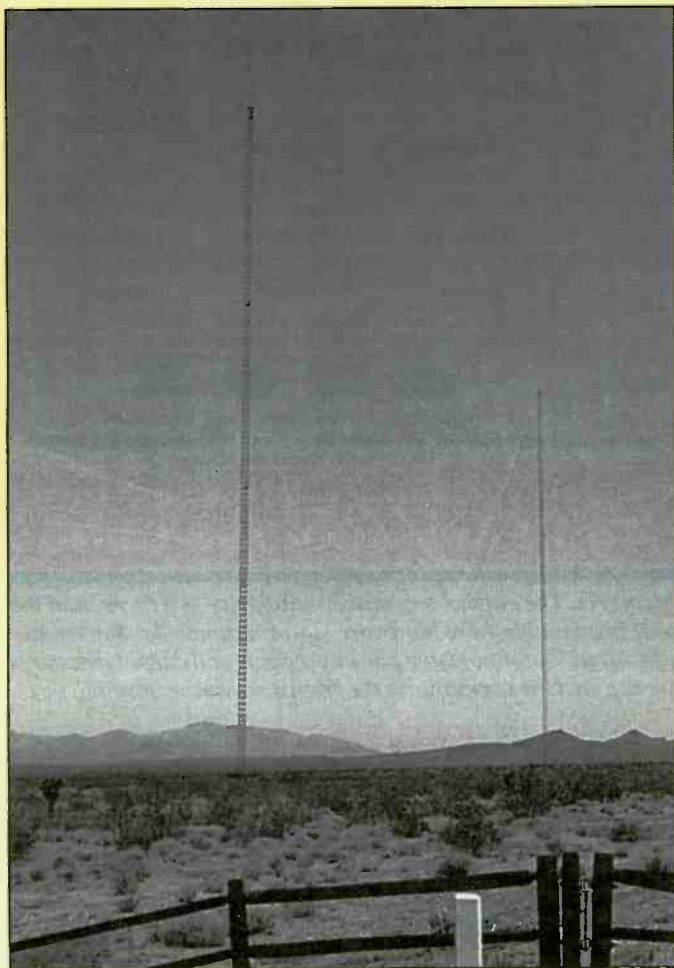
Every time we open the *Pop'Comm* mailbag there's at least one letter asking a similar question. It's no secret that today's radios are very complicated and intricate machines. You certainly wouldn't open the case and have at it with a screwdriver or soldering gun unless you know your stuff. And finding folks who do know their stuff can be difficult, especially when that radio is out of warranty.

Some of our readers have reported excellent work from The RF Shop in Hamilton, Ohio. Check them out (online at <www.therfshop.com>) or call 513-737-0043 from 9 a.m. to 9 p.m. EST Monday through Friday. They do repairs on a multitude of products, including units by ICOM, Alinco, and Yaesu. Randy Adams, NT8N, has been repairing radios since he was 19, has worked as a technical support engineer and computer consultant, and guarantees repairs for 30 days. He'll typically turn your radio around in one to eight weeks.

Loran C In The Desert

A Special Tour Of A Unique Nevada Station

by Stan Jones, KC5UYF



Two of the four towers that beam the powerful 100-kHz signal worldwide to ships and aircraft.

You can imagine my surprise as I drove down the rocky dirt road in the middle of the Nevada desert between Las Vegas and Laughlin, with no water in sight, when technicians wearing Navy-type uniforms walked out to greet me. I had seen the four massive tower structures the night before but decided to investigate the next morning. The 700-foot towers, spaced about 1,400 feet apart, sit a couple of miles off Highway 95 near Searchlight, but their white strobes can be seen for miles.

As I was traveling back to Las Vegas I saw the sign that identified the facility as a Coast Guard Loran C transmitting station. I turned off the highway thinking I'd be allowed to take a tour of the place. Not only was I greeted warmly, allowed to tour the



All the LORAN stations are synchronized by computer and can operate mostly unmanned when needed.

facility and ask about all the operations there, but I was also allowed to take photos.

Inside The Station

This Loran transmitter site is a secondary unit and is unmanned at night. Night and weekend operations are turned over remotely to either Petaluma, California, or Alexandria, Virginia. The transmitter and its non-directional antenna array send out digital pulses on 100 kHz to the tune of about 480 kW. These digital pulses can be heard worldwide and provide navigation needs anywhere in the world. The master station that works with this one can be either Boise City, Oklahoma, or Fallen, Nevada.

The day I visited the site the crew was pumping 5,000 gallons of salt water in the ground under the operations building and their towers. They explained that the desert soil is so hot and dry and the water table so far underground that this "salting" is needed to maintain a good RF "earth" ground. As the soil dries and the ground becomes less effective, the SWR goes up on the antennas and the reflected power gets back into the building and equipment. The window frames and even the metal garage doors begin to vibrate when this happens. Anything

Loran C operates by a master station and at least one secondary station transmitting these pulses "in-sync."

ed that GPS signals, while highly accurate and easy to use, are so low powered that they can be easily "jammed" or interfered with. So, for the time being, LORAN has an upper hand over GPS in that the mega-powered signals can be heard reliably worldwide. At present, there are about 1.2 million LORAN C receivers in use worldwide, with about 80,000 of them on aircraft. No firm decision will be made to discontinue the system until a more "robust" GPS system proves itself!

Scientists, researchers, and others are using Loran C for time standards. In fact, there is at least one company that produces a Loran receiver and advertises it for that purpose. Imagine getting cesium-beam accuracy for your time standard for the price of a Loran receiver?

This is a very impressive operation, especially because of the station's location. No one seemed to know why this particular location was chosen, but people speculated that it might have been because of its remoteness. There sure isn't a lot around this area that would interfere (or be interfered with) this station! ■



Power transmitter tubes are driven hard enough for their plates to glow red. Several spares are kept on hand.

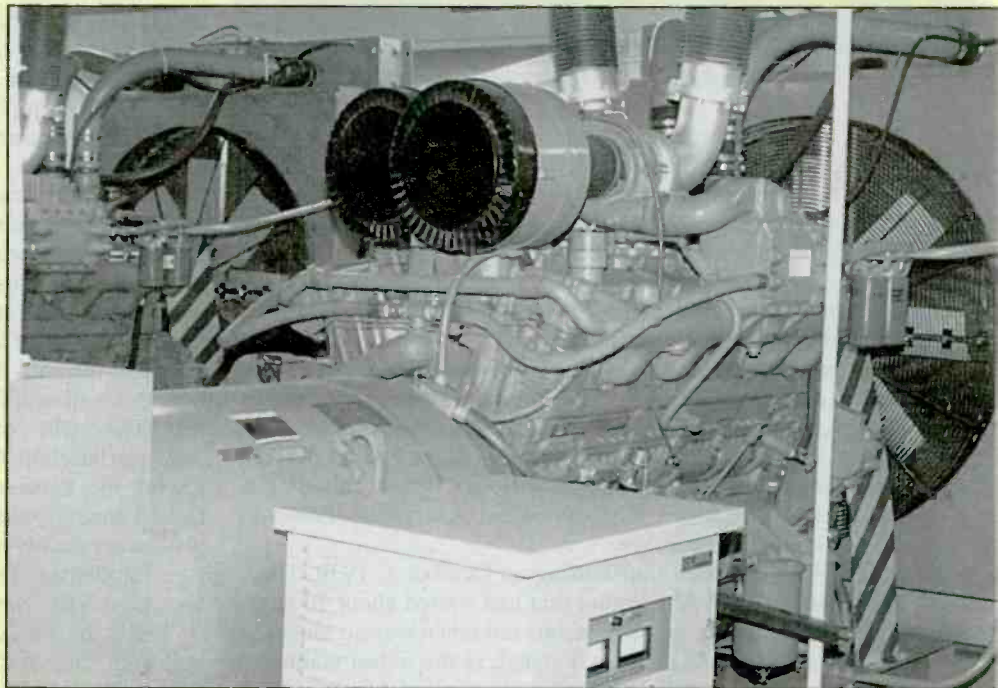
metal becomes a shock hazard. This is much like ham operators who sometimes get "RF in the shack" from a poor ground or other antenna/drive line problems.

Loran C operates by a master station and at least one secondary station transmitting these pulses "in-sync." The secondary station is usually north or south of the master by a few hundred miles. The master and secondary stations both transmit eight pulses, but the master sends a ninth pulse out after a specific interval to identify it from the secondary signal. A Loran receiver can lock onto both signals, and, by measuring the time delay difference between the two, it can plot a position on the map, accurately showing the location of the receiver within 200 feet (at about a 500-mile distance from the transmitters). This method of navigation is both global and very reliable. Loran stations are located all over the world, although all the ones outside the United States have now been turned over to their host countries.

The Future For Loran

I asked if Global Positioning Systems (GPS) would make Loran C obsolete. Chief Tom Eskew told me that at first it appeared so, and that most stations had been expected to close by December

2000. This was not to be the case, however, since government surveys showed there were, and are, many more users of Loran C than first thought. It seems that LORAN C will remain around for a few more years, at least through 2008. The U.S. and other governments have decid-



Massive turbine generators ensure that the site can operate even without commercial power.

Pop'Comm Exclusive: Inside Alaska's KFAR

**Key For Alaska's Riches—
Heartbeat Of Alaska**

by Bill Hoefler



A look at the KFAR operations console.

When Harold asked me to do an article on KFAR in Fairbanks, Alaska, just because I happened to be here, different thoughts went through my mind. I hope that Alice Brannigan, who is the former radio history editor for *Pop'Comm* will look at this and give me her blessing. Maybe, just maybe, if I can pull it off then I might try an article on the rival rock and roll stations in the '60s in Orlando. So I figured, sure, why not?

In June I made arrangements to meet with Terry Walley, the station manager of KFAR. We sat down in one of the studios and discussed the station. It was a typical radio studio, but with photos and framed newspaper clippings of the station. KFAR, which stands for Key For Alaska's Riches, is now called "The Heartbeat of Alaska." It is the oldest AM radio station in Fairbanks still in existence.

KFAR first started transmitting on October 1, 1939. There was another 1 kW AM station that had started about 10 years earlier in Fairbanks, but for reasons unknown was no longer in existence in 1939. KFAR, as I stated, is the oldest station in Fairbanks, but I'm still doing research on all of Alaska. I have information that KENI in Anchorage may be older.

KFAR has had four different owners: Lathrop, Midnight Sun, Borealis Broadcasting, and currently New Northwest Broadcasters, which owns 48 stations throughout the Pacific Northwest. Earlier in its broadcasting, like many stations of the day, KFAR limited its transmitting to two hours in the morning and two in the evening. Their programming was live and originated, initially, from the Lathrop building which was located on 2nd Avenue in Fairbanks. Today the studios are located on Aspen Drive in Fairbanks with the transmitter running 10 kW from North Pole, Alaska, about 15 miles southeast.

Though much of the station's history was uneventful, KFAR was widely publicized throughout Alaska in the late 1950s when a famous young U.S. senator visited the station: Senator John F. Kennedy.

Alaska is part of the "circle of fire" that surrounds the Pacific Ocean. There are numerous active volcanoes plus many fault lines that produce earthquakes. Virtually everyone remembers the "Good Friday Earthquake" that nearly destroyed Anchorage in 1964, a similar earthquake occurred just three years later in Fairbanks. Later in 1967 the Cheena River flooded the city of Fairbanks. During the earthquake and the flood, the only local station that remained on the air was KFAR, a testament to their public service.

From its first transmission in 1939 up to the 1960s the format was mainly music. Like many AM stations, KFAR went to a Top-40 format and later to an all-talk format. They still cover semi-pro baseball, following the Fairbanks Gold-Panners, whose players are mainly college students. They broadcast ABC News.

Today, in the same building on Aspen Drive with KFAR are



KFAR manager Terry Walley.

(Continued on page 68)

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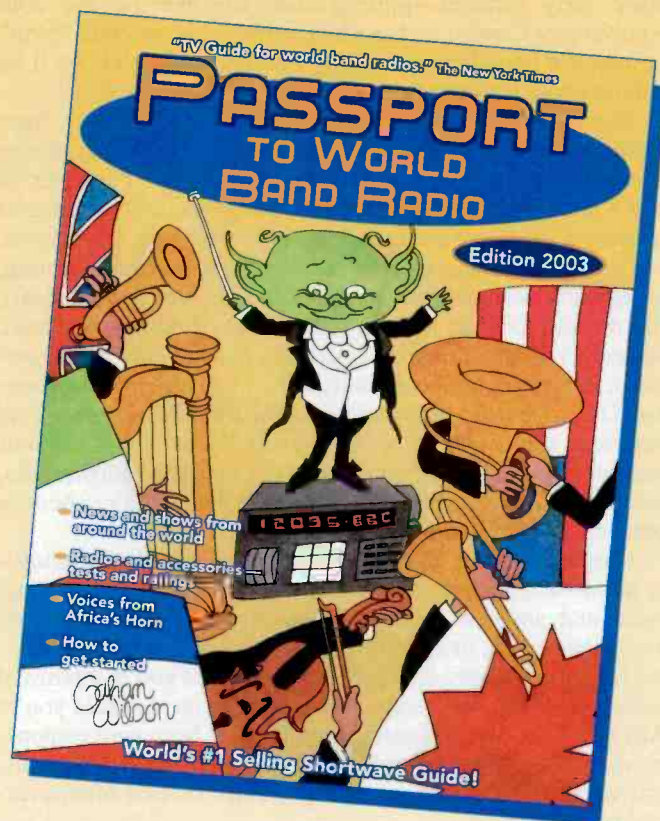
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Tons Of Survey Results

What You're Telling Us About Your Magazine

by Harold Ort, N2RLL, Editor

Well, I'll admit that it's been a while since we last sat down and compiled our survey results, so let's get right down to business. First, our sincere thanks to the hundreds of you who have taken the time to fill out the survey card every month, spending your own money on the postage and waiting patiently for me to report the results. It's been quite busy since early summer—putting ideas together for the 20th Anniversary Contest and working on my new antenna “farm” (a fantastic two-element Yagi by Fluidmotion which we'll be talking about soon) and, well, you know how it goes!

Naturally we need to know your basic radio interests, from monitoring your local police and fire departments to tuning international shortwave—it's the core of the coverage in *Pop'Comm*. Sixty-one percent of you reported that listening to international shortwave broadcasters is your primary interest, while the main focus of your radio activity remains scanning, specifically scanning public safety (police, fire and medical), followed by civilian aircraft (40 percent of the respondents), scanning military aircraft (26 percent), and rail comms (25 percent). Interestingly, about one-fourth of you report being interested in pirate radio broadcasts (despite some of the rather irate letters we sometimes get about pirates). We believe—and your survey responses confirm this—that if it's out there on the radio, you want to hear it. It certainly doesn't mean you're about to open up a pirate station!

One large aspect of shortwave listening and DXing is utility radio—all those interesting comms outside the international radio and amateur spectrum—which puts everything from diplomatic traffic to aircraft (military and civilian) at your tuning fingertips. Thirty-four percent of you said you're interested in those comms, and nearly 58 percent of you also said you're AM broadcast band listeners. And, judging from your responses, more than 23 percent of you said FM DXing is your interest; we'll be providing upcoming articles on that often-overlooked radio topic.

Sometimes when we're bitten by the ham radio hobby we tend to focus on the “new” thrill of talking around the world at the expense of our other radio interests, at least that's what the water cooler talk would have you believe. Not so, according to our survey results. Fully 40 percent of you report dividing your time up evenly between amateur radio activity and listening to your receivers and scanners. Thirty-two percent of you said you don't spend less time listening to the radio after becoming licensed. We're glad to hear that, not just because we're mainly a monitoring magazine, but because our radio hobby is so enriching and has such wide appeal—the potential for enjoying a different aspect of it is as easy as turning the pages of *Pop'Comm* each month!

Despite the fact that we're a monitoring magazine, we believe

it's important to continue to learn more about ham radio and the many, exciting modes of communication that enable comms across town or around the world. Packet radio is one such medium, so we asked our ham readers to tell us how many of them are interested in

packet. Surprisingly only seven percent said they were, while the vast majority (132 of the 171 responses) said they don't regularly use packet radio.

Regarding shortwave, 57 percent of our readers reported that receiving weather satellite imagery on shortwave and printing the photos is an interest, but they need more information. Those of you who own and regularly use a decoder with your shortwave receiver number about 14 percent, but a whopping 36 percent reported they might get one if they knew more about that aspect of the hobby. Thanks for that awakening! We'll be on it, and you'll see upcoming articles on decoding wefax comms and much more in future issues.

About one-fourth of our readers report an interest in collecting and restoring old radios. That's welcome news, because we realize that while this aspect of our hobby isn't as popular as hearing the latest action on the scanner, it is our roots and a wonderful way of remembering radio's golden years. The 55 percent of you who said you don't collect and restore these old gems might just have an old radio or two in the attic (or Grandma's basement). Dust it off, take a photo and send it in to Pete. You just might find yourself restoring your family's original living room or kitchen centerpiece. I encourage you to hunt around for an old collectible—after all, 17 percent of you said you did in the past!

Your Monitoring Since 9/11/2001

No doubt most of our “monitoring” just over a year ago on that fateful day was at the TV and AM news radio unless you lived in close proximity to New York City or the Pentagon. What better place to hear the world's reporting than international shortwave? Many of you (about 15 percent) report listening to international SW as world events unfold; since 9/11, the same number of you report that you typically listen to international



SW for at least an hour. Only 10 percent of respondents indicate listening during the day *and* night for at least an hour. Still, the great majority (more than three-fourths of the respondents) report listening as time permits, with no change after 9/11.

As far as your scanning, 36 percent of you said you're listening to the scanner more since 9/11, while 57 percent said the opposite. The tragedies of 9/11 got us thinking about the many uses of NOAA weather radio, beyond just for reporting weather emergencies. Fifty-percent of you say you have a separate NOAA weather/emergency receiver in your house, while interestingly, 39 percent report not having such a receiver. About 15 percent of you report that you're considering purchasing one—a good idea—while 61 percent said you don't intend to buy one; another 15 percent were undecided. May we recommend you purchase one of these lifesavers? Get one with SAME (Specific Area Message Encoding), which allows you to program the receiver right down to your county so you don't receive warnings for areas 30 miles away, as in the past.

While relatively few of you have recently purchased a new receiver costing over \$1,000, about 12 percent of you said your primary shortwave receiver is less than a year old, while 65 percent of you say yours is more than two years old. Nineteen percent of the respondents say they listen to shortwave with a portable receiver they take from room to room.

We're Listening!

Not only are we listening to the radio, we're also listening to you! A while back we asked if you'd like to see a column like Alice Brannigan's return to *Pop'Comm*. Fifty-three percent of you said yes—only six percent said no—and, interestingly, 35 percent reported not remembering Alice.

Well, for those of you who don't remember Alice, she's the gal who writes about old-time radio with lots of historical tidbits and photos not found anywhere but in back issues of *Popular Communications*. Her work, research, and dedication to the hobby is truly unforgettable! But Alice hasn't written for us in quite some time, taking a well-deserved hiatus from her column. Nevertheless, you've been asking for her to return, and while that's not possible, we've found the perfect solution in another writer: Shannon Huniwell. Her "Shannon's Broadcast Classics" recently debuted in *Pop'Comm*, and we're certain you'll love her... *and* her work!

Propagation is one of those technical subjects where you'll find a lot of so-called "experts." Frankly, though, I've known a lot of self-proclaimed experts in my life, as I'm sure you have—and passing off an expert as such in these pages isn't going to happen unless that person is tried and proven in a particular field of radio. To that end, enter Tomas Hood, NW7US, Mr. Propagation himself. Tomas is indeed an expert in this often-complicated field, but he has a way of reducing the complications to the lowest common denominator. Tomas' column, "The Propagation Corner" is a direct result of your letters and calls—and survey responses—telling us you're looking for an *understandable* monthly radio propagation report.

We'd like to know your thoughts on having an online version of *Pop'Comm*. Few of you (about six percent) said you'd actually subscribe to an online version, while another 23 percent said you might, depending on the price. The remainder of respondents said they wouldn't subscribe to an online version. This area needs much further investigating—and your comments, please—in the coming months. Could it be that those of

you responding to our surveys prefer a hard copy of *Pop'Comm* to carry from room to room as many of you do your portable shortwave receivers? Or is there a large, untapped audience that would subscribe online, a diverse group of folks who haven't even seen *Pop'Comm*? We're looking at this issue and will report our findings in the coming months, but in the meantime, your comments would be sincerely appreciated.

"Scanning" Your Answers

You've recently reported that a good handheld scanner is your favorite VHF/UHF receiver. About 24 percent of you own and regularly use one handheld, while 16 percent of you own two handhelds, and 18 percent have *three or more* handheld scanners!

Twenty-two percent of respondents say they own and regularly use a base scanner, only nine percent have two base scanners, but—here's a surprising revelation—22 percent of you say you've got three or more base scanners.

Less than 10 percent of you reported having one handheld and one base; the same number of you said you've got two handhelds and two base scanners. About 15 percent report having three or more of *each* type of radio!

Many of you (25 percent) also reported that your scanners have 1,000 or more channels. But there are still many older scanners out there in regular use, as about 17 percent of you said your scanner has 50 channels or less. The same number of you report that your scanner has 50 to 100 channels; those of you having scanners with 100 to 200 channels number about 21 percent. But the percentages are quite different when the number of channels jumps to 200 to 500, as 43 percent of you fall into that category.

Is price a major concern when looking for a new scanner? Thirty-one percent of you say yes. On the topic of cost, forty-nine percent of you say scanners are priced just about right; 16 percent of you had "no opinion" on scanner prices. Frequency coverage is apparently your main concern—fully 69 percent of you report it to be among the most important considerations when buying a new scanner. The other three primary considerations you have when buying a new scanner are the number of channels, number of features, and performance features (attenuator, audio quality, and specs). Least important to you is the cost of shipping, size of the radio, CTCSS capability, and computer programmability.

It seems like many of you have one scanner dedicated to public safety, for example, while you might use another scanner or two for either aircraft or federal monitoring. Judging from our survey results, 61 percent of you don't have all those channels programmed with active frequencies; only one-third of you do. Can we help you find active frequencies or possibly give you tips on searching the spectrum? What are you hearing on those channels you've got programmed? Ken Reiss, our "Overheard" columnist, wants to know and wants to see some photos of you in your radio shack with all this equipment. Who knows, you could end up on the cover!

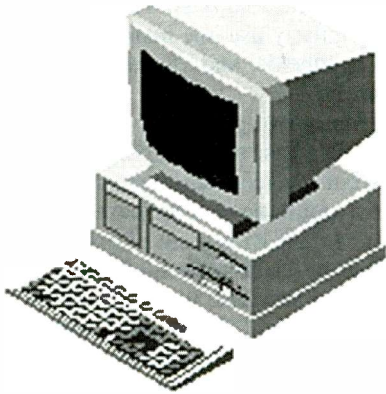
In the coming months we'll be reporting more of your survey answers and awarding one lucky reader a free one-year gift subscription to *Pop'Comm*! This month's results were compiled from three months of survey results, so our three winners are Peter Economos, W9RMB, of Illinois; William Chapman, Jr., of Pennsylvania; and Mike Frank of Indiana. Congratulations to each of you, and keep those survey cards coming! ■

computer-assisted radio monitoring

by Joe Cooper <joe@provcomm.net>

CAT Applications—Part II

This month I'm continuing my overview of the Computer-Assisted Tuning (CAT) software that's available today for compatible monitoring radios. As I've said before, the availability of well-designed and easy-to-use CAT software is one of the most significant advances in radio monitoring. Today just about anyone with a good personal computer made during the past five years and a compatible radio can take advantage of a wide range of CAT software products.



ible radio over a local area network (LAN), and I'll use Dextra's WorldStation and Creative Express's Ergo to show you how that is done. With the advent of inexpensive LAN hardware, easy-to-use operating systems (such as MS Windows or Linux) and high-performance personal computers, it has become very easy for people to set up small computer networks in their homes and thus take advantage of such features.

Even if you don't have a CAT software program, I will show you how to use MS Window's NetMeeting program to distribute your monitoring radio's audio from one computer to another, even across the Internet. Once I show you some of the basics about networking you'll be surprised at how simple it is to use.

The CAT Software

Again, I've chosen four commercial software programs that I believe illustrate some of the best programming for CAT applications. There are many other packages available, but not all are designed for the hobby market, some being restricted to military/government application only. There are also several *free* packages that can be downloaded from the Internet, but none make any guarantees about support, dependability, or future revisions.

Each of the software products listed below have good company histories, technical support, and proper documentation. Likewise, these programs are being revised and updated in some way, or have just been recently released as a new version (as in the case of SCANCAT), making each one a good investment.

A brief overview of these software packages (in no particular order of appearance) follows:

Ergo (Creative Express <www.swldx.com>)—Allows you to control up to two of the leading shortwave receivers at the same time (each off a separate serial port), while providing real-time propagation information from the Internet (when connected). Also provides access and control of custom and commercial frequency databases. Future versions will allow remote control of a receiver over a local area network or the Internet.

Smart Control (FineWare <www.fineware-sw1.com>)—Designed for use with four of the top computer-controlled radios on the market today, it supports multiple subscription databases of pre-defined frequencies.

WorldStation (Dextra <www.dextra.com>)—Designed specifically for the Ten-Tec RX 320 and RX 350, it has many advanced features, such as the control of the radio across a network and a unique scanning function that includes a sophisticated analysis of the data you capture from your scans. Since WorldStation is programmed in JAVA, you can use this software in the Windows, UNIX, or Mac operating systems. This program will also support network tuning in the next version.

SCANCAT Gold (Computer Aided Technologies <www.scanat.com>)—Supports over 70 models of computer-controlled radios. It offers excellent features for HF receivers and

What CAT software will do for you is supply more than a "radio front panel under glass." While there are many software products that simply operate a compatible radio through a computer, CAT software is *different*. The key here is the word *assist-ed*, because the software actually does assist you in finding stations to listen to in a variety of ways.

Some software assists you by allowing you to access a database of frequencies with known activity so that you can tune in those stations. Others help you find stations by scanning defined groups or ranges of frequencies, automatically stopping the scan when a signal of a pre-determined strength is found. Others provide you with an analysis of current radiowave propagation conditions, which predict where to look for possible station activity. Some can undertake statistical analysis of signal activity over a range of frequencies to show you the probability of more activity occurring on a specific frequency.

At this time, there is still a lot of software development going into finding the best combination of features to make a good CAT software product for a particular monitor radio. This month I will be looking at four CAT software packages to illustrate some of the features you should be looking for when deciding which package is best for you. I will look at the specific application of each of the software package through the hands-on use of their features.

Again, just to be clear for those who are not familiar with the application of CAT software, it is only those radios that have built-in computer control circuitry that can use this type of control software. You cannot use this type of software with a radio that does not have the necessary computer circuitry. If you have any questions regarding the compatibility of a particular make and model of radio, please check the owner's manual or specification sheet.

In a future column I'm going to take a detailed look at an advanced use of CAT software: remotely controlling a compat-

VHF/UHF scanners (supporting functions such as Trunk Tracking), most notably its ability to create and manage complex databases of frequencies or to import commercial frequency databases.

Now let's take a look at the installation, setup, and operation of each package.

Ergo

Ergo 3.0 is designed to work with Drake R8A and R8B, Japan Radio NRD535/D, AOR AR7030, TEN-TEC RX-320, and the Watkins-Johnson HF-1000/8711A. As I mentioned last month, Ergo is unlike many CAT software programs that try to provide a "virtual" control panel that emulates the look and feel of a conventional radio. Instead, Ergo focuses entirely upon making the most use of the computational and communication power of the computer in which it resides. This is accomplished through multiple windows, each having their own particular function.

You can download a 30-day evaluation version of the program from Creative Express's website. The file is 5.3 MB so you will need a suitable data connection for downloading. The file is in ZIP compression format, so you'll also need a suitable utility program to either unpack the files or install it. However, once begun, the installation process is very straightforward, with lots of prompts and easy-to-understand instructions.

The actual setup of the program is also easy and is initiated by simply clicking on its icon. All of the configuration takes place through the use of a "wizard" that asks you to select the radio you are using, the serial port you are using it on, and what default features you want to use with the software. You are asked questions such as the name of the city or town you are listening from, the latitude and longitude for that location, whether you want to use miles or kilometers for distances, and how you want your time to be displayed. All this information is used to set up a custom environment that reflects your monitoring needs.

When the Ergo program is running, you will see that you are provided with a number of tools that go beyond the control of the radio. The big support feature that you notice right away is the display of real-time radiowave propagation information, which can be updated automatically or manually. The reason for providing this information is to give you a means of predicting the possibility of receiving a station at a given time on a particular frequency. For further propagation support, you can also refer to a real-time grey line map showing sunrise and sunset around the world. (Due to the way in which the D layer of the ionosphere builds up and disappears along the line of sunrise and sunset, you can often receive stations that would be difficult to hear at other times. Tracking the grey line is, therefore, a very good technique for hearing rare or distant stations).

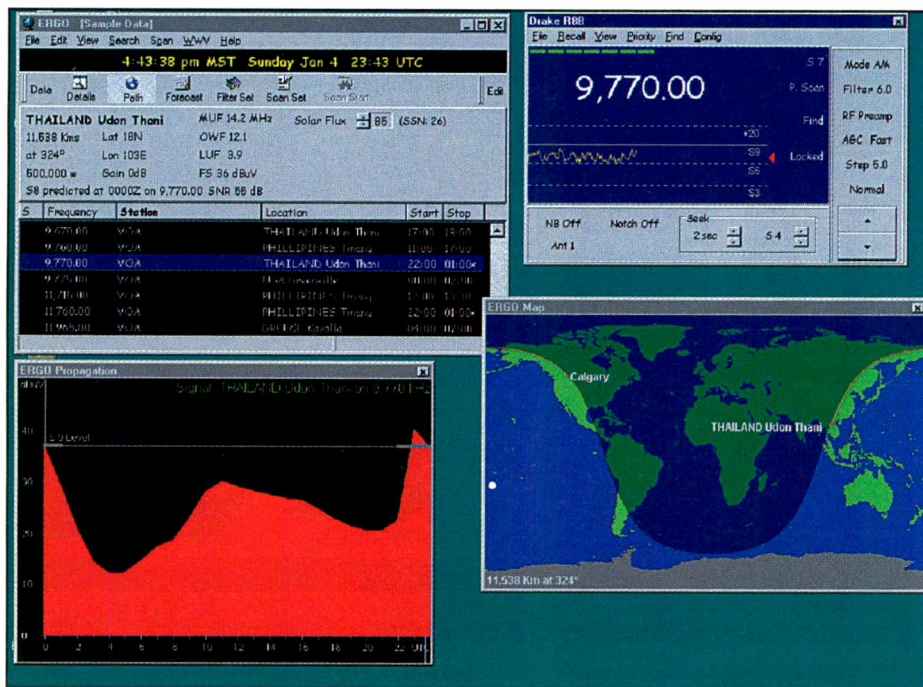
To use these propagation prediction features properly you need to know your approximate latitude and longitude (which you place into the software during the setup) and have a connection to the Internet so you can receive the necessary propagation data while you are monitoring. Once you have all that you can then use the propagation forecaster to punch in the Solar Flux number, K index, and the location of the target station to get the MUF (Maximum Usable Frequency) for a given time.

In addition to these functions, there are some sophisticated database management tools provided, along with scanning and logging functions. Using the simple utility program provided, you can import many lists of popular frequencies that you can either purchase on CDs or download from the Internet (more about where to find those in next month's column). Likewise you can also create your own databases of frequencies and use them in the same way.

I found that once I had familiarized myself with the control buttons on the software (which was very easy), the propagation analysis features were simple to operate and a wonderful aid. There's nothing more frustrating than sitting down at your HF radio, punching in a frequency for a particular station at the correct time, and then hearing nothing but static. The predictions of MUF were very good indicators of whether or not I was going to hear something

Another product, Ergo Lite, is available for those of you without computer-controllable radios. This gives you with all the propagation tools, but leaves out the CAT program. You can still use the predictive functions for a particular frequency or station, but must manually tune it in. You can also use this program to view the contents of frequency database files, though again, you must manually tune in the station once you know its frequency.

Ergo is designed for both the serious Dxr, who wants to listen to some of the rarer broadcast stations on the shortwave bands, and the novice, who want to listen to the more popular shortwave broadcasters. While the program doesn't have a fancy interface, the simplicity of the design lets you quickly access all the functions of the radio you've chosen. Overall I found the software easy to understand



The Ergo software in operation. You can see that each of the functions of the software are contained in an individual window.

and to have performed as promised. Likewise, the propagation predictor and database manager let me find shortwave broadcast stations quickly by helping me avoid frequencies that would have been dead because of propagation conditions at the time I was monitoring.

Smart Control

Smart Control is a series of four separate programs that have been developed by FineWare (also known for their Radio Listener's Database program) for four of the most popular computer-controlled monitoring radios on the market. Smart Control supports ICOM IC-R75, Japan Radio NRD-535/545, Drake R8 (A and B), and Kenwood R-5000 and TS-440S.

The computer screen is in the "virtual control panel"-design style in that it closely emulates the look of the original radio. However, there are many more features that take the program beyond a simple control interface.

The program allows access to databases of frequencies stored in the computer, as well as the frequencies stored in the radio itself. This allows you to use the features of either the radio or the computer as suits your needs.

One feature that stands out is the way in which database information is managed in these programs. You can get a listing of all the stations available either at a given time or on a given frequency. You can also get the entire schedule for a single station. A band plan is provided to quickly take you to areas in the radio spectrum where SWBC, ham, and utility stations are found.

A logging program is provided and will automatically begin with time, date, and frequency information. You can then add any additional information and notes. The database can be exported in a popular format used by many radio monitoring magazines and groups.

A shareware version of these programs is available from Fineware's website. The file is only 1.4 Meg, so it does not take a great deal of resources or time to download. The file itself is in ZIP compressed format, so you will need a compatible utility to extract the installation files and install them. The actual installation process is fast and easy.

Set-up of the software is straightforward and accomplished through an options pull-down menu that is easy to locate. All of the functions are set using easy-to-find radio buttons set under clear-

ly defined tabs. If you do need any assistance, there's a help function which includes special summary topics on the operation of the software, memory management, and logging stations heard.

You can use the software as a virtual faceplate and simply tune and control the radio from your computer (you cannot control certain functions, however, such as volume or RF gain). Where the software really begins to assist you is when you use it with either the radio's own built-in memory or frequency database files. This allows you to view lists of stations and their frequencies, and then tune to the one you want by pointing and clicking.

You can also scan through groups of frequencies to search for station activity. Scanning can be done through a built-in band plan for either shortwave broadcasters or utility stations. You can also turn on a feature that provides you with a visual log (which can be saved) of the signal strength activity found over the range of frequencies covered.

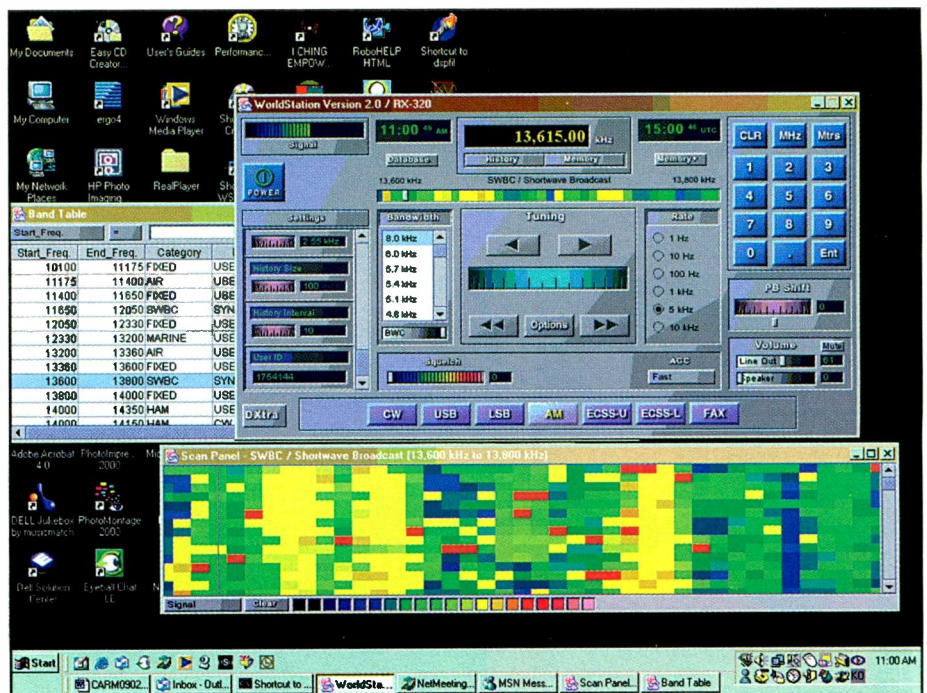
The software also contains additional aids, such as a timer for turning the radio on and off while tuned to a specific frequency up to over 30 separate time periods. If you register the software you also get a simple propagation predictor (MUF) and the ability to print out your logs in a standard reporting format.

Despite all the features in this program, it is still simple and intuitive, no matter which of the four radios you are using it with. It is a true CAT program in that it is definitely more than a "point and click" alternative to using the radio itself. You will find the real potential of your computer-compatible radio is fully exploited, particularly if you register the program to get full use of the logging program. This is definitely an ideal program for those who like working with databases of known stations to create software logs for collecting QSL cards or submitting monitoring reports to SWL clubs or magazines.

WorldStation

I have profiled this software program before, and I still think highly of its features. Because it's dedicated to the operation of Ten-Tec's RX 320 and 350 DSP receivers, it really optimizes their performance. WorldStation has all the features that you would expect of a CAT program and a few more. It offers excellent scanning, bandplan, and database management functions, but what really makes it stand out is its use of JAVA programming.

By using JAVA, the WorldStation program is not restricted to operating in the Microsoft Windows environment. This means that if you have a Mac- or UNIX-



This screenshot shows you WorldStation in scanning mode. A shortwave broadcast band has been selected, and the results of the scan have been captured in the scan panel. This visual data can now be analyzed to determine which frequencies are most likely to have active stations on them.

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based computer you can still easily use program. JAVA itself is notable for its stability and features. As a result, you will find that the look, feel, and operation of the program is superior to most Windows-based programs.

For the user, this means more functions are on the screen, rather than hidden in pull-down menus. You will also find some interesting innovations in the way the display screen operates, with 3-D buttons and controls. It may seem a minor point, but if you are going to be using the software for many hours you will find the display less fatiguing than other programs.

Included in the programming is a very sophisticated scanning function that allows you to build a graphical analysis of that portion of the radio spectrum where you are looking for stations to monitor. By simply allowing the software to scan over a given time period, you build up a record of activity that then provides a prediction of the expected occurrence of a station, and whether or not it is truly DX.

The installation of WorldStation is slightly different from the others mentioned, and is actually a bit simpler as you receive an installation program rather than a compressed file that needs a special utility to set up. However, because the

software is programmed in JAVA, you must first download and install the free JAVA runtime environment from Sun Microsystems. That step is also simple and, once installed, it is automatically accessed by WorldStation. The instructions provided with the software explain each step very clearly, so the installation is one of the simplest I have encountered for any software package I have ever used.

Its actual operation is very intuitive. All the major controls (including setup and configuration) are shown when the software is running. To activate further features you use a series of simple, one-key keyboard commands, which give you access to all of the radio's functions, as well as frequency databases, band plans, and scanning functions.

One important feature of the program is scanning and is accessed through a special set of tuning buttons and windows that become available when scanning begins. You can choose a range of frequencies to scan for station activity through a band table window. The band table provides a well-defined list of services (broadcast, utility, amateur, mobile, fixed, and so on) with their corresponding frequencies from the broadcast band through to 30 MHz. Clicking on any one

of the starting frequencies for a particular group will immediately set up the scanning range. To scan, merely click on the button that begins the scanning function and then listen. If anything is heard, you can stop the scan by clicking the stop button. If you want, you can create your own range of frequencies to scan by adding a new line to the band-scanning window and editing its contents.

An important aspect of the scanning function is a scan panel that provides a visual display of signal activity found on each frequency as it is scanned. This provides a visual record of station activity over time showing the accumulated activities on a range of frequencies. In addition to viewing the raw information gathered through the scanning, you can also perform a statistical analysis. This allows you to refine the visual information shown so that those frequencies which are more likely to provide station activity are shown more clearly. This feature is useful for people who monitor non-broadcast frequencies where activity may be either random or scheduled at unspecified times. By allowing the software to scan a selected range of frequencies over a long period (24 hours, for example), you can gain a clearer picture of the total activity found there,

letting you predict which frequencies are most likely to provide station activity.

WorldStation scanning functions make it a good choice for those who want easy-to-operate CAT software for general radio monitoring, as well as those interested in listening to harder-to-find utility services or unscheduled stations.

ScanCAT Gold

This is definitely the program to buy if you want to control a VHF/UHF scanner. The number of makes and models of radios that this software controls is exceptional, with somewhere over 70 models listed at this time.

The main feature of this program is scanning large banks of frequencies, whether by defining a range of frequencies or by using a database of frequencies. You can create, modify, link, or filter these files in order to get to the frequencies you need. Simply clicking on a button on the screen adds a frequency to a file with optional description and time stamp. You can then build a log file from those frequencies that can be exported to a text file in a format recognized by the major DX clubs and magazines. Also, dbase, Access, and Btrieve files of frequencies that can be downloaded from various subscription services or purchased on CD can be used with ease.

The control panel is dual-featured, letting you switch between basic and advanced scanning functions. The basic functions provide pull-down menus that give you access to popular bands in both the HF and VHF/UHF frequencies, as well as dbase files that you have placed into your computer. With these you can scan selected ranges or banks of frequencies using the controls provided.

The advanced scanning feature gives you either directly control the radio or use single or multiple files of frequencies for scanning. The controls also allow you to log "hits," record lists of frequencies from those hits, or record the station as a wave file, if you have connected your radio's audio output to your computer's sound card.

In addition to these general features, the ScanCat also supports the individual functions of certain radios. For example, if you have the BEARCAT Trunk Trackers (BC895, 245, or 870) it will enable you to use these features properly. If you own an ICOM HF and VHF radio, you will be able to scan through both, moving up and down the RF spectrum as needed.

The key word to remember, though, with this software is *scanning*. What this software package does so well is cover lots of RF real estate quickly and efficiently. If that is your monitoring requirement, then this software will fit your needs very well, especially at the UHF/ VHF frequencies.

ScanCAT Gold Ver. 8.25 is available as a downloadable demo program, being a reasonable 1.75 Meg in size. Installation is very simple, as it is an executable file rather than a compressed file needing a utility to extract it. Once the software is installed, all you need to do is select your radio and the serial port it is connected to on your computer and it should begin working immediately.

The control screen for the software provides you with two methods of scanning: basic and advanced. The basic mode lets you select from a series of pre-defined frequency ranges available from a pull-down menu, or from a database file of similarly pre-defined frequencies. The advanced mode lets you tune the radio manually using a virtual tuning knob or up-down buttons. The advanced mode also lets you select ranges of frequencies or banks of frequencies from files. Likewise the

advanced mode provides controls for logging stations heard, recording the audio from the radio if its audio output is connected to the computer's sound card. As with some of the other software mentioned in this column, ScanCAT has a spectrum analysis function that is used in the scanning mode.

It is definitely in the scanning of a large number of frequencies that the ScanCAT program really shines. In this regard, I found its features best suited to VHF/ UHF monitoring, rather than HF or LF applications. This is not to say that one should overlook ScanCAT for such tasks as scanning for HF utility stations—to say that the software is popular with that group of radio monitors would be an understatement. Still, where the software comes into its own is when it is monitoring frequencies that have a low noise level that allows the signals to be clearly heard.

Why this is important is in the way in which the ScanCAT program triggers either the stopping of a scan in order to hear a station, or the logging of a station when it is encountered. This is accomplished by setting a threshold signal strength level on the relative signal strength meter. This method works well, unless there is a high level of either natural or man-made background noise, which can often be well over the trigger point. The problem with HF or LF signals is that they are often found under background noise, so it is hard to trigger the stop-scan and log feature. Still, having said all this, ScanCAT is very useful in scanning banks or ranges of HF spectrum, stopping the scanning manually when a station is heard.

So, ScanCAT is still the number one program on the market for controlling the largest number of computer-controlled monitoring radios. While being able to make that claim, the software is still better suited for monitoring activity in the VHF/UHF ranges where you need to cover a large amount of RF real estate quickly. When applied in that manner, ScanCAT is an amazingly versatile program that will assist you in getting the most out of your scanner. It is still very useful for those who monitor the HF or LF spectrum, but with less access to some of the advanced features that favor the higher frequencies.

What's Next?

Next month, I'll be looking at software programs that use database files in order to operate. These databases can be lists of frequencies for various radio stations, which can include additional information such as the times when broadcast stations are on the air. Some software programs help you create your own databases, such as those programs that help you log the stations that you hear.

One question that you've been asking quite often is how to create a new database file for use by a particular CAT program, or how one modifies an existing one to edit the information found there. I'll be providing good basic information on how to do that without going too far into the deep end of technical talk. Once you have the basics laid out for you on how a database file works, changing and modifying one will be easy.

Contact me with ideas, comments, and suggestions at <joe@provcomm.net>, or by mail at "Computer-Assisted Radio Monitoring," c/o Joe Cooper, PMB 121, 1623 Military Rd., Niagara Falls NY 14304-1745. Remember, I cannot answer general questions about computers, software, or operating systems, but I will do my best on any questions about the content of the columns or computer-assisted radio in general.

Thanks for reading this column, and I hope that the information provided here will help you get the more out of your computer and monitoring radio than you ever thought possible. ■

A Potpourri Of Your Projects And Ideas

I'm opening the Readers' Mailbag again for this issue and checking out the amazing potpourri of offerings we have this month! We've got interesting things to build and lots of great stuff to read, so let's get started!

The Man-From-Mars Radio Hat

First, to end the year on a light note, here's a tidbit from reader Bill Morris, the MerriLei Corporation Man-From-Mars Radio Hat! This bit of frivolity was actually sold through magazine advertisements, and in larger New York City department stores in 1949. It was touted as being ideal for cyclists, beach goers, Boy Scouts, or sportsmen. Costing \$7.95, it was available in lipstick red, chartreuse, tangerine, bluish pink, lavender... well, you get the idea. The manufacturer coated the tubes with thick plastic to protect the user from glass shards in the event a tube was smashed. The radio was featured in the June 1949 issue of *Radio-Electronics*, and it also earned a page in the *Rider Perpetual Troubleshooting Manual*. A copy of the Rider schematic is presented for those of you who might want to try duplicating this novelty set.

Bill homebrewed a copy of the hat, but notes, "Everyone gets a kick out of that hat—except my wife. She directs as much hate to it as a woman would direct hate at pornography. I built it for a recent meet at Elkhart. Many members wanted to take picture of it. A few didn't want to be associated with me—go figure!"

Bill, I don't think I'd be caught dead wearing one either!

If it makes our deadline, I'm expecting a photo of Bill modeling his version of the Radio Hat! If not, the cover scan of the June 1948 *Radio-Electronics* will give you some idea of what the radio looked like.

Building The Man-From-Mars Radio

Unfortunately, some key component values were not given on the schematics,

notably the variable tuning capacitor and loop antenna coil values. The original used a compression mica trimmer for tuning; the smallest thing available in that era, but I suspect a more modern substitute could be gleaned from a defunct transistor set. Some cut-and-try experimentation will be needed for the loop antenna. The size of the loop determines the amount of energy intercepted from broadcast signals, so don't try to skimp on the size of the original five-inch loop diameter. Inductance values between 180 and 300 μH should be a good starting point, depending on the tuning cap capacitance range. The original loop was swivel-mounted, permitting the user to adjust the antenna orientation for maximum signal strength.

The circuit was billed as "an efficient ultraudion circuit," and was operated from a 22.5-volt B battery and a single 1.5-volt flashlight cell for the filaments. The batteries were housed in a remote battery pack. I'd suggest using three or four 9-volt transistor batteries in series for the B supply, and perhaps a C or D alkaline cell for the A filament supply. The 20-meg grid biasing resistors might be a bit hard to find, so I suggest using the more common 22-megohm value (1/8-, 1/4-, or 1/2-watt sizes will do).

Reading Material

Reader Mike Grimes of Plano, Texas, was kind enough to provide a brief synopsis of several vintage—yet still popular and available—textbooks that delve into radio theory and service. These are often offered via on-line auction venues, such as eBay (<www.ebay.com>), or by



Here's reader Bill Morris modeling the latest in radio fashion—a replica of the Mars Radio Hat!



The hat is tuned using a tuning capacitor and knob recycled from a junked transistor radio. Note the loop antenna assembly; Bill uses a quarter-inch phone plug to permit tilting the loop for the best signal.



Under-helmet view shows the construction technique used to build the Mars Radio Hat.



The cover of Gernsback's Radio-Electronics June, 1949, issue featured the Mars Radio Hat, a product of MerriLei Corporation.

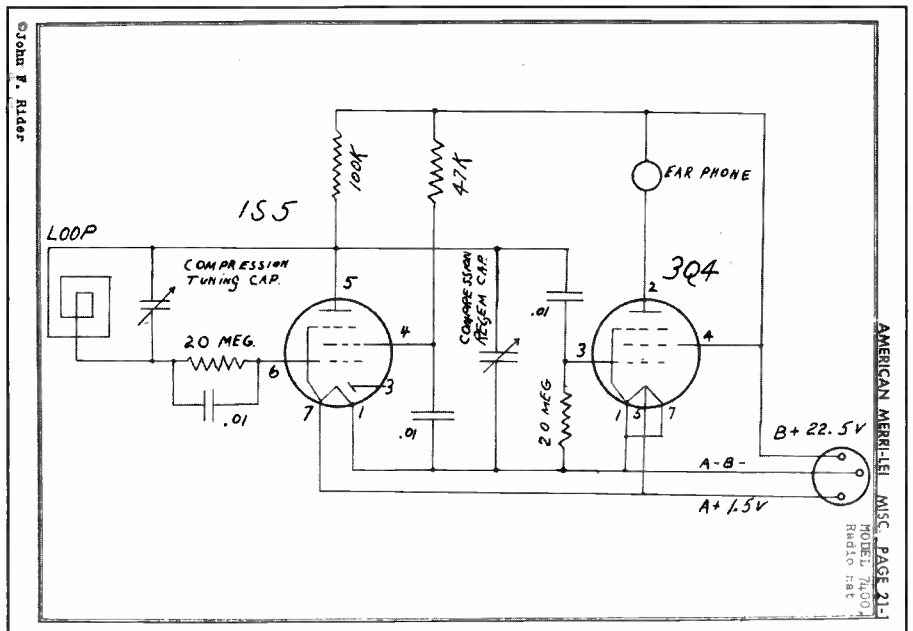
used book dealers. Most used-book vendors are networked with other dealers; if they don't have the book, they can often locate one and obtain the material for you. Here's Mike's report:

During the past year I have been reading several textbooks on the principles and theory of radio. The intent was to review and get a better understanding and grasp of the principles of radio, as if I was a beginner. I have been associated with electronics and education for many years, but I wanted to improve my own understanding of basic radio. Also, since I collect vintage radios, I wanted not only to restore them electronically, but also to improve my understanding of how they worked. Thus, it necessarily included a study of tube-type theory, which can be carried into solid state as well.

As I surveyed the current and classical texts, I noticed some seemed to be much better than others in explanation and clarity. From a fairly large cross-section of texts I selected 12 for study (see below). I tried to cover the most popular, contemporary, and classical texts, but certainly not an exhaustive list. I will not critique each here, but will give some of my impressions of the best (in my opinion) and offer recommendations.

While some of the texts were not written strictly for the purpose of in-depth study, they were written as a quick review for radio repair and restoration. These did make an effort to get the essentials across, so I included them as they have merit as well. Perhaps it is a bit unfair to include them in the broad range of texts, but again, the purpose here was to review and understand radio principles.

I've listed the texts below in order of my preference. Starting with the best, I recommend *Elements of Radio*¹ by Marcus and



Schematic of the MerriLei Mars Radio Hat scanned from Rider's.

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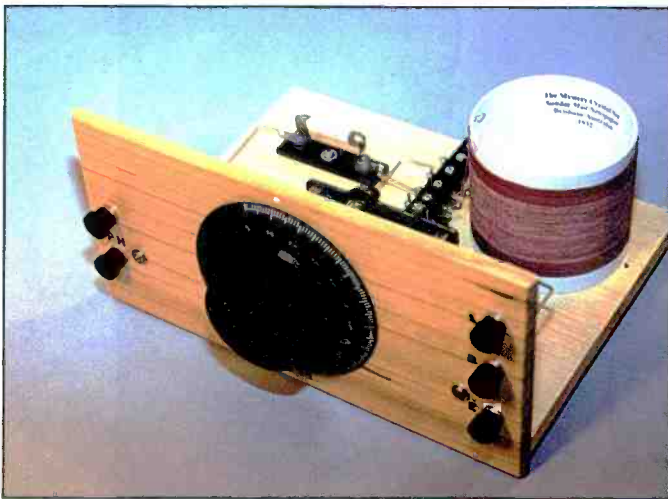
Please send me more detailed information about this new scientific marvel.

Name _____

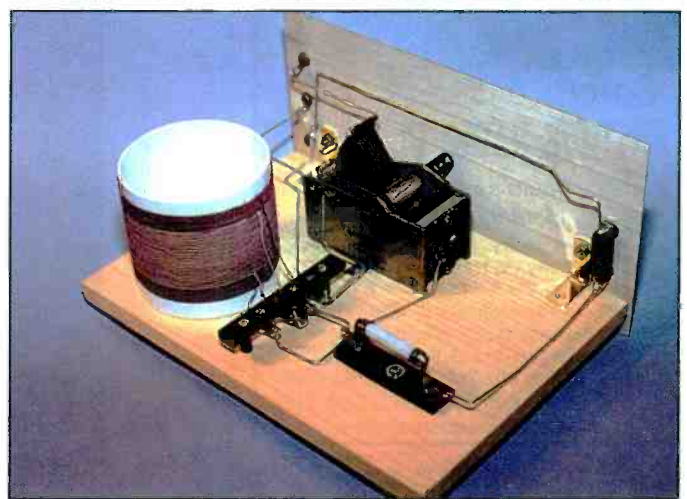
Address _____ Zone _____ State _____

City _____ RE 9-49

The original magazine ad for the Mars Radio Hat!



John Haught's version of the Mystery Crystal Set. As usual, John's craftsmanship is exemplary.



A rear shot of John's Mystery Crystal Set. John makes use of vintage parts, when available. The coil form is wound on plastic pipe, and the fixed detector is made from a vintage grid leak housing. Clever!

Horton. This text had, by far, the best clarity of discussion and is detailed enough to explain without being too elementary. The pace is right and holds your interest. Although dated, it compares well with contemporary publications. Of course, it doesn't cover solid-state subjects, but I did not find this a disadvantage, as the theory translates well and one can quickly progress to solid state with some supplemental reading. The figures, illustrations and examples exactly illustrate the discussion. The topic organization lends itself to logical progression, making theory discussion easy to follow. The figures and illustrations were nearly always on the same page as the discussion. This may sound trivial, but if you are trying to follow theory and discussion from drawing and figures on a different page from

the discussion, it can lead to frustration. In addition, I found that several times, while reading other texts, I would become confused with their explanation and would refer back to *Elements of Radio* for a better understanding. If you study no other text, read this one.

My second recommendation is *Learn Electronics Through Troubleshooting*². It includes theory and principles from the point of view of troubleshooting. I found this an excellent tie to the principles and certainly an excellent supplement to *Elements of Radio*. It is also clear, to the point, and has excellent illustrations using two color graphics. By the use of cause and effect, a good discussion leads to principles. This text also includes an introductory chapter on solid-state radio.

*Practical Radio Servicing*³, another

Marcus text, comes in third. It's also an excellent text with clear discussion and examples. While mostly directed toward repair, it also contains sufficient theory and principles of radio to meet most needs.

I'll not disparage any of the texts listed (see References 1 through 13 for a full list)—they all have much to offer and are well worth your time. I would not offer them as first reading because some tended to be tedious and unclear in discussion with long sentence structure and assumed some vital points. Certainly I would encourage you to read any and all texts available to you, as it will only enhance your understanding and enjoyment. Whether you are a beginner, an old timer, or an engineer and want to maximize your radio experience, I recommend starting with these texts. Most are still available through your radio organizations, the Web, the library, or your local swap meet.

If I have excluded some obvious candidates or left out your favorite, please let me know. I'd like to hear from you. My hope is that you will derive some pleasure from reading and studying a good text and get excited about this wonderful phenomenon known as radio!



Al Cikas, KAGDL's growing family of homebrew Ocean Hoppers! This shot shows the original Allied Ocean Hopper receiver and the seven homebrew versions it inspired.



Al Cikas recently sent in these photos of receiver number 7!



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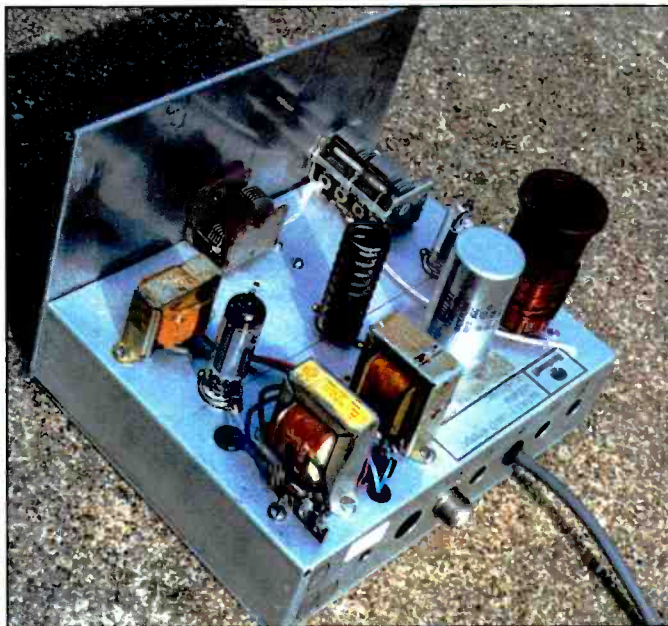
"33 Simple Weekend Projects for the Ham, the Student, and the Experimenter" gives only a hint at the fun and satisfaction to be found between the covers of this little book. Dave Ingram, K4TWJ, has pulled together a wide ranging collection of do-it-yourself electronics projects from the most basic to the fairly sophisticated, and even touching on the frivolous.

You'll find an interesting and very do-able array of useful devices: station accessories for VHF FMing, working OSCAR satellites, joining the fun on HF, trying CW, building simple antennas, even a complete working HF station you can build for \$100.

Add a measure of practical tips and techniques on how to build electronic projects yourself, and you've got an information-packed book that will keep the newcomer or the most experienced home-brewer busy for many a pleasant weekend.



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or call toll-free 800-853-9797



Rear view showing the top chassis layout for the Ocean Hopper clone! It's quite a bit more than might be expected!

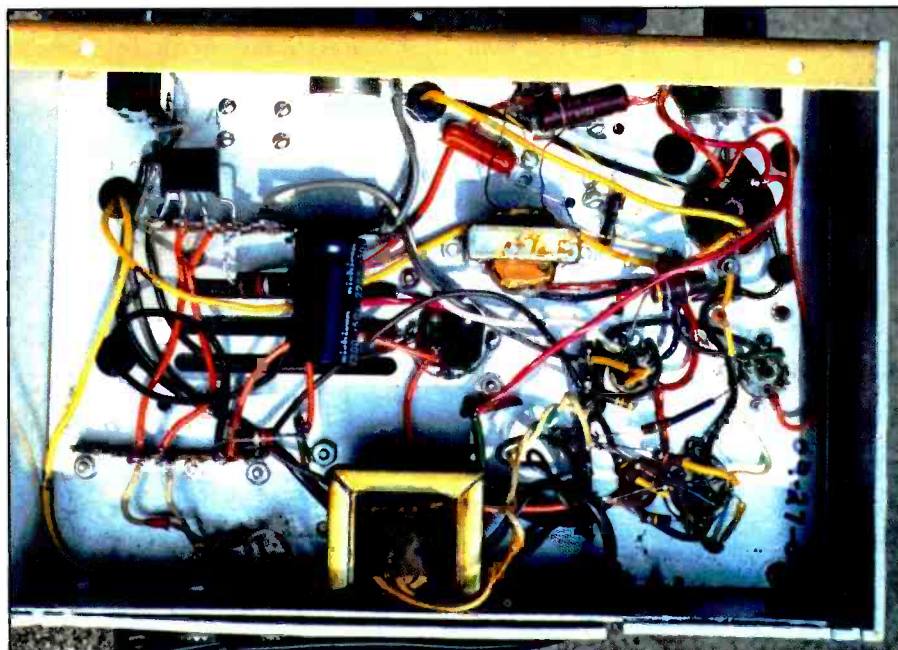
**John Haught's Mystery
Crystal Set**

This letter has been sitting in our mail-bag since October of 2000, so now's as good a time as any to share it! Reader John Haught wrote:

The Mystery Crystal Set has been completed. I don't see how or why, but it is a pretty good performer! I can receive all the local BC stations, and at night DX with foreign sta-

tions being heard. The set can be improved by adding a BC wavetrap because of station interference—this I might add later.

To keep the set looking vintage, I substituted a 1N34 diode for the resistance element in an old glass tube-grid grid-leak. Just find an old glass grid leak, heat and remove the ends, drill the ends for the diode wire leads to extend through, reassemble, and solder the leads to the ends. A piece of three-inch diameter plastic pipe was used for the coil form, as per the information in the November 2000 issue of *Popular Communications*.



Here's the under-chassis view. Even small two-tube receivers can be more intricate than first imagined. The receiver is built on a chassis salvaged from a Heathkit DX20 transmitter.

The set was easy and fun to build, and more fun to operate. I trust many of your readers enjoyed the same experience. I'm looking forward to your future articles, as they prove quite interesting!

Al's Ocean Hopper Receivers

Reader Al Cikas, KAGDL, from Sherman, Illinois, is building homebrew versions of the famous Ocean Hopper radio! Al writes:

Regarding the previous materials I've sent to you on the Ocean Hopper-based homebrew receivers, I've realized I'd never put them in one place at the same time. A few weeks ago I gathered them together, along with the original Allied Radio kit version that inspired it all, and took some photos. I thought you'd enjoy seeing them. I have wound some 28 coils, and all 28 will fit any of the eight receivers. This may encourage your readers to do the same.

Al ads in a second letter:

I've also taken some detailed photos of the last receiver I constructed—number 7—based on the Allied Ocean Hopper. The pictures are intended to give your readers some options on what a homebrew receiver project might look like. While I believe I have wrung out every possible enhancement of the original design, I'm sure some sort of challenge to your readers might bring even more new ideas. With that, I rest my case.

Until next, year, we wish you Happy Holidays! See you in January.

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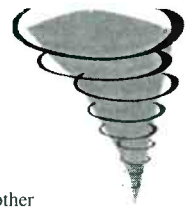
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Working Special Event Stations: Fun For You, Nifty Wallpaper For Your Shack!

Hams collect stuff—there’s no denying it. We can squirrel things away with the best packrats. We can forget we own stuff and delight in rediscovering it years later! This, in fact, is one of ham radio’s most endearing qualities. Underneath our rough and ready exteriors, we’re soft and even a little “syrupy” when it comes to collecting special sentimental goodies!

Some hams collect radios themselves, while others gather up interesting QSL cards or hard-to-find Morse code keys. Many of us collect operating awards, and when we finally qualify for them, we proudly display the awards in and about the rest of the “wallpaper” we’ve amassed.

Check out the shack pictures in any ham magazine and you’ll almost always turn up something framed and on the wall: QSL cards, a contest award, DXCC, or whatever. This is Amateur Radio’s version of the “ego walls” that we usually associate with the offices of certain professionals. It’s meant to impress—and to let your fellow hams know what a great operator you are. It also serves as a way to reflect on the mileposts of your ham radio career.

If your shack walls need covering, let me suggest collecting Special Event certificates as the absolute fastest way to cover them up (short of applying actual wallpaper, that is). This month’s column is full of tips on how to acquire Special Event wallpaper of your own. By using just a few of these tips you’ll be knee deep in certificates before you know it!


Something Special

In case you’re still wondering, Special Events are on-air activities designed to generate interest in specific happenings.

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

Special-Event stations show up year round, although the busiest months seem to be April and May, as many groups use

them as a warm up for Field Day. The “events” can range from a town festival, the commemoration of special historical events, the opening of museums, club anniversaries, or even holidays, such as operating from Christmas, Florida, in December. Clubs use these opportunities to get on the air in a big way, not only to publicize these events to the ham community, but also to demonstrate ham radio to the public. Just ask anyone who’s been bitten by the Special-Event bug: Any excuse will do when it comes to getting on the air!




KB1HGK
Sturbridge, MA

Radio Operators for Missing Children
Special Event Station May 19, 2002


“I am only one;
but still I am one.
I cannot do everything,
but still I can do something.”
Helen Keller

The 2nd Annual
International Missing Children’s Day Event
“Searching All Four Corners of the World”




Molly Bish

Birth 08/02/1983
Race White
Missing 06/27/2000
Height 5’ 7” Weight 127 lbs.
Eyes Blue Hair Blonde Sex Female
Missing From Warren, MA USA
Age at Disappearance 16yrs




**Molly Bish
Suspect Composite**

Eyes Dark
Hair Brown
Sex Male



Vicke Lee Lamberton

Birth 10/30/1989
Race White
Missing 02/19/94
Height 5’ 3” Weight 110 lbs.
Eyes Brown Hair Lt Brown Sex Female
Missing From Worcester, MA USA
Age at Disappearance 4yrs



Jacqueline Vasquez

Birth 01/14/2001
Race Hispanic
Missing 05/04/2001
Height 3’ Weight 30 lbs.
Eyes Brown Hair Black Sex Female
Missing From Avondale, AZ USA
Age at Disappearance 4mo

Statistics

The Association of Missing and Exploited Children’s Organizations (AMECO) serves as a membership organization for non-profit missing and exploited children’s organizations and to support the endeavors of the membership on behalf of missing and exploited children, their families and the community-at-large. These purposes are strictly **non-commercial** and **non-profit**.

There are over 40 certified non-profit missing and exploited children’s organizations within the United States and Canada.

In the United States there are an estimated **114,600** attempted abductions of children by non-family members; **4,000** of the attempts are successful. Of those 4,000 children, **200-300** are taken by strangers. Approximately **100** of the children abducted by strangers are murdered and of those, **74%** are dead within the first three hours of the abduction.

On May 6th, 2001, we held our first ever **Ham Radio Special Event** to raise awareness about missing children and adults. On that same day we were contacting other ham radio operators about missing children, two young girls were **abducted** by strangers. One of those children was a 5 year old girl who was later found **murdered**.

The other is the infant pictured above. Jacqueline Vasquez was **taken** from a swap meet while her mother helped another of her children. She is still **missing**. Jacqueline has a distinctive heart shaped birthmark on her right arm. She is now 18 months old. If you have seen her or Molly, please call **1-800-The Lost** (1-800-843-5678).

QSO WITH	MO/DY/YR	UTC	MhZ	RST	MODE

Special Event stations call attention to or commemorate a wide variety of events, activities, and causes. This certificate was used to acknowledge contact with the KB1HGK Special Event station highlighting the group’s second annual Missing Children Day, May 19, 2002 (Sturbridge, Massachusetts).

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

Special Events, Easy to Find

How do you find Special Event stations? Most ham radio magazines devote some space in each issue to publicizing the Special Event operations occurring that month. These generally appear as brief announcements listing the sponsoring club, the reason for the event, a frequency or two, and details on how to claim your certificate. If you have access to the Internet, point your browser to <www.cq-amateur-radio.com> (click on Hamfests and Special Events) or to <www.arrl.org/contests/spev.html> for on-line listings. All you need to do is get on the air and begin the hunt.

Most operations will use only one or two transmitters, and antennas can range from verticals to multi-antenna beam arrays. Almost everyone operates on the 40-, 20-, and 10-meter bands and will usually accommodate a Morse code contact if you ask for one.

When beginning your search, remember that interference and band crowding can force the stations to move up or down in frequency, depending on the bands. If the operation doesn't list any frequencies, careful tuning of the General-class subbands or the Novice/Technician 10-meter phone subband (28.300 to 28.500 MHz) should turn up what you're looking for. Some stations are even including VHF or packet operations so Techs can get in on the fun.

Put 'Em In The Log

So how hard is it to work a Special Event station once you've found one? As I mentioned, most Special Event Stations are relatively easy to work. The most popular events, however, generate a lot of interest, and pileups can result. (This merely makes the chase a bit more interesting!) When you work a station, be sure you carefully mark down all the QSO information.

Some stations will give you a contact number to help the operators track you down when it comes time for them to confirm your QSO. Many groups work

upwards of 3,000 hams in the course of a weekend and, if your information is more than a little off, they may not find your contact and you'll wind up in the dreaded position of being "not in the log."

Obtaining Certificates

Well, I worked one, so what do I do now? If you first discovered the event in a magazine, it probably listed what the award was (a special QSL card, a certifi-

cate, or both) and how to obtain it. Usually you send in your QSL card with all of the information about the contact (the day, time, the callsign you worked, the band, and the signal report you gave. If the op mentioned a contact number, make sure you display it prominently on the card. And make sure you've included a self-addressed, stamped envelope (SASE).

If a group says it's offering certificates, it's best to send a 9- x 12-inch SASE. Most certificates are printed on 8-1/2- x 11-inch stock, and this will ensure that yours will

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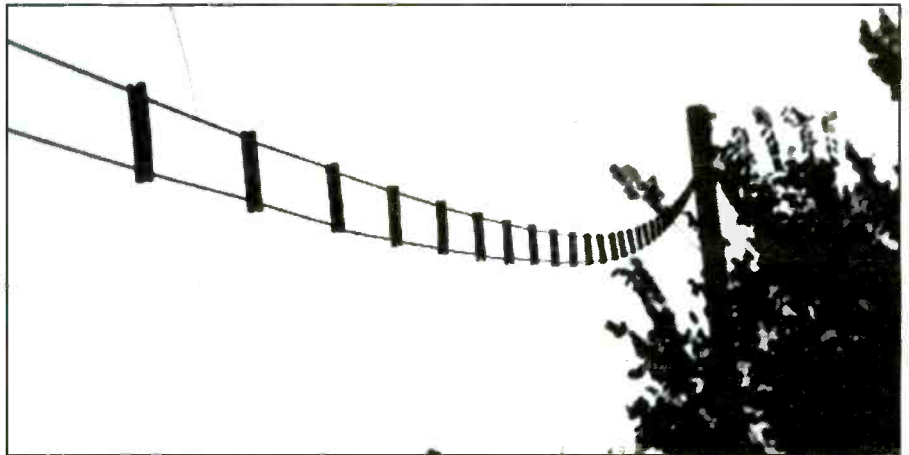
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This handsome QSL card was the prize for contacting W1S, the Pawtuxet Valley Amateur Radio Club's Special Event station celebrating "Subs on the Air" (SOTA). The submarine on the card is an ex-Soviet cruise missile submarine, JULIETT 484, now owned by the Saratoga Museum Foundation and moored in Providence, Rhode Island. The PVARC hams were using a special callsign for the day, W1S (the "S" is for Submarine, the "1" indicates New England). This callsign was specially issued by the FCC and the ARRL for use during the event.



Q. What did your great grandfather know about ham radio feedlines that you've probably forgotten?

A. That open-wire transmission lines, sometimes called ladder line, kick butt compared to coax in most situations. If you're ready to experience a virtually lossless feedline for your next multiband antenna, check out W7FG's "true ladder line" feeders. The lightweight, UV-resistant "spreaders" keep the 16-gauge parallel feedline wires about four inches apart, giving the line its characteristic 600-ohm impedance (think of this stuff as TV twinlead on steroids). Because W7FG's lines are assembled by Helpworks, Inc, a sheltered workshop for developmentally disabled adults, using this feedline benefits more than just your signal!

Check out W7FG's collection of antennas and feedline at <www.w7fg.com>.

not come back folded beyond recognition. Remember that larger envelopes often require extra postage!

That's all there is to it! In a few weeks you should get your certificate in the mail, ready to be framed and displayed. Before

too long, you'll have your own "wall of fame" for all to behold! As usual, send your QSL cards, questions, and letters to me at *Popular Communications*, c/o "Ham Discoveries," 25 Newbridge Rd, Hicksville, NY 11801. ■

homeland security

power, and products

by Alan Dixon, N3HOE / WPUC720 / KST8678

Emergency Power For Your Home And Mobile Two-Way Radio Communications Station

Possibly our biggest single vulnerability in a disaster situation is loss of commercial electric power service. As long as the current continues to be delivered to our homes, many aspects of our daily household lives will remain in order. The roof might blow off of your house, but if the electricity manages to stay connected, your food will still be safe in your refrigerator. You could still park your face in front of a fan to stay cool, or an electric space heater to keep warm, regardless to the catastrophic damage to your home *if* you still happen, however unlikely, to have electricity.

But lose power for more than 24 hours, even with *nothing* else amiss, then your whole world becomes turned upside-down. Perishable food spoils and ice melts. Suddenly we have little control over climate-related comfort—we're literally left in the cold and dark. Most of us wouldn't know what time to wake up. We wouldn't be watching TV and even our handheld cell phone would miss its daily charge. In a number of ways, when the lights go out, we're *finished*. That's why this month we're considering emergency power for your home radio communications equipment set-up and even for your mobile station.

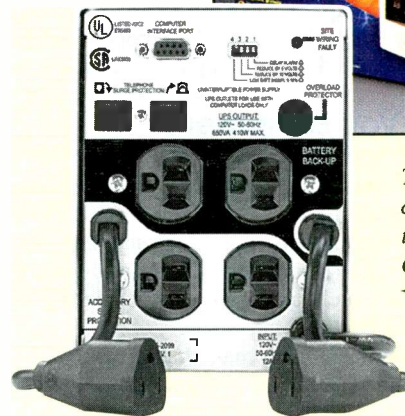
Being Prepared!

It doesn't have to be this way, however. There are certain preparations we can make, some extensive and, therefore, expensive; others more modest, affordable, and quite effective. We really need to consider the more cost-conservative means before we indulge our full imaginations and devise whole-hog solutions to protect and provide for our entire households. With that in mind, and considering our primary scope—*communications*—we'll see what we need to keep our emergency communications functioning during typical power outages. This article is intended to give you general ideas for coming up with your own backup power configurations. It is not intended to be comprehensive by any means. An entire book could be written on this subject alone, and still would cover only major points!

One of the less useful items to have on hand for a *momentary* power outage, is—surprisingly to some—a generator. Yes, generators are excellent for typical outages lasting a few hours up to perhaps a few days. Generators have two notable functional limitations, however. For those annoying short outages lasting mere seconds or minutes, who wants to run outside, possibly in rain and lightning, and have to deal with starting a balky engine and throwing transfer switches which may or may not be easily accessible? By the time the generator is running and the switches are thrown, this sort of outage will likely be over. Even in a sophisticated system with automatic startup and transfer switching, this sort of momentary outage (you guessed it) could well be past. A generator is not the *fastest*, nor often the *simplest* means of dealing with certain power outages.

Another limitation all generators share relates to their fuel supply. Smaller generators I have had experience with—typically less than 1-kilowatt (1000 watts) output—easily consumed a gallon of gasoline over a 12-hour stretch. A large five-gallon jerry can would power one of these units for about two and a half days of continuous use. Larger generators will require even more fuel. What if an

The APC 650 Battery Backup system. (Photo courtesy of American Power Conversion Corp.)



The 650's back panel connections. (Photo courtesy of American Power Conversion Corp.)

outage lasts a week or longer? How much gasoline can you realistically keep on hand? How much can you safely keep? Institutional emergency backup generator installations often have fuel supplies in thousands of gallons, with tanks underground or in special bunker rooms. Most of us simply don't have the resources to have such an installation at home, even if zoning, building codes, and homeowner association covenants would permit.

Solutions for both momentary outages and for extended outages require different design methodology. We will look at the shorter outages. As a relatively economical solution to momentary power outages lasting up to about an hour, having one or more uninterruptible power supply (UPS) devices integrated into your home-base station can provide good-to-adequate continuity to your radio equipment. The typical home communications base station, or *shack*, has a standard desktop personal computer (PC) collocated with the communications equipment. If this is the case, you will need one UPS dedicated to your computer and its peripherals, and a second UPS dedicated to selected communications devices. However, if having an operating PC is *not* essential to your emergency communications capabilities, then you have one less group of appliances to power, so you can save more than just a few dollars on backup power.

Take an inventory of your home base communications equipment. Basically, your equipment's power supply requirements will be in one of three categories.

First, some of your radios and related devices will run directly from commercial AC power (110 volts here in North America, 220 volts in the UK). Nearly all of these devices operate on much smaller internal voltages, but for this category, we are concerned mainly with those that are intended to operate either primarily or exclusively on commercial electric power.

The second category is actually a split category. This group includes equipment that requires 12 volts DC power. Here's the

split: Some of these devices will be primarily *mobile* radio equipment adapted for base or fixed use by either internal batteries or a commercial AC power supply providing 12-Vdc output. The third category includes usually smaller radios and other devices that typically run on internal batteries at voltages less than 12 Vdc.

Now, visualize this typical shack setup, very similar to my own home-base station configuration. Consider having two UPS's: one for the computer and its peripherals, the other for radio communications equipment. Have them in close proximity to each other and have their power output cords arranged so they can easily and quickly be swapped if one UPS runs down first and the other still has power, having likely in this instance been underutilized.

When designing your backup power supply, always be thinking in terms of versatility! Always have cables and power distribution strips placed so that they can be reconfigured at a moment's notice, on the fly. As for our two UPS units, having their outputs each going into its own power strip makes a quick swap quite easy. Any radio equipment from the first category, above, is to be plugged into the second UPS: the one *not* connected to the computer equipment.

Our 12-Volt Equipment

Next, we need to consider our 12-volt equipment. You may have one or more handheld radios sitting on your desktop for QRP (low-power transmit) base use, when otherwise not being carried around. These will likely be connected to a common power supply/charger combination, and with each such radio going into a switch connected to an outdoor antenna.

You may also have hand mics, which make handheld use as a QRP base station much more like operating a true fixed base station radio. Additionally, you may have one or more large, high-power mobile radios set up for base station operation, or you may have 12-volt base station radios. For any handheld or QRP radios, including any 12-volt AM CB sets, you can choose one of two options, as your budget permits.

The first and less expensive alternative is to have handhelds powered by their original wall-wart power supplies, if these power supplies will permit simultaneous charging and operation. Many will, but some chargers included with handheld radios are only for charging. If your handheld's power supply will not support *operation*, then you will need to acquire a small power supply that will produce enough current (amperage) to power your handhelds at their highest transmission power levels. If you are operating more than one handheld or QRP rig, make sure that the power supply you get for this purpose will provide enough current to power them all. You will plug this power supply into the UPS dedicated for our radio equipment.

Another alternative for your fixed-use handhelds, and the thing to do for any QRP equipment that you may have, including mobile AM CB radios used as base stations, is to get a small gel-cell-type lead-acid battery pack-charger combination. When I say "small," I mean something containing a gel-cell pack smaller than a car or marine deep-cycle battery. You may be able to use a separate battery and charger, but you will be better off using a battery pack made specifically for deep-cycles of charge and discharge, or one made for communications equipment installations.

How small should this battery pack be, electrically? First, let me say that it can never be too big! I mean, if you really want a larger battery, such as a marine deep-cycle and a charger to match, then by all means, go for it. In the world of batteries, *bigger* means a longer-lasting charge, as a rule of thumb. But our main concern here, in establishing our backup power supply systems, is to keep it within our individual budgetary means. So, buy a battery pack whose *amp-hour* rating is adequate for your needs.

If a battery says that it has a three amp-hour rating, that means, in theory at least, that the battery will deliver 3 amps over a one-hour period, or that it will provide 1 amp of current over a three-hour period, or any other corresponding ratios of current-to-time.

Here's a note to remember when considering power requirements for your handheld and QRP radios. Take a look at the power requirements for one of these devices, as shown in the operator's manual. You will notice at least two figures, and often several. The minimal two different values will be for receive and for transmit. Additional values will be for different TX output power levels, if selectable, and for various RX squelch and volume settings. You need to calculate an appropriate average of these power levels for each device you will be backing up. To do this, you will have to do some "guesstimating," since your operating needs, requirements, and habits will vary considerably from one day to another.

Now for example, in my case, I like to consider the transmit current requirement at its *highest* power. If there is more than one RX current figure, I will use a "midpoint" value. Say the minimum receive current is 0.5 amps with the volume low and the audio squelched, and the maximum RX is 1.5 amps with the squelch open, signal present, and volume at maximum. I like to use the midpoint value, which is 1.0 amp in this example.

Now, you need to figure some sort of average of your transmit-versus-receive current consumption. This will relate specifically to your TX *duty cycle*. Make a decision. Yes, it will be a guess. Given your budgetary concerns here, be conservative. Estimate how much time you spend actually transmitting, say while participating in net operations, versus how much time you spend receiving. Be aware that this RX includes both active listening as well as idle standby awaiting a call. I like to use a 30-percent TX duty cycle figure.

Okay, let's use our midpoint RX current requirement in the example in the previous paragraph: 1 amp. Let's say that our highest transmit current draw is 10 amps. (Please note that for illustration, these amperage figures are a good bit higher than you are likely to actually see for QRP devices in the real world.) Now, given a 30-percent duty cycle, you can see that your time-averaged current requirement is *roughly* 4 amps.

This is a standard ratio calculation. But battery discharge cycle life is not at all an exact science, so for my own purposes, I don't bother to calculate this on paper. I just visualize these values, and I estimate (by weighted interpolation, for those to whom it may matter!).

Now you have a rough time-averaged power consumption for one radio. Figure this for any other low-power radios that you have, and add up the total number of amps. Figure the minimum number of hours of emergency operation that you would absolutely need, and multiply that number by the number of amps.

Let's say you are counting on an hour a day for seven days. That would be seven hours. This seven, times the 4 amps we just calculated, gives you 28. Therefore in this example, you would need a battery pack with a 28 amp-hour capacity.

I must emphasize again that the *current* (amps) figures we are using in this example are much higher than you will probably see in actual handheld two-way radio, cell phone, and QRP radio use. You see, 24 amp-hours does not really constitute a *small* battery anymore! In my own shack, my actual requirement for one handheld VHF/UHF dual-band ham radio and one CB mobile radio, happens to be a 7 amp-hour battery pack. Specifically, this contains a smaller gel-cell battery. This now, is realistic, and a good bit more manageable in terms of money spent. But, also please bear in mind that all of these calculations and considerations do have a measure of compromise. We cannot be ConEd or any other

power company, because we simply cannot have megawatt generators, hydroelectric dams, or nuclear plants. Most of us are blessed just to have adequate antennas, you know!

As you add up your total current requirements for your handheld and QRP equipment, and consider how many hours you will need for these devices to operate simultaneously, you really want to be realistic from a budgetary standpoint. So, do think *minimal*. With this in mind, perform a second calculation considering only the power requirements of whichever handheld or QRP radio consumes the most power. Take this lone amperage figure, and consider how many hours, again at a minimum, you will need this device to operate.

In each of these two calculations, you simply need to multiply the current requirement in amps by the number of hours that you want to operate. In this latter calculation here, let's say that the device in question uses 2 amps. And let's say that you want it to operate for three hours. Two times three equals six. In this example, you want a 6 amp-hour battery. But notice that you performed two different sets of calculations, with two different results. Again, make a decision. To save money, buy a battery with the lower amp-hour figure. For more operating time, get a battery with at least your higher calculated rating.

A Typical Example

To wrap it up for your low-power communications radios, here is an example of how things are actually set up in my home-base shack. I have one 12-volt scanner, one AM CB radio, one VHF/UHF dual-band amateur HT, and one consumer-grade GMRS handheld with headset and high-gain rooftop antenna.

Notice that two of these radios, the ham and the GMRS handhelds, of course, have their own internal rechargeable batteries. I have power supply adapters (wall-wart type for the GMRS, for example) for both of these that are capable of powering each for simultaneous operating and charging. The GMRS' wall-wart is plugged into the communications UPS. The amateur handheld radio power adapter is a 12-volt cigarette lighter type, fed from the battery pack we are discussing.

Now, picture this—the charger for the 12-volt battery pack is fed from the UPS. So here's how it shakes out: Both the scanner and the CB are fed from this 12-volt battery pack. The GMRS has its own redundancy, too. It is fed from its own nickel-hydride (NiMH) rechargeable internal batteries. These are in turn, recharged from the UPS, if need be, automatically. The dual-band ham HT, connected to a rooftop antenna and equipped with a hand mic, has a triple-redundancy. It is fed primarily from its own internal NiMH batteries. These are recharged by the 12-volt battery pack. The 12-volt battery pack is recharged by the commercial power (110 Vac) provided by the UPS. And it all works well!

What we have discussed so far takes into account your lower-powered 12-volt devices. As for higher-powered 12-volt radio equipment, such as a 100-watt HF transceiver or a 50-watt VHF/UHF rig, your considerations are naturally different. Since we are looking into low-budget alternatives for now, we are concerned mainly with providing backup power supplies for your lower-powered communications devices.

Providing emergency power for high-power amateur transceivers requires a substantially larger investment. Just to give you an idea though, there is one configuration for this type of radio equipment that I have seen work very well, and it's not too complicated. More than one resourceful ham I have known used two rather large *unvented* marine deep-cycle gel-cell batteries wired by heavy cables to a heavy-duty *vapor-tight* A-B type switch with a neutral third "Off" position. The power supply feed points for the transceiver connect to this switch, permitting the operator to select either battery.

For recharging, these hams used an automotive-type battery charger. The best choice is a charger that's switchable between a rapid rate of recharge and a trickle-charge. It should have a voltmeter, as well. The charger's cables were routed through another *vapor-tight* A-B type switch again, with a neutral third position. The charger plugs into commercial power (either 110 or 220 volts) and can be set to charge either battery at a time.

It is important to note that there are serious safety matters to consider when dealing with batteries not specifically designed for communications use. In the example given above with the two marine batteries, hydrogen vapors and sparks from any possible source can constitute a major explosion and fire hazard. Have expert assistance on-site when setting up such a system. These sorts of batteries really do not belong indoors, and should never be kept in a garage or anywhere near gas appliances or other ignition sources. Remember: this particular example with the deep-cycle marine (or automotive) batteries is only to give you a very rough idea of what may be needed for such a setup.

Smaller Radios And Other Appliances

Now we need to consider a third category of devices needing backup power, that is, smaller radios and other appliances that typically run on internal batteries at voltages less than 12 Vdc. Most often, your only alternative with these devices is to procure the appropriate plug-in power supply "adapter," once again usually the dreaded wall-wart. You may have to order the proper power supply from the manufacturer of the device in question, or you may be able to get one aftermarket at RadioShack or other electronic supply shop. Plug these into the UPS, and you are all set.

For emergency backup power, I use the APC Corporation 650 model UPS with a volt-amp (VA) rating of 650. (Note: VA is *not* the same as amp-hours.) I would not recommend using a unit any smaller than this. The UPS is 6.6 x 4.7 x 14.2 (HWD) inches and weighs 23 pounds. It has outlets that are both on-line and off-line with the backup power function. It also has audible alarm, switchable transfer voltage, and a PC serial interface to allow a PC to go into a self-shutdown mode, if desired. Windows-compatible software is provided on CD, along with an interface cable. While this unit can supply up to 400 watts, it will do so for only a few minutes. A nominal load of about 110 watts will remain powered up for approximately 37 minutes. A small radio drawing perhaps only 10 or 15 watts should make the UPS charge last considerably longer. For more information, visit the manufacturer's website at <www.apcc.com> or call them at 1-888-289-2722. I use two of these units side-by-side to spread the load around, and purchased them at Sam's Club for \$149.98 each, plus tax.

How about that 12-volt rechargeable battery pack we have been talking about? Be sure to check out the Vector Manufacturing multi-function AC/DC power system featured in the October, 2002, edition of *Pop 'Comm* (it appears on page 50 in "Technology Showcase"). If you don't have that issue handy, go to <www.vectormfg.com> and check it out. Or consider the Xpower 300 "Emergency Power Generator" as shown in the same column in our March, 2002, issue, page 14. Both of these units also include a 110-volt power inverter. While that is not what we are specifically looking for here, it's not a bad extra thing to have. It gives you a little bit more versatility in your backup power configuration.

Don't forget to look at page 28 in the September, 2001, issue! That month's "Technology Showcase" examined the nifty Prestone "JumpIt!" battery back. This model is more along the lines we have been discussing, and appears to be quite an excellent emergency unit. See it for yourself at <www.prestone.com>. Harold Ort has already described these excellent products in great detail, so we won't re-hash them here.

Once again, keep in mind that whenever you are using backup power sources, you must make certain compromises. Like it or not, when the electricity goes out, we *are* in a compromising position. So, in deciding for which radios and other appliances to provide backup power, you will need to prioritize. Unless your home-base station consists of only two or three radios, you need to decide which ones, in an emergency, will be most important to you. You may elect to connect them all to your backup power supply setup. But when pressed into service, you will want to operate only one or two smaller (in terms of current drawn) radios at a time, and those items only on some sort of schedule, such as the monitoring or passing traffic during only the first five minutes of each hour.

In my own home-base station in Florida, I have two appliances in the "other" category plugged into my UPS. One is a low-wattage gooseneck desk lamp. The other is a very small 110-volt desktop fan. These two items can drain a UPS very quickly, but either or both may be necessary in my own operations. My radio room is in a solid concrete structure with steel hurricane shutters. During a hurricane, with commercial power out, I would find myself in the dark and in stifling heat. If I am going to be in the radio room for only five minutes every hour, then I can probably "afford" to run the fan and the lamp. Let's just pray that I don't have to actually test this anytime soon!

When The Batteries Go Dead, And The Commercial Power Is Still Out

Every emergency power installation should have at least one solar panel to recharge your 12-volt battery packs. Even a modest panel assembly like the ICP model 4011 "Solar Battery Saver" (RadioShack catalog # 980-1045), provides 80 mA, which is 10 mA more than required by my wall-wart battery charger for my dual-band amateur VHF/UHF handheld radio. You see, after all the batteries go dead, and commercial power is still out, Old Man Sol will still be shining and radios will still be heard. List price for this compact 4- x 12-inch panel, with built-in charge-regulating circuitry, is \$29.99 at RadioShack On-Line. This product is not carried in RadioShack stores. Visit <www.radioshack.com> or call 1-800-THE-SHACK.

Backup Power For Your Car!

There is one more thing I had promised for this month. How about a backup power system for your car, truck, or SUV? Automobiles make wonderful mobile communications stations. They all come factory-equipped with a heavy-duty 12-Vdc power supply, complete with a very large battery; they have a generator (alternator) to recharge the battery, and an engine powerful enough not only to charge the battery, but golly, it will actually drive the car or truck wherever you direct it on the roads! Yes, you have to keep it fueled, but you won't be paying an electric bill to run the lights, stereo, air conditioning, or any other accessories.

Trouble is, we can easily run a battery dead by either operating accessories such as radio communications equipment with the engine off, or by accidentally leaving an accessory or headlights turned on. The obvious dilemma is that without battery power to crank the engine, it cannot be started for the purpose of recharging the battery. Our automobile batteries need to be resuscitated when this happens!

Either the above-mentioned Prestone "JumpIt!" battery pack or the Vector Manufacturing multi-function AC/DC power system can be used to jump-start a car with a dead battery. But a potentially more economical and definitely more compact alternative is the Coleman "Powermate" emergency car starter with 12-volt power source. (RadioShack catalog #270-4121). This unit is no bigger than a brick and seems to be about as heavy. It will not

instantly start a car, but over a 20-minute period, it will recharge the vehicle battery enough to start.

The Powermate plugs into your cigarette lighter, and if your vehicle has a *switched* lighter socket (that is, one to which power is shut off when the ignition key is completely off), I see no reason to even disconnect this unit. I leave mine plugged in so that it is constantly in a fully charged state. As such, it can not only start my SUV when the vehicle battery is dead, but it can also power any radio communications device on board in order to call for assistance. Nice! Even if I accidentally leave the lights on, they will not run down the Powermate, since the ignition switch in the parked vehicle is obviously fully off, isolating the switched cigarette lighter socket (connected to the Powermate) from the lights and the vehicle battery. Very nice indeed!

This unit has status indicator LED's and a 12-volt cigarette-type socket of its own for plugging in auxiliary items, such as a portable cell phone or a laptop computer. We found the Powermate in stock at RadioShack stores for \$39.99 plus tax. Shop around!

The Cellular Industry's Dirty Little Secret

I want to add one more important Homeland Defense item to our "roster" this month. Over the last several years, *Pop'Comm's* "Washington Beat" column, as well as this column, have discussed the coming of wireless telephone Priority Access Service (PAS), the cellular industry's "Dirty Little Secret."

The FCC has permitted this service, on a voluntary basis, to be provided by participating wireless telephone carriers, under government contract. PAS gives top government officials first access to RF channels when cellular systems overload during times of crisis and disaster. The problem with the shortsighted PAS concept is that it will hinder vital access to cellular circuits for a great many first responders. Equally bad, the system originally approved by the FCC (though *not* presently being used or considered by any wireless carrier at this time) would hinder access to 911 for distress calls of the highest priority.

The direction that PAS technology and politics is headed in at this point is toward its early adoption on PCS networks that use GSM technology. VoiceStream, reportedly in the process of changing its name to T-Mobile USA, is to date the first and only wireless service provider contracted to provide PAS, and only in the New York and in Washington, DC, markets. (VoiceStream, which is under an FCC rules waiver, uses a *different* system than that approved by the FCC, and *may* process all emergency traffic on a more equitable basis.)

The trend, however, is for several or all GSM carriers throughout the U.S. to provide nationwide PAS. If you are a first responder, emergency worker, or volunteer not eligible for PAS, or if you are simply a citizen who wants to contribute to national security by providing eyes and ears to America's 911 emergency centers, you may want to consider a wireless phone provider that is *not* in the PAS business.

Bottom line: *If* your cellular phone service provider cannot guarantee you 911 emergency access over *all* other type calls, including PAS, then you are putting your life and the lives of those around you in danger. You just might want to seriously consider doing business with a more responsible telephone company. How does your wireless service provider handle 911 calls in relation to PAS traffic? Ask them!

Next month, our permanent "Homeland Security" editor will take over this column. Please pick up our upcoming January, 2003, issue and welcome writer Rich Arland, K7SZ. I will continue to produce our "On-The-Go Radio" column as I attempt still other projects here at CQ Communications. For now, remain vigilant, and do not let terrorists rob you of a very merry Christmas and a joyous New Year with those you love. May God bless. ■

the propagation

corner

up-to-the-minute forecasts helping you get the most from the radio spectrum

by Tomas Hood, NW7US
<pc-prop-man@hfradio.org>

Mediumwave DX: Why It's So Hot Right NOW

On December 22, the Northern Hemisphere experiences the longest day of darkness. This marks the peak of the DX window on the lower shortwave bands and the mediumwave band. With very short daylight periods, the maximum usable frequencies are generally lower across propagation paths over areas in the Northern Hemisphere, making for quiet higher shortwave bands. At the same time, shortwave propagation on the mid-shortwave bands, like 31 meters, often stays active around the clock.

Last month, we looked at how different shortwave propagation is during the fall and winter as compared to spring and summer. This month, let's look at why DX in the Northern Hemisphere is so hot on the mediumwave frequencies during the late fall and winter.

Mediumwave Propagation

The frequencies between 300 and 3000 kHz are known as the medium waves (MW). In North America, the AM broadcast band, from 530 to 1700 kHz, falls right at the bottom third of the mediumwave spectrum. Many other countries have stations using these frequencies as well.

One of the reasons MW DXers enjoy catching these domestic and foreign stations is because of the challenge. Most MW signals never make it past 800 to 1,000 miles, first because of ground wave signal loss and second because of the *D*-layer absorption. Occasionally, however, exciting but often short-lived openings of over 3,000 miles occur. During the late fall, winter, and early spring months these openings increase. Shorter paths also become more stable and last longer.

During daylight hours, the sun's radiation causes the *D*-layer to become highly ionized. The long wavelengths of MW radio signals never make it through this dense ionospheric layer, and so cannot reach the *E*- and *F*-layers for refraction back to earth. Most of the MW signal is lost, so those transmissions can only be heard via groundwave propagation in a localized region.

When night falls, the direct influence of solar radiation decreases, allowing the *D*-layer to calm down and recombine. Some experts believe that the *D*-layer completely disappears, but evidence now suggests that some ionization still lingers through the

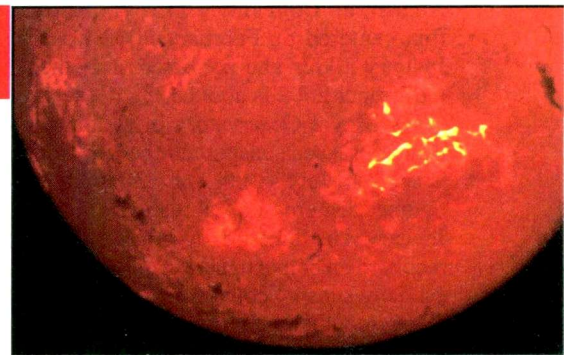
hours of darkness, sometimes even intensifying under certain conditions.

Another phenomenon that prevents reliable propagation on MW is lightning-related noise, as well as sporadic-*D* (*D*s) absorption. During summer months in the northern Temperate Zone, there are a higher number of electrical storm events, causing broadband noise. Most of the energy of these electrical storms is concentrated at lower frequencies. These electrical storms also cause ionization in the lower atmosphere, causing *D*-layer absorption, which in turn blocks the propagation of MW signals. Those signals that do make it to our receivers compete with the noise generated by these storms. During the winter, however, there is a significant reduction in these seasonal electrical storms, making conditions much better for long distance propagation of these broadcast signals.

There are other factors that cause degradation of mediumwave signal propagation. These include ionospheric storms caused by solar flares and coronal mass ejections, aurora, tornadoes, and many other events that involve the atmosphere and ionosphere.

If mediumwave signals make it past the *D*-layer, propagation may occur off the *E*- and *F*-layers of the ionosphere. The ability of an MW signal to cover long distances lies in having the right conditions: the frequency and angle of the radiowave as it arrives at the ionosphere, and the highest frequency that will be refracted back at that point in the ionospheric layer. The lower the angle into the ionosphere, the farther the reflected signal will return to earth. Most MW long distance propagation takes place via the *E*-layer. Scientists and radio hobbyists have discovered that radiation angles above 10 degrees from horizon are those refracted best off of the *E*-layer. Lower angles result in higher absorption and losses, while angles that are too high have been found to pass through the *E*-layer and onto the *F*-layer. Angles above 25 to 30 degrees are not productive, as they will pass through the *E*-layer, arriving at the *F*-layer to be refracted back with a short hop distance.

An interesting form of MW propagation is the *E*-layer Valley *F*-layer Propagation Ducting Mechanism. This is when a radiowave gets through the *E*-layer at the point of origin, only to be refracted back by the *F*-layer, but not through the *E*-layer at



the far end of this first hop, since the *E*-layer is more ionized at that point. The wave is then refracted back up to the *F*-layer, and so forth, until the wave is able to penetrate back down through the *E*-layer at some farther hop. This ducting may allow the radiowave to travel over 3,000 miles or more.

You can see why longer hours of darkness would be beneficial to mediumwave propagation. If the absorption decreases at night with the near-disappearance of the *D*-layer, the MW radio signals can reach the *E*- and *F*-layer and potentially be refracted back to earth somewhere more distant than the outer reach of groundwave signals from the same transmitter. MW DXers look for days with low solar and geomagnetic activity and long hours of darkness. The late fall, winter, and early spring are optimal for low frequency DXing.

Many MW DXers feel that the 2001-2002 DX season was dismal, probably the worst in even distant memory. Because of the elevated solar activity of the peak in the current solar cycle, conditions for MW propagation were often degraded by ionospheric absorption. Adding to the frustration was the double peak of this cycle, which has prolonged dismal MW propagation conditions.

The 2002-2003 MW DX season continues to experience elevated solar and geomagnetic activity and long periods of MW signal absorption. We are still very close to the peak of this cycle, so expect quite a bit of solar activity throughout the coming months. Don't get too frustrated, though, as we are now in the declining side of the 11-year solar cycle.

If you are interested in exploring mediumwave propagation in more depth, check out Thomas Giella's "Medium Frequency Radio Propagation Theory Notes" at <www.kn4lf.com/kn4lf8.htm>. He offers a weekly MW propagation outlook, as well, located at <www.kn4lf.com/kn4lf6.htm>.

Current Solar Cycle 23 Progress

The solar cycle activity increased a bit during July and August. The Dominion

Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 184 for August, up from July's 175. The 12-month smoothed 10.7-cm flux centered on February 2002 was 197, up two points from January 2002. The predicted smoothed 10.7-cm solar flux for November 2002 is about 133.

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for August 2002 was 116, which is up from July's 100. The 12-month running smoothed sunspot number centered on February 2002 was 115, one point up from January. The lowest daily sunspot value during August 2002 was recorded on both August 9th and 10th with a count of 73. The highest daily sunspot count for August was 186, occurring on August 17. A smoothed sunspot count of 79 is forecast for November 2002 by the Space Environment Center.

The observed monthly mean planetary A-Index (Ap) for August 2002 was 16, up a bit from an Ap of 13 for July. The 12-month smoothed Ap index centered on February 2002 remains 12. Geomagnetic storming will be much the same as we have had during October, with a few possible aurora events.

HF Propagation

With short daylight days, the openings on many paths are short, though possibly strong on the higher HF frequencies. In general, paths on 31 through 19 meters are now in their seasonal peak, especially between North America and Europe in the morning, and between North America and Asia during the late afternoon hours. Nineteen and 22 meters are probably the best daytime DX band, opening for DX just before sunrise and remaining open from all directions throughout the day, with a peak in the afternoon. Nighttime conditions will be short and weak, and mostly north/south in orientation since the Southern Hemisphere has long daylight hours.

The best bands for around the clock DX will be 31 and 25 meters. Twenty-five meters continues to be an excellent band for medium distance (500 to 1,500 miles) reception during the daylight hours, with longer distance reception (2,000 to 3,000 miles) possible for an hour or two after local sunrise, and again during the late afternoon and early evening. Thirty-one and 40 meters provide medium distance daytime reception ranging between 400 and 1,200 miles, and beyond 3,000 miles during the hours of darkness until two to three hours after local sunrise.

Seventy-five through 120 meters are stable now, so you can expect great nighttime DX conditions, especially with the decrease in seasonal noise and the longer hours. Look for Europe and Africa around your sunset until the middle of the night, and then Asia, the Pacific, and the South Pacific as morning approaches.

Signals below 120 meters are also greatly improved. Tropical and regional stations are easier to hear, with stronger openings late into night and through early morning hours.

Be sure to check out the latest conditions, as well as the educational resources about propagation, which I have put together for you at <www.prop.hfradio.org/>. I also provide a WAP/WML resource for wireless devices. If you want the latest propagation information, such as the solar flux and Ap reading, check out <<http://wap.hfradio.org/>>, the wireless version of my propagation site.

Feedback

I have received a number of letters and e-mails from readers. I am happy to hear that this column is useful, and I appreciate the encouragement you have given me. Please don't hesitate to write and let me know about any interesting propagation you have noticed. Do you have questions about propagation? I look forward to hearing from you. Turn on your favorite radio and enjoy the great DX season on the medium and shortwaves. Happy hunting!

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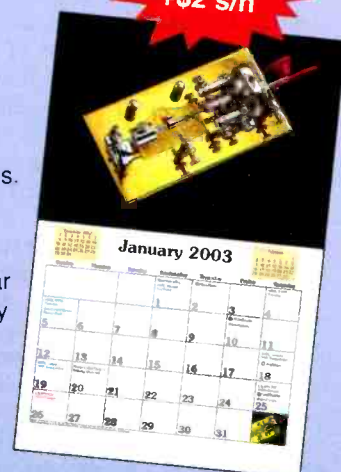
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Marine SSB Radios Do More Than Boat Talk

Many boaters may pull their marine SSB transceiver before selling the boat. Or maybe they buy a boat, and pull the SSB radio off because they're just going to be cruising locally within VHF range. VHF at 156 MHz offers 55 channels for boaters, and high-frequency SSB covering 2 MHz to 26 MHz offers hundreds of channels for long-distance sailors.

During the winter season, I see a lot of these marine SSB radios showing up at garage sales, swap meets, or offered online. If they're extremely old, they are crystal-controlled and will have no value to us as radio experimenters. But if they are within 10 years "young," they're probably completely synthesized and offer general coverage capabilities well beyond just the boat yak-yak channels.

The majority of 10-year and younger marine SSB transceivers all feature general coverage SSB, AM, and data-signal receive. The general coverage receiver is usually double-conversion and may offer automatic internal narrow-filter operation. Most are extremely sensitive down to a fraction of a microvolt. These marine SSB rigs typically run on 12 volts with a common SO-239 antenna connection. Just add 12 volts, string up a dipole, and see what it takes to get the tuning into variable frequency oscillator mode, and then lock in on your favorite shortwave frequency.

If you're a ham radio operator, almost all of these new marine SSB transceivers will transmit up to 150 watts output on ham frequencies. Almost all have a lower sideband filter for 40 meters, 75 meters, and 160 meters. Most will have capabilities for sending and receiving data, too, making them great for ham radio high-frequency automatic position reporting system operation.

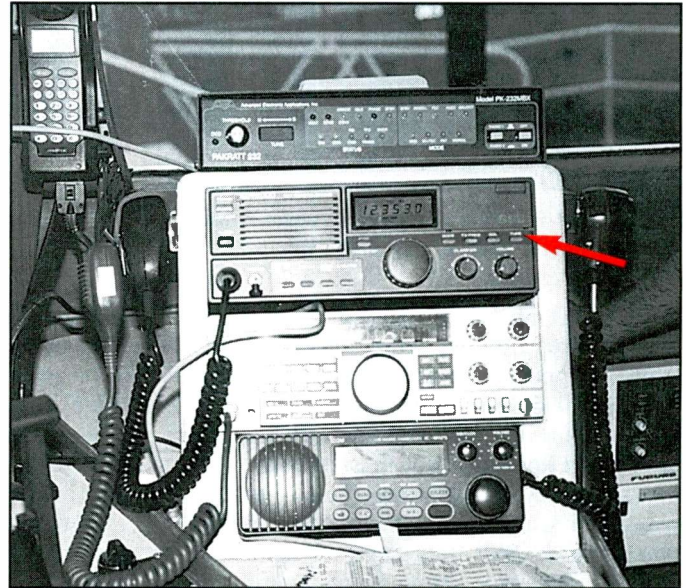
A Look At The Radios

Here are some rigs that are easily or already high-frequency agile for ham operators and high-frequency radio hobbyists:

- ICOM America M-700, M-700 Pro, M-710, and M-802
- SGC SG-2000 and SG-2020
- SEA 222, 223, and 235
- Furuno, all models after 1990
- Raymarine/Raytheon, most models after 1990

These FCC type-approved Part 80 marine single-sideband transceivers should *all* tune general coverage receive from approximately 2 MHz through 22 MHz. In 1990, a higher marine SSB band was added at 26 MHz, so most marine single-sideband

A ham using an SGC-2000 marine SSB transceiver on ham frequencies. →



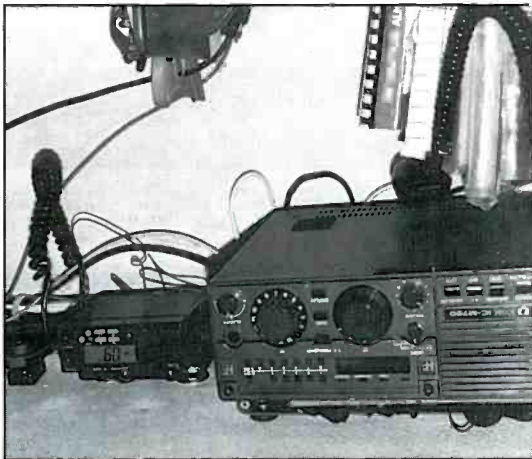
The Kenwood TKM 707 marine SSB transceiver (marked with arrow) works great on ham frequencies too!

transceivers less than 10 years old may also include receive capabilities up to 29.9 MHz.

But getting the marine SSB off of marine channels and onto general coverage VFO may require you to read the manual, go to a Web page, or contact that manufacturer's technical help desk. Almost all of the manuals describe how to enter individual frequencies and how to then move up and down the dial.

But not all marine SSB transceivers move up and down the dial once you have the frequency loaded in memory. Recently, the most popular SSB rig to show up at swap meets has been





An ICOM M-700—old style, yet ham radio-ready without the need for any modifications.



A prize "catch" at a marine swap meet. The seller thought it was a CB—cost: under \$100!

the older ICOM-700. It's a fantastic radio that requires nothing more than key-strokes to get receive and transmit onto the general coverage or ham coverage portion of the dial. Only problem is, to go up or down 1 or 2 kHz, you must enter the new frequency via a keypad. There is no scan-up or scan-down. Almost all of the other marine SSB sets have an agile receive tuning knob, refining tuning steps down to 100 Hz if you really want to SLOWLY tune in a digital station.

Licensed amateur operators may find that the used equipment may already be modified for general coverage transmit. To find out, go to a ham band that covers your privileges, such as a General class operator on 14.302.5 MHz, push the microphone button, speak into the mic, and see whether or not you have any output power. If you do, your set has been "opened."

Each manufacturer has its own way of getting to ham band transmit. It can be easy or difficult. Some sets require special keystrokes to unlock ham transmit capabilities, yet others such as the ICOM-700 Pro and 710, require a computer upload to unlock transmit inhibit. The ICOM computer program is available

from a local ICOM marine electronics dealer, and the entire process of loading in the new ham transmit capability takes less than two minutes.

SGC and Furuno equipment will work ham transmit straight out of the box. SEA equipment may require you to push "73 #" for ham transmit unlock. On the brand new ICOM-802, the front panel key-strokes are mode, 2, and TX buttons held in when you turn on the equipment, and magically, transmit inhibit drops out and ham transmit is enabled. They have stored many ham channels already in memory, but you will need to clean up a little factory error and put the 3.8- and 7.1-MHz ham frequencies into lower sideband (rather than where they now appear in

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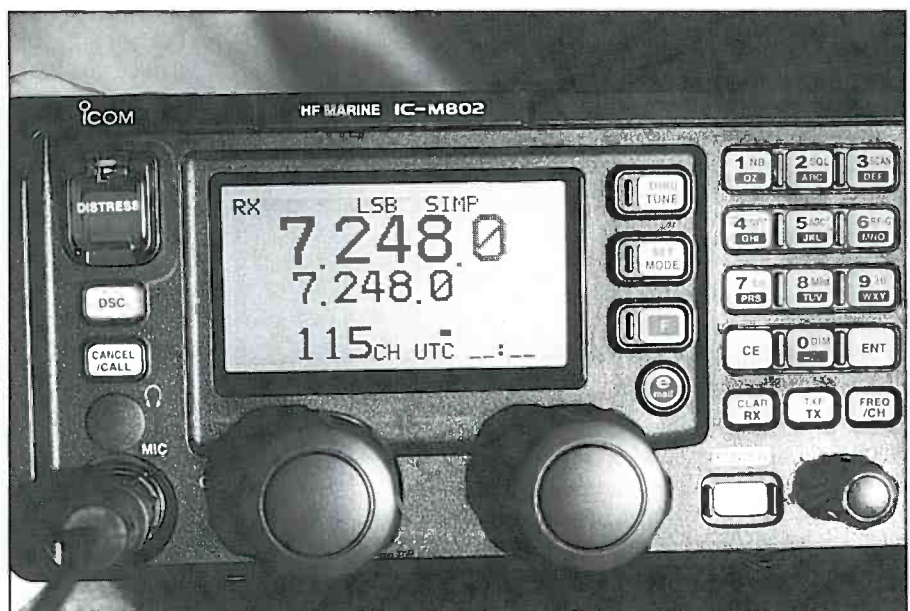
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Here's the remote head on a marine SSB rig tuned to ham transmit and receive.

memory as upper sideband). This rig also has capabilities of digital signal calling, and in some preliminary tests I've run, you and a buddy with a ham license and the same equipment could actually call each other over the high-frequency airwaves without even having to pick up the mic.

DSC (Digital Selective Calling) is the latest technique that allows mariners to reach the U.S. Coast Guard and other emergency services when far out at sea. They squawk a digital call for help, including their position and nature of distress. The new ICOM-802 is one of the first low-cost marine transceivers to offer this feature, plus it's a full-featured ham set, too.

Keeping Alert At The Local Marine Swap Meet

A neat reason for keeping alert at the local marine swap meet is that many of these marine SSB transceivers were put aboard boats just because they were required to have the set, and many have never even been turned on or put on the air other than for quick radio checks to satisfy a local government inspector. Most marine SSB transceivers have a powerful solid-state transmitter that can easily pump out 150 watts on a whistle. However, most marine SSB transceivers, including that brand new ICOM-802, severely restrict automatic limiting control (ALC) action, so when you're just normally talking into the mic, power output is poor. If you go into the transceiver and locate the ALC pot, adjust it slightly counterclockwise for less ALC action, and watch your average talk power dramatically increase on your watt meter. But don't overdo it—you must maintain *some* ALC action in order to protect the radio's final output transistor from overdrive and runaway.

Finally, on the new SEA, Furuno, Raytheon, and ICOM marine SSB transceivers with built-in digital selective calling, keep your fingers off of the red distress button. Pushing that button for more than 5 seconds puts your equipment into an emergency distress signal mode. The equipment probably has an imbedded ID code where ultimately the radio is going to get tracked down to your particular unit. If you squawk a digital call for help and no emergency exists, you can be in deep trouble. But you will know when you have activated the distress function because the radio goes into a howling alert that you just can't miss!

So keep your eyes open this winter for a marine swap meet or watch the online used equipment sites for a marine SSB transceiver. If it's less than 10 years old, chances are it has a hot general coverage receiver with all sorts of filters built in, runs on common 12 volts DC, and, for ham operation, can put out a powerful sig-

nal at a fraction of new equipment cost. Typical prices for new marine single-sideband equipment are around \$2,200; typical swap meet specials might be as low as \$300 when someone doesn't know the value of the equipment being sold). Scoop it up fast because I'll probably be right behind you looking for a set myself. ■

Mobile DXer

by Dave Mangels, AC6WO

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A practical guide to Mobile DXing - an exciting, challenging and rewarding facet of today's Amateur Radiol

Here's a sampling of what you'll find inside:

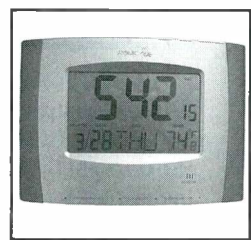
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ATOMIC TIME

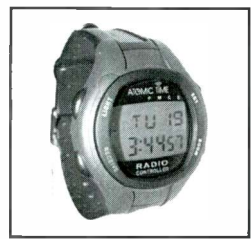
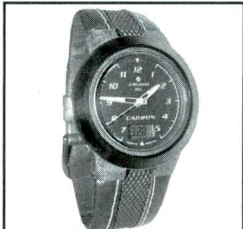
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Atomic Time 0645R Digital Wall Clock/Dark Grey
 12 or 24 hr. format day, date, month temp. alarm
 10.5" x 7.5"
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Junghans MEGA Atomic Carbon Carbon Fiber case sapphire glass crystal lens, black leather band, LCD with day & date.
 \$239.20



Atomic Time W102 Digital
 Hour, minute, second, day, date, blue polymer case backlight, alarm & stopwatch
 \$28.95

Atomic Dual Time-Dual Alarm Clock TLWA201
 Available in black or silver, backlit, displays local time and any world time
 \$45.00



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800-MHz Spectrum Sharing Plan

Interference complaints on 800-MHz frequencies are nothing new, but now there's a proposal to segment the band to reduce interference has been submitted to the FCC. Nextel, the Industrial Telecommunications Association, the Association of American Railroads and Forest Industries Telecommunications, and the Association of Public Safety Communications International are proposing an allocation of discrete blocks of spectrum in the 800-MHz band for public safety and industrial purposes.

Nextel has offered \$500 million toward relocating public safety communications and has said that it would give up its 700-MHz licenses for use by public safety agencies and its 900-MHz licenses for business and industrial use. As good as this all sounds, the United Telecom Council, which represents utility companies, doesn't look kindly on the plan. UTC believes the cost to relocate communications systems would range from hundreds of millions to several billion dollars.

FCC Introduces Phase-In Plan For Digital TV

By the year 2007, nearly all new television sets will have off-air digital TV (DTV) tuners, according to an FCC plan. The FCC's five-year roll out schedule will begin with larger, more expensive TV sets, thereby minimizing the costs for equipment manufacturers and consumers. The Second Report and Order and Second Memorandum Opinion and Order require that all television receivers with screen sizes greater than 13 inches and all television receiving equipment, such as videocassette recorders (VCRs) and digital versatile disk (DVD) players/recorders, include DTV reception capability after July 1, 2007, according to the following schedule: Receivers with screen sizes 36 inches and above—50% of a responsible party's units must include DTV tuners effective July 1, 2004; 100% of such units must include DTV tuners effective July 1, 2005. Receivers with screen sizes 25 to 35 inches—50% of a responsible party's units must include DTV tuners effective July 1, 2005; 100% of such units must include DTV tuners effective July 1, 2006. Receivers with screen sizes 13 to 24 inches—100% of all such units must include DTV tuners effective July 1, 2007. TV Interface Devices, VCRs, and DVD players/recorders, etc. that receive broadcast television signals—100% of all such units must include DTV tuners effective July 1, 2007.

Analog Wireless On The Way Out

The Federal Communications Commission has approved a plan to phase out analog cellular service within five years. Around 15 percent of wireless customers in the United States still use analog phones, but the move is on to all digital networks. Due to different standards, most cellular telephones today work on both digital and analog networks. Wireless

Carriers believe that nationwide digital networks will be in place well within five years.

ARRL Gets Fed Grant

The American Radio Relay League has received an \$181,000 homeland security grant to train 1,700 ham radio operators across the U.S. in emergency communications. ARRL members were active in New York following the September 11 attacks, providing critical radio communications for up to two months after the incident.

California Traffic Management System Privacy Concerns

The San Francisco Bay area's new wireless technology is raising concerns among privacy advocates. TravInfo, a partnership between the Metropolitan Transportation Commission (MTC), the California Highway Patrol, and the state's transportation department, is a new service that uses wireless technology to collect and deliver real-time traffic information. TravInfo gathers its data by sending signals from transponders attached to commuters' cars to sensors located along roads. The sensors send encrypted information on traffic flow to the TravInfo system. Congestion reports can be sent to drivers via their cell phone, radio, or the Internet. Privacy advocates say that the transponders on cars, which are also used to pay tolls, are connected to databases with identifying information and may allow tracking of people's movements. MTC says that TravInfo will generate separate coded information that will be destroyed daily. Similar systems for traffic management are already being used in Houston and New York.

Amateur Asks For Part 97 Waiver

A U.S. amateur radio operator is asking the FCC to amend its rules regarding PMR 446 radios in the United States. PMR 446 is the British version of the Family Radio Service, operating on eight 0.0625-kHz offset channels spaced 12.5 kHz apart in the 446.0- to 446.1-MHz band. While fine for use in the UK, operating these radios stateside presents a problem: the eight channels are within the Amateur Radio Service. Up until now, it appears that foreign nationals with PMR 446 radios have been allowed to bring them into the U.S. and operate them, in direct violation of FCC rules. Ham operator Michael C. Trahos, D.O., of Virginia, has filed a Petition for Rulemaking asking for amendment of 47 CFR Part 97 Amateur Radio Service, or amendment of 47 CFR Part 95 Subpart B Family Radio Service, to allow visiting, transient, or tourist non-amateur, non-U.S. resident foreign nationals access to certain 446-MHz frequencies on a limited, license-exempt basis. ■

Tap into secret Shortwave Signals

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, Iraqi 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

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.

Receives strong, clear signals from all over the world. 20 dB attenuator, gain control, ON LED.

Switch two receivers and auxiliary or active antenna. MFJ-1024 \$139⁹⁵ 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

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."

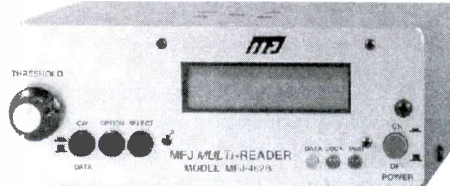
Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as a preselector with external antenna. Covers 0.3-30 MHz. Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, \$14.95.

Compact Active Antenna 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. 3 1/8 x 1 1/4 x 4 in.

MFJ-1024 \$139⁹⁵

MFJ-1020B \$79⁹⁵

MFJ-1022 \$49⁹⁵



MFJ-462B \$179⁹⁵

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. 5 1/4"Wx2 1/4"Hx5 1/4"D inches.

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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

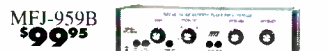
If you're not completely satisfied, simply return it within 30 days for a prompt and courteous refund (less shipping). Customer must retain dated proof-of-purchase direct from MFJ.

Eliminate power line noise!



MFJ-1026 \$179⁹⁵ **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 \$99⁹⁵ 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 \$99⁹⁵ 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 \$99⁹⁵ High-gain, high-Q receiver pre-selector 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 \$149⁹⁵ 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 \$49⁹⁵ 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

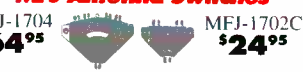


MFJ-1046 \$99⁹⁵ **New!** Improves any receiver! Suppresses strong out-of-band signals that cause intermod, blocking, cross modulation and phantom signals. Unique Hi-Q series tuned circuit adds super sharp front-end selectivity with excellent stopband attenuation and very low passband attenuation and very low passband loss. Air variable capacitor with vernier. 1.6-33 MHz.

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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.

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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.

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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's MFJ-8121 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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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	UTC	Freq.	Station/Country	Notes
0000	5770	Radio Miskut, Nicaragua	SS	0230	11885	Voice of Turkey	TT
0000	17705	Radio Havana Cuba	SS	0230	11787	Radio Iraq Int'l	
0000	5990	Radio Senado, Brazil	PP	0230	4800	Radio Buenos Nuevas, Guatemala	SS
0000	6215	Radio Baluarte, Argentina	SS	0245	11980	RDP Int'l, Portugal	PP
0030	11905	Radio Thailand		0300	12005	RTV Tunisienne, Tunisia	AA
0030	15425	Radio Sri Lanka		0300	4991	Radio Apinte, Surinam	unid.
0030	9610	VOIRI, Iran		0300	9405	Vatican Radio	
0030	5700	Radio Frecuencia San Ignacio, Peru	SS	0300	17755	Qatar Broadcasting Service	AA
0030	11690	Radio Vilnius, Lithuania	EE/LL	0300	11765	RAI Int'l, Italy, via Ascension	SS
0045	3390	Radio Emisoras Camargo, Bolivia	SS	0300	11730	BBC relay, Seychelles	
0100	17675	Radio New Zealand		0300	12020	Radio Rossii, Russia	RR
0100	5025	Radio Rebelde, Cuba	SS	0300	9925	Voice of Croatia, via Germany	Croatian
0100	5035	Radio Aparecida, Brazil	PP	0300	7385	Radio Prague, Czech Republic	
0100	9775	Radio Dat, clandestine to Kazakhstan	local	0300	12040	Radio Ukraine Int'l	
0100	11990	YLE/Radio Finland	Finnish	0300	6265	Zambia National Broadcasting Corp.	
0130	15105	Deutsche Welle relay, Sri Lanka	GG	0300	4820	Radio Botswana	
0130	4819	La Voz Evangelica, Honduras	SS	0300	9870	Radio Prague, Czech Republic	
0130	4985	Radio Brazil Central, Brazil	PP	0300	9960	Norwegian Radio	NN
0130	9870	Radio Austria Int'l		0300	4976	Radio Uganda	
0200	5678	Radio Ilucan, Peru	SS	0300	11710	Adventist World Radio via Austria	various
0200	11940	Radio Romania Int'l		0330	11655	Voice of Turkey	
0200	5500	Radio San Miguel, Peru	SS	0330	11750	Voice of Russia, via Moldova	
0200	13755	VOIRI, Iran	SS	0330	4996	Radio Andina, Peru	SS
0200	6458	Armed Forces Network, Puerto Rico	USB	0330	9900	Radio Cairo, Egypt	AA
0200	11675	Radio Kuwait	AA	0330	4960	Radio Cima, Dominican Republic	SS
0200	9475	Radio Cairo, Egypt		0330	15170	Broadcasting Service of the Kingdom of Saudi Arabia	AA
0200	13685	China Radio Int'l, via French Guiana		0330	4875	Radio Difusora Roraima, Brazil	PP
0200	17815	Radio Cultura, Brazil	PP	0330	6940	Radio Fana, Ethiopia	vern.
0200	11925	Radio Bandeirantes, Brazil	PP	0330	9960	Radio Denmark, via Norway	DD
0200	11710	Radiodifusion Argentina al Exterior		0330	3215	Adventist World Radio via Madagascar	EE/others
0200	4980	Ecos del Torbes, Venezuela	SS	0330	3270	Namibia Broadcasting Corp.	
0215	9615	Radio Cultura, Brazil	PP	0330	7405	Radio Marti, USA	SS
0215	11605	FEBA, Seychelles	Farsi	0400	3320	South African Bc. Corp.	Afrikaans
0230	9490	Radio Sweden		0400	12030	RDP Int'l, Portugal	PP
0230	6175	Voice of Vietnam, via Canada		0400	9895	Voice of America relay, Sao tome	
0230	11920	RTV Marocaine, Morocco	AA	0400	4389	Radio Imperio, Peru	SS
0230	9570	Radio Budapest, Hungary		0400	4775	Trans World Radio, Swaziland	unid
0230	7220	Radio Free Europe via Greece	RR	0500	7255	Voice of Nigeria	
0230	11700	Radio Bulgaria		0500	4770	Radio Nigeria	
0230	11780	Radio Nacional do Brazil	PP	0500	6250	Radio Nacional, Equatorial Guinea	SS
0230	7160	Radio Tirana, Albania		0500	11710	Channel Africa, South Africa	
0230	11815	Radio Brazil Central, Brazil	PP				

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0530	5030	Radio Burkina, Burkina Faso		1300	15575	BBC relay, Cyprus	
0530	3255	BBC via South Africa		1300	11690	Radio Jordan	
0600	9530	Magadan Radio, Russia	RR	1330	17775	Radio Tashkent, Uzbekistan	
0600	6185	Radio Educacion, Mexico	SS	1400	17755	Radio Japan/NHK, via Gabon	
0600	6350	Armed Forces Network, Hawaii	USB	1430	13710	All India Radio	
0600	15240	Radio Australia		1430	11890	Radio Canada Int'l, via Japan	CC
0600	9970	RTBF, Belgium	FF	1500	6150	Mediacorp Radio, Singapore	
0600	9580	Africa No. One, Gabon	FF	1500	17770	Channel Africa, South Africa	
0600	4783	RTV Malienne, Mali	FF	1500	11570	Radio Pakistan	
0600	4915	Ghana Broadcasting Corp.		1500	9335	Voice of Korea, North Korea	
0600	6010	Radio Mil, Mexico	SS	1530	9635	VOIRI, Iran	
0630	6138	Radio Unamsil, Sierra Leone		1530	11930	Voice International, Australia	
0700	11960	China National Radio	CC	1530	15295	Adventist World Radio, Guam	Hindi
0700	5985	Radio Vlaanderen Int'l, via Germany		1545	13765	Vatican Radio	
0700	9870	Trans World Radio via Germany		1600	13675	UAE Radio, Dubai	
0700	9870	Trans World Radio, via Monaco		1600	17545	Kol Israel	
0730	5975	Voice of Hope, via Germany		1600	11685	Voice of Armenia	
0800	5020	Solomon Is. Broadcasting Corp.		1600	11585	Kol Israel	HH
0800	3290	Voice of Guyana		1630	11625	Far East Broadcasting Assn., Seychelles	
0830	11930	Voice of America relay, Northern Marianas		1630	11910	RAI Int'l, Italy	
0830	12015	Voice of Mongolia		1700	15265	Radio Africa Int'l via Germany	
0830	9605	Voice of the Mediterranean, Malta	via Italy	1700	21490	United Nations Radio, via South Africa	FF
0900	6040	Radio Clube Paranaense, Brazil	PP	1730	15190	Radio Pilipinas, Philippines	Tagalog
0900	6135	Radio Santa Cruz, Bolivia	SS	1800	11675	Voice of Russia	
0900	3325	Radio Maya, Guatemala	SS	1800	15640	Kol Israel	
0900	6090	Radio Esperanza, Chile	SS	1830	17605	Radio Netherlands relay, Bonaire	
0930	9885	Radio New Zealand		1830	13640	Radio Telefis Eireann, Ireland	via Canada
0930	6060	La Voz de tu Conciencia, Colombia	SS	1900	15345	RTV Marocaine, Morocco	AA
0930	6055	Radio Tampa, Japan	JJ	1900	15390	Deutsche Welle relay, Rwanda	
0930	3280	Radio Maria, Ecuador	SS	1900	15250	Salama Radio to Nigeria	vern
0945	4875	La Cruz del Sur, Bolivia	SS	1900	17560	Radio Exterior de Espana	SS
1000	3290	Radio Centro, Ecuador	SS	1930	13830	Voice of Croatia	Croatian
1000	3205	Radio Sanduan, Papua New Guinea		2000	15290	Radio Exterior de Espana	
1100	9665	Radio Singapore Int'l	unid.	2000	15120	Voice of Nigeria	
1100	7295	Radio Malaysia		2000	15150	Voice of Indonesia	
1100	9740	BBC relay, Singapore		2100	11620	All India Radio	
1100	7260	Radio Thailand	various	2100	17660	HCJB, Ecuador	
1100	15520	Radio Ukraine Int'l		2100	13610	Radio Damascus, Syria	
1130	4890	NBC, Papua New Guinea		2130	15435	Radio Jamahiriya, Libya	AA
1130	3300	Radio Cultural, Guatemala	SS	2130	9590	Radio Netherlands relay, Madagascar	Indonesian
1130	3220	Radio Morobe, Papua New Guinea		2130	17705	Voice of Greece, via USA	Greek
1130	4754	Radio Republik Indonesia, Makassar	II	2130	9540	Radio Tirana, Albania	
1200	9930	KWHR, Hawaii	CC	2130	11775	Caribbean Beacon, Anguilla	
1200	4845	Radio K'ekchi, Guatemala	SS	2130	15760	Reshet Bet, Israel	HH
1200	11650	Radio Australia		2200	15600	Radio Taipei Int'l, Taiwan via Florida	
1200	15535	Far East Broadcasting Assn., Seychelles	AA	2200	11905	Swiss Radio Int'l, via French Guiana	GG
1200	15190	BBC relay, Antigua		2200	11895	Radio Japan/NHK via French Guiana	JJ
1200	15095	Far East Broadcasting Corp., Philippines		2200	9590	Radio Canada Int'l	
1230	18960	Radio Sweden		2200	15725	WRMI, USA	
1230	11580	KFBS, Northern Marianas	CC	2200	11600	Radio Prague, Czech Republic	FF
1230	4860	All India Radio		2200	15345	RAE, Argentina	SS
1230	17900	Voice of Greece		2230	15185	Voice of America relay, Philippines	
1230	11980	China Radio Int'l		2230	15565	Radio Vlaanderen Int'l, Belgium, via Bonaire	
1230	12130	KTWR, Guam	CC	2245	9675	RAI Int'l, Italy	
1230	17670	YLE Radio Finland	FF	2300	11955	Radio Nacional, Angola	PP
1230	12105	KNLS, Alaska	CC	2330	9850	Democratic Voice of Burma via Germany	clan
1230	12020	Voice of Vietnam		2330	4965	Radio Christian Voice, Zambia	
1300	11550	Family Radio via Taiwan					
1300	15515	Radio France Int'l, via French Guiana	FF				

radios & high-tech gear

review of new, interesting, and useful communications products

HamTestOnline Announces New Website

J. Cunningham & Assoc. announces the launch of a new website, www.hamtestonline.com, which helps both new and experienced ham radio enthusiasts prepare for U.S. amateur radio written exams. This is the first website to bring computer-based training (CBT) technology online for the amateur radio tests.

Unlike other test preparation websites, HamTestOnline takes on the role of your personal trainer. It keeps track in its database of which questions you have seen, which ones you have learned, and which ones you get right and wrong. It asks you questions based on your own personal needs, concentrating on the areas where you are weak. Even if it has been weeks since your last session, HamTestOnline's database remembers your history and continues where you left off.

Other ham test websites give you questions at random, so you spend too much time answering questions you've already learned and too little time on your weak areas. With 1,572 questions in the question pools, you can take 100 randomly generated, simulated tests and still not see all the questions!

HamTestOnline does not try to simulate a test. In a simulated test you spend 15 minutes guessing at the answers and learning nothing, and then two minutes reviewing your answers and actually learning. Only a small fraction of your time is spent learning! With HamTestOnline, your entire study session is devoted to learning.

HamTestOnline operates entirely online so there is no software to download or install. It is easy to use: one click records your answer, provides feedback, and presents the next question.

The website includes all questions from the latest Technician, General, and Amateur Extra question pools. The site offers a free trial, which includes 20 percent of the questions from each question pool. A paid subscription of \$19.95 provides access to all questions in all three question pools for a period of two years. The site offers a money-back guarantee if you are dissatisfied for any reason.

J. Cunningham & Assoc. is a small software development and consulting firm located on the outskirts of Boston, Massachusetts. They can be contacted via e-mail at webmaster@hamtestonline.com.

ICP Global's BatterySAVER PLUS

One of our astute readers recently told us about ICP Global's neat products, and one in particular caught our attention: the BatterySAVER PLUS. This small, lightweight solar product plugs into your vehicle's 12-Vdc cigarette lighter receptacle and will, as ICP Global says, "constantly replenish your car's battery by sending a maintenance-level charge to the battery."

It's rated at 1.8 watts, 15 volts. The BatterySAVER PLUS comes complete with built-in diode protection, an eight-foot, 12-Vdc power cord, and includes a small built-in LED voltage indicator (that blinks when there's sufficient daylight) on the

panel, which can be kept permanently mounted to your dashboard and connected even as you drive. (For the unit to work when your ignition key is "off" you must ensure your cigarette lighter socket is electrically active; if not, the unit must be connected directly to the battery.)

For more information on ICP Global's BatterySAVER PLUS, contact ICP Global Technologies, 6995 Jeanne-Mance, Montreal, Quebec Canada H3N 1W5 or phone them toll-free at 888-427-7652. Visit them on the Web at www.icpglobal.com. Be sure to tell them you read about it in *Pop'Comm*.

Silver Salute Desktop Microphone

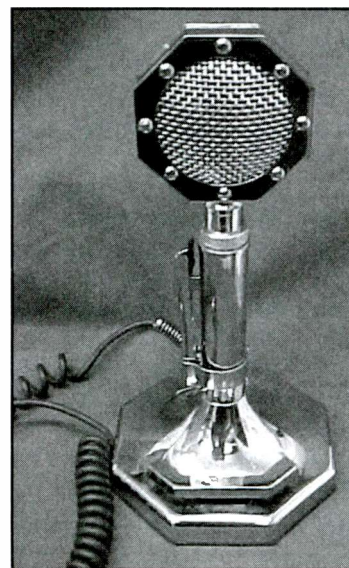
When a leading competitor announced that they were going to discontinue a similar desk microphone, Workman Electronic Products decided to create a desk mic to fill that void. Shawn LaPoint, Vice-President in Charge of Product Development, envisioned a new desk mic that would be affordable and readily accepted by the retail CB and ham markets. It had to have all the audio that customers had come to expect from a desk mic, be very dependable, as well as stylish.

Several styles of the mic were designed, and finally the prototype called the octi-pop was adopted. It was named the Silver Salute and packaged with the American Flag logo all over the box. (Interestingly, the box design was actually decided upon in the summer of 2001).

Every Silver Salute mic comes pre-wired to 4-pin Uniden/Cobra. In keeping with the Workman tradition, adapters were made to fit on the 4-pin end and thereby adapt it to most other base stations without having to rewire the microphone plug. The microphone cord is the Mil Spec 10 cord from Workman which has been installed for the past three years on all Workman Microphones and has an excellent track record. The Mil Spec 10 cord coupled with traditional leaf switching not only makes this microphone dependable, but also allows it to be serviced with off-the-shelf parts.

Holding the Silver Salute at arms length will produce clean clear audio—and the TV in the next room will not be heard, a main concern in the development of this all-new microphone made from off-the-shelf parts.

Pictures and information about this microphone as



The new professional-looking Silver Salute desktop microphone has an average retail price of \$100.

well as other Workman products can be found at <www.thechshop.org>. This site is updated and maintained by Truckstop Electronics, Inc. Retailers use this site primarily to get pertinent information about new Workman Electronic Products as they are developed. Three years ago Workman contracted with Truckstop Electronics, Inc., to do their promotions and assist in product development. Out of this contract have come nearly 40 new products and many more are on the drawing boards. Workman's new websites can be found at <www.wep4cb.com> and <www.wep4hams.com>.

Silver Salute microphones are available at most CB retailers across the country or you can order them at <www.thechshop.com>. Average retail price is \$100.

New Vector Indoor/Outdoor Rechargeable Lamps

Vector Manufacturing introduces a totally new product line of indoor/outdoor "rechargeable" table lamps that are elegant and decorative and operate up to eight hours continuously on a single charge with dimmer control. The "average retail" price of the lamps is \$45 each.

The Vector rechargeable lamp family includes six unique table lamp models: the Neoteric look of the "Metro" design, a Classic profile "Parchment Shade or Tiffany style," and the earthen silhouette of the Hanging Arbor. Vector Manufacturing offers businesses and consumers alike the world's first truly portable "Rechargeable" lamp that's also elegant.

Features include continuous operation from household AC

current, cordless use for up to eight hours with dimmer function, and rechargeable sealed lead acid battery (powers continually and recharges from a 110-Vac household outlet).

Vector Manufacturing is the first and only company to offer a product line that advances traditional lighting into a new realm of decorative illumination. Vector continues to be the leader in developing and supplying the newest innovations in portable power products. Their 12-Vac rechargeable products exceed all industry standards and company officials say, "...we stand by our pledge to provide the industry with the highest quality product and customer service."

For more information on their rechargeable lamps and other portable power products, contact Vector Manufacturing at 4140 S.W. 28th Way, Ft. Lauderdale, FL 33312 or phone 954-584-4446 or toll free at 866-584-5504.



Looking for rechargeable lighting that's also decorative? Vector's lineup of six portable, rechargeable lamps might be just what you need.

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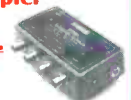
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Pelican's Model 1620 Protective Case

When was the last time you went to the field or on vacation only to find that precious radio is now merely a worthless paperweight? Well, say good-bye to flimsy bags and tucking your expensive radio equipment next to your wife's makeup bag the next time you hit the road: Pelican's cases are your answer to keeping your radios safe, no matter what the conditions.

I've been using the Pelican Model 1620 case for about six months and it's unbeatable! It's constructed of a supremely durable resin shell that doesn't dent, scratch, or corrode with time and abuse. Their literature says, "Anything that can be damaged by everyday hazards is safe in a Pelican Protector Case." I wanted to see for myself if that was true, so I put the Pelican 1620 Case to the test.

Now, if you're like me, transporting your sensitive radio gear and having it arrive in one piece, ready to operate, is as important as life itself; please don't tell me my stuff is safe if it arrives looking like yesterday's dirty gym socks.

What We Fit In The Pelican 1620

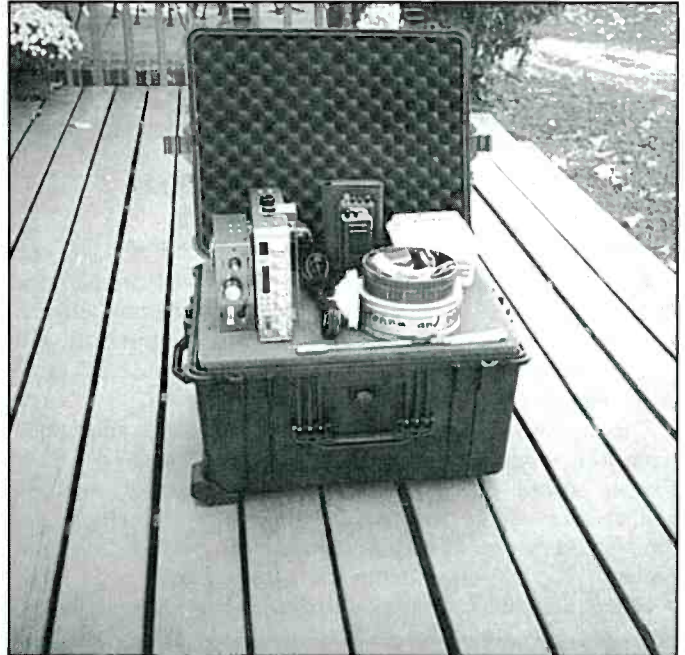
The *inside* dimensions of the Pelican 1620 case are 22 1/16 x 17 x 12 9/16 inches (LWD). Of course the company makes a multitude of cases for every need. A small Pelican case, the Model 1120 is 7 3/8 x 4 7/8 x 3 1/16 inches (LWD)—again, inside dimensions—which is perfect for a couple of handhelds and battery packs.

Talk about a company that thinks smart: The 1620 case has heavy-duty, rugged handles on *three* sides, plus a fold-down handle that tucks neatly underneath the case, and has a fingertip lock to secure the handle in the "out" position. This isn't some flimsy, funky handle that breaks the first time you send it through the airline baggage destruction process. It's built to last. Pelican could have compromised by using cheap wheels or handles, but they didn't—it's quality throughout!

The case comes with or without the protective foam set or padded dividers. The current price for the basic 1620 case is \$249.26 (without foam); for the Pick And Pluck foam sections (a set of three) add \$62.78. The 1620 case complete with foam insert is \$293.55. For me, the choice is simple: Go out and get a \$75 or \$100 piece of department store luggage and wrap your expensive, delicate equipment in a towel or your t-shirts, or do it the *right* way with one of these Pelican cases. After all, you've spent your hard-earned money on the radios, why not give them the best possible protection so you don't need to buy new radios after every trip?

Frankly, after 9/11, I started thinking about the need—you never know—to transport some basic radio gear in an emergency, whether it's to an emergency shelter or a tent in the Adirondacks. Check out what I got into my Pelican 1620 case, and then think about the level of protection from the elements and rough and tumble world out there:

- Cobra 148F-GTL Mobile CB with mounting bracket



Plan what's going in the Pelican case before plucking out the foam! If necessary, get out a ruler and piece of paper, because there's nothing worse than tearing out too much of the protective foam insert only to find out you removed too many layers.



A small Kyocera, Inc., solar panel fits nicely on the bottom of the large Pelican case, and there's even a thick layer of foam protecting the panel.



All of the necessary communications equipment from a mobile CB to ham transceiver fit perfectly in this Pelican case.

- Small magnetic-mount CB antenna with cable
- PRO-43 handheld scanner and antenna
- RadioShack HTX-202 handheld transceiver and antenna
- Sangean ATS-800 portable shortwave receiver
- BayGen FreePlay portable radio
- MFJ-9420 20-meter ham transceiver
- Container with a homemade 20-meter dipole antenna with rope and end connectors
- Plastic container holding 60 AA alkaline batteries
- Metal container with two handheld mics and power cords
- Kyocera KC60 solar panel

Try that in an off-the-shelf luggage or a clumsy backpack!

From start to finish, it took me about an hour to plan, tear the foam, and pack all the gear. We took our first trip shortly after 9/11, and the Pelican 1620 case and my radio gear came along. Now, granted, this is no small case, and without any equipment, weighs in at about 30 pounds, but don't forget the added versatility the expandable handle and wheels provide. You'll soon realize you're light years ahead of tossing your radios—or whatever—into your aging luggage along with your shaving kit and sneakers.

I'm certainly not a "let's tackle the whitewater rapids" kind of guy, but I feel confident my Pelican case would handle the task and keep my equipment dry. Why, you ask? Far from the rigors of whitewater rafting I decided to douse the case—with my radios inside—with our garden hose. Pelican has a superb automatic purge valve that prevents moisture from entering the case and allows air in and out at any given time. They report, "Pelican cases feature an exclusive 1/4" neoprene o-ring, to guarantee a perfect seal. Neither dust nor water can penetrate this barrier." I did the unthinkable (again, try this with your luggage, briefcase, or little flexible carry-on bag) and turned on the hose full blast. I stood there about 10 minutes drenching this case until my neighbor, Rick, asked me why I was watering a large black case. He just doesn't understand. I put the hose down and flipped open the four large clasps on the case. Inside, and dry as an old bone, was all my radio gear.

Not that a sane person would, but I'd also expect you could drop-test these Pelican cases, submerge them in the pool, and toss them off your roof, and your radio gear would survive. At any rate, you'll rest comfortably knowing your equipment—radios, cameras, laptop, or whatever—is getting the best possible protection from the rigors of everyday life with a Pelican case. My emergency communications gear is safe and sound, regardless of the conditions.

Pelican Inc., established in 1975, offers an "Unconditional Lifetime Guarantee" that states they'll either replace the case or refund your money (*YOUR* choice!) within 30 days of purchase through the original dealer/retailer. They continue to guarantee the case directly, saying "for a lifetime, against breakage or defects in workmanship."

For more information on the Pelican 1620 protective case, or on their complete line of cases, flashlights, and work lights, contact them directly at Pelican Products, Inc., 23215 Early Avenue, Torrance, CA 90505; Phone: 310-326-4700; Fax: 310-326-3311; Web: www.pelican.com; E-mail: sales@pelican.com. In Canada, contact their offices in Edmonton Alberta at 780-481-6076. Be sure to tell them you read about their Pelican 1620 case in *Popular Communications*. ■



Try this with your luggage (but be sure none of your family's stuff is inside). The Pelican 1620 case kept all the radio gear dry despite this extensive drenching.

v.i.p.

spotlight

how you got started in radio

Congratulations to Nolan Crabb!

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: "V.I.P. Spotlight," *Popular Communications*, 25 Newbridge Road, Hicks-



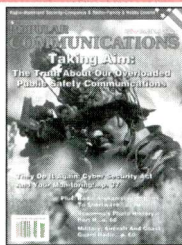
Nolan Crabb, AA3GO, at his comfortable radio shack in Oregon.

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Our December Winner: Nolan Crabb, AA3GO, Of Salem, Oregon

Pop'Comm reader Nolan Crabb tells us:

There's something magic about Christmas Eve, especially if you're 12 years old and you've been telling Santa, your folks, and anyone else who would listen that you just had to have a shortwave radio. That's exactly what I'd been doing. I barely slept; when I did, I dreamed of the AM/FM shortwave radio I'd seen at a discount store a few months earlier.

That dream came true on Christmas, 1969. It seemed I could almost hear Santa talking with the elves on one of the shortwave bands as he headed home with an empty sleigh. On another Christmas, more recent but no less magic, I received an Alinco DJ180 2-meter ham rig. My Extra class ticket had arrived three weeks earlier.

The Braille edition of *Popular Communications* introduced me to the scanning hobby. It was good ol' St. Nick who showed up again on yet another Christmas with a Bearcat 855XLT.

These days, I spend most of my radio time with my Kenwood TS450S ham rig on the HF bands. Although I didn't receive it at Christmas, it was a gift from a true friend and remarkable Elmer. For whatever reason, it seems that the magic of Christmas and the magic of the communications hobby are inseparable, at least for me. ■

FRS: Soon To Be For Families Only? Plus The CB Enforcement Action That Wasn't!

The Family Radio Service, or “FRS,” was created when the FCC rewrote the Subpart B Personal Radio Service rules (47 CFR Part 95) about five years ago. This relatively new radio service is available for all U.S. citizens to use just about anywhere. Since FRS is intended to be a short-range radio service, the FCC has limited the transmission power to just 500 mW—that’s one half of 1 watt. Such low power lends itself *handily* (pun intended) for use in the handheld or walkie-talkie mode.

For instance, FRS is excellent for communication at shopping malls and amusement parks. It allows family members to communicate and to locate each other easily. From its inception, however, folks in the working world, and even those in government at all levels, saw the value of FRS immediately. That’s right, FRS is used every day by construction and utility workers, stock clerks, waiters, maintenance personnel, security officers, and even soldiers.

The FCC could have named its new Class B Personal Radio Service anything that sounded good, I imagine, but settled on “Family Radio Service.” This would have been an excellent name choice if FRS use had been limited, by regulation, to personal use only. But the Commission had no intention of making this new service regulatory-intensive. Perhaps additionally, the FCC did not envision the business world, and especially government, embracing a radio service with such low power that many consider it to be of *toy* quality. Embrace it they did, nonetheless. These little handhelds are very inexpensive, small and lightweight, simple to use, have near high-fidelity audio, and are more rugged than you might presume. Oh yes, they really do work very well over the very short distances that befit their engineering design. This was truly a formula for success.

FRS is literally today’s new CB radio service. You will note that it is perfectly correct to refer to FRS as a CB radio service. FCC rules §95.401(b) specifically identify FRS as such. In case you’ve been away from it for awhile, traditional 27-MHz HF CB radio still exists as we knew it, and its name has not been changed to anything different or trendier. FRS was added as the *other* two-way CB radio service. (It is important to note that the General Mobile Radio Service (GMRS) was once officially one of the Citizens Radio Services, but today instead stands among the larger group of *Personal Radio Services*.)

Why’d They Do It?

So, why did the FCC name this the Family Radio Service if it’s for everybody and for any use? Well, the FCC didn’t come up with the idea for FRS simply on its own. Radio equipment vendors were among those who worked closely with the Commission to define the FRS concept. For consumer mass mar-



The ICOM IC-F3S Soldier Intercom tactical handheld radio. (ICOM press release photo)

ICOM’s IC-4008A FRS radio is similar to units being used by U.S. Marine Corps infantry. (ICOM press release photo)

keting purposes, the name we now have has proven to be a winner. People took to this new radio service as a low-budget wireless alternative to mobile phone services for cases where a small group in close proximity wants to stay in touch. FRS walkies have become nearly as ubiquitous as wireless phone handhelds. It essentially came down to market appeal.

Which is it, then—primarily a *personal* radio service, or more of a *general* radio service? With no clear regulatory definition or direction, folks have been using FRS for many *business* purposes, as well as for personal use. When FRS was new, and I first discovered commercial users there that perhaps should have

been on Part 90 business channels, my initial gut reaction was not a happy one. First, I ran to the rulebook to confirm just what uses were legitimate and what were not. Have you ever seen the FRS rules for yourself? The Commission could have printed the Subpart B rules on a postcard. They don't say much at all. Yet, who would know? Neither the FCC nor most FRS radio vendors seem to think that the rules are important enough to have a copy of them included in the product packaging. I am waiting for an FCC bureaucrat somewhere to tell me that the FRS rules are so minimal that users don't need to read them. It is true that any idiot could operate an FRS radio with no knowledge of any rules, and probably not screw up. BUT, how would we *know* this without having a copy of the rules in hand to which to refer? But, I digress.

Upon giving the situation more thought, business use of FRS made good sense. Why should business operators use expensive "commercial-grade" walkie-talkies for job site communications in situations where very inexpensive FRS radios will do? My own first concern was that business users could be taking bandwidth from personal users. But in many situations (though certainly not all), business users would be operating where personal users are not present. One example of this would be warehouse stock handlers using FRS to keep in touch around the physical plant. Consider the very short range of FRS, especially inside buildings. And consider the likelihood that such a plant would be in an area zoned for commercial/industrial use. Very few, if any, personal users would be within range of the warehouse operations. In fact, if warehouse personnel in this example were *not* using FRS, then those frequencies in that vicinity would go unused—a waste, for sure.

For business use, the only useful alternative to FRS, before its inception, was to spend money to purchase the more expensive commercial-grade handheld radios, then to spend money for frequency coordination, then to spend money for an FCC Part 90 "business" license. Getting on the air with licensed-by-rule FRS certainly involves a whole lot less spending. Going the traditional route, a business could easily fork over in excess of \$1,000 just to get two walkie-talkies on the air. On the other hand, a retail bubble-pack of two Motorola FRS handhelds might cost less than \$150, maybe a lot less, particularly if one chooses a lesser-known name brand. Even with a couple of sets of top-quality

nickel-hydrate batteries and a pair of drop-in chargers, the cost still likely wouldn't top \$200 for everything. And there is no licensing or any costly frequency coordination planning, to boot.

In all fairness, the traditional commercial grade equipment is typically more durable and has a greater transmission range than FRS units. But let's stop and think about this. Assuming the commercial equipment is in fact a bit more durable, we need to consider how many \$50 FRS radios can be broken and discarded before equaling the cost of a \$300 commercial handheld radio. Get the picture?

Okay, what about range? Commercial walkies usually run anywhere from 2 to 7 watts TX output. Most put out about 5 watts, max. By comparison, FRS runs a puny 1/2 watt. Guess what? You will barely notice the difference in range if you are in a typical business operation within a warehouse, most any retail establishment, or a low-to-mid-rise office building. Don't even ask what these ranges are in terms of miles, or any other unit of distance. There are so many variables that such figures are mostly meaningless. All right, comparing a 1/2 watt's range to a unit with 10 times its power is a little bit of a stretch, but not much!

Then There's GMRS

Users needing walkie-talkie power in the higher commercial-grade range often turn to the "related" GMRS consumer-grade handhelds instead of FRS units. These share seven channels with FRS, so it's possible for them to intercommunicate. Most consumer-grade GMRS radios offer 2 watts TX output. And 2 watts at UHF has *very* similar propagation to 5 watts, under comparable conditions! Now, GMRS is a licensed personal service, and new business use is permitted only if all individuals involved have their own GMRS licensing. At the present \$75 a head, that *can* get to be expensive, I'll admit. But if FRS will do the job for your business needs, then why not?

The Industrial Telecommunications Association (ITA) has petitioned the FCC to prohibit "daily business communications" on FRS "frequencies" in a filing late this past August (reference WT Docket 95-102). ITA asserts that FRS was created for families and friends to use, "not businesses." ITA is a professional/trade association and frequency coordinator involved in private commercial/industrial two-way radio system opera-

tion. We could speculate as to what ITA's motive might be for this stand.

Whatever we may guess notwithstanding, Laura Smith, a communications attorney as well as President and CEO of the ITA, was kind enough to set the record straight for *Pop'Comm* readers. Laura tells me that their FRS petition has been filed upon request of some of the ITA board corporate members. In other words, several member companies had asked ITA to file with the FCC on this matter. According to Laura, the underlying issue here is *safety*. Evidently, the parties to this petition—large manufacturing companies—are concerned with worker safety when using FRS radio on the job at their plants. Specifically though, ITA is concerned with businesses using FRS for "safety of life" communications, "general safety" use "in a manufacturing plant," and for "maintenance purposes" on an assembly line.

ITA definitely has a point on at least one aspect. Regular life-safety communications operations should definitely have their own dedicated systems. That means a fully licensed and frequency-coordinated commercial-grade radio system. This would include such obvious users as security personnel and lifeguards. For such purposes, FRS is no better than 11-meter CB radio and, perhaps surprisingly, no better than commercial wireless phone services, either. None of these services is *dedicated*, but shared, so they are not usually suitable for regular life-safety use.

Then, should FRS be limited to personal and family-type communications or should any interested parties continue to be permitted to use this service for whatever purposes? How many folks are aware that the U.S. military often relies on FRS radios? Imagine, these radios are *that* useful!

An anonymous *Pop'Comm* reader in New England brought to my attention evidence of a case-in-point: U.S. armed forces in Bosnia. At home and overseas, U.S. military personnel can purchase FRS radios, along with any number of consumer goods, at their AAFES Post Exchange or Base Exchange. And many do, buying these radios for their everyday duties at their own expense. Soldiers in certain patrol operations feel that they could not fulfill their tasks without the inexpensive FRS radios. And they consider FRS radios to be highly reliable.

Now hold on here! Doesn't the military provide radio equipment for our troops? Don't our forces have the most advanced

communications equipment available? Well, the Department of Defense is in the process of switching over from the old AN/PRC-127 handhelds, to the ICOM IC-F3S *Soldier Intercom* (SI) mil-spec brick-style handheld radios. Coincidentally, the IC-F3S can be programmed with up to 14 channels. I have no information on the cost of the IC-F3S to the government, but I dare say we can presume that these top-quality mil-spec radios are well over, say, \$60 or \$70 each! (Note: The civilian and public safety versions of the IC-F3S are among the ICOM IC-F4 series radios.) The cost notwithstanding, the Government Issue radios are only given to regular Army, not to reserve or National Guard units. Furthermore, not every soldier on the ground, even in the eligible forces, gets a radio. Army standard operating procedure is one Government Issue radio per patrol, as in our Bosnia example.

Yes, operation of U.S. FCC certified devices in Europe and elsewhere outside North America does raise regulatory compliance questions. For example, the European version of our FRS is called PMR-446. That's Private Mobile Radio at 446 MHz, another low-power handheld personal communications service with integral antennas, like FRS. There is obviously, then, no compatibility.

Also, tactical use of radio comms mode in the public domain, as FRS is, raises obvious security concerns. Top military brass is reportedly considering banning or otherwise tightly controlling tactical use of FRS by U.S. forces. The U.S. Marine Corps had a more creative solution to this dilemma, though. The Marines had ordered 13,000 ICOM IC-4008 series FRS-style radios specifically for infantry squad use. These radios are the IC-4008M model, while the civilian model is the IC-4008A. There is one significant difference, of which we are aware, between the civilian and the military versions. The IC-4008M is programmed to 14 undisclosed *military* UHF channels instead of the 462/467-MHz FRS frequencies. The use of military frequencies puts life-safety mission-critical field communications on essentially dedicated frequencies—where such comms should be. Addition-ally, U.S. Marine Corps command owns and controls the use of these radios.

So, if you want a military-grade FRS radio for your personal use, be sure to check out the ICOM IC-4008A. You

never imagined there was such a thing as a military-grade FRS radio? Neither did I! There's no whiz-bang state-of-the-art digital modulation, and no sophisticated trunking or cellular infrastructure. These guys under fire in the field just want to push a button and have it work! You know, sometimes *simple is better*.

In any event, this brings us back to our basic question of whether FRS should be, as its name strongly suggests, *for families only*. Your *Pop'Comm* staff will be carefully watching this regulatory question, as it continues to unfold.

The Big CB Enforcement Bust That Wasn't

By now you've likely heard or read the story of William Flippo of Jupiter, Florida. Flippo had been arrested, tried, and convicted on charges of unlicensed operation and causing intentional interference, as you may recall. Last summer Flippo was sentenced to 15 months imprisonment and a whopping \$25,000 fine. Additionally, Flippo will have to serve a year of supervised release following his 15-month incarceration. But, exactly *what* Flippo was charged with causing interference to, and allegedly pirating, may come as a surprise. At least one widely circulated press release claimed that a Jupiter, Florida, CB radio operator was the perpetrator. Yes, the authors of that release were referring to this very same case.

So, what are we to think—that Mr. Flippo was convicted and sentenced for interference on the CB band, or possibly with illegal high-power CB equipment? If that's what you thought, I can hardly blame you. After all, that's probably what you read elsewhere. But it's not so. Flippo's conviction involved unlicensed operation and intentional interference in two different *amateur radio bands*. The unlicensed transmitting, or "pirating," if you accept that definition, and the interference at issue, had nothing to do with the 11-meter Citizens Band, according to official sources at the FCC's Enforcement Bureau. Whether William Flippo was coincidentally a CB radio operator had *nothing* to do with the case in question. The irrelevant characterization of the accused being a CB operator emanated from a national amateur radio organization whose motive for such misrepresentation appears to have been to

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further the rift between hams and CB radio enthusiasts.

It's a shame any time a few otherwise good hams move to slam the CB radio community. There is absolutely nothing constructive about this sort of behavior. It won't make the *lids* minority on CB shut up or go away. And it certainly won't encourage the many fine CB operators to become licensed amateurs. I've said this before: Hams, if you don't like what you hear on CB, then get on the band and show 'em how it's done *correctly*. I'll be right there with you!

Wishing You A Joyous— And Safe—Holiday Season

It's getting very close to the holidays, already. It's time to finish up that wish list, especially if you need to get it approved by the "accounting department" consisting of the XYL, or the XOM if that be the case. These days you usually need cash up front or at least a valid credit card account number, you know.

As we enter the holiday season, I know quite a few of us will be on the road. Is your car, truck, or SUV well equipped with telematics devices? If you are stranded somewhere on a cold night, will you have what you need to summon assistance, or to get a message home? If you're lacking in this category, then by all means, add the equipment to your wish list. If Santa doesn't bring you what you need in time for your holiday traveling this season, then perhaps you'll have it in place in time for a subsequent trip.

Have a safe and joyous holiday season! You may write to me here at *Pop'Comm* with comments and suggestions at n3hoe@juno.com. I'll see you again next year! ■

S B C hannon's roadcast lassics

a look back at radio & TV's golden years

A Sea of Change Near Lake Coeur d'Alene, Idaho

It's probably safe to say that many radio buffs started acquiring an interest in the broadcasting business while still in grade school or junior high. Often such fascination began by simply identifying with a favorite local Top-40 music station—especially one that our parents considered to be playing incredibly lousy music. Add to that a bit of dreaming about owning a station someday.

Young listeners with a touch of "collector" in them sometimes extended that focus into amassing weekly music surveys, QSL cards, bumper stickers, or just by keeping a list of call letters and the locale of every station they could pick up on a given night. Key to this was having a copy of *Radio-TV Experimenter* with the "White's Radio Log" near the back of the magazine. As a kid, I spent hours—in intervals of spare minutes here and there—pouring over various editions of White's lists. For some reason, certain quadruple consonant callsigns (like WZZZ when it was assigned to the now defunct kilowatt daytimer on 1510 in Boynton Beach, Florida) and dual cities of license (for example, the 950 kHz, 1000-watt daytime facility for Potomac-Cabin John, Maryland) captured enough of my attention for me to pull the family atlas off the shelf and pinpoint the place.

Most interesting to this erstwhile youthful easterner, though, were stations in communities that were rather far west of me and tough to spell. Few fit that bill better than KVNI in Coeur d'Alene, Idaho. Because one or two early 1960s "White's Radio

Log" editions note a mysterious and short-lived AM competitor to KVNI that even most long-time residents there never heard of, I asked Jan Lowry of *Broadcast Pro-Files* to see if he could dig up any other evidence of more than a single standard broadcast station in that beautiful northern Idaho community. His findings surprised me. And to sweeten the results, Jan also sent facts about a slick proposal there that the FCC bought, apparently without blinking a governmental regulatory eye.

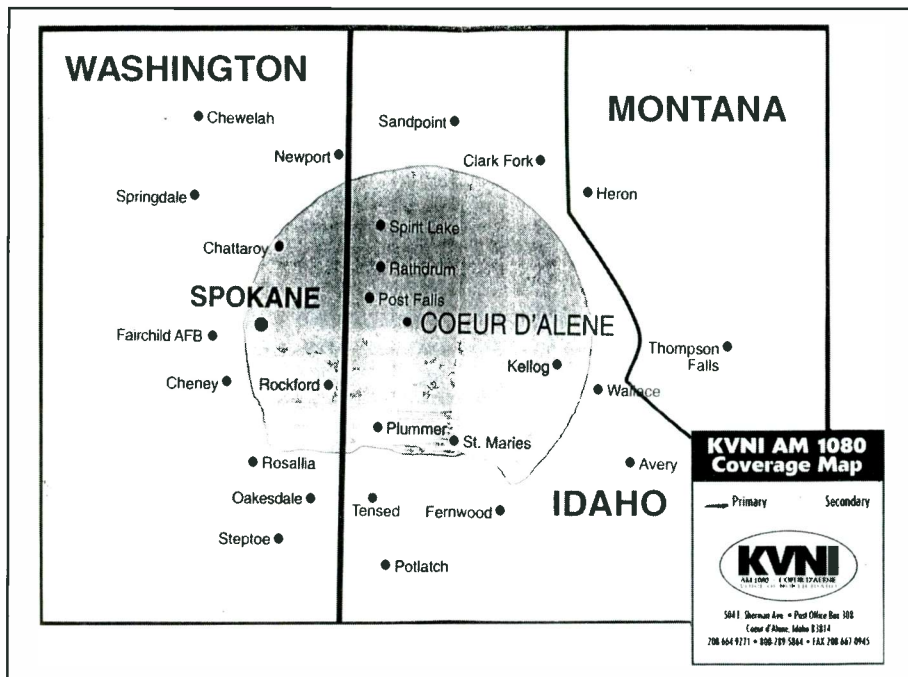
Looking Back At Coeur d'Alene

Some 25 miles east of Spokane, Washington, lakeside Coeur d'Alene had only about 10 percent of its present day 35,000 inhabitants when, in winter 1937, the Commission granted a construction permit (CP) for a new station there. Paperwork for the proposed 100-watt daytime-only outlet on the then local frequency of 1200 kilocycles had been filed a year earlier by equal partners Clarence A. Berger and Saul S. Freeman.

The duo picked the callsign KGCI and promised a small studio/transmitter facility at the intersection of Coeur d'Alene's Second and Sherman Streets. But passersby never noticed much radio action at the corner. Reportedly, Burger and Freeman hit upon some now long forgotten money trouble making it necessary to tell the FCC that they couldn't follow through with their plans. In official vernacular, regulators cancelled the KGCI permit and deleted the calls because the "permittees failed to construct [KGCI] within a reasonable time." No doubt at least a few local radio buffs were disappointed by the February 20, 1939,

It was not uncommon for small radio stations to be headquartered in buildings that strongly resembled a ranch or "rambler" style house. During the late 1940s and '50s, one broadcast manual suggested such a structure would net potential station owners quicker bank loans for their venture because bankers could easily sell the building if the station failed. Of course there was no need for such worry regarding KVNI, as the Coeur d'Alene AM hit upon immediate success—twice! Here the second incarnation of KVNI is pictured, circa 1960, as a non-directional, 1000-watter on 1240 kilohertz. Note the neon call letter sign, and empty parking lot, except for a bicycle leaning against the homey picket fence. The bike indicates that the picture was probably taken during a weekend when some high-school-age, part-time DJ was on duty. No doubt he (it's a boy's bike) felt mighty important at the mic! (Courtesy—Museum of North Idaho)





This contemporary coverage map shows that as a 10-kW facility with directional antenna on 1080-kHz, KVNI reaches Spokane, Washington, where the station's first incarnation was relocated in a very unusual 1947 Federal Communications Commission procedure.

mandate. Soon, though, the proposed AM station faded from community scuttlebutt, while the larger Spokane stations continued serving Coeur d'Alene folks via the outer ends of their primary signals.

It is likely that the "almost" radio station caught the attention of Burl C. Hagadone who had a business interest in Coeur d'Alene's (then) main media outlet—the town's daily newspaper. Logically, most print magnates realized the economic power of the transmitted spoken word, and so adopted an "if you can't beat 'em, join 'em" modus operandi. Sometime during World War II, plans to establish a radio facility there were revitalized by Hagadone and partners. Their Coeur d'Alene Broadcasting Company held a pretty decent construction permit for such a modest community-located enterprise by January 1946. Perhaps, some thought, too good to have parked in a locale with less than 5,000 population? The CP specified fulltime operation with a kilowatt at 1430 on the AM dial.

Quickly built, this non-network affiliate, dubbed KVNI, officially put its Western Electric 1000-watt transmitter on the air during the first day of November 1946. While announcers switched on the KVNI microphones at studios in Coeur d'Alene's Desert Hotel building, it appears that the new station's owners had little intention of keeping such a potent

regional coverage fulltime voice in a small town. Behind the scenes, applications were rapidly filed to raise KVNI power to 5000-watts (1000-watts, directional night) and shift its base of operations to the area's largest city, Spokane, Washington. In August of 1947 (just 10 months after greeting Coeur d'Alene residents as their local station), this KVNI (on 1430) left the airwaves and reappeared as KNEW in Spokane for September 1!

Filling The Void

To be fair, the KVNI-to-KNEW transformation was not completely without precedent. Shrewd engineering has produced more than a few such "move-ins." But, unlike others in my post-WWII files, the Coeur d'Alene story hardly ends with a single point A to point B scenario. In 1947, additional CP applications regarding the Idaho/Washington situation were handed to the FCC. The boldest was a request from Hagadone's group to have its kilocycle cake and eat it too! That is to say, documents got filed seeking permission to fill the local broadcasting void left in Coeur d'Alene due to the original KVNI's Spokane move.

In today's regulatory environment, operating two AMs (TVs or FMs) that cover all or some of the same market is

commonplace, but was strictly taboo prior to the 1980s because officials wisely feared concentration of media control would hamper competition (an issue that's now generating grassroots attention). Surprisingly, a permit was quickly approved for the "new" Coeur d'Alene broadcast property. It was a true "switcheroo" that received explanation and fanfare in the local press because the paper's publisher, Burl C. Hagadone, had been instrumental in securing the 1240-kilocycle CP through the aforementioned machinations.

Understandably, in moving to Spokane, the former KVNI no longer wanted to be identified as a Voice of Northern Idaho, so as previously noted, it relinquished its callsign in favor of fresh-sounding KNEW. (Years later, in 1966 this outlet converted to KJRB when the KNEW moniker went to Metromedia's San Francisco-area facility to match the company's flagship WNEW in New York.) Of course, Hagadone and his associates stood ready to retrieve KNVI lettering for the present day KNVI which hit the air in 1948.

By the way, during KVNI's second inauguration at Coeur d'Alene, engineers working with Hagadone's group discovered that the Spokane station could slide down the AM dial to an even nicer spot. KNEW submitted papers to make another change and, in 1950, was authorized to take 790 kHz using 5000-watts fulltime via a dual directional pattern.

Meanwhile, a tidy little studio/transmitter building on Blackwell Island, southwest of downtown Coeur d'Alene, became the KVNI headquarters and the community's 250-watt source for local DJ shows, news, and big city fare via the Mutual Broadcasting System and the west coast Don Lee Network. Over the years, Mutual would have an on-again/off-again relationship with KVNI, as some new owners would opt for 100 percent local content. Typically, the morning announcer hit the transmitter's high voltage switch at 6 a.m. with sign-off occurring around 11 p.m. Straight through to the late 1960s, KVNI listeners were treated to a consistent brand of innocuous conversation and non-offensive middle-of-the-road musical programming handled by believable personalities that endeared much of rural America to its hometown stations.

As a youngster in the 1950s, Spokane native Paul Huetter and his family vacationed in their lakefront cottage at Coeur

d'Alene. He fondly recalls how KVNI's original homey sound distinguished the station's output from that of the more sophisticated Spokane radio outlets. Huettner says KVNI's laid-back, "if anyone has anything you'd like us to play or talk about, call us up or stop by," kind of approach matched the easy pace of vacation days enjoyed by a good number of the little AM's seasonal listeners. "Folks smiled about its neighborly consistency," he noted.

A year-round resident since the 1970s, Huettner reports that he has never heard anyone accuse the station of drifting very far from those roots. Behind the scenes, however, KVNI was often in a sea of change, switching licensees at a remarkable pace. In 1955 to Allan H. Pollack, a former Sacramento, California, TV station general manager; in 1957 for \$65,000 to Herbert C. Rice's Northern Idaho Broadcasting Company; in 1958 to Rexard Company, Rex Koury and Howard Flynn; and in 1963 to Lake City Printing Company, which was equally owned by Duane C. Hagadone and Scripps League Newspapers. This last change brought KNVI back into the hands of its founding family and operators of *The Coeur d'Alene Press*. So when the FCC granted the ownership change and a boost in daytime power to 1000-watts, studios and offices were relocated to the newspaper building at 201 North Second Street.

The Good Old Days

Before the days of publicly held, mega-broadcasting groups, radio stations were typically founded and operated by radio people who loved the business, so consequently expected to work hard, serve the community, enjoy a good local reputation, and be comfortable, but not necessarily rich. Key to this was finding just the right town for your station (or buying an existing one) where there wouldn't be stifling competition. In fact, the FCC used to require applicants, especially in small markets, to prove that their proposed sta-



tion could survive without harming an existing broadcaster. I remember my dad telling me about the early existence of Middlebury, Vermont's WFAD (1490 kHz) and how the Commission was concerned that maybe it shouldn't have authorized the station. He'd heard that the management of nearby WIPS (1250) Ticonderoga, New York, complained to the FCC that the new Vermont outlet was cutting into WIPS' Green Mountain State advertising revenues.

Both the Green Mountain and Empire State facilities survived, but that wasn't the case in Coeur d'Alene. There, two radiomen (Robert L. Swartz and Arthur R. MacKelvie) filed—under the name of Radio Actives—for a CP to build a daytimer on 1050 kHz. They already owned KZUN in Opportunity, Washington, and figured 1957 would be their chance to expand. The FCC considered the request in the light of KVNI's operation and believed the Coeur d'Alene business climate was brisk enough to support a second local AM. Swartz and MacKelvie planned to spend \$13,026 building their station, \$36,000 to run it for its premier year, and to garner \$42,000 in anticipated advertising sales income. Commission officials granted a construction permit on September 5, 1957, and the permittees quickly picked the calls KZIN (to mimic their KZUN), and had the 250-watter on the air only three months later.

Perhaps revenue expectations were not quickly realized because merchant acceptance of interloper salespeople was chilly, or maybe local folks loyal to KVNI saw no need to move their dials to KZIN. Whatever the reason, KZIN was sold the following September. Actually, in a spir-

it of "take the money and run," the \$75,000 paid for KZIN by Lakeside Broadcasters (William C. Rhodes, former manager of Spokane's KNEW, Vernon M. James, and Fremont L. South) likely netted the founders a small profit.

It'd be neat to hear tapes of KZIN, but it's unlikely any exist. (Does anyone have some KZIN memorabilia?) If we could eavesdrop on the little station around 1960, probably very few commercials, though lots of free public service announcements, would be heard. One can imagine that, while the same power as cross-town competitor KVNI, the latter as an older and fulltime facility was thought by most to be Coeur d'Alene's "big" station. Some perception of that ilk caused also-ran, KZIN to go dark and surrender its license in 1962. There must have been some arrangement with rival KVNI ownership about this closure, as Vernon James who'd held half of the KZIN stock was soon managing former competitor KVNI.

During the mid 1970s KVNI's officials employed an engineering firm to study ways that a frequency change and power increase might be sought. Certainly the outlet was no stranger to technical modification. Coeur d'Alene and nearby towns had enjoyed steady population growth, stretching its 1000-watt signal thin past city limits. In 1979, an ownership modification (to Duane B. Hagadone) occurred, a CP for moving (from 1240) to 1080 kHz with 10,000-watts day/1000-watts (directional) night was granted, and a new broadcast facility was built at First and Lakeside. *Broadcast Pro-Files* indicates "the modern single story brick and glass building was erected in a corner of *The Coeur d'Alene Press* parking lot." Its new antenna array became a fixture southeast of town just off Eddyville Road. A 6 a.m.-to-midnight broadcast schedule was adopted, as was contemporary music. This lasted until Satellite Music Network's "soft adult contemporary" format was instituted in 1986.

The FCC approved KNVI's inside-family stock transfer to Burl Todd



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Though a promotional piece from Seattle's KJR 950, the (approximately 3 x 4-inch) candy dish relates to our story in that KVNI, which became KNEW Spokane, morphed into KJRB, the sister station to KJR.

Hagadone three years later. Twenty-four-hour-a-day broadcasting emanated from the station in 1990, with news/talk programming elements added. This signaled a period of rapid format shifts in the 1990s, with the likes of adult contemporary tunes off Satellite Music Network, Sports Talk, and Country also off the "bird." The Hagadone family interests left KVNI with its \$2.5 million sale to Queen B Radio, Inc., during 1998, and, by the end of the millennium, KVNI occupied new studio/office space on East Sherman Drive. Lately, under the auspices of the KXLY Broadcast Group, KVNI's "Doo-Woppin' Oldies" (Elvis and the Drifters to Jan & Dean and Buddy Holly) format with some informational local news/talk shows has earned the "Mighty 1080" fans throughout the Coeur d'Alene region.

But there is another station, KOFE, at least loosely connected to our Northern Idaho radio story. It's a local AM in river-side St. Maries (pronounced St. Mary's), some 30-miles (as the lake and rivers go) from Coeur d'Alene. KOFE took to the airwaves in late winter 1970 with a kilowatt on 1480. "White's Radio Log" shows a slight shift to 1490 so that it could go from being a daytime-only (or as some say "daylighter") to a station operating after dark.

What is most interesting, however, is that as soon as KVNI switched from 1240 to 1080 kHz, little KOFE in St. Maries asked the FCC if it could have KVNI's old frequency. In terms of the six "local" AM channels (1230, 1240, 1340, 1400,

1450, and 1490), most radio people feel one is as good as the other five. Adjacent channel interference can be an issue and perhaps Spokane's 50,000-watter at 1510 worried KOFE on 1490? In any event, this shift let both 1480 and 1490 float around the area for possible use by potential competitors, though neither has been since activated. Nor was the 1050 spot at Coeur d'Alene after KZIN's demise.

Broadcasting history is filled with such "what ifs?". Sometimes it's lot of fun to get together with other enthusiasts who know the AM band and put together power/frequency/community-of-license

scenarios like sports nuts who speculate about dream teams.

Next Month—Early UHF-TV

Next time we'll enjoy the early days of UHF-TV and muse about some ambitious plans that were victims of viewer apathy, limited finances, exorbitant power bills, and simply arriving in their media markets too soon. Meanwhile, resolve to check the attic for that long-retired UHF converter, as I sign-off...*And so ends another broadcast day of electronic media history at Pop'Comm.* ■

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Monitoring Mall Security—Different This Year?

It's getting to be that time of year again. It's time to do all that holiday shopping and plan for travel over the holiday week, sure, but that's not the time of year I was talking about. I was referring to the fact that it's time to load your scanner with mall frequencies!

Scanning the mall can be quite entertaining. Quite frequently, additional security personnel are added for the increased workload, and not all of them are familiar with procedures. Between inexperienced officers and more frequent problems due to the increased crowds, the combination can result in some amusing discussions. I suspect, with the current focus on security, that situation will be quite common this year.

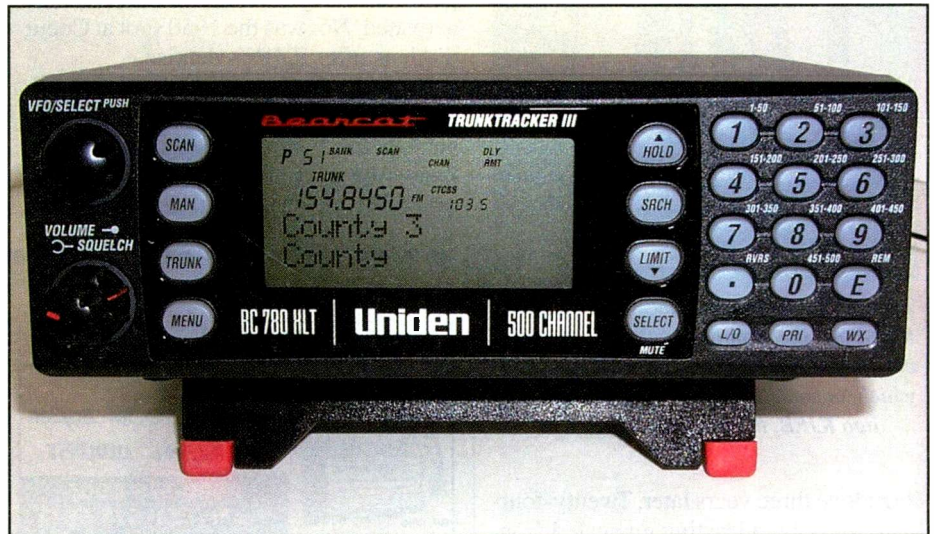
Most of the security officers and others who are to be heard on the radio are not professional communications specialists, to say the least. Even the full-time employees frequently use the radio "only because they have to," and, during the holidays, there are likely to be a number of part-time staff added to help with the increased workload. This part-time staff will need directions and answers to questions that customers may ask hundreds of times a day, but maybe a certain part-timer hasn't had the question come up before, and it must be answered over the radio by a senior employee. Sometimes it's answered for the one-hundredth time by that particular senior employee and the answer is somewhat less than polite.

Our mall also runs into parking problems around the holidays, and a whole detail of folks is dedicated to solving that problem and transporting staff and guests to other off-site parking. To say the least, security is tighter and there are likely to be more problems in general during the holiday shopping season with so many people coming and going, and, unfortunately, more opportunities for unscrupulous types to take advantage of as well.

What's The Frequency, Ken?

You can find store and mall security on just about any business frequency, so you may have to do some hunting to find just what you're after. In some cases, off-duty officers provide the security, but they're equipped with police frequencies and a special unit number. Larger malls will have their own systems.

Another good place to look is the itinerant frequencies, particularly within individual stores (larger stores all have security staffs of their own these days). Equipment operating on these channels is widely available to anyone. They are required to operate at low power levels, and while that's enough to carry the signal within a building, you may not be able to hear them



This is the Uniden BC780, but the new 785 is going to look just like it from everything I've been told. Both are great scanners and very capable trunktracker receivers as well. The 785, which is due out soon, will have a slot for a "digital decoder" card for listening to APCO-25-based digital systems.



This is the 8600—last year's model—which is still available. The newer 8600B features some upgrades in performance. Both are probably available right now, and both would be a great addition to any shack!

unless you are close by. Larger centers will have dedicated frequencies and possibly several channels to keep security and maintenance functions separated. Two of our local centers even use repeaters, which makes listening all that much easier since you can hear both sides of the conversation.

Finally, you may have some luck finding frequencies in more traditional references like *Police Call* and *Monitor America*. Both of these excellent references should be in your library as good starting points for frequency information. The most recent editions of both publications have mall frequencies for major centers. Check them out.

If you don't have the frequencies already, it's a bit of a fun challenge to identify them. If you can't find anything listed at



If you use a lot of mobile or base units with 12-volt supplies, you might find this power strip a handy item. You can replace a whole slew of wall wart supplies with a single 12-volt converter and use a power strip like this MFJ-1116 to make connections easy. Your radios will run cooler too!

all, or don't have access to the frequency directories, go have a look around the store or mall you're interested in. See if you can spot any antennas on the roof, or if you can spot someone using a handheld radio. The length of the antenna *may* give you some indication of their frequency, but not always. In the good old days, you could tell just by how long the antenna was on the handheld transceiver what frequency band they were operating on. That information was very helpful to hobbyists in order to narrow the search. However, today's modern antennas, particularly on portables, have many shapes and sizes and don't always correlate well to the band they're designed for. For example, I have an 800-MHz rubber duck antenna that's much longer than several common VHF-Hi antennas.

Perhaps you can find a friendly mall employee who'll let you look at the radio itself. Sometimes they have meaningful labels (sometimes even the frequency itself), but sometimes not. Good hunting!

Passing Of An Era

It is with great sadness that I must report on the apparent passing of a time-honored tradition. RadioShack, citing increased costs of production, is apparently not planning to produce a catalog this year, relying instead on the Web to market their products. The catalog will truly be missed, particularly this time of year. The catalog usually made its way into stores in September with promises of "Available in December" appearing on many new items in its pages—just in time for Christmas! How convenient! I always looked forward to finding the new stuff and finding out what to add to my "wish list." At the same time, I have to admit that I really can't blame them. I have more than a passing acquaintance with the

printing and production process, and I'm certain that their catalog was indeed expensive to produce. In recent years, you may recall, they've had a policy of charging for the catalog, which was met by fairly stiff resistance. In the last couple of years, you could get it free with a purchase of just about anything. That still amounts to giving away hundreds of thousands, if not millions, of free books.

Holiday Wish List for Scanner Nuts!

Time really flies whether you are having fun or not! As I look back over the columns from past years, I can't believe this is the fifth holiday season we've been through together. ("Scantech," the former title of this column, joined *Popular Communications* in November of 1997 with yours truly as the author.) It's become a bit of a tradition in this column to talk about items you might want to add to your holiday wish list. No sense messing with a good thing, so here are my suggestions for this year.

New radios are always a great gift for the scanner enthusiast. The problem can be choosing which one and letting Santa know what's on your list without being too blunt. I'll leave that problem to you and Santa as I haven't found a good solution either.

Right now, all eyes are on Uniden Corporation as we await the new Digital Trunktracker scanners. There's both a handheld model (BC250) and an upgraded 785D base/mobile unit expected. They may in fact be available by the time you read this. The most recent information (speculation?) that I've seen puts the units into production sometime in October and hopefully available to dealers late November or early December. You'll

probably have to move quickly if you want to snag one for this Christmas.

What makes the two radios unique is the ability to add (for additional cost) a digital decoder card. This card will read the rapidly growing standard APCO-25-type transmission mode. If the digital system you're listening to uses another standard (like EDACS digital for instance) or has encryption turned on (like most federal systems) you won't be able to listen with these radios either. However, an increasing number of systems are being installed with the APCO-25 protocol for spectrum efficiency. The FCC would like all public safety communications to go digital at some point, but so far there's no real deadline for the conversion.

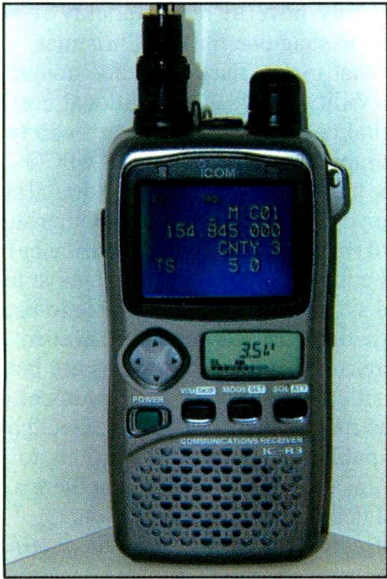
If you don't need the digital system in your area, you might want to consider the Uniden BC-780XLT. With 500 channels with alpha tags, this capable receiver is the most versatile trunktracker to date. It can trunk track Motorola type I and II systems, EDACS, and LTR. Add the computer interface and it's quite a package. I would guess that there may be some deals on this radio as the 785 becomes available. There is some speculation that the digital module could be added to a 780 as well, but we have no official word on this from Uniden. If you think you'll want digital down the road, I'd wait for the 785.

Software?

Many software applications are also available for this new receiver. ScanCat and ScanStar both have added support for the 780 to their jack-of-all-trades applications. There are also several specialty applications available as well, including the much-discussed WinScan 780 from Pozilla software. Look at the range and find one that has the features you're after.

There were few new radios introduced this year—at least so far—but it appears that several are on the horizon. AOR's 8600B receiver represents an upgrade in performance to their already stellar base/mobile unit. The new RadioShack online catalog lists a PRO-95 1000 channel handheld, which may be available by the time Santa gets serious about shopping (Catalog No. 20-525 \$249).

If you haven't played with any of the computer-aided or computer-controlled scanning applications, a present from Santa might be the way to get your first taste. Remember that you'll need a computer interface on the scanner you're trying to hook up, so check that out first!



While not new for 2002, this receiver is still pretty amazing. The TV picture is very impressive for such a small screen. When you're not watching TV, it doubles as a fairly impressive broadband receiver.

ScanStar and ScanCat are by far the two leading contenders in broad support for the most radios. There are, however, some specialty applications available for particular radios that can be easier to use with that new radio and, in some cases, support the special features of the radio better. Neither will be a bad choice, but look around before you write your letter to St. Nick.

RadioShack is listing a new PC Interface kit for \$16.95 (20-048). This kit includes a cable and a CD and supports a number of their receivers. I have not yet had the opportunity to check out the software to see just how it works, but if you have a computer-programmable scanner from RadioShack, you should check this out. The cable by itself is probably worth that much.

While you're at it, you probably should also pick up the new edition of *Police Call*. The editions for the last few years have included a CD-ROM that includes data for the entire U.S. The software was improved greatly in 2002, and it makes a very usable package and a great frequency reference. It really should be in your library if it isn't already!

Branching Out

How about exploring some other parts of the band? If you're into scanning, you might want to think about asking for a receiver that covers a portion of the fre-

quency ranges that you don't currently have. If you're using an older scanner, an upgraded model with 800 MHz coverage or trunktracking might be just the ticket.

If you're covered in that department, how about a shortwave receiver to check out the action below 30 MHz? I'd strongly recommend a receiver capable of SSB reception so you can listen to both the broadcasters *and* the utility stations that are to be found in the HF range. Many of the utility stations operate like stations on the scanner frequencies you're used to listening to, but at longer range.

Become Part Of The Action!

You might want to get out of the listening habit and become part of the action you're listening to! Many transmitters no longer require a license and can be extremely handy for home or work applications. However, what I had in mind for your wish list was a study guide for one of the radio amateur exams. Getting your ham license has become a very good idea for scanner listeners in many states, and having a transmitter handy just in case something happens is also a good idea.

There are many study guides available from all sorts of sources, including RadioShack, American Radio Relay League, and *Pop'Comm's* own Gordon West! Check them out and see how easy it is to become a licensed ham! I like to point out that our local scanner club is full of hams. It opens up a whole new world for both listening and fun activities if you choose to get involved.

Antennas, Anyone?

Scanner nuts never seem to have enough antennas. Of course, on a hand-

held, they're easy to change and swapping back and forth can be advantageous for various conditions or frequencies of interest. Base users can also gain some mileage from changing antennas from time to time. Perhaps you've been using a model that you're not quite satisfied with, or perhaps you've got a second scanner that could use a little signal boost. On the other hand, if you're hearing everything you want to, a new antenna is probably not necessary.

Handheld antennas are self-contained, so the only real issues are performance versus what you're willing to be seen walking around with. Some of these antennas get to the point of being larger than the radio, and that always makes me wonder just how practical they are. If you don't have a telescoping antenna that can be adjusted for various frequencies, you probably should. If you're still using the antenna that came with your radio, you're a good candidate for an upgrade. Look around and see what strikes your fancy, but keep in mind the other major consideration in handheld antennas: frequency coverage. All antennas, not just handhelds, are built with particular frequency ranges in mind. The telescoping system that I mentioned above has the advantage of having adjustable length, which means adjustable frequency response.

I have a tendency to use ham antennas for my scanners because they are so widely available and because they are close to the frequency ranges I'm interested in monitoring. You may be able to get significant performance enhancements on a single band by using commercial antennas built for just that frequency range, but you are quite likely to sacrifice bandwidth (the ability of the antenna to perform over a wide range of frequencies).



This PRO-2052 trunktracker from RadioShack makes for a great base/mobile unit and has recently been on sale. The optional speaker directs the audio forward making it much easier to hear in a larger room.

On a handheld, that's not a major concern, depending on the intended purpose of the antenna. For instance, if you mostly listen to stuff in the 154 to 158 range, finding a commercial antenna for it will probably improve performance. You may not hear much outside that range, however, so you'll have to assess the frequencies you listen to before buying. Trunktracker users who listen mostly to the trunked system in their city tend to benefit considerably from an antenna designed for the 800-MHz range.

Base antennas, however, present a whole different set of problems. The major concern with a base antenna is likely to be performance over a broad range of frequencies that you are interested in, followed by how much room the antenna takes up in the attic or outside. Are you going to have to add structural support to the mast or tower in order to support the wind load of the antenna? It's something to keep in mind as you're shopping.

Other Accessories

If you're all set for radios, you might want to look at some accessory items. One of the biggest problems in my shack has always been having enough power in the right place at the right time. Power strips are the answer, and the MFJ power strip for 12-volt items is a very convenient. You simply run your equipment off a 12-volt supply that can handle a large number of radios and accessories. This allows you to cut down on the heat generated by each radio's power supply, as well as cut down the number of AC outlets you need and the number of wall wart transformers that have to be plugged into them! It's a great system!

Both base and mobile scanners can usually benefit from a speaker upgrade. External speakers come in all shapes and sizes and for all purposes, and they're very easy to install, assuming your radio has an external speaker jack. If you've never used anything but your scanner's built-in speaker, I'll warn you that you might not want to try this—it's addicting!

External speakers can do a number of things for you. Most scanners have the speaker mounted so that it faces up or down. Up is definitely better, since that's where you're more likely to be listening to it, but up doesn't direct the audio *out* into the room (or car) as well as it might. By using an external speaker that faces forward, you can hear more of the sound. Speakers can also be tailored to the voice

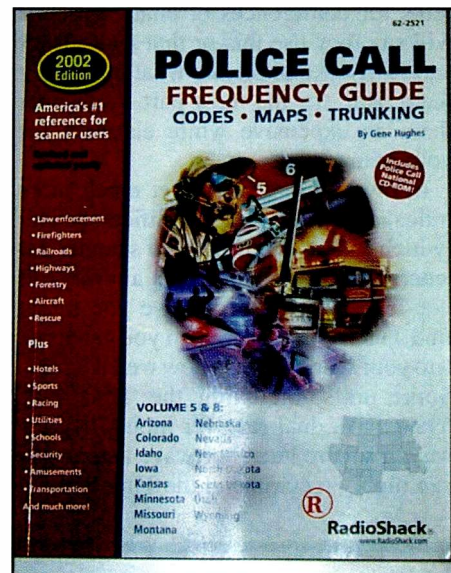
range that you listen to on your scanner. Sometimes, depending on the radio you have, just a bigger speaker will make the audio a bit easier to listen to. Sometimes you might want a communications speaker available from the major retailers for a variety of applications.

RadioShack has a few speakers that work well for scanner applications. I have been using the RadioShack Minimus 0.3 (40-1254, now discontinued) with some success for years. While not the best possible speaker, it does serve the purpose of getting the audio out into the room, and it's inexpensive and small enough that a number of them can be used without making a major dent in shelf space. The RadioShack RCA DieCast mini-speaker (40-5000) also works very well for me, although some people do complain of it having too much treble response for scanner use, which highlights the problem of picking the best speaker—only you can judge. One of the great things about RadioShack is that they will let you exchange it for something else if you make a mistake!

If you can't get enough audio from your radio, you might consider any of the various amplified speakers that are on the market. This trick works extremely well with handhelds. With the proliferation of multimedia computer systems, amplified speakers are available everywhere at all price ranges. Keep in mind that you don't need a real high-fidelity speaker to reproduce the voice information that most of us listen to on our scanners. In fact, a high-fidelity speaker may work against you. These speakers will often have a "whine" or ringing sound to them. This isn't anything wrong with the speaker, but rather the speaker's attempt to reproduce some of the CTCSS or tone squelch that your scanner is allowing through to the audio amp. It's annoying to listen to, but it doesn't hurt anything either.

Finally, external speakers can be used to separate the audio. That is, if you have more than one radio, simply using your ears to determine where the sound is coming from can help you distinguish which radio is active. External speakers can be mounted in the ceiling or walls, or can just be placed at opposite ends of a desk. The idea is to put them in spots that you will hear the difference!

Depending on where your scanner is located in relation to the rest of the house, and more importantly the activity in your house, it might be helpful for domestic tranquility to have a set of headphones



If this isn't in your library, it should be. Police Call 2002 is a great reference for all sorts of frequency information. The included CD-ROM has all the data for the entire country so it's a great resource for when you're traveling!

around. These can come in very handy for those late-night listening sessions, or for listening to the scanner while others are watching TV nearby. Some shortwave listeners find that they prefer listening through headphones all the time, while others almost never use them.

The only problem I've found with headphones is that it can be difficult picking out a pair for someone as a gift that that person will be comfortable with. Also be aware that headphones come in stereo and mono (mostly stereo for obvious reasons). Some of our receivers will support the stereo headphones by putting the signal into both ears, but most do not; you'll only get audio in one ear under these circumstances. That might not be all bad, as it leaves the other ear open for hearing room noises, but it can be annoying if you want to concentrate on the radio. There are adapter plugs to solve this problem, or you might prefer a pair of headphones that are optimized for communications listening (available from any of the major manufacturers of ham and shortwave equipment).

Another accessory that I get asked about is audio filters. For shortwave listeners, these are a great help, depending on your receiver's capabilities. However, for scanner listeners, I don't think they are quite as useful. Every once in a while on the AOL conference (Thursday night 9 to 11 EST at keyword SCAN; follow the

links for conferences or chat) someone will say they use this or that audio filter and really like or dislike what it does for them. But, for the most part, I consider them an expensive white elephant for your scanner.

In my opinion, you'll get much more mileage out of a pure amplified speaker (which I think is how a lot of scanner listeners wind up using filters anyway). If you also listen to shortwave you might find a use for one, and then you can hook it to your scanner to see how well it works. Some units, including the TimeWave 599+, have dual receiver inputs! By the way, if you're into shortwave listening, I can highly recommend the TimeWave if

the price doesn't put you off. MFJ also has a nice DSP filter that's worth a look—I've heard good things about it but never actually used one.

Another audio accessory that might be of interest is the NiteLogger (BMI \$69.95, available through many dealers including Universal Radio in Ohio) which allows you to set up a tape recorder and only record the activity, not the quiet times. This can be a great way to find active frequencies, to help identify traffic on an unknown frequency, or to monitor a channel that's only busy when you're at work or asleep. Of course, you'll need a suitable tape recorder to go with this accessory, but, hey, maybe Uncle Hank

can provide that instead of the usual assortment of handkerchiefs? With the proper software you can also record into your computer and then convert the files to MP3 or something if you want.

Finally, you might want to have a look at the new generation of MP3 players beginning to hit the market. Once you've converted those recorded files I mentioned above, you can take them with you and listen on the move. This can be a fun way to pass the time of a commute. And you can also use them to listen to many other things.

Frequency Of The Month

If you've just joined us, let me explain how all this works. I came to the conclusion long ago and far away that for me to keep a central database of frequency information was simply not practical. There's just too much of it out there, and there are many sources of license listings (one excellent source, for instance, is <www.perconcorp.com>).

So we decided to play this backwards. I give you the frequency, you tell me what's on it in your area. What you see here is just a sampling of the entries for this particular frequency. Everyone who sends in an entry benefits because they find out what's on that frequency. Then we throw all the names into the *Pop'Comm* random number generator to pick a winner from time to time!

Our frequency for this month is **170.975**. Let me know what you can hear. Even if you don't hear anything on that frequency in your local area, you can still enter with that information! We'll put all entries in the drawing when it comes up!

Speaking of drawings, Lou Borkowski wrote to tell us that he hears the Buffalo, New York, ground control on 121.9. That's about what everyone heard (if they heard anything) because that frequency is pretty much used nationwide for ground control. Congrats Lou!

Your Input Needed

"Overheard" is your column (but I didn't name it). Please don't hesitate to write in with questions or suggestions. I do read every letter, even though I don't get to respond to all of them.

Contact me via regular mail to Ken Reiss, 9051 Watson Rd. #309, St. Louis, MO 63126 or via e-mail at <radioken@earthlink.net>.

Until next month, good listening! ■

Tuning In (from page 4)

because of the global nature of everything we humans do from trading to polluting, how we're viewed in places many Americans can't even find on a map is vitally important.

While our government is busy building momentum for today's crusade—and heaven knows what it *will* be by the time you read this—our ever-vigilant New York media has successfully breached airport security 14 times merely a year after the tragedies of 9/11. And, of course, the politicians and heads of all the three-lettered organizations moan and groan over the investigation into the system-wide intelligence failures leading up to that fateful day.

Have you heard? Most overseas shortwave media is giving the hearings less news and analysis airtime than Trent Lott gets in my backyard. Sometimes it's interesting to listen to what the rest of the world doesn't say.

Meanwhile, as this is written, German Chancellor Gerhard Schröder has just won re-election. It's said that his hard-line stance against committing German troops in any American campaign against Iraq—even if it's UNSANCTIONED—gave him just enough votes to win the election. Naturally, coverage on Deutsche Welle and the BBC was extensive. Some Americans got a *glimpse* of the debates between Schröder and Stöiber on CNN and the big networks, but a glimpse is hardly enough. It is, though, what we as Americans have come to crave; a sound

bite is fine, thank you. Don't give us too much, please, because it's not happening on this continent.

As we enter this new era of uncertainty with our own Weapons of Mass Destruction (*please* tell me they're as well contained as anyone else's), which we conveniently forget about when discussing the rest of the world, listen to the shortwave radio and talk about what you hear with your family and friends. It costs nothing but our time and patience to learn something about ourselves from those who have as much to say about our destiny as we do theirs.

In 1938, FDR said, "If the fires of freedom and civil liberties burn low in other lands they must be made brighter in our own."

In 1938, FDR said, "If the fires of freedom and civil liberties burn low in other lands they must be made brighter in our own." Mr. Cheney, I know you can afford a good shortwave receiver. While you're at it, buy one for Mr. Bush for Christmas, order some Big Macs, and give a listen. I don't know how reception is in the bunker, but out here in the real world things are very clear, indeed.

May God bless you, your family and our troops this holiday season. See you next year. ■

Latin American Shortwave Heats Up!

There's a chance we may have a new station on the air from Honduras early in the coming year. **Radio Bethel**, currently operating on mediumwave (1160) is expected to show up on 60 meters shortwave running 5 kilowatts. No shortwave frequency has been announced yet, but even without knowing what it may be, it shouldn't be hard to find since activity on that band is minimal, to say the least!

Also, the still elusive **Radio America** in **Paraguay** continues its expansion plans. The **7300** frequency, used in a test mode some months ago, is apparently still active and beamed to Buenos Aires, although it is frightfully low powered. **7740**, beamed at La Paz, Bolivia is due to be reactivated, and an omni-directional beam should be on the air now on **15185**, reportedly 24 hours a day. The kicker? This transmitter is running a minuscule *5 watts!* If you do manage to catch this station, on whatever frequency, they are eager for reports. The address is Radio America, Casilla de Correo 2220, Asuncion, Paraguay.

Radio Transcontinental, Mexico City, has changed to an all-religious format, which is about the only approach which can fill the coffers on shortwave. XERTA is using **4810**, at least as of this writing (it's been playing frequency hopscotch since it came on the air two or three years ago).

Believe it or not, there's been another U.S. station call letter change (this is getting to be as bad as domestic mediumwave!). **WJIE** has become **WPBN** (World Prayer Broadcasting Network). The network actually consists of the two **WJIE** transmitters, along with **WJIE-FM** in Louisville, Kentucky, **WVHI** in Evansville, Indiana, plus High Adventure Ministries' **KVOH** (two transmitters) and shortwaver **KHBN** (Palau). Another four domestic AM stations are destined to become part of the group. **KVOH** will continue to be owned by High Adventure Ministries. In addition to all this a new FM/shortwave station, **The Voice of Liberty**, is to be built in Liberia. It looks like these folks mean business!

Direct broadcasts from **Polish Radio** have become a thing of the past. Radio Polonia has discontinued use of in-country transmissions in favor of renting time on transmitters in Germany and Slovakia. A schedule hasn't been firmed up yet but, given some sensible time and frequency pairings it's likely Radio Polonia will be more easily heard here, even though it won't be the "real thing."

The big change at **HCJB** is now official. This pioneering shortwave broadcaster will be moving its transmitting facility from Pifo to Santa Elena near Ecuador's coast and could have the first transmissions on the air from the new location by the



Last year AWR issued this special card commemorating the Marconi Centenary.

middle of next year. In all, HCJB will have 17 antennas and 11 transmitters operating from the new 500-acre site.

Having closed down its station at Forli, Italy, in favor of building a new one in Argenta, **Adventist World Radio** has taken another look at things and decided not to go ahead with the new facility. Instead, they'll concentrate on using other sites, mostly Moosbrunn, Austria, to provide the coverage Argenta was to give them. And now we learn that power supply problems in Albania may cause AWR to discontinue use of that relay and move those transmissions to Moosbrunn as well.

Radio Veritas (not the Philippine version) has begun shortwave broadcasts from **Monrovia, Liberia**. It is using **3450 and 5470**. The schedule runs for as much as 18 hours per day and the best times to catch them seem to be at sign off (which is sometimes 2300, sometimes 0000) or at sign on (which probably comes at 0600).

By now you've probably heard the news regarding **Overcomer Ministries' Brother Stair**—he recently spent some time in jail (now out on bail) accused of sexual misconduct with underage girls. Some of his followers are working to keep the broadcasts going, but that may well be a losing battle without the Main Man. If the Overcomer broadcasts do end, it will free up a lot of transmitter hours. Now let's try and guess who might step forward to fill them!

Our book winner this month is **Brian Alexander**, of Pennsylvania, in appreciation of his regular and always top quality logs. Brian receives a copy of the 2003 edition of *Passport to World Band Radio* from **Universal Radio**, 6830 Americana Parkway, Reynoldsburg, OH 43068. Write them or call 614-



Here's a museum piece—a 1957 QSL from Radio Budapest for reception on their old 9833 frequency. (Tnx Mike Clapstow, WA)

866-2339 for a copy of their gigantic catalog of receivers, antennas, books, and other radio goodies. You can also e-mail your request to <dx@universal-radio.com>.

Remember, your shortwave broadcast logs are always and forever sought and welcome. Please list your catches by country, double or triple space between each one, and add your last name and state abbreviation after each. We're also looking for spare QSL cards we can use as illustrations. Also station schedules, station photos, shack photos (don't be so shy!), pennants, schedules—anything and everything you'd care to lay on us! As always deepest thanks for your continued interest and support!

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.

ALASKA—KNLS, **12105** in CC at 1225. ID at 1230. (Brossell, WI)

ALBANIA—Radio Tirana, **7160** at 0230 with times and frequencies followed by news. (Brossell, WI) **9540** at 2131 with schedule program notes, domestic news. (Burrow, WA)

ANGOLA—Radio Nacional, **11955** at 2312 with pop ballads and dance music and periodic "Nacional" IDs. (Strawman, IA)

ANTIGUA—BBC relay, **15190** at 1215 with report on AIDS epidemic in Africa. (Brossell, WI). Deutsche Welle relay, **11985** in GG at 0714. (Becker, WA)

ARGENTINA—RAE, **11710** at 0213 with "news from Buenos Aires," music. (Burrow, WA). Radio Nacional, **15345** with radio novella in SS at 0205. (Brossell, WI)

ASCENSION ISLAND—BBC relay, **6005** at 0618. (MacKenzie, CA) **21740** with sports at 1641. (Jeffery, NY)

AUSTRALIA—Radio Australia, **6020** at 1200, **9580** at 1400 and **17580** at 1205, the latter in possible Arabic. (Northrup, MO) **9580** with "Life Matters" at 1135. **15240** at 0718 with "Correspondent's Report." **17580** with sports news at 0321 and **17750** with news at 0800. (Jeffery, NY) **9580** at 1100 with news and music. (Quinby, PA) **11650** at 1210 with soccer coverage. (Brossell, WI) **12080** at 0717 and 15240 at 0635 with commentary on crocodile problem. (Becker, WA) **17750/21680** in Indonesian at 0504. (Miller, WA) **21740** with "AM" and "Music Deli" programs. (Paradis, ME)

BELGIUM—Radio Vlaanderen Int'l, **15565** (via Bonaire—gld) at 2230 with news. "Arts For Today." (Paradis, ME) RTBF Int'l, **9970** in FF at 0627. (Jeffery, NY)

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
annt(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 Republic 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

BOLIVIA—Radio Santa Cruz, **6134.8** at 0918 with rustic SS vocals. Very messy frequency. (D'Angelo, PA)

BOTSWANA—Radio Botswana, **4820** at 0252 sign on with barnyard IS, choral national anthem, ID and anmts, tribal vocals, pop/country. (D'Angelo, PA)

BRAZIL—Radio Clube Paranaense, **6040** at 0903 with PP talk, rooster crows, vocals, and phone talk. (D'Angelo, PA) 0216 with PP talks. (Paszkiwicz, WI) Radio Cultura, **17815** at 0205 with romantic Brazilian ballads, light jazz and PP anmts. Poor on //9615. Off at 0300. (Alexander, PA) 0210 with romantic vocals, PP anncr. Co-channel Romania dominated from 0240 through to its 0256 close. (D'Angelo, PA) Radio Record, **6150** at 2307 with fast-talking PP anncr, ID mixed with vocals. Fair, with //9595 very poor. (D'Angelo, PA) Radio Bandeirantes, **9645.2** at 0024 with PP talk, ID, promo, and more spirited talk by two men with some music segments. (D'Angelo, PA) **11925** with news in PP at 0252. (Miller, WA) Radio Brazil Central, **4985** at 2347 with PP religious talk, another man with ID at 2355 and vocals. (D'Angelo, PA) **11815** at 0233 with jingle ID, U.S. pop. (Brossell, WI) 0245 in PP with ballads and several IDs. (Linonis, PA) Radio Nacional, **11780** at 0228 with possible live sporting event, "Radio Bras" ID at 02331, music, anmts. (Brossell, WI) 0240 with futbol, mentions of Santa Cruz. (Linonis, PA) 2343 in PP with pops. (Miller, WA)

BULGARIA—Radio Bulgaria, **9400/11700** at 0238 with health report, ID. (Miller, WA) 11700 at 2300 with news, local economic situation. (Paradis, ME) 2332 with feature on woodcarving in Bulgaria. (MacKenzie, CA) 0220 with "Urban living in Bulgaria." (Brossell, WI) 0230 with news and sports. (Linonis, PA) **11900** at 2152 with folk music. Off at 2200. (Miller, WA)

CANADA—Radio Canada Int'l, **9590** heard at 2200 with "As It Happens." (Quinby, PA) **11890** via Japan in CC at 1430. (Barton, AZ)

CHINA—China Radio Int'l, **9690** via Spain at 0335 with talk on social living in China. //9730. 9730 via French Guiana at 0415 with news, feature on Chinese history. **9790** via Canada at 0410 in CC. (MacKenzie, CA) **11980** with news at 1231. Also **13685** in SS via French Guiana at 0208 (Brossell, WI)

China National Radio, **11960** in CC to Russia and Korea at 0712. (Becker, WA)

CROATIA—Voice of Croatia, **9925** (via Germany) with Croatian news, ID, into narrative in unid. language. (Burrow, WA) 0305 with talks, music and interviews in Croatian. (Brossell, WI) 0354 with woman in Croatian, comments, and music interludes. (MacKenzie, CA)

CUBA—Radio Havana Cuba, **17705** at 0000 with SS music. (Linonis, PA) Radio Rebelde, **5025** in SS with local pops at 0800. (Becker, WA)

CYPRUS—BBC relay, **9410** at 0156. Also **17640** at 0908. (Jeffery, NY) **9670** in RR at 0422. (MacKenzie, CA) **12095** at 0310 with news, ID. (Brossell, WI) **15575** heard at 0300. (Paradis, ME)

CZECH REPUBLIC—Radio Prague, **7385//9870** at 0259 with IS, schedule, ID, program notes, news. (Burrow, WA)

DOMINICAN REPUBLIC—Radio Villa/Radio Cima, **4960** at 0200 with talk, ballads, ID. (Paszkievicz, WI) 0314 with lively Latin vocals, ID at 0329 including address and website. Transmitter breaks noted at 0324 and 0331. (D'Angelo, PA)

ECUADOR—HCJB, **11680** to Europe at 0709 and **11755** at 0827 to the South Pacific. (Becker, WA) 0729. (Jeffery, NY) **11960** at 0055 with IS, ID, sigh on f/by DX Party Line, //9745. (MacKenzie, CA) **15115** with "Encounter" at 1100. (Paradis, ME) **17660** at 2100. (Quinby, PA)

EGYPT—Radio Cairo, **9475** at 0204 with ID and "The Holy Koran and Its Meaning." Good modulation for a change. (Burrow, WA) 0315 in AA with martial type music to close at 0325. **9900** at 0345. Also **9950** at 0350 in AA. (MacKenzie, CA) 9900 with AA interview at 0240. (Brossell, WI)

ENGLAND—Voice of America via Wooferton, **9530** at 0611 and **15205** at 1507. (Jeffery, NY)

FINLAND—YLE/Radio Finland. **17670** with news in French at 1233. (Brossell, WI) **15445** in Finnish at 0437. (Miller, WA)

FRENCH GUIANA—Radio France Int'l, **15515** with news in FF at 1300. (Northrup, MO)

GABON—Africa No. One. **9580** in FF at 0616. (Jeffery, NY)

GERMANY—Deutsche Welle, **9700** in GG at 0419. (MacKenzie, CA) **15490** via Sri Lanka in GG at 1300. **15515** (via Canada—gld) in GG at 1420 and **17485** in GG at 1230. Also **17560** via Sri Lanka in GG at 1305 (Northrup, MO) Radio Africa Int'l via Germany on **15265** at 1715 with music, ID, segment on AIDS. (Jeffery, NY)

GREECE—Voice of Greece, **17705** via Delano in Greek at 2039. (Miller, WA) 2135 with rock. //17565. (MacKenzie, CA) 17900 in unid. language at 1235. (Brossell, WI)

GUAM—Trans World Radio/KTWR, **12130** at 1230 with ID, religious programming in CC. (Brossell, WI)

GUATEMALA—Radio Cultural, **3300** with marimba music at 1145. (Barton, AZ) Radio K'ekchi, **4845** with news in SS at 1304. (Miller, WA)

HAWAII—Armed Forces Network. **6350 USB** at 0603 with news. (MacKenzie, CA) 0738 with country. (Jeffery, NY) KWHR, **9930** with religious program heard at 1205 and into CC at 1230. (Paradis, ME) **11565** with sermon at 1215. (Brossell, WI) 0816 to the South Pacific. (Becker, WA)

HONDURAS—La Voz Evangelica. **4819** with inspirational music in SS. (Miller, WA) (time?—gld)

HUNGARY—Radio Budapest, **9570** with news heard at 0234, ID 0235. (Burrow, WA)

INDIA—All India Radio, **4760**, presumed Chennai, at 1212 with vocals and flutes but gone by 1222. (Strawman, IA) **4860** (Delhi) at 1313. (Miller, WA) **7140** with music at 0230 and **11620** in presumed Hindi at 0155. (Brossell, WI) 2100 with news, comment, and traditional music. (Paradis, ME) 2146 with domestic music. (Miller, WA) **11735** at 0240 suffering QRM from Radio Taipei Int'l via Florida and killed off at 0300 by BBC-Seychelles sign on. (D'Angelo, PA) **13710** in EE to Southeast Asia at 1430. (Barton, AZ)

INDONESIA—Voice of Indonesia, **15150** at 2000 with ID, schedule, news, comments. (Burrow, WA; Paradis, ME) Radio Republik Indonesia, **15125** at 0400 in possible II with AA-sounding music. (Linonis, PA)



And another from 1957—Radio Norway. (Tnx Clapstow, WA)

IRAN—VOIRI, **7245//9635** at 1528 with music, ID, anthem, schedule. (Burrow, WA) **9610** at 0058 with mailbag program and contest. (Paszkievicz, WI) **13755** in SS at 0222. (Brossell, WI)

ISRAEL—Kol Israel, **9815** in HH at 0408. (MacKenzie, CA) **15640** monitored at 1812 and **15760** in HH at 0452. (Miller, WA) **17535** in HH at 1450. (Northrup, MO) 1556 with IS, time pips, ID, news. (Burrow, WA) 1900 with news. (Paradis, NE)

ITALY—RAI Int'l, **11765** via Ascension Island, with talks in SS at 0327. (Brossell, WI)

JAPAN—Radio Japan/NHK, **7200//9750//11730** at 1552 with language lesson, e-mail address, ID, and schedule. (Burrow, WA) **11895** via French Guiana with news in RR at 0420. (Barton, AZ) 2225 in JJ, //15220 via Ascension, **13680** and **17825** via Canada. Also 17825 at 0358 with anmts, ID, time pips and off at 0359. (MacKenzie, CA) 13630 closing at 0800. (Becker, WA) **17755** via Gabon at 1415, //9505. (Barton, AZ)

KUWAIT—Radio Kuwait, **11675** in AA at 0157. (Brossell, WI) 2205 in AA. (MacKenzie, CA) **15505** in AA at 0450. (Miller, WA)

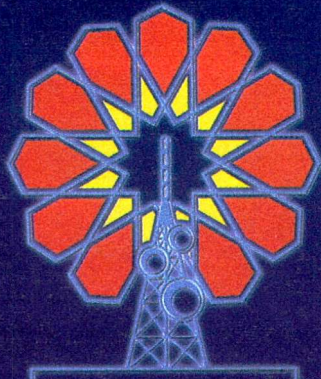
LIBYA—Radio Jamahirya, **15435** with political speech in AA at 2137. (Miller, WA)

MADAGASCAR—Radio Netherlands relay, **9590** at 2150 in Indonesian with interviews, later in EE/FF. Covered by RCI sign on at 2159. (MacKenzie, CA)

MALAYSIA—Radio Malaysia, **7295** at 1102 with stock market news. (Miller, WA) Radio Four service at 1510 with music, ID. (Burrow, WA)

MEXICO—Radio Mexico Int'l, **9705** at 0308 with mailbag, pops, ID, address and back into SS at 0335 with local folk music. Poor to fair and weaker on //11770.1. (Alexander, PA) Radio Educacion, **6185** in SS at 0605. (MacKenzie, CA)

الجمهورية العربية السورية
SYRIAN ARAB REPUBLIC



المديرية العامة لهيئة الإذاعة والتلفزيون

SYRIAN RADIO & TELEVISION



This view of Warsaw graces a QSL from Radio Polonia.

A year ago Radio Damascus was issuing this attractive QSL card.

MOLDOVA—Voice of Russia relay, **11750** in RR at 0225. (Brossell, WI)

MOROCCO—Radio TV Marocaine, **11920** with talks and singing in AA. (Brossell, WI) 0250 with music and possible interview in AA. (Linonis, PA) 0400 with Middle Eastern music. Off at 0500. (Barton, AZ) **15345** in AA at 1835. (Miller, WA) Voice of America relay, **17895** with “Africa World Tonight” at 1800. (Jeffery, NY)

NETHERLANDS ANTILLES—Radio Netherlands via Bonaire, **9845** at 2330 with “Sincerely Yours” and “Dutch Horizons.” (Paradis, ME) **11655** in DD to the Pacific at 0706. (Becker, WA) **17605** heard at 1828 with ID, IS, “Newline.” (Jeffery, NY)

NEW ZEALAND—Radio New Zealand Int'l, **9885** at 0723 with talk about housing in Auckland. Also **17675** at 0117 with “Cadenza.” (Jeffery, NY) **9885** at 0830 with news, weather, “Sounds Historical.” (Paradis, ME) 0807 to Pacific. Also **11820** with sign off at 0657. (Becker, WA) **15160** at 2019. (Miller, WA) **17675** heard at 0250 with “Word Pictures. (Burrow, WA) 0350 with Maori music, ID, news, weather. (MacKenzie, CA)

NICARAGUA—Radio Miskut, **5770** at 0020 in reduced carrier USB, SS pops/ballads, SS talks, ID and off with national anthem at 0115. (Alexander, PA)

NIGERIA—Voice of Nigeria, **7255** at 0550 with Afro music and comments by two male announcers. (MacKenzie, CA) **15120** with news at 2043. (Miller, WA)

NORTH KOREA—Voice of Korea, **9335** at 1508; international plaudits for the world leadership of Marshal Kim Jung Il. (Burrow, WA) **11725** at 0825 in RR to Russia. (Becker,

WA) **KCBS**, Kanggye, **11680** with KK talk and music. (Becker, WA)

NORTHERN MARIANAS—KFBS, **11580** with presumed religious program in CC at 1230. (Brossell, WI) Voice of America Tinian relay, **11930** to Asia at 0829. (Becker, WA) **15240** with sports at 1225. (Barton, AZ)

PAKISTAN—Radio Pakistan, **11570** and **15100** at 1459 with IS, ID, news with mentions of Pakistan and India. Off in mid-sentence at 1514. (Burrow, WA)

PAPUA NEW GUINEA—NBC, **4890** at 1218 with political discussion. (Miller, WA)

PERU—Radio Andina, **4995.6** at 0305 with SS religious talk, man with echo ID at 0310. Still going at 0400. (D'Angelo, PA) Radio Ilucan, **5678** at 0222 in SS with vocal, ID and sign off anmts at 0226. Off without anthem. (D'Angelo, PA) Radio San Miguel, tentative, **5500.1** at 0200 with SS anncr in possible sign off routine followed by instrumental music. Either signed off or was lost in noise. (D'Angelo, PA)

PHILIPPINES—Radio Pilipinas, **15190** at 1730–1800 with news in possible Tagalog. (Quinby, PA) 1803 with news and talk in Tagalog. (Miller, WA) **15270** at 0300 with ID and news in EE. (Burrow, WA) VOA relay, **12040** in CC at 1222. (Brossell, WI) **15160** at 1100. (Paradis, ME) 1130. (Jeffery, NY) **15185** at 2232. (D'Angelo, PA)

PORTUGAL—RDP Int'l, **11980** in PP at 0250. (Brossell, WI) **12030** at 0400 in PP with ID, news. (Linonis, PA)

PUERTO RICO—Armed Forces Network, **6458 USB** at 0557 with PSAs, news at 0600. (MacKenzie, CA)

QATAR—Qatar Broadcasting Service, **17755.2** at 0240 with open carrier to music start at 0258, then man in AA, ID and anmts at 0300. (D'Angelo, PA)

ROMANIA—Radio Romania Int'l, **11940** at 0241 with music appreciation program, ID and sked at 0254. (Burrow, WA) 0255 ending EE. (Miller, WA)

RUSSIA—Voice of Russia, **9530** in RR at 0636. **17595** at 0135 with music and ID, //9665, 9725, 1825 via Vatican, and **12000**. Also **17690** at 0410, //9665, **11750**, **12000**, **17650**. (MacKenzie, CA) **11675** at 1822. (Jeffery, NY) 12000 at 0400 in RR. (Linonis, PA) Radio Rossii, **12020** in RR at 0310. (Brossell, WI)

RWANDA—Deutsche Welle relay, **15340** at 1900 with news and business news. (Linonis, PA)

SAO TOME—VOA relay, **6080** with “Daybreak” at 0613. Also **9895** at 0404 in an African dialect. (MacKenzie, CA)

SAUDI ARABIA—BSKSA, **15170** with AA prayers at 0350. (Miller, WA)

SEYCHELLES—FEBA, **11625** in unid. language at 1658, “What a Friend” IS and off at 1700. (Miller, WA) **1880** at 0350 with “Spotlight,” ID in unid. language at 0359 and off. (D'Angelo, PA) **15535** in AA at 1200 to 1245 close. (Paradis, ME)

SIERRA LEONE—Radio UNAMSIL, **6137.8** at 0241 with various music styles and brief talks, including some EE, in between. (D'Angelo, PA) 0645 with DJ in EE with time checks and mostly continuous U.S. romantic vocals. Local news at 0701–0707 and several canned IDs by a child that sounded like “This is Radio UNAMSIL, the voice of peace.” Strong, but muddy modulation made it difficult to understand much. (Alexander, PA)

SINGAPORE—“Mediacorp” Radio, **6150** at 1510 with music, DJ, e-mail address, IDs at 1514 and 1516. (Burrow, WA) **9665** at 1115 to SE Asia in an Asian language. (Barton, AZ) BBC relay, **9740** at 1102 with

news and science feature. (Jeffery, NY)

SOLOMON ISLANDS—SIBC, **5020** at 1006 with news. (Miller, WA)

SOUTH AFRICA—Channel Africa, **17770** at 1518 with report on AIDS, news, and ID at 1524. (Burrow, WA) SABC, **3320** in Afrikaans at 0411. At 0500 5 plus 1 time pips and into apparent news. (D'Angelo, PA)

SPAIN—REE **15160** in SS at 0200. Also **15170** via Costa Rica at 1215. (Brossell, WI) **15290** at 2007 with news, ID, more news focusing on Africa. (Burrow, WA)

SRI LANKA—Radio Sri Lanka, **15425** at 0030 sign on with 5 plus 1 time pips, ID, EE anmt. Fair, with //9770 poor. (D'Angelo, PA) **1503** with news, ID. (Burrow, WA) Deutsche Welle relay, **15105** in GG at 0127. (Jeffery, NY)

SURINAME—Radio Apinte, presumed, **4991** at 0314 with continuous pop vocals, man anncr, more music. (D'Angelo, PA)

SWEDEN—Radio Sweden, **9490** at 0235. (Brossell, WI) **0245** with commentary. (Miller, WA) **18960** with "In Touch with Stockholm" heard at 1230. (Paradis, ME)

SWITZERLAND—Swiss Radio Int'l, **11905** via French Guiana, 2215 with news in GG. (Quinby, PA) Here and //9885 at 2235. (MacKenzie, CA) **2330** with economic and business news. (Paradis, ME)

SYRIA—Radio Damascus, **13610** at 2111. Strong carrier but no modulation until 2111, then ID, anthem, and news. (Burrow, WA)

TAIWAN—Radio Taipei Int'l, **9680** via Florida heard at 0249 with "Kaleidoscope." (Burrow, WA) **11605** in CC at 1215. (Brossell, WI) WYFR via Taiwan, **11550** with religious program at 1300. (Barton, AZ)

TAJIKISTAN—Voice of Russia via Dushanbe, **11500** at 1318 with talk in Hindi. (Strawman, IA)

THAILAND—Radio Thailand, **11905** at 0025 with Thai vocals and flute music. (D'Angelo, PA) **15395** at 0306 with economic report. (Burrow, WA) BBC relay, **11955** at 0032 with ID and program on terrorism. (D'Angelo, PA)

TUNISIA—RTV Tunisienne, **12005** in AA at 0310 and **17735** at 1220. (Brossell, WI) **12005** in AA at 0400. (Linonis, PA)

TURKEY—Voice of Turkey, **11655** at 0332 with feature on Turkish art and Anatolian monuments. (Burrow, WA) **0338** with letterbox, music, "Turkey Bulletin" to sign off at 0359. Also **11885** in TT at 2220. (MacKenzie, CA) **0237** with songs and anmts. Always a good signal here. (Brossell, WI) **11885** in TT at 0252. (Miller, WA) **17570** in TT at 1300. (Northrup, MO)

UKRAINE—Radio Ukraine Int'l, **12040** heard at 0311 with news, ID, economics. (Burrow, WA)

UNITED ARAB EMIRATES—UAE Radio, Dubai, **13675** in EE at 1601 with "The Arabs in History." (Burrow, WA) Here and **15400** at 0210 in AA. (Brossell, WI)

UZBEKISTAN—Radio Tashkent, **11905** at 2029 with IS, ID, frequencies, news in EE. (Burrow, WA) **17775** at 1330 with news, comment, local music. (Paradis, ME)

VATICAN—Vatican Radio, **11830** in CC at 2212, //9600. (MacKenzie, CA) **12065**// **13765**, **15235** at 1550 with IS, ID, sked, religious news. (Burrow, WA)

VIETNAM—Voice of Vietnam, **6175** via Canada at 0245 with "Current Affairs" and agriculture report. (Burrow, WA) **9405** at 0307 with church news. (Miller, WA) **12019.9** at 1230 with EE news, comment, local music. Off at 1257. //9839.5. (Alexander, PA)

ZAMBIA—Zambia National Broadcasting Corp., **6265** heard at 0248, choral

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One of the studio/control rooms at Radio Vlaanderen International.

national anthem at 0255, drums, and anncr with opening ID. Tribal vocals at 0304. (D'Angelo, PA)

And that's the end of the line for this time. A gazillion thanks to the following who dug up the stuff, despite nasty propagation conditions:

Richard D'Angelo, Wyomissing, PA; Stewart Mackenzie, Huntington Beach, CA; Pete Becker, Clarkson, WA; Mike Miller, Issaquah, WA; Jerry Strawman, Des Moines, IA; Bruce R. Burrow, Snoqualmie, WA; Dave Jeffery, Niagara Falls, NY; Sheryl Paszkiewicz, Manitowoc, WI; Ray Paradis, Pittsfield, ME; Mark Northrup, Gladstone, MO; Robert Brossell, Pewaukee, WI; Jack Linonis, Heritage, PA; Rick Barton, Phoenix, AZ; Brian Alexander, Mechanicsburg, PA; and a special welcome to Samuel J. Quinby, West Middlesex, PA. A big thanks to each one of you!

Until next month—good listening! ■

Stations Testing IBOC (In-Band On-Channel) Broadcasting

The implementation of In-Band On-Channel (IBOC) digital radio broadcasting is moving forward in the United States despite mixed reviews. IBOC received the endorsement of the National Radio Systems Committee for fulltime use on FM, but only daytime use on AM because of nighttime skywave interference issues. Daytime tests were completed at 1500 WTOP Washington DC last March, and nighttime AM radio tests are being evaluated at 700 WLW Cincinnati and 710 WOR New York.

A press release from WOR engineering provides a pretty good overview:

Buckley Broadcasting/WOR has entered into an agreement with iBiquity Digital Corporation that will once again make WOR a pioneer in the broadcast industry. WOR will be a test station for IBOC Digital AM radio. IBOC Digital will offer AM stations FM stereo audio quality.

WOR will be the first AM station in New York City to broadcast a digital signal. The average listener will not notice any difference in WOR's (analog) signal. WOR's participation in the testing of IBOC transmission will be instrumental to the commercial launch of the technology.

For the past 10 years, there has been a movement afoot to have AM and FM broadcasters begin a transition to a digital transmission method. Various methods have been proposed. The IBOC system for FM stations has been approved for use on FM, and it has been recommended that the FCC add rules to start implementation of FM IBOC and AM IBOC, but during daytime only for AM stations. AM stations have different issues regarding transmission than FM stations do. This is where WOR will come in.

AM signals bounce off the atmosphere at night. This is one reason WOR employs a directional transmitting antenna. There are questions as to how Digital AM will perform with skywave interference. There also are questions as to how the digital portion of an AM signal will react in the 'concrete canyons' of New York City (and other major cities, as well). WOR will be instrumental in helping iBiquity identify these issues.

Thomas R. Ray, III, Corporate Director of Engineering for Buckley Broadcasting/WOR states,

I take great pride in having our radio station be part of the development of one of the biggest technical advancements in radio broadcasting since FM stereo in the 1960s. WOR has been a pioneer since being one of the only radio stations on the air in the U.S. in 1922. We have been part of the development of the profanity delay, were pioneers in the development of the AM directional transmitting antenna, and were one of the major players during radio's 'golden era' by forming the Mutual Radio Network. I'm proud of being given the opportunity to pilot WOR through another technical pioneering phase.

IBOC Under Fire

IBOC digital interference to existing analog signals has been an ongoing concern. The IBOC digital signal is broadcast via the sidebands of an existing analog signal. This allows an AM or FM radio station to continue broadcasting its analog signal on its present frequency while simultaneously broadcasting a digital signal from the same transmission facilities. Thus a radio



station may begin digital broadcasting without having to apply for a new frequency and construct new facilities, a distinct advantage of IBOC. It's the sideband digital interference that has broadcasters and DXers worried.

Daytime tests at 1500 WTOP Washington DC conducted last March by Clear Channel Communications engineers found that the IBOC digital signal caused significant "white noise" interference to the 1490 WARK Hagerstown, Maryland, analog signal. Although the interference was outside the primary protection area for WARK, it was still well within what would have otherwise been listenable to the average person.

Nighttime skywave testing at WLW took place in August, and testing at WOR was in progress at the time of this writing, so an official test report wasn't available. However, while DXers couldn't receive the digital broadcasts from WLW, they did report hearing the digital noise coast to coast on their analog receivers. The noise was loud and clear at 690 and 710 kHz, wiping out regular reception of WOR for some.

Public comments regarding IBOC on file at the FCC overwhelmingly express concerns about interference to existing analog signals. Not only will AM analog reception be affected, but FM IBOC coverage remains questionable in fringe areas and where multipath is a problem. And while Mexico remains undecided over which digital radio broadcasting standard to adopt, our neighbors in Canada will undoubtedly be in touch with the FCC about IBOC interference to their analog AM and FM radio stations along the border. Canada and Europe went with the Eureka-147 digital broadcasting system and now have digital radio on the air in the 1460- to 1480-MHz band.

The following radio stations will serve as future IBOC test sites: 102.7 WNEW-FM New York; 88.5 WAMU, 90.9 WETA-FM, 99.1 WHFS, 106.7 WJFK-FM Washington DC; 960 KABL, 97.3 KLLC, 102.1 KDFC San Francisco; 900 WILC, 93.1 WPOC Baltimore; 740 WNOP Cincinnati; 90.5 WBJB and 97.5 WPST in New Jersey; 1140 KSFN, 89.5 KNPR, 95.5 KWNR Las Vegas; 950 WWJ, 105.1 WGRV Detroit; and 98.9 WMMO Orlando. If you receive the digital noise from IBOC testing on your analog receiver, be sure to send reception reports to the test station and those subject to interference. By the way, marketers are now officially referring to IBOC as HD Radio by, apparently hoping that consumers will associate it with the high quality of HDTV.

Format And Frequency Changes

After first signing on at their assigned frequency of 585 kHz, WJJD Tafuna, American Samoa, quickly changed to 580 kHz. WJJD realized that although South Pacific AM radio stations

operate on frequencies at 9 kiloHertz intervals (531, 540, 549, 558, etc.), most listeners in American Samoa have receivers designed for the American marke that tune in 10 kiloHertz intervals (530, 540, 550, 560, etc.).

The split-frequency signal at 705 kHz from St. Vincent & the Grenadines is off the air. According to their website at <www.nbcsvg.com>, "In January of 2002, NBC Radio started the process of changing its transmission to the FM band. We now broadcast on 107.5, 89.7 and 90.7 FM. Although the 705 kHz transmitter has been switched off, plans are in the pipeline to operate an AM as well as FM service to better serve the public service components of our broadcast." This leaves DXers with only three remaining split-frequency signals in the Caribbean: 535 Grenada, and from St. Kitts 555 and 895 kHz.

CHUM oldies are back! 1050 CHUM Toronto and its affiliates have dropped "The Team" sports talk after just over a year,

most returning to a "much more music" oldies format. But well before "The Team" threw in the towel, some stations were defecting. 1420 CKPT Peterborough, Ontario, was among the first to forgo the sports network in favor of local programming and nostalgia as "1420 Memories" to better serve the community. Canada isn't the only place where a sports radio format hasn't proved to be popular. TeamTalk 252 longwave from Ireland is off the air after its short stint with sports talk. Various reports indicate some interest in returning to the airwaves with cultural programming aimed at Irish citizens living in England and abroad.

QSL Information

970 WDAY Fargo, North Dakota, partial-data letter in 11 days, states this is their 80th year of operation! Signed Lori

Broadcast Call Letter Changes

PENDING				New Call	Location	Freq.	Old Call
New Call	Location	Freq.	Old Call	WYGC	High Springs, FL	104.9	WDRS
WVJR	Ravenswood, WV	1360	WMOV	WSOS-FM	St. Augustine, FL	94.1	WSOS
WLEG	Ligonier, IN	102.7	WGSN	WKEP	Woodville, FL	97.9	New
CHANGES				WFRP	Americus, GA	88.5	New
New Call	Location	Freq.	Old Call	WTMQ	Lumpkin, GA	88.5	New
WPNS	Atmore, AL	1620	WPHG	WFSL	Thomasville, GA	90.7	New
WVOK	Oxford, AL	1580	WARB	KKLU	Rigby, ID	89.5	New
KKNT	Phoenix, AZ	960	KCTK	WYST	Fairbury, IL	107.7	WBZM
KGET	Bakersfield, CA	970	KZTK	WHCC	Ellettsville, IN	105.1	WGCT
KFSD	Escondido, CA	1450	KSPA	KPVL	Postville, IA	89.1	New
KSPA	Ontario, CA	1510	KMXN	KANV	Olsburg, KS	91.3	New
KION	Salinas, CA	1460	KTXX	WAYD	Auburn, KY	88.1	New
KTIM	San Rafael, CA	1510	KJAZ	WHMR	Ledbetter, KY	90.1	New
WRFX	Miami, FL	940	WINZ	WXMA	Louisville, KY	102.3	WULV
WINZ	Augusta, GA	1340	WBBQ	WXXF	Lacombe, LA	94.7	WYLA
KHCM	Waipahu, HI	940	KJPN	WDLD	Halfway, MD	96.7	WQCM
KFXD	Boise, ID	630	KIDO	WOFR	Schoolcraft, MI	89.7	WBMV
KIDO	Nampa, ID	580	KFXD	KNSE	Austin, MN	90.1	New
WLAS	Lafayette, IN	1410	WAZY	KKLW	Willmar, MN	90.9	New
WBOW	Terre Haute, IN	1300	WSJX	KREZ	Chaffee, MO	104.7	KYRX
KPSZ	Des Moines, IA	940	KXTK	KYRX	Marble Hill, MO	97.3	KREZ
WNNW	Lawrence, MA	800	WCCM	KMZO	Hamilton, MT	90.3	New
WKKM	Harrison, MI	1540	WWKM	WTHK	Trenton, NJ	94.5	WNJO
WZBK	Keene, NH	1220	WKBK	KENC	Pecos, NM	102.9	KTRL
WCEC	Salem, NH	1110	WNNW	WMHQ	Malone, NY	90.1	New
WAMF	Fulton, NY	1300	WZZZ	WHPU	High Point, NC	90.3	WWIH
WLIE	Islip, NY	540	WLUX	WRFX-FM	Kannapolis, NC	99.7	WRFX
WLXE	New York, NY	1380	WNNY	WZNB	New Bern, NC	88.5	New
WROC	Rochester, NY	950	WBBF	WIAM-FM	Windsor, NC	98.9	WDRP
WWDR	Murfreesboro, NC	1080	WINX	WZRFX-FM	Fort Shawnee, OH	107.5	WBUK
WULM	Springfield, OH	1600	WBLY	WPFX-FM	North Baltimore, OH	107.7	WIMJ
KRPI	Ferndale, WA	1550	KCCF	WBUK	Ottawa, OH	106.3	WQTL
WZND	Headland, AL	105.3	WBCD	WZLR	Xenia, OH	95.3	WDTP
WPIL	Hellin, AL	91.7	New	KARU	Cache, OK	88.9	New
WVOK-FM	Oxford, AL	97.9	WVOK	KTVR-FM	La Grande, OR	90.3	New
KAKL	Anchorage, AK	88.5	New	WQCM	Greencastle, PA	94.3	WIHR
KTEE	Gonzales, CA	104.3	KMBY-FM	WSNI-FM	Philadelphia, PA	104.5	WLCE
KTOL	Healdsburg, CA	96.7	New	KQFR	Rapid City, SD	89.9	New
KHFR	Santa Maria, CA	89.7	New	KWRC	Corpus Christi, TX	88.7	KFGG
KMBY-FM	Seaside, CA	103.9	KTEE	KSHJ	Doss, TX	88.1	New
KRFC	Fort Collins, CO	88.9	New	KKDL	Muenster, TX	106.5	KXGM
KTPL	Pueblo, CO	88.1	New	KRIO-FM	Pearsall, TX	105.9	KMMG
WXJZ	Gainesville, FL	100.9	WYGC	KNKL	North Ogden, UT	88.7	New
				WWBU	Radford, VA	101.7	WBXW
				WDKL	Grafton, WV	95.9	WTBZ-FM
				KWYC	Orchard Valley, WY	90.3	New

Becker. Address: PO Box 2466, Fargo ND 58108. (Griffith, CO) Congratulations WDAY!

1680 WTTM Princeton, New Jersey, nice full-data certificate with an embossed station seal in four months, signed Neal Newman, CE. Also two colorful promo sheets, Newman's business card, and an old QSL card (not filled in) from when they were Nassau Broadcasting Partners. This is the South Asian station that was looking for reports. (Berg, MA) Very nice package with beautiful QSL certificate, two EBC radio posters, CE's business card, and mint sample of QSL card issued by previous station owners, received in 110 days, signed Neal Newman KA2CAF, CE. Address: 456 Middlesex Ave., Metuchen, NJ 08840. (Griffith, CO)

Broadcast Loggings

An unusual third peak in solar activity during sunspot cycle 23 is having its effect on mediumwave reception. The auroral conditions have subdued transatlantic signals while enhancing reception from down under. "The best I have seen in months," says Patrick Martin. All times are UTC.

531 1XPI Auckland, New Zealand, at 1250 good with Samoan talk and island music. (Martin, OR)

Pop'Comm Exclusive: Inside Alaska's KFAR (from page 10)



Outside the KFAR studios, also home to KCBF (country station), KOOL, KWLF, and KXLR (classic rock).

four other local stations: KUWL 103.9, oldies format; KWLF 98.1, Top-40; KXLR 95.9, classic rock; and KCBF 820, classic country. All five stations can be found online on <www.akradio.com> but KFAR has its own site at <www.kfar660am.com>.

In spite of its relatively low 10-kW output, KFAR is heard around the world, with QSL reports coming in mainly from Sweden and Mexico. But be assured that if you're fortunate enough to hear KFAR on 660 kHz, you are likely listening to the oldest continuously operating station in the state of Alaska.

549 R. Rhema, Kaitaia/Gisborne, New Zealand, at 1356 presumed the source of a soft hymn and talk, lots of KMVI 550 splash. (Martin, OR)

550 KMVI Wailuku, Hawaii, totally dominating 550 with sports talk at 1320 and spots for a truck dealer on Maui, S9+30 dB. (Martin, OR)

558 R. Fiji One, Naulu, Fiji, with kind of disco sounding island music and a man in Fijian at 1340. (Martin, OR)

567 2YA Wellington, New Zealand, good at 1304 with National Radio network news. (Martin, OR)

570 KQNG Lihue, Hawaii, good on top of KVI with Dr. Joy Brown show and "KONG" mention at 1315, best heard in a long time. (Martin, OR)

630 4QN Townsville, Australia, parallel 4QR heard on 620 kHz, mostly buried at 1303 with ABC news. (Martin, OR) Very nice, Patrick!

640 R. Guadeloupe, Pointe-a-Pitre, Guadeloupe, heard at 0110, French Caribbean music, received on a barefoot Superadio III loud and clear during the Boston Area DXers "DX Clams" expedition at the Granite Pier, Rockport, MA. (Thorburn, MA)

650 KHNR Honolulu, Hawaii, fair over and under KSTE with "Hawaii's only all news station, KHNR" ID at 1345. (Martin, OR)

684 R. Fiji One, Labasa, Fiji, parallel 558 kHz with island music at 1323, 680/690 kHz splatter. (Martin, OR)

738 RFO Tahiti, very strong over Australia with talk in French and island music, noted many times between 1245 and 1345. (Martin, OR)

1080 WTIC Hartford, Connecticut, heard at 0333. Strong signal with "The Bruce Williams Show," IDs as News/Talk 1080. (Ressler, OH)

1116 4BC Brisbane, Australia, very good signal at 1352 holding on well even with splatter from KPNW 1120 with talk, mention by a woman of "Talk Radio 1116," and phone numbers. They are much stronger than they used to be. Back in the '80s, 4BC was not all that common. With a signal like this, it will probably be one of the easiest commercial Brisbane stations to hear, at 5 kW with a lobe this way per the pattern book, a possible one to make it inland. (Martin, OR)

1120 KMOX St. Louis, Missouri, at 0408 a good signal with lottery numbers, sports, and weather, then "The John Grayson Show," IDs as "The Voice of St. Louis." (Ressler, OH)

1170 WWVA Wheeling, West Virginia, at 0421 a strong signal with country music and talk, including discussion about the lineup of acts for the Jamboree on the Hill concert, IDs as News/Talk 1170 WWVA. (Ressler, OH)

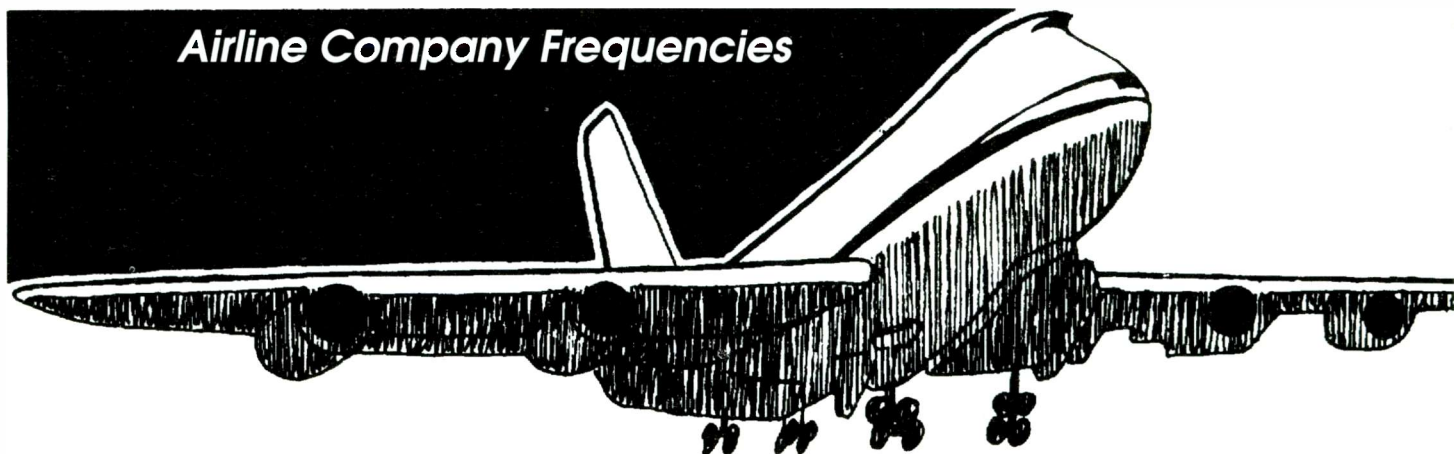
1540 ZNS1 Nassau, Bahamas, heard in the car this morning 20 miles southwest of St. Augustine, Florida. I usually don't hear ZNS1 at night. I've heard them in the past during the day in Jacksonville when WOBs 1530 was dark—this was several years ago. (Gitschier, FL)

1560 WQEW New York, New York, at 0440, a good signal with Radio Disney featuring contemporary hits and children's music. Strange to be hearing kids music at this late hour. (Ressler, OH)

1650 KDNZ Cedar Falls, Iowa, at 0500 a weak signal, CBS network news, local weather, and Coast-to-Coast AM, KCNZ IDs. (Ressler, OH)

Many thanks to Jerry Berg, Ron Gitschier, Patrick Griffith, Patrick Martin, Lawrence Ressler, and Gary Thorburn. 73 and Good DX!

Airline Company Frequencies



Happy holidays from the nice sunny “west-coast of the east-coast of North America,” namely Tampa Bay, Florida. I was wondering just what I was going to do for the Christmas issue and it finally came to me. Most of my columns have been about monitoring communications between pilots and air traffic control (ATC). But nothing has been written in conjunction with airline/dispatch communications. So, this month I’ll reveal my vast (cough-cough) listing of frequencies used by the various airline companies talking to their en-route aircraft. Remember that this listing is not inclusive, can vary from airport to airport, and many frequencies are being phased out, if not already replaced by digital ACARS (Aircraft Communications, Addressing, And Reporting System) units.

But before I get to the frequency listings I have an aviation trivia question that happens to somewhat coincide with the release of the new Star Trek film (*Star Trek Nemesis*) being released this month. The question is: Which of these airway fixes found in the National Airspace System does not exist—KIRKK, SPOCK, SCOTT, MCCOY, SCOTY? The answer appears after the list of changes at the end of the column.

The following listing is of various frequencies used by the airlines. They are in order of the callsign of the airline, followed by the three-letter ICAO identifier for each airline, the name of the airline company (if needed), and the frequencies. I’d like to know what you hear.

AEROMEXICO (AMX) Aerovias de Mexico
154.515

AIR CANADA (ACA)
129.05, 131.1, 460.7, 464.675

AIR WISCONSIN (AWI)
152.42, 460.65, 460.775, 460.9125, 460.9375, 461.5625, 461.9125, 463.2625, 464.475, 465.65, 465.775, 466.5625, 466.9125, 468.2625, 469.475

ALASKA (ASA) Alaska Airlines
72.02, 72.14, 72.38, 121.7, 130.5, 131.2, 154.54, 156.8, 460.65, 460.7, 460.75, 460.775, 460.8, 460.825, 460.875, 461.3125,

465.65, 465.7, 465.75, 465.775, 465.8, 465.825, 465.875, 466.3125

ALITALIA (AZA) Alitalia-Linee Aeree Italiane
464.775

ALOHA (AAH)
129.5, 129.9, 460.7, 460.75, 461.375, 465.7, 806.0, 810.5875, 855.5875

AM TRAN (ATA) American Trans Air
129.2

AMERICAN (AAL)
129.0, 129.2, 129.3, 129.35, 129.425, 129.775, 129.85, 131.4, 151.685, 460.675, 460.775, 460.8, 460.875, 460.9125, 464.425, 464.875, 816.2375, 816.3375, 816.5875, 817.2375, 817.3375, 818.2375, 818.3375, 818.5875, 818.8375, 819.2375, 819.3375, 819.5875, 819.8375, 820.2375, 820.3375, 820.5875, 820.8375

CACTUS (AWE) America West
130.925, 460.65, 460.7, 460.8, 460.85, 460.875, 461.1625, 461.6, 461.8125, 462.15, 462.175, 462.8125, 464.375, 464.475, 464.5, 464.55, 464.6, 464.775, 464.8125, 465.65, 465.7, 465.8, 465.875, 466.1625, 466.8125, 467.15, 467.175, 467.8125, 469.375, 469.5, 469.55, 469.6, 469.775, 469.8125, 896.1375, 896.15, 896.1625, 896.175, 869.1875, 896.6375, 900.1875, 935.15, 935.1625, 936.175, 935.1875, 935.6375, 939.1875

CANDLER (CAA) Atlantic Southeast
463.2625, 464.1625, 464.2625, 464.5375, 469.1625, 469.2625, 469.5375, 469.9625

COMAIR (COM)
75.0, 108.0, 108.05, 108.1, 114.9, 129.9, 334.7, 460.65, 460.75, 460.7, 460.725, 460.875, 461.875, 461.3875, 461.4875, 461.725, 461.9875, 462.1375, 462.8125, 462.8875, 463.675, 464.425, 464.75, 464.975, 465.675, 465.875, 469.975, 978.0, 979.0

CONTINENTAL (COA)
128.925, 129.925, 130.35, 130.525, 130.9, 131.2, 131.9, 131.95, 460.85

DELTA (DAL)
 129.5, 129.55, 129.6, 129.9, 130.1, 130.65, 131.225, 131.45,
 131.65, 131.75, 131.85, 131.9, 131.95, 460.7, 460.8, 460.825,
 460.875, 462.7, 463.5625, 463.6125, 463.6625

EMERY (EWW) Emery World Airline
 131.175, 136.525

FED EX (FDX)
 130.75, 131.925, 461.225

HAWAIIAN (HAL)
 121.9, 129.5, 460.7, 460.8, 460.85, 462.0, 463.325, 465.8,
 465.85, 467.0, 468.325, 811.8375, 812.8375, 813.8375,

814.8375, 815.8375, 856.8375, 857.8375, 858.8375, 859.8375,
 860.8375

HORIZON AIR (QXE) Horizon Airlines
 156.45, 156.8, 157.025, 460.675, 460.775, 460.8, 461.8875,
 462.8125, 465.675, 465.775, 465.8, 466.8875, 467.8125

KIWI AIR (KIA) Kiwi International Airlines
 460.825, 460.875, 465.825, 465.875

LUFTHANSA (DLH)
 460.675, 460.7, 460.75, 460.775, 460.8, 460.825, 460.875,
 464.825, 465.675, 465.7, 465.75, 465.775, 465.8, 465.825,
 465.875, 469.825

NEW/CHANGED/DELETED FREQUENCIES

NEW

AZ
 Glendale, Luke AFB (LUF)
 PMSV 267.4

FL
 St. Augustine (SGJ)
 LC 127.625, 269.475
 GC 121.175, 251.125
 ATIS 119.625
 Valpariso, Eglin AFB (VPS)
 Airspace ATIS 133.0

IN
 South Bend, Memorial Hospital at South Bend Heliport
 (79IN)
 Unicom 123.05

ME
 Eutler Regional Airport (ME2)
 CTAF 122.9

MI
 Grayling AAF (GOV)
 Military Ops 122.8
 Marquette, Sawyer International (SAW)
 LC 119.975
 GC 121.65

MO
 Knob Noster, Whiteman AFB (SZL)
 PTD 139.3

ND
 Grand Fork FSS (GFK)
 Fargo RCO 122.45

OH
 Cleveland ARTCC (ZOB)
 DuBois PA RCAG 126.72, 291.65

OK
 Magnum (Scott Field, 2K4)
 Altus Apch 125.1, 257.725

SC
 Myrtle Beach Approach (MYR)
 Apch 127.4, 257.95

TX
 Brownwood, Flying S Air Ranch Airport (10XS)
 Unicom 122.8

VA

Jonesville, Lee County Airport (OVG)
 Unicom/CTAF 122.8

WI

Janesville, Rock County Airport (JVL)
 CD 118.8

CHANGED

AZ

Glendale, Luke AFB (LUF)
 Cmd Post was 381.3, now 349.4

FL

Orlando Approach Control (MCO)
 was 259.1, 284.7, 397.85, 307.0, 351.9, now 351.9
 was 273.45, 338.2, 338.65, 397.85, 353.65, 251.075, now
 253.5

MO

Columbia FSS (COU)
 Sedalia RCO was 122.3, now 122.05

NC

Charlotte/Douglass International Airport (CLT)
 Apch was 134.75, now 120.05
 was 316.7, now 307.8
 was 282.325, now 257.2
 was 282.325, now 307.8

OK

Cheyenne, Mignon Laird Municipal Airport (93F)
 Unicom/CTAF was 122.8, now 122.9
 Vinita Municipal Airport (H04)
 Unicom/CTAF was 122.8, now 122.9

DELETED

CA

Alturas (ARU)
 NDB 215 kHz

FL

St. Augustine (SJG)
 AWOS-3 119.625

NJ

Newark, University of Medicine & Dentistry
 Rooftop Heliport
 CTAF 122.9

MEXICANA (MXA)

130.0, 460.7, 460.8

MIDWAY (MDW)

151.865, 151.925, 460.75, 460.775, 460.825, 460.875, 465.75, 465.825, 465.875

NORTHWEST (NWA) Northwest Orient

128.975, 129.55, 129.6, 129.95, 130.35, 131.65,, 131.7, 131.9, 460.65, 460.675, 460.8, 460.85, 460.875, 461.65

OZARK (OZK)

460.725, 460.85, 460.9625, 462.675

PIEDMONT (PDF)

129.75, 130.52, 154.515, 460.65, 460.775, 460.8, 460.85, 460.875

SOUTHWEST (SWA)

75.0, 108.0, 108.05, 108.1, 108.15, 130.85, 334.7, 460.65, 460.675, 460.7, 460.75, 460.8, 460.825, 460.85, 460.875, 461.0125, 461.0375, 461.15, 461.1625, 461.2125, 461.2875, 461.3625, 461.5125, 461.5625, 461.6125, 461.6375, 461.65, 461.8, 461.95, 461.9625, 462.1125, 463.2125, 463.5375, 463.6125, 463.7125, 463.75, 463.7625, 463.8125, 463.9125, 464.0875, 464.2125, 464.3625, 464.3750, 464.5375, 464.5625,

NEW/CHANGED/DELETED/CLOSED/ABANDONED AIRPORT IDs**NEW****CA**

Irvine, Broadcom Corporation Heliport 78CA

INJasper (Memorial Hospital at Jasper Heliport 77IN
South Bend, Memorial Hospital at
South Bend Heliport 79IN**MA**Hamilton, Devon Glen Heliport 47MA
Manchester, Seagate Heliport 33MA**PA**

Kennet Square, Marlboro Corporate Park Heliport PS17

TX

Brownwood, Flying S Air Ranch Airport 10XS

VA

Jonesville, Lee County Airport 0VG

CHANGED**AZ**Mesa, AT&T-Apache Jnctn Heliport was 00E, now 63AZ
Mesa, Desert Samaritan Hosp. Heliport was 9E9, now 66AZ
Mesa, Lutheran Hospital Heliport was 02E, now 62AZ
Phoenix, Good Samaritan Hosp. Heliport was 16E, now 67AZ
Phoenix, KTSP Heliport was 13E, now 64AZ
Tucson, St. Mary's Helistop Heliport was 83E, now 65AZ**CA**Burbank, NBC-TV Heliport was 5L9, now 8CL3
City of Industry, Haddicks Heliport was 7L6, now CL87
Clovis, Larsen Heliport was 5Q8, now 8CL4
Clovis, Rogers Helicopters Inc. Heliport was 5Q7, now 7CL2
El Mirage Field, Adelanto Airport was L69, now 99CL
Elk Grove, Lucchetti Ranch Airport was 7Q4, now 8CL2
Elk Grove, Mosier Airport was 7Q6, now CL85
Goffs, Camino Airstrip Airport was 11L, now CL29
Huntington Beach, McDonnell Douglas
Space Systems Heliport was 21L, now 9CA8
Irvine, Park Place Heliport was 23L, now 88CL
Lodi Memorial Hospital Heliport was 24Q, now 8CL7
Los Angeles, R I Al Canoga Park B/2
Helistop Heliport was 69L, now 8CL5
Los Angeles, R I Rd Canoga Park
G/L Heliport was 72L, now 7CL3
Maxwell, Moller Airport was 34Q, now 8CL6
Oroville, Siller Brothers Inc. Airport was 46Q, now 97CL**Parker Dam, Gene Wash**Reservoir Airport was 91L, now 5CL7
Pauma Valley Air Park Airport was 95L, now CL33
Willows, Noltas Airport was O50, now 98CL**KS**

Plains Municipal Aiport was 56K, now 2KS5

MAIpswich, Snow Airport was PHQ, now MA36
Ware Airport was UWA, now MA35**ME**Avon, Lindbergh Airport was 10M, now 08ME
Cutler Regional Airport was ME15, now ME2
Jonesboro, Drisko Airport was 62B, now 05ME
Mount Vernon Airport was 74B, now ME36**MO**Archie, McDonnell Airport was K47, now 03MU
Cassville, Timber Line
Airport Airport was H70, now 02MU
Faucett, Farris Strip Airport was 89K, now 61MU**NE**Arthur, Packard Ranch Airport was 39V, now 42NE
Glenvil, Munsterman Airport was 98Y, now 98NE
McCook/Culbertson, Hoyt Airport was 53V, now 19NE
Nebraska City, Grundman Airport was 3GN, now 82NE**OK**

Okeene Municipal (O65) now Christman Airfield

UT

Salt Lake City, Tri-Arc Heliport was 2U3, now 1UT9

VTNewport, North Country
Hospital Heliport was 9B2, now VT70**WA**

Goldendale, Hillcrest Airport was 9P7, now 2WN9

CLOSED/ABANDONED**CA**

Soledad, Chalone Vineyard Airport (53CA)

MOBrookfield, General John J. Pershing
Memorial Airport (93MU)**NY**

Angola Airport (D22)



464.6125, 464.625, 464.6375, 464.6875, 464.925, 464.9625, 464.9750, 465.65, 465.7, 465.75, 465.8, 465.825, 465.85, 465.875, 466.0125, 466.0375, 466.15, 466.2125, 466.2875, 466.3625, 466.3875, 466.5125, 466.5625, 466.6125, 466.65, 466.8, 466.95, 466.9625, 467.1125, 468.2125, 468.5375, 468.6125, 468.7125, 468.7625, 468.8125, 468.9125, 469.0875, 469.3625, 469.375, 469.5375, 469.6125, 469.625, 469.6375, 469.6875, 469.925, 469.9625, 469.975, 806.0, 978.0

TWA (Trans World Airlines)

129.1, 129.2, 129.4, 129.65, 130.225, 130.625, 151.655,

151.685, 151.775, 460.675, 461.3875, 461.725, 461.75, 464.425, 464.525, 466.7125

TRANSAMERICA (TVA)

460.85, 463.5125, 464.575, 464.875

UNITED (UAL)

128.9, 129.0, 129.3, 129.35, 129.5, 129.55, 131.3, 460.675, 460.725, 460.825, 460.875, 461.3125, 464.325, 464.375, 464.5, 464.55, 464.575

UPS (UPS) United Parcel Service

129.425, 129.475

US AIR (USA)

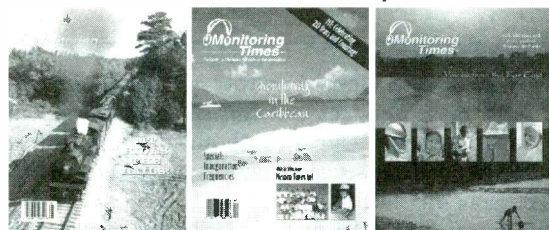
129.05, 129.75, 130.075, 130.05, 130.1, 130.5, 151.625, 460.65, 460.7, 460.8, 460.875, 461.6125, 461.675, 461.725, 461.9625, 462.025, 462.175, 462.7875, 462.9125, 463.9875, 464.425, 464.475, 465.7, 465.8, 465.875, 466.6125, 466.675, 466.725, 466.7625, 466.9625, 467.025, 467.175, 467.7875, 467.9125, 468.9875, 469.425, 469.475, 469.7375, 811.8375, 812.8375, 813.8375, 814.8375, 815.8375, 856.8375, 857.8375, 858.8375, 859.8375, 860.8375

Trivia Question Answer

If you answered SCOTY, then you are wrong. Surprisingly the answer is SCOTT. KIRKK is found near Middleton, Delaware; SPOCK is found near Abingdon, Virginia; and the rest are in Oregon (MCCOY is near McMinnville and SCOTY is near North Bend). And my wife wonders how I can stick Star Trek in this column!

Have a very happy holiday and see you again in 2003. ■

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More HF Aero Communications!

This month I'm continuing with Craig Rose's mini-report on HF aero communications. Over the coming months these reports by Craig and other assistant editors will become a regular part of the column along with articles and features by guest writers. This brings us back to the main purpose of this column, which is to be a place where you share your logs, information, and ideas.

Since the events of 9/11, many people have been diverting their attention away from hobbies as worries and concerns about the economy, world events, and family have been taking precedence. This trend has not only affected those interested in monitoring utility radio stations, but everyone with outside interests and pastimes it seems.

At this point, though, we now have a clearer idea of the issues confronting the world and what our roles will be in upcoming events. While there is no excuse to let down the preparedness that has been put into place over the past year, it is neither healthy nor desirable to remain in a continuous state of anxiety over the future.

So as we face a new year, now is a good time to start re-building what we enjoy and value in our lives. In that regard I put a challenge out to each of you to start contributing again—after all, it is your column. Let's start seeing some new names in the logs next year, as well as more letters and comments.

Likewise, I also welcome more contributions, and again remind you that they do not have to be perfect to be published. Let me work with you to polish your ideas into a final product. Again, I also welcome suggestions or ideas for the future, as well as your comments on what has been published already.

The plan is to get this column interesting and exciting again, and the only way to do that is through your participation and input. So let Craig's efforts inspire you to try your own hand at writing, as the log contributors have inspired others.



Canadian Forces CH-124 Sea King at Moffett Federal Airfield. (Photo by Craig Rose)

HF Aero Communications— Atlantic And Caribbean Regions

By Craig A. Rose <hfaerocomms@hotmail.com>

In the first installment of our HF aero communications review we focused exclusively on the long-haul two-way radio services offered by the aviation communications company Aeronautical Radio, Inc. (ARINC).

Our initial look at these operations focused specifically on the Pacific Oceanic region. Now we'll take a look at ARINC's operations in the Atlantic and Caribbean while also exploring a bit more about ARINC's overall system and mission.

As I mentioned in my last column, ARINC's primary voice communication services are intended to provide air traffic control (ATC) activities for oceanic air routes administered by the FAA, while also offering individual air carriers with the means to conduct phone patches with their companies.

To put the scale of ARINC's mission into perspective, the company handles over two million ATC messages and position reports every year. The majority of transmissions—over 80 percent—are conducted on behalf of the FAA to control and coordinate flights on various oceanic air routes.

Additionally, ARINC will assist in linking flight crews with their operations centers when requested to do so in what is clas-

sified as Aeronautical Operational Control (AOC) communications. Recall that these services are carried exclusively via ARINC's Long Distance Operational Control Facilities (LDOCF) on HF frequencies set aside for this purpose (see "HF Aero Voice Frequencies" sidebar).

LDOC activities for the Atlantic and Caribbean regions are handled either directly by ARINC facilities in New York or via contract facilities located in Houston, Texas (Universal),



Antonov An-124-100 Ruslan operated by Volga Dnepr rests on the ramp at NASA's Ames Research Center in Mountain View, California. (Photo by Craig Rose)

and Miami, Florida (Silvair, Inc.). To be precise, the New York ARINC facility serves as the LDOCF for all flights on trans-Atlantic routes, while the contract radio facilities in Houston and Miami are assigned communications responsibilities for the Caribbean, Central America, and South America.

You may notice that ARINC tends to group their HF aero frequencies in what they refer to as *families*. This is simply a way of classifying frequencies for use by specific aircraft when on certain segments of oceanic aeronautical routes. According to ARINC documents, the North Atlantic families of frequencies used by the New York facility are available to all aircraft regardless of where they are registered.

On other segments of oceanic routes, mainly those handled by overseas HF radio facilities, aircraft are to use specific frequency families depending on the

aircraft's country of registration and if that country is located east or west of 30 degrees West longitude.

Now that you're armed with HF aero frequencies for the Atlantic and Caribbean, it is my hope that you will enjoy monitoring these communications as much as I do. In a future column, we'll take a closer look at how you can identify the route and type of aircraft you're hearing. And, as always, if you have any questions, comments or suggestions, please feel free to drop me a message at <hfaerocomms@hotmail.com>.

**HF Aero Voice Frequencies
(Atlantic/Caribbean)**
(All Transmissions in USB and kHz)

Long Distance Operations Control	
3494	11342
6640	13330
8933	17925

Caribbean Family A Network

2887	8918
5550	11396
6577	13297

North Atlantic Family A Network

3016	13306
5598	17946
8906	

Caribbean Family B Network

3455	8846
5520	11330
6586	17907

North Atlantic Family E Network

2962	11309
6628	13354
8825	

Additional facilities you might hear include Shanwick, Iceland, Santa Maria, Gander. These are only a few locations that provide ATC services outside of the U.S.

Reader's Logs

This month I welcome two new contributors to the column. They are Mark Cleary (MC) who lives in South Carolina, and Rich Klingman (RK) who lives in Mt. Upton, New York. Mark lives in an apartment and is using a DX-390, Grundig YB400, Sangean ATS 505, DX-398, PRO-37, and a BC245XLT. He uses a reel-out antenna, employing the RF Systems AA-1 antenna adapter to prevent overload.

You will see that they have both managed to capture some good logs. A basic technique and simply listening often will produce more results than fancy equipment. In a future column I am going to be looking at how to set up a good monitoring station using a portable radio as the foundation.

So let's look at what Mark and Rich, as well as our regular contributors, have logged this month.

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)

2182: UNID station, sounded like "Manchako Radio" with "PAN-PAN" broadcast. Possible vessel in distress, pos'n 43deg 52' north, 003deg 25' west. 0325 in USB. (RK)

4125: UNID, commercial fishermen discussing equipment problems in USB heard at 0126. (MC)

4195: FUE, FN Paris 1010 RTTY 75/850 RY/ID/SG/Qwerty. (RH2)

4278.7: UNID, UNID 1005 RTTY 100/ 850 Genuine Baudot—cryptop. (RH2)

4333.9: RFVIE, FN Le Port 1914 RTTY 75/850 RY/ID/SG. (RH2)

4372: R1, 3A (part of JFK CVBG) in VACAPES area in Link 11 co-ord net. Operators stated they had spent 156 days at sea. USB at 0152. (MC)

4372: Z1M, 1GZ, L0V in Link 11 co-ord net in Virginia Capes OPAREA. USB monitored at 0123. (MC)

4476: P, C1SN KALININGRAD CW Single letter [P] HF beacon. (DW)

4503.1: UNID, UNID CW Time count? "02 02 02 etc" in slow CW. Then "02 03," "02 04," "02 05" changing approx every min. Slight QRM. (DW)

4570: UNID, UNID 0608 RTTY 50/430 Genuine Baudot—online cryptop. (RH2)

4610: GYA, RN NORTHWOOD FAX//120/ 576/N/800 Spot winds prog 700hPa. (DW)

4666: Philippine 105 (A343 SFO to PHNL to RPLL) working San Francisco ARINC (MWARA CWP-2) with position report and SELCAL check on LS-ER in USB at 1217Z in USB. (CR)

4724: NATO 38 wkg Thule via Offutt, very weak. 0243 in USB. (RK)

5019: HSP, UK MIL/DIPLO HANSLOPE PARK MIL.STD 188-141A on USB. Sounding. Also at 1633 1952. (DW)

5547: PAT 296 working San Francisco ARINC (MWARA CEP-2) for HF radio check prior to departure for Fairchild AFB then is advised to make 11282 the primary and call San Francisco for radio check in USB at 1326Z. (CR)

5547: Japan Air 6083 (B747-200 SFO to PANC to RJAA) working San Francisco ARINC (MWARA CEP-1) with position

report and is advised to contact Vancouver Center on 135.200 in USB at 1250Z. (CR)

5667: FedEx 14A (MD-11 RCTP to PANC) working San Francisco ARINC (MWARA NP-3) with position report and SELCAL check in USB at 1118Z. (CR)

5673: Beijing VOLMET (BGX) with automated aeronautical weather observations in USB at 1316Z. (CR)

5690: PANTHER (DEA HQ, Nassau Bahamas) in p/p with CG 1718. Directing ops of 22C and 24C in pursuit of drug runner that makes landfall on North Bimini Island. 22C lands ground forces. USB at 0554. (MC)

5696: CAMSPAC, Point Reyes wkg CG 1704 in USB at 1027 and CG 1716 at 0212. (MC)

5696: CAMSLANT, Chesapeake wkg CG 1718, 22C (HH-60J), and 24C (HH-60J) on counter narcotics mission in Bahamas. They are pursuing a Go Fast drug runner boat near Bimini Island. Target vessel is throwing bales of drugs overboard. USB at 0318. (MC)

5696: Oscar 4 Charlie wkg Camslant Chesapeake. Reports "unable to establish landline with Panther" 0116 in USB. (RK)

5708: USAF AIRCRAFT C-5 70-0451 MIL.STD 188-141A on USB. Sounding. (DW)

5708: CRO, USAFCROUGHTON MIL.STD 188-141A on USB. Sounding. Also 1843 1934. (DW)

5800: FUE, FN BREST RTTY//75/R/ 850 5800.16. Marker "FAAA de FUE ... RY's. int zbz." Weak, poor copy. (DW)

6234: USCG, ANDVT encrypted traffic in USB at 1155. (MC)

6348: FUE FN BREST RTTY//150/R/850 Marker "FAAA de FUE esinr RS's SR's juaersui lkineda kkk"—faulty tape. (DW)

6449.7: PWZ33, BN Rio 0616 RTTY 75/850 Coastal WXSS & Grids. (RH2)

6491.5: LOR, AN Puerto Belgrano 2146 RTTY 75/170 RY/ID + 5LG & some Nx/EE—QSY 22818.43. (RH2)

6501: USCG, Portsmouth w/high seas WX forecast in USB at 2230. (MC)

6622: American 973 (JFK to SBGL) working New York ARINC (MWARA CAR-A) to request flight level 370 and clearance to deviate 20 miles east of course for building weather in USB at 0504Z. (CR)

6622: American 951 (JFK to SBGR) working New York ARINC (MWARA CAR-A) to accept ATC clearance to deviate up to 20 miles either side of course for weather in USB at 0502Z. (CR)

6655: Asiana 214 (B777-200 RKS1 to SFO) working Tokyo Radio (MWARA NP-2) to advise unable to accept flight level 360 per Tokyo ATC request in USB at 1321Z. (CR)

6655: Air China 985 (B747-400 ZSPD to SFO) working Tokyo Radio (MWARA NP-2) with request for flight level 350 then deferred by ATC due traffic at 1220Z. (CR)

6655: Polar 6000 (B747-200 RJTY to Travis AFB) working Tokyo Radio (MWARA NP-2) with position report and is advised to make next report on 5.667.0 to San Francisco ARINC in USB at 1224Z. (CR)

6676: Bangkok VOLMET (THA) with automated aeronautical weather broadcast in USB at 1213Z. (CR)

6679: Auckland VOLMET (ZKAK) with automated aeronautical weather broadcast in USB at 1153Z. (CR)

6679: Tokyo VOLMET with automated aeronautical weather broadcast heard in USB at 1341Z. (CR)

6679: Hong Kong VOMET with automated aeronautical weather broadcast in USB at 1247Z. (CR)

6830: CIA numbers station in AM mode—very strong signal YL/SS with Grupo Tres (3), Seis (6), Cinco (5) x 3 then into 5F groups. Off at 2230 with “finale” x 3. (RK)

6845: FDG, FAF BORDEAUX CW Marker “VVV de FDG.” (DW)

7505: 7505, EMIR UNID ALE on USB. ClnG ESS. (DW)

7505: IO5, UNID MIL.STD 188-141A ALE on USB. ClnG SIT. (DW)

7505: EMIR, UNID MIL.STD 188-141A ALE on USB. Sounding. (DW)

7505: UNID, UNID MIL.STD 188-141A ALE on USB. ClnG YA1. (DW)

7505: ELIVEA, UNID MIL.STD 188-141A ALE on USB. Sounding, also at 0344. (DW)

7508: ZSJ SAN CAPETOWN FAX// 120/576/N/800 Sfc analysis. Weak, grainy. (DW)

7657: 22C (USCG HH-60J #6022) wkg PANTHER (DEA HQ Nassau). They report they are airborne en route to sectors T and I for patrol. USB 0100. (MC)

7708: MOANDA, GABON RAILWAYS MOANDA MIL.STD 188-141A ALE on USB. Sounding. (DW)

7708: PCOWEND, GABON RAILWAYS OWENDO MIL.STD 188-141A ALE on USB. Sounding. (DW)

7710: VFF CCG IQUALUIT FAX//120/576/N/800 Ice chart. Vague in qrm/m-path but improving. (DW)

8125: UNID (some kind of net) Short RTTY bursts followed by YL/EE op with: “This is the KDX50 net. Special announcement. Net meeting on 29 August cancelled. Inquiries may go to Johnny at 214 xxx-xxxx (214 area code is in Dallas TX)” 1636 in USB. (RK)

8330.3: RFHI, FF Noumea 1529 ARQ-E3 100/400 CdeV on VII cid. (RH2)

8443: UNID, MURMANSK MET FAX//120/576/N/800 Weak image in noise. (DW)

8652: UNID, UNID FAX//120/576/ N/800 Very weak. Just visible dead zone/alternating timing bars? Then alternating in/out noise floor. Continuous service. Part of FWO Northwood Arabian Gulf svc? (DW)

8764: USCG, Portsmouth w/high seas WX forecast in USB at 2230. (MC)

8764: NMN Coast Guard Master Station Atlantic with automated weather forecast 2330 in USB. (RK)

8843: N5GV (Gulfstream V, Gulfstream Aerospace, Inc.) working San Francisco ARINC (MWARA CEP-1) to accept ATC clearance to maintain mach speed .85 in USB at 1723Z. (CR)

8843: Lifeguard N978E (Lear 36A, International Jet Aviation) working San Francisco ARINC (MWARA CEP-1) to accept ATC clearance to climb and maintain flight level 410 in USB at 0400Z. (CR)

8843: Westwind 10MV (WW1124, EFC Enterprises) working San Francisco ARINC (MWARA CEP-1) for HF radio check in USB at 1919Z. (CR)

8912: U.S. Customs, ANDVT encrypted traffic in USB at 2220, 2312, 0023, and 0210. (MC)

8971: DUNLOP 10 (P-3C) wkg BLUESTAR, TSC Roosevelt Roads, P.R. reporting position of target contact they are tracking. USB at 0305. (MC)

8971: CARDFILE 71D (P-3C) with coded position report to FIDDLE, TSC Jacksonville, FL, in USB at 2044. (MC)

8971: UNIROYAL 01 (P-3C) with position report to BLUESTAR in USB at 2154. (MC)

8983: CAMSLANT, Chesapeake wkg HERK 02 and cutter Mohawk in “search of local hot spots.” Requests they come up on 6234 and 8337. USB at 1153. (MC)

8983: CAMSLANT Chesapeake orders CG 2102 to return to Miami to pick up parts for Guantanamo Bay. USB at 1356. (MC)

8983: CAMSLANT, Chesapeake wkg B4Q. They relay a posit PANTHER (DEA HQ Bahamas) wants them to overtly and tell them to refuel at Georgetown, Bahamas, before dark. USB at 2159. (MC)

8983: CAMSLANT, Chesapeake wkg D9J (UNID USCG vessel). Request they retransmit their 212000Z msg. CAMSLANT states HFTG broadcast is on 17190 and 13081 and they will switch to a Miami transmitter. USB at 0114. (MC)

8983: USCG. Group Key West wkg CG 1713 in USB at 2121. (MC)

8983: CAMSLANT, Chesapeake wkg cutter Eagle. Eagle request time of next high seas WX forecast. Next forecast 0230. USB at 2309. (MC)

8992: DARK 41 wkg Raymond 31. “Bomber target is isolated motor pool of terrorist camp at 40N 113W (approximate location turned out to be the Dugway Proving Grounds in Utah) 1535Z in USB. (RK)

9016: UNID, TADIL A Link 11 data transmission. USB at 2155. (MC)

9025: CRO, USAF CROUGHTON MIL.STD 188-141A ALE on USB. Sounding. Also at 1716, 1811, 1816. (DW)

9025: PLA, USAF LAJES MIL.STD 188-141A ALE on USB. Sounding. Also at 1745, 1845 [CMD POWER CONTROL]. (DW)

9025: UNID, TADIL A Link 11 data transmission. USB at 2004. (MC)

9041: 5YE, Nairobi MET 0315 RTTY 100/850 RY/ID & WX codes. (RH2)

9055: BU2C2, ROMANIAN MOI BUCHAREST MIL.STD 188-141A ALE on USB. ClnG BACC2/Bacau. (DW)

9070: 055 E ASIAN NET? MIL.STD 188-141A ALE on USB. Sounding. (DW)

9247.3: FY2, DTRE Kerguelen I0330 ARQ-E3 200/400 Betas. (RH2)

9983: KUM70, Honolulu Met 1630 FAX 120/576 Satpix then WX chart. (RH2)

10057: China Eastern flight 589 (MD-11 LAX to ZSPD) heard working San Francisco ARINC (MWARA CEP-3) with position report and SELCAL check on FG-EQ in USB at 2211Z. (CR)

10535: CFH, CF HaliFAX 0523 FAX 120/576 Poor chart. (RH2)

10535: UNID, CIS Navrad 0255 36-50 50/240. (RH2)

10555.2: VMW, Wiluma 1630 FAX 120/576 Fairly clear chart! 1st received here fm this station! (RH2)

10611: UNID, Moscow Met 0324 FAX 1120/576 Clear chart! (RH2)

10917.5: RFTJ, FN Dakar 1729 ARQ-E3 48/400 CdeV on TJF cid. (RH2)

11175: TOTEM 31 (C-130H, 517th AS, Elmendorf AFB) with p/p via GHFS Hickam to ARCTIC WARRIOR to advise of three hour ETA to Elmendorf AFB with Alpha-2 status for inoperative radar and heater followed by p/p to Elmendorf Metro for arrival WX in USB heard at 1225Z. (CR)

11175: AIREVAC 6954 with p/p via GHFS Elmendorf to Hickam CP to advise of 1545Z arrival at Hickam with termination of current mission and pickup of new mission from Hickam to Scott to Wright-Patterson followed by p/p to Hickam Metro for arrival forecast and PIREP with description of tropical storm northeast of Guam in USB at 1328Z. (CR)

11175: REACH 5010 (C-5) with p/p via GHFS McClellan to Travis CP advising of blocks at 1610Z with alpha-3 status due to elevator damage with eight crew and one passenger in USB at 1356Z. (CR)

11175: AUSSIE 780 (C-130, tail A-97003) with p/p via GHFS Andrews to Travis Base Ops to advise of 0620Z arrival time with 11 crew and nine pax and requests 2000 gallons fuel, external power supply followed by p/p

to Travis Metro for arrival weather in USB at 0514Z. (CR)

11175: DOOM 72 (B-52) p/p to RAYMOND 19 (Warner Robins AFB). Requesting status of refueling with RHET 34 (KC-135). They are told RHET 34 cancelled due to WX. No more flights tonight. USB at 0133. (MC)

11175: REACH 395Y p/p to AMCC. Request WX for Rhein Mein. Cargo of 11 rolling stock and 9 pallets. Report problem with extended range fuel tank. USB at 0010. (MC)

11175: Andrews with SKYKING EAM transmission in USB at 2034. (MC)

11175: REACH 9166, C-17 with p/p to McChord AFB CP. Report ETA 0230. Status A2. Have 32 PAX. Need three buses. USB at 2350. (MC)

11175: REACH 449, C-5, p/p to Hilda East. Request WX for Charleston AFB. Have 7 PAX, 9 crew. Status A2 for broken AOA gauge and left APU. USB at 0044. (MC)

11175: SKYKING broadcast, started by Offutt, and echoed by Andrews, McClellan, and Elmendorf AFBs. heard at 2058 in USB // 8992. (RK)

11175: BRILL 29 (RC-135) wkg Offutt for weather at their location 1946 in USB. (RK)

11175: DARKSTAR NOVEMBER wkg RED WAGON via Hickam AFB re "squawking 9023." 1800 in USB. (RK)

11184: N325UP AIRCRAFT FLIGHT UP6727 HFDL// on USB. ACARs msg w/psn 51.51N 31.57W 1615. 1620 posn 5156N 3052W. (DW)

11184: ARINC REYKJAVICK HFDL// on USB. Squitters. Heard operating on 6712, 8977, 11184 kHz. 1613 logon confirm to ICAO E93D8E. 1616 mpdu to UP6727/ N325UP. (DW)

11232: CANFORCE (?) with traffic passed in French. USB at 0142. (MC)

11244: Offutt with 22-character EAM broadcast for AJGII6 accompanied by OM singing in unknown language under Offutt's transmission in USB at 1434Z. (CR)

11282: QUEST 24 (KC-10A, 60th AMW, Travis AFB) heard working San Francisco ARINC (MWARA CEP-2) to advise of AR operation beginning at 39.20 north. 131.00 west while in the block from 170 to 190 in USB at 0144Z. (CR)

11282: 1950Z—RAIDER 20 (KC-130R, VMGR-352, MCAS Miramar) working San Francisco ARINC (MWARA CEP-2) to accept ATC clearance to climb and maintain flight level 230. (CR)

11282: AIR FORCE RESCUE 126 working San Francisco with position report and requests clearance to climb to 150 or 190 and estimates Moffett Field at 0304Z in USB at 0125Z. (CR)

11282: NAVY RU 252 (C-130T, VR-55, NB Pt. Mugu) working San Francisco ARINC (MWARA CEP-2) with initial position report and request to climb to and maintain flight level 230 in USB at 1653Z. (CR)

11282: NAVY JS 647 (C-9B, VR-46 "Eagles," NAS Atlanta) working San Francisco ARINC (MWARA CEP-2) with

Friends Of Long Island Wireless History

As anyone who has followed this column knows, I'm a big fan of museums featuring radio history and technology. One group I have been supporting is the FLIWH, located on Long Island, New York. This group has been documenting and preserving the early history of utility radio on the Island. Much of their work has focused on such historic sites as RCA's Radio Central and the Telefunken station at Sayville.

Recently the FLIWH installed a display called "A Look at L.I. Maritime History" at the Long Island Maritime Museum in East Sayville, which opened August 24, 2002. The exhibit is designed to take guests from early signals, Morse code, Marconi and his stations, U.S. Navy and Coast Guard DF stations, some commercial stations through to the space age. The exhibit will be there a year, during which time they will be adding to and perfecting it.

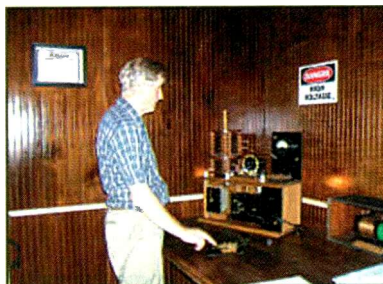
The main features of the display are a reproduction of a Marconi Radio Room from the WWI period (with a working Spark Transmitter built and operated by George Flanagan) and a merchant marine radio room from the 1939/40 time period (with appropriate equipment and a figure dressed as an operator from that time).

The museum is located at 86 West Avenue, West Sayville (West Avenue goes south from Montauk Highway, just east of the town of West Sayville.) You can contact them by phone at 631-447-8679 or by e-mail at <LIMaritimeMuseum@aol.com>. Their Web page is <www.limaritime.org/index.html>.

The FLIWH can be contacted by writing to Connie Currie, President FLIWH, 43 Sayville Rd. West Sayville, NY 11782. Membership is \$20 per year, and includes a newsletter and events.



The history of utility radio outlined in historic documents on display at the Maritime Museum, West Sayville, Long Island, New York.



Working reproduction of a Marconi spark gap radio set in a radio room modeled after those used around World War I. George Flanagan, who built the spark gap radio, is shown standing beside it.

position report and advises level at 300 in USB at 0425Z. (CR)

11282: NAVY YD 771 (P-3C, VP-4 "Skinny Dragons," MCAF Kaneohe Bay) working San Francisco ARINC (MWARA CEP-2) is advised to call Seattle Center at 128 west on 132.070 en route NAS Whidbey Island in USB at 0217Z. (CR)

11282: NAVY PD 885 (P-3C, VP-9 "Golden Eagles," MCAF Kaneohe Bay) working ARINC to accept ATC clearance to climb and maintain flight level 290 in USB heard at 1423Z. (CR)

11384: ADOBE 61 (USAF tanker) working San Francisco ARINC (MWARA SP) with position report and is advised to make next report to Tokyo Radio on assigned frequency in USB at 1311Z. (CR)

11384: New Zealand 32 (B767-300/ER Osaka to NZAA) working San Francisco ARINC (MWARA CWP-2) with position report in USB at 1333Z. (CR)

11384: ARINC SHANNON HFDL// on USB.

Squitters. Operating on 8942, 11384. (DW)

11387: Sydney VOLMET (VJN385) with automated aeronautical weather broadcast in USB at 1432Z. (CR)

11410: UNID, TADIL A Link 11 data transmission. USB at 0010. (MC)

11475: 055, E ASIAN NET? MIL.STD 188-141A ALE on USB. Sounding. (DW)

11489: DG, MOROCCAN MOI ?LOC MIL.STD 188-141A ALE on LSB. Sounding. Also 2156, 226, 2256Z. (DW)

11545: Lincolnshire Poacher station, weak but readable through some bubble jamming. 2130 in USB (RK)

12489: UCVT TH Ussuri 1003 ARQ t/c to Vladivostok. (ML)

12489: UFOJ PS Kherluf-Bidstrup monitored at 1124 ARQ UFOJ log on & msg to Vladivostok. (ML)

12489: XUEE8 TH Ayaks (ex Krev) 1031 ARQ SELCAL KYXM, XUEE8 log on & t/c to Vladivostok. (ML)

12510: UDFX STR Tikhmenevo 1110 ARQ

crew msgs to Vladivostok. (ML)
12510: XUMQ8, UNID vs1 1054 ARQ w/KYPS SELCAL & 53971 XUMQ8 log on to Vladivostok, no tfc. (ML)
12566.6: PWGO, UNID (Brazilian Nvy vs1?) 0950 RTTY 100/850 c1g Salvador w/PWF33 DE PWGORY SG INT ZBK/ZBZ K tape then off air. (ML)
12570: UCXG, M/V *Morning Star 1* 0942 ARQ w/54408 UCXG log on & svc msg to Vladivostok. (ML)
12570: UDDA, SMB Predannyj at 1031 ARQ tfc to Vladivostok, UDDA log off. (ML)
12570: UEVS, TR Ostrov Karaginskiy (ex EFIM Novoselov) 1048 ARQ w/UEVS log on & test msg to Vladivostok. (ML)
12591.5: UFL, Vladivostok R 1008 ARQ msg & QSL to UCVT TH Ussuri. (ML)
12617: XSF71, Lian Yungang R CHN 0957 ARQ 4FG msg to unknwn vs1. (ML)
12690.7: RFVIE/FUX FN Le Port 0620 RTTY 75/850 RY/ID/ Testing. (RH2)
12877.5: UIW, KALININGRAD RADIO 3SC//50/R/170 "UBDC" de UIW ans 22247" then tfc in 3SC to ship TR Wilhelm Pik. 1036Z c1ng "V3WK7 de UIW ans 16626." (DW)
13330: North American 5298 with p/p via Houston LDOC (Universal) to their dispatch to accept re-release information in USB at 1433Z. (CR)
13526.7: UNID, EGYPTIAN EMB TRIPOLI SITOR/A//100/E/170 In irs mode. 1521Z changes to iss, tfc in AA(ATU80) and offline encrypt. Var opchat and s/off 1531Z. (DW)
13597.5: UNID, ROME MET FAX//120/576/N/800 Upper air and sig WX charts. Weak/grainy thru 0945. Possible schedule listed for 0813Z not txd. (DW)
13927: TEAL 71 (WC-130, 53d WRS, Keesler AFB) with p/p via USAF MARS station to unknown location to relay interrogative regarding AR request for COLT FLIGHT originating out of Baltimore monitored in USB at 1352Z. (CR)
14354.3: MGJ, RN FASLANE VFT//4 chann Fleet broadcast vft on USB. (DW)
14356.1: MGJ, RN FASLANE RTTY//7R/N/340 CARB. Chan 3 in vft. (DW)
14824.7: RFVITT FF Dzaoudzi MYT 1110 ARQ-E3 192/400 non-protege msg to RFVI Le Port, cct TTT. (ML)
15016: Shark 02 (C-27 Spartan, US SOUTH-COM) wkg "Lobo" (?) in USB. Left location WST, arrive location TRO @ 0130, location SMY @ 1130. Hrd @ 1532. (RK)
15920: CFH, CF HALIFAX RTTY//75/N/850 "cg/3 de cfh r9 r9 k" and "naws de cfh zkr f1 2822 4170 6254 8303 12830 16576 22200 ar." "cg/3 de cfh r10 r10 k" thru r12 then signoff. (DW)
15961.7: RFLI, FF FT DE FRANCE ARQ/E3//192/E/400 8rc. Betas. 1603 cct [BFL] c de v svc Antilles de Antilles. (DW)
15988: DDK8, HAMBURG MET RTTY//50/N/450 Marker "CQ de DDK8 DDK7 frequencies 11638 kHz 15988 kHz." (DW)
16014: RFQP, FF Jibouti 1531 ARQ-E3 100/400 CdeV on RUN cid. (RH2)
16014.4: RFVI, FF LE PORT ARQ/

E3//100/E/400 8rc. Betas. 1951 cct [RUN] c de v svc RFQP de RFQP. (DW)
16035: 9VF252, KYODO SINGAPORE FAX//60/576/N/800 Japanese script press sheet. (DW)
16051.7: Egyptian Embassy Nairobi monitored at 1125 ARQ 5LG msg to Cairo. (ML)
16606: UNID, Brit Mil Cyprus 1630 MFSK 195.3/300 4 lovely big sharp tones! (RH2)
16607: T04, UNID MIL.STD 188-141A ALE on USB. Sounding. (DW)
16607: UNID, AIRCRAFT FLIGHT LH8441HFDL/on USB. Posn 51.24N50.49E qso via ARINC Bahrain. (DW)
16713: XUBR8, M/V *Wind* 0815 ARQ KYXM SELCAL, 515129000 XUBR log on & svc msg to Vladivostok. (ML)
16713: XUJ9, M/V *Dream* monitored at 0911 in ARQ XUJ9 log on & svc msg to Vladivostok. (ML)
17190: NMN, USCG Portsmouth with SITOR-A at 0127. (MC)
17946: Delta 149 (MD-11 LIRF to JFK) working New York ARINC (MWARA NAT) in USB at 1731Z with position report and is advised to contact New York Center on 125.920. (CR)
18220: JMHS, TOKYO MET FAX//120/576/N/800 72hr sfc pres/precip prog. Weak, grainy. (DW)
18256.7: UNID, UNIDSITOR/A//100/E/170 Offair before fully tuned in. (DW)
18270: OLZ88, MFA PRAGUE MIL.STD 188-141A ALE on USB. C1ng OLZ84/? and proprietary 8 tone (600-2400Hz) modem operating in burst mode. (DW)
18940: BDF, SHANGHAI MET FAX//120/576/N/800 Dead zone and vague outlines in noise floor. (DW)
18940: BDF2, SHANGHAI MET FAX//120/576/N/800 Forecast chart. Slight speed variations in scanner drum speed. (DW)
18940: BDF, Shanghai Met 0205 FAX 120/576 24 hr sea f/cast, strong sig—poor chart. (ML)
19331: UNID, UNID CW End of hispd msg. "qrk sk" and offair. (DW)
19640: C3P, French Emb Tokyo 0820 FEC-A 192/850 5LG msg to Paris. (ML)
20036.7: UNID, EGYPTIAN DIPLO SITOR/A//100/E/170 Op chat in AA (ATU80) and s/off. (DW)
20107: RIC, E ASIAN NET? MIL.STD 188-141A ALE on USB. Sounding. (DW)
20107: 055, E ASIAN NET? MIL.STD 188-141A ALE on USB. Sounding. (DW)
20179.7: UNID, FF PARIS ? ARQ/E3//100/E/400 8rc. Betas. No app tfc thru 1600Z. (DW)
20340: ADZ, ALGERIAN EMB AGADEZ MIL.STD 188-141A ALE on USB. C1ng TRP/Tripoli then [AMD] BRSUIS QAP (same stns?—no IDs decoded). (DW)
20340: TRP, ALGERIAN EMB TRIPOLI MIL.STD 188-141A ALE on USB. C1ng ADZ/Agadez. (DW)
20633.7: RFVI, FF LE PORT ARQ/E3//100/E/400 8rc. Betas. 1429 cct [REI] C de V svc RFVI de RFVI. (DW)

20890: CS9, US CUSTOMS ?LOC MIL.STD 188-141A ALE on USB. Sounding. (DW)
20890: PR1, US CUSTOMS ?LOC MIL.STD 188-141A ALE on USB. Sounding. (DW)
20890: CS1, US CUSTOMS ?LOC MIL.STD 188-141A ALE on USB. Sounding. (DW)
20942: S97, SWEDISH EMB ABIDJAN MIL.STD 188-141A ALE monitored on USB. C1ng "?". (DW)
20946: 8BY, FRENCH INTEL PARIS CW "vvv 8BY" very weak. Off air 1500Z. (DW)
20958: S84, SWEDISH EMB WASHINGTON MIL.STD 188-141A ALE on USB. Sounding. (DW)
20990: ANK, SLOVAKIAN EMB ANKARA MIL.STD 188-141A ALE on USB. Sounding. (DW)
20995: KAH, SLOVAKIAN EMB CAIRO MIL.STD 188-141A ALE on USB. Sounding. Also at 1402Z. (DW)
22316.5: P3GR9, TH St Spirit 0825 ARQ SELCAL KYXM, P3GR9 log on & tfc to Vladivostok. (ML)
22356: 50001, UNID MIL.STD 188-141A on USB. Sounding. (DW)
22356: 50003, UNID MIL.STD 188-141A on USB. Sounding. (DW)
23265.5: HGX21, MFA Budapest 1634 Dup-ARQ 125/170 V. long 55 min Tx/HH. Not fluent in HH but looked like flood warnings & Formula One Grand Prix placings. (RH2)
23370: HZN, Jeddah Meteo 0616 RTTY 100/850 Synop codes. (RH2)
23370: NMC, USCG Pt. Reyes 1455 with FAX 120/576 Satpix file://12730.0 monitored at 17151.0. (RH2)

Our group of utility contributors this month are Craig Rose (CR); Day Watson (DW); MJ Cleary (MC); Murray Lehman (ML); Rich Klingman (RL); and Robert Hall (RH2)

Again, each of your contributions are greatly appreciated.

Coming Next Month

Over the next four months, I am going to be continuing my revamp of the column, so it's going to be a while before I can start posting a solid schedule again. As I've outlined, my hope is to get as many of you involved in this revamp as possible, with the plan being to have a group come on board as assistant editors.

I'll still need logs, so please keep them coming in. As you saw this month I've already had two new recruits—there's still room for lots more. So please get them in, and remember that it does not matter how many you send, as long as you send them.

So until next month, may all of your utility monitoring sessions be enjoyable and productive. ■

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Harmonica Jack And Rat-Man Are ON THE AIR!

For those of you who don't know every personal detail about me, I can only tell you you're probably better off not knowing. Besides being an ex-Coast Guard radio operator and a licensed ham, I have a pet rat and play the chromatic harmonica. While it is possible to send Morse code on a harmonica, it is rare that there's anyone within earshot who can copy it. Until now, that is.

Friend Jack Hopkins, the enthusiastic leader of the Capitol Harmonica Club of Alexandria, Virginia, has just gotten his ham license. That alone shouldn't surprise anyone, unless they know that Jack celebrated his 80th birthday a few years ago. Jack participates in as many as seven musical performing groups, leads perhaps four of them, and the rest of his schedule would likely wear me down at my tender age of \$#&*+@\$\$. Hmm. Must have been a burst of static just then.

I congratulate Jack on his enthusiasm, and to any of you who say you're too old or you can't learn anything at your age, etc., I say "hogwash."

You may recall in last month's issue that my long-tailed little friend, Rattie, had become proficient at sending Morse code using the "dah" side of my speed key. I honestly don't expect her to use both sides; after all, when you see her little hands, it's a wonder that she can send at all.

I read in a book about pets, *Your First Mouse* (no one seems to carry books on pet rats), that rats are the smartest of the small rodents and can be trained and taught to do many things. The book didn't say what I might teach her, beyond finding cheese at the end of a maze, but I've started teaching her to copy Morse code. She's not able to hold a pencil very easily, and when she does, she tends to hold it sideways and gnaw on it, so I'm teaching her the way I learned—on a real typewriter.

Okay, it's not a typewriter—it's a computer. She couldn't push the keys down on a typewriter anyway, and she'd never

"There was nothing left for me to do but pull on the fishing line and watch the coax disappear into the wall, only to re-appear as it followed the fish line out the hole by the attic window. Amazing."

master the carriage return, so this is just the ticket.

So far, you (my loyal readers) are the first to know that I'm grooming Rattie for her ham license. I should have gotten some video footage of my tutelage, particularly when I send an "A" on the oscillator and take her left paw and put it on the "A" key, then the "S," the "D," the "F," and so on. She doesn't seem to quite grasp the concept of "home keys," as her fingers all fit on one key.

She took to sending code to get my attention and communicate with me, but like so many would-be hams, copying seems to present a brick wall to her advancement toward her first license.

Theory is another area where she's having difficulty. It's hard to tell if she's really learning, or if she knows that the greasy spots on the Gordon West book are the correct answers because that's where I put the bits of cheddar cheese for her reward. She seems to get the Q signals OK, but she has a real problem with schematic symbols.

I tried talking to Norm about ways to teach her, but Norm is of the old school: firmly entrenched with the belief that animals should not be licensed. I invited him to listen to the pileups on 20 meters, but he told me "that's different!" Anyway, he readily admitted that he's just not wise in the ways of rodents, and suggested that I check with a research lab somewhere. Rattie shivered at the mere mention of it.

We took a break from studying—Rattie likes to sit under my monitor during her breaks—and we ran some lead-in for my shortwave receiving antenna. Rattie tugged on my sleeve and pointed to the spool of tangled fishing line on a nearby shelf. She gestured that I should tie a loop

in the end, and I did. She took the loop in her mouth and disappeared into a small hole above the wainscot (it's a very old house we live in) and came back in about five minutes through another opening. She no longer had the line in her mouth and I thought she had lost it. She pulled the cut end of the coax to the hole where the fishing line entered the wall and stared at me. Dutifully, I taped the line to the monofilament.

"Now what?" I said. She crawled to the windowsill behind me and pointed outside. There was the loop she had taken through the wall. I put my head out the window and looked up, and saw that the line came out of a small opening by the attic window. For this, I stopped and got her a piece of Crenshaw melon—one of her favorites.

There was nothing left for me to do but pull on the fishing line and watch the coax disappear into the wall, only to re-appear as it followed the fish line out the hole by the attic window. Amazing.

I was on my own stringing the longwire through the trees, though Rattie does not venture outside except in the safety of my shirt. We have two barn owls and a dozen or more cats (this *is* a working farm, you know) who would not give a hoot—or a meow—that Rattie is my personal friend.

I'm afraid that Rattie will have to accept her lot as a "guest operator" if she wants to get on the air. She has a pretty good fist, and sometimes hits maybe six wpm, but I think I'll have to copy for her. And tune. She seemed to want to say something in CW to the BBC the other day, and since she'll be operating under the auspices of my license, I'll try to keep her within the right bands. Perhaps she is more suited for RaTTY. ■

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