

# POPULAR COMMUNICATIONS

OCTOBER 2011

Shortwave Listening • Scanning • AM & FM • Radio History



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**On the Cover: Dave Schank, KA9WXN, at WMVT in Milwaukee, Wisconsin. Details on page 54**

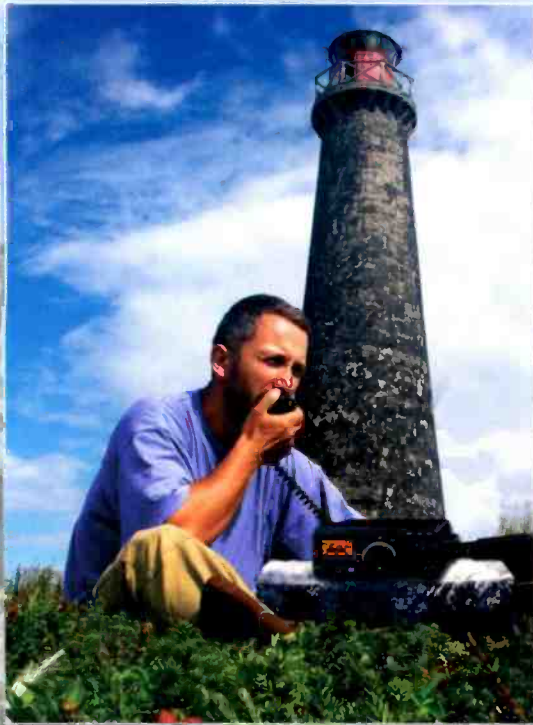
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The Icom IC-R9500 raises the bar for professional receivers. Enjoy unmatched performance from 5 kHz to 3335 MHz (less cellular, in consumer version). Visit the Universal website for full details on this state-of-the-art instrument.



## YAESU FT-450D



The Yaesu FT-450D amateur transceiver operates 160 to 6 meters with 100 watts on all bands. The superb receiver covers 30 kHz to 54 MHz. Operating modes include USB, LSB, CW, AM and FM. A built-in TCXO provides outstanding stability. The Yaesu FT-450D expands on the success of the previous FT-450, providing features such as: built-in antenna tuning system, classically designed knobs, dedicated data jack for FSK-RTTY, CTCSS, user configurable functions, digital voice announcement of frequency, mode and S-meter, 500 regular memories and two voice memories, CW beacon function, 10 kHz roofing filter, key illumination, foot stand plus 500 and 300 Hz CW filters. If you are in the market for a good shortwave receiver, with the idea of going into amateur radio in the future, this may be your ticket. The FT-450D comes with: MH-31ABJ hand mic, mic clip and DC power cord. This radio requires 13.8 VDC at 22 amps.



## YAESU



### FT-857D



**FREE** Yaesu orange mug with FT-857D/897D.

The Yaesu FT-857D is the world's smallest HF/VHF/UHF multimode amateur transceiver covering 160 m to 70 cm with 100 watts on HF. Now with 60 meters and DSP2 built-in.

### FT-897D



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**POPULAR  
COMMUNICATIONS**  
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**ON THE COVER**

Coming face-to-face with the final amplifier tubes in the UHF transmitter at WMVT in Milwaukee, Wisconsin, Dave Schank, KA9WXN, is definitely feeling the power. WMVT is part of Milwaukee Public Television. Story on page 54. (Cover photography by Larry Mulvehill, WB2ZPI)

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# Tap into secret Shortwave Signals

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



MFJ-462B  
**\$199<sup>95</sup>**

Plug this self-contained MFJ Multi-Reader™ 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.

## 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. 6x3x5 in. Remote has 54" whip, 50 feet coax. 3x2x4 inches. 12 VDC or 110 VAC with MFJ-1312, \$15.95.

## Indoor Active Antenna

Rival outside long wires with this tuned indoor active antenna. "World Radio TV Handbook" says MFJ-1020C 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, \$15.95.

## Compact Active Antenna

Plug this MFJ-1022 compact MFJ all

band active antenna into your receiver and you'll hear strong, clear signals from all over the world, 300 KHz to 200 MHz including low, medium, shortwave and VHF bands. Detachable 20" telescoping antenna. 9V battery or 110 VAC MFJ-1312B, \$15.95. 3 1/8 x 1 1/4 x 4 in.



MFJ-1024  
**\$159<sup>95</sup>**



MFJ-1020C  
**\$99<sup>95</sup>**



MFJ-1022  
**\$69<sup>95</sup>**

## Eliminate power line noise!

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-1026  
**\$199<sup>95</sup>**

## MFJ Antenna Matcher

Matches your antenna to your receiver so you get maximum signal and minimum loss. MFJ-959C  
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## EDITORIAL

### Tuning In

by Richard Fisher, K16SN  
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# Building a Pop'Comm Monitoring Station Community: Being 'Part of Something Bigger'

On January 1, 2012, we will launch the *Popular Communications* Monitoring Station Program — an initiative that looks over its shoulder to the historic programs of 50 years ago while leaning forward to embrace the mind-boggling array of 21<sup>st</sup> century monitoring technologies we have today.

We are doing this in large part because you asked us to. “Should Pop'Comm launch a monitoring station callsign program?” The response to our question in July 2011's *Tuning In* has been overwhelming and affirming.

Your letters begin on page 12, the vast majority with a resounding: *Yes!*

The notion of having a monitoring station program clearly swells with as much appeal today as it did more than five decades ago. That's when the late Tommy Kneitel — WPE2AB — directed the WPE program at *Popular Electronics* magazine.

Tommy went on to become founding editor of *Popular Communications* in 1982, and we honor his memory today in establishing our monitoring station program in his spirit.

CQ Communications Publisher Dick Ross, K2MGA, perhaps knew Kneitel better than anyone in radio. “This is about bringing cohesiveness to this great hobby,” he said in a development discussion, recalling Tommy's energy, commitment and enthusiasm. Our program “will create a place — a community — where members can say, ‘We're part of something bigger.’”

We suspect Tommy would have liked that a lot. Just as many of you apparently will.

You'll see in their letters, some people have taken issue with our use of the term “callsign” in this program proposal. They feel callsigns are for people “like me who earned (them) through study and licensing,” said one writer, presumably a radio amateur.

With history as a compass, these writers have a point. The vintage WPE and WDX programs' “Certificate of Registration” says its recipient is assigned a “station identification sign.” That's a little bigger mouthful than “callsign,” but seems perfectly right. And if it was good enough for Tommy Kneitel, it's good enough for us.

On the way to January 1, we'll be refining our vision for:

- **STATION IDENTIFICATION:** Establishing an assignment system for station identification signs — both sequential and self-selected vanity, similar to amateur radio callsigns — that offers applicants a range of options: WPC and KPC prefixes for U.S. monitoring stations and specially-selected DX prefixes for those outside the U.S. All will follow standard call district numbering and have either two-letter or three-letter suffixes.

- **RECOGNITION:** Single-letter station ID sign suffixes awarded by *Pop'Comm* to individuals or monitoring groups of special interest or of great distinction. These special station identifications will be issued for designated periods or for life.

- **AWARDS PROGRAM:** A robust *Pop'Comm* Monitoring Station initiative recognizing achievement in reception, in the development of methods or technologies that advance our hobby; that celebrates members' longevity and commitment to our community, and more.

- **CERTIFICATES:** A colorful *Pop'Comm* Monitoring Station Certificate of Registration — recognizing your commitment and certifying your expertise in mon-

(Continued on page 82)



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# The Weirder Side of Wireless

by Staff

## ET Planetary Sounds for Your Listening Pleasure

A website called "Your Remote SMeter" has a gallery of strange noises from outer space you might enjoy. Check out: < <http://bit.ly/r3H4Wi> > and fasten your seatbelt for an interplanetary hootenanny.

Example: The Cassini spacecraft sends us noise from its Radio and Plasma Wave Science (RPWS) investigations. The sounds of 50 to 500 kHz radio emissions that "RPWS has sent back to Earth from Saturn have been compressed in time . . . so that one second corresponds to one planet rotation." (*Sounds like we're in the middle of a digital contest on the ham bands.* – Ed.)

In another case, "Jupiter is a powerful source of odd 25-MHz radio noises that can be received from Earth. The signals have a couple different forms called 'L' Bursts and 'S' Bursts." (*Described as "a little like waves crashing on a beach."* We agree. – Ed.)

Listeners can hear, as well, "an example of the Earth's magnetosphere 'Chorus' recorded by Stephen P. McGreevy during a severe magnetic storm over Vancouver Island, British Columbia, Canada, on February 21, 1994." (*Could have been made on the shore of a Georgia swamp.* – Ed.)

## Banana Splits After Attacking Gorilla At Wireless Center

A gorilla holding an advertising banner outside a phone store in the Cleveland suburb of Strongsville was attacked by a banana in late June.

The store's manager told police a person dressed as a banana tackled the business's mascot and then fled on foot with four males.

Authorities said the gorilla was not injured. Police were unable to locate the banana. (*To see a video news report about the incident and hear the 9-11 call, visit: < <http://bit.ly/oshG6L> >.* – Ed.)

## Jaws: Radio Programming Delivered Through Your Teeth

With a snorkel in your mouth, you're at the pool doing laps. Or swimming from California to Hawaii. In either case, you're bored to tears. This is no fun. What to do?

Well, the Aquanaut Aqua FM Snorkel, with a built-in FM radio, is alleged to be the answer.

No wires. No earphones. Bite down on the mouthpiece while you're stroking away, and it sends music to your ears through your teeth! Your outer ear is bypassed. (*This will allow your outer ear to listen for "Jaws."* – Ed.)

History tells us it joins the bone conduction headset, the bone conduction phone and the bone conduction pillow.

The unit runs on two AAA batteries, is made in France and isn't cheap. Give or take a few Euros, it's about \$150 U.S.

Aquanaut Aqua FM Snorkel is produced by Amphicom®, which has full details at its website: < <http://bit.ly/nKLNnQ> >.

## 'Somebody's Watching Me,' Circa 1922

Back in the day, a fellow named Tom P. Morgan wasn't too keen on radio, according to Corey Deitz of *About.com Radio*, < <http://www.radio.about.com> >. In April 1922, he wrote an article in *The Country Gentleman* called "A Wireless Warning" where Morgan surmised that, "the radio was slowly being used to keep workers in line and never far from the demands of his boss."

Morgan was convinced that Chicago police officers had "small wireless receiving sets" with the antenna stitched into the gendarme's coat.

"On one arm is clasped a disk or concussor of about the size of an ordinary wristwatch," Morgan said. "When the chief wishes to convey a message to the officer on any particular beat he pushes a switch." The disk thumps the officer's wrist. "The officer immediately takes from his pocket a small receiver, places it to his ear and is given the message. No doubt in a reasonably short time a somewhat similar device will be perfected for use on the average hired man."

For more, Deitz suggests reading *United States Early Radio History*, by Thomas H. White: < <http://bit.ly/n8OiqV> >.



Bite down on the mouthpiece while you're swimming and the Aquanaut Aqua FM Snorkel sends music to your ears through your teeth. (*Courtesy of Amphicom®*)



## News, Trends, And Short Takes

by D.Prabakaran  
[bcdxer@hotmail.com](mailto:bcdxer@hotmail.com)

### Despite Positives, BBC World Service Audience Plummet

BBC World Service audiences have fallen by 14 million in the past year — largely as a result of service closures and platform changes due to cuts to central government grants, authorities said. The overall audience estimate for the year is 166 million, down from 180 million last year.

The World Service, currently funded by the United Kingdom's Foreign and Commonwealth Office, had its budget cut in the government's spending review and in January announced that five language services would close along with significant platform changes to other services.

However, there were solid improvements in some core areas of the World Service that partly offset the effects of the cuts, the BBC said. World Service online audience figures have risen by 40 percent over the past 12 months. The 2010/11 figures indicate that there are 10 million weekly unique users of World Service websites — a 3 million increase from 2009/10.

World Service English audiences are up 10 percent over the previous year with a total weekly reach of 43 million and the audience in the U.S. has risen to 10 million. This follows record audience figures in the UK of 1.79 million for the first quarter of 2011 — a reach of 3.5 percent among all UK adults.

BBC Arabic TV had a strong year with audience growth of 2 million, taking it to 13.5 million viewers. (*BBC World Service*)

### Radio Amateurs Inaugurate Operation From South Sudan

The online DX magazine *DXCoffee* reports that an initial amateur radio operation from South Sudan was on the air as of July 22, using the callsign STØR and operating on 30 meters (10.1 MHz) to start.

The newly-established Republic of South Sudan is the latest addition to amateur radio DX entity lists. It was added to both the American Radio Relay League's DXCC list and the CQ Countries list as of July 14, its admission date to the United Nations.

*DXCoffee* has recently started an English-language edition, in addition to its original Italian version. It's online at < <http://www.dxcffee.com/eng/> >. (*CQ Newsroom*)

### Pirates Use Silent Sky Radio Frequency After Tower Collapse

A pirate radio station in southeast Drenthe, a Dutch province in the Netherlands, made use of the radio silence when a communications tower collapsed in the town of Hoogersmilde. After many stations went off the air, the pirates took over the frequency of Sky Radio to broadcast their own playlist. (*For a video of the tower's collapse, visit: < http://bit.ly/pEgQ23 >. - Ed.*)

According to the pirate station, the collapse of the

mast was a perfect opportunity to play music never heard on Sky Radio: schlagers (sentimental ballads or light pop tunes) and "pirate hits." To make it sound authentic, the pirate station used Sky Radio jingles. The pirates have now stopped their actions to allow the real Sky Radio to return to the air in the region.

Sky Radio is not happy with what it calls an "abuse" of the disaster at Hoogersmilde. The station says it has received a lot of complaints from listeners and store owners who were annoyed by the music that the pirates aired on the Sky Radio frequency.

Meanwhile, technicians have been allowed into the Hoogersmilde tower to begin their investigation into the cause of overheated cables that led to a fire believed to have been a factor in the mast's collapse. (*ANP*)

### CBC Warned to Gird for Five Percent Funding Cut

In a wide-ranging interview in July, Heritage Minister James Moore warned CBC/Radio-Canada it should ready for a 5 percent reduction in parliamentary allocation in the next budget.

"Moore ruled out privatizing the public broadcaster, but said all government spending, except for health care and support for seniors, is under review," according to a report on the CBC website.

"The CBC has to do its part. The idea that the CBC can't find 5 percent efficiencies within the CBC to give back to the broader economic framework is silly," he said. "Of course the CBC will be part of this overall process."

Moore said that, "all of this is dictated by the process going forward of the strategic review which is to look at the macro framework of the Canadian economy, going forward the next few quarters. And we'll see where we are next year, but everybody has got to be a part of it."

He also backed up Finance Minister Jim Flaherty's warning to arts organizations not to expect regular government funding. (*CBC*)

### Radio Netherlands Worldwide Budget Cuts Looming

The Dutch parliament has voted against two motions which might have blunted the effect of the budget cuts facing Radio Netherlands Worldwide.

One motion called for a separate debate devoted to the future of RNW. Previous debates tackled the cut-backs facing all public broadcasting. The other criticized the decision-making as hasty and called for a postponement.

Effectively, this vote means that the cabinet's plans to move RNW from the education, media and culture ministry to the foreign ministry and cut the budget from 46.3 million euros to 14 million will go forward.

RNW's management will now draw up a redundancy plan, which is expected to be completed this month. (*RNW News*)

# Capitol Hill And FCC Actions Affecting Communications

## by Richard Fisher, KI6SN **Bad Fencing Gets Carolina AMer in FCC Doghouse**

Inadequate antenna tower fencing and other violations has resulted in a Wilson, North Carolina radio station being hit with a \$25,000 FCC fine.

An online story from *RadioWorld.com* reported that during an inspection of WGTM-AM by field agents from the Norfolk, Virginia commission office, an unlocked fence that was “in disrepair” around the station’s four-tower array was found, along with “no perimeter fence. The unattended transmitter site is in Rock Ridge.”

“At the main studio in Wilson,” the story said, “agents found the station had no functional EAS (Emergency Alert System) system and no documentation showing EAS gear had ever been installed or that any weekly or monthly EAS tests had been sent or received. During the inspection, the general manager couldn’t produce the public inspection file, according to the FCC.”

Station officials were given 30 days to respond. (*Radio World*)

## **Inaugural Nationwide EAS Test Set Next Month**

The first nationwide test of the Emergency Alert System (EAS) is scheduled for Wednesday, November 9 at 2 p.m. EST — “and may last up to three and a half minutes,” according to Federal Emergency Management Agency and FCC officials.

“The EAS is a national alert and warning system established to enable the President of the United States to address the American public during emergencies,” a government press release said.

“On November 9, the public will hear a message indicating that ‘This is a test.’” Both radio and television will get the same audio message. The President’s voice will not be used during the exercise.

“It is important to remember that this is not a pass or fail test, but a chance to establish a baseline for making incremental improvements to the EAS with ongoing and future testing,” agency officials said. “It is also important to remember that the Emergency Alert System is one of many tools in our communications toolbox, and we will continue to work on additional channels that can be a lifeline of information for people during an emergency.” (*FEMA, FCC*)

## **Court Acts On FCC Rule Regarding Newspaper-Broadcast Ownership**

An FCC rule that relaxed limits on cross-ownership of newspapers and broadcast stations has been overturned by a U.S. appeals court in Philadelphia.

The court says the Commission failed to provide adequate public notice. It voted 2-1 to have the FCC further consider the rulemaking.

According to the *Radio Currents* website, “The deci-

sion says former FCC Chairman Kevin Martin did not give the public sufficient time to respond to the adopted proposals, so the ownership rules discussion will be back on the table at the FCC. In the meantime, the ruling upholds the current rules so no companies will be required to divest properties.” (*Radio Currents*: < <http://bit.ly/qzYMAAd> >.)

## **Amateur Bands Could Be Affected By New Radar Pact**

The National Telecommunications and Information Administration (NTIA), the regulator of federal government spectrum use and advisor to the president on telecommunications matters, has proposed establishing oceanographic radar allocations at several high-frequency segments — including the 60 meter and immediately adjacent to the 20-meter amateur bands.

According to the ARRL, the recommendation to propose these allocations at next year’s World Radio-communication Conference (WRC-12) came as a surprise to those members of a U.S. WRC working group set up by the FCC — including an ARRL representative.

The group had proposed different sets of frequencies and concluded that sharing between these radars and amateurs would be difficult at best. Apparently, there has not yet been an explanation of why NTIA made these specific proposals or why it disregarded the working group’s advice. (*CQ Newsroom, ARRL*)

## **House Committee Considers FCC Reform**

A hearing in June to discuss ideas for reforming FCC processes was held by the U.S. House Energy and Commerce Subcommittee on Communications and Technology, chaired by Rep. Greg Walden (R-Oregon).

According to published reports, the subcommittee reviewed the means by which the Commission goes about the public’s business. “The hearing focused on how to codify best practices to ensure consistency,” an online report on *Radio Currents* said.

“The subcommittee prepared a draft bill to amend the Communications Act of 1934 to provide for greater transparency and efficiency in the procedures followed by the FCC,” the story reported. “The proposed bill is currently titled the Federal Communications Commission Process Reform Act of 2011.” (*The full text of the committee’s internal memorandum publicizing the hearing can be seen at: < http://bit.ly/pp4lRP >. - Ed.*)

The committee said that, “under both Democrat and Republican chairmen, the FCC has fallen into practices that weaken decision-making and jeopardize public confidence. While Chairman Genachowski and his predecessors have taken steps to improve process, the time may have come to do so statutorily to ensure consistency from issue to issue, and commission to commission.” (*Radio Currents, other sources*)

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# A Whole Lot of Feelings:

by Rob de Santos, K8RKD  
commhorizons@gmail.com  
Twitter: @shuttleman58

*“As our communications methods expand, the question of how we include the emotional component and apply our emotional intelligence becomes more and more important.”*

If you were to describe one of the many ways you communicate each day, what would you say about it?

How about your breakfast order at the drive-thru window? An egg and bacon sandwich and a coffee might have been your order. There is nothing very exciting about that.

How about that email you answered a half-hour ago from your boss. He wants your expense report done by Tuesday.

Or that 2-meter chat you had on the way home with the guy who restores antique furniture.

More than likely you would describe the content of the communication in words: How it was done, where it was done and so on. However, something would be missing from the description if that were all you included.

What’s missing in all of these is the emotional component. Without the emotion, it is much harder to interpret the message. Generally, we don’t give much thought to such content of a message.

The drive-thru window attendant smiles and says, “Thanks for visiting McDuffies,” or your boss expects your response to his request to be serious, not sarcastic (and presumably it is, if you still want to be employed!).

That guy on 2-meters appreciates the friendly tone in your voice.

The email ends with a happy face emoticon, not a frown.

How we interpret these emotional factors is part of “emotional intelligence” — the ability to identify, assess and control the emotions of oneself, of others and of groups. It’s not only a component of your intellect but also a key feature of all of the communications you undertake each day.

You only have to recall the last time a friend completely misunderstood what you said because she misinterpreted your feelings about it.

As our communications methods expand, the question of how we include the emotional component and apply our emotional intelligence becomes more and more important. Each medium we use seems to develop ways to relay those emotional messages.

In early telegraph communications, the operators devised their own shorthand to accomplish this (for private messages to each other). Ham radio has had these for years in customs such as the use of “73” — “best regards” — in a closing to a contact.

In email and bulletin boards, emoticons evolved. Facebook has a “like” button.

Looking to the future, what will the new forms of communication use to indicate emo-

tion? How will we change as a consequence of those methods?

I’ve written in previous columns about my “Inverse Law of the Internet” which posits that a message is more likely to be read and to spread the shorter it is. The advent of Twitter and SMS (text) are the extreme examples of this. The use of shorthand and symbols to indicate emotion, particularly where voice isn’t used, are certainly necessary in the “short message” world.

Today’s symbols, such as emoticons, are derived from the character-based keys found on most keyboards. : )

If we move toward voice recognition or virtual keyboards (as some smartphones and tablet devices already have), this may change. It’s quite possible that the virtual world will evolve different symbols and shorthand from what is in use today.

As a species, we’ve developed a very sophisticated means of reading emotional messages from facial expressions, variations of tones in voices, patterns of sound (rising or falling volume), emphasis (accents on particular syllables) and more.

It’s widely accepted that text-based communications suffers greatly from the lack of context the emotional components provide. Anyone who has sent an email or text and been misunderstood as a result understands this perfectly. In the future, will we accept this loss or evolve other ways of providing emotional context?

Science fiction writers have already examined one aspect of this issue. Characters on the shows *Star Trek* and *Star Trek-TNG*, such as Spock or Data, did not interpret emotions in the same way as other characters. Of course, this led to differences in the way the characters interacted.

The computer HAL, in the movie *2001: A Space Odyssey* was given human feelings and the ability, fatally flawed as it turned out, to interpret emotions.

The stories are fiction, but they suggest we’re all aware of how emotional communications is changing.

## Now It’s Your Turn . . .

*What do you think technology is doing to emotional communications? Do you find the new technology a good thing or bad thing for conveying feeling? Drop me a note, with a friendly feeling I trust, by the method of your choice. More on the horizons in communications next month.*

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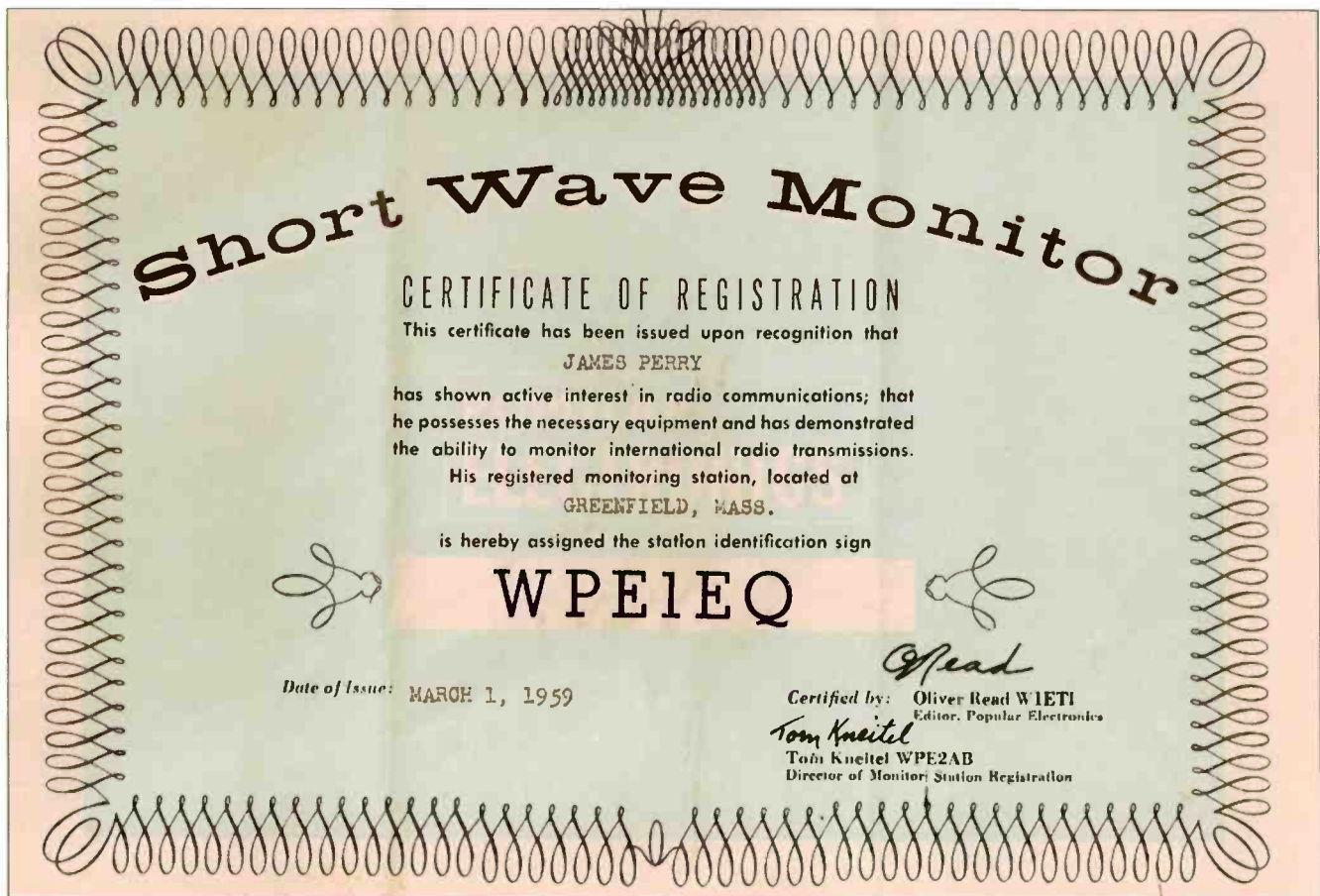


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Jim Perry, KJ3P, of Shippack, Pennsylvania, sent us a copy of his *Popular Electronics* "Short Wave Monitor" certificate, issuing him WPE1EQ, dated March 1, 1959 and signed by *P-E* Editor Oliver Read, W1ETI, and the renowned Tommy Kneitel, WPE2AB, Director of Monitor Station Registration. (Courtesy of WPE1EQ)

# 'Should Pop'Comm Launch a Monitoring Station Program?' — Most Respondents Say 'Yes!'

By Richard Fisher, K16SN

In July's *Tuning In* editorial, we asked *Pop'Comm* readers if they would be interested in the magazine launching a monitoring station program similar to those so popular in the late 1950s, '60s and '70s.

We recalled *Popular Electronics*' Tommy Kneitel, who managed its wildly popular "WPE" Station ID program — and who went on to be founding editor of *Popular Communications*. We remembered the WRØ and WDX programs, as well.

An overwhelming majority of respondents think a *Pop'Comm* monitoring station program would be a good addition to the SWL-scanning-digital monitoring community.

Pro and con, for better and for worse, here is a sampling of their views.

(For more about the *Pop'Comm* Monitoring Station Program's future, see this month's *Tuning In* on Page 4. — Ed.)

— Richard Fisher, K16SN

## WPE8IHS to K4IHS — Yesterday to Today

Not only do I think it would be a great idea to launch another monitoring station callsign program, but also to have a web-site where the old WPE/WDX callsigns are listed.



"I believe that that early WPE certificate gave me the motivation to move on to have a good career in electronics, including as a U.S. Navy E5 avionics technician, broadcast engineer, SBE/CBT, pilot and pilot instructor."

— Paul Gene Hadley, W7MHZ

My monitoring station callsign was WPE8IHS. I wish I'd saved a few of my old QSL cards from that era. What a fun time I had. In fact, when I finally got around to getting my ham license, it didn't take long to change my ham call to K4IHS using the FCC's vanity callsign change option.

Ralph Stallworth, WPE8IHS/K4IHS  
Fort Myers, Florida

### An Aggregation of SWL Callsigns?

I received my SWL callsign, WPEØESQ, in 1965 from *Popular Electronics* magazine. I have used this callsign for QSLs going on 45+ years. Your editorial certainly caught my attention as I have wondered just how many other "WPEs" were out there.

I would love to see a database of all SWL (callsigns) or some kind of club or organization (to aggregate them).

I still have my certificate on the wall after all these years.

Dan Holtz, WPEØESQ  
Cherokee, Iowa

### From Tom's Dining Room to My Shack's Wall

I didn't realize I had a document from Tom Kneitel's dining room table hanging

on the wall here in the ham shack. I enjoyed reading your editorial in the July issue of *Pop'Comm*.

Larry P. Waggoner, WØKA,  
WPEØAHN  
Wichita, Kansas

### Retired Policeman: Monitor Callsigns a Fine Public Service

I am a retired police officer from Ogemaw County, Michigan. About half-way through my career I was placed in charge of setting up and installing the County E911 program. Back then, I decided that the scanner listener population could be of value to our cause — BOL's (Be On the Lookout) and other things that the many eyes of the county could help with.

In order to give credibility to the caller I wanted to assign a callsign or number to identify that person. That program was not promoted well and eventually fell through. It was my error and I take the blame.

The side of the population we always have showed up. They claimed it was a means of "big brother" or (a means for) law enforcement to track who had scanners.

I still believe this is a good idea and would love to be assigned a call. I listen to scanners, shortwave — the list goes on. I even listen to local farmers and schools.

I've been able to render aid to school buses stuck in the winter. The dispatch advised them it would take at least 45 minutes to help them. I was there in less than 15 and got them out. Please add me to the list if you're going to start this program. I am a long-time subscriber of your magazine.

Bob Mitchell, WB8UJB  
Prescott, Michigan

### Monitoring Callsign Districts Are a Good Idea

Yes! I think *Pop'Comm* should start a monitoring station callsign program. I got one [many] years ago, probably from "Tom Cat" (Tom Kneitel), when I was stationed in Arizona — KUSØCJ. I would kind of like a different one that better reflects some kind of call area. Maybe with a "5" in it. However, any way it is handled, would be fine. It also gives something to put on a QSL card.

Spencer G. Sholly, KB5WQW  
Killeen, Texas

### Melding the Old and the New

I support you[r] [decision] in restarting a monitor callsign program. [I] suggest you allow those of us with an old call [to] use them and new applicants what you decide: WPC### call. I am WPE4HGV.

Butch Harris, WA4WKL  
Pensacola, Florida

### Phony, Pretentious and for Wannabees: Don't Do It!

Please, no listener callsign program. Those in the past seemed phony, pretentious and appealing to wannabees who were too lazy to get amateur radio licenses and callsigns. Any serious radio listener should enjoy the small amount of effort required to obtain an entry-level amateur radio license and callsign, and should enjoy the privileges that come with them.

Jim Allen, N4DEE  
Conway, South Carolina

### Rekindling Childhood Memories

Please do start a *Pop'Comm* Listener Callsign program. I would be first in line to apply for one! One of my fondest childhood memories is of having one of the WPE callsigns. Over the years I lost any



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record I had of the call and I cannot remember it. My first logs as a "WPE" were with my Knight Kit Ocean Hopper and Space Spanner receivers that I built while in junior high school in Asheville, North Carolina. I listen to shortwave radio every day and I think the callsign program is a great idea.

*Steve Cherry  
Warrenton, Virginia*

## Nice Pair: Monitoring and Ham Callsigns

Just got my July issue of *Pop'Comm* and read (*Tuning In*) the editorial about the proposed monitoring callsign program. I would really be interested in it. I have been SWLing since the 1950s and missed getting one then. At the time, I was busy with school and starting a career. Now I am retired and spend most of my time listening and talking on the HF (high-frequency) bands. I am a licensed ham with the callsign W9AAZ. Would really like to get a monitoring callsign to go with my ham call — after all these years!

*Clarence Kerous, W9AAZ  
Middleburg, Florida*

## Wishes He'd Kept His WPE1 Certificate

I happened to pick up a copy of July's *Pop'Comm* at a local Borders bookstore. I was one of those thousands who signed up for the WPE program in *Pop'Tronics*. Sure wish I still had that certificate. Sadly, I don't even remember my WPE1 callsign.

You might like to keep in mind that eQSL < <http://eqsl.cc/> > offers some sort of SWL registration program. Not that this should inhibit you one bit! As a ham, I just received an eQSL from an SWL in Belarus with the "call" of EW3-018. "EW3" is the ham prefix for Belarus, so I guess eQSL just tacks on numbers to the ham prefix.

If you decide to proceed with any SWL registration program, I'd be very interested in helping out. I have lots of experience, and time on my hands!

*Jim Perry, KJ3P, (licensed since 1958)  
Skipack, Pennsylvania*

*(While thumbing through his old Novice logbook, Jim came across an envelope "carefully tucked away behind the last page." It was his Popular Electronics Short Wave Monitor certificate, bearing his callsign WPE1EQ. A copy appears on the opening page of this feature. — Ed.)*

## Program Can Be a Motivator

I became interested in radio in the early 1960s and got my WPE certificate number in either 1961 or 1962, followed by my (amateur radio) Novice license — WNØANG — in 1962. If you have the database or info from that period, I would appreciate it if you could take a look to see if you can remind me of my WPE certificate number.

In any event: YES! I think that is a great idea for *Pop'Comm* to launch its own Monitoring Station program. I will be early in line to apply for my certificate and number.

I believe that that early WPE certificate gave me the motivation to move on to have a good career in electronics, including as a U.S. Navy E5 avionics technician, broadcast engineer, SBE/CBT, pilot and pilot instructor.

I think your idea to launch a *Pop'Comm* Monitoring Station Callsign program may help a lot of people — young and old —

to get started in radio monitoring. And who knows what else that will lead to.

*Paul Gene Hadley, W7MHZ  
Tucson, Arizona*

## Short and Simple . . .

I would be interested in obtaining a *Pop'Com*-issued listener callsign.

*Everett LaPorte, KC1EL  
Palmetto, Florida*

I think a callsign for SWLers would be great.

*Raymond Lucier, N1PLC  
Copperas Cove, Texas*

I would gladly get one.

*Eric F. Wise  
UHF Team, DRS Technologies  
Kabul, Afghanistan*

On Page 4 in the July 2011 copy of *Popular Communications* you ask for interest in *Pop'Comm*-issued listener callsigns. I think this would be a great idea for those of us who monitor radio.

*Robert Bueermann  
Beaverton, Oregon*

## . . . And From Our Visitors On Facebook

In a recent "Wall" post on the Facebook pages of *Pop'Comm*, *WorldRadio Online*, *CQ Amateur Radio* and *CQ VHF* Facebook pages we asked readers:

Do you remember the monitoring callsign programs for SWLers and scanners developed by *Popular Electronics* and others in the late 1950s? Would you like *Popular Communications* magazine to start a monitoring callsign program of its own — for this relatively new millennium?

Here are many of their responses:

"WDX5LGM. here. Sure, why not!" — *Melvin L. Pratt*

"What about Canadian content? Lots of scanner users in Ontario, Canada. Lots of SWLers, too. I do both." — *Leonard James Beecroft*

"Forget the SWL and scanner callsigns! Focus on learning the science of radio and on the content of SW broadcasting, actually appreciating it for once! Callsigns are for people like me who EARNED their callsigns through study and licensing. These SWL and scanner callsigns really cheapen the efforts made by legitimate radio amateurs." — *Dan Hensley*

"In countries outside of the USA/Canada, it is required to have a shortwave radio listening license before an amateur radio license. There is study involved. As far as issue of a listening 'callsign' for SWLing, it *does* serve a purpose (and this was a proven asset under the old program): Many international shortwave broadcasters seemed to have taken more seriously the reports and input from 'registered' SWLers than from the 'random' public.

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"Having a 'callsign' lent a credibility to the observer/reporter — and that was the value. There is a need for such a 'seal of approval' in the SWL community.

"Those serious enough to belong to a community and willing to participate with community standards to report to each other and to the broadcasters, utility stations and the like (SWLers of amateur stations), should be taken seriously, even if they have not (yet) achieved amateur radio license status.

"They should not be unwelcome just because they are not yet licensed amateur radio operators. This is the opinion of many fellow SWLers and of me." — *Tomas Hood, NW7US (Mr. Hood writes The Propagation Corner, appearing monthly in Pop'Comm. He comments here as a member of the listening public. — Ed.)*

"I still have mine: KDXØSTL, issued on July 30, 1982, and signed by Amelia Greenwald and Hank Bennett. I also registered with World Listening Service (WLS-5MO) and CRB Research (KMOØCN). The WDX and CRB calls hang in the shack, below my amateur radio license." — *Eric Bueneman*

(FIRST POST) "I remember the weird 'callsigns' issued into the 1980s. Don't bring that back. 73 DE K6BSR"

(SECOND POST) "Even from a licensed ham, a 5 by 9 report is generally suspect unless you know the other operator's style. I can see where some sort of registration with a

group could garner a little more faith in signal reports, time/date and band condition information. — *Branden Wilson*

"YES! I think I was WPE1HTU! I had a bedroom wall filled with QSL cards from shortwave radio stations *all over the world!* 73 from WA1LYT Radio, Meriden, Connecticut." — *Tom Coss*

"Mine was WPE1HEF and my (amateur radio) Novice call was WN1HFE! QTH (my location) back then was East Hampton, Connecticut." — *David Rose*

"I still have mine from CRB Research: KCA6ZY. Those were good times for shortwave. We need to preserve it like we do ham radio. A *Popular Communications* monitoring club on the scale of RCMA is just what it needs — complete with call letter registry for its members." — *Bryan Herbert*

"I had a *Popular Electronics*' SWL call: WPE9EEL. That was before I got my first ham license." — *Mark Robbins*

"WPE3HLV, then WDX3HLV and finally WDX2RTW." — *Jeff Stewart*

"I had WPE5AU." — *James McWain*

"I'm still alive. Please don't reissue WPE2GEP!" — *Jeff Murray*

# SWL Detective's Updates: VOA, Radio Nederland, WYFR, 'The List,' Solar Cycle 25 and More . . .

by Gerry L. Dexter  
[gdex@wi.rr.com](mailto:gdex@wi.rr.com)

Like a detective with too many leads, I'm awash with important and interesting items this month. Where to begin? Maybe I'll just toss a coin.

## Slow Boat to the Informational Promised Land

Somewhere — probably in the catacombs of 330 Independence Ave. (SW) in Washington, D.C. — some government wonk has seen beyond his quill pen and ink bottle and decided that the world is changing and the Broadcasting Board of Governors should begin thinking about guiding

us to the informational promised land — making changes to the way we access its various services.

From that initial concept it has begun to envision the future. A future which would drastically reduce (read that *eliminate*) the government-run stations and the services they carry, in favor of other platforms such as FM, television, the Internet — even cell phones and other hand-held devices.

All of this is described as a “sunset.” But none of the changes sketched may take effect this year, or next year or even the next. If history is our guide, it's a slow retrenchment, *à la* what the BBC is and has been doing — at a two-steps-forward, one-step-back pace.

So for the present, the Voice of America, Radio Free Asia, RFE/RL, Radios Farda, Marti, Ashna and the rest are likely to continue essentially as they have. (See September *Pop'Comm's Tuning In* editorial for the magazine's stand on proposed cuts to VOA shortwave broadcasts. — Ed.)

In Britain's case, the Foreign Office has granted the BBC the funds necessary to continue its broadcasts in Hindi and Arabic — services of major importance to the BBC's mission. Even with those extra funds the BBC will still find itself short of last year's budget and will have to make some minor cuts in facilities and services. Still, we can wipe our brows for now, at least.

## The Cruel Bite of Austerity

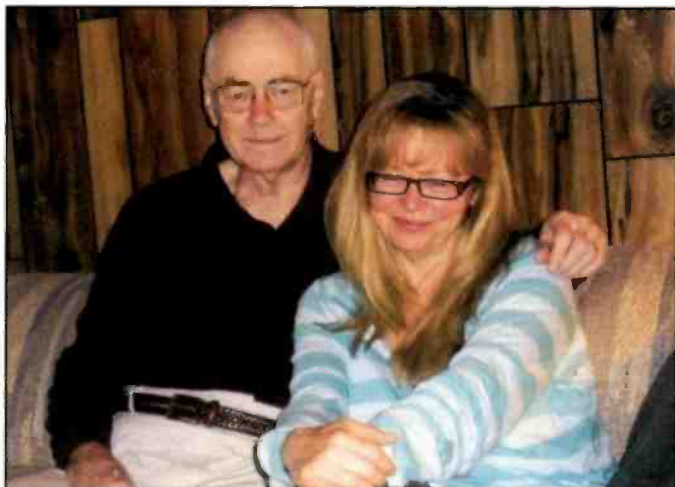
The news out of Holland is not so good. Radio Nederland — once a staunch supporter of shortwave broadcasting — has slipped into weak-knee mode and is now hedging its bets. It is facing budget cuts and having to confront “reorganization” due to a government austerity program.

The service will become an organ of the Dutch Foreign Ministry effective in January 2013, and will then no longer concern itself with providing information for Dutch interests abroad. Rather, RNW will focus on providing a free speech informational source for people in countries lacking that advantage.

Much of this remains to be sorted out and, again, nothing much will happen soon. However,



Rich D'Angelo scored this QSL from pirate Radio Ronin Shortwave.



Former *PopComm* editor Edith Lennon paid GIG a visit in May.

it's safe to say that the writing is on the wall. We just haven't been able to decipher it yet!

The new government of Portugal has adopted an austerity program that includes an attempt to save money by privatizing the operations of RTP Internacional, which recently announced it would be backing off shortwave due to a lack of listeners. Whether — or how long — that situation continues is unknown, as is the final fallout of the Portuguese government's decision. Translation: everything is up in the air (again!)

### WYFR: More Music, Less Camping

I'm sure you've heard that Harold Camping (Family Radio/WYFR) experienced a mild stroke a few days after the date of "The Rapture" passed. Now, according to Camping, we await doomsday on October 21.

A couple of weeks after May 21, WYFR dropped several broadcasts and placed less emphasis on some of its relays, while changing its broadcast content to more music and less Camping. We await developments.

### Bad News for Solar Cycle 25?

There's still more negative news. You've also probably heard that the science types are wondering what's up with ol' Sol. Some are predicting that the next sunspot cycle (No. 25) may not even occur, or may enter a period of greatly reduced activity.

We could be facing years' worth of conditions similar to what we've gone through in recent years — or even worse! One study indicates that Cycle 25 could make things as bad as they have not been since the 1600s! I may be old, but even I don't remember those days! And there wasn't much on, anyway! (See *September Pop'Comm's The Propagation Corner* for full details. — Ed.)

### One's Off, Another's On

The private Canadian station, CFVP in Calgary, Alberta, is inactive, having been turned off for repairs due to flooding. Once things return to normal it expects to resume relaying local CKNC. Running just 100 watts, this is a real DX catch right next door.

Meanwhile, WWV is now announcing that the decision to

### Help Wanted

We believe the Global Information Guide — month after month — offers more logs than any other monthly SW publication! Just over 580 shortwave broadcast station logs were processed this month! Why not join the fun and add your name to the list of GIG reporters? Send your logs to Gerry Dexter, Global Information Guide, 213 Forest St., Lake Geneva, WI 53147 or email them to <[gdex@wi.rr.com](mailto:gdex@wi.rr.com)>. See the column text for formatting suggestions. And please, look over your logs before sending them. It is somewhat important to mention such little tidbits as the time (all four numerals, please). And, it also helps to include the frequency!

*\*Not all logs get used. There are usually a few which are obviously inaccurate, unclear or lack a time or frequency. Also discounted are unidentifieds, duplicate items (same broadcaster, same frequency, same site) and questionable logs.*

discontinue the 18 past the hour propagation forecasts will not happen. The hourly forecasts will continue as they have been.

### NASWA Adds Southern Sudan to 'The List'

A new country is about to be added to the country list maintained by the North American Shortwave Association. Southern Sudan — as yet not officially named. Activity by Radio Peace, operating from Juba on 4740, makes the area eligible for status as a radio country. Radio Peace currently operates with just 1 kilowatt from 1600 to 1745 and 0230-0400, the latter time is your only chance (albeit slim) to hear this one. You can download a copy of the NASWA Country List from the NASWA website: <<http://www.naswa.net>>. Why not join while you're at it?

### Your Logs, Please . . .

Remember, your shortwave broadcast station logs are always welcome. But *please* be sure to double or triple space between the items, list each logging according to its home country and include your last name and state abbreviation after each.

Needed, as well, are spare QSLs or good copies you don't need returned, station schedules, brochures, pennants, station photos and anything else you think would be of interest. And how about sending a photo of you at your listening post? It's your turn to grace these pages!

Here are this month's logs. All times are in UTC. Double capital letters are language abbreviations (SS = Spanish, RR = Russian, AA = Arabic, etc.). If no language is mentioned English (EE) is assumed.

- ALASKA — KNLS, 9920 at 1126 with talks in CC. (Brossell, WI)
- ALBANIA — Radio Tirana, 7425 in Albanian heard at 0345. (Maxant, WV)
- ALGERIA — Radio Algerienne, 9535 via Issoudun in AA at 0513. (Parker, PA)
- ANGUILLA — Caribbean Beacon, 6090 monitored at 0422. (MacKenzie, CA)
- ARGENTINA — Radiodifusora Argentina al Exterior, 11710.5 at

### Here's your "blast from the past" for this month:

Radio Clube de Benguela, Benguela, Angola, 9502 at 0604 in PP on May 14, 1962.

0245 with EE, tangos and closedown anmts with IS and IDs. (D'Angelo, PA) 0309 in FF with light, upbeat tunes. (Parker, PA)  
**ASCENSION ISLAND**—BBC South Atlantic Relay, 6005 at 0205. (Padazopoulos, Greece) 7285 at 0536. (Parker, PA) 9420 at 0532 with news features. (Wood, TN) 9915 at 2247. (Handler, IL) 11810 on UK elections at 1946 and 15400 on world's economy at 2020. (Brossell, WI) 1812. (Parker, PA)

**AUSTRALIA**—Radio Australia, 7240 at 1435, 9560 at 1100, //11945, 9580 at 0755 at 0755 and into news, and 12080 at 0620 with live play-by-play coverage. (Barton, AZ) 9475 with news at 1210 and 1415 with soccer at 0330. (Maxant, WV) 9580 at 1153 and 11795 with

an interview. (Coady, ON) 9580 at 1147, //9475. (Handler, IL) 11945 at 1130, 13670 at 0003 and 17830 at 1848. (Brossell, WI) 12080-Brandon on PNG at 0906. (D'Angelo, PA) 0632 with M/W talks and 17750 at 0618. (Sellers, ON) 11690, 13690 at 0446. (Wood, TN) 15415 and 15515 with commentary at 0225. (Padazopoulos, Greece) 15515 at 2150. (Parker, PA) 2206, //15560 and 17750 monitored at 0215. (MacKenzie, CA)

ABC Northern Territories Service, 2310-Alice Springs at 1037 rising above the noise floor at the grayline pass. (Rippel, VA) 2325-Tennant Creek at 1130 with vocals. (Barton, AZ) 2485-Katherine at 1130 with world news. (Brossell, WI)

Ozy Radio (p) 5050 at 1251 with pop vocals. (Sellers, BC)  
 HCJB-Australia, 15340 with W ancrs and music heard at 1240. (Handler, IL)

**BAHRAIN**—Radio Bahrain, 9745 at 2357 audible after Romania signs off with local ME style music and AA talk. (Alexander, PA) 0041 with ME vocals and AA talk then brief news at 0100. (D'Angelo, PA)

**BONAIRE**—Radio Nederland Relay, 6165 in SS at 0340. (Maxant, WV) 0412 in DD, 15540 in DD at 2210. (Mackenzie, CA) 2215. (Padazopoulos, Greece)

**BOLIVIA**—3310 Radio Mosoj Chaski, Cochabamba, in SS at 0940. (Wilkner, FL)

Radio Yura, Yura, 4717 at 0047-0248\* in SS. (D'Angelo, PA)  
 Radio Pio XII, Siglo Viente, 5953.3 in SS at 1030. (Wilkner, FL)  
 Radio Santa Cruz, Santa Cruz, 6135 at \*0859 sign on with SS ID and anmts, local music at 0904. (Alexandra, PA)

**BOTSWANA**—Voice of America Relay, 4930, //6080 with news at 1138. (Coady, ON) 9855 at 0430 with *Daybreak Africa*. (Parker, PA) 15580 with music for Africa at 2042. (Handler, IL) 2255 with Afropops. (Parker, PA)

**BRAZIL**—Radio Dfusora Roraima, Boa Vista, 4878.5 at 0345 with Brazilian ballads, PP talk. Off with NA at 0408. (Alexander, PA) 0347 ending with choral anthem at 0406. (D'Angelo, PA)

Radio Clube do Para, Belem, 4855 at 0201 in PP with bossa novas. (Wood, TN) 0348. (Parker, PA)

Radio Brazil Central, Goiania, 4985 at 0020. (Brossell, WI) 0352 with Brazil pops. (D'Angelo, PA)

Voz Missionaries, Camboriu, 5940 at 0055 with PP religious talk. (Alexander, PA)

Radio Senado, Brasilia, 5990 at \*0903 open with jazzy music, ID and opening PP anmts. (D'Angelo, PA)

Super Radio Deus e Amor, Curitiba, 6060 at 0925 and 6120 at 0815 with PP preacher. Also, 9586.7 at 0445. The frequency varies anywhere from 9581 to 9594. (Alexander, PA) 0527 with M ancr and high-life music. (Parker, PA)

Radio Nacional Amazonia, 11780 at 2219 with M/W in PP. (Handler, PA)

Radio Inconfidencia, Belo Horizonte, 15190 at 0045 with romantic ballads, PP talk at 0045. (Alexander, PA)

**BULGARIA**—Radio Bulgaria, 7400-Kostinbrod, with *Events and Developments* at 2012. (Fraser, ME) 9400 at 0452. (Parker, PA) 11700 at 2355 with *Time Out for Music*. (Coady, ON)

**CANADA**—Radio Canada International, 15330 in FF at 2145, //15235 and 17735. Also, 15445 in SS at 2335 and 11990 in SS at 0052. (MacKenzie, CA) 17735 in FF at 2130. (Parker, PA)

CBC Northern Service, 9625 with *Happy Hour* pgm at 1320. (Maxant, WV)

CFRX, Toronto, 6070 with call-in pgm at 0335. (Maxant, WV)  
 CKZU, Vancouver, 6160 with *Quirks and Quarks* heard at 0648. (Sellers, ON)

CHU, Ottawa, 3330 at 0345, 7850 at 0350 and 14670 at 2015 with time signals. (Maxant, WV)

**CHAD**—Radio National Tchadienne, 6165 from \*0429 with NA, M with opening ID and anmts, highlife vocals. (D'Angelo, PA) 2210 with FF talk. Off with NA at 2230. (Alexander, PA)

**CHILE**—CVC-La Voz, 17680 in SS at 1214. (Barton, AZ) 1704. (MacKenzie, CA) 1915. (Handler, IL) 2025. (Brossell, WI) 2138. (Parker, PA)

**CHINA**—China Radio International, 5990 via Cuba in SS at 0001,



Deutsche Welle,



Radio Nederland and —



Radio Portugal International — all are facing a fuzzy future.

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## This Month's Winner

To show our appreciation for your loggings and support of this column, each month we select one "GIG" contributor to receive a free book or other prize. Readers are also invited to send in loggings, photos, copies of QSL cards and monitoring room photos to me at *Popular Communications*, "Global Information Guide," 25 Newbridge Rd., Hicksville, NY 11801, or by email to <gdex@wi.rr.com>. The email's subject line should indicate that it's for the "GIG" column. So, come on, send your contribution in today!

This month's prize winner is **Robert Brossell**, Pewaukee, Wisconsin who receives a Radio Free Asia coffee mug to help get him started on his morning DX routine, which (for him, anyway) begins at 5:30 local time!

6175 via Albania in PP at 0225 and 9710 in SS at 0240. (Padazopoulos, Greece) 6080 via Canada at 0425, 6190 via Canada at 0545, 9640 in SS at 2250, 11990 via Canada in SS at 0030, 13655 in CC at 0025 and 17890 in CC at 0206. (MacKenzie, CA) 6175 via Albania in SS at 2308, 7285 via Albania at 2054, 11935-Shijiazhuang in RR at 1140, 12070-Xi'an in (I) Tagalog at 1150 and 15180 in apparent AA at 1901. (Brossell, WI) 9570 via Cuba at 1320. (Maxant, WV) 9560-Urumqi in Uighur at 0520, 11650-Kashi in Urdu at 0255, 11750-Shijiazhuang in CC at 0344. (Parker, PA) 13700-Lingshi in Uighur at 0008 and 11770-Xi'an in VV at 0020. (Parker, PA)

China National Radio/CPBS, 4920-Lhasa in Tibetan at 0031. (Padazopoulos, Greece) 9500 in Mandarin at 1230. (Handler, IL) 11960 in CC at 0055. (MacKenzie, CA) 13610 at 1045 with W in CC and 11580 in CC at 0430. (Barton, AZ)

BPM, 10000 time station at 1000 mixing with WVVH. (Rippel, VA)

Firedrake music jammer, 7970 at 1015 and 15570 at 1630. (Barton, AZ) 9855 at 1348. (Sellers, BC) 11500 at 1138 against Sound of Hope. (Brossell, WI)

**COLOMBIA**—Alcaravan Radio, Puerto Lleras, 5910 at 0412 in SS with slow guitar. (Parker, PA)

La Voz de su Concencia, Puerto Lleras, 6010 at 0415 with religious talk in EE and SS translations. (Alexander, PA)

**CUBA**—Radio Havana Cuba, 5040 with FF news at 0036, 6000 in EE at 0205 and 13670 in SS at 0235. (Padazopoulos, Greece) 11760 in SS at 2015, 12020 in SS at 2142, 12040 in SS at 2312, 13670 in SS at 0009, 15120 in SS at 0030, 13760 in SS at 0040 15360 in SS at 1814 and 15370 in SS at 0017. (MacKenzie, CA) 17560 in SS at 2141. (Parker, PA)

Radio Rebelde, 5025 in SS at 0035. (Padazopoulos, Greece)

**CYPRUS**—Cyprus Broadcasting Corp., 9760-Limassol at \*2215-2244 in Greek with Greek music and talk. (Alexander, PA)

**DJIBOUTI**—Radio Djibouti, 4780 at \*0304 with abrupt sign on. Koran at 0304 and AA talk. (Alexander, PA)

**ECUADOR**—Radio Quito, 4919.9 at 0310 with SS ballads and amts, IDs at 0421,

0431, 0445 and 0514. Irregular operation. (Alexander, PA)

**EGYPT**—Radio Cairo, 9305-Abis at 0449 in AA, with horribly distorted audio. (Parker, PA)

**ENGLAND**—BBC, 5875 Cyprus Relay in Dari at 0042. (Padazopoulos, Greece) 9410 via Meyerton with an interview at 0456, 11855 Cyprus Relay at 0417 in Farsi, 21470 Cyprus Relay with soccer at 1625. (Parker, PA) 15335 Singapore Relay with BBC News at 0000. (Coady, ON) 17685 with IS and news at 0000. (Barton, AZ)

Far East Broadcasting Assn. (p), 7485 via Uzbekistan at 0007 with a drama in (I) Bengali. (D'Angelo, PA)

**EQUATORIAL GUINEA**—Radio Africa, 15190 with religious music at 1657. (Brossell, WI)

**ERITREA**—Voice of the Broad Masses, 7165 at 0259 instead of usual 7175 at 0257 with IS and vernacular talk in Program Two, 7205 with Program One at \*0236 with IS, vernacular talk, HOA music, 7235 with Program Two at \*0258 sign on with IS, vernacular talk at 0300. Here instead of 7165 or 7175, 9715 with Program Two at \*0257 sign on, //7175. Replaces 9820 and 9830, 9820 at \*0258 with Program Two at \*0258, //7175. (Alexander, PA)

**ETHIOPIA**—Radio Ethiopia, 9705 to 2100\* close with wide variety of Europops, Afropops, local folk and HOA. Also from \*0258 sign on with electronic keyboard IS, opening Amharic ID and amnts and local HOA music. (Alexander, PA) 9705 at 0303 with HOA music, news monitored at 0400. (D'Angelo, PA)

Radio Fana, 6110 at \*0258 sign on with a fanfare and possible brief newscast in (p) Amharic, //7210. (D'Angelo, PA) 7210 at \*0256 with IS, Amharic talk, HOA music. (Alexander, PA)

Radio Oromiya, 6030 at \*0322 sign on with xylophone-like IS and talk in (I) Oromo. Sign on time varies by a few minutes. (Alexander, PA)

Voice of the Tigray Revolution, 5950 at 0420 in Tigrinya with a long talk between two women and much laughing. (Parker, PA)

**FRANCE**—Radio France International, 17800 in EE at 0607 with news. (Sellers, BC)



# WPON



W-PON (The Weapon), another pirate recently QSL'd by Rich D'Angelo

21690 French Guiana Relay, in FF at 1827. (MacKenzie, CA) 2111 in FF. (Parker, PA)

**GABON**—Africa Number One, 9580 in FF at 2050. (Brossell, WI)

**GERMANY**—Deutsche Welle, 7235 at 0429 with *Newlines*. (Wewoka, NC) 5915 via Rampisham at 0414 in RR with Beatles songs, 9480 Rwanda Relay at 0502, 9545 via Wooferton in RR at 0517, 9885 Rwanda Relay in GG at 0437, 11965 via Rampisham in Swahili at 0336, 13780 Sri Lanka Relay with EE talks at 0024 and 17840 Portugal Relay in FF at 1755. (Parker, PA) 9755 Rwanda Relay at 0513, 11795 via England at 1911. (Brossell, WI) 9865 via Singapore in GG at 0520 and 11865 Rwanda Relay at 2130 with *Soundscape 100*. (Coady, ON) 15640 Rwanda Relay at 2130 and 17610 via England in GG at 1714. (MacKenzie, CA) 15275 Rwanda Relay ending EE segment at 0628. (Sellers, BC) 15275 Portugal Relay with EE to Africa at 2112. (D'Angelo, PA) 17610 via Wooferton at 1915. (Fraser, ME) 21780 Sri Lanka Relay in GG at 1303. (Padazopoulos, Greece)

**GREECE**—Voice of Greece, 9420 in Greek at 2149, //15630. (Handler, IL) 15630 at 2215, 15650 at 0012 with Greek songs. (Padazopoulos, Greece) 15630 in Greek at 2200. (Parker, PA) 15630 in Greek at 1719. (Brossell, WI) 2215 in Greek. (MacKenzie, CA)

**GUAM**—Trans World Radio/KTWR, 9910 in CC at 1128 and 12105 in CC at 1150. (Brossell, WI) 11945 in Karen at 1316. (Handler, IL)

**GUINEA**—Radio Guinee, 7125 at 2215-2301 abrupt sign off in vernacular, also \*0555 sign on to past 0700 in FF with intermittent problems staying on. Sometimes with weak modulation. (Alexander, PA) 2200-2247 in FF with highlife music. (D'Angelo, PA)

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Radio Mushroom, one of many pirates using 6925 usb, verified for Rich D'Angelo.

**GUATEMALA**—Radio Verdad, Chiquimula, 4055 at 0105 with SS religious talk. (Alexander, PA) 0309 with hymns. (Wood, TN) 0404 with choirs. (D'Angelo, PA) 0520 with M/W in SS and old time religious songs. (Parker, PA) 0538 with EE preacher. (Sellers, BC)

**GUYANA**—Voice of Guyana, 3290 with instrumental music at 0930. (Wilkner, FL)

**INDIA**—All India Radio. 4840-Mumbai in Hindi at 0020. 4950-Srinagar in Kashmiri at 0033. (Padazopoulos, Greece) 6155-Bangaluru in Hindi at 0028 and 9690-Bangaluru with Indian pops and EE at 1352. (Brossell, WI) 7305 at 0035 with commentary on Pakistan. (Ng, Malaysia) 9690 with news just after 1330 sign on. (Sellers, BC) 11670 with commentary and ID at 1935. (Coady, ON) 11735-Bangaluru at 0315 in Dari, 13605-Bangaluru in EE at 2335 and 13795-Bangaluru in Tamil at 0028. (Parker, PA)

**INDONESIA**—Voice of Indonesia. 9526 suddenly into EE at 1301. On other occasions noted in CC at 1134 and in JJ at 1202. (Sellers, BC) 11785 at 1330. (Maxant, WV)

**ISRAEL**—Galei Zahal, 15850 in HH at 2150. (Handler, IL) 2230 in HH. (Coady, ON)

**IRAN**—Islamic Republic of Iran Broadcasting, 9790 in (I) Urdu at 1356 and 11865 in FF at 1914. (Brossell, WI) 9905 in SS at 0145. (Padazopoulos, Greece) 11600-Zahaden in AA at 0303. 11700-Sirjan in Armenian at 0300. 11920-Sirjan in EE at 0345-0358 and 13715 in CC at 0011. (Parker, PA)

**JAPAN**—Radio Japan, 5960 via Canada in JJ at 0436. 11920 in JJ at 2145. 11935 in JJ at 0345. 13680 in JJ at 2216. 15265 via Bonaire in JJ at 2318 and 17810 in JJ at 0210. (MacKenzie, CA) 6110 via Canada with news at 0500. (Weronka, NC) 6120 via Canada at 1205 and 7360 at 0325 on nationalizing electric power plants. (Maxant, WV) 9695 with world news at 1210. (Sellers, BC) 11935 via Ascension Is., in JJ at 0340. (Parker, PA) 11740 via Singapore in (I) Tibetan at 1144. (Brossell, WI)

Radio Nikkei, 3925 in JJ at 1240. (Sellers, BC)

**KUWAIT**—Radio Kuwait, \*15540 with sign on in EE at 1800. (Handler, IL) 1950 with pops on immigration policies there. (Coady, ON) 17550 in AA at 2005. (MacKenzie, CA) 2036 with pop vocals, M EE anc. (D'Angelo, PA) 2145 in AA. (Parker, PA)

**MALAYSIA**—Traxx FM, Kajang (Sarawak), 7295 with EE pops at 0055. (Ng, Malaysia) 1225 with pop songs, contest details, mention of Radio Malaysia. (Sellers, BC)

**MADAGASCAR**—Radio Madagasikara, 5010 in Malagasy at 0325. (Brossell, WI)

**MALI**—RTV Malienne, 5955 at \*0555 sign on with IS, NA, flute IS, opening FF ID and anmts, tribal music at 0601. Also, 9635 at \*0759 sign on with a similar format. (Alexander, PA)

**MAURITANIA**—Radio Mauritanie, 7245 at \*0550 abrupt sign on

with local chants and AA talk. (Alexander, PA) 0558 with Koran recitation. (Sellers, BC) 0748 with local stringed instrumentals, tribal chants and FF anmts. (Perry, IL)

**MICRONESIA**—The Cross, 4755 at 1058 with soft instls and ID at 1100. (Brossell, WI)

**MEXICO**—Radio Educacion, Mexico City, 6185 in SS at 0406. (MacKenzie, CA)

**MOLDOVA**—Radio PMR, 9665 at 1931 with EE news, ID, sked and into FF at 1936. (Alexander, PA) 1940 in EE. (Fraser, ME) 2150 and into FF at 2200. (Handler, IL)

**MOROCCO**—RT Marocaine, 15345 in AA at 2016. (Brossell, WI)

**NEW ZEALAND**—Radio New Zealand International, 6170 at 1015. (Fraser, ME) 1050. Also, 9655 at 1100 and 15720 with *Dateline Pacific* at 0321. (Coady, ON) 6170 at 1345. (Barton, AZ) 11725 at 0600. (Weronka, NC) 0515 with *Checkpoint*. (Wood, TN) 15720 at 2205 with sports. (Parker, PA) 0225. (Padazopoulos, Greece) 2218. (MacKenzie, CA) 0227. (Handler, IL)

**NETHERLANDS**—Radio Nederland, 11655 Madagascar Relay on baby boomers at 1937. (Brossell, WI) 15495 via Wertachtal at 1826. (Fraser, ME)

**NIGER**—La Voix du Sahel, 9705 at 2140-2259\* in FF with vernacular anmts, Afro and local pops. Koran at 2252 and NA at 2257. Seems irregular lately. (Alexander, PA)

**NIGERIA**—Voice of Nigeria, 15120-Ikorodu at 0511 with W on Nigerian leaders having shaped African events. (Wood, TN) 1830 with a magazine/features pgm. (Ripple, VA)

**NORTH KOREA**—Voice of Korea, 9335 at 1325 and 11710 at 1310 on Kim's return from a trip to China. (Maxant, WV) 11710 in FF at 1141. (Brossell, WI) 1312 with EE news. (Sellers, BC) 13760-Kujang in SS at 0016. (Parker, PA) 15180 at \*0100 to 0200\* with propaganda rants. (Ripple, VA) 15245 in EE at 2112. (MacKenzie, CA)

**NORTHERN MARIANAS**—Far East Broadcasting/KFBS, Saipan, 11580 in CC at 1315. (Brossell, WI)

**OPPOSITION**—Democratic Voice of Burma, 11595 via Armenia at \*2330-0030\* with vocal at sign on, local music and talk in Burmese with many mentions of Myanmar. (Alexander, PA) 0018 to 0029\* with M/W in BB and phone interview. (D'Angelo, PA)

Radio Republica (to Cuba), 9490 in SS at 0151. (Padazopoulos, Greece)

Voice of the People (to Zimbabwe), 9870 via Madagascar at 0430 in vernacular. (Parker, PA)

Radio Y'Abaganda (to Uganda), 15410 at \*1700-1715\* opening with African choral number, and vernacular talk. Active on Saturdays only. (Alexander, PA)

Voice of Mesopotamia (to Iran), 11530 with Kurdish songs at 1401. (Brossell, WI)

Hamada Radio International (to Nigeria), 9610 at \*0531-0559\* with abrupt sign on and talk in Hausa. (Alexander, PA)

Voice of Peace and Democracy (to Eritrea), 7235 at \*0358-0431\* with IS and talk in (I) Tigrinya. (Alexander, PA)

Radio Damal/Voice of the Somali People, 11740 via Germany at 1909 with talks in (I) Somali. (Brossell, WI)

**PALAU**—World Harvest Radio relay, 9930 at 1357 with ID and into religious songs. (Brossell, WI)

**PAPUA NEW GUINEA**—Radio West Sepik Vanimo (West Sepik), 3205 at 1106 with rock and anmts in EE. (Brossell, WI) 1231. (Sellers, BC)

Radio Madang (New Guinea), 3260 with group singing at 1116. (Brossell, WI)

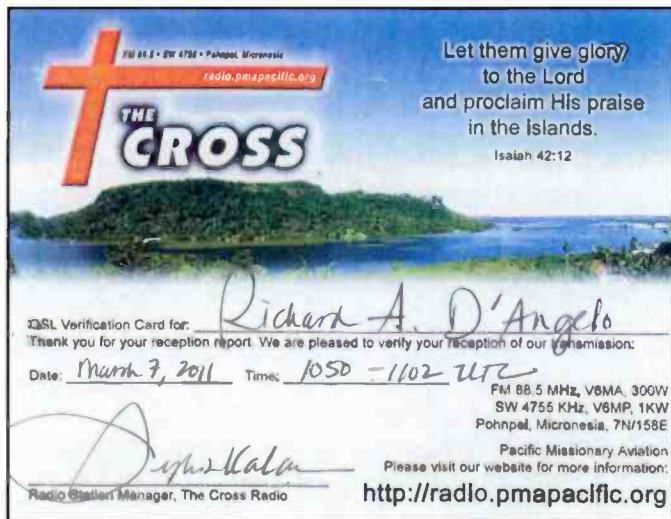
Radio Milne Bay (New Guinea), 3365 at 1205 with M and news in Tok Pisin. (Sellers, BC)

Radio East New Britain (New Britain), 3385 with rock at 1118. (Brossell, WI) 1129 in Tok Pisin. (Sellers, BC)

**PERU**—Ondas del Huallaga, Huanuco, 3329.5 at 1000-1030. (Wilkner, FL)

La Voz del Selva, Iquitos, 4824.5 at 0000 with OA music and SS talk. (Wilkner, FL)

Radio Manantial, Huancayo, 4986.3 in SS at 0025. (Wilkner, FL)



The Cross, Pohnpei, Micronesia — QSL'd D'Angelo for his reception on 4755.

Ondas del Suroriente, Quillabamba, 5120.3 noted in SS at 1030 and 0030. (Wilkner, FL)

Radio Bolivar, Ciudad Bolivar, 5460.3 at 0020. (Wilkner, FL)

Radio Bethel, Arequipa, 5921.3 in SS at 1020. (Wilkner, FL)

Radio Twantinsuyo, Cusco, 6174 at 0024 with nice OA vocals and M ancr in SS. (D'Angelo, PA) 0030. (Wilkner, FL)

**PHILIPPINES**—Radio Veritas Asia, 15450 in Burmese at 1130. (Ng, Malaysia)

**PIRATES**—Syko Radio, 6925.3 at 0107 mentioning e-mails from various people, punk rock and things. Email for reports to sykco-radui@gmail.com. ID mentioning "totally unprofessional radio at its finest". Another ID mentioned 85.7 FM. (D'Angelo, PA)

Wind-Up Radio, 6926.5u at 0349-0358\* with M and brief talk, Lone Ranger theme and applause. (D'Angelo, PA)

XFM Shortwave, 6930u at 0409 with rock, <XFMSshortwave@gmail.com> for reports. Also ancd XFMLive.com website. (D'Angelo, PA)

Wolverine Radio, 6925u at 0325 with GoGo selections, The Waitresses, Wang Chung and others. (Alexander, PA) 0326 with rock and ID at 0327. (D'Angelo, PA)

Radio Appalachia, 6934.8v at 0010 with pgm of old time country songs performed live. Ancd as the "free voice of the Ohio valley broadcast from a western Virginia mountain top." (Hassig, IL) 0202 with a bluegrass version of God Bless America and an abrupt close at 0205\*. (Ripple, VA)

Radio Ronin, 6925 at 0029-0043\* calling for postings on FRN, various titles. (Wood, TN)

World Rodent Rapture Radio, 6925.1 at 1932 with Commander Bunny discussing the Rapture. Belfast address. (Zeller, OH)

Captain Morgan Shortwave, 6924.9 at 0010 with blues, somewhat distorted ID. (Alexander, PA)

MAC Shortwave, 6924 at 0010, with DJ Paul Starr. (Hassig, IL)

WBNO, 6925.2 at 0019 with rock, M ancr. Used the slogan "bean-o". Mentioned Psycho Radio. (Zeller, OH)

Laser Hot Hits (Euro). (t) 6945 at 0035 M talk with British accent, pops. (Alexander, PA)

6930.3 Irish Music Radio (Euro), (t) at 0025 with talk and pops. (Alexander, PA)

Radio Malta (Euro), 6937 at 0320 with 70s-80s pops. Poor. (Alexander, PA)

**PORTUGAL**—RDP Internacional, 7240 in SS with pops at 0523. (Parker, PA) 11850 in PP at 0735. (Weronka, NC)

**ROMANIA**—Radio Romania International, 9520 with commentary at 0225. (Padazopoulos, Greece) 9620 in SS at 2050. (Brossell, WI)

9655-Galbeni with an EE/Romanian lesson, listener letters and sign off anmts at 0555. (Wood, TN) 9790 at 2200 with *Radio Newsreel*. (Ng, Malaysia) 11880//11940 at 2048 with *Radio Newsreel* at 2035. (Coady, ON) 11880/11940 with a Tchaikovsky concerto. Also, 15430 at 1109 with M/W presenters. (Handler, IL) 15340 at 0345 on a Bucharest theater. (Barton, AZ)

**RUSSIA**—Voice of Russia, 9660 at 0320 talking about Facebook. (Maxant, WV) 9735 in SS at 0248 and 9810 via French Guiana in SS at 0145. (Padazopoulos, Greece) 11500-Moscow in FF at 2027. (Brossell, WI) 12040-Moscow at 1908 on the end of WWII. (Fraser, ME) 15425-Petropavlovsk at 0227. (MacKenzie, CA)

**SAO TOME**—Voice of America Relay, Pinheira, 4960 with news now format at 0348. (Coady, ON) 6080 at 0618 with items on *Daybreak Africa*. (Wood, TN) 15730 in FF at 2052. (MacKenzie, CA) 17895 at 1740 on the Muslim Brotherhood. (Parker, PA)

**SAUDI ARABIA**—Broadcasting Service of the Kingdom, 11820 with Koran recitations at 2025. (Brossell, WI) 2124, //11915. (Handler, IL)

**SEYCHELLES**—BBC Indian Ocean Relay, 9410 with *Newshour* at 2049, //15400. (Coady, ON)

**SOLOMON ISLANDS**—SIBC, 5020 in Tok Pisin at 1154, EE Christian devotions at 1155. ID and closing anmt at 1200. (Sellers, BC)

**SOUTH AFRICA**—Channel Africa, 7230-Meyerton heard at 0459 with *Africa Rise 'n Shine*. (Parker, PA) 0603 with W and news. (Sellers, BC)

**SOUTH KOREA**—KBS World Radio, 9650 via Canada at 1205 with *Discover South Korea* pgm. (Maxant, WV) 1230 mixing with North Korea and also what sounded like jamming. (Barton, AZ) 11795 in SS at 1139. (Brossell, WI)

**SPAIN**—Radio Exterior de Espana, 6125 Costa Rica Relay, in SS at 0416, 9630 Costa Rica, in SS at 0524, 11680-Nobeljas in SS at 0102, 15110 in SS at 2210, 15160 in SS at 0024 and 17850 Costa Rica, in SS at 1657. (MacKenzie, CA) 15160 in SS at 0035, 17815 in SS at 2135 and 17850 Costa Rica, in SS at 2124. (Parker, PA) 12015 in FF at 1911. (Brossell, WI) 12040 in SS at 0530. (Weronka, NC) 15160 in SS at 0010. (Padazopoulos, Greece)

**SRI LANKA**—Sri Lanka Broadcasting Corp., 11905 at \*0020 sign on with local drums, NA, ID at 0025 and Hindi talk. Also, 15745 at 0150 with EE pgm, country songs, ID and EE news. (Alexander, PA) 0053 with Hindi music. (D'Angelo, PA) 1117 in Tamil. (Handler, IL)

**SUDAN**—Sudan Radio TV, 7200 at \*0229 sign on with local chants, AA talk, local string music and tribal vocals. (Alexander, PA) 0400 in AA with news, time pips and ID. (Parker, PA)

Miraya FM, 9670 via Italy (IRRS) in AA at 0417. (Parker, PA) 11560 via Ukraine at 0340 with AA talk and ID, time pips at 0400. (Alexander, PA)

**SWAZILAND**—TWR, 3240 in (l) Ndaui at 0325 with an inspirational talk and hymns. (Coady, ON) 4775-Manzini at 0410 with preaching in GG. EE segment began at 0430. (D'Angelo, PA)

**SWEDEN**—IBRA Radio, 11875 (Site? - gld) at 1920 in an unlisted language. (Brossell, WI)

Radio Nord, 9340 at \*0359 with instl music, time pips at 0401 and oldies pops. (Alexander, PA) (Temporary broadcast - gld)

**TAIWAN**—Radio Taiwan International, 3965 in SS with commentary at 2045. (Padazopoulos, Greece) 5950 via Florida at 0355 on Taiwanese industry. (Maxant, WV) 11665 in CC at 1136 and 15690 via France on education there at 1713. (Brossell, WI) 17725 via Florida in SS at 2324. (MacKenzie, CA)

Voice of Han, 9745 in CC at 1131. (Brossell, WI)

**THAILAND**—Radio Thailand, 15275 at 0012 with a conl for Bangkok Airways and news. (Coady, ON)

**TUNISIA**—RT Tunisienne, 7345 at 2247-2310\* with AA discussion, short music interlude, promo anmt, ID and news. Carrier cut at abrupt close. (D'Angelo, PA) 9725 in AA at 0347. (Handler, IL) 12005 in AA at 0333. (Parker, PA)

**TURKEY**—Voice of Turkey, 9515 with news at 0305. (Maxant, WV) 0300 with IS and ID, pgm highlights and news. Also, 9830 with *The Letterbox Program* at 2225. (Coady, ON) 9905 in SS at 0253. (Padazopoulos, Greece)

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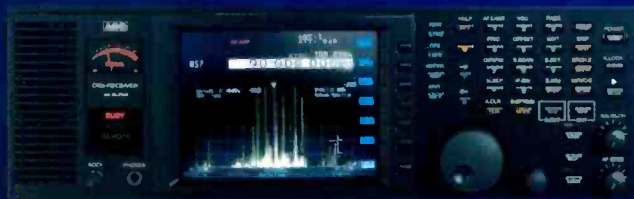


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**UNITED STATES**—Voice of America, 7390 Northern Marianas Relay, in Cantonese at 1341 and 15225 via Bonaire in FF at 2016. (Brossell, WI) 11525 Sri Lanka Relay, in Pashto at 0253, 11905 via Madagascar in (I) Kinyarwanda at 0405. 12015 Sri Lanka Relay, in Pashto at 0324 and 15170 Thailand Relay, in CC at 0040. (Parker, PA) 11925 Philippines Relay, in CC at 2210. (Ng, Malaysia) 15580 Sri Lanka Relay, with news at 0512. (Wood, TN)

Radio Free Asia, 11945 via Tajikistan in (I) Mandarin at 1020. (Brossell, WI) 15585 Northern Marianas Relay, in CC at 2324. (MacKenzie, CA)

Radio Free Europe, 9750 Lampertheim Relay, opening at 0100 with RR with news and news-related features. (D'Angelo, PA)

Radio Sawa, 5860 in Farsi at 0037 and 17840, 17870 in Farsi at 1245. (Padazopulos, Greece)

Radio Marti, 17750, Greenville, in SS at 0238. (Wood, TN)

WTWW, Tennessee, 5755 at 0403, 9480 at 2030 and 12100 a unid language at 2340. (MacKenzie, CA)

WINB, Pennsylvania, 13570 at 2020. (MacKenzie, CA)

WWCR, Tennessee, 3215 at 0330, 4840 at

0348, 5890 at 0407, 5935 at 0433, 9980 at 2130, 12160 at 2025, 13845 at 2016, 15160 at 1820 and 15825 at 1807. (MacKenzie, CA) 12160 at 1615. (Barton, AZ)

World Harvest Radio, Indiana, 17850 at 1743. (MacKenzie, CA)

WWRB, Tennessee, 5050 a 0357 and off at 0359. (MacKenzie, CA) Closed at 0403. (Parker, PA)

WYFR, Florida, 5950 in CC at 0437, 11740 at 2308, 15440 in CC at 0225. (MacKenzie, CA) 7340 in VV at 1338 and 11665 via Ascension in (I) Yoruba at 1940. (Brossell, WI) 9615 via Irkutsk at 1320, //9865, 9960 and 11520. Also, 15570 at 1400. (Sellers, BC) 11725 at 1115 with uninterrupted hymns. (Barton, AZ) 15440 at 0030 with a (Harold) Camping rant, 17785 via Ascension at 1718. (Handler, IL)

WBCQ, Maine, 7415 at 0530 and 15420 at 2058. (MacKenzie, CA)

WEWN, Alabama, 11520 at 0125. (Padazopulos, Greece) 0205. (Wood, TN)

KJES, New Mexico, 11715 at 1315. (Maxant, WV; Barton, AZ) 12100 in SS at 2135. (MacKenzie, CA)

Adventist World Radio 11755 via South Africa in FF at 2020, (Brossell, WI, 15205 via

Wertachtal at 1930 open with ID into the Ibo language. (Handler, IL)

WRMI, Florida, 9955 carrying Radio Prague at 0605. (Weroka, NC)

Radio Payam e-Doost, 7460 via Moldova at \*0229 and into (I) Farsi with short breaks of ME and instl music. (Alexander, PA)

Sudan Radio Service, 17745 via Portugal from 1500 sign on with local tribal music, some AA talk. (Alexander, PA)

Radio Dardasha 7, 11810 via Germany at 0525-0530 closing with AA talk and jingles. (Alexander, PA)

WBAP, Texas, 25190, FM mode, at 1420, studio-transmitter link with a local lawn and garden show, local ads, jingles. (Alexander, PA) 1531 with ad strings news and local traffic. (D'Angelo, PA)

KSCS, Texas, 25990 FM mode, another STL, at 1420 with country songs. (Alexander, PA)

**VANUATU**—Radio Vanuatu, 3945 at 1143 with pops and M ancr, possibly in Bislama language. (Sellers, BC)

**VATICAN**—Vatican Radio, 6100 in SS at 0420, 11525 in Somali at 0355 and 15570 in FF at 1720. (MacKenzie, CA)

**VENEZUELA**—Radio Nacional, 15250 via Cuba in SS at 2316. 17705 in SS at 2340. (MacKenzie, CA) 15250//13680 in SS at 2300. (Barton, AZ)

**VIETNAM**—Voice of Vietnam, 6175 via Canada at 0405. (Maxant, WV) 0410 in SS. (MacKenzie, CA) 12020 with news at 1333. (Sellers, BC)

**YEMEN**—Republic of Yemen Radio, 9780 at 0455 with traditional AA music but completely covered by REE's DRM signal from 0501 sign on. (Alexander, PA)

**ZAMBIA**—CVC-The Voice, 15590 at 0630 with religious lecture and some rowdy Christian rock things. (Barton, AZ)

And, once again, order is restored! The following folks are given high fives and plenty of thanks for their participation this month. And, a special welcome to Steven Handler and ol' buddy Charles (Chuck) Ripple. The other dependables include: Rich D'Angelo, Wyomissing, PA; Brian Anderson, Mechanicsburg, PA; Peter Ng, Johor Bahru, Malaysia; Stewart Mackenzie, Huntington Beach, CA; Harold Sellers, Vernon, BC; Robert Brossell, Pewaukee, WI; Rick Barton, El Mirage, AZ; Fotios Padazopulos, Zaharo, Greece; Robert Fraser, Belfast, ME; Joe Wood, Greenback, TN; George Zeller, Cleveland, OH; Richard Parker, Pennsburg, PA; Robert Wilkner, Pampano Beach, FL; Chuck Ripple, Chesapeake, VA; William Hassig, Mt. Prospect, IL; Ralph Perry, Wheaton, IL; Charles Maxant, Hinton, WV; Steven Handler, (new International Bands editor for NASWA), Buffalo Grove, IL; and David Wewoka, Benson, NC.

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# Receiver Review: The Sangean ATS-909X

## **Meet the Stylish New Flagship of the Company's AM/FM/SW Portable Line**

By Richard A. D'Angelo

*"The radio has a nice, solid feel providing great stability while tuning."*

Having owned several portable shortwave radios over the years, including the flagship of the Eton line — the discontinued E1 — I was looking forward to the new release from Sangean.

The ATS-909X receiver is billed by the company as the new flagship of the Sangean AM/FM/SW portable radio line. It is a sharp-looking piece of equipment, but I was wondering if the unit's performance would match its distinct appearance.

### **Upon Arrival . . .**

Opening the box, I noted that the Sangean ATS-909X came with a 200-page operating instructions manual, a 9-volt external power supply, ear buds, the ANT-60 portable shortwave reel

*"The ATS-909X fits the bill as a first class, reasonably priced short-wave portable radio that can do the job in tight listening situations . . ."*

antenna and, of course, the ATS-909X — in a nice carrying case (Figure 1).

The ATS-909X also can be operated using four AA-sized batteries. For this review, both the 9-volt, external power supply and battery supply were used.

The Sangean ATS-909X dimensions are 7.75 inches x 5.25 inches x 1.5 inches and the unit weighs a mere 28 ounces (Figure 2).

Don't panic about the size of the 200-page oper-



**Figure 1:** Opening the box, you'll find the Sangean ATS-909X in a leatherette case with manual, antenna, earbuds and power supply. (Photographs courtesy of Richard A. D'Angelo)



**Figure 2:** The ATS-909X has rounded edges, making it look quite stylish.

ating instruction manual because it includes five languages: English, French, Spanish, Dutch and German — with each about 40 pages in length.

The folks at Sangean did a nice job packing the box, making sure the radio arrived undamaged during the shipping process. Opening the box was a very pleasant experience.

### Performance and Features

The Sangean ATS-909X delivers superb performance — top-notch reception and quality audio — in a very compact, stylish package. It has features generally found in more-expensive table-top communication receivers and combines them in a trim, stylish footprint.

Coverage includes all longwave (153-519 kHz), mediumwave (520-1710 kHz), shortwave (1711-29999 kHz) and FM frequencies (87.5-108 MHz) with stereo FM available through its headphone jack.

Mediumwave can be set for either 9 or 10 kHz steps to correspond to the ranges for different parts of the world. This radio follows Sangean's previous ATS-909 model in regard to construction, output power and signal range.

The new, enlarged LCD of the ATS-909X features a bright white LED for excellent clarity. This may be the most readable LCD display in any portable receiver (Figure 3).

### More ATS-909X Features

The shortwave performance of the ATS-909X is enhanced with a digital signal processing (DSP) decoder integrated circuit (IC), which is standard with the unit, and wide-narrow bandwidth switch.

The radio includes a number of features, as well, which significantly enhance reception through improved interference rejection — such as digital bandpass filter (SSB/AM/FM modes),

providing sharp selectivity for reducing adjacent-frequency interference and for shaping of the incoming station's audio frequency response.

Shortwave performance is enhanced with a wide-narrow bandwidth switch and selectable upper and lower single sideband (SSB). The ATS-909X receiver provides unusually good single SSB performance for a portable, which I found extremely useful during my "test drive." SSB tuning is in 40 Hz steps.

Several tuning methods are featured: direct keypad entry (my personal favorite mode of operation), manual tuning, auto scan, manual up-down tuning, memory recall or manual knob tuning.

### Memory, Timers, Alarms and More

The alpha-numeric memory system of the ATS-909X lets the user store 406 presets (351 shortwave, 18 mediumwave, 27 FM and nine longwave, plus one priority preset).

Three programmable wake timers are available. There is a built-in world time clock supporting daylight savings time with two editable city names.

The clock's digits are displayed even when the radio is tuning and has 42 world city times stored.

The Sangean ATS-909X offers an alarm function with three timers for Snooze and Sleep features. Wake up to a conventional buzzer or one of your favorite radio presets. There is a nap timer for those who enjoy a siesta during the day. The large LCD display features a signal strength and battery life indicator.

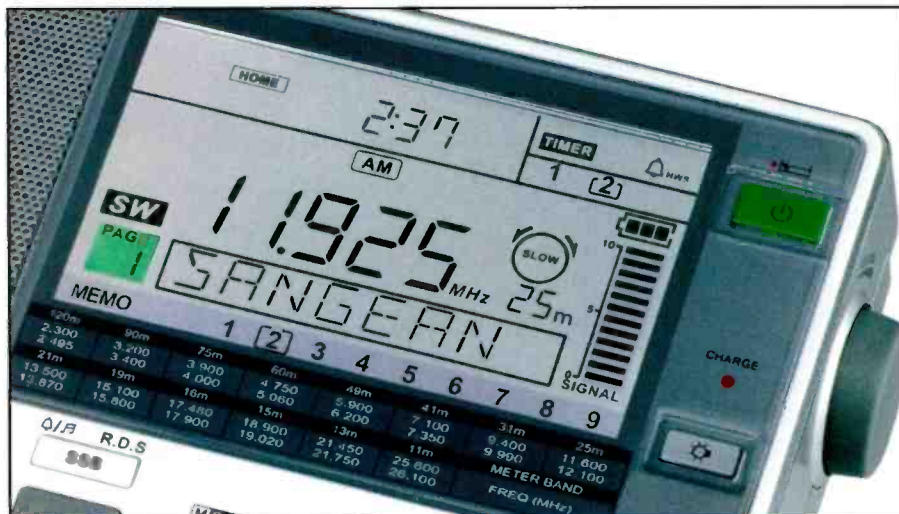
The ATS-909X will display FM RDS/RDS with PS, PTY, RT and CT, as well, for station name and clock time in areas where service is available.

Other interesting features include: stereo/mono switch, RF gain, squelch, auto scan and a flip-stand. As mentioned previously, the ATS-909X requires four, AA alkaline or rechargeable batteries (not included) or can be operated with the included AC adapter (ADPATS-808 6-V, DC Adapter).

The radio features a rechargeable battery and an LED light that indicates the charging status. The built-in battery charger can recharge NiMH batteries.

### 909 vs. 909X: A Comparison

Compared to the previous ATS-909 model, the new ATS-909X boasts a larger LCD with a brighter backlight for eas-



**Figure 3:** Sangean has enlarged the LCD screen that now includes a full LED backlight for the ATS-909X.





**Figure 4:** The ATS-909X rests on the box that carried it through delivery.

ier reading. With more than three times the output power of the old ATS-909 (1 watt vs. 0.3 watt) and a more rigid cabinet, the ATS-909X offers superior sound quality and reliability.

An additional AM RF preamplifier, DSP decode IC and a longer telescopic antenna compared to the ATS-909 enhances the shortwave reception for improved signal quality.

A “squelch” setting allows you to set the sensitivity rating for radio reception, rejecting residual noise and reducing scans of faulty stations.

All of these Sangean ATS-909X features come in a package that’s smaller than the original.

## Speaker, Headphones and LCD Screen

The built-in, 3-inch speaker lets you conveniently listen anywhere, and is great for a small room or office environment. I enjoyed using this speaker — along with the sliding tone control — for casual listening situations.

You can listen to the ATS-909X using the 3.5-mm headphone jack and the included earbuds, as well. Personally, I am not a fan of earbuds, so substituting headphones with a 3.5-mm headphone jack provided excellent results while tuning the bands.

An AUX (auxiliary) input allows you to connect other sources to the ATS-909X for playback via the built-in speaker or earbuds. The AUX-IN jack allows for MP3 player or iPod connectivity.

The receiver has a built-in headphone amplifier that allows for manual control of the volume going to the headphones or ear buds. This portable is about as hi-tech as you can get in today’s market.

## Test Driving the ATS-909X

Okay, that is a lot of technical detail, but what about practical, everyday performance of the unit? To answer that question, I took the Sangean ATS-909X for a test drive over the course of a few weeks to see how well it performs in day-to-day listening situations.

I didn’t want a one-off look at the unit since I was interest-

ed in seeing how it performed over a period of time under different operating conditions. The results are quite interesting.

My first experience with the Sangean ATS-909X was in my backyard during a nice cool, crisp but sunny early spring afternoon. On many occasions, I have used my backyard as a mini-DXpedition site getting somewhat away from the noise pollution that can be found inside the home.

On this day I enjoyed relatively good conditions. Checking the 19-meter band, I noted Radio Africa from Equatorial Guinea on 15190 kHz, Radio Portugal on 15465 kHz, Family Radio from Ascension Islands on 15195 kHz and Radio Exterior de España, Spain on 15110 kHz — all with decent-to-good reception in the 1930-2030 UTC time period.

I did a number of tests with the whip antenna compared to the supplied external antenna. I found in these outdoor situations, the supplied external antenna improved signals enough that I found myself using it most of the time.

Later, I moved down to the 31-meter band where an afternoon favorite, Saudi Arabia, was noted with great music programming on 9870 kHz as well as on 9555 kHz. The signals were fair-to-good, which is what I expected.

A longtime favorite station, African No. 1 from Libreville, Gabon, was heard on its usual 9580 kHz channel at UTC sign-off with French talk, several IDs and time pips at 2300 UTC before terminating the broadcast.

I spot-checked the 41-meter band and noted BBC Cyprus on 7395 kHz at a fair level and Guinea on 7125 kHz at 2200 UTC with news in French. Another favorite is Radio Cairo, Egypt on 6270 kHz with clear reception of a music program. As darkness approached, the tropical bands opened with soccer from Radio Brasil Central noted on 4985 kHz.

## Moving Inside and While Traveling

Indoors, the ATS-909X was a delight to use. The unit’s small footprint takes up very little space and the whip antenna performed satisfactorily.

I didn’t see any improvement using the external antenna indoors, although I would expect some improvement if you could manage to run it away from the house — outdoors, say, to a nearby tree. I was able to do numerous comparisons to my Ten Tec RX-340, Drake R-8B and Eton E-1, and while those DX machines are quite good, the little, sharp-looking ATS-909X was able to perform commendably.

The Horn of Africa is a favorite target of mine with Radio



**Figure 5:** From head-on, here’s a look at the Sangean ATS-909X.



**Figure 6:** The new Sangean ATS-909X looks sharp on any desktop.

Ethiopia on 9705 kHz, Radio Fana on 6110 kHz and The Voice of the Broad Masses of Eritrea on 7175 kHz all heard on the Sangean unit.

For fans of pirate radio stations, I found the Sangean ATS-909X up to the challenge. I checked the pirate band around 6925 kHz for action on several occasions. I was pleasantly rewarded with nice results when stations were operating.

I found having a nice portable rig available while traveling or visiting relatives can offer some diversity to the usual entertainment options available on the road.

### ATS-909X's Other Goodies

The ATS-909X has a nice backlight feature for using the radio in a darkened room, however, this feature isn't necessary under normal lighting conditions. Nevertheless, it is a good feature to have if you are using your portable rig outdoors in early morning or twilight conditions or in total darkness. Turning the backlight feature off during normal lighting conditions preserves the life of the batteries.

Important features include the ATS-909X's selectivity, three-way tone con-

trol, wide/narrow filters, digital bandpass and DSP, which all contribute to cleaning up and separating adjacent signals making it possible to hear what you attempt to tune in.

I am not a fan of a squelch control for the shortwave bands. However, the ATS-909X uses this method to help keep noise between broadcast stations at a predetermined amount. This is a common feature in scanners.

If you are more into casual shortwave listening, it can make tuning easier on the ears. You use the squelch by tuning to the weakest station you can understand and then adjusting the squelch to that level. By doing so, anything below the threshold station level will be blocked out.

It's not something recommended, though, for DXing situations where finding a weak signal is part of the excitement.

### Mediumwave and FM Reception

Although my primary interest is shortwave, I did take a brief test drive on the medium wave and FM bands. The sensitivity, selectivity and audio quality all

seemed to be very good. Finding stations along the east coast and into the Midwest seemed simple enough. I would think a loop antenna would be a valuable tool for DXing mediumwave with the ATS-909X.

On FM, the ATS-909X was excellent. For a small radio, this unit packs a lot of punch in this area. The selectivity is very good, as is the audio.

### Physically Fit

The Sangean ATS-909X has an excellent design. It is a very satisfying, enjoyable portable to use.

The radio has a nice, solid feel providing great stability while tuning. But it is not a heavy unit. The quality of the finish is excellent.

The ATS909X can be used right out of the box without having to spend a lot of time learning the operating manual (**Figure 4**).

There are other portable units with more memories, but I have never considered the number of memories an important feature in any radio other than a scanner. The memories it does have are easy to use.

### In Summary

Priced at about \$260 from several large commercial radio dealers, the Sangean ATS-909X is a sturdy, fine looking and solid performing shortwave portable at a fair price point.

It is small enough to legitimately fit the portable category and it provides very good performance for a portable radio. It is a good-looking radio, as well, so we are not talking about an eyesore sitting on the desk that non-radio fans living in the same household would find offensive (**Figure 5**).

The ATS-909X is a much better performer than many of the other similar sized units out in the market. Although it lags slightly the Eton E-1 — which is a much larger "portable" unit with a much higher price tag and is no longer in production — it is far superior to any of the competition in today's portable shortwave radio market.

The ATS-909X fits the bill as a first-class, reasonably-priced shortwave portable radio that can do the job in tight listening situations, as well as for providing great sound for casual eavesdropping on the big, easy-to-copy shortwave broadcasters.

This fine-looking radio with excellent performance is certainly worth adding to any radio person's shack (**Figure 6**).

### SPURIOUS SIGNALS

By Jason Togyer KB3CNM



# Pop'Comm October 2011 Reader Survey

Your feedback is important to us at *Pop'Comm*. It helps guide us to make the magazine even more valuable to you each month.

Please take a few minutes to fill out this month's Reader Survey Card and circle the appropriate numbers corresponding to the questions below. We'll pick a respondent at random for a year's free subscription or an extension of an existing subscription as thanks for your participation — so don't forget to fill in your mailing address and other contact information.

We encourage your comments and suggestions in the space provided, as well. Thank you.

*Last, but not least:* You can now take this survey online. See details below.

## As a shortwave listener, scanner monitor, digital communications buff, and so on, how would you rate the equipment in your station?

- State of the art . . . . . 1
- Reasonably up to date . . . . . 2
- Old, and that's the way I like it . . . . . 3
- Old, but wish I could do better . . . . . 4

## How often do you buy new gear?

- Practically all the time . . . . . 5
- Once or twice a year . . . . . 6
- Every five years, or so . . . . . 7
- Very rarely . . . . . 8
- Never . . . . . 9

## Where in your budgeting priorities would you place "buying new gear?"

- At the top . . . . . 10
- Near the top . . . . . 11
- About in the middle . . . . . 12
- Pretty far down the list . . . . . 13
- It's not on my list . . . . . 14

## What factors most influence your decision to buy? (Choose any that apply.)

- Having excellent gear is a top priority . . . . . 15
- The ability to receive new modes or new spectrum . . . . . 16
- My attraction to shiny, new objects . . . . . 17
- The state of my household budget . . . . . 18
- No factors — I buy on impulse . . . . . 19

What radio or listening-monitoring accessory do you have recurring dreams about owning? (Use the comment line.)

## Take This Reader Survey Online

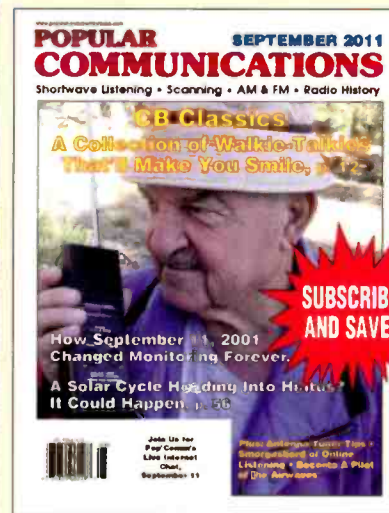
You can now participate in this reader survey via the Internet. Simply go to *Pop'Comm On the Web* : < <http://www.popcommmagazine.blogspot.com/> > and click the link to the *Pop'Comm October 2011 Reader Survey*. It's quick and easy.

## And the Winner Is . . .

For participating in the *Pop'Comm Readership Survey*, the winner of a free subscription or extension is **Dr. John J. Spolsdoff, of Fresno, California**. *Way to go, Doc!* Your suggestion about adding "reviews of old classic receivers and scanners to help those buying used gear" is a good one. Many thanks!

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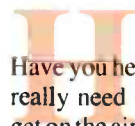
	USA	Canada/Mexico	Foreign
1 Yr	\$ 32.95	\$ 42.95	\$ 52.95
2 Yrs	\$ 58.95	\$ 78.95	\$ 98.95
3 Yrs	\$ 85.95	\$ 115.95	\$ 145.95

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# A Propagation Toolbox for the Shortwave Listener

by Tomas Hood, NW7US,  
nw7us@arrl.net

“... There are times when I would like to take a more efficient, planned approach to my radio time.”



Have you heard fellow radio hobbyists say, “I don’t really need to know what the Sun is doing. I just get on the air and try my luck at catching some DX.” Or, “I like the thrill of the hunt — get on the radio, tune around and just see what I can catch.”

These and comments like them convey the idea that exploring the science of propagation is a waste of time, or perhaps even unsportsman-like.

Confession: I, too, have fully enjoyed the sheer joy of randomly picking a range of frequencies and patiently tuning around to find new and exotic signals. What a pleasure to discover a radio broadcast from an exotic country that I did not expect.

However, in the desire to maximize my enjoyment of the hobby, there are times when I would like to take a more efficient, planned approach to my radio time. If I could know ahead of time when a certain international broadcaster is going to be transmitting toward North America on a frequency that is most likely to propagate well into my area with the current sunspot activity, maybe I can shuffle my chores so I can be at the radio at the right time.

## Print and Online Tools for SWLers

There are various resources and tools at the disposal of the shortwave radio listener.

In the printed realm, for example, *Pop’Comm’s* Global Information Guide, compiled by Gerry Dexter, provides a monthly listing of some great shortwave radio stations with times, frequencies and other details to help you on your hunt.

An online resource is provided by this columnist. You can search any shortwave frequency to see what international broadcast entity has declared using that frequency at a given time and with what language they plan on broadcasting (and other details) at < <http://hfradio.org/swbc> >, or you can get a listing of all stations transmitting in English at the current time (or search for another time) at < <http://hfradio.org/english> >.

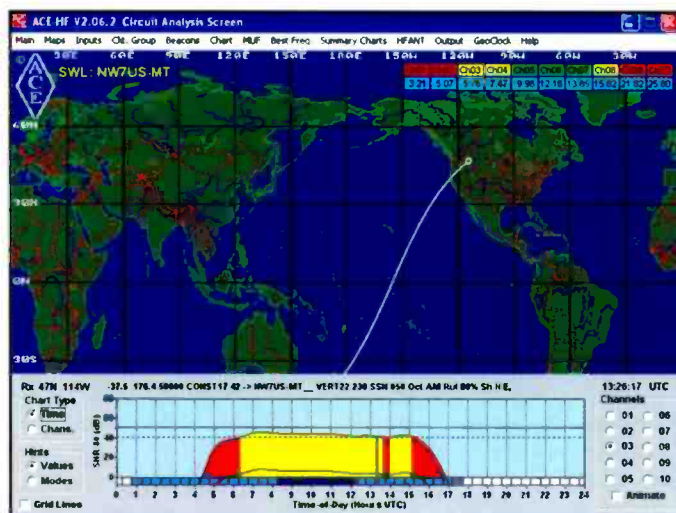
There are schedules at many of the broadcasting station’s official websites, as well.

## ‘Modeling’ Propagation

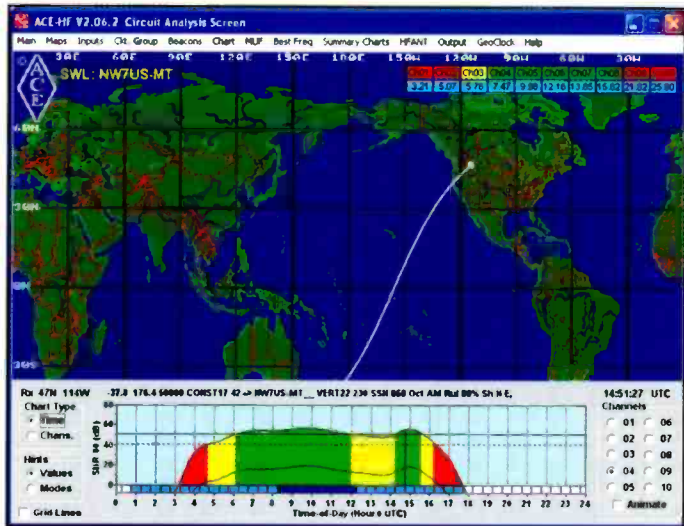
Another very powerful resource is propagation forecasting and analysis — or simply, a “modeling” tool. I use ACE-HF Pro System Simulation & Visualization software (which I’ve reviewed previously in this column) available at < <http://hfradio.org/ace-hf> >.

This software — known as “the Cadillac of HF Propagation Programs” — officially maintains and validates the VOACAP (Voice of America Coverage Analysis Program for HF Propagation Prediction and Ionospheric Communications) engine upon which many free propagation aids are based. However, this is the only tool that provides the animated movie analysis, and the well-maintained engine.

What’s really great about ACE-HF Pro is the Shortwave Radio Listener’s mode. The name, ACE-HF, is derived from the professional ACE-HF NETWORK software for government and



**Figure 1:** Assuming a smoothed monthly sunspot count of 50 (translating to a smoothed monthly solar flux average of 102), and a transmitting antenna curtain array with a 17-dB gain, ACE-HF Pro indicates that the signal from Radio New Zealand will be marginal in the 49-meter band during the morning hours in Montana during October (during 80 percent of the month). The receiving antenna used in the analysis and modeling is a vertical. This result suggests that the shortwave listener might seek a better frequency on which to hear the broadcast, if one exists. Consulting a published schedule aids in selecting and modeling a frequency choice. (Graphics courtesy of NW7US, using the ACE-HF Pro v2.06.2 software – < <http://hfradio.org/ace-hf> >.)



**Figure 2:** Assuming the same conditions and parameters as in Figure 1, ACE-HF Pro indicates that the signal from Radio New Zealand will be good to excellent in the 41-meter band during the morning hours in Montana during October (during 80 percent of the month). This analysis is in agreement with the author's outlook for October, in that 41 meters is a major player during the morning hours.

commercial HF (high-frequency) network operators, in use by the military and by commercial groups. Two words best describe ACE-HF: Visualization and Animation.

"ACE" stands for Animated Communications Effectiveness, the copyrighted technique for displaying both transmission and reception area coverage on maps of the world, a feature that I find very informative and helpful. All of the charts used to visualize HF system performance may be animated.

## An Example: Tuning for RNZ

As an exercise in planning some listening time, let's take a look at Radio New Zealand (RNZ). Assuming that RNZ is using 50 kilowatts of power into a very good antenna array (let's assume an antenna with 17 dB of gain), what times in the morning might I have the best chance of hearing it in Montana? Looking at the online schedules, I see it broadcasts in the 49- and 41-meter bands.

Running some analysis with ACE-HF Pro indicates that early in the morning, around 0900 UTC, the 41-meter signal would work very well. Later in the morning, 49 meters is the choice, but not for the entire morning. By 1200 UTC, propagation becomes poor. By the time propagation should improve, RNZ is no longer scheduled to be on the air.

Instead, I decide to tune in the Australian Broadcast Corporation's Radio Australia in the 31-meter band and enjoy its broadcast during the window from 1200 to 1400 UTC.

Later in the day, however, as the animated model illustrates, it will be a challenge to hear the South Pacific stations in Montana while the sunspot cycle is still getting underway. As the movie tracks from hour to hour, I watch the footprint of Radio Australia grow and shrink as it follows the ionizing influence of the Sun on the ionosphere.

I've used these tools and resources on many occasions when trying to hunt a hard-to-hear station listed in one of the fine columns in this magazine. Sometimes, it is just not possible to hear the station I am hunting, because the current solar activi-

ty level, the location of the transmitter and my station, and the time of day in which that broadcast is being aired do not come together in the right mix to make it all work.

With the right modeling tools and the resources to know what to plug into the modeling software, I am better able to figure out why I did not hear the station in question. Or, why I might and when to do it!

Having a good schedule and the aid of propagation modeling, you can plan your radio time to maximize your on-air success. When conditions are less-than-favorable and the stations you are hunting are not on the air, that's the time to clean out the garage or fix the antenna.

## HF Propagation for October

The yearly "DX Season" is here — as the long sunlit days of the summer season are passing, the number of dark hours increase. With the shorter period of sunlight each day, the ionosphere has more time during the dark hours to lose the energy created during daylight hours. This affects the propagation of radio signals by lowering the Maximum Usable Frequency (MUF) over many areas of the Earth during part of each day.

You might think this would cause degradation in DX. The change in the length of daily darkness, however, is not the only influence on the propagation of radio waves through the atmosphere. The amount and strength of radiation arriving and passing through our atmosphere varies from season to season, as well as from the solar cycle minimum to the solar cycle maximum.

During the Northern Hemisphere's winter months, the Earth is closer to the sun than during any other time of its orbit. This makes the daytime ionization more intense than that of summer daytimes. In turn, this higher-level energy during the day causes the average MUF to be higher as compared to the same time of day during the summer season, over the same radio signal path.

Then, with the longer winter hours of darkness, the ionosphere has more time to lose its electrical charge. This causes the MUF to dip lower at night than during the summer months. But, with a lower noise level on the high frequencies, the lower bands that are propagating play well, as we can work the weaker signals normally masked in the noise.

These conditions cause a wide daily variation in the maximum frequency that can be propagated by refraction of the radio waves by the wintertime ionosphere. Many radio enthusiasts celebrate the arrival of the winter shortwave season for these reasons.

On the mediumwave and low high-frequency bands, expect a bit of an increase in night-time signal strength and less noise this month. Expect a few DX openings during the hours of darkness and into the sunrise period.

These openings will often be weak due to the relatively high signal absorption during the expected elevated geomagnetic storminess through the rest of this year. Look for openings from Europe and the south if you are listening in the eastern half of the United States, and from the south, the Far East, Australasia and the South Pacific if you are in the western half of the country.

The best propagation aid is a set of sunrise and sunset curves, since DX signals tend to peak when it is local sunrise at the eastern end of the path in question. A good Internet website featuring a grey line map display is found at < <http://www.fourmilab.to/earthview/> >. Follow the link, "map of the Earth" showing the day and night regions.

On frequencies up through the 49-meter band, expect evening, night and early morning activity. Signals here should peak from

**Optimum Working Frequencies (MHz) - For October 2011 - Flux = 120, Created by NW7US**

UTC	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
<b>TO/FROM US WEST COAST</b>																									
CARIBBEAN	23	21	17	14	13	13	12	12	11	11	11	11	10	14	20	22	24	25	26	26	26	26	25	24	
NORTHERN SOUTH AMERICA	32	30	26	21	20	19	18	17	16	15	15	14	14	14	24	27	29	31	32	33	34	35	34	33	
CENTRAL SOUTH AMERICA	31	29	24	20	19	18	17	16	15	15	15	14	14	17	26	29	30	31	32	33	33	33	33	33	
SOUTHERN SOUTH AMERICA	34	32	29	24	23	21	19	18	17	16	16	15	15	14	21	27	30	32	33	34	35	35	35	35	
WESTERN EUROPE	10	10	10	10	10	9	9	9	10	10	10	9	9	13	16	18	19	19	19	18	16	13	11	11	
EASTERN EUROPE	10	9	9	9	9	11	10	10	10	10	10	10	9	9	14	15	15	14	14	13	11	10	10	10	
EASTERN NORTH AMERICA	25	23	17	15	14	13	13	13	12	12	12	12	11	18	23	25	27	28	28	29	29	28	28	27	
CENTRAL NORTH AMERICA	15	14	12	9	8	8	7	7	7	7	6	6	6	11	13	14	15	15	16	16	16	16	15	15	
WESTERN NORTH AMERICA	8	8	7	6	4	4	4	4	3	3	3	3	3	3	6	7	7	8	8	8	8	8	8	8	
SOUTHERN NORTH AMERICA	24	23	20	15	14	13	13	12	12	11	11	11	11	11	18	22	24	25	26	26	27	27	26	25	
HAWAII	23	22	21	20	18	14	13	12	12	11	11	10	10	10	9	9	13	17	20	21	22	23	23	23	
NORTHERN AFRICA	11	10	10	10	10	10	9	10	10	10	10	9	9	14	17	19	20	21	20	17	13	12	11	11	
CENTRAL AFRICA	14	13	13	12	11	11	10	10	10	10	10	9	9	13	17	18	20	20	21	18	17	16	15	14	
SOUTH AFRICA	22	20	15	14	13	13	12	12	12	12	11	11	11	19	22	24	25	26	27	27	27	26	26	24	
MIDDLE EAST	10	10	10	9	9	11	10	10	10	10	10	9	9	15	17	19	17	12	12	11	11	10	10	10	
JAPAN	22	22	21	20	18	16	12	11	11	11	10	10	10	10	10	9	10	10	10	9	15	19	20	22	
CENTRAL ASIA	22	22	21	20	18	16	12	11	11	11	10	10	10	10	9	11	13	12	12	12	12	12	21	22	
INDIA	15	15	15	14	11	11	10	10	10	10	9	9	9	9	9	9	9	11	12	13	13	14	14	14	
THAILAND	21	21	20	19	18	15	12	11	11	10	10	10	10	10	10	9	13	15	14	14	13	13	12	17	
AUSTRALIA	29	30	31	31	28	22	19	18	17	16	16	15	15	14	14	14	19	18	17	16	19	22	25	27	
CHINA	20	21	20	19	17	15	12	11	11	10	10	10	10	10	9	9	10	10	10	10	10	9	15	18	
SOUTH PACIFIC	33	34	33	31	28	23	21	20	19	18	17	16	15	15	15	14	17	17	19	23	26	28	30	32	
<b>UTC TO/FROM US MIDWEST</b>																									
CARIBBEAN	26	22	20	18	17	16	15	14	14	13	13	12	15	21	25	27	28	29	30	30	30	30	29	27	
NORTHERN SOUTH AMERICA	29	27	24	22	20	18	17	16	15	15	14	14	13	20	23	25	27	29	30	31	32	32	32	31	
CENTRAL SOUTH AMERICA	30	27	24	22	20	19	18	17	16	16	15	15	18	25	27	29	30	31	32	33	33	34	33	33	
SOUTHERN SOUTH AMERICA	33	31	27	25	23	21	20	19	18	17	16	15	15	21	26	29	30	32	33	34	34	35	35	34	
WESTERN EUROPE	10	10	10	10	10	9	9	9	10	9	9	9	16	18	19	20	20	19	18	17	14	11	11	11	
EASTERN EUROPE	10	10	10	9	9	9	10	10	10	9	9	9	13	17	18	18	17	17	16	15	13	11	10	10	
EASTERN NORTH AMERICA	17	15	11	10	10	10	9	9	9	8	8	8	8	9	16	18	19	20	21	21	21	20	20	19	
CENTRAL NORTH AMERICA	8	8	6	5	5	4	4	4	4	4	4	4	4	6	7	8	9	9	9	9	9	9	9	9	
WESTERN NORTH AMERICA	15	14	12	9	8	8	7	7	7	7	6	6	11	13	14	15	16	16	16	16	16	16	15	15	
SOUTHERN NORTH AMERICA	17	15	13	11	10	10	9	9	8	8	8	8	8	11	15	16	17	18	19	19	19	19	18	18	
HAWAII	26	25	23	20	15	14	13	13	12	12	12	11	11	11	11	11	16	21	24	25	26	27	27	26	
NORTHERN AFRICA	13	12	12	11	11	10	10	10	10	10	9	9	9	17	19	21	22	22	22	22	22	16	15	14	14
CENTRAL AFRICA	14	12	12	11	11	10	10	10	10	9	9	9	17	19	20	21	22	22	22	22	20	19	17	16	15
SOUTH AFRICA	22	19	18	17	16	15	15	15	14	14	14	14	25	29	31	33	34	34	34	33	32	29	26	24	
MIDDLE EAST	10	10	10	10	9	10	10	10	10	9	9	9	15	18	20	21	20	18	14	12	11	11	11	10	
JAPAN	21	20	19	17	12	12	11	11	10	10	10	10	10	9	9	10	10	10	9	14	18	20	21	21	
CENTRAL ASIA	21	20	18	16	12	11	11	11	10	10	10	10	10	9	10	14	13	13	12	12	12	12	20	21	
INDIA	13	15	14	11	11	11	10	10	10	10	9	9	9	14	16	15	14	12	10	10	10	9	9	9	
THAILAND	20	19	17	15	12	11	11	10	10	10	10	9	9	14	17	16	15	14	14	13	13	12	16	16	
AUSTRALIA	29	30	30	26	20	19	18	17	16	15	15	15	14	14	14	20	19	18	17	16	20	23	25	27	
CHINA	19	19	17	14	12	11	11	10	10	10	10	10	9	9	11	11	10	10	10	10	10	9	13	17	
SOUTH PACIFIC	34	33	30	27	23	21	20	19	18	17	16	15	15	15	16	18	17	17	21	25	27	30	31	33	
<b>UTC TO/FROM US EAST COAST</b>																									
CARIBBEAN	20	18	16	15	14	13	12	12	11	11	10	10	15	19	21	22	23	24	24	25	24	24	23	22	
NORTHERN SOUTH AMERICA	26	24	22	20	19	17	16	15	14	13	13	12	16	19	22	24	25	27	27	28	28	28	28	27	
CENTRAL SOUTH AMERICA	30	27	25	23	21	20	19	17	17	16	15	18	23	25	27	29	30	31	32	33	33	33	33	32	
SOUTHERN SOUTH AMERICA	32	30	27	25	23	21	20	19	18	17	16	15	21	25	27	29	31	32	33	34	34	35	35	34	
WESTERN EUROPE	10	10	10	9	9	9	9	9	9	9	13	17	19	20	21	21	20	19	18	17	14	11	11	11	
EASTERN EUROPE	10	10	10	9	9	9	9	10	9	9	9	9	16	19	20	20	19	18	17	16	14	11	11	10	
EASTERN NORTH AMERICA	8	6	5	5	5	4	4	4	4	4	4	4	7	8	9	10	10	10	10	10	10	9	9	9	
CENTRAL NORTH AMERICA	18	15	11	11	10	10	10	9	9	9	9	9	11	17	19	20	21	22	22	22	21	21	20	20	
WESTERN NORTH AMERICA	25	23	17	15	14	13	13	13	12	12	12	12	12	18	23	25	27	28	29	29	28	28	28	27	
SOUTHERN NORTH AMERICA	20	17	15	14	13	12	11	11	10	10	10	10	11	17	20	21	23	23	24	24	24	23	23	22	
HAWAII	26	23	19	16	15	14	14	13	13	12	12	12	12	13	13	12	18	23	26	28	28	29	28	27	
NORTHERN AFRICA	14	13	13	12	12	12	12	12	12	12	19	23	26	27	28	29	29	28	26	22	20	19	17	16	
CENTRAL AFRICA	15	14	14	13	13	12	12	12	12	12	19	23	26	27	28	29	29	28	26	22	20	19	17	16	
SOUTH AFRICA	22	21	19	18	17	16	16	16	15	15	17	25	29	32	33	34	34	34	33	32	29	26	24	24	
MIDDLE EAST																									

Europe and from a generally easterly direction around midnight. DX paths will move farther west through the night.

By morning, openings from Asia should be common. For openings in a generally western direction, expect a peak just after sunrise. The band should remain open from the south through most of the night. Propagation in this band is quite similar to that expected on 41 meters, except that signals will be somewhat weaker on the average, noise levels will be a bit higher and the period for band openings in a particular direction will be a bit shorter.

Forty-one meters should be the hottest DX band during the dark hours as the seasonal static levels are lower than they were during the summer. The band should be open first for European DX in the eastern United States during the late afternoon. Signals should increase in intensity as darkness approaches.

During the hours of darkness, expect good DX openings from most areas of the world. Signals should peak from an easterly direction about midnight, and from a westerly direction just after sunrise. Excellent openings toward the south should be possible throughout most of the nighttime period.

Paths on 31 through 19 meters are becoming ever more reliable between North America and Europe in the morning and between North America and Asia during the late afternoon hours. The strongest openings occur for a few hours after sunrise and during the sunset hours.

Thirty-one and 25 meters will often remain open into many areas late into the night and will open early in the morning, especially when part of the propagation path moves through sunlit regions. However, these bands are crowded and signals are usually very strong and steady.

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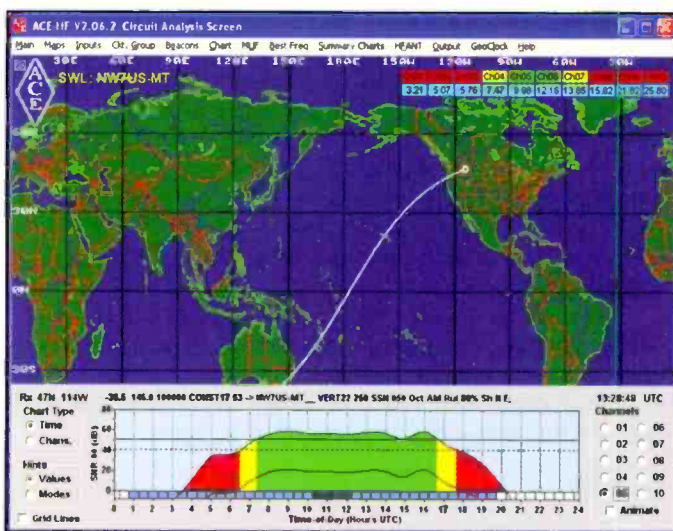


Twenty-five meters is expected to be an excellent band for medium distance (500 to 1,500 miles) reception during the daylight hours. Longer distance reception (up to 2,000 to 3,000 miles) should be possible for an hour or two after local sunrise, and again during the late afternoon and early evening.

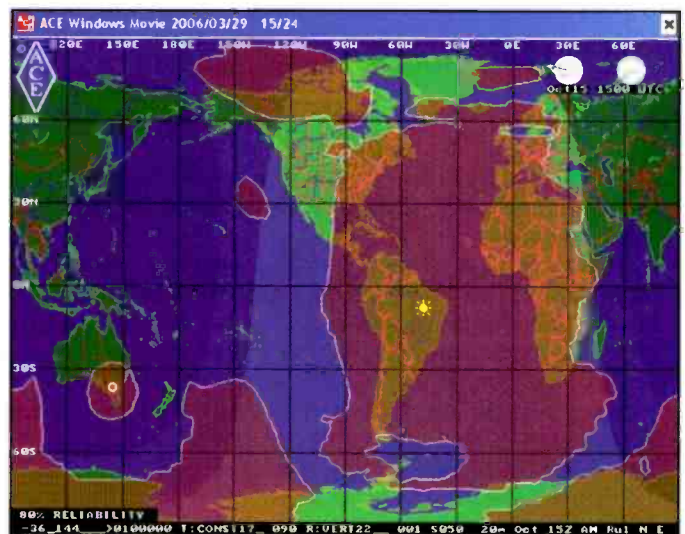
Thirty-one meters will provide medium distance daytime reception ranging between 400 and 1,200 miles.

Twenty-two through 19 meters compete with 16 for the best daytime DX band during October. They will open for DX just before sunrise and should remain open from all directions throughout the day, with a peak in the afternoon.

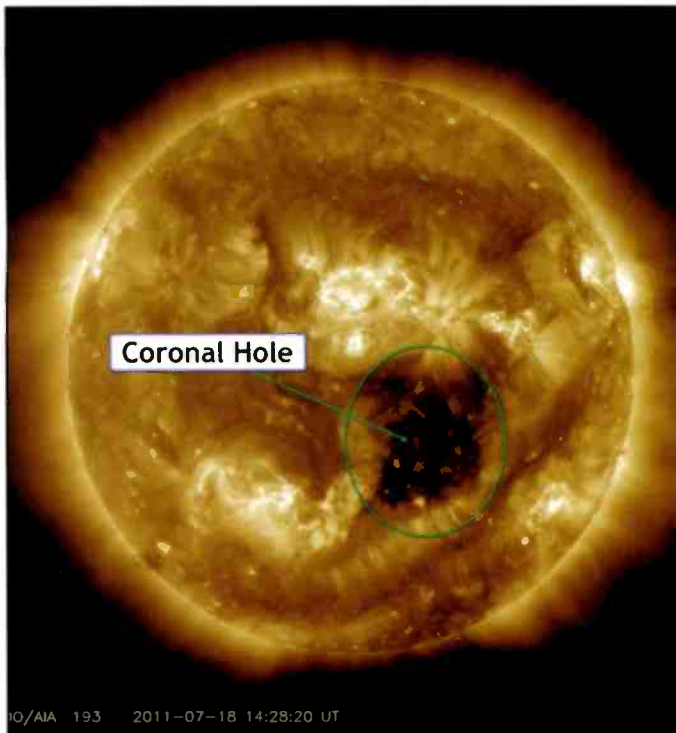
Nighttime conditions will favor openings from the south and



**Figure 3:** Assuming the same conditions and parameters as in Figures 1 and 2, ACE-HF Pro indicates that the signal from Radio Australia in the 31-meter band is a great choice after Radio New Zealand is no longer received in Montana. Radio Australia has a solid window for a number of hours.



**Figure 4:** Radio Australia continues to have great coverage into Montana at 1500 UTC during October, as this map from the animated hourly movie indicates. One more hour, and the footprint significantly shrinks, and Radio Australia's 31-meter broadcast becomes more regional.



At the 193-Angstrom wavelength, the Solar Dynamics Observatory's Atmospheric Imaging Assembly filters capture a coronal hole on July 18, 2011. A coronal hole is an area of weaker magnetic structure in the Sun's corona, where the solar plasma escapes the gravitational pull of the Sun and rides on the ever-present solar wind. Because of the weaker magnetic "hole," the solar wind streams away from this hole at a higher speed than from the rest of the corona. When such a hole is in just the right position, as is this one, it has a "connection" with the Earth and can influence geomagnetic activity. This coronal hole is said to be "geo-effective" because it has rotated into the region where its streaming solar wind and plasma material is lined up to intersect with the Earth. Sure enough, it triggered geomagnetic activity for about two days, causing a degradation in shortwave communications. Expect this type of solar weather during October, as well. (Photograph courtesy of Solar Dynamics Observatory [SDO]/Atmospheric Imaging Assembly [AIA] – Ed.)

tropical areas. Since the Southern Hemisphere has long day-light hours, DX paths on these bands from stations in the south will be common.

Sixteen through 13 meters will occasionally open through October when flux levels reach above 100. Paths from Europe and the South Pacific as well as from Asia, at least during days of higher solar flux levels, are common, especially on 16 meters. Look for best conditions from Europe and the northeast before noon and from the rest of the world during the afternoon hours. Reception from the South Pacific, Australia, New Zealand and the Far East should be possible well into the early evening.

## VHF Conditions

Conditions during October should include moderate levels of trans-equatorial propagation (TE) in which stations in the southern states and parts of the Caribbean will be able to work into the northern areas of South America during the late afternoon.

During peak years of a solar cycle, October is one of the best months for TE activity, especially later in the month. Since we are in the very beginning phase of the new Sunspot Cycle 24, these openings may not occur often, but it is possible an exciting opening might occur from time to time. Look for them by getting on the air and trying.

There is some possibility of extended tropospheric propagation conditions during October because of the changing weather patterns. Higher VHF is the best frequency range to watch for this.

## Current Sunspot Cycle 24 Progress

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 95.8 for June, essentially the same as for May 2011. The 12-month, smoothed 10.7-cm flux centered on December 2010 is 89.6, up from November's 87.7. The predicted smoothed 10.7-cm solar flux for October 2011 is 120, give or take about 9 points.

The Royal Observatory of Belgium reports that the monthly mean observed sunspot number for June 2011 is 37.0, down from May's 41.6. The lowest daily sunspot value of 10 was recorded on June 13 and June 27. The highest daily sunspot count was 89 on June 2. The 12-month, running smoothed sunspot number centered on December 2010 is 28.8, up from November's 26.5. A smoothed sunspot count of 66, give or take about 9 points, is expected for October 2011.

The observed monthly mean planetary A-Index ( $A_p$ ) for June 2011 is 8, down one point from May. These figures remain fairly quiet, overall. The 12-month smoothed  $A_p$  index centered on December 2010 is 6.5. Expect the overall geomagnetic activity to be varying greatly between quiet to moderate storm level during October, since the increased sunspot activity also includes flares and related space weather.

Refer to the Last Minute Forecast at < <http://sunspotwatch.com> > for the outlook on conditions this month.

## Connections . . .

Do you have a question that you'd like me to tackle in this column? Drop me an email or send a letter, and I'll be sure to cover it. I'd love to hear any feedback you might have on what I have written. You may email me, write me a letter, or catch me on the HF amateur bands.

If you are on Facebook, check out < <http://www.facebook.com/spacewx.hfradio> > and < <http://www.facebook.com/NW7US> >. Speaking of Facebook — check out the *Popular Communications Magazine* fan page at < <http://www.facebook.com/PopComm> >.

I invite you to visit my online propagation resource at < <http://sunspotwatch.com/> >, where you can get the latest space data, forecasts and more, all in an organized manner.

Please come and participate in my online propagation discussion forum at < <http://forums.hfradio.org/> >.

*Until next month,*

73 de NW7US, Tomas Hood

< [nw7us@NW7US.us](mailto:nw7us@NW7US.us) >

@NW7US

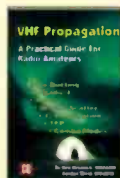
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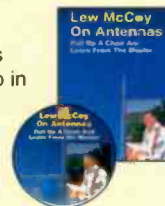
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This listing is designed to help you hear more shortwave broadcasting stations. The list covers a variety of stations, including international broadcasters beaming programs to North America, others to different parts of the world, as well as local 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	5860	Radio Farda, USA, Sri Lanka Relay	Farsi	0300	11935	Radio Japan, via Ascension	JJ
0000	6155	All India Radio	Hindi	0300	5010	Radio Madagaskara, Madagascar	Malagasy
0000	15335	BBC Far Eastern Relay, Singapore		0300	3919	Radio Quito, Ecuador	SS, (irregular)
0000	5875	BBC Middle East Relay, Cyprus	Dari	0300	5950	Radio Taiwan International	
0000	17685	BBC Asia Relay, Thailand		0300	7425	Radio Tirana, Albania	
0000	13655	China Radio International	CC	0300	12005	RT Tunisienne, Tunisia	AA
0000	15720	Radio New Zealand International		0300	7300	Sudan Radio TV Corporation	AA
0000	13760	Radio Australia		0300	4930	Voice of America Relay, Botswana	
0000	11990	Radio Canada International	SS	0300	4960	Voice of America Relay, Sao Tome	
0000	15160	Radio Exterior de Espana, Spain	SS	0300	9660	Voice of Russia, via Moldova	
0000	5990	Radio Havana Cuba	SS	0300	9515	Voice of Turkey	
0000	15190	Radio Inconfidencia, Brazil	PP	0300	5050	WWRB, Tennessee	
0000	15275	Radio Thailand		0330	6030	Radio Oromiya, Ethiopia	Oromo
0000	15170	Voice of America, Thailand Relay	CC	0400	5910	Alcaravan Radio	SS
0000	15650	Voice of Greece	Greek	0400	6090	Caribbean Beacon, Anguilla	
0000	13760	Voice of Korea, North Korea	SS	0400	7230	Channel Africa, South Africa	
0030	13670	Radio Havana Cuba	SS	0400	9885	Deutsche Welle, Germany, Rwanda Relay	GG
0100	11780	Radio Nacional Amazonia, Brazil	PP	0400	9305	Radio Cairo, Egypt	AA
0100	4025	Radio Rebelde, Cuba	SS	0400	4055	Radio Verdad, Guatemala	SS
0100	9490	Radio Republica, via Canada	SS	0400	6010	La Voz de su Concencia, Colombia	SS
0100	11905	Sri Lanka Broadcasting Corporation	Hindi	0400	9760	Miraya FM, Sudan, via Slovakia	AA
0100	15180	Voice of Korea, North Korea		0400	9400	Radio Bulgaria	Bulgarian
0100	9810	Voice of Russia, via French Guiana	SS	0400	6185	Radio Educacion, Mexico	SS
0200	6070	CFRX, Canada		0400	5960	Radio Japan, via Canada	
0200	7305	Vatican Radio		0400	6165	Radio Nederland, Bonaire Relay	DD
0200	17750	Radio Australia		0400	9780	Republic of Yemen Radio	AA
0200	4885	Radio Clube do Para, Brazil	PP	0400	4775	Trans World Radio, Swaziland	
0200	6000	Radio Havana Cuba		0400	6190	Vatican Radio	SS
0200	11935	Radio Japan, via Bonaire	JJ	0400	11905	Voice of America, via Madagascar	Kinyarwanda
0200	4717	Radio Yura, Bolivia	SS	0400	7235	Voice of Peace and Democracy, via Eritrea	Tigrinya
0200	11775	Radio Marti, USA	SS	0400	7235	Voice of the Broad Masses, Eritrea	Trigrinya
0200	9725	RT Tunisienne, Tunisia	AA	0400	6175	Voice of Vietnam	SS
0200	11535	Voice of America, Sri Lanka Relay	Pashto	0400	9410	BBC, via South Africa	
0200	9735	Voice of Russia	SS	0430	6165	Radio Nacional Tchadienne, Chad	FF
0200	9905	Voice of Turkey	SS	0430	9870	Voice of the People, via Madagascar	
0200	15425	Voice of Russia		0500	9545	Deutsche Welle, Germany, via England	RR
0200	4980	WWRB, Tennessee		0500	9755	Deutsche Welle, Rwanda Relay	
0300	11700	Islamic Republic of Iran Broadcasting	Armenian	0500	11725	Radio New Zealand International	
0300	11710	Radio Argentina al Exterior	FF	0500	9535	Radio Algerienne, Algeria	AA
0300	4985	Radio Brazil Central	PP	0500	12030	Radio Exterior Espana, Spain	SS
0300	4780	Radio Djibouti	AA	0500	7240	RDP International, Portugal	PP
0300	9705	Radio Ethiopia	Amharic	0500	9565v	Super Radio Deus e Amor, Brazil	PP
0300	6110	Radio Fana, Ethiopia	Amharic				

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
0500	15580	Voice of America, Sri Lanka Relay		1300	9930	World Harvest Radio, USA, via Palau	
0500	7315	WBCQ, Maine		1400	530	Voice of Mesopotamia, via Moldova	Kurdish
0530	9610	Radio Hamada International, via Germany	Hausa	1400	15760	Kol Israel	Farsi
0600	15255	Channel Africa, South Africa		1600	17745	Sudan Radio Service, USA	AA
0600	6160	CKZU - CKZN, Canada		1700	17780	CVC-La Voz, Chile	SS
0600	15590	CVC-The Voice, Zambia		1700	17840	Deutsche Welle, Germany, Portugal Relay	FF
0600	7245	Radio Mauritanie, Mauritania	AA	1700	15190	Radio Africa, Equatorial Guinea	
0600	17800	Radio France International		1700	15690	Radio Taiwan International, via France	
0600	5995	Radio Malienne, Mali	FF	1700	5570	Vatican Radio	
0700	11850	RDP International, Portugal	PP	1700	17895	Voice of America, Sao Tome Relay	
0700	7125	Radio Conakry, Guinea	FF	1800	15400	BBC South Atlantic Relay, Ascension Is.	
0800	6580	Radio Australia		1800	15495	Radio Nederland, via Germany	
0800	9635	Radio Malienne, Mali	FF	1800	9990	Radio Cairo, Egypt	Hausa
0900	6135	Radio Santa Cruz, Bolivia	SS	1900	11875	IBRA Radio, Sweden, via Germany	unidentified
0900	3290	Voice of Guyana	Dutch	1900	11865	Islamic Republic of Iran Broadcasting	FF
1000	3310	Radio Mosoj Chaski, Bolivia	SS	1900	15180	Radio Canada International, via England	AA
1000	15220	Radio Canada International		1900	11655	Radio Nederland, Madagascar Relay	
1000	6170	Radio New Zealand International		1900	15120	Voice of Nigeria	
1100	1485	ABC Northern Territories Service, Australia		1900	12040	Voice of Russia	
1100	12105	Adventist World Radio, Guam	CC	1930	15205	Adventist World Radio, USA, via Germany	
1100	9655	Radio New Zealand International		2000	11755	Adventist World Radio, USA, via South Africa	FF
1100	3365	Radio Milne Bay, Papua New Guinea	Tok Pisin	2000	9580	Africa Number One, Gabon	FF
1100	11795	KBS World Radio, South Korea	SS	2000	9410	BBC Indian Ocean Relay, Seychelles	
1100	9920	KNLS, Alaska	CC	2000	15540	Radio Kuwait	
1100	3330	Ondas del Huallaga, Peru	SS	2000	7400	Radio Bulgaria	
1100	3385	Radio East New Britain, Papua New Guinea	Tok Pisin	2000	11945	Radio Free Asia, via Tajikistan	Mandarin
1100	11740	Radio Japan, via Singapore	Tibetan	2000	11760	Radio Havana Cuba	SS
1100	3260	Radio Madang, Papua New Guinea	Tok Pisin	2000	11880	Radio Romania International	
1100	15430	Radio Romania International		2000	9620	Radio Romania International	SS
1100	11665	Radio Taiwan International	CC	2000	15345	RTM Morocco, Morocco	AA
1100	15450	Radio Veritas Asia, Philippines	Burmese	2000	11635	Vatican Radio	FF
1100	5020	Solomon Islands Broadcasting Corporation	Tok Pisin	2000	15580	Voice of America, Botswana Relay	
1100	4750	The Cross, Micronesia		2000	15225	Voice of America, via Bonaire	FF
1100	99210	TWR, Guam	CC	2000	13570	WINB, Pennsylvania	
1100	11710	Voice of Korea, North Korea	FF	2000	9480	WTWW, Tennessee	
1100	3912	Voice of the People, South Korea (to North)	KK	2000	9980	WWCR, Tennessee	
1100	5050	Ozy Radio, Australia		2000	7285	China Radio International, via Albania	
1100	3945	Radio Vanuatu	Bislama	2100	11820	Broadcasting Service Kingdom, Saudi Arabia	AA
1200	965-	KBS World Radio, South Korea		2100	21690	Radio France International, French Guiana Relay	FF
1200	9695	Radio Japan		2100	15850	Galei Zahal, Israel	Hebrew
1200	6120	Radio Japan, via Canada		2100	9705	La Voix du Sahel, Niger	FF
1200	17840	Radio Kuwait	AA	2100	15110	Radio Exterior de Espana, Spain	SS
1200	13680	Radio Nacional, Venezuela, via Cuba	SS	2100	11930	Radio Japan	JJ
1200	3925	Radio Nikkei, Japan	JJ	2200	9420	Voice of Greece	Greek
1200	7925	Traxx FM, Malaysia		2200	15540	Radio Nederland, Bonaire Relay	DD
1200	4750	Bangladesh Betar		2200	9790	Radio Romania International	
1230	9920	Far East Broadcasting, Philippines	VV	2200	9830	Voice of Turkey	
1300	11715	KJES, New Mexico		2230	9760	Cyprus Broadcasting Corp.	Greek, wknds
1300	11580	Far East Broadcasting, USA, via N. Marianas	CC	2300	13605	All India Radio	
1300	7390	Voice of America, Northern Marianas Relay	Cantonese	2300	6175	China Radio International, via Albania	SS
1300	11945	Adventist World Radio, Guam	Karen	2300	12040	Radio Havana Cuba	SS
1300	9690	All India Radio		2300	11700	Radio Bulgaria	
1300	9625	CBC Northern Service, Canada		2300	15585	Radio Free Asia, Northern Marianas Relay	CC
1300	7340	Family Radio, USA, via Russia	VV	2300	17750	Radio Kuwait	AA
1300	15340	HCJB, Australia		2300	17705	Radio Nacional, Venezuela, via Cuba	SS
1300	9790	Islamic Republic of Iran Broadcasting	Urdu	2300	15250	Radio Nacional, Venezuela, via Cuba	SS
1300	9525v	Voice of Indonesia					
1300	9335	Voice of Korea, North Korea					

## Trivia, and Other Pursuits

by R.B. Sturtevant, AD7IL



In April 1909, members of the Peary-Sledge Party hold flags at the North Pole. Pictured from left: Ooqueh, with the Navy League flag; Ootah, D.K.E. fraternity flag; Matthew Henson, Polar flag; Egingwah, the D.A.R. peace flag; and Seeglo, with the Red Cross flag. The party was successful in using wireless to send notification of its success in reaching the pole. (Courtesy of Wikimedia Commons)

**Q:** *Did Commodore Robert Peary use wireless on any of his several attempts to reach the North Pole?*

**A:** The answer is yes and no. Peary's first attempt (1890-1902) did not have any means of communications during his pole attempt. In 1905-1906 he had a wireless setup away from his ship to rush the news back to Labrador and on to Washington.

Unfortunately that expedition was not successful. On his 1908-1909 expedition he used this system to report his reaching what he thought was the pole.

It wasn't until very late in the 20th Century that upgraded navigation and satellites revealed that he had missed his mark by a few miles. Under the conditions he was working, however, it appeared that he was on the spot.

**Q:** *Speaking of Navy Morse code, I've heard of keys equipped with a "Navy knob." What does the term mean and why did the Navy need a different kind of finger rest than everybody else?*

**A:** The Navy's first transmitters were spark gaps that threw sparks all over the shack and labeled all radio operators "Sparky" or "Sparks" forever more. The Army, Western Union and other landline-based systems did not need this system with its inherent problems.

The round or egg-shaped finger piece was designed to keep the operator's fingers out of the way. Not wanting to throw anything away, the Navy kept using the same style of key even after spark gap transmitters were just a memory. Many sailors I've talked to said they used the flat-type key finger rest and never saw a "Navy knob" — or took them off and sent them back to supply in favor of the flat key finger rest.

I don't think anyone can be 100 percent sure about this, but this is what my friend Marshall Emm of Morse Express and I came up with.

**Q:** *Why are so many commercial shortwave stations closing down all over the world?*

**A:** Like with so many other things in the world, follow the money. International shortwave broadcasting has always been forbidden to carry commercial messages. On the AM and FM bands, advertising is what pays the bills and keeps the lights on.

Without the cash coming in, international shortwave needs a government or other large organization to pay the freight. Some countries or organizations start up in fine form but local conditions and cash flow problems make it necessary for them to go dark after a while.

I suppose the only thing to be done to reverse the situation is to allow large corporations to sponsor programming. That, of course, is only a short step from their controlling what is said and done on the stations — in some areas at least.

As always, we, the listeners, are between a rock and a hard place. You just can't win for losing.

**Q:** *How far do you think that amateur radio can go in its development and are there any real limits?*

**A:** Any regular reader of this column should know by now that I believe that progress among the amateur radio community is limited only by the imagination of the various hams and how they approach the technology of the hobby.

Einstein's Theory of Relativity suggests the possibility of teleportation. It was backed up by a paper Einstein published in 1935. I have heard that it has already been done over short distances with nonliving material like small rocks and pieces of cinderblock.

Currently physicists are predicting teleportation of complex molecules in a few years and DNA samples or viruses in a few decades.

We just have to make sure it is done on frequencies where we have privileges or get the appropriate frequencies converted to the amateur bands.

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Nat-Com's FCC Scancat Files.....	9.95
Bonus Disk Of Frequencies.....	15.00
If Purchased Separately	\$84.85



## New, Interesting and Useful Communications Products

### On-Ear EMBRACE Headphones, From BlueAnt

BlueAnt, maker of Bluetooth peripheral devices and mobile communications accessories, has announced the availability of its EMBRACE stereo headphones.

"EMBRACE represents a new voice with true-to-life sound that is not artificially manipulated," a company press release noted. "We are breaking new ground by leveraging BlueAnt's heritage in voice-centric products to bring the highest audio quality at an affordable price to the world of stereo headphones," said David Hogan, CEO of BlueAnt.

The on-ear EMBRACE sound "ensures that audio detail and range are faithfully reproduced without bass or treble being enhanced or manipulated," BlueAnt said. "This creates a pure or 'flat-frequency' listening experience. Users may also choose, through their personal device, to adjust EQ settings to match their personal preferences."

The headphones feature "an integrated in-line remote control for music playback volume control and a microphone that allows users to switch between lis-



The EMBRACE headphones' conforming ear pads "create a noise-isolating seal which blocks out unwanted background noise," the company says.

tening to music or watching a video to taking hands-free calls."

In addition, the EMBRACE's conforming ear pads, "create a noise-isolating seal which blocks out unwanted background noise. The headphone comes with a standard 'straight-through' audio cable to ensure compatibility with any device that has a standard 3.5-mm, audio headphone socket."

#### Features:

- Cable with integrated Apple® remote and microphone
- 36-inch, straight-through audio cable
- OMTP adapter
- Carry case
- Fold-flat design
- 1-year replacement warranty

According to BlueAnt, EMBRACE has a value price point (MSRP) of \$199.99 and is available at: < <http://www.blueantwireless.com> >. A video can be seen at: < <http://bit.ly/ompMhO> >.

### Free Android App to Track Consumer Electronics

Dealnews.com, specializing in online deals on consumer electronics, gadgets



The EMBRACE has a value price point (MSRP) of \$199.99, according to BlueAnt. (Photographs courtesy of BlueAnt)

and computers, has launched a free app that allows Android users to "swiftly browse more than 100 deals a day from 2,000+ reputable online retailers," using a simple interface, a company news release says.

"The Android app v1.0 comes complete with several advanced features to help shoppers identify the best deals at the lowest prices and complete online purchases," dealnews says.

#### Features:

- **Search:** Browse deals and coupons by product, category or keyword.
- **Save:** Deals can be saved on your phone for future consideration.
- **Share:** Users can share deals with family, friends and coworkers via social networks (Facebook, Twitter, etc.) or email.

• **Coupon Code Tracking:** Search for coupons; includes easy "clipping" for use at vendors' online checkout.

• **Newest Deals:** The "New" tab will display the most recent deals since your last visit For more information and a demonstration video, visit: < <http://bit.ly/pDR2cA> >.

## Almost a Teen, PSK31 Is Still Driving the Digital Evolution

by Kirk Kleinschmidt, NTOZ  
[kirk@cloudnet.com](mailto:kirk@cloudnet.com)

*“Introduced to the public in late 1998 . . . PSK31 quickly zoomed to the digital forefront and is now the dominant keyboard-to-keyboard mode worldwide.”*

**B**etween checks for openings on 6 meters earlier this year, I made a couple-dozen QSOs in the North American QSO Party RTTY. I was hoping to finish my “WAS QRP RTTY With Indoor Antenna” award — to be self-awarded with suitable fanfare. (*WAS QRP is Worked All States with 5-watts or less power.* — Ed.)

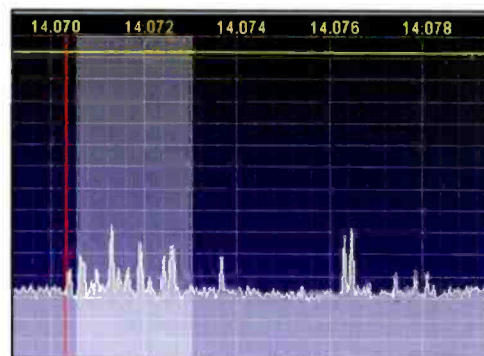
I couldn’t find anyone in the elusive four remaining states, unfortunately. I did, however, work Gary Senasec, AL9A, in Wasilla, Alaska; and Anatoly Antonets, KSØAA, in Olathe, Kansas, as “backup” QSOs. For whatever reason, these two states have been scarce on RTTY for me, so I worked ‘em again for good measure!

As a distant relative of Edward Kleinschmidt, the co-inventor of the Kleinschmidt Perforator and many other seminal teleprinter technologies, I have a special affinity for RTTY. It’s a “manly” digital mode with no error correction that works just fine on modern PC-controlled systems and 70-year-old teletype machines. Much like Morse code, it’s still useful and it’s still hanging in there — despite the onslaught of PC-based digital modes that offer better weak-signal performance.

Ham radio digital communications are in transition, and the bands are filled with a wild mix of old and new technologies. Perhaps, by its very nature, ham radio has always been this way. Spark gave way to continuous wave (CW), AM to SSB, and so on. Now, although it’s still in use, RTTY, the original keyboard-to-keyboard mode, has largely given way to PSK31 (and its digital cousins). Amazingly, PSK31 will be a teenager in December of this year! How time flies.

Just as amazingly, RTTY isn’t completely gone — it’s still dominant in digital-mode contesting, for example — but its days could still be numbered. And when it comes to equipment, just like every other electronics technology, tiny PC-based systems are now the norm.

Despite the power and compactness of modern systems, I still miss the clunky teleprinters of yesteryear. Behind a hulking typewriter keyboard sat a teleprinter with a large continuous roll of yellow paper. As the receiver’s analog demodulator converted the *deedle-eedle* tones into readable characters, those characters were impact-printed onto the paper, making a lot of clattering, clunking, whirring and clicking noises in the process.



**Figure 1:** On a hot, summer night in Minnesota, propagation was toast above 20 meters and atmospheric noise had all but decimated 80 and 40. Twenty meters was the hot spot, as usual. Although there were no RTTY signals in sight, as shown by the band scope on my FLEX-1500 SDR, 14.070 to 14.072 was filled with PSK31 signals from around the world (see Figure 2). (*Images courtesy of NTOZ*)

Even as dot-matrix printers replaced traditional impact printers in the 1980s, the back and forth *zip-zip* of the print heads still made quite a racket. I worked as a newscaster in those days, so I have fond memories of “checking the wire” for updated news copy. (Even in the 1980s, news services such as the Associated Press and United Press International distributed near-real-time copy to radio and TV stations via teleprinter. Whether landline or via radio, the technology was the same.) To me, it was all RTTY!

RTTY hardware improved and evolved in the ‘70s and ‘80s, and hams and SWLs started monitoring shortwave RTTY and fax stations with everything from cheap, two-diode PC serial interfaces to expensive HAL or Universal terminal units.

In the late ‘80s, multimode terminal units from Kantronics and AEA (often dubbed multimode communications processors, MCPs, which were used with PCs or “dumb” terminals) were the rage, pushing aside even the more robust RTTY-only gear made by companies such as TONO and HAL.

During this “pre-PSK” era, RTTY saw increasing competition from the various error-correcting



**Figure 2:** What would the founding fathers of RTTY say about this? One amazing benefit of the “digital evolution” is a software tool like Digital Master 780 (DM780), versatile digital-mode software that’s part of Ham Radio Deluxe (HRD), a free logging, rig-control and digital-mode suite available from: < <http://www.ham-radio-deluxe.com> >. DM780’s “super browser” function simultaneously decodes all of the PSK31 signals in its pass-band. Decoded here are the signals shown in **Figure 1**. Callsigns include VK2MBK, UR7IKX, IZ5UFW, IS0YTA, UX1IW, W4NHO and F5BBD — not bad for the middle of summer and a marginal spot in the solar cycle!

“handshaking” modes — AMTOR, packet, FACTOR, G-TOR, CLOVER and so on — and I wondered even then whether the RTTY era was coming to an end. RTTY was still around then, just like it’s still around today, but it wasn’t popular unless you were a ham radio digital-mode contester (still true today, only to a greater degree).

I played around with error-correcting modes for a while, but found that working other stations via AMTOR — which relentlessly chirps away until all data is correctly transmitted and acknowledged — just didn’t feel like *radio*, where our ability to copy ebbs and flows with the vagaries of propagation. Today, although digital hams can still use AMTOR, for the most part, they don’t.

Hams needed a high-performance digital mode that could optionally incorporate error correction *without* requiring back-and-forth chirping. The breakthrough technology, which marked a turning point in amateur radio digital communication, was PSK31.

Introduced to the public in late 1998 (although developed a bit earlier), PSK31 quickly zoomed to the digital forefront and is now the dominant keyboard-to-keyboard mode worldwide. What a difference a decade makes!

## The Genius of PSK31

Peter Martinez, G3PLX, (who also developed AMTOR, by the way), devel-

oped PSK31 as a way to leverage emerging technology to improve the signal-to-noise performance of ham radio digital communications. PSK31 uses the DSP brains of your personal computer’s sound card and a variety of free software that runs in Windows, Mac or Linux (and on tablets and smart phones for bleeding-edge types).

The “PSK” in PSK31 stands for Phase Shift Keying, the space-age modulation technique used to transmit an entirely new digital code. The “31” refers to the data rate, or baud rate, of the transmitted signal. It also represents the bandwidth occupied by a PSK31 signal — a paltry 31 Hz.

The digital code itself is called *Varicode*, a term coined by G3PLX because each character is made up of a varying number of data bits — much like Morse code. Commonly used letters have fewer bits, while rarely used characters have a whole bunch. This keeps the transmission bandwidth the same while maximizing data throughput.

In everyday use, PSK31 takes up almost no bandwidth, and its weak-signal performance bests Morse code and *destroys* RTTY. Because you undoubtedly have a PC or two in your shack, getting started involves only a small investment of time and perhaps a few bucks for an audio interface.

If your ham radio operations are restricted by covenants and deed restrictions, or if you’re a dyed-in-the-wool

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QRP operator, PSK31 is tremendously efficient and requires only 1 to 20 watts of output power.

## Modes Aplenty

Now that PSK31 has gotten the digital ball rolling, a wide variety of sound card-based digital modes can be found on the ham bands.

PSK63, a direct offshoot of PSK31, can sling characters at 100 WPM but takes twice the bandwidth (hence the name PSK63). PSK63 offers faster contest exchanges and improved performance on radio paths that travel over the poles. The two modes use the same hardware and software.

Using the same hardware and software, as well, are the multiple frequency-shift keying modes (MFSK) such as MFSK16, a multitone data protocol developed by Murray Greenman, ZL1BPU, for use on the high-frequency (HF) ham bands, and FSK441, JT6M and JT65 (parts of the *WSJT* family of radio modulation systems developed by Joe Taylor, K1JT, for use in weak-signal VHF QSOs).

Olivia, developed in 2003 by Pawel



**Figure 3:** From kludged-together, home-brew circuits to big-bucks, commercial-grade boxes, there are plenty of ways to handle digital-mode interfacing. Most have one feature but not another — or the interface with the features you really want costs as much as a new transceiver! One compact and versatile unit that does everything well and is as close to universally loved as you'll ever find (4.9 out of 5 stars with nearly 200 reviews at:

< <http://www.eham.net> >) is the Signalink USB from Tigertronics. Weighing in at less than \$100, this reasonably priced digital-mode interface has a built-in sound system and connects to your PC with a single USB cable — no PC sound card required. The TX, RX and Delay controls on the front panel are *very handy!* For more information, see: < <http://www.tigertronics.com> >.

Jalocha, is a multitone digital mode optimized for long-distance paths and extremely weak signals. It isn't nearly as easy to use as PSK31, but offers even better weak-signal performance.

SWLs have been wrestling with various MFSK systems on the shortwave utility bands for years. Coquelet, Piccolo and THROB, to name only a few, are mostly used for government, military and commercial communications. Demodulating and decoding these signals can be quite complex, as many slightly-different variations are used, and even if an SWL *demodulates* the signal, the contents may still be encrypted and difficult or impossible to *decode*.

## Digi-Mode Hardware

If you like to build stuff, the minimal hardware required to connect your PC's sound card to your radio, and to make an optional PTT connection between your PC and your rig, can be built from junk-box parts. Ready-made interfaces are available from West Mountain Radio, Tigertronics, MFJ and others. Traditional interfaces handle push-to-talk (PTT) and audio inputs/outputs between your PC soundcard and your radio. (**Figure 3.**)

## PSK31 Frequencies

PSK31 signals can be found pretty much around the clock near 14.070 MHz. Activity on other bands is also common, depending on propagation conditions. Look for PSK31 signals here (in MHz):

1.838  
3.580-3.585  
7.035, 7.080  
10.132-10.139  
14.070-14.075  
18.100  
21.070, 21.109  
24.920  
28.120-28.130  
50.290

**Table 1**

Newer digital-mode interfaces incorporate low-noise, built-in sound chips and require only a single USB connection to your PC — no PC soundcard required. Some of these newer designs sport a lot of bells and whistles (and have price tags to match) but several, like the Tigertronics Signalink USB, can be purchased for about \$100.

## Get Started

This month's column is hardly sufficient for a comprehensive how-to guide, but thanks to thousands of enthusiasts and the magic of the Internet, there's a lot of excellent information out there.

Links to a huge variety of digital-mode software, hardware and tutorials can be found at: < <http://ac6v.com/software.htm#DIGITAL> >. You'll find free-to-download PSK31 software, detailed info about PSK31, build-them-yourself hardware interface schematics and excellent links to related sites.

You can also Google PSK31 and discover enough links to keep you busy for hours.

Any PC made within the past 15 years that sports a 16-bit sound card (a \$5 item on eBay if it doesn't); at least one copy of the many free PSK software packages; a stable HF SSB rig (USB is the standard for PSK31; although older modes such as RTTY, AMTOR, packet and clover default to LSB); and a set of cables to interconnect the components will get you on the air. You almost certainly have this stuff, or most of it, in your shack.

Once you have your software and hardware up and running, tune around the

digital subbands (especially on 20 meters, see **Table 1**) and look for PSK31 signals. They're distinctive, so you won't have much trouble finding them. PSK31 signals don't *deedle-ee-dle* like RTTY, and they don't *chirp* like AMTOR. They make a strange, droning *warble*. Once you've heard a PSK31 signal, you won't mistake it in the future. The same goes for MSFK-16, which sounds like a calliope played by a drunken monkey. You'll see! You can hear what many of these modes sound like by perusing the files at: < <http://www.astrosurf.com/luxorion/gsl-audiofiles.htm> >.

In PSK31's earliest days we had to manually tune our radios to work other stations, just like old-school RTTY. Because of the super-narrow bandwidths involved, this was a *real pain*. Today, we simply tune our rigs to the PSK "hot spot" on each band and let the software, with its graphical interface and powerful DSP engine, do its magic.

Once you see a signal (or six) displayed on the "waterfall display," simply click your mouse on one of the displayed signals and your software will start decoding it instantly! The software's "automatic frequency control" will track your QSO if it drifts up and down in frequency a bit. Once the desired signal is locked and you're seeing text flow across your screen, PSK31 QSOs proceed pretty much like regular RTTY.

## An RTTY Renaissance?

Thirteen years into the new digital era PSK has replaced RTTY for day-to-day operation. PSK has all of the benefits of Baudot RTTY, plus better weak-signal performance. The gear is inexpensive, ubiquitous and works well.

Despite its somewhat *historical* nature, unlike spark, you will probably be able to make RTTY QSOs decades in the future. Ironically, the same sound card hardware and free PC software that makes PSK possible can also operate RTTY! In fact, most RTTY on the bands today is generated in this newfangled way. And because RTTY is still faster in the frantic back-and-forth, send-receive conditions found in contests, RTTY is still king of the hill in competitions. You can still also run full legal power while operating RTTY, which is a real no-no when running PSK modes.

PSK31 — the prodigious teenager that transformed amateur radio digital communications — may have inadvertently preserved RTTY forever!



## White Lines in the Sky May Lead to McConnell AFB

by Mark Meece, N8ICW  
[ohioscan@gmail.com](mailto:ohioscan@gmail.com)

*“At least 12 aerial refueling tracks cross, end or begin over this base named for three-of-a-kind.”*

**H**ow many times have you looked up into a clear blue sky on a bright sunny day and seen countless remains of contrails that seem to crisscross endlessly?

You can gaze upon that kind of deep blue canvas almost anywhere, but perhaps nowhere so much so as above Kansas — the Sunflower State — right in the heart of the United States.

No fewer than 12 aerial refueling (AR) tracks either cross, or have their end and entry points over Kansas. The majority of these are controlled by units at McConnell Air Force Base and Forbes Field.

### History: The Legacy of Fred and Thomas McConnell

The only “total force” base in the U.S. Air Force, McConnell Air Force Base is located in

*“With a rich history, McConnell Air Force Base today remains a major refueling hub and operates two runways — 1L/19R and 1R/19L — on 3,113 acres. And there is lots of scanner traffic for area listeners.”*

Sedgwick County, four miles south of Wichita in the southern part of the state. The installation began its history in 1924 when Wichita hosted the National Air Congress.

With hundreds of thousands of people in attendance, Wichita city leaders used the event to raise funds for a planned municipal airport. The plan was an overwhelming success and the first spadeful of earth was turned on June 28, 1929.



Jet contrails, like these captured by a NASA photographer in Virginia, are a common sight in the Kansas skies above McConnell Air Force Base — with good reason. (Courtesy of NASA)



A KC-135 Stratotanker sits on the flightline at McConnell AFB, Kansas. (Photographs courtesy of the U.S. Air Force)

## LISTENING IN

UNIT	NAME	TAIL CODE/COLOR
22 <sup>nd</sup> ARW (AMC)	344 <sup>th</sup> ARS "RAVEN SQUADRON"	Yellow/Black
	349 <sup>th</sup> ARS "Blue Knights"	Yellow/Blue
	350 <sup>th</sup> ARS "Red Falcons"	Yellow/Blue
	384 <sup>th</sup> ARS "Square Patches"	Yellow
931 <sup>st</sup> ARG (AFRC)	18 <sup>th</sup> ARS "KANZA" McConnell Air Force Base (KIAB)	

## AERONAUTICAL OPERATIONS

118.000	McConnell Ground
123.125	Boeing Ground
124.650	ATIS
126.700	Wichita Approach
127.250	McConnell Tower
134.800	Wichita Approach/Departure
134.850	Wichita Approach/Departure
233.700	McConnell Tower
269.100	Supervisor of Flight
269.900	ATIS
275.800	McConnell Ground
291.7750	McConnell Tower
301.600	18 <sup>th</sup> ARS Operations
311.000	Command Post Primary
321.000	Command Post Secondary
353.500	Wichita Departure West
372.200	Dispatcher
375.200	Metro

Aerial Refueling Tracks (AR) and frequencies served by the units in Kansas.

TRACK	PRIMARY	SECONDARY	ENTRY	EXIT
AR-17	276.500	320.900	337.4E	327.0E
AR-330	305.500	260.200	327.0W	269.4W
AR-653	324.400	260.200	363.20	363.20

The Boeing Company, which has a large presence at the base, operates a small analog Motorola trunk system.

SYSTEM:	The Boeing Company
TYPE:	Motorola Type II
SYSID:	C202
SYSTEM VOICE:	Analog

It was not until 12 years later that the first military unit was assigned to the airport as the Kansas National Guard was activated. For the next 10 years the primary military activity was aircraft material and procurement.

The 3520<sup>th</sup> Combat Crew Training Wing was activated on June 4, 1951 to train crews on the B-47 Stratojet. About this time the United States Air Force desired to make this a more permanent military facility and so the city of Wichita was given \$9.4 million to construct a new airfield.

On May 15, 1953 the airfield changed its name to Wichita Air Base. Just short of a year later, the base was renamed McConnell Air Force Base — April 12, 1954. It was named in honor of Fred and Thomas McConnell, who had died in military service. They were two of three flying McConnells who served in World War II. Their brother Edwin survived the war. All were natives of Wichita and were known as "three of a kind."

## Changes in Control

The United States Army Air Force's Air Material Command controlled the airport from 1942 to 1946. Boeing had a plant that shared a runway and from which they produced the B-29 Superfortress during World War II.

From 1951 through 1958 the Air Training Command was the host command of the base, training B-47 crews. On July 1, 1958 the Strategic Air Command (SAC) took over operations at the base. The 4347<sup>th</sup> Combat Crew Training Wing took over from the 3520<sup>th</sup> and on July 15, 1959 the 42<sup>nd</sup> Strategic Aerospace Division was activated at the base. Training on the B-47 continued until March 1, 1963 when the 4347<sup>th</sup> was deactivated.



A group of McConnell KC-135s await on the flightline prior to take-off.

## FREQUENCIES:

854.88750  
 855.18750  
 855.38750  
 855.63750  
 855.88750  
 856.31250  
 857.31250a  
 858.31250c  
 859.31250a  
 860.31250

c = control channel, a = alt control channel

## TALKGROUPS

48 Boeing Plant - Security  
 80 Boeing Plant - Fire Department

## 190<sup>th</sup> ARW FORBES FIELD, KS (KFOE) AERONAUTICAL OPERATIONS

120.800 Forbes Tower  
 121.700 Forbes Ground  
 122.950 Unicom  
 123.800 Approach/Departure (Kansas City ARTCC Topeka RCAG)  
 128.250 ATIS  
 236.600 Forbes Tower  
 275.800 Forbes Ground  
 286.500 190<sup>th</sup> ARW Operations  
 304.600 190<sup>th</sup> ARW Operations  
 340.200 Forbes Tower  
 343.700 Approach/Departure (Kansas City ARTCC Topeka RCAG)

## If You Visit McConnell AFB...

The Kansas Aviation Museum is located at 3350 George Washington Boulevard in Wichita near the base's west gate. Opened in 1991, the museum was once the terminal and administration building of the former Wichita Municipal Airport. It is a beautiful art deco style building reminiscent of the 1930s. Millions of dollars have been spent to rehabilitate the building. The south end of the building is now very close to resembling how it looked in 1935.

The museum is open Monday through Saturday 10:00 AM to 5:00 PM, and Sundays 12:00 PM to 5:00 PM. More info can be found at their website: < <http://www.kansasaviationmuseum.org/> >

When visiting the area, remember to stop in and check it out, and load your scanner up with the frequencies we provided for you here. Enjoy your stay in the land of wheat and sunflowers!

Using McConnell as its base, SAC brought up the 381<sup>st</sup> Strategic Missile Wing on March 1, 1962. Eighteen Titan II ICBM missile silos were installed forming a ring from the northeast and south to the west on an erratic radius of 20 to 50 miles from McConnell. This made the base a major factor in the Cold War for the next 24 years. The 381<sup>st</sup> was deactivated in 1986 and all of the Titan II ICBMs were dismantled by 1987.

The 388<sup>th</sup> Tactical Fighter Wing was reactivated with four subordinate squadrons (560<sup>th</sup>, 561<sup>st</sup>, 562<sup>nd</sup> and 563<sup>rd</sup>) in October of 1962. At first the wing flew the F-100C Super Sabre, replaced the following year by the F-105D/F Thunderchief. Tactical Air Command (TAC) took over command of the base on July 4, 1963 with the 388<sup>th</sup> as the host unit.

## A New Mission in 1971

It was in April of 1971 that McConnell received its new mission with arrival of the 91<sup>st</sup> Aerial Refueling Squadron along with their Boeing KC-135A Stratotankers from Robbins Air Force Base in Georgia.

SAC once again took control of the base in July of 1972, with the 384<sup>th</sup> Air Fueling Wing arriving in December 1972. A second KC-135A aerial refueling squadron — the 384<sup>th</sup> ARS — was activated on September 30, 1973. This transformed McConnell into a major SAC refueling hub.

With then-President Ronald Reagan's plan for strategic modernization (SMP), the base was selected to become a host for the B-1B bomber. On July 1, 1987 the 384<sup>th</sup> was redesignated to the 384<sup>th</sup> Bombardment Wing, Heavy and the 28<sup>th</sup> Bombardment Wing was activated that



## On the Cover

When Dave Schank, KA9WXN, pops the hood of WMVT-TV's Harris Sigma Series UHF transmitter he finds himself staring down a pair of E2V IOT@ DT2100 final tubes supplied with 35,000 volts at 1.7 amperes. That's enough to get any engineer's attention.

Schank, one of the transmitter maintenance engineers at the Milwaukee, Wisconsin PBS station, takes meter readings to assure WMVT's 28.6-kW, over-the-air digital signal reaches its audience — generally within a 50- to 60-mile radius of the 40-foot-tall UHF antenna at 1,221 feet.

On occasion, Schank said, WMVT's signal propagates to longer distances. The station received a report from a Hammond, Indiana viewer 120 miles away. "It's one of the phenomena of the (nearby) lake. We do pretty well."

WMVT, while designated Channel 35, is Channel 36 on the air (599 MHz) and has several sub-channels.

As a safety feature, the transmitter has a Thyatron "crowbar assembly," Schank said. If there is an electrical problem, the 35,000-volt B+ shorts to ground. If it happens three times, the transmitter shuts down.

WMVT is one of the stations owned by Milwaukee Area Technical College, where Schank has been employed for nine years.

When not keeping things running at WMVT-TV, Schank likes D-Star operation on a repeater he owns and operates for 1.2 GHz (10 watts), 440 MHz and 2 meters (each 25 watts). The antenna and repeater are at 600 feet up the television station's tower.

"There's a fair amount of D-Star activity," in the region, Schank said. Coverage on 1.2 GHz is 25 to 30 miles; 50 miles on 440 and 50 miles on 144 MHz. The D-Star repeater is the first in the state, he said.

Schank, 39, first became interested in amateur radio as a kid, getting his license in 1987 as a freshman in high school.

— Richard Fisher, KI6SN

(Cover photography by Larry Mulvehill, WB2ZPI)

## MILITARY INTERCEPTS

Regular contributor Doug Bell of Ontario, Canada, has recently used some much needed vacation to sit down at the controls of his Sony ICF-2010 and sends along his loggings for us. We would love to see what you are hearing be it on HF/VHF/UHF. Use the email in the column credits and put "Pop Comm" in the subject line, also please try to follow the format we have here.

- 5616:** USB 0050 REACH 280 (C-17A #96-0008/62nd AW, McChord AFB, WA) wkg GANDER RADIO with a 040W position report at fl 290.
- 0117 REACH 176 (C-130J #06-4634/19th AW, 41st AS, Little Rock AFB, AK) wkg GANDER RADIO with a HF radio check.
- 0130 REACH 600 (C-130J #07-46312/19th AW, 41st AS, Little Rock AFB, AK) wkg GANDER RADIO with a 040W position report at fl 250.
- 0331 REACH 1049 (C-27J #09-0320/27th SOW, 318<sup>th</sup> SOS, Cannon AFB, NM) wkg GANDER RADIO with a position confirmation.
- 6761:** USB 1917 CODER 15 (KC-10A #59-1500/126th ARW, 108<sup>th</sup> ARS, IL-ANG, Scott AFB, IL) repeatedly calling QUARTERBACK with no response.
- 1927 MOTOWN 03 (KC-135R #59-1512/127th AW, 171<sup>st</sup> ARS, MI-ANG, Selfridge ANGB, MI) also repeatedly calling QUARTERBACK.
- 2157 DECEE 42 (KC-135R #57-1479/459th ARW, 756<sup>th</sup> ARS, Andrews AFB, MD) calling "mainsail" with no response at.
- 8864:** USB 1117 CANFORCE 4154 (CC-150 #15002/8 WG, 437 SQN CFB Trenton, ON) wkg GANDER RADIO with a 030W position report and a ASCP selcal check.
- 8918:** USB 1156 GANDER RADIO repeatedly calling REACH 563 (C-5A #69-0001/105h AW, 137th AS, NY-ANG, Stewart ANGB, NY) with no response.
- 1401 CONVOY 9945 (C-9B #159113/VR-61, NAS Whidbey Island, WA) wkg NEW YORK RADIO with a ABCQ selcal check.
- 8983:** USB 1420 COAST GUARD 6507 (MH-65C #6507/CGAS Houston, TX) wkg CAMSLANT-Chesapeake with unreadable transmissions.
- 1423 CAMSLANT-Chesapeake repeatedly calling COAST GUARD 2104 (HU-25C #2104/CGAS Cape Cod, MA) with no response.
- 1447 COAST GUARD 2002 (HC-130J #2002/CGAS Elizabeth City, NC) wkg CAMSLANT-Chesapeake reporting "operation normal" and a position of 38N 074W.
- 9007:** USB 2006 CANFORCE 2103 (CC-130E #130308/8 WG, 436 SQN, CFB Trenton, Ontario) wkg TRENTON MILITARY with a phone patch to WING OPS and flight data passed.
- 11175:** USB 1506 DIXIE 71 (KC-135R #60-0320/97th AMW, 54<sup>th</sup> ARS, Altus AFB OK) wkg HF-GCS Station MCCLELLAN with unreadable communications.
- 1917 TUFF 15 (B-52H/917th BW, 93rd BS, Barksdale AFB, LA) wkg HF-GCS Station OFFUTT with a HF radio check.
- 1919 BLUE 41 (KC-10A #84-0192/305th AMW, McGuire AFB, NJ) repeatedly calling "mainsail" with no response.

same date to operate the 25 B-1Bs assigned to the wing.

## Great Challenge in the 1990s

On April 26, 1991 McConnell Air Force Base was heavily damaged from an F-3 tornado spawned in the Andover,

Kansas tornado outbreak. The tornado crossed east/northeast of the base, barely missing a line of B-1B bombers. It destroyed several structures on the base, causing \$62 million in damage. The tornado eventually reached F-5 on the Fujita scale, traveled 46 miles and was on the ground for more than an hour.

Many changes to the Air Force took

place in 1992. The 184<sup>th</sup> Tactical Fighter Group was redesignated to the 184<sup>th</sup> Fighter Group in March.

On June 1, the Air Force absorbed the Strategic Air Command into the new Air Combat Command (ACC). The 384<sup>th</sup> Wing was assigned to the ACC and was redesignated the 384<sup>th</sup> Bomb Wing. The 384<sup>th</sup> ARS was reassigned to the 19<sup>th</sup> Air Refueling Wing at Robbins AFB.

The 184<sup>th</sup> FG once again changed commands in July 1993, becoming a part of the new Air Education and Training Command (AETC).

One year later, the F-16s flown by 18<sup>th</sup> FG were transferred and the unit was once again redesignated the 184<sup>th</sup> Bomb Wing. The 127<sup>th</sup> Bomb Squadron — a subordinate unit — took delivery of 14 B-1B Bombers, becoming the first Air National Guard unit to fly the aircraft.

On January 1, 1994, the 22<sup>nd</sup> Air Refueling Wing transferred to McConnell from March Air Force Base, California. Also at that time the 384<sup>th</sup> was redesignated the 384<sup>th</sup> Bomb Group under the 22<sup>nd</sup> ARW.

The USAF converted McConnell to a refueling hub. The 28<sup>th</sup> Bomb Squadron reported for reassignment to the 7<sup>th</sup> Operations Group at Dyess AFB near Abilene, Texas, without equipment or personnel.

The B-1s were sent across base to the 127<sup>th</sup> Bomb Squadron of the Kansas Air National Guard. The 384<sup>th</sup> BG deactivated on September 1994.

The rest of 1994 saw various other refueling units activating under the 22<sup>nd</sup> ARW; the 344<sup>th</sup> ARS from Seymour-Johnson AFB; the 349<sup>th</sup> ARS reactivated from McConnell; 350<sup>th</sup> ARS from Beale AFB, California; and the 384<sup>th</sup> ARS from Robins AFB, Georgia.

- 1933 DEUCE 68 (C-130E/43rd AW, 2nd AS, Pope AFB, NC) wkg HF-GCS Station ANDREWS with a phone patch and flight data passed.
- 1933 KING 85 (HC-130P #64-14860/347th RQW, 71<sup>st</sup> RQS, Moody AFB, GA) wkg HF-GCS Station PUERTO RICO with a phone patch to MOODY COMMAND POST and flight data passed.
- 1956 NORTH ISLAND (NAS North Island, CA) wkg HF-GCS Station OFFUTT with a HF aignal strength test.
- 1958 TUFF 35 (B-52H/917th BW, 93rd BS, Barksdale AFB, LA) wkg HF-GCS Station MCCLELLAN with a HF radio check.
- 2053 TEAM 81 (KC-10A #84-0192/305th AMW, McGuire AFB, NJ) wkg HF-GCS Station OFFUTT with a phone patch to TRAVIS METRO and weather passed.
- 2138 TUFF 42 (B-52H/917th BW, 93rd BS, Barksdale AFB, LA) wkg HF-GCS Station PUERTO RICO with a HF radio check.
- 2210 NIGHTCAP (E-6B #164405/VQ-3, Tinker AFB, OK) repeatedly calling "mainsail" with no response.
- 2258 REACH 389 (C-17A #08-8198/305th AMW, McGuire AFB, NJ) repeatedly calling "mainsail" with no response.
- 2320 KIMBO 41 (MC-130P #66-0220/352nd SOG, 67<sup>th</sup> SOS, RAF Mildenhall, UK) wkg HF-GCS Station ANDREWS with a HF radio check.
- 2330 NAVY LL 015 (P-3C/"The Pro's Nest", VP-30, NAS Jacksonville, FL) repeatedly calling "mainsail" with no response.
- 11232: USB 1626 CANFORCE 4229 (CC-130J #130605/8 WG, 436 SQN CFB Trenton, ONT) wkg TRENTON MILITARY with flight data passed.
- 1921 SENTRY 30 (E-3B #73-1675/552nd ACW, Tinker AFB, OK wkg TRENTON MILITARY with a HF radio check.
- 2345 CANFORCE 4235 (CC-130J #130606/8 WG, 436 SQN, CFB Trenton, ONT) wkg TRENTON MILITARY with flight data passed.
- 13927: USB 1519 REACH 1006 (AC-130U #89-0510/1st SOW, 4<sup>th</sup> SOS, Hurlburt Field, FL) wkg MARS Operator AFA7HS (Leawood, Ks.) with a personal phone patch.
- 2031 REACH 574 (C-5A #69-0009/105th AW, 137th AS, NY-ANG, Stewart ANGB, NY) wkg MARS Operator AFA4VP (Indiana) with a phone patch and flight data passed. [Aircraft reported itself as being over Italy.]
- 20390: USB 1656 CAPE RADIO repeatedly calling Freedom Star with no response.



Emblem of the 22<sup>nd</sup> Air Refueling Wing based at McConnell AFB, Kansas.



A KC-135 from the 22<sup>nd</sup> ARW, McConnell AFB, refuels a B-2 Spirit in-flight from the 509<sup>th</sup> Bomb Wing at Whiteman AFB.



Two bioenvironmental technicians from the 22<sup>nd</sup> Aerospace Medicine Squadron at McConnell record wet bulb measurements to determine heat indices that help airmen to better prevent heat-related injuries.

The Air Force Reserves' 931<sup>st</sup> Air Refueling Group joined the others at McConnell on January 1, 1995 providing aircrews while the 22<sup>nd</sup> provides the equipment and maintenance.

### Today: Still a Major Refueling Hub

McConnell Air Force Base today remains a major refueling hub and operates two runways — 1L/19R and 1R/19L — on 3,113 acres.

Aeronautical and support operations along with current active units are listed in our "Listening In" section. Also listed there you will find frequencies used by the 190<sup>th</sup> Air Refueling Wing with its 117<sup>th</sup> Air Refueling Squadron of the Kansas Air National Guard which is based at Forbes Field in Topeka.

Like its counterparts across the state, crews also fly the KC-135R. They operate off of one runway — 13/31 — on 193 acres.



Cars pass throughout the night past the Main Gate at McConnell Air Force Base.

# Anchors Aweigh! The Hallicrafters HT-32 Restoration, Continues

This is the third of a four-part series

by Peter J. Bertini  
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*“If you don’t have the experience or skills to comfortably work on (tube-based, high-voltage) gear, have a pro do it for you.”*

**T**his month we’ll be dealing with the HT-32 power supply — without a doubt, the most critical step in marking the HT-32 transmitter airworthy.

Before proceeding, I must warn potential HT-32 owners that **extremely dangerous voltages are always present in this transmitter, even during standby!**

The 800 VDC high-voltage B+ plate supply and the low B+ 350-volt supply are always energized *whenever the power is turned on*. The driver (12BY7) and the pair of final tubes (6146 transmitting tubes) have full voltage applied to their plate and screens at all times, as do many other of the other stages.

**Exercise extreme caution and remain fully alert and focused on what you are doing when working with dangerous voltages.**

One lapse into inattentiveness can kill you. Note that these deadly voltages are exposed and easily contacted below chassis, and inside of the shielded final cage on the exposed 6146 anode connections and on the RF plate choke.



**Photo A:** The leads for 5-volt rectifier filament windings are insulated and taped off inside the transformer housing.

*“We have an SX-101A amateur band receiver that will be restored and mated with the HT-32 in the near future.”*

If you don’t have the experience or skills to comfortably work on this type of gear, have a pro do it for you.

## Power Transformer Failure

Unfortunately, the HT-32 power transformers have inherent weaknesses and are failure prone. Many vintage power transformers meet an untimely demise when one succumbs to the temptation to plug an old rig in to “see if it still works.” This sets the stage for leaky filter capacitors to fail, a rather spectacular demise of the rectifier tube, which is quickly followed by the smell, smoke and sizzling noise of transformer windings being burnt to a crisp.

In the HT-32, the failure mode is a bit different — the problem is usually a catastrophic breakdown in the insulation between the 5-volt rectifier tube filament windings and the high-voltage secondary winding inside the transformer.

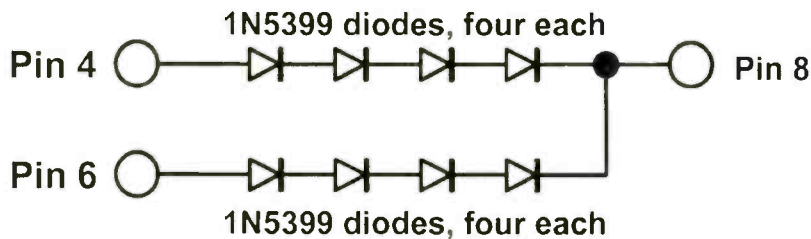
I suspect the failures involve deterioration of the organic insulating materials; and there is little that can be done to reverse or slow the process.

## Eureka! A Solution

If the transformer has survived for the past 60 years, replacing the tube rectifiers with solid-state devices will help to ensure it survives well into the future. The 5-volt windings for the two rectifier tubes are tapped off and not used. We’ll cover this later in the column.

I normally don’t rush helter-skelter to replace tube rectifiers with solid-state devices — unfortunately this is becoming an increasingly popular practice, the justification being doing so reduces transformer heating. This is not true! Permit me to explain why.

While the transformer winding may be delivering 3 amps of current for the filament, most of that 15-watts of energy is used to heat the filament, and with little lost as heat in the transformer.



**Figure 1:** This is the schematic for the replacement solid-state rectifiers. These will replace full-wave tube rectifiers that use a 5T base connection. This includes popular rectifiers such as the 5U4, 5V3, 5Y3, 5R4 and many others. (Photographs courtesy of K1ZJH)

If someone tells you that replacing a 5U4 — a rectifier with a 5-volt, 3-amp filament — with silicon diodes will reduce transformer heating by 15 watts, they are mistaken!

More importantly, Tom Rausch, W8JI, shows on his website how the low impedance of solid-state rectifiers results in increased peak charging currents that increase transformer stress — exactly what many are trying to prevent by eliminating the filament load. Visit: < <http://bit.ly/qTBAAZ> >.

These are the very brief high-current pulses that occur near the crest of each AC cycle where depleted energy is stored back into the filter capacitors. Besides, with very few exceptions, tube rectifiers are very reliable and have long operating life.

Tube rectifiers have a voltage drop between the plate and cathode, yielding the same effect as having a resistor input to the first filter cap. When this resistance is eliminated, the ripple current in the first filter cap increases, as well as the B+ voltage.

AC ripple currents have a large bearing on a filter capacitor's operating lifespan. The internal voltage drop between the rectifier cathode and plate also contribute to the supply filtering and the designers take this drop into account for the expected B+ operating voltage.

Another graphic example of how drastically a transformer's secondary current rating can be de-rated, depending on peak charging currents, can be inferred from the charts presented on the Hammond transformer website < <http://bit.ly/oAaL4B> >.

## Transforming the Transformer

The power transformer was removed earlier to facilitate chassis rust removal and chassis painting. As seen in **Photo A**, the bottom transformer cover is removed to expose the insulated wire leads as they emerge from the various windings.

The two 5-volt filament leads were trimmed back and the cut ends insulated with three layers of shrink tubing and electrical tape. Shrink tubing was used on the high-voltage leads to beef up the wire insulation, which seemed a bit light considering the high *peak-to-peak* AC voltages they carried!

I also added insulation over the transformer leads where they passed through the opening in the transformer bottom shell cover. Both the top and transformer covers were cleaned and given an overcoat of black spray lacquer paint. Light surface rust on the transformer core laminations was gently removed with steel wool.

A small amount of black lacquer paint was mixed with thinner, and this was lightly applied to the laminations using a rag dampened in the black lacquer. This applied just enough tint to darken the metal. The same treatment was given to the large filter HV filter choke to refresh its appearance.

## Solid State Rectifiers

The HT-32 uses two rectifier tubes. A 5V4 supplies the low B+ voltage, which is about 350 volts DC. A 5R4 is used for the



**Photo B:** Insulation was added to increase the voltage breakdown rating for the high-voltage secondary winding leads.

high B+ voltage supply, and the output on this supply can approach 800 volts or higher as the line voltage nears 120 VAC.

Both tubes have the same base, so I opted to build a universal solid-state plug-in replacement that would replace either tube. **Figure 1** shows the schematic for the replacement plug-in solid-state rectifiers. Two defective octal-based tubes were sacrificed to provide the octal tube bases and housings for the solid-state rectifiers. **Photo C** shows the two tube bases after the glass vacuum tube envelopes were removed, and the wire lead remnants de-soldered from the tube pins.

I decided 1N5399 silicon power diodes would be ideal devices to use in the new rectifiers. These diodes are rated for 1.5 amps and 1,000 volts. Its specs are slightly better than those of the more popular 1N4007 silicon diode.

Note that we need a peak-inverse-voltage (PIV) rating that is greater than 2.828 times the peak AC voltage of the secondary winding. I used four diodes for each leg of the full-wave rectifier replacement packages.

We use 2.828 times the RMS secondary voltage to determine the PIV rating, instead of 1.414, because the filter caps are charged over the full AC cycle, and they are in series with the diodes when they are reverse biased — the charge on the filter caps almost doubles the applied reverse voltage.





**Photo C:** The bases from two defective glass octal-based tubes were reclaimed to house the new solid-state rectifier replacements.

**Photo D** shows the diodes nestled into one of the reclaimed tube bases. A visit to the local hardware store yielded the two PVC plumbing caps seen in **Photo E**. Raised lettering on the dome of the PVC caps was removed with 100-grit sandpaper.

These were hot-glued over the sockets, and painted black giving them a profes-

sional appearance. The solid-state plug-in replacements are shown in **Photo F**.

### Dealing With Damaged Sockets

A previous owner replaced both of the rectifier tube sockets. The workmanship could have been better, so I replaced both

of the inexpensive molded Phenolic octal sockets with high-quality ceramic sockets.

The improved voltage rating was worth the small trade off in originality. And as discussed at the start, this radio was far from being a museum quality specimen when we began. I needed to enlarge the mounting holes by about 1/8 inch to accommodate the larger diameter of the replacement sockets.

This was easily done with my Dremel tool and a grinding bit as shown in **Photo G**.

**Photo H** is a rear view of the chassis taken after the major power supply work was nearing completion. The power transformer is the large black object at the far right.

The two solid-state rectifier replacements are seen behind the final amplifier cage shield. The rectangular gray object at the far left is the oil-filled 10-uF, 1,000-volt filter cap for the 800-volt B+ supply.

Unless it shorted or is leaking, there is no need to replace the oil-filled filter cap. The black transformer behind it is the filter choke for the high B+ supply. The small 7-pin miniature tube to the left of the replacement solid-state rectifiers is a ØA2 gas regulator tube. It supplies a regulated 150-volts DC for the transmitter VFO.

### Voltage Correction

As expected, both the high and low power supply voltages were running high



**Photo D:** Each side of the full-wave rectifier is comprised of four 1N5399 diodes in series for a total PIV rating of 4,000 volts. Note that modern avalanche mode diodes do not require equalization resistors or capacitors in parallel with each device.



**Photo E:** The plumbing section of the local hardware yielded two PVC cover caps that were ideal for protective covers over the solid-state replacement rectifiers. They are hot-glued to the old tube base shells.



**Photo F:** A coat of black paint makes the replacements look as good as the commercially made equivalents — at a fraction of the cost!



**Photo G:** A Dremel tool was used to enlarge the tube socket openings on the HT-32 chassis to accommodate higher-quality ceramic tube sockets.



**Photo H:** Many of the larger power supply components are back in place after being cleaned and painted.

due to the solid-state rectifiers. A 30-ohm, 10-watt wire-wound power resistor was added between pin 8 (cathode pin) of the 5R4 socket so it is in series with the filter choke for the high B+ plate supply.

A 100-ohm, 10-watt wire-wound resistor was added between pin 8 of the 5V4 socket and the first filter cap in the low B+ supply. The optimum values were determined by experimentation. Generally, a choke input supply will require less resistance but the opposite was observed here.

## The Bias Supply

As mentioned earlier, the transmitter stages are always powered, even during standby. The final tubes are biased into Class AB-1 operation at all times. This probably means the HT-32 would be a poor candidate for an electronic antenna changeover like the Johnson 250-39 T-R Switch, since the HT-32 PA stage would probably introduce broadband white noise into the receiver.

T-R switches use the transmitter Pi-Net to “tune” the T-R Switch input. The bias supply provides an unregulated, -49 volts grid bias for the two 6146 final tubes. The bias, screen and plate voltages all follow variations in the incoming AC line voltage, which I suspect keeps the final grid bias near the correct level over those variations.

The reliability of the bias supply is extremely important. If it fails, the final tubes will draw heavy current and self-destruct, possibly damaging the power supply in the process.

The components for the bias supply are shown in **Photo I**. The original rectifier was a selenium type, but it was replaced at some point with an early “top hat” style silicon rectifier. Restoration involved replacing most of the resistors, all of the capacitors and the early silicon “top hat” diode with a modern 1N5399 rectifier.

The reworked bias supply section is shown in **Photo J** — a view a bit obscured by the power transformer leads.

## Rebuilding the Electrolytic Filter Capacitor

I’ve shown how to rebuild can electrolytic capacitors in numerous columns — most recently in the Zenith 8G0005 TO restoration earlier this year.

A two-section, FP-mount type electrolytic capacitor was used in the 350-volt DC supply. This is C79A (60 uF at 475 volts) and C79B (40 uF at 475 volts) on the Hallicrafters schematic.



**Photo I:** The majority of the minus 49-volt bias supply components are mounted on the terminal strip. Note the replacement early-style diode that was used to replace the original selenium rectifier at some time in the past.



**Photo J:** The minus 49-volt bias supply after replacing all of the capacitors, out-of-tolerance resistors and the early silicon diode.



**Photo K:** The double-section, FP-style mount electrolytic metal can capacitor was gutted and rebuilt using new components.

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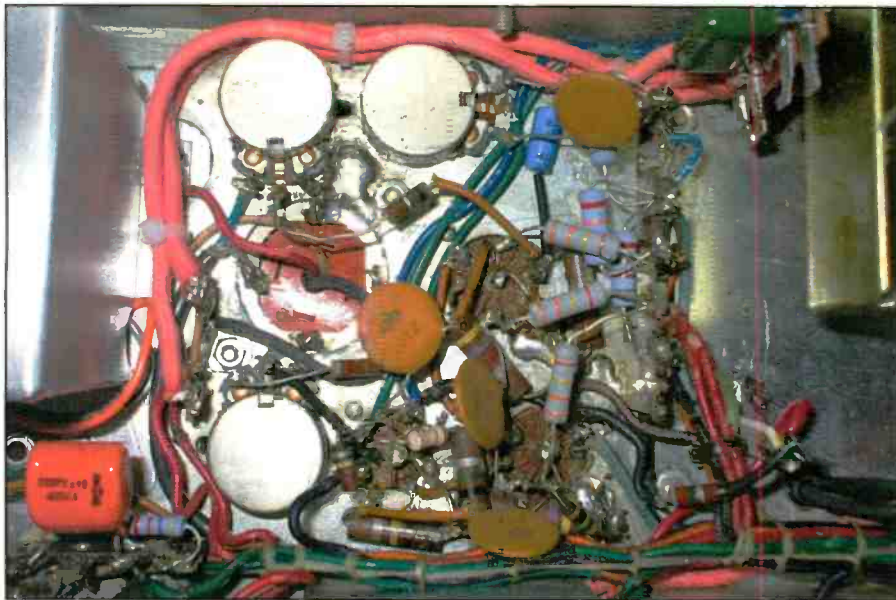


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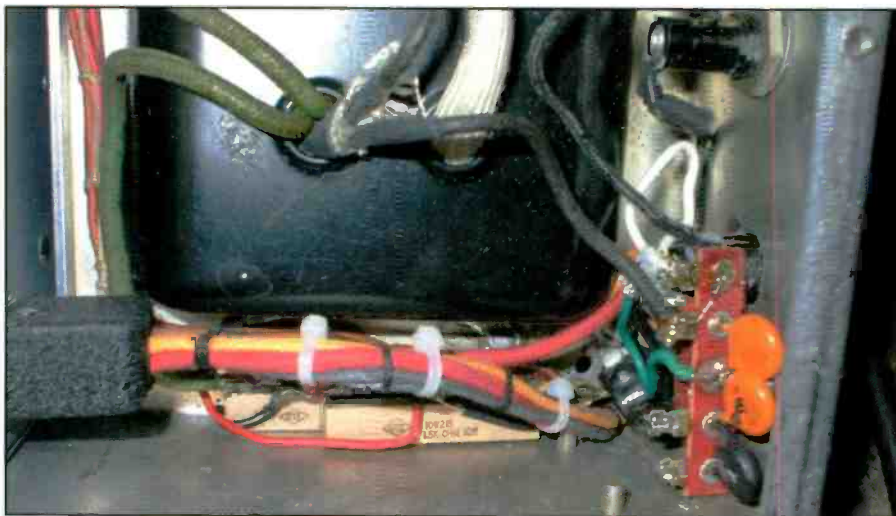




**Photo L:** All of the resistors were measured and those that were discolored or out of tolerance were replaced with new components.



**Photo M:** The two tubular power resistors shown in this photo are not original and were installed too close to nearby insulated wiring.



**Photo N:** The two resistors in **Photo M** were replaced with new, wire-wound resistors. The bodies of the new resistors were placed away from the wiring bundles, and also with their bodies against the steel chassis to aid heat dissipation. Note the AC wiring was updated for a new three-wire grounded and polarized AC cord.

These were replaced with modern near-value capacitors rated for 47  $\mu\text{F}$  and 80  $\mu\text{F}$  at 450 volts. The voltage is well under 450 volts on both capacitors.

The old filter capacitor was rebuilt, and **Photo K** shows the new parts being inserted into the empty shell as the capacitor was being reassembled. Instead of reusing the original base and solder lug connections, I ran insulated leads out to a new terminal strip mounted under the chassis.

### Odds and Ends . . .

Most of the other restoration work entailed replacing out-of-specification capacitors and resistors. For example, **Photo L** shows the HT-32 audio section with the out-of-tolerance parts replaced.

I'm beginning to favor carbon film or metal oxide resistors — these are far more value-stable than carbon composition resistors.

Another area where early repair efforts needed attention is shown in **Photo M**. The two tubular power resistors are the dropping resistors for the gas regulator tube.

These are parts R40 and R41 on the HT-32 schematic. These get quite warm, and they are replacements that were located much too close to nearby insulated wiring. The resistors were replaced with new wire-wound, 10-watt resistors. As can be seen in **Photo N**, they are now positioned with their bodies resting against the steel chassis. This improves the heat dissipation so they will run a bit cooler.

For safety, a polarized three-wire grounded AC line cord was added. The original AC bypass capacitors (C81 and C82) were replaced with capacitors UL rated for AC line bypass service.

They are the two orange-bodied disc capacitors mounted on the new terminal strip on the rear chassis apron. The power cord was wired so that the "hot" side of AC line is the side that is switched and fused.

### Rounding Third, Heading for Home

We'll conclude the HT-32 saga in our next column. We have an SX-101A amateur band receiver that will be restored and mated with the HT-32 in the near future. Hopefully we'll be able to feature that restoration soon, as well.

I'll also be mixing in lighter fare to better balance the column content. Until then, keep those soldering irons warm, and those old tube *boat anchor* rigs glowing!

## Taking a Scan Around Toronto's 'Golden Horseshoe'

by Ken Reiss  
[radioken@earthlink.net](mailto:radioken@earthlink.net)

One of the largest metro areas in Canada — and my personal favorite, although I have to admit I haven't been to all of them — is the Metropolitan Toronto area, also called the Golden Horseshoe.

Technically, the Golden Horseshoe is much bigger than just metropolitan Toronto, running south to Lake Erie and north as far as Georgian Bay, encompassing several counties and almost 20 percent of the population of Canada in that one small area.

Toronto itself is both the capital city of Ontario and the largest city in the country.

The Toronto Police department was founded in 1834 making it much older than many of the more famous police departments in the U.S. In 1835, Toronto hired five full-time officers, replac-

ing the system of *Watch and Ward* where able bodied males were required to report for night duty a certain number of times per year.

In 1859 the responsibility for the force was removed from the city council and replaced with a provincially-mandated Board of Police Commissioners, thus ending a very corrupt era for the department.

Prior to the board, the aldermen appointed local officers to their district for their term of service and expected the police to assist with "election matters."

Today, Toronto Police Service (TPS) is a modern department with patrol and investigative divisions, water services and a whole host of community service programs.

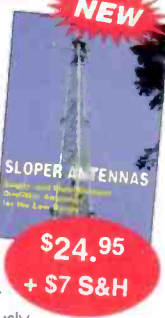


Metropolitan Toronto is the largest city in Canada, and the CN Tower is a well-known landmark.  
(Courtesy of AssetBurned)

## SLOPER ANTENNAS

By Juergen A. Weigl, OE5CWL

Single- and Multi-Element Directive Antennas for the Low Bands



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The Toronto Police Headquarters Building in downtown Toronto is an interesting deviation from the typical police headquarters building. (Courtesy of SimonP)



Not nearly as impressive from the rear, TCP headquarters is still not a normal city building. (Courtesy of GTD Aquitaine)

## Police - Headquarters

Conventional frequencies used in addition to the talkgroups on the Toronto Public Safety System.

Toronto Public Safety  
Motorola Type II SmartZone

Frequency	Tone	Description
861.68750	110.9 PL	HQ - 1 District - Central Field
861.48750	110.9 PL	HQ - 2 District - Area Field
861.93750	110.9 PL	HQ - 3 District - Area Field
861.66250	110.9 PL	HQ - 4 District - Area Field
861.43750	110.9 PL	HQ - 5 District - Central Field

## Police - Detective Services

Conventional frequencies used in addition to the talkgroups on the Toronto Public Safety System.

Frequency	Tone	Description
860.66250	110.9 PL	Investigative B1
860.98750	110.9 PL	Investigative B2
860.48750	110.9 PL	Investigative B3
860.93750	110.9 PL	Investigative B4
860.91250	110.9 PL	Investigative B5
860.18750	110.9 PL	Investigative B6
860.21250	110.9 PL	Investigative MSS 150
860.73750	110.9 PL	Investigative MSS 250
860.23750	110.9 PL	Investigative MSS 350
860.68750	110.9 PL	Investigative MSS 450
860.71250	110.9 PL	Investigative MSS 550
861.16250	110.9 PL	Investigative MSS 650
860.41250	110.9 PL	Investigative MSS 750
860.43750	110.9 PL	Investigative MSS 850
860.46250	110.9 PL	Investigative MSS 950
860.16250	110.9 PL	Investigative MSS 1050
863.73750	110.9 PL	Surveillance

## Police - Operational Services

Conventional frequencies used in addition to the talkgroups on the Toronto Public Safety System.

Frequency	Tone	Description
857.21250	110.9 PL	Emergency Task Force - Sim Ch. 1
857.46250	110.9 PL	Emergency Task Force - Sim Ch. 2
857.43750	107.2 PL	Court Services - Simplex
861.18750	110.9 PL	Marine Unit - Simplex

## Police - District Simplex Channels

Conventional frequencies used in addition to the talkgroups on the Toronto Public Safety System.

Frequency	Tone	Description
857.48750	110.9 PL	1 District - Simplex
857.18750	110.9 PL	2 District - Simplex
857.23750	110.9 PL	3 District - Simplex
857.43750	110.9 PL	4 District - Simplex
859.41250	110.9 PL	5 District - Simplex

## Police Zone 9

Frequency	Tone	Description
862.93750	110.9 PL	West City
861.73750	110.9 PL	East City
859.91250		Air 1 not in service
866.86250	123.0 PL	Air 2 (York/Durham helicopter)
867.86250	110.9 PL	Air 3 not in service
861.00000	67.0 PL	Air 5 not in service
151.29500		Emergency link to all services



The Ontario Provincial Police (OPP) also has a presence both in Toronto and in the surrounding area of the Golden Horseshoe. (Courtesy of Wladyslaw)



A VW Bug has been called into service as a Metro Toronto Police car. (Courtesy of Skeezix1000)

## Toronto Public Safety:

This is a Motorola Type II SmartZone trunked system that uses Analog audio, so a regular trunktracker scanner will work just fine.

Site	Name	Freqs		
1	TPS - South	857.1625	857.4125	861.4625
		861.7125	861.9625	862.2125
		862.4625	862.7125	866.3875
		866.8875	867.3875	867.4625
		867.7375		
2	TPS - East	860.2625	861.9875	863.2375
		863.6875	866.6125	867.1125
		867.61250a	868.08750c	
3	TPS - North	859.5375	859.8875	862.6625
		862.9125	863.1625	863.4375
		866.2375	866.73750a	
4	TPS - West	859.7125	862.1875	866.2625
		866.7625	867.2625	867.76250a
		867.98750c		

1 District Police Talkgroups  
Central Field Command - York , Western Downtown Area

13 Division may be patched with Highway Patrol

861.6875 110.9PL

HQ - 1 District - Central Field

(heard 14 Div. on foot patrol)

FM	Description	Tag
DEC		
4112	11 Division	Law Dispatch
4128	12 Division	Law Dispatch
4144	13 Division	Law Dispatch
4160	14 Division	Law Dispatch
4176	14 Division Substation (Exhibition Place)	Law Dispatch
4192	11 Division Tactical	Law Tac
4208	12 Division Tactical	Law Tac
4224	13 Division Tactical	Law Tac
4240	14 Division Tactical	Law Tac

2 District Police Talkgroups  
Area Field Command - Etobicoke

22 and 23 Division are usually patched talkgroups

DEC	Description	Tag
4368	22 Division	Law Dispatch
4384	23 Division	Law Dispatch
4416	22 Division Tactical	Law Tac
4432	23 Division Tactical	Law Tac

3 District Police Talkgroups  
Area Field Command - North York

32 and 33 Division are usually patched talkgroups

861.9375 110.9 PL TPS HQ3  
HQ - 3 District - Area Field

(heard on TTC Sheppard Subway Line)

FM	Description	Tag
DEC		
4448	31 Division	Law Dispatch
4464	32 Division	Law Dispatch
4480	33 Division	Law Dispatch
4496	31 Division Tactical	Law Tac
4608	32 Division Tactical	Law Tac
4624	33 Division Tactical	Law Tac

4 District Police Talkgroups  
Area Field Command - Scarborough

DEC	Description	Tag
4640	41 Division	Law Dispatch
4656	42 Division	Law Dispatch
4672	43 Division	Law Dispatch
4688	41 Division Tactical	Law Tac
4704	42 Division Tactical	Law Tac
4720	43 Division Tactical	Law Tac

5 District Police Talkgroups  
Central Field Command - Downtown Core, Midtown, Eastern  
Downtown, East York

51 and 53 Divisions are patched talkgroups and 54 and 55 Divisions  
are patched talkgroups

861.4375 110.9 PL TPS HQ5  
HQ - 5 District - Central Field

(heard on TTC Yonge - University - Spadina Subway Line)

FM	Description	Tag
DEC		
4736	51 Division	Law Dispatch
4752	52 Division	Law Dispatch
4864	53 Division	Law Dispatch
4880	54 Division	Law Dispatch
4896	55 Division	Law Dispatch
4912	52 Division Secondary	Law Talk
4928	51 Division Tactical	Law Tac
4944	52 Division Tactical	Law Tac
4960	53 Division Tactical	Law Tac
4976	54 Division Tactical	Law Tac
4992	55 Division Tactical	Law Tac

Police Zone 6 Talkgroups  
Specialized Operations Command

Highway Patrol is usually patched with 13 Division

857.2125	110.9 PL	TPSA1-ETF-S1	Emergency Task Force - Sim Ch. 1
857.4625	110.9 PL	TPSA2-ETF-S2	Emergency Task Force - Sim Ch. 2
861.1875	110.9 PL	TPS9F Marine	Marine Unit - Simplex

DEC	Description	Tag
5008	Highway Patrol	Law Dispatch
5120	Traffic Services Administration	Law Talk
5136	Traffic Services Support	Law Talk
5152	Traffic Enforcement	Law Talk
5168	Traffic Investigative	Law Talk
5184	Marine Unit	Law Tac
5200	Police Dog Services	Law Tac
5216	Emergency Task Force	Law Tac
5232	Parking Enforcement East	Law Talk
5248	Parking Enforcement West	Law Talk
5264	Public Safety Unit	Law Tac
5376	Public Safety Administration	Law Talk
5392	Mounted Units	Law Talk
5408	Fleet Services	Law Talk
5424	Radio & Electronics	Law Talk
5440	Video Unit	Law Talk

Police Zone 7 Talkgroups  
Special Events

DEC	Description	Tag
816	Temporary Use 1	Law Tac
832	Temporary Use 2	Law Tac
848	Temporary Use 3	Law Tac
864	Temporary Use 4	Law Tac
880	Temporary Use 5	Law Tac
896	Temporary Use 6	Law Tac
912	Temporary Use 7	Law Tac
1024	Temporary Use 8	Law Tac
1040	Temporary Use 9	Law Tac
1056	Temporary Use 10	Law Tac
1072	Temporary Use 11	Law Tac
1088	Temporary Use 12	Law Tac
1104	Temporary Use 13	Law Tac
1120	Temporary Use 14	Law Tac
1136	Temporary Use 15	Law Tac
1184	Temporary Use 16	Law Tac

Police Zone 8 Talkgroups  
Specialized Operations Command

857.4375	107.2 PL	TPSA8CRT SIM	Court Services - Simplex
DEC			Tag
5456	Document Services	Law Talk	
5472	Court Wagons	Law Talk	
5488	Court Officers	Law Talk	
5504	Old City Hall Court	Law Talk	
5520	College Park Court	Law Talk	
5632	Ontario Supreme Court	Law Talk	
5648	District Court	Law Talk	



5664	Young Offender Court	Law Talk
5680	West Mall Court	Law Talk
5696	East Court	Law Talk
5712	North Court	Law Talk
5728	Help Desk	Law Talk
5744	Internal Affairs	Law Talk
5760	Forensic Identification	Law Talk
5776	Homicide	Law Talk
5888	Training College	Law Talk

Police Specialized Operations Talkgroups  
Specialized Operations Command

DEC	Description	Tag
4352	TAVIS	Law Talk
4400	TAVIS	Law Talk
5968	Entertainment District	Law Talk
1152	Visiting Services	Interop
5904	Visiting Services Access to TPS	Interop
6096	Investigative Ops	Law Tac
6112	Unknown Investigative Ops	Law Tac
6128	Unknown Investigative Ops	Law Tac
6176	Unknown Investigative Ops	Law Tac

Queens Park Talkgroups

Also monitor:

410.4125	100.0 PL	OPP QNS PK	OPP – Queen's Park area buildings
DEC	Description		Tag
1168	Ch 1 – Security		Law Dispatch
1280	Ch 2 – Security		Law Dispatch

Police MSS Talkgroups  
Specialized Operations Command

DEC	Description	Tag
19200	MSS - Unknown Digital	Law Talk
19216	MSS - Unknown Digital	Law Talk
19360	MSS - Unknown Digital	Law Talk
19376	MSS - Unknown Digital	Law Talk
19392	MSS - Unknown Digital	Law Talk
19408	MSS - Unknown Digital	Law Talk
19440	MSS - Unknown Digital	Law Talk
19488	MSS - Unknown Digital	Law Talk

Fire Dispatch Talkgroups  
Dispatched on Site 001 - TPS South

DEC	Description	Tag
22416	Dispatch 1	Fire Dispatch
22448	Dispatch 2	Fire Dispatch
22480	Dispatch 3	Fire Dispatch
22512	Dispatch 4	Fire Dispatch
22544	Dispatch 5	Fire Dispatch
22576	Dispatch 6	Fire Dispatch
22608	Dispatch 7	Fire Dispatch
22640	Dispatch 8	Fire Dispatch
22672	Dispatch 9	Fire Dispatch
22704	Dispatch 10	Fire Dispatch
22736	Dispatch 11	Fire Dispatch
22768	Dispatch 12	Fire Dispatch
22800	Dispatch 13	Fire Dispatch
22832	Dispatch 14	Fire Dispatch
22864	Dispatch 15	Fire Dispatch
22896	Dispatch 16	Fire Dispatch

Fire North Command Talkgroups  
Fire Districts 11, 12, 13, 14 in North York

DEC	Description	Tag
20656	North Operations	Fire Dispatch
20688	N Tac 1	Fire-Tac
20720	N Tac 2	Fire-Tac
20752	N Tac 3	Fire-Tac
20784	N Tac 4	Fire-Tac
20816	N Tac 5	Fire-Tac
20848	N Tac 6	Fire-Tac
20880	N Strategic 1	Fire-Tac
20912	N Strategic 2	Fire-Tac
20944	N Fire Prevention	Fire-Talk

Fire East Command Talkgroups  
Fire Districts 21, 22, 23, 24 in Scarborough, East York and Eastern  
Downtown Toronto

DEC	Description	Tag
20336	East Operations	Fire Dispatch
20368	E Tac 1	Fire-Tac
20400	E Tac 2	Fire-Tac



A Zodiac police patrol boat is used on the lake. (Courtesy of GTD Aquitaine)

20432	E Tac 3	Fire-Tac
20464	E Tac 4	Fire-Tac
20496	E Tac 5	Fire-Tac
20528	E Tac 6	Fire-Tac
20560	E Strategic 1	Fire-Tac
20592	E Strategic 2	Fire-Tac
20624	E Fire Prevention	Fire-Talk

Fire South Command Talkgroups  
Fire Districts 31, 32, 33, 34 in Downtown Toronto

Station 346 is located at Exhibition Place and operates annually during the Canadian National Exhibition.

DEC	Description	Tag
20016	South Operations	Fire Dispatch
20048	S Tac 1	Fire-Tac
20080	S Tac 2	Fire-Tac
20112	S Tac 3	Fire-Tac
20144	S Tac 4	Fire-Tac
20176	S Tac 5	Fire-Tac
20208	S Tac 6	Fire-Tac
20240	S Strategic 1	Fire-Tac
20272	S Strategic 2	Fire-Tac
20304	S Fire Prevention	Fire-Talk

Fire West Command Talkgroups  
Fire Districts 41, 42, 43, 44 in Etobicoke, York and Western Downtown Toronto

DEC	Description	Tag
20976	West Operations	Fire Dispatch
21008	W Tac 1	Fire-Tac
21040	W Tac 2	Fire-Tac
21072	W Tac 3	Fire-Tac
21104	W Tac 4	Fire-Tac
21136	W Tac 5	Fire-Tac
21168	W Tac 6	Fire-Tac
21200	W Strategic 1	Fire-Tac
21232	W Strategic 2	Fire-Tac
21264	W Fire Prevention	Fire-Talk

Fire Training Talkgroups  
Training exercises at 947 Martingrove Rd., 4265 Sheppard Ave. E, 895 Eastern Ave., 200 Bermondsey Rd. and at the waterfront

DEC	Description	Tag
21296	Training 1	Fire-Talk
21328	Training 2	Fire-Talk
21360	Training 3	Fire-Talk
21392	Training 4	Fire-Talk
21424	Training 5	Fire-Talk
21456	Training 6	Fire-Talk

#### Fire Talkgroups

On scene fireground conventional frequencies:

411.7875		TFS FG 1	Fireground 1
411.8625	103.5 PL	TFS FG 2	Fireground 2
411.9875	103.5 PL	TFS FG 3	Fireground 3
415.3125		TFS FG 4	Fireground 4
412.7125	71.9 PL	TFS FG 5	Fireground 5
414.6375	85.4 PL	TFS FG 6	Fireground 6

DEC	Description	Tag
1808	Toronto Fire Common	Interop
1840	Toronto Fire Common	Interop
21744	Mechanical	Fire-Talk
22928	Unknown	Fire-Talk

#### EMS Zone A Talkgroups

Channels A1 to A4 are "Standby" - not on a call channels

Channel A9 - nothing programmed, A10 to A14 Back up Emergency Conventional channels

858.8875	118.8 PL	A10 Emrg B/U	A10 - Emergency Back up
----------	----------	--------------	-------------------------

858.3875	118.8 PL	A11 NW B/U	A11 - NW Back up
858.6375	118.8 PL	A12 NE B/U	A12 - NE Back up
862.7875	118.8 PL	A13 SW B/U	A13 - SW Back up
859.1375	118.8 PL	A14 SE B/U	A14 - SE Back up

DEC	Description	Tag
25616	A1 - NW District Standby	EMS-Talk
25648	A2 - NE District Standby	EMS-Talk
25680	A3 - SW District Standby	EMS-Talk
25712	A4 - SE District Standby	EMS-Talk
25808	A5 - Supervisor / Supports	EMS-Tac
	A6 - Patient Care Transport Unit/	
25744	Non-Emergency Ambulances	EMS-Talk
26704	A7 - Alerts 1	EMS-Tac
26672	A8 - Alerts 2	EMS-Tac
25904	A15 - Medical Control Secondary	EMS-Tac
25936	A16 - Medical Control Main	EMS-Tac

#### EMS Zone B Talkgroups

Channels B1 to B4 are "Enroute/At a call" channels

Channels B6 and B7 TEMS/Subway channels 1&2 in the Toronto Conventional listings

857.8625	118.8 PL	B6 Subway 1
868.0125	156.7 PL	B7 Subway 2

TEMS Channel B16 listed in Peel Region trunked system as talkgroup 3696

DEC	Description	Tag
25840	B1 - NW District Destination	EMS-Tac
26512	B2 - NE District Destination	EMS-Tac
26800	B3 - SW District Destination	EMS-Tac
26832	B4 - SE District Destination	EMS-Tac
26480	B5 - Toronto Fire Standby	EMS-Tac
	B8 - Special Operations - CBRN ,TAC	
26736	Medics	EMS-Tac
26608	B9 - Staging	EMS-Tac
26544	B10 - Special Events 1	EMS-Tac
26576	B11 - Special Events 2	EMS-Tac
26768	B12 - Special Events 3	EMS-Tac
25968	B13 - Special Events 4	EMS-Tac
26000	B14 - Special Events 5	EMS-Tac
25776	B15 - Special Events 6	EMS-Tac

#### Ontario Provincial Government-Southwest Zone

This is a Motorola Type II Smartnet system also, but there is some digital APCO-25 traffic on this system. There is also much analog traffic, so it's worth giving a try if you're so equipped. What's interesting is the frequencies that this system operates on!

Site	Name	Freqs	
2	City of Guelph 02GLPH	142.1700	142.41000a
		142.62000c	142.8150
		143.2650	
3	Cedarwoods 03CEDA (Kitchener)	141.4500	141.7200
		142.0500	142.0650
		142.65000c	142.8450
		143.1750	143.80500a
4	Listowel 04LIST	141.4350	141.6900
		142.23000a	142.32000c
		142.5150	142.5750
5	Ballinafad 05BALL	141.3600	141.5400
		141.7350	142.24500c
		142.4550	142.60500a
		143.2950	143.3250
6	Primrose 06PRIM	141.5550	142.0800
		142.44000a	142.72500c

6	Primrose 06PRIM	142.9500 143.5200	143.1150 143.6550	21	Woodstock 21WSTK	141.3000 141.3900 142.5300a 143.6400	141.3750 142.2600c 142.9950
7	Charlton 07CHAR (Hamilton)	141.4050 141.9300 142.3500c 142.8000a 1872 E Stratford	141.6300 142.2150 142.6350 143.0850 143.3850 Law Talk	22	Aylmer 22AYLM	142.2450c 142.6050a 143.0100	142.4550 142.9650
8	Durham 08DURH	141.6900 142.1100 142.5900c 143.0550	141.70500a 142.3350 142.8900	23	Brantford 23BRAN	141.4950 142.3950 142.8900 143.0550	141.7050c 142.5900a 142.9350 143.4000
9	Britannia 09BRIT (Mississauga)	141.4200c 142.3650 142.7550 143.0700 1920 E 143.7300	142.1850 142.6650a 142.9950 143.3100 143.5050 Law Talk	24	Dyers Bay 24DYER	141.5550 142.7250c 143.5200	142.4400a 143.0550
10	Port Stanley 10PSTN	142.1550 142.3500c 143.3250	142.2750 143.1000a	25	Goderich 25GODR	141.5250 142.2750 142.9650c	142.1950 142.5000a 143.1600
11	Cayuga 11CAYU	141.6750 142.3350 142.4850 142.8750	142.1400c 142.3800a 142.7100 143.7750	26	Sunderland 26SUND	141.4500 142.3200 142.8600 143.2800	141.7200 142.6500a 143.1000c
12	Woodlawn 12WDLN (Guelph West)	141.9750a 143.8500 143.8800 143.9550	143.1000c 143.8650 143.9400 143.9700	27	Ipperwash 27IPPW	141.6750 142.0050 142.5900c	141.7050a 142.3950 142.8150
13	Skylon Tower 13SKYL (Niagara)	141.5250 142.2000 142.6950	142.0950c 142.3050 142.9500a	28	Kincardine 28KCDN	141.1950 142.3800 142.9500c	141.3900 142.7100a
14	Wallaceburg 14WALL	141.5550 141.9300 142.2300c	141.7350a 142.1100 143.7300	29	Owen Sound 29OWEN	141.4500 142.6500c 143.1000a	141.7200 142.8600
15	Fonthill 15FONT	141.6900 142.3200c 142.5150 142.9650	142.1550 142.5000a 142.7400 143.0100	30	Penetang 30PENE	141.4050 142.2000 142.4250 143.0700a	141.6300 142.3500c 142.8000
16	Doyles (Chatham) 16DOYL	141.6900 142.5150c 142.7400	142.3200a 142.5450 142.9800	31	Sarnia 31SARN	141.1950 142.0650 142.7100c	141.3900 142.3800 142.9500a
17	Essex 17ESSX	142.0950 142.3650 142.6650a 142.9650	142.1850 142.5000 142.9050c	32	Simcoe 32SIMC	141.5550 142.4400a 142.9800 143.4150	142.2900 142.7250c 143.1600 143.5200
18	Byron 18BYRN (London)	141.4200c 142.1850 142.4850 142.8750 2080 E Spare 2	142.0350 142.3650 142.6650a 142.9050 143.2200 Law Talk	33	Stratford 33STRT	142.1400a 142.7400 143.1450c	142.3050 142.8300 143.3100
19	Wardsville 19WARD	141.4350 142.2150 142.6350c 143.0700a	142.0800 142.4100 142.6950	34	Kimberley 34THORN	141.4200c 142.3650 142.9950	142.1850 142.6650a
20	Windsor 20WNRD	142.0500 142.5300c 142.7250 143.1450a	142.2600a 142.5600 142.8300	35	Warton 35WIAT	141.3600 142.2450a 142.6050c	141.5400 142.4550
				36	Wingham 36WNGM	141.4050 142.3500a 143.0700c	141.6300 142.6950
				37	Whitby 37WHIT	141.3900 142.2900 142.4250 143.1450c	142.0500 142.3350 142.8300a
				38	Pontypool 38PONT	141.4950	141.7050a

38	Pontypool 38PONT	142.59000c 143.0550	142.8900 143.2650
39	King City 39KING	141.1950 142.14000a 142.7850 142.9800 39872 A 143.7750	141.6750 142.38000c 142.9200 143.3550 143.3700 Corrections
40	Mowat 40MOWT (Toronto)	141.3000 142.1100 142.90500c 143.6400	141.4350 142.68000a 143.3400 152.0000
41	Edgar 41EDGR	141.3750 142.0350 142.50000c 142.96500a	141.5250 142.2750 142.8150 143.0850

Ontario Fire Marshall Talkgroups  
Interagency/Common/Mutual Aid Talkgroups

DEC	Description
33088	Ontario Fire Marshall
DEC	Description
8000	MTO/MNR/OPP Common Channel
9584	Patch with Brantford Police Service
9600	Patch with London Police Service
9632	Patch with Peel Regional Police Service

9648	Patch with Toronto Police Service
9664	Patch with Waterloo Regional Police Service
9696	Patch with York Regional PD
32768	Public Safety 1
32816	Police Common
32832	Fire Common

OPP Southwestern Region Talkgroups

DEC	Description
8208	Brant County 6B - 1OPS01
8224	Bruce County 6R - 1OPS02
8240	Chatham-Kent 6D - 1OPS03
8256	Elgin County 6P - 1OPS04
8272	Essex County 6E - 1OPS05
8288	Haldimand County 6C - 1OPS06 (6Q First Nations)
8304	Huron County 6G - 1OPS07
8320	Lambton County 6M - 1OPS08
8336	Middlesex County 6J - 1OPS09
8352	North Grey 6L - 1OPS10
8368	Oxford County 6S - 1OPS11
8384	Perth County 6N - 1OPS12
8400	South Bruce 6I - 1OPS13
8416	Wellington County 6T - 1OPS14
8432	Norfolk County 6O - 1OPS15
8448	Spare (Future Use) 1OPS16
8464	Spare (Future Use) 1OPS17
8480	Spare (Future Use) 1OPS18
8496	Bruce Nuclear Power Plant - 1BNPD

OPP Greater Toronto Region Talkgroups

DEC	Description
8656	Aurora 5B - 1OPS38 Highway Safety Division (5A- GHQ , 5L- 407 )
8672	Burlington 5C - 1OPS39
8688	Town of Caledon 1S - 1OPS40
8704	Cambridge 5E - 1OPS41
8720	Toronto 5F - 1OPS42
8736	Niagara Region 5G - 1OPS43
8752	Port Credit 5I - 1OPS44
8768	Whitby 5K - 1OPS45
8784	Spare (Future Use) 1OPS46
8800	Spare (Future Use) 1OPS47
8816	Spare (Future Use) 1OPS48
8832	Spare (Future Use) 1OPS49

OPP Central Region Talkgroups

DEC	Description
8528	Barrie 1B - 1OPS30
8544	Collingwood & TOTBM 1O - 1OPS31
8560	Dufferin County 1N - 1OPS32
8576	Huron West 1H - 1OPS33
8592	MnJikaning 1M - 1OPS34
8608	Southern Georgian Bay 1K - 1OPS35
8624	Nottawasaga 1L - 1OPS36
8640	Orillia & Severn Township 1M - 1OPS37

OPP Tactical Talkgroups

DEC	Description
9376	Tactical 1 - 1TAC01 (London Comm Centre)
9392	Tactical 2 - 1TAC02 (London Comm Centre)
9408	Tactical 3 - 1TAC03 (London Comm Centre)
9424	Tactical 4 - 1TAC04 (London Comm Centre)
9440	Tactical 5 - 1TAC05 (Orillia Comm Centre)
9456	Tactical 6 - 1TAC06 (Orillia Comm Centre)
9472	Tactical 7 - 1TAC07 (Orillia Comm Centre)
9488	Tactical 8 - 1TAC08 (Orillia Comm Centre)
9504	Tactical 9 - 1TAC09
9520	Tactical 10 - 1TAC10

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## A Time and Place for Everything: It's the Fall Clearance!

by Shannon Huniwell  
melodyfm@yahoo.com

*"Vacation time is over. The leaves are coming off of the trees and our prices are falling too . . . Don't wait to rake in these values because soon they'll make like a tree and leave. . . boing!"*

**T**he set-up for this month's column begins on top of a small strip mall sometime during mid-June 1974 in Virginia . . . or might it have been Maryland? *Pop'Comm* subscriber Arne Baxter admits that the friendly neighbor who related this story just couldn't recall. Burned into the fellow's memory, however, were the words to a commercial that played at least once an hour on a little radio station housed in one of the mall's storefronts.

"Vacation time is over," lamented a novice announcer trying to sound like a serious 40-something. "It's true!" he emphasized over the slightly scratchy instrumental record, *Theme From A Summer Place* . . . "The leaves are coming off of the trees and our prices are falling too, for our giant FALL CLEARANCE SALE!!! . . . This week only! Don't wait to rake in these values because soon they'll make like a tree and leave."

And onto that lame punch line, the teenaged production man had added the bouncy sound effect, *boing!*

What was Arne's pal doing 10-feet above the radio station and in the inescapable vicinity of an outdoor speaker horn that was piping its audio to strip-mall shoppers? As part of a regional roofing company's itinerant crew, he was assigned to the hot tar-intensive task of revamping that property's topside.

Arne relays that his friend, then a college junior happy to have well-paying summer employment as a roofer, eventually ventured into the station lobby during a lunch hour to advise the management that their ubiquitous FALL CLEARANCE spot was either really early or way too late.

What he discovered inside the local AM was another college student in the process of earning tuition money. Her summer job consisted of serving as what used to be called a "Gal Friday," handling receptionist, telephone and secretarial duties, as well as minding the facility's automation machine which normally ran from 9 a.m. until 3 p.m., while the owner/morning show host made sales calls.

Apparently, though, during the week Arne's compatriot was roofing there, the station licensee and his wife (who normally pulled the mid-afternoon to sunset sign-off DJ shift) were on a well-deserved vacation.

*"(These) miscellaneous pictures and their explanations shall serve as the main merchandise to our metaphorical fall event. The stuff on 'special' ranges from extra renditions of QSL cards . . . to left-over images of people, places or things tangentially related to some previously covered topic."*

The kid who'd voiced the clearance commercial got a shot at filling in for the owner during morning drive. Reportedly, his jokes — which were offered as supposedly clever zingers after practically every song title — caused even the politer men on the roofing project to comment, "What an idiot!" — sometimes remarking so in *French*.

Meantime, the college girl (who didn't appear to possess any particular radio industry acumen) had received strict instructions to load the automation unit's tape cartridge carousels with carted commercials numbered exactly as noted on the program log. She showed Arne's buddy the gray and clear plastic cart containing that anachronistic Fall Clearance spot, and verified that its label number matched the digits on the official paperwork.

"Yeah, it's probably the wrong commercial," she nodded, "but I just do as I'm told. Besides, nobody else has complained about it." When her impromptu guest wondered why the store purportedly holding the fall clearance during early summer hadn't noticed the snafu, she shrugged, "I think maybe it's because they went out of business last winter."

**Historic Broadcasting Graphics —  
ON SALE NOW! EVERYTHING  
MUST GO! (boing!)**

The summer office help's matter-of-fact comment reminds me that there's an optimum time and place for everything. In my case, what comes to mind are the several dozen old radio/TV images parked on my computer's desktop since about January.

They bug me to include them somewhere relevant each time my iMac gets switched on, and I've been meaning to use them in various editions of Shannon's Broadcast Classics. So far, though, none have fit into any of this year's narratives.

Arne's email about his neighbor being driven nuts by an outdated fall clearance commercial gave me an idea how I might move some vintage visual merchandise from my computer files and onto the pages you hold in your hands.

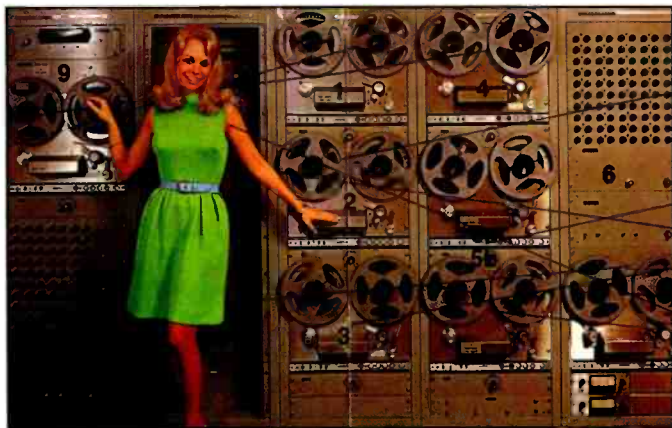
Perhaps you've deciphered how, by composing information-packed, small-font-sized captions for accompanying graphics, I often endeavor to offer a subplot to each SBC installment.

This time around, the miscellaneous pictures and their explanations — in normal type size — shall serve as the main merchandise to our metaphorical fall event. The stuff on "special" ranges from extra renditions of QSL cards depicting stations already mentioned since this column's October 2002 debut, to leftover images of people, places or things tangentially related to some previously covered topic.

Here's hoping the resulting inventory will prove to be a **BAR-GAIN BONANZA** from radio's and TV's fascinating past.

## Even the Dress Is Wrong

"Does the automation equipment in this catalog picture look like the stuff you saw in the strip-mall station?" *Pop Comm* subscriber Arne Baxter asked. His neighbor quipped that the girl in the station he visited wasn't wearing a green dress. "In fact, she wasn't wearing a dress at all," he reminisced as Arne shook his head. "I seem to remember that she had on a nice fitting pair of waist-high jeans with colorful embroidered butterflies on the back pockets."



Arne reminded his friend that it was the station's *electronic attire* he wanted to know about. The fellow thought for a moment and recalled the automation system being much smaller. "Just a single cabinet. The size of a refrigerator. It had two big reel-to-reel decks and one round unit where the commercial tape cartridges went."

Whatever the unit's brand, that little automation system was certainly less versatile than the Schafer rig shown here. Its inventor, Paul Schafer, is a true pioneer in the avenue of mechanizing radio programming. In 1956, he fit his initial system — some Seeburg brand, 45-rpm, automatic record players and several AMPEX tape decks (for station IDs, public service announcements and commercials) into KGEE 1230 kilohertz of Bakersfield, California.

Though incredibly clunky and primitive compared to today's completely digital (with no moving parts) radio automation,

Schafer machine number 1 allowed the 250-watt Golden State AM to run during the wee hours unattended.

Other broadcasters soon got word of the Bakersfield operation's overnight personnel cost savings, causing Schafer to develop an easier to program all-tape-based system and install them in over a thousand stations before such technology was supplanted by satellite-delivered programming services.

## An Ideal Home for a Hometown Station

This scene from a Jersey Shore community really depicts the brand of mid-century modern shopping that began quickly killing-off old time, parking-metered Main Street commerce.



A radio history buff, Arne (also an avid postcard collector) showed the image to his neighbor to gauge how closely it compared to the strip mall in our featured article.

Apparently, the one with the local radio station was only about three-quarters the size and didn't branch off in an "L" shape. "Still, though," Arne's friend remarked, "the one I helped reroof looked a bit like it, with a supermarket in the middle and cantilevered shelf canopy over the storefronts (including the little station's headquarters) on each end's facades."

If one could swing the rent, a strip mall represented an ideal studio home for a small broadcasting facility.

Such a venue offered lots of conspicuous parking for the station news cruiser (usually a station wagon with large lettering bragging the callsign), sidewalk visibility for a studio window, easy ad client/guest access and the perfect place to use a virtually indestructible *Electrovoice* 635A microphone connected to every spare microphone cable coiled on a pegboard in the production room!

## Room With a View

Here's a "big screen" TV, Eisenhower-era style! This Sparton-brand television set looks like it has a built-in security system . . . That is to say, few crooks would be able to lift the hefty video item into their getaway car — even without the optional UHF-tuning section installed.

Can you imagine the permanent impressions those four little legs could dig into off-pink or burnt orange wall-to-wall carpeting!

Sparton was a quasi-contraction of the name Sparks Withington Co., of Jackson, Michigan. The firm was founded circa 1900 to make components for agricultural machinery, got into car parts (most notably electric automobile horns), and then



during the mid-1920s, jumped into the fledgling electronics field. Its first radios were offered in 1926.

TV production got underway around 1948. To handle north-of-the-border production, a Canadian subsidiary, Sparton of Canada, Ltd., of London, Ontario, started around 1950. By the early '60s, the company had shifted to manufacturing products for military defense contracts, a more lucrative endeavor than consumer electronics.

Its last televisions were marketed about 1956 in the U.S. and until approximately 1960 in Maple Leaf territory. Most notably — for our historical musings — was Sparton's 1954 founding of WWTW, Channel 13 in Cadillac, Michigan. That brief foray into ownership allowed it into an exclusive club of TV makers that also operated television stations — the likes of RCA (NBC), CBS and DuMont. Raytheon earned a footnote in that category, as it once held the original construction permit to build Channel 2 in Boston.

## Accounting for a 'Free Gift'

I've had this image sailing around for at least five years, but never found a proper "story" port for it to drop anchor. Its tenuous link to this month's column is a recollection that Arne's neighbor retains regarding the strip-mall-based AM station on which the "fall clearance" ad was programmed.

While the guy didn't remember many details about the station, he did say there was a bank branch next door that was happy to cash his roofing company paycheck. The catch? Arne's friend had to open an account.



Even though he closed it the day the work was done and the crew moved on, he received a free gift for his trouble. Rather than the decorative ship lamp touted by the long-forgotten financial institution which distributed this card, however, Arne's buddy says he got a BBQ utensil set and a couple of pot holders printed with simple drawings of hot dogs and burgers.

## 'Steady Stream of Bikini-Clad Women'

Begun in 1941 with 250-watts on 1340 kilocycles, WWPG, West Palm Beach, Florida, had only been on the air a few years when this postcard image was prepared.

Everything looks so new and breezy. Check out the call sign pennant just below Old Glory . . . and those wicker chairs all set for some clever disk jockey to sneak an iced tea out on the veranda as an ABC Network program tickled the VU meter on the master control board inside.



Beautifully placed at 3000 S. Ocean Boulevard in Palm Beach, the station bordered a municipal beach. Some of the local AM's alumni DJs recall being pleasantly distracted by the sight of a steady string of bikini-clad women walking by a window on their way to the sandy shore.

Like many other stations, WWPG morphed into other identities as formats and call letters changed. It became WQXT circa 1967, ran a rock format and sistered with 100-kilowatt WMUM-FM at 97.9 MHz.

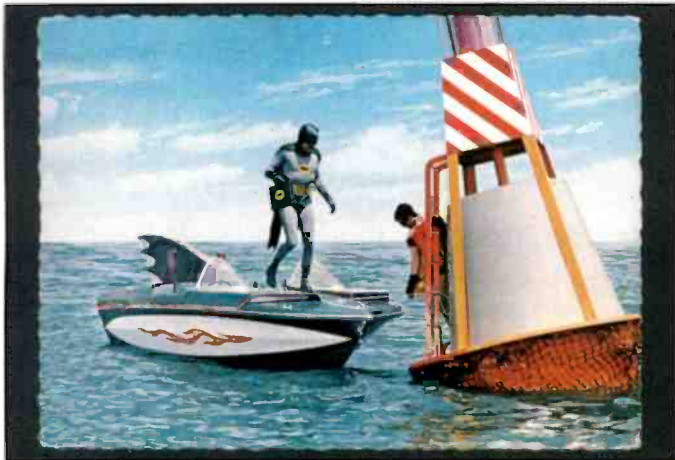
The city of license changed, too, moving — on paper, anyway — from Palm Beach to West Palm Beach and then back to Palm Beach.

## BAM! BANG! BOOM!

I've had this TV show promotional postcard floating around in my computer for months. Fans of vintage fiberglass hulls will recognize Batman's boat as being a customized *Glastron* run-about.

The Caped Crusader's sidekick, Robin, is helping dock the stylized craft to a radio-controlled and gadget intensive buoy. Many Batman buffs are surprised to learn that the crime fighters' deliberately-kitschy television series debuted on January 12, 1966 as a mid-season replacement offering. The show quickly became a super hit (BAM! BANG! BOOM!) for its youth-oriented network, ABC, but was sufficiently burned out by March of 1968 to get cancelled.

Of course, reruns are still on the air and cable here and there. During the program's zenith, Batman lingo was so popular that a radio jingle company successfully marketed a derivative of its signature theme, but replaced the word "Batman" with "That



Man,” and then tagged the jingle with a shout-out of the names of their client stations’ DJs.

Among the Top-40 outlets trendy enough to associate their air-personalities with the hottest TV show, circa 1967, was WPRO in Providence, Rhode Island.

Speaking of radio, the Mutual Broadcasting System provided Batman and Robin their first opportunities to fly over America’s airwaves. During the 1940s, MBS had the dynamic duo (via voice actors Stacy Harris and Ron Liss) make a few guest appearances on the network’s Superman show.

### This Showboat’s No Rowboat

When Davenport, Iowa’s Channel 6 (KWQC) was on VHF

channel 5 with the call WOC-TV, Cap’n Ken Wagner hosted one of the river boat-themed kiddie shows that long-ruled the station’s waves.

Wagner was followed by a trio of subsequent honorary paddle-wheeler commanders who helped helm the “Three Stooges” and cartoon-rich program from the early 1950s into the mid-70s.

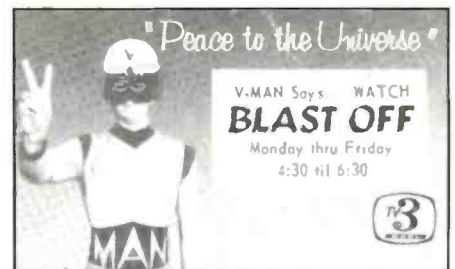


According to Tim Hollis’ enjoyable kids’ TV show book, *Hey There Boys and Girls!*, the final MC, Cap’n Ernie Mims, made the “showboat” Dixie Belle, “so real in the viewers’ minds that occasionally a visiting kid (in the studio audience) would express disappointment at his first sight of the set in the WOC-TV studios.”

To quickly redirect complaining youngsters, Cap’n Ernie would claim that the actual boat was being used to sightsee on the river, making it necessary that afternoon to use a stage lookalike.

### Space Available On Georgia’s WRBL

This tiny advertisement is one of the few traces of evidence that space aliens communicated with television viewers in the Columbus, Georgia media market.



Actually, the planetary visitor was named Jim Carlisle, and worked for WRBL-TV and served as sprocket-jockey (showing drive-in quality horror movies) while dressed in his self-styled, V-Man costume during weekday afternoons.

On weekends, Carlisle appeared as himself and MC’d professional wrestling matches for his television employers. The ad’s headline, “Peace to the Universe,” represents Carlisle’s or V-Man’s benediction, delivered with a Churchillian “V” gesture at his 6:30 p.m. sign-off time.

Had his set’s spacecraft been real, Carlisle might have been able to get a live shot of WRBL-TV’s 1,750-foot guyed tower, reported to have been the world’s tallest man-made structure . . . at least during 1962, the year of its completion.

Within 12 months or so, however, another broadcaster built a higher stick and snatched the distinction, just like we were doing to the Russians during the space race years that V-Man had UFO-fans scanning the skies.

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## Gene Shalit: Man About the Airwaves

When NBC radio and TV were really owned by the National Broadcasting Company, its air-personalities often pulled duty on both mediums. This 1970s ad promoted one of the original broadcast network's most ubiquitous hosts, Gene Shalit.

With a distinctly friendly (though certainly not "announcer-ish") voice that matched his signature big hair, big bow tie, full-size eye-glasses and wide mustache, Shalit commented on everything from movies to quirky politics.

A regular on NBC-TV's *Today* show, he arguably reached an even more-diverse audience via his radio stints on the weekend Monitor shows and 3- to 5-minute segments sent down the NBC radio affiliate lines.

My father is a big fan of Shalit, who also did voice work for characters on cartoons like *SpongeBob SquarePants*. While visiting WSBS in Great Barrington, Massachusetts, Dad was told about the time Shalit — who was vacationing in the nearby Berkshire Mountain area — was slated to do his NBC radio feed from the then 250-watt NBC affiliate housed in a notably modest locale.

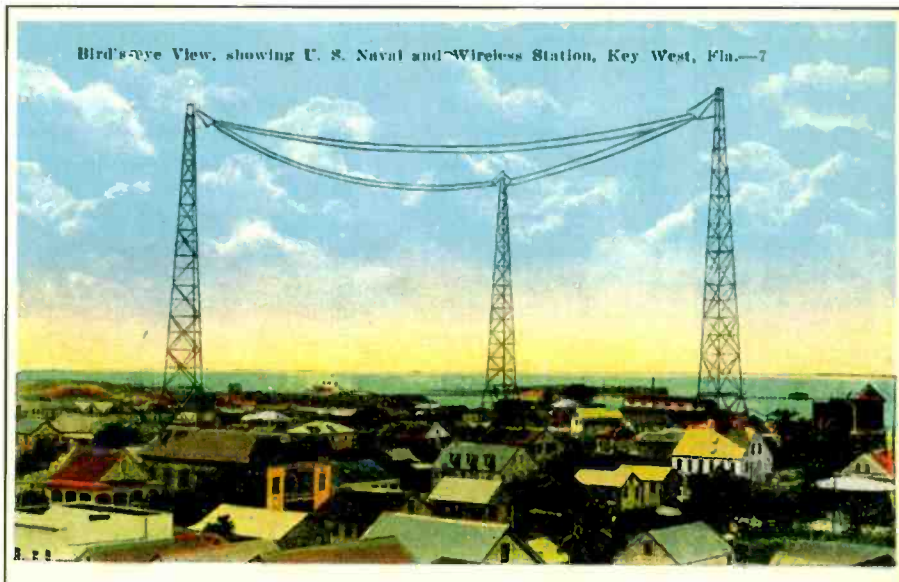
Shalit pulled into the station driveway only a few minutes before airtime and explained that he'd been "looking all over for your studios. I saw the tower," he admitted while being quickly ushered into WSBS, "but your building is so tiny that I figured this was only the transmitter site."

## Dots, Dashes and Lots of Wire

Had the photograph for this hand-colored postcard been snapped in 1917-1918, blimps and seaplanes would be seen over the Key West, Florida waters. They were based at the Naval facility and used to hunt German submarines lurking among the waves and recharging their motor batteries.

My guess is, though, the image was shot circa 1920 when only a few Navy men remained at the base to operate the service branch's nicely-positioned wireless transmit/receive station.

Dots and dashes were probably the major output. Reportedly, the '20s and '30s also saw some seaplane training maneuvers occurring overhead. No doubt the flight instructors offered serious warnings to their students: "Make sure you steer well clear of those towers and wires!"




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### 'Just the Facts, Ma'am'

WQPC was the 1,000-watt, "Calling All Cars!" station of the Illinois State Police at Chicago. While it normally transmitted on 1610 kHz, rumor had it that a clever ham cop who sometimes worked the late Sunday night/early Monday morning graveyard shift stashed a 7090-kHz crystal so that he could do a bit of radio amateur work when the local criminals were off duty.

This picture dates to about 1937. Knowing how sensitive FCC and law enforcement brass were in those days regarding the moral cleanliness of public airwaves, that rifle might be at the ready in case some gangster got the big idea of overpowering the radio officer and cussing out Elliot Ness over the microphone.

Hey, I wonder if they got a parking meter maid to read the meters on WQPC's Wilcox brand transmitter?

### 'But . . . But . . . But . . . Yes, Dear'

The "staged" expression on this guy makes one wonder if he's a real cop on the beat or a Motorola model used to advertise the communications equipment company's then new 2-way FM technology.



Rather than appearing to be getting some exciting assignment from the Commissioner's office, he looks like his wife is giving him an earful for volunteering to pull an extra shift instead of taking her shopping.

Those cars in the background date the photo in the late 1940s or early '50s. That was the sunset of the era when police car radios were receive-only and after getting a "Calling All Cars!" alert, an officer would pull over to the nearest call box and get the scoop from headquarters.

During the period of this publicity shot, Motorola also pushed FM transceivers that fit into a patrol car's trunk. Neat antenna with a signal light on top . . . Is that a UHF connector on the right hand side of the radio? And fancy that extruded aluminum crown on the call box. How municipal!

### Across From the World's Largest Bowling Alley

When network television show production began migrating from New York to Southern California during the early 1950s, more than a few movie and video fans started considering LA a "dream" vacation venue. Couple being part of a studio audience with sightseeing in Disneyland (beginning in 1955) and a media-loving family could really have some thrills in greater Los Angeles.



One spot where lots of TV tourists bunked was Hollywood's TV City Motel right on fabled Sunset Boulevard. Though in direct line-of-sight with the Mount Wilson television (and FM) transmitter towers, TV City Motel bedecked its flat rooftops with four sizable antennas.

The establishment's proprietor had connections with all of the local stations so that the motel's front desk always had a supply of free tickets to game shows, public affairs discussion programs and sitcoms. Arguably, the latter category was the most sought after, though not nearly as plentiful as were passes to low budget shows with which visitors from outside of the LA media market were probably unfamiliar.

By the way, motel guests who had their fill of TV were offered little incentives to try their hand at 10 pins in the "world's largest bowling alley" across the street.

### Hiding in Plain Sight

If it weren't for the little bit of four-legged self-supporting tower just behind the Harrisburg National Bank sign, it'd be tough to visually prove that this 1938 postcard had any radio connection.

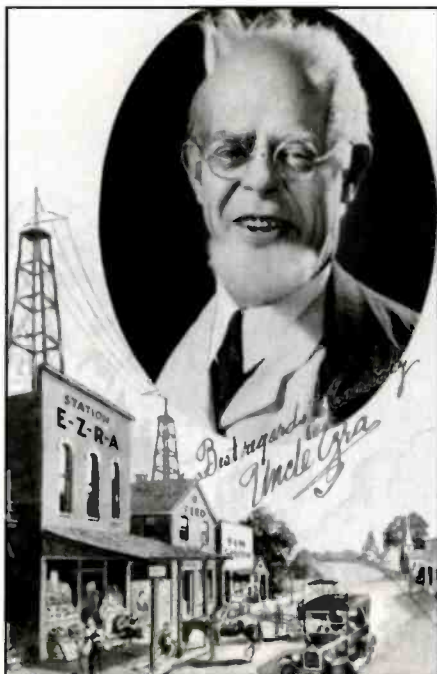


A *Stevenson's Radio Bulletin* from 1940 lists a WEBQ as hailing from Harrisburg, Illinois and being located in the 8-story bank building.

At the time, the station (founded in 1923) transmitted on 1210 kHz with 250 watts. It later moved to 1240 on the dial. Perhaps the bankers figured a hint of stick and caption mention of a "broadcasting station" would prompt WEBQ officials to cover some of the postcard printing costs.

### Sighs for 'The Good Old Days'

Don't waste your time searching old FCC databases for details of the fiction-



al AM station sporting the long-wire array on this promotional card. The only documented facts about station E-Z-R-A come from the imagination of radio actor Patrick Barrett, aka Uncle Ezra P. Watters, and are as follows:

"E-Z-R-A is a powerful 5-watt stick down in Rosedale, the friendly little city." Barrett first played the homespun advice giver and station owner in the late 1920s on WLS' National Barn Dance program out of Chicago.

It was one of the only live shows to charge its studio audience admission. In the 1930s, the National Broadcasting Company picked up the program for car-

riage over its Red Network. By the early '40s, NBC — under sponsorship of R.J. Reynolds Tobacco Co. — offered a spin-off called Uncle Ezra's Radio Station and sent it to real life affiliates three nights per week for 15 minutes.

With the stresses of World War II then beginning to infiltrate the lives of radio listeners, the image of a simple, slow-paced and peaceful circa-1925 rural America that Barrett transmitted via his fictitious facility made audiences tune-in, smile and sigh for *the good old days* — something that a well-programmed oldies music/DJ format can still do these days on terrestrial or satellite stations.

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# So, You Want to Buy a Radio Station?

by Bruce A. Conti  
[contiba@gmail.com](mailto:contiba@gmail.com)

*“Now could be the best time . . . Here’s a look at what your money can buy and how to get started.”*

**T**he real estate downturn has not only impacted home values — radio station values have dropped, as well.

Now could be the best time to buy a radio station, but the entry cost is highly dependent upon location. Understandably, brokers can be rather tight-lipped when it comes to revealing the details of a specific radio station for sale without signing a confidentiality agreement.

Listings are often generic in nature to protect the identity of a radio station, preventing employee stress and the potential loss of revenue due to an uncertain future. It’s also the job of the broker to ascertain a buyer’s qualifications before releasing proprietary information.

Still, an investigation of various broker listings does provide a good point of reference without

being committed. Here’s a look at what your money can buy and how to get started.

## Big City, Big Bucks

If you’re looking to make a move to big city broadcasting, then you’ll need plenty of financial backing. Be prepared for sticker shock with radio stations starting at seven figures in most major metropolitan areas of the U.S.

KVTT-AM in Mineral Wells, Texas — serving the Dallas-Ft. Worth metro area, licensed for daytime-only operation and at 1110 kHz with a power of 20 kW directional — recently sold for a startling \$2,625,000.

WHJX 105.7 FM, Baldwin, Florida, near Jacksonville, went for \$1 million. With the



With its scenic location, KWBI-FM translator K217BF, 91.3 MHz, Wheatland, Wyoming, sits near the top of Laramie Peak. (Courtesy of Wusel007, Wikimedia Commons)

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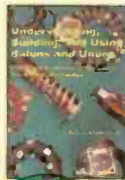
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A radio station sale may require lease of the transmitter site, or sometimes only the "stick," or antenna. (Courtesy of Bruce A. Conti)

amounts of money involved, there isn't much movement of these kinds of properties, and deals can take months, if not years, to conclude.

Prices become somewhat less painful for radio stations with limited coverage in the suburbs of a metro area. KRCM, Shenandoah, Texas, outside Houston, sold for \$575,000. It broadcasts fulltime at 1380 AM with 250 watts daytime and 69 watts at night.

Serving north shore communities just outside Boston, AM 1570, WNSH in Beverly, Massachusetts, runs 30 kW daytime — reduced to 85 watts at night non-directional with a 500-watt pre-sunrise authorization — was sold to a Spanish-language regional broadcast company for \$450,000 and now has a Spanish adult contemporary music format under the nickname "Viva 1570."

FM stations just beyond a metro area tend to remain high-priced, though. The full-service FM station relaying Boston's WFNX to southern New Hampshire from a transmitter site atop Pack Monadnock Mountain at 92.1 FM, was listed for \$1.1 million.

### Start Small

WGMI, in Bremen, Georgia, is a good example of a more reasonable investment for an individual seeking to enter the broadcast business.

It is a fulltime AM radio station at 1440 kHz and is non-directional. It runs 2.5 kW daytime, 62 watts nighttime with pre-sunrise authorization, and is located in the west metro Atlanta market.

Often a radio station sale doesn't include the transmitter site or broadcast building. The sale may require lease of the transmitter site, or sometimes only the "stick" (antenna). The license is for sale without a building or broadcast facilities.

A complete package for WGMI including a single tower antenna and broadcast office building with all equipment on three acres was listed for an asking price of \$325,000.

The deep south of the U.S. seems to be where some of the best deals can be found for an individual buyer. A northeast Alabama AM station near the Weiss Lake resort area, consisting of a studio and tower with a one-year-old, solid-state transmitter on 7.5 acres, was listed with great owner/operator potential for \$150,000.

Another Alabama AM station — this one including an FM translator, serving nearby Chattanooga, Tennessee — could have been yours for the asking at \$149,000.

WWON-AM in Waynesboro, Tennessee, a "True Oldies" music station, sold for \$110,000. It is a full-time broadcaster on 930 kHz from a single stick with a daytime power of 470 watts, nighttime 91 watts.

There are affordable stations to be found elsewhere across the country, as well. For example, bank-owned KDJQ in Meridian, Idaho, near Boise — broadcasting at 890 kHz with a powerful 50 kW daytime signal, reduced to a relatively puny 250 watts nights — was a bargain at \$139,500. "La Koza Tejana," KOZA in Odessa, Texas, a fulltime 1 kW AM station at 1230 kHz, was purchased for \$85,000.

More deals can be found for newly-licensed stations not yet on the air. AM 1060 KFOY in Sparks, Nevada, which is licensed for 15 kW daytime and 370 watts nighttime operation but not up and running as yet, sold for only \$50,000. However, it's reasonable to expect that further investment in the facilities — perhaps including some sweat equity — will be required to get a non-operational station on the air.

In some cases the station for sale hasn't even been constructed. An FCC construction permit for a new full-time AM station in Billings, Montana — at 1600 kHz with a daytime power of 5 kW and 1,250 watts overnight — was listed by a broker for \$9,500.

### Translation, Please . . .

The FM translator market has been especially hot since the FCC began allowing rebroadcast of AM radio. FM translators are used to relay nonprofit networks, and to fill deficiencies in coverage area for full-power AM and FM stations.

Keep in mind that translators are prohibited from transmitting any programming not also transmitted on an originating or primary station at the same time. Although FM translators typically sell for less than \$100,000, prices vary widely.

Early this year, K276FK at 103.1 FM in Pinecliff, Colorado, near Denver, sold for \$375,000 for the purpose of rebroadcasting AM 950 KRWZ. W262BN, licensed to Lorain, Ohio, was sold to a broadcast corporation for \$90,000. W225BB, at 92.9 FM in Battle Creek, Michigan, sold for just \$10,000.

### Going On the Hunt

This is just a small sample of the variety of broadcast investment opportunities out there. Search the Internet for "radio sta-

Your Classic Hits Station  
**WGMI 1440**  
*The Train*

Bremen, Georgia's WGMI "is a good example of a more reasonable investment for an individual seeking to enter the broadcast business." (Courtesy of Bruce A. Conti)

**This Month in Broadcast History**

*75 Years Ago (1936): Professor Quiz* premiered on CBS as the first radio quiz show. Contestants won \$25 for correct answers. President Roosevelt used his radio address to introduce the Second New Deal, which included the Works Progress Administration, Social Security and new taxes in response to criticism that the original New Deal didn't go far enough.



*50 Years Ago (1961): Big Bad John* by Jimmy Dean, topped the Radiant Radio Fabulous 50 Tunedex on 1570 WHOT Youngstown, Ohio.

*25 Years Ago (1986):* The Fox television network debuted on broadcast affiliates nationwide with *The Late Show* starring Joan Rivers.

tions for sale" to get a better idea of what's currently available and to locate brokers.

When you're ready to get serious, it's time to contact an online broker to begin a more targeted search for properties that suit your interests and finances. Remember that it doesn't hurt to talk to brokers and get them working for you, but in many cases you will be required to sign a confidentiality statement.

Don't be afraid to talk to local radio station owner/operators for recommendations either, as most would be more than happy to give advice.

**Before You Buy**

Don't get stuck with a lemon. Just like buying a home, a professional facilities



Now known as "Viva 1570," WNSH in Beverly, Massachusetts was sold to a Spanish-language regional broadcast company for \$450,000. (Courtesy of Bruce A. Conti)

inspection is well advised before initiating a contract. Identify exactly what is included in the deal. Obtain a complete listing of the make, model and year of the antenna tower; transmitter; audio gear and computer equipment; and then inspect all equipment for signs of wear or potential maintenance issues.

Pay particular attention to the condition of the antenna and ground system. Offer to pay a local broadcast engineer to assist with inspection and provide an objective opinion.

Consult with an attorney to assess any contractual obligations with station employees, subcontractors, advertisers, brokered or syndicated programs and network affiliates. Review lease agreements such as the terms for a leased tower site. Check for outstanding litigation or adverse FCC actions. Make sure all real estate is free and clear of liens or short sale complications.

Take a look at the cash flow too, as you will be entering a business venture and profits are critical to survival.

**If Gets Complicated**

Purchasing a radio station involves more than a transaction between the sell-

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er and buyer. Again, just like buying a home, bank financing is involved along with a pile of paperwork.

Obviously the lending environment is tough in this economy. You'll need to put together a business plan to convince the bank to give you a loan. Expect a minimum down payment of 20 percent. Look for owner financing of small market stations.

The National Telecommunications and Information Administration (NTIA) is an executive branch agency within the U.S. Department of Commerce that primarily advises the president on domestic and international telecommunications and information policies.

The NTIA manages federal use of spectrum including public safety operations, performs research and engineering for public and private sector development such as in promoting more efficient use of radio spectrum and administers public telecommunications infrastructure including the expansion of broadband technology.

**Things to Keep In Mind**

The NTIA promotes small business development in the communications

field, and offers the following tips when considering the purchase of a radio station.

- Local radio station owners can be contacted directly to ask if they would be interested in selling, but station brokers and communications attorneys are recommended to assist with identifying stations for sale and closing the deal.

- The FCC does not maintain a list of stations for sale, nor is it directly involved with a sale. However once a purchase contract is signed, the FCC must be notified by Form 314 to request assignment of the station from the previous owner to you. Both parties to the transaction must sign Form 314. You cannot take over operation of the station until the application for reassignment is approved by the FCC.

- An applicant is required to certify compliance with many statutory and regulatory requirements such as the Anti-Drug Abuse Act of 1988, anti-discrimination policies and FCC rules for ownership of multiple stations.

- The Form 314 filing fee is \$565 for a single radio station transaction. Electronic filing is mandatory via the FCC Media Bureau website: < <http://www.fcc.gov/mb> >. Once the reassignment has been granted, the sale must be consummated within 60 days and the FCC notified of the consummation within 24 hours followed by filing Ownership Report Form 323 with the FCC.

- In addition to the FCC consent to reassign application, an FCC Registration Number (FRN) needs to be assigned to the applicant before the whole process can begin. The FRN, a 10-digit identifier, is required for anyone doing business with the FCC. An FRN can be obtained electronically at the FCC Media Bureau website or by manually filing FCC Form 160. Furthermore, Part 73 of Title 47 of the Code of Federal Regulations (47 C.F.R.) requires that applicants for consent to

reassignment give local notice in a newspaper of general circulation in the community to which the station is licensed, and broadcast notification over the station if operating. Publication in the newspaper is not required if it's the only operating station in its broadcast service licensed to the community involved. The pending sale contract and FCC applications must be retained in the station public inspection file until final action is taken.

## New Construction

New construction is difficult to find, although, as mentioned earlier, construction permits already issued by the FCC can be bought and sold. The FCC is not accepting applications for new AM radio stations at this time, so opportunities are available only for the purchase of existing stations and permits.

Openings for new FM stations have been through FCC auctions. The last auction was conducted in March with the winning bidders announced in May. Consult "How to Apply for a Broadcast Station" at the FCC Media Bureau website for further guidance if you really want to start from scratch.

## Go Boldly Forward

There's certainly plenty to think about when considering the purchase of a broadcast radio station. Hopefully this didn't scare you away from the dream of someday owning your own. Don't be discouraged. It can be done!

*Next month it's the annual DXpedition edition of Broadcast Technology. We'll be heading to the top of the world to log exotic signals on the AM broadcast band. Until then, as always, 73 and Good DX! – Bruce A. Conti*

---

## Tuning In (from page 4)

itoring station activities. An array of award certificates honoring monitoring achievements, as well.

- **MODES AND PLATFORMS:** We'll celebrate five decades of evolving monitoring interests that began at our historic foundation — shortwave and broadcast band DXing. Our scope will be inclusive, sweeping across the broad monitoring spectrum. With your help, we'll shine light on the latest monitoring technologies, the Internet and mobile platforms as we push forward.

- **PRINT COVERAGE:** Beginning with the January 2012 edition, a Monitoring Station column will be carried regularly in the pages of *Pop'Comm*.

- **ON THE WEB:** Internet components will include those that give members and users ready access to our station ID sign database, awards information and certificates, as well as the latest news about the *Pop'Comm* Monitoring Station Program.

- **ALL OF US:** Our vision is of a *Popular Communications* Monitoring Station community that is foremost friendly, helpful, honorable, enthusiastic and inclusive.

Initiatives of this scope can be challenging to launch and administer. In the coming months we'll be fine tuning these basic concepts and developing a timetable for specific implementation of the puzzle's many pieces.

Meantime, as a potential *Pop'Comm* Monitoring Station Program member, if you'd like to volunteer your services, or have expertise with the Web, as a writer or in club administration, we'd like to hear from you. This is a community in the truest sense. The greater member involvement, the stronger we will be.

Of course, we welcome your comments and ideas. We will keep you updated each month as we close in on a Happy New Year.

## Pop'Comm's 30th Year

With its first issue in September 1982, founding editor **Tommy Kneitel**, then-**K2AES** (later **W4XAA**) (SK) and CQ Communications Publisher **Dick Ross**, **K2MGA**, set in motion what would soon become a marquee publication in a very competitive industry — *Popular Communications*. We proudly find ourselves in the midst of our 30th year of publication.

*Pop'Comm's* longevity is a tribute in itself to the tremendous staff and management that has carried a torch of excellence for three decades.

As newest kid on the block, I tip my hat to Tommy and his editor-successors: **Chuck Gysi**, **N2DUP**; **Harold Ort**, **N2RLI**; and **Edith Lennon**, **N2ZRW**, and to all of the hard-working, incredibly talented people behind the scenes who make this magic happen every month.

– *Richard Fisher, KI6SN*



## readers' market

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## Not in the Mooooo'd for the Heat or the Hassle

by Bill Price, N3AVY  
chrodoc@gmail.com

*"Air conditioners can be quickly analyzed and repaired. Interference cannot."*

**H**erd of cows? Yes, I've heard of cows. There is a herd of cows living behind my house.

Today, a Saturday, I was sleeping in until 7 a.m. when I awoke to call our company's trusty air conditioner service people (making my HPJIE\* easier since 1993). I'm writing this during a Guatemalan heat wave that crossed the country's midsection and landed squarely on Cowfield County and its nearby metropolis, where our transmitters chug along, tirelessly for the most part, until they get really hot.

During a recent 2-day power outage (which targeted ONLY our transmitter building) we had some pretty high temperatures in the building, followed by the complete failure of two of our three enormous air conditioners, which usually back one another up as in tag-team wrestling. With the failure of the third — they were "down for the count."

Our trusty air conditioner service company was also booked up beyond belief. I had to enlist the services of a stranger.

Since I was working from home, using my cellphone to find help, I was able to continue, uninterrupted even after discovering that there were 12, full-grown cows and steers roaming my backyard, planning an escape to a nearby shopping center. I held them at bay with convincing chatter and a long stick in each hand until reinforcements arrived from the landlord's other farm and we got them back within their fence. Did I mention it was over 100 degrees F?

So, working from my stylish Cowfield County manse, I got to know every air conditioner tech within driving distance of our transmitter building. They were all polite, all courteous, but none of them could get to our site for at least four working days. Eventually, I came upon a small residential A/C service company and told them, "We'll pay double," without even asking for their rate. I think they understood our plight. They were onsite in a couple hours.

The site is located in a high density area crammed with light industry, but we eventually got the techs to the right gate, identified the lock and had him dial in the combination. From there, getting him the several keys from the lockbox was easy, and he was in the building where I told him he was now on his own and that I knew (and still know) very little about air conditioners, but I'd be here to help him with anything else that had to do with the building.

*"Working from my stylish Cowfield County manse, I got to know every air conditioner tech within driving distance of our transmitter building . . . but none of them could get to our site for at least four working days."*

I said we would be very grateful if he could get one of the units working, and even more so if he could get a second, or even a third unit running. Although he and I did not speak much of each other's language, we seemed to work well together. He was able to make one good unit of the three, leaving two needing new compressors and contactors. Our broadcast equipment would no longer suffer.

It's hard to weave two plots together (not counting the great cow escape), so I'll just lay this next one at the bottom of the page: At the same time our power came back on, and at the same time our three giant air conditioners failed, an unknown source began to interfere with the signal we transmit to our clients.

Air conditioners can be quickly analyzed and repaired. Interference cannot. It must be searched out, and the sources — the *types* of sources, and their location(s) can take days or weeks to identify. Clients have little patience for our plight.

My boss, who is really good — or really lucky — found the source in record time and we got the interference resolved at just about the same time as the air conditioner came back into service. I'm not sure what he used to threaten the offending interferer — it's not my job to know.

The two of us, in conjunction with our collective boss, had very little to say except that each of us said, at the end of a very hot day at the end of a very hot week, "I'm getting too old for this . . . uh . . . stuff."

Next week *has* to be better.

*(Price vividly remembers those magazine ads where a guy took a correspondence course to escape a tyrannical boss named Mr. Bemis, and get a "High-Paying Job In Electronics." He's still waiting to spend a day at the bench with a scope and a soldering iron like the guy in the picture. — Ed)*

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