

# POPULAR COMMUNICATIONS

MAY 2010

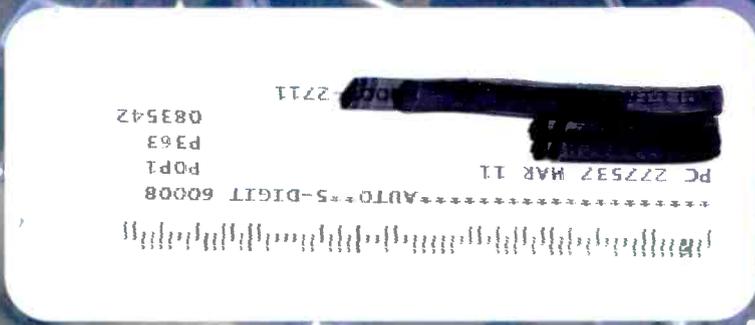
Shortwave Listening • Scanning • AM & FM • Radio History

## Long-Distance Marine Monitoring Listen To Maritime Traffic From Almost Anywhere

**Tech Showcase:  
Uniden's 22-Channel  
GMRS/FRS Two-Way  
Radios, p. 22**

**All Scanners On Deck  
For Fleet Week 2010, p. 24**

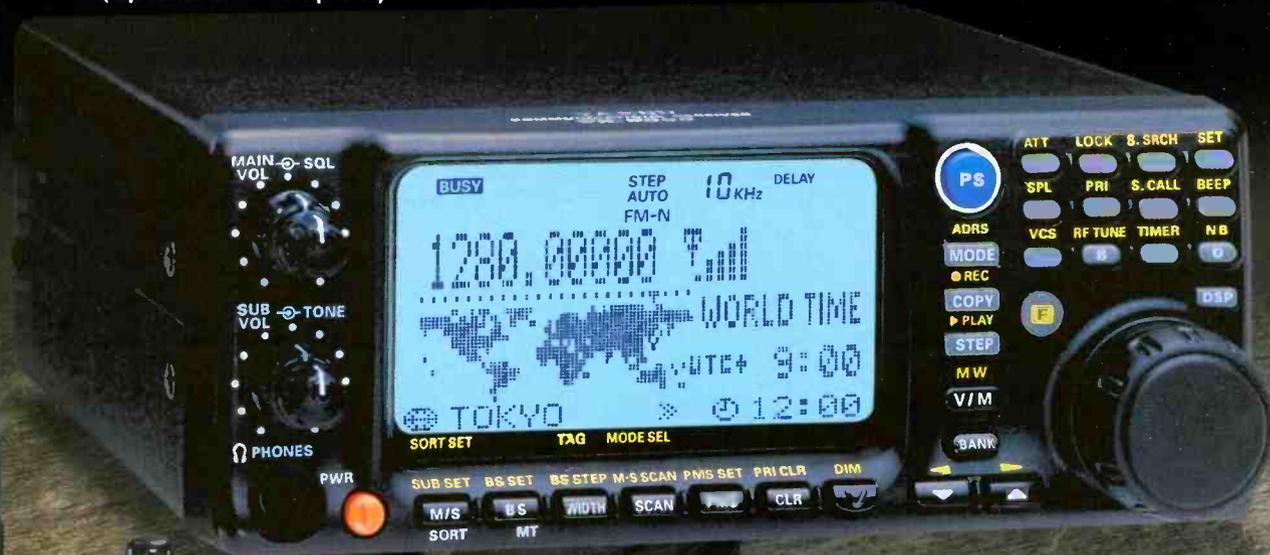
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An Era Ends With LORAN-C Signal's Demise •  
Monitoring New York-Metro Airports**



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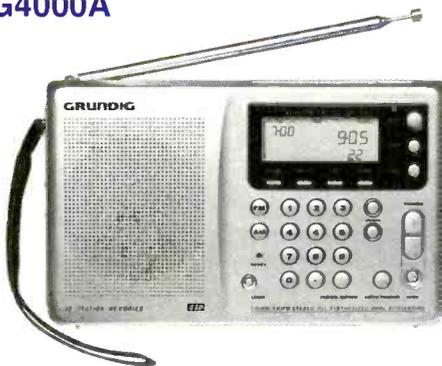
**G4000A**      \$129.95  
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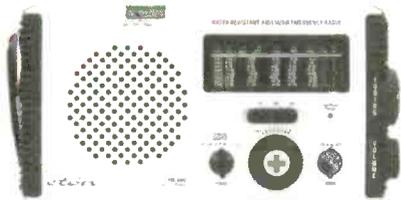


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For the landlubber and seadog alike, there's an ocean of interesting radio traffic out there, if you know where to listen. See "Easy Long-Distance Monitoring Of Maritime Mobile Voice Channels," by Gordon West, WB6NOA, starting on page 10, for how to tune marine comms. (Cover photo: officers of the New Jersey State Police Marine Division on patrol off Point Pleasant, New Jersey, by Larry Mulvehill, WB2ZPI)

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## EDITORIAL

### Tuning In

by Edith Lennon, N2ZRW

[editor@popular-communications.com](mailto:editor@popular-communications.com)

*In February of this year, I turned the editorial page over to Pop'Comm columnist Gordon West, WB6NOA, to share his thoughts on FCC rules regarding ham communications on behalf of an employer and its October 20, 2009, Public Notice regarding it. This month I also got a request for this same space from another Pop'Comm regular, Tom Swisher, WA8PYR, who wanted to weigh in. Again, if you're a ham, you likely have your own strong feelings about it; if not, well, never turn your back on Zeitgeist.—ed.*

## Does It Ever End?

by Tom Swisher, WA8PYR

First came the Part 97 rule from the FCC, then the Commission's recent Public Notice to clarify it, then Gordon West's guest editorial in *Pop'Comm*. Since I'm a county radio system administrator and a regular participant in emergency drills (and a ham for 30 years), the rivulets of thought naturally started running on a fast course.

Basically, the FCC announcement was intended as clarification to §97.113(a)(3), which generally prohibits amateur communications in which the amateur has a pecuniary interest, or those *on behalf of an employer*. At first glance, it is an absolutely stunning announcement from the FCC that, on the surface, appears to prohibit employees of agencies taking part in emergency drills from participating in these drills in an amateur radio capacity...even if we're off duty or on our lunch hour.

However, a couple of important points were left out of Gordon's fine commentary. First and foremost is that we as employees can continue to participate in these drills, *as long as the agency sponsoring the drill obtains a waiver of the rules in advance of the drill*.

What this means is that to enable our participation the government agency sponsoring the drill must request a waiver from the Wireless Telecommunications Bureau for the drill, and include the following information:

1. Date, time, and location of the drill;
2. A list of the amateur licensees expected to participate;
3. The employer(s) on whose behalf the communications will be made;
4. A brief explanation of the drill.

Even more importantly, the waiver must be granted *before* the drill takes place. An application isn't enough; the waiver has to be granted. And so far, the FCC has been quite willing to grant these waivers as long as they are properly prepared and filed.

The other point Gordon didn't clearly mention is that the above restrictions do not apply for an actual emergency. The Part 97 rules specifically state that an amateur station may use "any means of radio communication at its disposal to provide essential communication needs in connection with the immediate safety of human life and the immediate protection of property when normal communications systems are not available." We're, of course, not about to fire up the old 2-meter rig on the local Sheriff's frequency, but we're certainly going to put it to good use passing other emergency traffic as needed by the agencies requesting our assistance.

Taking all that into consideration, our initial dismay with the FCC decision can now be tempered to muted grumbling about more government nonsense, but let's stop and think about this for a moment.

The idea is that the employee ham(s) cannot participate *sans* waiver because they have a pecuniary interest in the operation (they're being paid). But how many other events take place on the radio in which the ham has a pecuniary interest? For example, hams sell gear over the radio, or use the phone patch to order a pizza over the radio. The operator certainly has a pecuniary interest in such

*(Continued on page 78)*

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The handheld BCD396T scanner was designed for National Security/Emergency Preparedness (NS/EP) and homeland security use with new features such as **Fire Tone Out Decoder**. This feature lets you set the BCD396T to alert if your selected two-tone sequential paging tones are received. Ideal for on-call firefighters, emergency response staff and for activating individual scanners used for incident management and population attack warning.

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The handheld BC246T TrunkTracker scanner has so many features, we recommend you visit our web site at [www.usascan.com](http://www.usascan.com) and download the free owner's manual.

Popular features include **Close Call Radio Frequency Capture** - Bearcat exclusive technology locks onto nearby radio transmissions, even if you haven't programmed anything into your scanner. **Dynamically Allocated Channel Memory** - Organize channels any way you want, using Uniden's exclusive dynamic memory management system. 1,600 channels are typical but **over 2,500 channels are possible** depending on the scanner features used. You can also easily determine how much memory is used. **Preprogrammed Service Search (10)** - Makes it easy to find interesting frequencies used by public safety, news media TV broadcast audio, Amateur (ham) radio, CB radio, Family Radio Service, special low power, railroad, aircraft, marine, racing and weather frequencies. **Quick Keys** - allow you to select systems and groups by pressing a single key. **Text Tagging**

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# The Weirder Side Of Wireless

by Staff

## Smile, You're On Cyber Camera

A federal class action lawsuit filed in Pennsylvania accuses a suburban Philadelphia school district of covertly watching its students in their homes via the built-in webcams of their school-issued laptop computers. The lawsuit claims Lower Merion School District officials remotely activated its laptops' webcams without students' knowledge. The suit also alleges the webcams may have been used to capture images of Harriton High School students and their family members at home as they undressed or were engaged in other sensitive activities.

Families reportedly learned of the alleged webcam images after an assistant principal confronted a student with photographic evidence of inappropriate behavior at home (drug use). But on WCAU-TV news the student's family claimed their son was simply enjoying his favorite candy, Mike and Ike. School district officials contend that the stealth webcam monitoring software was only installed to help track down stolen laptops, but the family says their son's laptop had never been reported stolen.

The FBI is investigating whether federal wiretapping laws were violated, which could be the case if laptop microphones were activated surreptitiously. Even more disturbing is the possibility that child pornography laws may have been violated by the school district if any images were captured of minors in various states of undress.

## A New Reason To Hate Harps

*The Guardian* (UK) reported that Venezuelan president Hugo Chávez has taken an innovative approach to boosting the abysmal ratings of his unpopular radio and TV broadcast diatribes: by ordering all stations to insert them—without warning—into popular programs like baseball games and salsa music shows. “When you hear the pluck of a harp on the radio, maybe Chávez is coming,” he said on the inaugural show. “It’s suddenly, at any time, maybe midnight, maybe early morning.” As legislative elections draw near, Venezuela’s newest radio show, called *Suddenly Chávez*, is the latest attempt by the country’s long-winded president to speak directly to voters, whether they care to listen or not. Poor ratings of Chávez’s epic Sunday radio and TV show, *Alo Presidente*—which can drag on for eight hours—apparently called for a new approach to capture listeners’ ears.

Chávez also regularly calls into a late-night pro-government talk show called *The Razor Blade* to

denounce his critics and opponents and address national problems like inflation, crime, and electricity shortages. “We are ready to decree the electricity emergency, because it really is an emergency,” said Chavez in a recent broadcast, announcing he would set an example by cutting electricity usage at the presidential palace. Perhaps Venezuela could harness the wind from his oratories to help reduce its domestic energy problems.

## Don't Say We Didn't Tell You...

The massive 700-foot antenna tower of KELO-TV in Sioux Falls, South Dakota, finally collapsed 53 years after its erection—just as predicted. The toppling tower was foretold by tribal elders of the Lower Brule Sioux, upon whose land it was built, said Michael Jandreau, chairman of the Native American tribe, as reported in the *The Daily Republic* (Mitchell, SD). The newspaper quotes Jandreau as saying the tribe doesn't want the tower rebuilt at the existing site, but rather moved off of tribal land, and has written to the FCC stating that five decades ago, “statutes and regulations protecting Native American historic and cultural resources and traditional cultural properties were non-existent.” FCC Chairman Julius Genachowski has shown consideration to Native Americans, even proposing alternative licensing procedures for new stations on reservations. So the FCC could conceivably force the owner of the tower to move it off the reservation.

Jandreau told *The Daily Republic*, “When it was built [on the sacred butte], some of our old men told them that it was going to fall down. It took 53 years, but it fell down.”

## Hot Police Radio Gear With A Side Of Salsa

The Associated Press reported that Trenton, New Jersey, police received a hot tip that their local Taco Bell drive-thru was offering new fare: hot police radio gear. Nobody was buying, and police were reportedly tipped off by a customer who found the new menu item unappetizing.

Police allege that Anthony Williams snuck into their headquarters and stole a handheld police radio transceiver, an LCD monitor, and a sergeant's briefcase before going on the air and giving police and scanner listeners an earful. They arrested Williams soon afterwards, taking him off the air and ending his career at Taco Bell.

## News, Trends, And Short Takes

by D. Prabakaran

### **The Disco Palace Launches Broadcasts In DRM**

The Disco Palace has started broadcasting the “best of disco music of all time” to listeners across Europe and North America using Digital Radio Mondiale (DRM). Based in Miami, the station’s program schedule includes music of the 1970s and 1980s from the U.S. and UK. The broadcast service provider is TDP and broadcasts are via TDF facilities. Visit the station’s website ([www.thedisco.com](http://www.thedisco.com)) for details, including times, frequencies, and contact information.

(Source: The Disco Palace)

### **Vodafone Offers “World’s Cheapest Phone”**

British telecommunications company Vodafone has launched a mobile phone aimed at the developing world. The Vodafone 150, marketed as the “lowest-cost mobile phone on Earth,” will sell for less than \$15. The first countries to receive it will be India, Turkey, and eight African nations, including Lesotho, Kenya, and Ghana. The handset allows voice calls, SMS, and has built-in support for mobile payment services. A costlier version (\$20), the Vodafone 250, also comes with a color screen and FM radio. Mobile ownership will reach five billion in this year, according to the UN, with most of the growth taking place in the developing world. Demand is being driven by people using their phones to access banking and mobile health services, the International Telecommunication Union (ITU) said.

(Source: [SiliconRepublic.com](http://SiliconRepublic.com))

### **Radio Pakistan Ends VOA Pashto Broadcasts After Taliban Threats**

Radio Pakistan has decided to scrap the agreement with the Voice of America (VOA) to broadcast its Pashto-language radio programs after receiving direct threats. The VOA launched its Pashto-language radio station, Deeva Radio, last year, targeting audiences in the Tribal Areas and the North-West Frontier Province. Its mission was to offer locals a chance to speak out against the Taliban in the region. Radio Pakistan aired Deeva Radio programs during its prime time slot of 7 to 10 p.m., but the Taliban and other anti-American groups threatened to bomb the Radio Pakistan Peshawar premises if the station continued airing Deeva Radio programs. The broadcast was cancelled after a month by mutual agreement between Radio Pakistan and the VOA.

(Source: Daily Times)

### **Radio Australia Using New Relay Sites After Darwin Closes**

The Darwin HF transmitter station in Australia was closed on January 31, 2010. CVC, a Christian broadcasting company that leased the transmission equipment since 1999, has decided to drop HF broadcasting to Asia. The land the transmitter complex is built on has since been claimed by a local Aboriginal community in the Northern Territory, and technicians have started decommissioning the equipment and lowering the antennas. Radio Australia (RA) has had to find alternative HF transmitting relays to service Asia. Under contract with UK-based support services provider VT Group, it has so far found two sites that can provide relay transmissions for RA to broadcast to Asia: Medorm (HBN) Palau in the Pacific Ocean and Dhabbaya (DHA) in the United Arab Emirates.

### **China Builds Largest Mobile Multimedia Broadcasting Network**

China’s state-owned mobile TV service provider, China Broadcasting Corporation (CBC), announced that the encryption operation of mobile TV service has been officially made available in 280 cities in China’s 31 provinces, autonomous regions, and municipalities. This marks the establishment of the world’s largest mobile multimedia broadcasting network, which uses China Mobile Multimedia Broadcasting (CMMB), a new broadcasting technique the government has promoted since 2008. It features clear viewing and listening of live TV broadcasts for viewers on the move, and any type of terminal equipped with the CMMB chip and a 7-inch or smaller electronic display screen can function as a portable TV. By March 31, 2010, the network will cover all cities across the nation, excluding those in regions with particularly harsh climates, such as Xinjiang, Tibet, and Qinghai.

(Source: People’s Daily Online)

### **Radio Taiwan International Starts Daily Webcast**

Radio Taiwan International (RTI) has launched a new 30-minute daily webcast in English called “RTI Plus.” According to the RTI website it will offer news analysis, editorials, and features with programs including *Think Tank*, *Taiwan Perspectives*, *Newmakers*, *Soft Power* and *In Mystical Taiwan*. New programs will be available every day on the Internet at 1600 UTC.

(Source: RTI website)

# Capitol Hill And FCC Actions Affecting Communications

by Richard Fisher, K16SN

## **APCO Implements EmComm Restoration Plan In Haiti**

A Haitian emergency communications restoration plan by the Association of Public-Safety Communications Officials International was implemented in mid-February when “telecommunications operators unilaterally turned on their 1-1-4 emergency call system and rerouted traffic to the secondary public safety answering point (PSAP) managed by the Haitian National Police (HNP) at their Patco Police Headquarters,” APCO reported on its website. “Following the earthquake on Jan. 12, the two known Haitian PSAPs that answered 1-1-4 were reportedly destroyed,” the organization said. “The Haitian National Police Land Mobile Radio (LMR) system, which consists of a three-site trunked system, was also largely damaged and much of the supporting wire line infrastructure destroyed.”

APCO said its plan “not only covers an immediate phased approach to a solution, but includes recommended long-term support and training for the Haitian people. The restoration plan was vetted by the FCC, the Department of Homeland Security National Communications System and the State Department USAID and acted upon by the Haitian government, implementing the first phase of APCO International’s recommended restoration.”

## **Spectrum: Wireless Applications In TV “White Space” Tested in North Carolina**

Frequencies vacated when television broadcast channels made the switch from analog to digital in 2009 are being utilized for wireless applications in areas of North Carolina. Wilmington and the county region of New Hanover are among the first communities to test applications using TV white space technology. According to a story by Marguerite Reardon for CNET.com, “the city and county have partnered with TV Band Service and Spectrum Bridge to launch a new experimental network that uses white space spectrum to provide wireless connectivity to surveillance cameras and environmental sensors in a ‘smart city’ deployment.”

One application provides links for traffic cameras to provide traffic monitoring for the department of transportation. In another application, “white space spectrum is being used to wirelessly connect cameras in city parks to police for surveillance. Radios are also set up in city parks to provide free Wi-Fi access to residents and city workers,” Reardon wrote. In a third, “the city and county are using the white space network to remotely monitor and manage wetland areas to comply with EPA regulations.”

## **Spectrum: FCC Grants Waiver For Robotics In 430-448 MHz Band**

The FCC has granted a waiver to a Minneapolis-based company for operation of a surveillance robot using frequencies in the 430-448 MHz band—spectrum allocated to the Amateur Radio Service and the Federal Government Radiolocation Service.

According to a report in the American Radio Relay League’s *ARRL Letter*, ReconRobotics in January 2008 “filed a request with the FCC for a waiver of Part 90 of the Commission’s Rules with respect to the Recon Scout—a remote-controlled, maneuverable surveillance robot designed for use in areas that may be too hazardous for human entry. “A waiver is required to permit licensing of the Recon Scout because the device operates in the 430–448 MHz band, which is allocated to the Federal Government Radiolocation service on a primary basis,” the League report said, “as well as the Amateur Radio Service and certain non-federal radiolocation systems on a secondary basis. More than two years later, the FCC [has] granted the waiver request in the form of an *Order* (WP Docket No 08-63), subject to certain conditions.” In May 2008, the ARRL called on the FCC to deny ReconRobotics’ waiver request, “either permanently or even temporarily.”

The FCC noted that the comments it received generally consisted “of public safety and law enforcement entities supporting the waiver request, and amateur radio operators opposing it.”

## **Amateur Radio Emergency Communications Act Of 2009 Garners House Support**

A Republican member of the U.S. House of Representatives has pledged his support of the Amateur Radio Emergency Communications Act of 2009, bringing to 34 the number of co-sponsors of the legislation, designated HR 2160. Jo Bonner (R-AL-1) joined other members of Congress in backing the bill, introduced by U.S. Rep. Sheila Jackson-Lee (D-TX-18) and written to “promote and encourage the valuable public service, disaster relief, and emergency communications provided on a volunteer basis” by radio amateurs “by undertaking a study of the uses of amateur radio for emergency and disaster relief communications, by identifying unnecessary or unreasonable impediments to the deployment of Amateur Radio emergency and disaster relief communications, and by making recommendations for relief of such unreasonable restrictions so as to expand the uses of amateur radio communications in Homeland Security planning and response.”

## Cable TV Horizons

by Rob de Santos  
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*“The big gorilla in the house is the delivery of television signals via IP... the cable industry is scrambling to find its own solutions to keep the eyeballs onboard.”*

It's been almost a year since the great “digital conversion” of broadcast television in the U.S. Despite all the excitement, for most people the changeover was a non-event as not many of us still used rabbit ears to capture a signal for our televisions. Today cable and satellite are the main delivery systems for television, and even the Internet. Oh sure, that old TV down in the basement workshop isn't good without a converter box now, and we had to go see our great-uncle to help him set up, but we coped with the change.

But what changes are coming down the pike for the cable-connected crowd? Technology marches on and it will catch up to the rest of us sooner than we think. For starters, digital delivery is already a fact for most satellite TV users and for many cable customers with a DVR or “set-top box.” However, a significant portion of cable customers still don't have a box on every TV, or no box at all if it's just “basic” service. Fair warning: The days of analog cable are numbered.

Analog cable channels are spectrum hogs. They use many times the bandwidth of digital channels, and with every new channel added to cable systems the pressure grows on cable system managers to drop analog channels. Most cable systems would see a significant capacity gain by dropping analog service altogether, allowing the addition of more digital channels and increases in Internet speeds. In some communities in the U.S., cable systems already have stopped offering analog basic service. Usually, they've done so with a free or heavily discounted set-top box offer.

Expect more companies to follow soon. The FCC has ruled that cable companies can drop analog service provided every customer has a set-top box within three years of the digital broadcast transition. Recently, Time Warner Cable realigned its digital cable channels in preparation for this changeover. So, say *sayonara* to analog cable by 2012.

Another major change already underway is the adoption of the DOCSIS 3.0 (ITU-T J.222) standard. DOCSIS is the key standard for Internet protocol communications over cable television systems. The new version, already being implemented in many parts of North America, promises improved Internet speeds (download speeds of 30 to 50 Mbps and upload speeds of 3 to 5 Mbps),

better support for IPv6 Internet addresses, and better security. These speeds come with correspondingly higher prices (typically \$89 to \$129 per month for the fastest service). We can never be fast enough, can we?

Targeted advertising has been a holy grail of the cable industry for decades. With two-way smart cable boxes finally mainstream, it would seem that we are closer than ever to interactive or targeted TV advertising. Pushing back against this are significant privacy issues. Today, viewers get whatever advertisement can be sold for a particular program's demographic. The trouble in many cases is that the programs in question aren't rated or have ratings so low that minimal or no demographics are known. However, every cable and satellite DVR and newer set-box can, in some fashion or another, determine what program you're watching at any given time and could, in principle, match that to your known demographics. Whether that will pass privacy muster, we don't yet know. What is known is that there are smart minds working the issue right now.

The big gorilla in the house is the delivery of television signals via IP (Internet protocol), usually referred to as IPTV. With the explosive success of YouTube and the rising popularity of services such as Hulu and Boxee, the cable industry is scrambling to find its own solutions to keep the eyeballs onboard. It's already possible to get movies and some TV services using separate Internet-connected boxes from companies such as Roku or by using your Xbox 360. Many high-end televisions are Internet-ready. Surveys have indicated that 35 percent of Americans would consider dropping cable subscriptions for TV over the Internet in the next five years.

One answer from the industry is a Comcast and Time Warner initiative called “TV Everywhere.” Whether this is a defensive maneuver to keep subscribers or an offensive move to enhance the existing subscription service is widely debated, but the battle is on for your subscription dollar. I hope to have a more detailed hands-on report on “TV Everywhere” for readers in the near future.

How do you expect to get your television in five years? Would you consider just getting it over the Internet? Let me know, I look forward to hearing from you.

# Easy Long-Distance Monitoring Of Maritime Mobile Voice Channels

***Landlocked? Not A Problem—You Can Still Tune Ship Traffic, Weather Nets, And Distress Calls Coming In From Thousands Of Miles Away***

by Gordon West, WB6NOA

**C**itywave single-sideband reception of the marine radio frequencies is a 24/7 catch. At night, tune in from 2 MHz to 8 MHz to hear everything from shrimp boats to super tankers. In the mornings, tune 8 MHz and 12 MHz for roll call weather reports. And during the day, 12- and 16-MHz marine channels are full of activity, including hair-raising distress calls. For the ham “floaters,” licensed amateur radio operators plying the high seas, tune 14.300 upper sideband and sail along with high seas skywave action. It’s easy, it’s exciting, and it’s tunable from anywhere in the country!

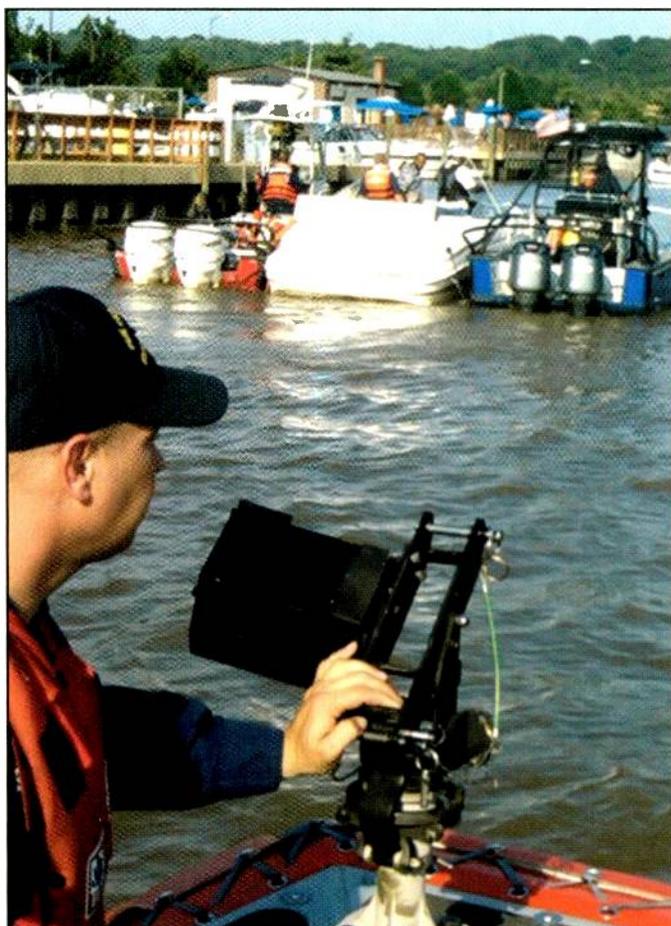
## **The Who, Where, And What Of The Marine Bands**

Long-range ocean voyagers do not need a ham radio license for unlimited access to their international single-sideband marine channels. With the diversity and sheer volume of radio traffic on the airwaves, there’s no lack of fascinating communications to listen to. For reception anywhere in the country, you can start by monitoring the frequencies given in the “Marine Band Channels” chart. That ought to keep you busy for quite a while!

At each MHz band, maritime frequencies have been allocated on an international basis. A commercial ship or private sailboat will use most of the same marine channels throughout a global voyage. Two-MHz channels are assigned regionally, and here in the United States, mariners have additional 4-MHz and 8-MHz SSB channels shared with the Fixed Service.

No licensing FCC exam is required to obtain a Ship Station License and the Restricted Radiotelephone Operator permit to operate medium-power marine SSB gear. The FCC Ship Station License callsign consists of 3 letters and 4 numbers, and is valid

Gordon West, WB6NOA, writes *Pop’Comm*’s “Gordon West’s Radio Ways” column. A prolific writer and teacher, he is a highly regarded “guru” in many aspects of the radio hobby.



Petty Officer 2nd Class Gurbachan Singh, from Coast Guard Station Washington, D.C., looks on as both D.C. Fire Rescue and D.C. Metro Police crews tow a 25-foot pleasure craft back to a pier after it began sinking in the Potomac River. (Coast Guard photo by Seaman Daniell C. Chatman)

## Marine Band Channels

(Carrier frequencies in kHz)

### 2 MHz Coastal

#### Intership Safety and Operational Communications

**Freq. Geographic Area**

2003.0	Great Lakes only
2782.0	Mississippi River System working frequency
2082.5	All Areas. Also, Intership non-commercial fishing
2086.0	Mississippi River System working frequency
2093.0	All Areas
2142.0	Pacific Coast, daily, south of 42 deg. N
2182.0	Distress, safety and calling
2203.0	Gulf of Mexico. Also, Intership non-commercial fishing.
2214.0	All Areas
2635.0	ITU Regions 2-3 (ITU RR 4193). Not in FCC rules
2638.0	All Areas
2670.0	U.S. Coast Guard Liaison and Maritime Safety Broadcasts, Also Intership Safety and Operational Communications in all areas
2738.0	All Areas, except Great Lakes. Shared with aircraft
2830.0	Gulf of Mexico only. Shared with aircraft

#### Business and Operational Frequencies

2065.0	All Areas
2079.0	All Areas
2096.5	All Areas
3023.0	Government shore, ship and aircraft stations for search and rescue coordination.

**Reference:** FCC Regulations, 47 CFR 80.373(b) and (c), except as noted. Assignments are required before these frequencies can be used by land stations. Duplex channels are not available in this band.

### 4 MHz Coastal and Local (HF Single Sideband Maritime Radiotelephone Channels)

#### Duplex Channels

ITU Channel	Coast Transmit	Ship Transmit	416	4402	4110
			417	4405	4113
401	4357	4065	418	4408	4116
402	4360	4068	419	4411	4119
403	4363	4071	420	4414	4122
404	4366	4074	421	4417	4125*
405	4369	4077	422	4420	4128
406	4372	4080	423	4423	4131
407	4375	4083	424	4426	4134**
408	4378	4086	425	4429	4137
409	4381	4089	426	4432	4140
410	4384	4092	427	4435	4143
411	4387	4095	428	4351	(varies)
412	4390	4098	429	4354	(varies)
413	4393	4101			
414	4396	4104			
415	4399	4107			

\*Calling; distress & safety working on 4125 kHz simplex  
 \*\*USCG Calling

### 6 MHz Gulf

#### Duplex Channels

ITU Channel	Coast Transmit	Ship Transmit	605	6513	6212
			606	6516	6215**
601	6501	6200*	607	6519	6218
602	6504	6203	608	6522	6221
603	6507	6206			
604	6510	6209			

\*USCG Calling  
 \*\*Calling; distress & safety working on 6215 kHz simplex

**8 MHz Medium range  
Duplex Channels**

ITU Channel	Coast Transmit	Ship Transmit	820	8776	8252
			821	8779	8255**
801	8719	8195	822	8782	8258
802	8722	8198	823	8785	8261
803	8725	8201	824	8788	8264
804	8728	8204	825	8791	8267
805	8731	8207	826	8794	8270
806	8734	8210	827	8797	8273
807	8737	8213	828	8800	8276
808	8740	8216	829	8803	8279
809	8743	8219	830	8806	8282
810	8746	8222	831	8809	8285
811	8749	8225	832	8812	8288
812	8752	8228	833	8291	8291
813	8755	8231	834	8707	(varies)
814	8758	8234	835	8710	(varies)
815	8761	8237	836	8713	(varies)
816	8764	8240*	837	8716	(varies)
817	8767	8243			
818	8770	8246			
819	8773	8249			

\* USCG Calling  
\*\* Calling

**12 MHz Long range  
Duplex Channels**

ITU Channel	Coast Transmit	Ship Transmit	1222	13,140	12,293
			1223	13,143	12,296
1201	13,077	12,230	1224	13,146	12,299
1202	13,080	12,233	1225	13,149	12,302
1203	13,083	12,236	1226	13,152	12,305
1204	13,086	12,239	1227	13,155	12,308
1205	13,089	12,242*	1228	13,158	12,311
1206	13,092	12,245	1229	13,161	12,314
1207	13,095	12,248	1230	13,164	12,317
1208	13,098	12,251	1231	13,167	12,320
1209	13,101	12,254	1232	13,170	12,323
1210	13,104	12,257	1233	13,173	12,326
1211	13,107	12,260	1234	13,176	12,329
1212	13,110	12,263	1235	13,179	12,332
1213	13,113	12,266	1236	13,182	12,335
1214	13,116	12,269	1237	13,185	12,338
1215	13,119	12,272	1238	13,188	12,341
1216	13,122	12,275	1239	13,191	12,344
1217	13,125	12,278	1240	13,194	12,347
1218	13,128	12,281	1241	13,197	12,350
1219	13,131	12,284			
1220	13,134	12,287			
1221	13,137	12,290**			

\* USCG Calling  
\*\* Calling

**16 MHz Duplex Channels  
Daytime long range**

ITU Channel	Coast Transmit	Ship Transmit	1605	17,254	16,372
			1606	17,257	16,375
1601	17,242	16,360	1607	17,260	16,378
1602	17,245	16,363	1608	17,263	16,381
1603	17,248	16,366	1609	17,266	16,384
1604	17,251	16,369	1610	17,269	16,387

1611	17,272	16,390	1636	17,347	16,465
1612	17,275	16,393	1637	17,350	16,468
1613	17,278	16,396	1638	17,353	16,471
1614	17,281	16,399	1639	17,356	16,474
1615	17,284	16,402	1640	17,359	16,477
1616	17,287	16,405	1641	17,362	16,480
1617	17,290	16,408	1642	17,365	16,483
1618	17,293	16,411	1643	17,368	16,486
1619	17,296	16,414	1644	17,371	16,489
1620	17,299	16,417	1645	17,374	16,492
1621	17,302	16,420*	1646	17,377	16,495
1622	17,305	16,423	1647	17,380	16,498
1623	17,308	16,426	1648	17,383	16,501
1624	17,311	16,429	1649	17,386	16,504
1625	17,314	16,432**	1650	17,389	16,507
1626	17,317	16,435	1651	17,392	16,510
1627	17,320	16,438	1652	17,395	16,513
1628	17,323	16,441	1653	17,398	16,516
1629	17,326	16,444	1654	17,401	16,519
1630	17,329	16,447	1655	17,404	16,522
1631	17,332	16,450	1656	17,407	16,525
1632	17,335	16,453			
1633	17,338	16,456	* Calling		
1634	17,341	16,459	** USCG Calling		
1635	17,344	16,462			

**18/19 MHz  
Duplex Channels**

ITU Channel	Coast Transmit	Ship Transmit			
1801	19,755 kHz	18,780 kHz	1809	19,779	18,804
1802	19,758	18,783	1810	19,782	18,807
1803	19,761	18,786	1811	19,785	18,810
1804	19,764	18,789	1812	19,788	18,813
1805	19,767	18,792	1813	19,791	18,816
1806	19,770	18,795*	1814	19,794	18,819
1807	19,773	18,798	1815	19,797	18,822
1808	19,776	18,801			

\* Calling

**22 MHz Daytime Long range  
Duplex Channels**

ITU Channel	Coast Transmit	Ship Transmit			
2201	22,696	22,000	2218	22,747	22,051
2202	22,699	22,003	2219	22,750	22,054
2203	22,702	22,006	2220	22,753	22,057
2204	22,705	22,009	2221	22,756	22,060*
2205	22,708	22,012	2222	22,759	22,063
2206	22,711	22,015	2223	22,762	22,066
2207	22,714	22,018	2224	22,765	22,069
2208	22,717	22,021	2225	22,768	22,072
2209	22,720	22,024	2226	22,771	22,075
2210	22,723	22,027	2227	22,774	22,078
2211	22,726	22,030	2228	22,777	22,081
2212	22,729	22,033	2229	22,780	22,084
2213	22,732	22,036	2230	22,783	22,087
2214	22,735	22,039	2231	22,786	22,090
2215	22,738	22,042	2232	22,789	22,093
2216	22,741	22,045	2233	22,792	22,096
2217	22,744	22,048	2234	22,795	22,099
			2235	22,798	22,102

# RADIOS FOR EVERYDAY ADVENTURES



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2236	22,801	22,105	2246	22,831	22,135
2237	22,804	22,108	2247	22,834	22,138
2238	22,807	22,111	2248	22,837	22,141
2239	22,810	22,114	2249	22,840	22,144
2240	22,813	22,117	2250	22,843	22,147
2241	22,816	22,120	2251	22,846	22,150
2242	22,819	22,123	2252	22,849	22,153
2243	22,822	22,126	2253	22,852	22,156
2244	22,825	22,129			
2245	22,828	22,132			
			* Calling		
<b>25 MHz Worldwide</b>					
<b>ITU Channel</b>	<b>Coast Transmit</b>	<b>Ship Transmit</b>	2506	26,160	25,085
2501	26,145	25,070	2507	26,163	25,088
2502	26,148	25,073	2508	26,166	25,091
2503	26,151	25,076	2509	26,169	25,094
2504	26,154	25,079	2510	26,172	25,097*
2505	26,157	25,082			
			* Calling		

for 10 years. The Captain or designated radio person will hold the Restricted permit, and generally anyone under their supervision may talk over the marine SSB frequencies. Skippers of commercial boats, plus those vessels carrying more than six passengers, must possess the Marine Radio Operator Permit (MROP), having passed a straightforward 24-question test covering marine radio operating and laws.

The majority of the marine SSB channel allocations are for duplex operation to a shore station. Many of these shore stations were public telephone facilities, handling ship-to-shore HF marine SSB phone traffic. The AT&T telephone stations KMI, WOO, and WOM have abandoned marine SSB duplex channels, where satellite communications now dominate the



Monitor VHF Channel 13, 156.650 MHz, for navigational calls from tugs to big cargo boats in busy harbors.

oceans. However, ShipCom LLC, which provides HF SSB radiotelephone ship-to-shore service through its network of public coast stations, continues to offer its powerful voice telephone service through its flagship station, WLO (more below), with remote station KLB Radio offering enhanced coverage of the Pacific and Alaskan waters.



Marine-related comms take place over the waves as well. Coast Guard Chief Petty Officer Randy Rice, a rescue swimmer, listens to radio communications while on a patrol of Long Island Sound. The Coast Guard routinely flies helicopters up to Maine and down to New York to patrol the ports, waterways, and coastlines. Other missions for the helicopter crews include commercial fisheries patrols and responding to search and rescue cases. (Coast Guard photo by PA1 Matthew Belson)

## HF DISTRESS & SAFETY WATCHKEEPING SCHEDULE

HF Radiotelephone (Single Sideband) – Distress and Initial Contact

**Authorized for the handling of Distress message traffic and initial contact with United States Coast Guard Long Range Communication facilities.**

kHz SHIP STATION	kHz COAST STATION	NMF	NMN	NMA	NMG
4125	4125	2300-1100Z	2300-1100Z	2300-1100Z	2300-1100Z
6215	6215	24 HRS	24 HRS	24 HRS	24 HRS
8291	8291	24 HRS	24 HRS	24 HRS	24 HRS
12290	12290	1100-2300Z	1100-2300Z	1100-2300Z	1100-2300Z

kHz SHIP STATION	kHz COAST STATION	NMC	Station and Schedule (UTC) NMO	NOJ
4125	4125	24 HRS	0600-1800Z	24 HRS
6215	6215	24 HRS	24 HRS	24 HRS
8291	8291	24 HRS	24 HRS	
12290	12290	24 HRS	1800-0600Z	

kHz SHIP STATION	kHz COAST STATION	Station and Schedule(UTC) Guam
6215	6215	0900-2100Z
12290	12290	2100-0900Z

HF Radiotelephone (single sideband) - Working Channels

These channels are available at all Coast Guard Long Range Communication Facilities for traffic handling purposes after initial contact is established on the HF Radiotelephone (Single Sideband) - Distress and Initial Contact frequencies.

ITU CHANNEL	kHz SHIP STATION	kHz COAST STATION
424	4134	4426
601	6200	6501
816	8240	8764
1205	12242	13089
1625	16432	17314

### U.S. COAST GUARD COMMUNICATION STATIONS

USCG Station	SELCAL	MARITIME MOBILE SERVICE IDENTITY
Communications Area Master Station Atlantic, Chesapeake VA/NMN	---	003669995
Communications Area Master Station Atlantic, remotely keying transmitters at Boston/NMF		003669991
Communications Area Master Station Atlantic, remotely keying transmitters at Miami/NMA	--	003669997
Communications Area Master Station Atlantic, remotely keying transmitters at New Orleans/NMG	---	003669998
Communications Area Master Station Pacific, Pt. Reyes CA/NMC	---	003669990
Communications Area Master Station Pacific, remotely keying transmitters at Guam/NRV	1096	
Communications Area Master Station Pacific, remotely keying transmitters at Honolulu HI/NMO	---	003669993
Communications Station Kodiak AK/NOJ	---	003669899
Marianas Section Guam	---	003669994

Note that except for the digital selective calling channels listed at the bottom of this page, the frequency channels described here are generally not Global Maritime Distress & Safety System (GMDSS) distress and safety channels. The Coast Guard does NOT monitor GMDSS radiotelephone or radiotelex channels.

The U.S. Coast Guard offers automated weather broadcasts on selected ITU duplex channels. Listen for the following:

ITU 424	4426 kHz USB
ITU 601	6501 kHz USB
ITU 816	8764 kHz USB
ITU 1205	13089 kHz USB
ITU 1625	17314 kHz USB

This monster kilowatt-plus signal may easily be heard nearly anywhere in the United States, coming up at their assigned times, minimizing interference among their own stations.

## Mayday, Mayday, Mayday

The U.S. Coast Guard HF Distress and Safety Watchkeeping service is for “cold calls.” It’s authorized for the handling of distress message traffic and initial contact with U.S. Coast Guard long-range communication facilities. Here’s where to tune for this traffic:

2182 kHz	very local range
4125 kHz,	simplex, USB nighttime
6215 kHz	simplex, USB, 24 hrs
8291 kHz	simplex, USB, 24 hrs
12,290 kHz	Simplex, USB, daytime

See the “HF Distress And Safety Watchkeeping Schedule” chart for specific information.

If the mariner has the distress under control, U.S. Coast Guard stations may switch him or her over to one of its DUPLEX working channels, and suspend weather broadcasting during the time they are working the vessel with priority traffic. Vessels will dial up the working channel by ITU number, enabling the transmitter to offset to the correct kilohertz ship station frequency. Quite likely multiple U.S. Coast Guard communications stations will hear the simplex channel distress call.

If you want to hear long-range Mayday calls from the very beginning, set your receiver on 8291 kHz, upper sideband, and stand by for some exciting traffic on an almost daily basis.

## WLO Voice Weather

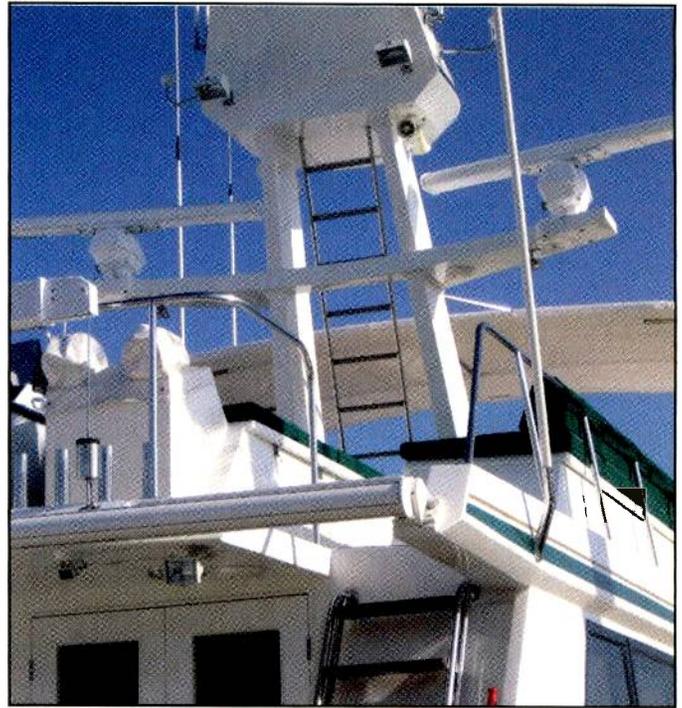
Every hour, ShipCom’s powerful high seas HF SSB shore station WLO transmits a synthesized voice weather broadcast, plus traffic lists to those vessels that have messages waiting. Try these frequencies, on the hour:

4369 kHz USB	13152 kHz USB
4396 kHz USB	17260 kHz USB
6519 kHz USB	17362 kHz USB
8788 kHz USB	19773 kHz USB
8806 kHz USB	22804 kHz USB
13110 kHz USB	

Up in the Pacific Northwest, tune in to ShipCom’s synthesized weather broadcasts on these frequencies:

4405 kHz USB	13101 kHz USB
8731 kHz USB	17311 kHz USB

Sometimes you may tune in the shore side of an in-progress telephone call, and hear something like, “You are a brand new daddy! He’s 7 lbs 8 oz with blue eyes, and he has your smile...” Dad, out on the boat, won’t be heard on this channel, because shore stations are assigned duplex channels (but you can still imagine his big smile). *Note: You are not allowed to divulge*



You can spot a race committee communications vessel by all the antennas on the flying bridge.

*anything that you hear on these public correspondence channels.* You’ll get an earful of the shore-side phone call, but FCC rules will not allow you to repeat anything you hear. Mind the rules—keep mum (no pun intended!).

For those north of the Lower 48, 5167.5 kHz USB is the statewide Alaska emergency channel. Occasionally, you may hear FCC-authorized testing on this single frequency, and I know several Alaska hams who regularly guard this channel in case “one of their own” gets in a jam out on the Inlet (or on the snowy roads, for that matter).

Marine radio ship-to-ship calls are authorized for specific channels, most separated by 3 kHz, from 2 MHz through 25 MHz. Here are some of the “hot” channels to monitor to hear the ship-to-ship radio traffic:

4146 kHz	4 Alpha	16528 kHz	16 Alpha
6224 kHz	6 Alpha	18840 kHz	18 Alpha
8294 kHz	8 Alpha	22159 kHz	22 Alpha
12353 kHz	12 Alpha	25115 kHz	25 Alpha

These channels, like *all* marine channels, are upper sideband. Tune every 3 kHz above and below the listed frequencies, and chances are you’ll hear some exciting marine ship-to-ship calls.

Shore stations, called Private Coast Stations, may also qualify for a few of these inter-ship channels. A fishing fleet headquarters, a yacht charter base station, or a big yacht club would all be candidates for the Private Coast Station license. Private shore-to-ship communications are limited to marine traffic only—*no* ham radio chitchat!

## HF Simplex Channels

Mariners have additional channels almost all to themselves, which you’ll find in the “Exclusive Maritime Channels” chart. What the FCC means by “exclusive” here is that these simplex channels are for the use of boaters only, not that they’re avail-

## Exclusive Maritime Channels

These frequencies are shared and are not available for the exclusive use of any station. Frequencies given in kHz.

4 MHz Band	6 MHz Band	8 MHz Band	12 MHz Band
4146	6224	8294	12,353
4149	6227	8297	12,356
4417	6230		12,359
	6516 ( <i>daytime only</i> )		12,362
			12,365
4065,4089,4116,4408 for Mississippi River	6209,6212,6510,6513 for Mississippi River	8201,8213,8725,8737 for Mississippi River	12,362 12,365 for Mississippi River
16 MHz	18/19 MHz Band	22 MHz Band	25/26 MHz Band
16,528	18,825	22,159	25,100
16,531	18,828	22,162	25,103
16,534	18,831	22,165	25,106
16,537	18,834	22,168	25,109
16,540	18,837	22,171	25,112
16,543	18,840	22,174	25,115
for Mississippi River	18,843	22,177	25,118
16,546 for Mississippi River			

### East Coast/West Coast Radio Resources For Your SSB Questions

Marine single sideband still goes aboard most sailing and power yachts, but except for the serious cruiser, this great long-range gear doesn't get much respect. Worse, it can be hard to find knowledgeable people to answer your questions about it.

"Nowadays, our clients use long-range cell phone systems, satellite phones, satellite weather on demand, and the trusty EPIRB [Emergency Position Indicating Radio Beacons] in case they need the Coast Guard," explains a yacht salesman along the East Coast. "Frankly, most marine electronics dealers no longer have old-time radio experts who really understand marine SSB."

That same observation is also made by many West Coast sailors who say that the marine installers seem to be more familiar with SatCom than SSB.

In Florida, a ham/marine electronics technician, Gary Jensen, AA1GJ, is the go-to guy for both voice and digital long-range marine communications.

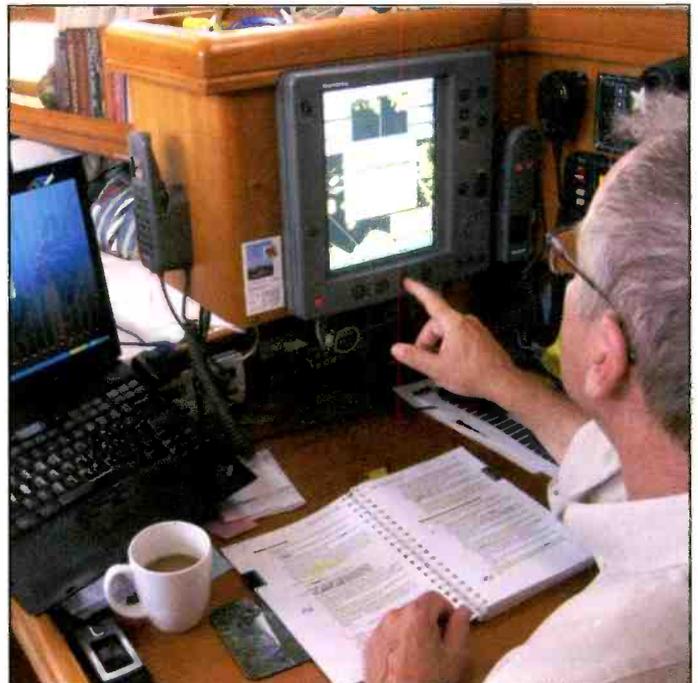
"We all listen to Herb's Southbound II weather net [see main text] on SSB channel 12 C, 12359 MHz, at 2000 hours Zulu," says Jensen. "In the event of tropical or other severe weather, an evening update will occur along the Florida coast on 8137 kHz—your readers may wish to tune in."

If you're in range, I'd definitely recommend that you do. You should also check out Jensen's East and West Coast ham and marine net listings on his website, [www.docksideradio.com/east\\_coast.htm](http://www.docksideradio.com/east_coast.htm). Additionally, Jensen operates marine weather routing, runs public correspondence station WCY, located in Lakeland, Florida, and offers several quick-start guidebooks covering marine SSB installations as well as an easy guide to SailMail/Airmail/Winlink2000.

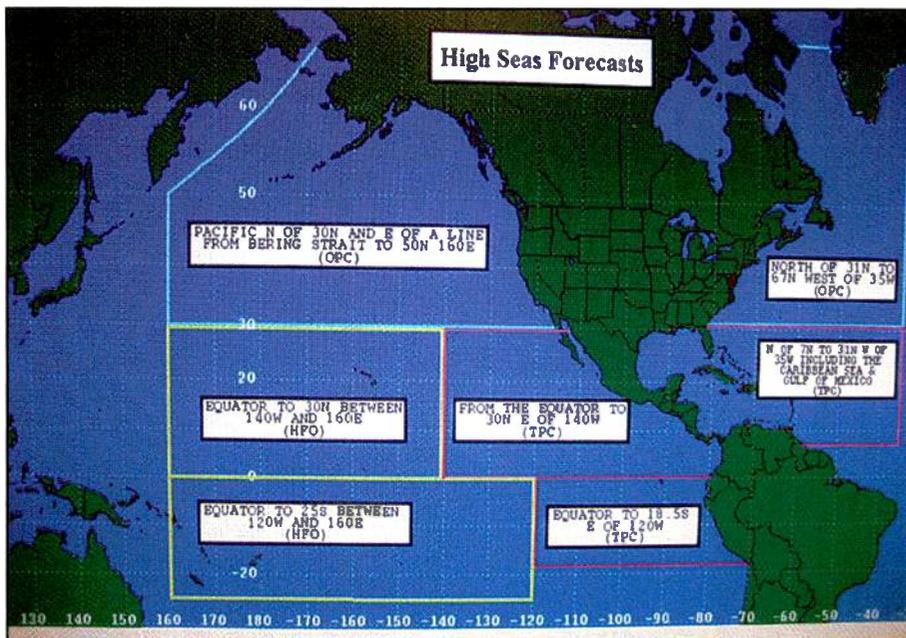
So for East Coast and Gulf Coast boaters, there is an expert on marine single sideband. Out here on the West Coast, I invite your emails at [WB6NOA@arrl.net](mailto:WB6NOA@arrl.net) or a phone call anytime at (714) 549-5000.

able for exclusive use by any station. They are to be shared among all boaters, on a non-interference basis; no one boater, yacht club, or any other entity owns the channel on an exclusive basis. They're shared with Mississippi River barges and tug boats, too.

Monitor the 4- and 6-MHz channels for best nighttime reception. On 8 MHz, you'll find lots of traffic in the mornings. A little later, try monitoring in the SSB mode on the 12- and 16-MHz channels for "high noon" seagoing vessels! Remember,



Radio ham, K1RDF, works radar and the AIS Channel 88 signal overlay on the screen for close in navigation in the bay.



The long-range U.S. Coast Guard SSB weather reports are broken down by geographic regions.

these are all upper sideband, not lower sideband or AM double sideband.

## How Is The Weather?

Weather facsimile broadcasts are still taking place on the HF bands. Although the U.S. Coast Guard has been under pressure to close down as many non-critical HF broadcasts as possible, the recent shutdown of LORAN-C (see "Utility Communications Digest" elsewhere in this issue—ed.) may open up some funds to continue these powerful weather chart images.

Free software is all over the place for receiving weather facsimile imagery. If your computer has a sound card, you're set. If no sound card, you can try using Tigertronic's (www.tigertronics.com) SignalLink USB interface for great weather



Channel 16, the International Distress frequency, must be monitored any time a marine radio is on and the vessel is underway.

facsimile images. For more information on this nifty device, see John Kasupski's "Tech Showcase" in *Pop'Comm's* September 2008 issue. You can get the latest version of worldwide marine radio facsimile broadcasts schedules at [www.nws.noaa.gov/om/marine/rfax.pdf](http://www.nws.noaa.gov/om/marine/rfax.pdf). Expect it to take about 10 minutes for a weather facsimile chart to paint on your computer screen.

## More Voice Channels

Mariners certainly have no shortage of 4-MHz and 8-MHz voice options, beyond the channels like 4 Alpha, 8 Bravo, and 4 Charlie, where you find many ocean race nets taking place.

The FCC allows boaters twenty-one 4-MHz channels and thirty-one 8-MHz channels, separated by 3 kHz for upper sideband. This offers added elbowroom on the air, but mariners must allow primary land users first call on these channels. Scan up every 3 kHz beginning at 4000 kHz, as well as every 3 kHz beginning at 8101 kHz, to tune in to a hotbed of commercial small-boat and MARS traffic, mainly in the Gulf. See the "Maritime Channels Shared with the Fixed Service" chart for specifics.

Still looking for more voices to catch? Listen for the West Coast's marine HF weatherman, Don Anderson. You'll find him on 8122-kHz upper side at 1415 UTC. For the East Coast, the legend is Herb, found on 12,359 (12 Charlie) after lunch, 2000 Zulu, covering all of the eastern seaboard.

U.S. Coast Guard Auxiliary volunteers, using type-approved SSB equipment, have been heard on the following frequencies:

5253.5 kHz	11,061 kHz
7351.5 kHz	15740.5 kHz
9195.5 kHz	19221.5 kHz

The U.S. Coast Guard Auxiliary volunteers offer interesting listening, and their voice communications (all upper sideband) follow strict protocol, with no idle chitchat. They are a credit to their country.

## Hams On HF

For more action, try 14.300 upper sideband, which is filled with activity beginning with early morning East Coast stations listening out to the east (Atlantic) and closing down when powerful West Coast stations, such as Randy, KH6RC, rolls the net from Hawaii, ultimately turning it over to other net stations down under. This is where is where all sailing ham radio operators would first transmit a distress call, knowing the number of shore-side stations listening. In an emergency, even the none-ham could place a life-or-death distress call on 14.300 and get immediate action from the maritime net controllers. Here are some other great ham nets to tune in:

3815 kHz LOWER sideband	Morning Caribbean net
3964 kHz LOWER sideband	East Coast morning waterway net and 7268 kHz
7163 kHz LOWER sideband	Morning Caribbean weather net
7233.5 kHz LOWER sideband	West Coast morning Baja net

## Maritime Channels Shared With The Fixed Service

The following channels in the band 4000–4063 kHz and 8100–8195 kHz may be used:

- for supplementing ship-to-shore channels for duplex operation;
- for Intership simplex (single-frequency) and cross-band operation;
- for cross-band working with coast stations;
- for duplex operation with coast stations working in the band 4438–4650 kHz or with Channels 834, 835, 836 and 837;
- for ship-to-shore or shore-to-ship simplex operations (8100–8195 kHz only).

Channel No.	4 MHz Carrier Freq.	8 MHz Carrier Freq.			
1	4000	8101	16	4045	8146
2	4003	8104	17	4048	8149
3	4006	8107	18	4051	8152
4	4009	8110	19	4054	8155
5	4012	8113	20	4057	8158
6	4015	8116	21	4060	8161
7	4018	8119	22	—	8164
8	4021	8122	23	—	8167
9	4024	8125	24	—	8170
10	4027	8128	25	—	8173
11	4030	8131	26	—	8176
12	4033	8134	27	—	8179
13	4036	8137	28	—	8182
14	4039	8140	29	—	8185
15	4042	8143	30	—	8188
			31	—	8191

7292 kHz LOWER sideband Chubasco weather net  
 7250 kHz LOWER sideband Every morning Gordo net  
 14,300 kHz UPPER sideband 24-hour maritime mobile net  
 14,325 kHz UPPER sideband Hurricane net

And that's just a few!

scquelch threshold. Sources of amplified DSP speakers include GAP Antenna Products ([www.gapantenna.com](http://www.gapantenna.com)), which offers a bhi product, and West Mountain Radio ([www.westmountain-radio.com](http://www.westmountain-radio.com)), which offers a Clear Speech product.

So, even if the ocean isn't exactly in your backyard, tune around the dial and try some marine band monitoring. You may be surprised from just how far away you can hear sailors out on the open seas!

### You're All Set

Your receiver could be any ham set or shortwave receiver with SSB capability. (If you're in the market for something new that will both tune the watery action and survive some salty spray, see "Tech Showcase: Uniden's GMR 2889-2CK GMRS 2-Way Radios" elsewhere in this issue.) Your antenna system to receive marine SSB could be a simple off-centered (OCF) dipole, giving great reception from 4 MHz on up. You won't need a beam! The key to good long-range marine reception is getting the antenna well away from your home's internal noise makers.

If you are having trouble pulling in readable signals, you can try listening through digital signal processing-amplified speakers. This will allow your receiver to cancel background static, letting only voice frequencies boom in loud and clear. Monitoring with DSP allows all signals to get through, whereas monitoring SSB with a squelch circuit may prevent weaker SSB signals from overriding the

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# Uniden's GMR2889 22-Channel GMRS/FRS Two-Way Radios

## Portables That Float!

by Gordon West, WB6NOA  
WB6NOA@arrl.net

Most marine single-sideband equipment features a weatherproof automatic antenna tuner, capable of withstanding light salt spray. The actual transceiver black box carries no waterproof rating at all. It must be kept down below deck—bone dry. The marine SSB remote head is water resistant, but I wouldn't spray it down with a fresh water rinse after the big storm.

Marine VHF handhelds are generally waterproof, some float, and there are even some that are submersible. Marine VHF handhelds may not be used on shore, however, and are designed for emergency or for "ship's business" communications only.

Gordon West, WB6NOA, writes *Pop'Comm's* "Gordon West's Radio Ways" column. A prolific writer and teacher, he is a highly regarded "guru" in many aspects of the radio hobby.

*"Uniden...now offers a GMRS/FRS handheld that is fully submersible to JIS-7 ratings. And it floats, too."*

Family Radio Service (FRS) handhelds that may also have General Mobile Radio Service (GMRS) capability are great for yakking on FRS frequencies where no license and few restrictions apply. You may use them on shore, run them on the boat, and play with them around the office—nearly anything goes. But until recently, the FRS/GMRS handhelds had to be sealed in funky plastic bags to keep them absolutely dry. Fortunately, times have changed.

Uniden, which counts many boaters among its staff, now offers a GMRS/FRS handheld that is fully submersible to JIS-7 ratings. And it floats, too. The company claims that the radio can survive being submerged three feet deep in a stream for 30 minutes.

### Features

The waterproof, submersible, floating radios come with their own drop-in charger assembly and offer 22 channels of UHF operation. Channels 1 through 7 are FRS/GMRS, with Channels 8 through 14 low-power FRS only. Channels 15 through 22 are simplex GMRS output frequencies, conventional bandwidth, shared with licensed GMRS stations. Both CTCSS and DCS squelch circuits are included for over 6,000 channel and tone combinations to keep the equipment absolutely quiet until it receives the exact directed encode tone.

Without any FCC GMRS license, this equipment is legal for FRS Channels 8 through 14, or any channel in Canada. Operators holding the GMRS license can use all the channels.

### Performance

I tested this equipment with some Community Emergency Response Team (CERT) volunteers



A Costa Mesa California CERT communicator uses the new Uniden floating FRS/GMRS radio (GMR2872-2CK) for excellent comms to a fellow operator over a three-mile path.

## At A Glance

### Uniden 22-Channel GMRS/FRS Two-Way Radios

#### Major Features:

Submersible to 3 Feet for 30 Minutes  
(JIS-7)  
Up to 28-mile Range (claimed)  
22 Channels (15 GMRS, 7 FRS)  
Direct Call  
Auto Channel Change  
PowerBoost Key  
285 Privacy Settings (142 Privacy  
Tones + 143 Group Codes)  
6,270 Channel Combinations

#### List Price:

GMR2872-2CK, \$89.99  
GMR2875-2CK, \$99.99

#### Contact:

[www.uniden.com](http://www.uniden.com)

during the recent heavy rainstorms in southern California, and at times we gave them a trial soak as they floated down the flooded streets. The equipment worked well, dutifully self-regulating its output to a 1/2 watt on FRS-only Channels 8 through 14, and automatically cycling up to probably a couple of watts output on shared and exclusive GMRS channels. We couldn't test the actual power output because the antenna is non-removable, but field strength meters indeed show a power output increase. When we tested over a one-mile path during a heavy downpour, we could hear the advantage of a 3 db+ power increase on shared FRS/GMRS channels. The Unidens gave us weather channel reception as well.

The receive audio from other radio equipment was fairly loud, thanks to the larger size of the Uniden radio, along with a good audio output circuit. However, when using a pair of Uniden radios together, or transmitting on one Uniden radio to be received by a conventional narrow-banded scanner, transmitted speech sounded a bit pinched, likely from the sealed waterproof speaker/mic element. According to Paul Opitz, the product manager at Uniden, the seal over the speaker/mic, which provides the JIS 7 rating, does attenuate the audio a bit. He says Uniden is looking to improve this.

The advertised range of up to 28 miles is exaggerated, as are all such claims with

FRS gear, but the claim of being submersible and floatable indeed held water!

## Two Radios, Two Choices

The radios come in a twin pack, in eco-friendly packaging, with belt clip, batteries, and charger included. Choose the bright yellow model (GMR2872-2CK; MSRP \$89.99) or the "Mossy

Oak" (GMR2875-2CK; MSRP \$99.99), which features a new breakup camo pattern color and some additional features. Look for them in your favorite retail outlet.

I think you'll be impressed with these excellent submersible and floating 22-channel UHF radios from Uniden—our Southern California Costa Mesa CERT team certainly was.

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and tough  
working conditions  
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# Ships Ahoy! Listening In On Fleet Week

*If You're In The Vicinity Of One Of These Ports Of Call, Grab Your Scanner And Join The Celebration*

by Ken Reiss  
reissken@earthlink.net

Fleet Week, when lots of active military ships and aircraft converge on a single port, is an annual celebration of our maritime services. With its attendant pomp and ceremony, it's a real feast for the eyes—for scanner monitors, it can also be a feast for the ears.

Traditionally held in four coastal cities around the country, officially it's just a port call for a large number of active ships, but it's been embraced as both a major tourist attraction by chambers of commerce, and as a military public relations event by the Navy. New York and Ft. Lauderdale have Fleet Week events for 2010 just around the corner. San Diego and San Francisco follow in the fall with events of their own.

There's nothing established by the Navy regarding the types or number of ships that constitute Fleet Week, and other celebrations, such as Seattle's annual Seafair, often host Fleet Week-style events. Even for the main ports involved, the Navy schedules the deployment of ships where and as they're needed, though it does try to accommodate the cities in their planning efforts.

You will often see ships from other services, mostly the Coast Guard, and from other countries, most notably Canada at the New York event. Ships range from small patrol boats to very large

Ken Reiss is *Pop'Comm's* "ScanTech" columnist.

The guided-missile cruiser *USS Vella Gulf* (CG 72) transits the Hudson River during the Parade of Ships as part of Fleet Week New York City 2009. Approximately 3,000 sailors, marines and Coast Guardsmen will participate in the 22nd commemoration of Fleet Week New York. This event will provide the citizens of New York City and surrounding tri-state area an opportunity to meet service members and also see the latest capabilities of today's maritime services. (U.S. Navy photo by Mass Communication Specialist 3rd Class David Danals)

warships. And speaking of large, the port of New York also boasts the *USS Intrepid*, an aircraft carrier that has been converted into a military museum and is the venue for numerous Fleet Week events. There's also a vintage diesel sub on display year round at the museum, which is well worth a visit any time of year.

One of the biggest highlights is when the festivities are kicked off by a Parade of Ships. It's an impressive sight, to say the least, when a flotilla of huge ships steams majestically into port, frequently accompanied by thundering aircraft flyovers. There are often major air shows associated with Fleet Week, too; for instance, the Blue Angels will be appearing at the San Francisco event this year.



Sailors and marines man the rails on the flight deck of the amphibious assault ship *USS Iwo Jima* (LHD 7) as the ship prepares to dock at Pier 88 in Manhattan. (U.S. Navy photo by Mass Communications Specialist Chief Michael W. Pendergrass)

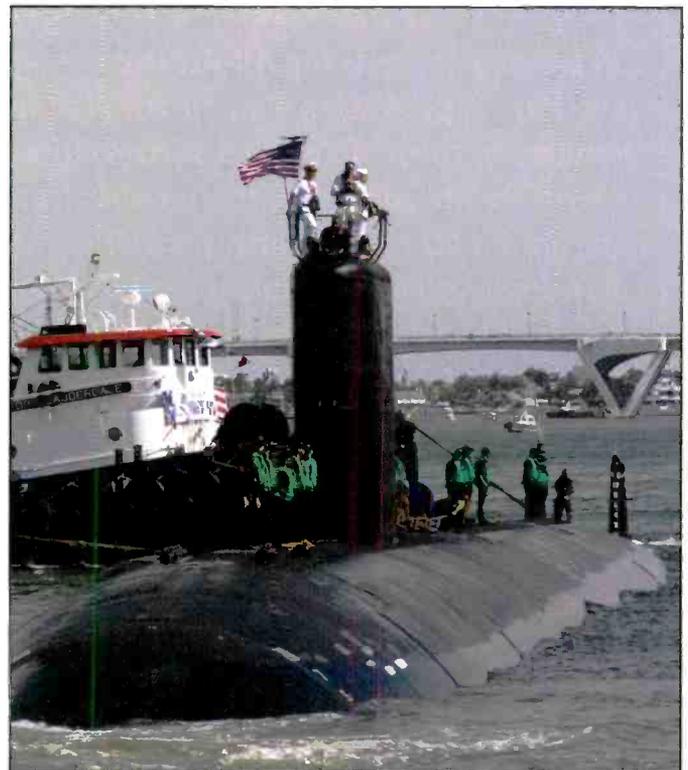
*“If Fleet Week is to feature a ship parade or other movements involving the craft, there’s probably a central control for staging that activity that you can listen to.”*

Many other sea, air, and land events and exhibits will be scheduled at or near Fleet Week celebrations. Typically there are musical performances, parades, friendly competitions like tug-of-war or martial arts, equipment demos, and, of course, ship tours and talks. Many of these, such as the tours, may require advance reservations so the crowds on board a particular vessel can be managed. Others are first come, first served, so you’ll need to get there early for the best tours. You’ll want to check the latest information available for what you’re interested in.

## History

The first official Fleet Week was held in San Diego in June 1935 during the California Pacific International Exposition. In those years leading up to World War II, most Americans were far more occupied with the depression and other urgent matters at home than with world events. President Franklin D. Roosevelt, a former assistant Secretary of the Navy, however, was intent on expanding the American military in response to the darkening world political situation and was looking for a way to build public support. The celebrations surrounding that Exposition seemed to provide a perfect public relations backdrop for this, and Fleet Week was born.

The 1935 Expo saw the arrival of 114 warships and 400 planes, bringing 3,000 officers and more than 50,000 enlisted



Tugboats guide the fast-attack submarine *USS Toledo* (SSN 769) during the kickoff of Fleet Week 2009 Port Everglades. (U.S. Navy photo by Mass Communication Specialist 3rd Class David Danals)

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"waterfall" function to show signal activity over a specified time period

- Composite video output on the rear panel of the unit
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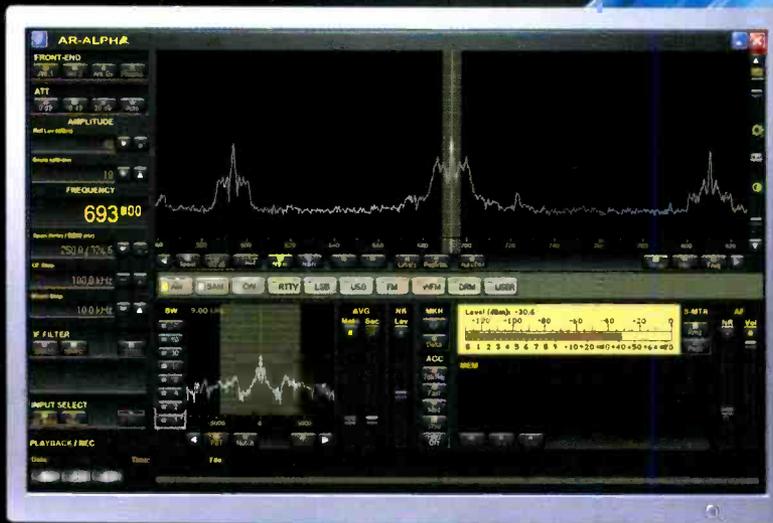
*The AR-ALPHA redefines excellence in professional monitoring receivers. No wonder so many monitoring professionals including government, newsrooms, laboratories, military users and more, rely on AOR.*



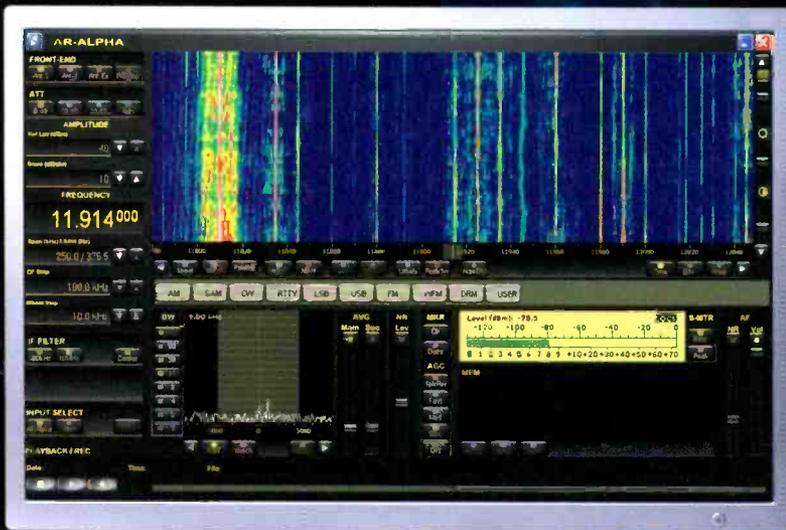
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PC screen displays waterfall function to capture signal bursts

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- Spectrum display, full color waterfall and averaging functions support signal evaluation and analysis
- Easy to use. No training required.

can even listen repeatedly to a loop in time to decode a transmission received in difficult conditions.

AR-IQ software can be uploaded to multiple PCs so that you can transfer data from a PC connected to the AR-ALPHA over to another PC for playback and review.

**The AR-ALPHA with AR-IQ software sets a new standard for professional grade multimode monitoring receivers! To order, contact your AOR dealer today.**

AOR has brought a new level of receiver control to the AR-ALPHA with the addition of AR-IQ software. This free software enables the AR-ALPHA to store and playback a full 1MHz of bandwidth activity without any loss of quality. Raw data can be easily transferred from the AR-ALPHA to the hard drive of almost any computer\*\*\* for later analysis and review. It is even possible to listen to a frequency off-line by recording

data and storing it on a PC. Operators can also create loops to cover a particular time frame so that no signal is missed. Signal bursts are easily seen with the full color waterfall display function.

Using the control panel of the AR-ALPHA through a PC monitor, operators are able to enjoy added capabilities. You can perform unattended datalogging for extended periods of time depending on storage capacity. So, for hours, days or even weeks you can capture up to 1MHz bandwidth between 10kHz and 3.3 GHz for later playback and analysis. You

\*\*\*AR-IQ software can be used with any dual core class PC operating Windows® XP or Vista with 2GHz CPU and 1GB RAM.



The amphibious assault ship *USS Kearsarge* (LHD 3) steams up the Hudson River during the Parade of Ships on the opening day of Fleet Week 2008 in New York. (U.S. Navy photo by Mass Communication Specialist 3rd Class Jonathan Snyder)

men, to the San Diego area. The ships were opened up to the public, and the sailors themselves visited the Expo and the city.

There was a lengthy break after that, however, until 1981 when San Francisco staged a Fleet Week event during the Columbus Day Weekend festivities. Since then, the San Francisco Fleet Week has been held around the Columbus Day holiday, during the second week of October. In the years following, New York and Fort Lauderdale established regular Fleet Week events, and San Diego's was revived as well.

While the main events seem to center around a week or weekend fair, there may be ships in the area for the better part of a month, making monitoring easier and a bit more interesting.

## Fleet Week 2010 Ports Of Call

### *New York*

In New York, the *USS Intrepid* Museum serves as the hub for events and

info. The official festivities are scheduled to begin the week before Memorial Day weekend. Look for activity near Pier 86 (the location of the *Intrepid*), Pier 88, and along the West Side Highway. There's a lot to see and do all through the area, and it's definitely worth a visit if you can get to New York.

At the time of this writing, other than

the ships scheduled (see box), published details were still a bit sketchy, so check out [www.intrepidmuseum.org](http://www.intrepidmuseum.org) or call 877-957-SHIP as the date gets closer for more details.

### *Ft. Lauderdale/Port Everglades*

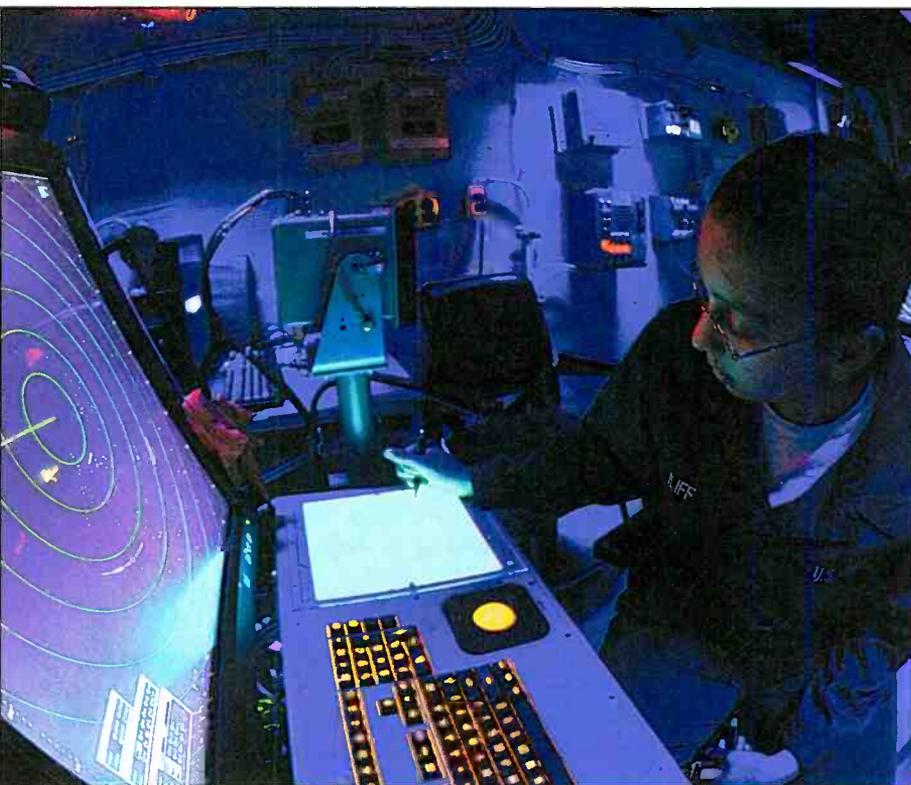
The Ft. Lauderdale event appears to be

## Fleet Week New York 2010 Ships Scheduled

*USS Iwo Jima* (Wasp-class amphibious assault ship)  
*USS Roosevelt* (Arleigh Burke-class destroyer)  
*USS Vella Gulf* (Ticonderoga-class Aegis guided missile cruiser)  
*USS Thunderbolt* (Cyclone-class Coastal Patrol ship)  
*USS Tempest* (Cyclone-class Coastal Patrol ship)  
*USS Hurricane* (Cyclone-class Coastal Patrol ship)  
*HMCS Fredericton* (Halifax-class frigate-Canadian)  
*HMCS Athabaskan* (Iroquois-class destroyer-Canadian)  
*HMCS Preserver* (Protecteur-class Auxiliary Oiler-Canadian)  
*HMCS Montreal* (Halifax-class frigate-Canadian)  
*HMCS St. John's* (Halifax-class frigate-Canadian)  
*USCGC Katherine Walker* (Coast Guard Buoy Tender)  
*USCG Spencer* (Coast Guard Famous-class Medium Endurance Cutter)



Aircraft assigned to Strike Fighter Squadron (VFA) 143 and (VFA) 211 of Naval Air Station Oceana, Virginia, fly over the guided-missile destroyer *USS Nitze* (DDG 94) as it sails up the Hudson River during the Parade of Ships on the opening day of Fleet Week 2008 in New York. (U.S. Navy photo by Mass Communication Specialist 1st Class Sherry Kusner)



Air Traffic Controller Airman Alexis Iliff stands the departure control watch in the carrier air traffic control center aboard the Nimitz-class aircraft carrier *USS Carl Vinson* (CVN 70). (U.S. Navy photo by Mass Communication Specialist 2nd Class Adrian White)

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*Any day you don't learn  
something new is a wasted day!*

## Listening In

### Navy Frequencies

Below are some unconfirmed frequencies that will give you a place to start looking for monitoring Fleet Week comms.

138.600 - Fire/Crash  
 140.075 - Investigators  
 140.100 - Fire/Crash  
 149.355 - Amphibian Bases

### Other

30.1500	30.2900	30.4100	30.4500	32.0500	32.4500
32.6500	32.9100	34.3500	34.5300	34.5500	34.7300
34.9500	36.1500	36.3500	36.4000	36.4600	36.5300
36.5500	36.8500	38.3100	38.9300	38.9500	40.3500
40.5300	40.5500	40.7900	40.8000	40.8100	40.8200
40.8300	41.1100	41.9100	41.9300	41.9500	49.8500
138.5250	138.8500	139.5000	139.5750	140.0250	140.3500
140.4500	140.5250	140.5750	140.7000	140.9000	141.0000
142.5000	143.7000	148.2900	148.3500	149.1000	149.3750
149.4000	149.4500	150.0750	162.6000	162.6250	165.2500
412.9500	412.9750	413.0000	419.3500		

### Marine Frequencies

While not official Navy frequencies, you'll likely want these in your scanner. Many support ships and other communications are likely to take place on the commercial marine band; below are some official frequencies for the New York area.

Frequency	Ch. Dsg.	Description	Mode	Note
156.0500	01A	Port Operations and Commercial, VTS.	FM	
156.2500	05A	Port Operations	FM	
156.3000	6	Intership Safety	FM	
156.3500	07A	Commercial	FM	
156.4000	8	Commercial (Intership only)	FM	
156.4500	9	Boater Calling. Commercial and Non-Commercial.	FM	
156.5000	10	Commercial	FM	
156.5500	11	Commercial. VTS in selected areas.	FM	
156.6000	12	Port Operations. VTS in selected areas.	FM	
156.6500	13	Intership Navigation Safety (Bridge-to-bridge).	FM	
156.7000	14	Port Operations. VTS in selected areas.	FM	
156.7500	15	Environmental (Receive only).	FM	
156.8000	16	International Distress, Safety and Calling.	FM	
156.8500	17	State Control	FM	

the smallest of the four. Only four ships, with 1,000 sailors, took part in 2009. Officially called Broward Navy Days, this Fleet Week will be held from April 26 to May 2 in conjunction with the Air Lauderdale Beach Fest, which includes an air show part of the festivities. Visit [www.browardnavydaysinc.org](http://www.browardnavydaysinc.org), [www.airlauderdale.com](http://www.airlauderdale.com), or call 954-762-7000 for more information.

#### San Francisco

The San Francisco Fleet Week is one of the largest, and the associated air show is a main attraction. Scheduled for October 7 to 12, the crowds are expected to exceed one million on the Columbus Day weekend. In addition to the air show, events planned include a Parade of Ships, a Navy in Space Exhibit (featuring artifacts from missions and exhibits about the role the

Navy has played in the space program), a Marina Green Festival, and ship tours. Visit [www.fleetweek.us](http://www.fleetweek.us) or call 650-599-5057 for more information as the dates draw near.

#### San Diego

San Diego goes all out with its Fleet Week celebrations, held this year from September 25 to October 3. There are official events for sailors, including an Enlisted Recognition Lunch and a Fleet Week Foundation Breakfast, and on September 23 the public events kick off with a car parade on Coronado Island. The main festivities are planned for the weekend of the 25th and 26th with a car race and ship tours as highlights. The Miramar Air Show winds up the celebration on October 1 to 3. Visit [www.fleetweeksandiego.org](http://www.fleetweeksandiego.org) or call 619-858-1545.

156.9000	18A	Commercial	FM	
156.9500	19A	Commercial	FM	
157.0000	20	Port Operations (duplex)	FM	
157.0000	20A	Port Operations	FM	
157.0500	21A	U.S. Coast Guard only	FM	Military
157.1000	22A	Coast Guard Liaison and Information Broadcasts	FM	Military
157.1500	23A	U.S. Coast Guard only	FM	Military
157.2000	24	Public Correspondence (Marine Operator)	FM	
157.2500	25	Public Correspondence (Marine Operator)	FM	
157.3000	26	Public Correspondence (Marine Operator)	FM	
157.3500	27	Public Correspondence (Marine Operator)	FM	
157.4000	28	Public Correspondence (Marine Operator)	FM	
156.1750	63A	Port Operations and Commercial, VTS.	FM	
156.2750	65A	Port Operations	FM	
156.3250	66A	Port Operations	FM	
156.3750	67	Commercial	FM	
156.4250	68	Non-Commercial	FM	
156.4750	69	Non-Commercial	FM	
156.5250	70	Digital Selective Calling (data communications)	FM	
156.5750	71	Non-Commercial	FM	
156.6250	72	Non-Commercial (Intership only)	FM	
156.6750	73	Port Operations	FM	
156.7250	74	Port Operations	FM	
156.8750	77	Port Operations (Intership only)	FM	
156.9250	78A	Non-Commercial	FM	
156.9750	79A	Commercial. Non-Commercial in Great Lakes only	FM	
157.0250	80A	Commercial. Non-Commercial in Great Lakes only	FM	
157.0750	81A	U.S. Government only - Environmental	FM	Federal
157.1250	82A	U.S. Government only	FM	Federal
157.1750	83A	U.S. Coast Guard only	FM	Military
157.2250	84	Public Correspondence (Marine Operator)	FM	
157.2750	85	Public Correspondence (Marine Operator)	FM	
157.3250	86	Public Correspondence (Marine Operator)	FM	
157.4250	88A	Commercial, Intership only	FM	
161.9750	AIS 1	Automatic Identification System (AIS)	FM	
162.0250	AIS 2	Automatic Identification System (AIS)	FM	

### Family Radio Service Channels And Frequencies

Don't forget to monitor the street action using these FRS frequencies.

<b>Ch.</b>	<b>Frequency</b>	<b>4</b>	<b>462.6375</b>	<b>8</b>	<b>467.5625</b>	<b>12</b>	<b>467.6625</b>
1	462.5625	5	462.6625	9	467.5875	13	467.6875
2	462.5875	6	462.6875	10	467.6125	14	467.7125
3	462.6125	7	462.7125	11	467.6375		

## Monitoring The Action

Military monitoring is as much of an art as a science and it isn't getting any easier. Many ships now have their own trunking systems for use in short-range communications, both near shore and within the ship at sea. These systems are likely to be digitally encrypted and virtually unmonitorable, but there may be interesting associated communications that you can hear.

Anytime a vehicle is moving, there's likely to be radio traffic. You might not be able to listen to the Naval ships, but you should be able to hear the support tugs and escort vehicles. There will also be a flurry of activity on local police frequencies providing the required security and traffic control. If Fleet Week is to feature a ship parade or other movements involving the craft,

there's probably a central control for staging that activity that you can listen to. This may also broadcast on the civil marine frequencies as well so any civilian ships involved can be made aware of what's happening in and around the harbor.

In addition, any frequencies that are normally active during a major public event will also be in use during the civilian portions of the Fleet Week celebrations. Crowd control, security, and police and fire assistance is likely to be required. Many fairs and similar public events set up a central dispatch on site to help with getting people and supplies where they need to go. Check the usual police, fire, and business frequencies for these communications. Don't forget the Family Radio Service frequencies; these widely available handheld radios will be used for everything from family members looking for each other to small vendors looking for more hot dog buns.

# Pop'Comm May 2010 Reader Survey Questions

This month we'd like to ask about *you*, the regular responders of our surveys. Please use the Reader Survey Card and circle all appropriate numbers. We'll pick one respondent at random for a free one-year subscription, or extension, to *Pop'Comm*, so don't forget your address. Thanks for participating.

## Are you currently a subscriber to *Pop'Comm*?

- Yes .....1
- No.....2

## How often do you respond to *Pop'Comm*'s surveys?

- This is the first time.....3
- Occasionally .....4
- Frequently.....5
- I pretty much always send it in...6

## Why do you send it in?

- To positively influence content...7
- To gripe.....8
- I'm in it for the sub/extension!...9

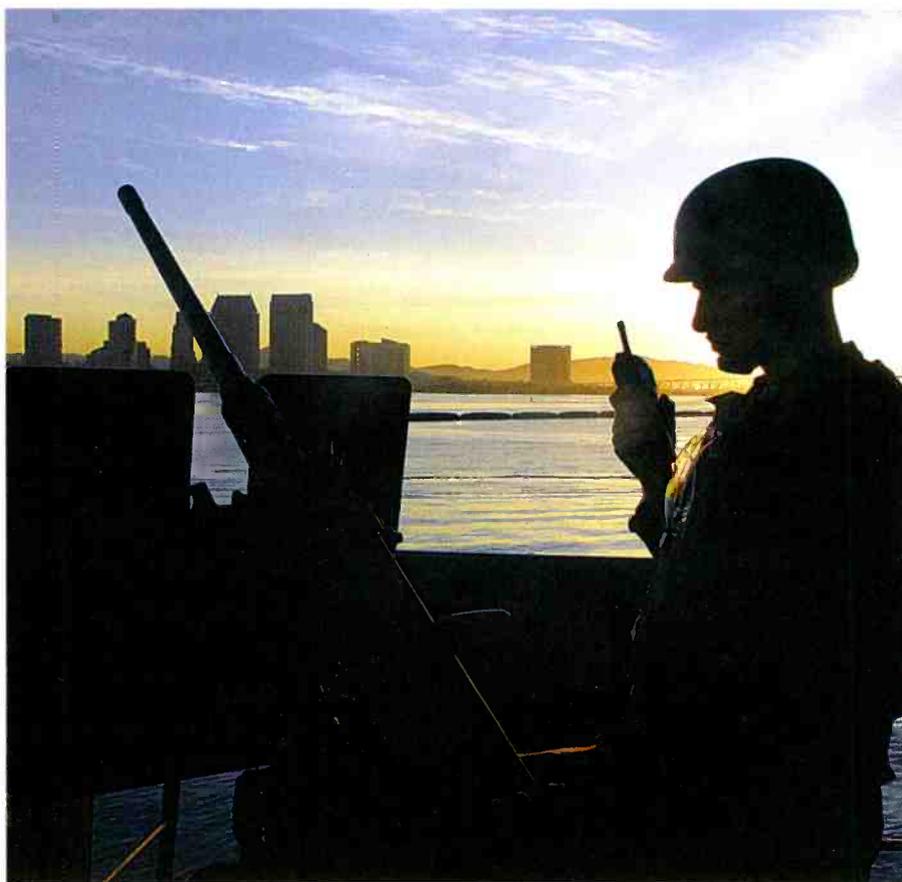
## Do you find *Pop'Comm* is meeting your needs as a hobbyist?

- Yes .....10
- No.....11
- Unsure .....12

## January Survey Highlights

January's survey took a read on the economy's temperature based on what was under your holiday tree. Sadly, a majority of readers didn't find a hobby-related present with their name on it: only 29 percent received hobby gifts, but about half took matters into their own hands to get what they wanted. In purchasing gear, 31 percent of readers said useful features was their main consideration, price came in at 29 percent, necessity at 23 percent, and 17 percent based their purchases on quality.

The winner of a free subscription or extension to *Pop'Comm* this month is **Henry McGann of Dover, Pennsylvania**. Congratulations, Henry!



Gunner's Mate 3rd Class Jonathan Vargo, from Jacksonville, Florida, radios the gunner's liaison officer as the aircraft carrier *USS John C. Stennis* (CVN 74) prepares to leave San Diego. (U.S. Navy photo by Mass Communication Specialist 3rd Class Kenneth Abbate)

The official frequency range for military communications is 225–380 MHz. While AM used to be the official mode, all bets are off today, and FM is just as likely to be used in many instances. Aircraft are still AM and will talk to both ships and local air traffic control. There may be a special air show tower set up to control operations and coordinate with commercial traffic in airspace areas of this density. Check both the civil and military bands for activity. If you're in the New York area, see the "Civil Aviation Monitoring" column elsewhere in this issue for Big Apple airport frequencies.

Again, Fleet Week isn't just for Navy fans, and there are usually some air show events held at the same time, as in San Francisco this year. See the feature article "Air Show Season Takes Off," by Tom Swisher in *Pop'Comm*'s March 2010 issue, for a schedule of shows, then program your scanner with the air frequencies for your area. The military demonstrations use military frequencies, of course, but most air shows also include civilian planes so you may hear

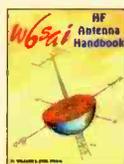
action in both band segments. Take your scanner along even if you don't have a mil-air radio!

Some civilian air show acts may use their own frequency (usually something in the aviation band) to get information to and from their ground crews about where maneuvers need to be performed and the like. Often there's a lot of information about the show passed to the pilot in a conversational manner while he or she waits to be "on stage." Tune around to see what you can pick up.

## Scanners Aweigh!

If you have a Fleet Week event near you, it's well worth visiting. There's plenty to see, do, and hear, usually spread over several days. You can get on some of the ships for a tour, watch air shows, attend demonstrations, and a host of other festivities, plus enjoy everything else these major port cities have to offer. Most importantly, you get to welcome the sailors and other dedicated service people and say "thank you."

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## Sloper Antennas

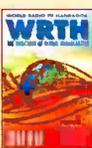
By Juergen A. Weigl, OE5CWL

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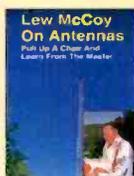
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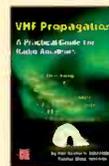
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# International Voices Of Freedom: Can You Hear Me Now?

by Bruce A. Conti  
contiba@gmail.com

*“According to a Bloomberg Radio news report, General Masoud Jazayeri, Iran’s deputy chief of military staff, said that the BBC and VOA are the command room for a soft coup.”*

The BBC, Voice of America (VOA), and Germany’s Deutsche Welle have called upon international regulators to take action against Iran for jamming broadcasts via the airwaves and the Internet. Iran counterpoints that the United States in particular is using the media to incite unrest. Meanwhile closer to home the VOA prepares to expand its reach into Latin America as Venezuela and other nations tighten government restrictions on the airwaves.

## Iran Jamming

The three powerful international broadcasters issued a strong message of condemnation following a new wave of deliberate electronic interference by the Iranian authorities that affected their broadcasts, reported a BBC press release. The English language channel of *BBC World News* was the latest to be jammed. The latest jamming incidents occurred as Iranians marked the 31st anniversary of the Islamic revolution. The jamming affected services on the Hotbird satellite, which covers audiences across Europe and the Middle East. These include BBC Persian television, the VOA television channel in Persian, the Radio Farda service of Radio Free Europe/Radio Liberty (RFE/RL), and Deutsche Welle’s television and radio services.

In a joint statement, Peter Horrocks, director of BBC World Service, Erik Bettermann, director of Deutsche Welle, and Dan Austin, director of VOA said:

We condemn any jamming of these channels. It contravenes international agreements and is interfering with the free and open flow of international transmissions that are protected by international treaties. We call upon satellite operators and those who regulate them to take urgent action to put pressure on Iran to stop this activity. The Iranian authorities are using the same satellite services to broadcast freely around the world including broadcasts in English and Arabic; at the same time they are denying their own people programs coming from the same satellites from the rest of



the world. We will not stop broadcasting accurate and impartial news and current affairs into Iran. We will try every avenue to give our large audiences in Iran the television news services that they want. The jamming violates article 45 of the Constitution of the International Telecommunication Union that prohibits signal interference and we look to the international regulatory community to take a firmer stance on this deliberate act of jamming. Formal complaints have been submitted to the International Telecommunication Union, and other channels are being vigorously pursued to stop further jamming.

Iran defends such actions taken against foreign media. According to a Bloomberg Radio news report, General Masoud Jazayeri, Iran’s deputy chief of military staff, said that the BBC and VOA are the command room for a soft coup. When questioned about BBC jamming during an interview on Channel 4 News in London, Iranian President Mahmoud Ahmadinejad responded:

Who is the BBC owned by? Is it a state-owned company or private? How can a government institution or state-owned company be independent from the policy of the government? Do you know anywhere in the world where the BCC has acted against the policies of the government? The BBC is the instrument of British government foreign policy and the British government has shown that it is against and hostile to our nation. They have shown that for about 100 years.

## VOA To Venezuela

Changes are underway at Radio Martí as the VOA looks to expand coverage into Latin America. Radio Martí is a service of the Office of Cuban

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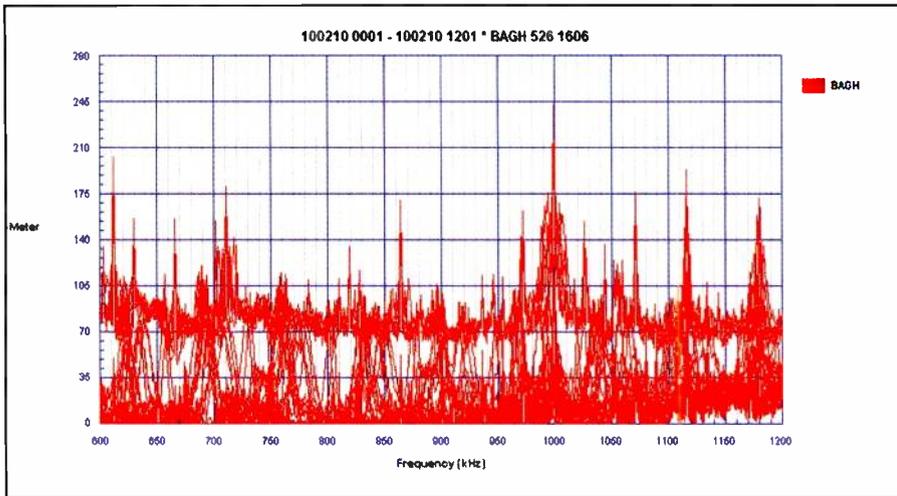
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IBB Monitoring bandscan from Baghdad, Iraq, 600 to 1200 kHz. The signal on 612 kHz is likely VOIRI Iran; the one on 711 kHz is IRIB Iran; while the strongest signals on 999, 1116, and 1179 kHz are local stations in Baghdad.

Broadcasting, created 25 years ago by Congress to beam programming specifically to Cuba via shortwave and a powerful Marathon Key, Florida, station on 1180 AM, operating independent of the VOA. The VOA wants to take advantage of the Miami broadcast studios of Radio Martí and the Marathon Key facility, which have developed a strong link with Latin America over the years. The VOA is targeting Latin American nations that have become increasingly critical of the United States, specifically Bolivia, Ecuador, Nicaragua, and especially Venezuela, where President Hugo Chávez has shut down several independent radio and television outlets that have voiced opposition to government policies.

“Any time a government shuts down an independent network, it is an area of concern of the United States,” stated a VOA editorial release in response to Venezuela actions against the media. “The U.S. values a free and vibrant press within our own society and promotes that ideal abroad as well.”

In February, the VOA introduced *A Fondo*, meaning *In Depth*, over the Radio Martí airwaves. *A Fondo* is a new week-night, Spanish-language radio program targeted to audiences in Latin America and the Caribbean, providing vital news and information to a region where media freedom is under attack. With anchors at VOA studios in Washington, D.C., and the studios of Radio Martí in Miami, the hour-long program utilizes the unique resources of both entities to provide local, national, and international news reports to audiences throughout the region. Call-in segments and interviews with experts

and government officials will provide facts and opinions that are currently unavailable to listeners.

The program was developed in response to the Chávez decision to shut down cable and satellite TV channels for failing to broadcast a speech he made. The Venezuelan government said the stations, including Radio Caracas Television (RCTV), failed to comply with new regulations mandating coverage of Chávez. Protests erupted after RCTV was shuttered.

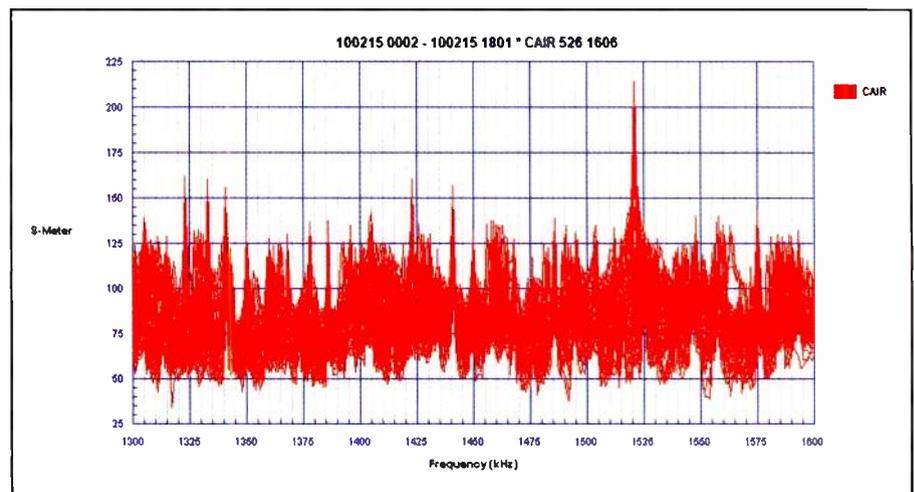
“The media crackdown in Venezuela demonstrates the need for accurate, reliable, and comprehensive news and information to audiences throughout the region. This program will help serve that need,” said Alberto Mascaro, director of the VOA Latin America Division.

The Broadcasting Board of Governors (BBG), an independent federal agency supervising all U.S. government-supported civilian international broadcasting, proposed \$768.8 million to support several key initiatives in its annual budget request for fiscal year 2011, a 1.5-percent increase over the 2010 budget. Per a BBG press release, those initiatives include upgrading the global satellite distribution capacity, expanding FM, digital, and new media opportunities, and the addition of 24/7 FM transmitters in Afghanistan to carry Radio Free Europe/Radio Liberty (RFE/RL) and VOA programming.

The proposed budget also continues funding for ongoing programming, aimed at audiences deemed critical, including 24-hour streams for VOA Persian News Network television and RFE/RL Radio Farda to Iran; Alhurra, including Al Youm, the daily three-hour Alhurra Television program broadcast live from the Middle East; Radio Sawa to the Middle East; Afia Darfur to Sudan and Eastern Chad; VOA and RFE/RL Pashto programming to the Afghanistan/Pakistan border region; RFE/RL and VOA Dari and Pashto programming to Afghanistan; VOA Urdu radio and television broadcasts to Pakistan; VOA Somali to Somalia; a 10-hour coordinated RFA and VOA stream to North Korea; and a 30-minute, five-day-a-week VOA Spanish television program for Venezuela.

## IBB Monitoring

The Spectrum Management Division of the Office of Engineering of the



The BSKSA station from Saudi Arabia on 1521 kHz dominates this IBB Monitoring bandscan from Cairo, Egypt, covering 1300 to 1600 kHz.

## This Month In Broadcast History

*75 Years Ago (1935)*—The *America's Town Meeting of the Air* political debate program premiered on NBC radio with a discussion about Social Security.

*50 Years Ago (1960)*—Radio

Swan commenced broadcasting from Swan Island on 1160 and 6000 kHz under the direction of the CIA as part of a plan to topple the Castro regime in Cuba, while at the same time the Soviet Union and Cuba were re-establishing diplomatic relations. CONELRAD (Control of Electronic Radiation) "Operation Alert" took over the radio and TV airwaves nationwide for a 30-minute test of the emergency alert system in which people were instructed to proceed to the nearest bomb shelters.

*25 Years Ago (1985)*—The Voice of America's Radio Martí began broadcasts beamed to Cuba on 1180 AM and shortwave.



International Broadcasting Bureau (IBB) has frequency management responsibility for the VOA, RFE/RL, Radio Martí, Radio Free Asia, Radio Sawa, and Radio Farda. IBB Monitoring provides audible samples and spectrum occupancy bandscans of shortwave, mediumwave, and FM reception from locations around the world.

IBB Monitoring operates a network of over 70 remote monitoring system (RMS) sites in order to determine and demonstrate the audibility of its own and others' broadcasts. Each RMS consists of an antenna, a radio, and a computer attached to the Internet. A simple text file script is used by the computer to collect and encode sound samples and bandscan information from the radio. Data collected by each RMS is then sent via email to one or more servers in Washington and overseas, made available through <http://voa.his.com>. A check of IBB Monitoring files found a number of VOA AM signals could be received in the Middle East, but reception within Iran remains an unknown without a monitoring site located inside that nation.

## Broadcast Loggings

Two 50-kW Montreal radio stations, 690 CINF and 940 CINW, signed off and turned in their licenses, thus leaving the frequencies clear for DXers in the northeast. Meanwhile, Chris Gay, KU4A, was taking advantage of sunrise DX conditions as outlined in the February edition of "Broadcast Technology," and east coast DXers received super signals from northern latitudes. Reception of the Middle East and more appears in this month's selected logs. All times are UTC.

**530 CIAO Brampton, Ontario**, at 1135 with ethnic South Asian talk, verified by Internet stream. (Gay-KY)

**530 Radio Enciclopedia, La Habana, Cuba**, at 0200 fair, over CIAO; theme music and ID, "Transmite CMBQ Radio Enciclopedia, desde la Habana, Cuba." (Conti-NH)

**531 Kringvarp Føroya Útvarpid, Akraberg, Faroe Islands**, at 2147 "Here I Go Again" by Whitesnake, then a Scandinavian-language pop vocal; way over co-channel Spain. (Connelly-MA) 2154–2258 (yes!), for 1 hour and 4 minutes! Strong and alone on the channel with male DJ in Faroese and mostly English rock and pop music including The Eagles' "Take It to the Limit" at 2156. Clearly parallel to web-

stream, which was only 15 seconds behind the over-the-air audio. (DeLorenzo-MA) At 0600 American pop music, top of the hour pips, then a man in presumed Faroese and more pop music. Recorded; good. (Black-MA)

**549 Chaîne 1, Les Trembles, Algeria**, at 0520 Arabic dance music briefly surfaced on the low side of a weak-fair 550 WGR, otherwise a loud and annoying het against the weakish 550 stations. (Chiochiu-QC)

**550 WSVa Harrisonburg, Virginia**, at 1208 with news and clear ID. (Gay-KY)

**560 WJLS Beckley, West Virginia**, at 1200 with gospel music and clear ID on the hour, topping a busy channel. (Gay-KY)

**576 MDR Muhlack, Germany**, at 2248–2300 good with discussion in German on Iran and Afghanistan parallel to webstream via delicast.com. First time heard. (DeLorenzo-MA)

**580 WGAC Augusta, Georgia**, at 1130 with the morning news. (Gay-KY)

**580 WSKS West Jefferson, North Carolina**, heard at 1235 with country music. (Gay-KY)

**600 WSJS Winston-Salem, North Carolina**, at 1245 with CBS News, sports scores, and clear ID. (Gay-KY)

**610 KCSP Kansas City, Missouri**, at 1142 with sports news, "610 Sports Radio." (Gay-KY)

**630 NRK Vigra, Norway**, at 2149 Norwegian talk, then primitive-sounding folk vocal; good, way over co-channel WPRO. (Connelly-MA)

**630 RTT Tunis-Djedeida, Tunisia**, at 2159 an Arabic male vocal, flute, strings; mixed with Norway and WPRO. (Connelly-MA)

**660 WLFJ Greenville, South Carolina**, at 1220 talk about weather in the Carolinas and clear ID. (Gay-KY)

**690 HJ CZ Radio Recuerdos, Bogotá, Colombia**, at 0504 a new log and thanks to the guys at RealDX. (Barstow-MA) At 0628 ranchera, "Los bailados de siempre están en Radio Recuerdos," then a classic cumbia track. Poor to fair, but dominant over apparent Cuba which was IDed earlier. New! I have 610 HJKL, 650 HJKH, 760 HJAJ, 770 HJJX, 810 HJCY, 1070 HJIJ, and 1070 HJCG, so this is my 8th Colombian on mediumwave. First new Colombian in ages! In 700 WLW null! It's hard to null out WLW without also semi-nulling Colombia, but a semi-null is better than a total null! (Chiochiu-QC)

**690 Radio Progreso, Jovellanos, Cuba**, at 0025 fair, over/under co-channel WELD with CINF off; alternating man and woman along with telephone news/talk parallel 640 kHz. (Conti-NH) At 0115 parallel 640 kHz. At 0404 on top with at least one or two Spanish stations under them. (Barstow-MA)

**693 RDP Açores Antena 1, Terceira, Azores**. 2141–2200 good mostly under but occasionally over BBC with man and woman in Portuguese taking phone calls and playing pop tunes. (DeLorenzo-MA) At 2210 apparent sports play-by-play, crowd noises in the background. Up and down reception but fairly good at peaks. Definite Portuguese language. Seemed to have interviews between play-by-play so it may have been a rebroadcast or sports program. (Wood-MA)

**693 BBC Radio 5, Droitwich, United Kingdom**, at 0040 loud and clear; talking live with a reporter at WMAL Washington, D.C. 0200 good, synchro echo; music bed and time pips, "On digital and online, this is BBC Radio Five Live." Occasional digital noise believed to be from Germany or Italy DRM. (Conti-NH) At 2129 excellent over RDP Azores discussing the political situation in Australia. In the clear with 690 CINF Montreal now silent. (DeLorenzo-MA) At 2200 ID/announcement, "This is BBC Radio, Five Live news," slightly over Spain and probable Azores. (Connelly-MA)

**702 RMC Col de la Madone, France**, at 2200 Chinese talk, then French, 5 pips then a sixth higher-pitched one, music flourish, "Vous écoutez Radio Chine International." (Connelly-MA)

**730 WPIT Pittsburgh, Pennsylvania**, at 1250 with religious teaching show by RC Sproul. (Gay-KY)

**780 WWOL Forest City, North Carolina**, at 1300 with clear ID. (Gay-KY)

**783 Radio Syria 1, Tartus, Syria**, at 0301 fair; distinct interval signal. (Conti-NH)

**810 ZNS3 Nassau, Bahamas**, at 0400 religious singing, then a woman in Island accent announcing end of program, "The Choice of God Prophecy," gave address and phone number in Freeport, Grand Bahama. Very good. (Black-MA)

**819 ERTU Batra, Egypt**, at 2240 fair with typical Mid-East music. (Barstow-MA)

**830 WTRU Kernersville, North Carolina**, at 1230 with religious programming. (Gay-KY)

**864 France Bleu, Paris, France**, at 0320 good; Barry Manilow "Copacabana," France Bleu jingle, and a contemporary French vocal, parallel streaming audio. (Conti-NH)

**870 WPWT Colonial Heights, Tennessee**, at 1246 with a long list of school closings. (Gay-KY)

**910 WJCW Johnson City, Tennessee**, at 1332 with local news and talk about heavy snow in the mountains. (Gay-KY)

**963 Radio 86, Pori, Finland**, 0334-0354 fair, relaying China Radio International in both Chinese and Russian. ID and URL in Russian at 0354. MW country #102 heard from Mass. Thanks to Sylvain Naud for help via Real DX! (DeLorenzo-MA) 0400-0420 a clear signal with woman in Russian, brief musical fanfare, reference to Radio Kitaya (Radio China). I emailed CRI, sent a report, got an immediate response, and later received a QSL card for 963 and their broadcast in Russian. Have been trying for Finland a long time and lately when many others have heard it found 963 kHz blocked by WPEN-HD digital noise. Verified country #131. (Dangerfield-PA) At 0500 fair, over unidentified time pips; time pips and "Mezhdunarodnoye Radio Kitaya" ID. (Conti-NH)

**1030 WNVR Vernon Hills, Illinois**, at 1235 with "Polskie Radio Chicago," strong once sunrise removed co-channel WBZ. (Gay-KY)

**1030 KCTA Corpus Christi, Texas**, at 1200 with clear ID. Probably right after switch to daytime power. (Gay-KY)

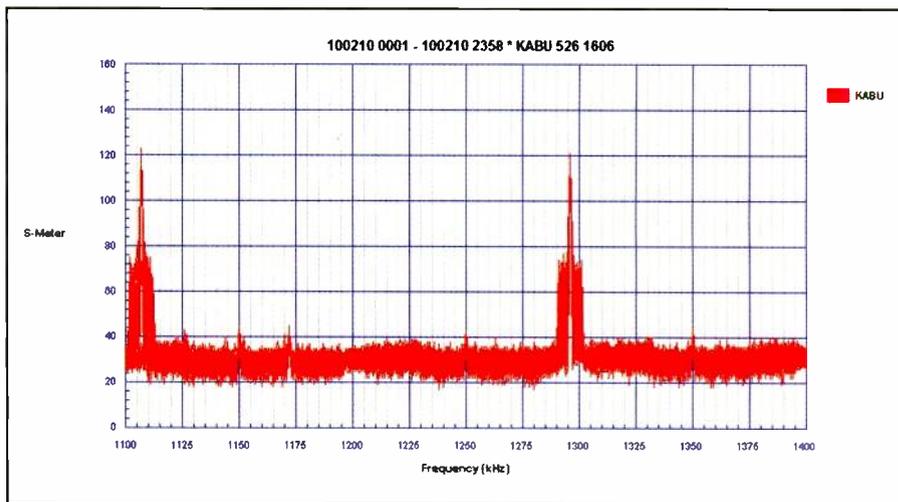
**1040 WYSL Avon, New York**, at 1325 heard "Newstalk 1040." (Gay-KY)

**1040 WPBS Conyers, Georgia**, heard at 1400 with clear ID on the hour, otherwise foreign language ethnic talk language. Very loud, but first time heard here. (Gay-KY)

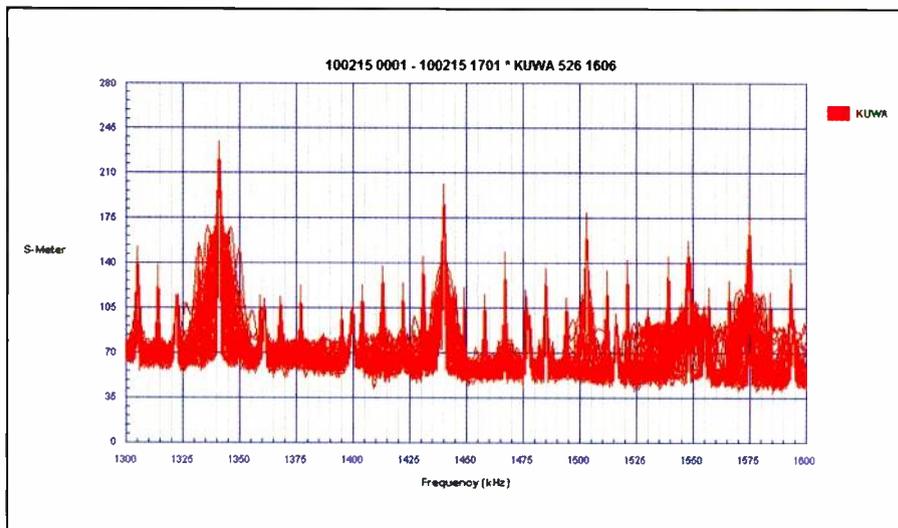
**1062 Danmarks Radio, Kalundborg, Denmark**, at 0440 excellent; alternating between two cycles of interval signal and sign-on announcement. (Conti-NH)

**1090 WKFI Wilmington, Ohio**, at 1445 with gardening show, then into country music. (Gay-KY)

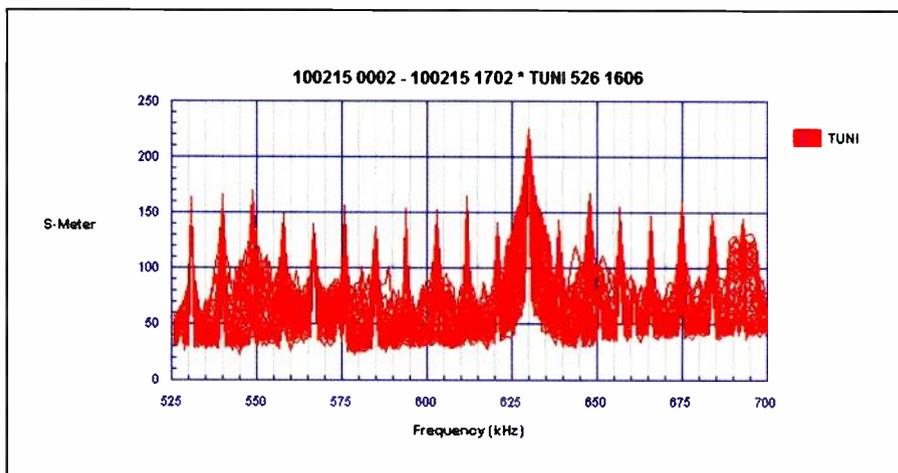
**1179 România Actualitati, Galbeni-Bacau, Romania**, at 2315 fading up through Sweden; contemporary vocals and telephone talk in distinctive Romanian language. A contemporary female vocal at 2340 was clearly parallel streaming audio. (Conti-NH)



Two local signals, RTV on 1107 and VOA on 1296 kHz, are the only two readable ones in this bandscan from Kabul, Afghanistan, covering 1100 to 1400 kHz.



In this 1300- to 1600-kHz Kuwait bandscan, 1341 Kuwait, 1440 Saudi Arabia, 1503 Iran, 1548 Radio Sawa Kuwait, and 1575 Radio Farda UAE are among many signals.



This bandscan from Tunisia covering 525 to 700 kHz shows many signals received over the saltwater path of the Mediterranean along with the local RTT Tunis station on 630 kHz. Note the DRM digital signal on 693 kHz from Europe.

**1179 Radio Sweden International, Sölvesborg, Sweden**, at 2230 the reception of a lifetime, since I live within shouting distance on 1180 WHAM Rochester, but by tweaking LSB/BFO/phaser knobs I was able to dredge up usable audio at 2215 or so and compare it to Global Tuners' Swedish receiver. By 2230 I was able to hear a good bit of programming without needing Global Tuners, when there was an interval signal followed by English programming about President Obama. MW country #69. (Renfrew-NY) At 2240 good; English program, feature story about national identity. 2300 into foreign language, Romany program per WRTH. Suddenly disappeared at 2359, leaving Romania with a fair signal in 1180 WHAM slop. (Conti-NH)

**1188 IRIB Radio Payam, Tehran, Iran**, at 2200 ascending three note chimes, then news; poor. (Connelly-MA) At 2223 weak with singing like a choir. New log, first reception on 1188 kHz. Thanks to Sylvain Naud for help with ID. (Barstow-MA)

**1210 WILY Centralia, Illinois**, at 1251 with oldies and clear ID. Co-channel WPHT luckily weaker than normal at the time. (Gay-KY)

**1210 WANB Waynesburg, Pennsylvania**, at 1416 with country music and clear ID. (Gay-KY)

**1240 WLLV Louisville, Kentucky**, heard at 1520 with a religious program. WFTM usually dominates 1240 kHz here. (Gay-KY)

**1296.323 COPE Valencia, Spain**, at 0400 carrier with bits of audio. Poor. Also noted by Sylvain Naud, Karel Honzik and Mauricio Molano via RealDX as being off frequency. (Black-MA)

**1431 Radio Sawa, Arta, Djibouti**, heard at 0158 good through adjacent channel slop; female singing an Arabic song with a high-pitched vibrating voice. (Barstow-MA)

**1512 ERA Chania, Crete, Greece**, at 0055 good at times in peaks with slop. Playing ballads including "Strangers in the Night." Did not catch the announcer and 1510 WWZN Boston didn't help. Parallel a weaker 1404 kHz. (Barstow-MA) At 0330 good with female singer doing Greek ballads, parallel to 7475 kHz. I verified this station 10 years ago and hadn't heard it since then. (Dangerfield-PA)

**1560 WCNW Fairfield, Ohio**, at 1730 with gospel music and clear ID. (Gay-KY)

**1575 Radio Farda, Al Dhabiya, United Arab Emirates**, at 2056 presumed with a nice early signal, heard with a man speaking, through domestic slop. At 2151 heard with music parallel Web audio. (Renfrew-NY)

Thanks to Roy Barstow; Chris Black, N1CP; Bogdan Chiochii; Mark Connelly, WA1ION; Ben Dangerfield; Marc DeLorenzo; Chris Gay, KU4A; Jim Renfrew; and Steve Wood.

Until next time, 73 and Good DX!

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# BROADCASTING

## World Band Tuning Tips

# World News, Commentary, Music, Sports, And Drama At Your Fingertips

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	6035	La Voz del Guaviare, Colombia	SS	0300	3320	Radio Sondergrense, South Africa	Afrikaans
0000	7475	Voice of Greece	GG	0330	7215	TWR, via South Africa	Oromo
0000	12055	Adventist World Radio/KSDA, Guam	CC	0400	5865	Radio Algerienne, Algeria, via France	AA
0000	9655	Deutsche Welle, Rwanda Relay	GG	0400	4915	Radio Diffusora Macapa, Brazil	PP
0000	9565	Radio Canada, via South Korea	CC	0400	11690	Radio Okapi, Congo, via South Africa	FF
0000	9599	Radio UNAM, Mexico	SS	0400	6030	Radio Oromiya, Ethiopia	Oromo
0000	15180	Voice of Korea, North Korea	SS	0400	4780	Radio Djibouti	AA
0000	4955	Radio Cultural Amuata, Peru	SS	0400	4770	Radio Nigeria	
0000	4747	Radio Huanta, Peru	SS	0400	11610	Voice of the People (to Zimbabwe)	
0000	4835	Radio Maranon, Peru	SS	0400	4790	Radio Vision, Peru	SS
0000	6055	Radio Exterior de Espana, Spain		0400	6130	Radio Romania Intl;	
0000	9680	Radio Thailand		0400	7230	Channel Africa, South Africa	
0030	9525	Radio Romania Intl	SS	0400	4960	Voice of America, Sao Tome Relay	
0100	7400	Radio Bulgaria	BB	0400	4965	The Voice-Africa, Zambia	
0100	9570	China Radio Intl, via Albania		0400	6020	Voice of Turkey	
0100	6060	Radio Havana Cuba	SS	0400	4976	Radio Uganda	
0100	6290	Radio Cairo, Egypt	AA	0400	9955	WRMI, Florida	
0100	4815	Radio el Buen Pastor, Ecuador	SS	0430	6100	Radio Tirana, Albania	
0100	3250	Radio Luz y Vida, Honduras	SS	0430	4775	TWR, Swaziland	
0100	7235	Islamic Republic of Iran Broadcasting		0500	4985	Radio Brazil Central	PP
0100	11735	Voice of Korea, North Korea		0500	4885	Radio Clube do Para, Brazil	PP
0100	6240	Voice of Russia, via Moldova		0500	5045	Radio Cultura do Para, Brazil	PP
0100	7250	Voice of Russia		0500	11815	Radio Brazil Central	PP
0100	6040	Radio Slovakia Intl	Slovak	0500	5910	Marfil Stereo, Colombia	SS
0100	6190	International Radio of Serbia		0500	3985	Hrvatski Radio, Croatia	Croatian
0100	6175	Voice of Vietnam, via Canada		0500	7210	Radio Fana, Ethiopia	Amharic
0100	7440	Radio Ukraine Intl		0500	5875	BBC, via Russia	
0100	7415	Radio Farda, Germany Relay	Farsi	0500	3975	Radio Budapest, Hungary	HH
0100	5110	WBCQ, Maine		0500	4845	Radio Mauritanie, Mauritania	AA
0200	11710	Radio Argentina al Exterior	SS	0500	4990	Radio Apinte, Suriname	
0200	7355	Radio Prague, Czech Republic		0530	5005	Radio Nacional, Equatorial Guinea	SS
0200	5025	Radio Rebelde, Cuba	SS	0530	6250	Radio Nacional, Equatorial Guinea	SS
0200	3340	Radio Misiones International, Honduras	SS	0600	6070	CFRX, Canada	relay CFRB
0200	4975	Radio del Pacifico, Peru	SS	0600	5990	Italian Radio Relay Service	
0200	11970	Radio Romania Intl		0700	7125	Radio Guinee, Guinea	FF
0200	7360	Vatican Radio		0800	9635	RT du Mali	FF
0200	5446	AFN/AFRTS, FL	usb	1000	3310	Radio Mosoj Chaski, Bolivia	SS
0300	4950	Radio Nacional, Angola		1000	6160	CKZN, Canada	
0300	4930	Voice of America, Botswana Relay		1000	3280	La Voz del Napo, Ecuador	SS
0300	5900	Radio Bulagria		1000	9690	Voice of Nigeria	
0300	5790	BBC	AA	1000	9765	Radio New Zealand Intl	
0300	5010	Radio Madagasikara, Madagascar	Malagasy	1100	9580	Radio Australia	
0300	7200	Radio Omdurman, Sudan	AA	1100	2325	ABC No. Terri. Svc., Tennant Creek, Australia	

UTC	Freq.	Station/Country	Notes	UTC	Freq.	Station/Country	Notes
1100	13770	Radio Havana Cuba	SS	1600	9610	Radio Canada Intl	
1100	6010	La Voz de tu Concencia, Colombia	SS	1600	13740	Radio Dabanga (to Sudan)	EE/AA
1100	6025	Radio Amanecer, Dominican Republic	SS	1600	15235	Channel Africa, South Africa	FF
1100	13780	Deutsche Welle, Germany, Portugal Relay	GG	1800	17895	VOA, Botswana Relay	
1100	15640	Deutsche Welle, Sri Lanka Relay	II	1800	11725	Deutsche Welle, Germany	GG
1100	4800	Radio Transcontinental, Mexico	SS	1800	9650	Polish Radio, via Germany	
1100	3260	Radio Madang, Papua New Guinea	Tok Pisin	1800	11815	Adventist World Radio, via South Africa	
1100	5020	Solomon Islands Broadcasting Corp.		1900	17680	CVC Intl, Chile	SS
1200	6020	Radio Australia		1900	15120	Voice of Nigeria	
1200	9755	Radio Canada Intl		1900	7330	Voice of Russia	
1200	11980	China Radio Intl		1900	9330	Radio Damascus, Syria	FF
1200	13790	China Radio Intl		1900	9780	Republic of Yemen Radio	AA
1200	15785	Galei Zahal, Israel	HH	2000	12090	Far East Broadcasting Co., Northern Marianas	VV
1200	4750	Radio Republik Indonesia	II	2000	12080	VOA Botswana Relay	FF
1200	9900	Islamic Republic of Iran Broadcasting	CC	2000	9410	BBC, Seychelles Relay	
1200	11840	All India Radio	CC	2000	6225	Radio Telefis Eireann, Ireland, via South Africa	Sundays
1200	6120	Radio Japan, via Canada		2000	11990	Radio Kuwait	
1200	6175	Voice of Malaysia	II	2000	11655	Radio Nederland, via Germany	
1200	6105	XEQM/Merida, Mexico	SS	2000	11975	Voice of America ,Sao Tome Relay	
1200	7295	Traxx FM, Malaysia		2000	11625	Vatican Radio	
1200	9585	KFBS, Northern Marianas	VV	2000	11735	Voice of Tanzania, Zanzibar	Swahili
1200	11530	Denge Mesopotamia (to Iran)	Pashto	2000	11845	Adventist World Radio, via South Africa	Hausa
1200	7280	Sound of Hope (to China)	CC	2030	7345	Radio Slovakia Intl	FF
1200	12130	T8WH, Palau		2100	7430	Radio Tirana, Albania	
1200	3385	Radio East New Britain, Papua New Guinea	Tok Pisin	2100	6155	Radio Belarus	
1200	9430	Far East Broadcasting, Philippines	CC	2100	11845	China Radio Intl, via Cuba	FF
1200	13590	Voice of Russia	CC	2100	7445	BBC, Cyprus Relay	
1200	12065	Voice of Russia	VV	2100	11690	Deutsche Welle, Germany, Rwanda Relay	
1200	15660	Voice of Russia	RR	2100	7225	RT Tunisienne, Tunisia	AA
1200	5920	Kamchatka Radio, Russia	RR	2130	6115	Radio Romania Intl	
1200	9650	KBS World Radio, South Korea, via Canada		2200	13630	Radio Australia	
1200	15450	Voice of Turkey		2200	15560	Radio Australia	
1200	9720	Radio Thailand		2200	9915	BBC, Ascension Is. Relay	
1200	15690	Radio Farda, Sri Lanka Relay	Farsi	2200	12095	BBC, Ascension Is. Relay	
1200	11700	Radio Liberty, Philippines Relay	RR	2200	11925	Radio Bandeirantes, Brazil	PP
1200	7470	Radio Free Asia	Taiwanese	2200	4319	AFN/AFRTS, Diego Garcia	usb
1200	9490	Voice of America, Northern Marianas Relay	Korean	2200	11670	Radio Nacional Venezuela, via Cuba	SS
1300	15400	HCJB Global, Australia		2200	5885	Vatican Radio	
1300	6140	Deutsche Welle via Russia	CC	2300	4409	Radio Eco, Bolivia	SS
1300	9525	Voice of Indonesia	various	2300	11780	Radio Nacional Amazonas, Brazil	PP
1300	9870	All India Radio	Hindi	2300	11975	China Radio Intl, via Mali	CC
1300	15110	Radio Kuwait	AA	2300	13680	Radio Havana Cuba	SS
1300	6170	Radio New Zealand International		2300	7580	Radio Cairo, Egypt	AA
1300	11675	Polish Radio, via Germany		2300	11955	BBC, Thailand Relay	
1300	9900	Voice of Russia	Pashto/Dari	2300	6195	BBC, Singapore Relay	
1300	11600	Radio Sweden	Swedish	2300	17810	Radio Japan	JJ
1300	7575	Voice of America, Thailand Relay		2300	17605	Radio Japan, via Bonaire	JJ
1300	9565	VOA Deewa Radio, Thailand Relay	Urdu	2300	5995	RT du Mali	FF
1400	11705	Radio Japan		2300	6240	Radio PMR, Moldova	
1400	9535	Radio Nikkei, Japan	JJ	2300	7270	Voice of China	CC
1400	9880	Furusato no Kaze (to North Korea)	JJ	2300	9720	Radio Veritas Asia, Philippines	Burmese
1400	9400	Radio Sweden		2300	9435	Far East Broadcasting, Philippines	Malay
1500	13750	Austrian Radio	GG	2300	7320	Radio Rossii, Russia	RR
1500	12095	BBC		2300	9535	Radio Exterior de Espana, Spain	SS
1500	9935	Radio Makedonias, Greece	GG	2300	7445	Voice of Asia, Taiwan	Thai
1500	11710	Voice of Korea		2300	15550	Radio Free Asia, Northern Marianas Relay	CC
				2300	5930	Radio Prague, Czech Republic	

## Trivia And Toons

by R.B. Sturtevant, AD7IL

**Q.** Drift stations built on ice flows have given us a lot of information about arctic conditions and the region around the North Pole. When did radio begin to play a part in this scientific research?

**A.** In the summer of 1937 four Soviet airplanes established a drifting polar station near the North Pole, which was among the first of its kind. Forty-one people were stationed there, including one of the first arctic radio operators. It was established on a 10-foot-thick ice flow, drifting away from the Pole toward the Sea of Greenland.

After 274 days and 1,554 miles of floating the seas while conducting scientific research, the station's crew was taken on board a Soviet icebreaker on February 19, 1938, after six days of storms. The expedition uncovered a great deal of information about the polar region and the surrounding sea, and the radio station received and transmitted nearly 3,000 radio messages during this time. Soviet pilots Valerii Chkalov and Mikhail Gromov made two record-breaking flights over the polar route from the Soviet Union to the United States aided by weather reports from this ice station's radio.

**Q.** When was the first radio message heard around the world?

**A.** You've got your choice on that one. The first radio transmission that was heard "completely

around the world" was from a Navy radio station near Bordeaux, France, on August 21, 1920 (local date). But if you want to know when radio messages were first heard literally *around* the world, that's from an earlier period: December 1907 to 1909. That was when President Theodore Roosevelt sent the four Battleship Divisions of the Atlantic Fleet on an around-the-world mission. The ships were all painted white to symbolize Peace. Dubbed the Great White Fleet, the ships sailed around the world making contact via radio with as many Naval and Civilian vessels and shore stations as they could reach. The signals didn't go as far as they would in 1920, but as they sailed, the ships of the Great White Fleet sent and received messages in places where long-range radio had never been heard before.

Whichever answer you like, it was a triumph for the Navy.

**Q.** When did experimenters start working on radio-controlled devices?

**A.** A lot earlier than you might think. In 1914 the term *radiodynamics* was being used to describe the control of devices using wireless signals. In 1897, when wireless telegraphy was just getting started, engineer Ernest Wilson was granted a British patent for the wireless control of dirigibles. The purpose of his invention was to carry dirigible torpedoes against an enemy fleet.

Nikola Tesla began testing a wireless-controlled boat-like vessel that could be operated without wires from a distance of less than a half-mile. He began research in 1892 and had a working model by 1897. His device was patented in 1898.

Active in this field were no less than 10 noted inventors, including Thomas Edison who worked out a dirigible torpedo. Most of these "infernal engines" could be guided from distances of about 500 feet and were pretty primitive. One dirigible was 15 feet long, weighed 16 pounds, and used a gasbag made from the intestines of 4,000 pigs. That's a long way from a cruise missile, but that's where the journey began.

### Spurious Signals



### By Jason Togyer KB3CMM



# New, Interesting, And Useful Communications Products

## Grace Digital Allegro Portable Wi-Fi Radio And Media Streamer



Grace Digital has introduced a portable Wi-Fi radio, the Allegro GDI-IRD4000, which offers users the flexibility to listen to streaming content without a computer wherever they choose. It accesses online music services like Pandora, Live365, and Sirius (with subscription) as well as more than 17,000 radio stations worldwide from Reciva's database, and will play your own media files with its built-in media player. It offers clear, high-quality audio to the rear-ported stereo speaker from its class D 16-watt digital amplifier. For portability, it can be powered by six AA or NiMH batteries (a built-in charging circuit for NiMH batteries means you don't need a separate charger; Grace claims eight hours of operation on a single charge).

Other features include high-contrast LCD display; full-function, 10-station preset remote control; control of one or more Grace Internet radios via iPhone or iPod Touch; five quick access radio station presets; built-in speaker jacks, stereo headphone jack; support of all major digital audio formats; 12-language menu: English, French, German, Italian, Spanish, Portuguese, Dutch, Danish, Finnish, Swedish, Norwegian, and Japanese.

The MSRP for the Grace Digital Allegro GDI-IRD4000 is \$169.99. For more information, visit [www.gracedigitalaudio.com](http://www.gracedigitalaudio.com).

### Gear Shift...

#### GRE And Alinco Team Up

GRE, Inc. and Alinco, Inc. announced an agreement under which GRE America, Inc. will distribute, offer customer support, and provide warranty and non-warranty repair for radios and amplification equipment under the Alinco brand for all of North America. The announcement stated that both the amateur radio and radio scanning communities would benefit from the new alliance.

Under the agreement, GRE, Inc., will be the exclusive distributor of Alinco products in the U.S., Canada, and Mexico and will handle all warranty service and parts orders. GRE will also provide out-of-warranty service, as will other currently authorized Alinco service centers.

Established in 1961, GRE Inc., designs, manufactures, and markets the GRE-COM line of analog and digital scanning receivers and is a private label original equipment/original design manufacturer of scanning receivers. GRE also produces industrial and consumer communication and electronic products for many of the world's leading electronic companies and governments. Established in 1970, Alinco, Inc., manufactures radio and amplification equipment. It introduced its communication products into the U.S. market over 20 years ago.

For more information, visit [www.greamerica.com](http://www.greamerica.com) or [www.alinco.com](http://www.alinco.com).

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# Surrogates In Pakistan And Iran, Radio Prague Still Stirring, And More

by Gerry L. Dexter  
gdex@wi.rr.com

*“Unfortunately, working in shortwave broadcasting can still prove hazardous to your health, especially if you find yourself involved with a surrogate, clandestine-opposition-target broadcaster.”*

You may have run across a strange new broadcast recently. Radio Mashaal, a division of Radio Free Europe/Radio Liberty, is a new surrogate broadcaster beamed to Pakistan, especially the Al Qaeda and Taliban-infected areas of the Northwest Frontier Province and the so-called tribal areas along the border with Pakistan. According to the station, there are hundreds of illegal radio stations in the area busily calling for all sorts of mayhem. Radio Marshaal’s mission is to combat that through its programming, which is expected to reach nine hours per day by September. We don’t yet have any information as to what frequencies or sites are being used for the service. It will broadcast using the oft-employed line-up of local FM, shortwave, satellites and the Internet.

Unfortunately, working in shortwave broadcasting can still prove hazardous to your health, especially if you find yourself involved with a surrogate, clandestine-opposition-target broadcaster. Through the years there have been arrests, imprisonments, beatings, and in at least one case, a murder. Most recently, the AP reports that seven people working for Radio Farda have been arrested by Iranian authorities, accused of spying and

contributing to the demonstrations against the government there. Radio Farda is a U.S.-sponsored surrogate broadcaster that beams programming in Farsi to Iran.

Give yourself a pat on the back if you were one of the people who wrote to Radio Prague, encouraging it to continue on shortwave. Late word is that it plans to do so, although another slice in its budget will mean some minor cutbacks. In the same vein, Radio Slovakia International, which was also under the gun, has worked out a deal with the Slovak Culture Ministry to continue on shortwave for another five years. The station will maintain broadcasts in half a dozen foreign languages.

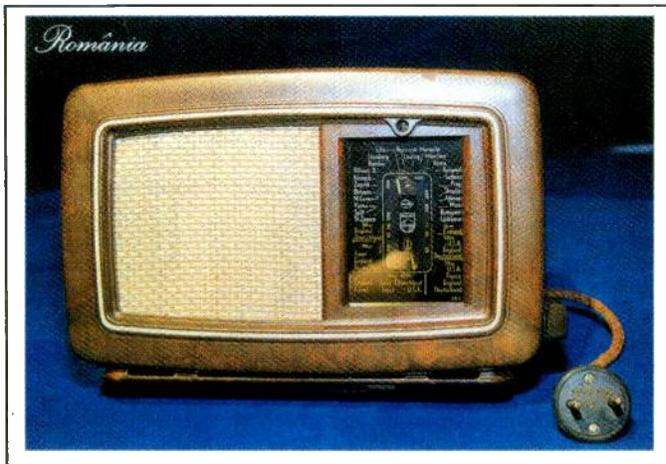
World Christian Broadcasting, which owns KNLS in Alaska, says construction of its new station in Madagascar, to be named Madagascar World Voice, is proceeding on schedule. Currently, 500-kW generators are installed on site and the station’s three 100-kW transmitters are in process. Christian Vision (CVC) has closed its Darwin, Australia, site, which it acquired from the Australian government only a few years ago. The long-term survival of the facility is up in the air and its fate unknown.

If you still have Voice of America languages or services you want to add to your log, you had better get busy. I hear that there is much unpleasantness ahead, coming in the form of significant and damaging cutbacks.

## Reader Logs

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. Also needed 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 to other SWBC DXers. I am *still waiting* for your shack photo! You are well past your deadline!

Here are this month’s logs. All times are UTC. Double capital letters are language abbreviations



This Romanian-made radio doesn’t look like it could even pick up WYFR. (Thanks Michael Yohnicki, ON)

## Help Wanted

We believe the "Global Information Guide" offers more logs than any other monthly SW publication (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 "Global Information Guide," 213 Forest St., Lake Geneva, WI 53147. Or you can email them to [gdex@wi.rr.com](mailto:gdex@wi.rr.com). Please note that attachment files do not always go through. See the column text for formatting tips.

*\* 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.*

(SS = Spanish, RR = Russian, AA = Arabic, etc.). If no language is mentioned English (EE) is assumed.

**ALBANIA**—Radio Tirana, 6100 at 0440 on an international film festival there. (Maxant, WV) 7430 at 2100 with IS, ID and world news. (Brossell, WI)

**ALGERIA**—RT Algerienne, 5805 via Issoudun in AA heard at 2310. (Patterson, Philippines) 5865 via Issoudun to Central Africa in AA at 0440. (Parker, PA) 2238 with Koran. (Ronda, OK)

**ANGOLA**—Radio Nacional, Mulenvos, 4950 at 0247 with M in PP and pops. (Parker, PA) 0454 with man in PP talking to a crowd, four time pips at 0500 and into news headlines. (D'Angelo, PA)

**ARGENTINA**—Radio Argentina al Exterior, 11710 at 0210, playing rumbas. Very weak modulation. (Maxant, WV) *(This was recently reactivated.—gld)*

**ASCENSION ISLAND**—BBC Southern Atlantic Relay, English Bay, 9915 with two M talking about a soccer game. Off suddenly at 2300. Also 12095 at 2248 and off at 2259. (MacKenzie, CA) 17885 in Hausa to West Africa at 1941. (Parker, PA)

**AUSTRALIA**—Radio Australia, 6020 at 1215 on alcoholism, 11945 at 1010 on using computers in natural science, 17715 at 0005 with news. (Maxant, WV) 9580 at 1113 on Internet dating. (Barton, AZ) 12010-Darwin at 2225, poor, sometimes down to very poor with talking, ID by woman at 2230. (Ronda, OK) 2325. (Patterson,

Philippines) 11660-Shepparton with news in CC at 1400 and 12015 in Burmese at 2300. (Ng, Malaysia) 11880 with EE music show at 1930. (Yohnicki, ON) 13630-Shepparton at 2147 with talk, ABC ID, 15560-Shepparton at 2010 with an interview and 17795 at 2350 on Sudan and Iraq. (MacKenzie, CA)

ABC Northern Territories Service, 2310-Alice Springs with EE news at 2030, 2325-Tennant Creek at 2042 and 2485-Katherine at 2250. (Patterson, Philippines)

HCJB Australia, 11750 at 0745, poor. (Maxant, WV) 15400 at 1315 with *DX Party Line*. (Ng, Malaysia)

**AUSTRIA**—Radio Austria International, 13750 via Canada in GG at 1525 about the country. (Maxant, WV)

**BANGLADESH**—Bangladesh Betar, 7250 at \*1227 with open carrier and test tones intermittently from 1229 but no voice today. Reasonably strong but no programming noted. (D'Angelo, PA)

**BELARUS**—Radio Station Belarus, 6155 with W and news at 2120. (Gay, KY)

**BOLIVIA**—Radio Mosoj Chaski, Cochabamba, 3310 at 1007 with W in (p) Aymara. Some rustic vocals, nice ID over flute at 1021. (D'Angelo, PA)

Radio Eco, Reyes, 4409.8 at 2310 for the past several days. (Wilkner, FL)

Radio Santa Ana, S.A. del Yacuima, 4451.2 heard at 1020 and 2330 in SS. (Wilkner, FL)

Radio San Jose, S.J. de Chiquita, 5580.2 weak with music heard at 2330. (Wilkner, FL)

Radio Pio XII, Siglo Veinte, 5952.5 at 1030 with SS talk, some Bolivian music. (Wilkner, FL)

**BOTSWANA**—VOA Relay, Mopeng Hill, 4930 at 0339 on the "Nigerian underwear bomber." 11710 at 0507 with HOA music, vocals in (l) Hausa, ID at 0529 and 15580 at 1812 with features in EE to Africa. (D'Angelo, PA; Parker, PA) 12080 in FF at 2011. (Ronda, OK) 13710 with FF Afropops at 2010. (Wood, TN) 17895 in EE at 1823 with coverage of Angola vs. Togo. (MacKenzie, CA)

**BRAZIL** *(All in PP—gld)*—Radio Imaculada Conceicao, Campo Grande, 4755 at 0515 with W talks. (Parker, PA)

Radio Clube do Para, Belem, 4885 at 0028 with hiflife music. (Parker, PA) 0515 with fast-paced music. (Wood, TN)

Radio Novo Tempo, Campo Grande, 4895 at 0349 with M and slow vocals. (Parker, PA) (t) at 0428 with soft music and some M talks. No definitive ID heard and rather non-descript programming. (D'Angelo, PA)

Radio Difisora, Macapa, 4915 heard at 0021 with PP pops. (Parker, PA) 0452. (Ronda, OK)

Radio Educacao Rural, Tefe, 4925.2 at 0017 with talk by man. (Parker PA)

Radio Capixaba, Vitoria, 4935 at 0203 with impassioned M preacher and strong CODAR. (Parker, PA) 0534 with M preaching, anmts at 0556 and jingle ID, frequency anmt, pop number and another preacher. (D'Angelo, PA)

Radio Brazil Central, Goiânia, 4985 at 0013 with a ballad. (Parker, PA) 0535 with LA pops. (Wood, TN) 2320 with mix of PP and EE songs. (Wilkner, FL) 11815 at 0502 with Brazilian pops hosted by M ancr, IDs and anmts after each song. (D'Angelo, PA)

Radio Cultura, Belem, 5045 at 0406 with music and ancr. (Parker, PA) 0540 with nice vocal jazz, ID at TOH and into traditional music. (Wood, TN) *(There seems to be confusion over this one. I show this station and location as correct.—gld)*

Radio Voz Missionaria, Florianopolis, 5940.1 heard at 0747 with talk, anmts, promos, jingles and an ID, then religious music. (Alexander, PA)

Super Radio Deus e Amor, Curitiba, (p) 6060 at 2350 with M in long religious talk before a live audience; covered by Cuba at 0001. (D'Angelo, PA)

Radio Nacional Amazonia, 6185 monitored at 0150 with an ID, Brazil pops, and 11780 at 2310 with music. (Yohnicki, ON) 2131 with sports play-by-play. (MacKenzie, CA)

Radio Boa Vontade, Sao Paulo, 9550.1 at 2308 with religious talks and choirs. (D'Angelo, PA)



This Channel Africa card shows the city of Durban. (Thanks Doug Brown, ON)

Observatorio Nacional, 10000, at 0232 with ID anmts on the minute and a "pip" every 10 seconds. (Parker, PA)

Radio Bandeirantes, Sao Paulo, 11925 at 2234 with rapid-fire talk. (Ronda, OK)

**BULGARIA**—Radio Bulgaria, 5900-Plovdiv with EE news at 0335. (Parker, PA) 7400 at 1830 with vocals. (Maxant, WV) 1845 on volunteer transport for the handicapped. (Fraser, ME) 0118 in BB, 9400 at 2305 in SS. (MacKenzie, CA)

**CANADA**—Radio Canada Intl, 9610 beginning EE monitored at 1603. (Barton, AZ) 9755 at 1155 with sign on routine. (Maxant, WV)

CFRX, Toronto, 6070 at 0615 relaying CFRB. (Wood, TN) 1010 with news-talk format. (Maxant, WV) 2152 interview with an author. (Gay, KY)

CKZN, 6160, St. John's (Newfoundland), at 1045 on cancer research. (Maxant, WV) 2351 with talk, many mentions of St. John's, into CBC News at 0000. (Ronda, OK)

CHU, Ottawa, 3330 at 1930, 7850 at 1933, 14670 at 1935 with EE/FF time signals. (Maxant, WV) 7850 at 2315. (MacKenzie, CA)

**CHILE**—Christian Voice, 17680 heard at 1929 with M and SS music, talks. (Parker, PA) 2350 with SS comments and vocals. (MacKenzie, CA)

**CHINA**—China Radio International, 5900 via Canada at 0542, 5960 via Canada at 0530, 9425 in Cantonese at 2334, 9470 in Mongolian at 0103, 9555 in CC at 2355, 9570 via Albania at 0110, 9590 in SS at 2328, 9610 in Hakka at 0010, 9710 in SS at 0100, 9745 via Bonaire in CC at 2344, 9765 in Cambodian at 0026, 9860 in Hakka at 0015, 9880 at 0013, 11650 at 0037, 11750 in CC at 2327, 11770 in VV at 0045, 11845 via Canada in FF at 2135, 11875 via Mali in CC at 2306, 11980 in Amoy at 0100, 13580 in CC at 0050, 13610 in CC at 0047, 13680 in VV at 0040, 17495 in Cantonese at 0008 and 17645 in CC at 0006. (MacKenzie, CA) 7215-Shijiazhuang at 2259 with W and into Mandarin news at 2301. (Strawman, IA) 9560 via Cuba at 1230. (Maxant, WV) 9765-Nanning in Cambodian at 2320. (Ronda, OK) 11935-Shijiazhuang in RR at 1233. (Brossell, WI) 11980-Kunming in CC at 1234 and 13790-Urumqi in EE at 1233 (Brossell, WI) 13615 at 1400. (Yohnicki, ON). 17740 in VV at 0420. (Ng, Malaysia)

China National Radio, 4800-Geermu in CC at 0218. (Parker, PA) 5925-Beijing in CC at 1305. (Ng, Malaysia) 6150-Beijing in CC at 1211. (Brossell, WI) 9480 in CC at 0050 to 0059,\* 9675 in CC at 0105 and 9845 in CC at 0020. (MacKenzie, CA) 9890-Lingshi in (I) Mongolian at 1342. (Ronda, OK)

Xinjiang PBS, Urumqi, 4500 in Mongolian with M/W talks at 0124 and 4980 in Uighur with M and music at 0236. (Parker, PA)

Xizang PBS, Lhasa, 4820 in CC at 2310. (Ng, Malaysia) and 7385 in CC at 1813. (MacKenzie, CA)

Voice of the Strait, Fuzhou, 4940 at 2305 with M/W in CC. (Ng, Malaysia)

Firedrake music jammer, 8400 at 1105. (Barton, AZ) 15740 at 1243 against an uncertain target. (Brossell, WI)

**COLOMBIA**—Marfil Estereo, Puerto Lleras, 5910 at 0520 with continuous Latin music and periodic M and SS ID. (D'Angelo, PA)

La Voz de tu Conciencia, Puerto Lleras, 6010 at 1115 with SS translation of EE sermon. Covered by Radio Japan sign on at 1125. (Alexander, PA)

La Voz del Guaviare, S.J. Guaviare, 6035 at 0040 reactivated with local pops. Off with anthem at 0103 (formerly ended at 0300\*) (Alexander, PA)

**CONGO (Dem. Rep.)**—Radio Okapi, 11690 via South Africa at 0400 with Okapi ID jingle, FF talk. (Ronda, OK) 0410, W in FF, M



A 2009 QSL from IRIB Radio, Tehran. (Thanks Clinton Huffender)

with pgm of hilife vocals. (D'Angelo, PA) 11890 via South Africa in FF at 1746. (Brossell, WI)

**CROATIA**—Hrvatski Radio, 3985-Deanovic at 0459 in Croatian with W ancr and pops. (Parker, PA)

**CUBA**—Radio Havana Cuba, 6010 in EE at 0545, 6060 in SS at 0138 and 11800 in SS at 2150. (MacKenzie, CA) 13680 in SS at 2321. (Patterson, Philippines) 13770 in SS at 1115. (Barton, AZ)

Radio Rebelde, 5025 in SS heard at 0521. (MacKenzie, CA) 2300 in SS. (Yohnicki, ON)

**CZECH REPUBLIC**—Radio Prague, 5930 at 2345 with vocals until sign off. Also, 7345 on Czech novelists at 0425 and 9860 at 0805 with interview of their P.M. (Maxant, WV) 7355-Litomysl to North America at 0206. (Parker, PA)

**DIEGO GARCIA**—AFN/AFRTS, 4319u at 2205. (Patterson, Philippines)

**DJIBOUTI**—Radio Djibouti, 4780-Arta, with Koran at 0306. (Parker, PA) 0400. (Wilkner, FL) 0423 with lively songs. (Ronda, OK) 2040 to 2302\* with AA talk, local music, off with anthem at 2100. (Alexander, PA)

**DOMINICAN REPUBLIC**—Radio Amanecer, Santo Domingo, 6025 at 1957 with music, ID, religious talk in SS. (Alexander, PA)

**ECUADOR**—La Voz del Napo. 3280.8 after a few days absence with good signals in SS at both 1100 and 2350. (Wilkner, FL)

Radio El Buen Pastor, Saraguro, 4815 at 0121 with M in SS, pops and folk things. (Parker, PA)

**EGYPT**—Radio Cairo, 6270 in EE at 2112 and 6290 in AA at 0005. (Yohnicki, ON) 0125 in AA. (MacKenzie, CA) 7580 in EE at 2348. (MacKenzie, CA) 15710 in II at 1310. (Ng, Malaysia)

**ENGLAND**—BBC, 3915 Singapore Relay at 2333 with World Service at 2333. (D'Angelo, PA) 5790-Skelton in AA with talk on Yemen at 0318, 5875-Rampisham at 0509 with EE to Russia. (Parker, PA) 6135 via Vladivostok at 2252 with EE interview on Internet censorship. Off at 2300. Also, 6195 Singapore Relay at 2325 and 7385 at 2306 with *The World Today* (Ronda, OK) 7375 Cyprus Relay in Urdu at 0140. (Ng, Malaysia) 7445 at 2102. (Brossell, WI) 9410 Seychelles Relay at 2013, 11955 Thailand Relay at 2313, also 15360 Thailand Relay at 0022. (MacKenzie, CA) 12095 with *Newslines* at 1500. (Fraser, ME)

**EQUATORIAL GUINEA**—Radio Nacional, Bata, 5005 at 2200–2254\* with Afro-pops, SS anmts, off with NA. (Alexander, PA)

Radio Nacional, Malabo, 6250 at 0530 with SS talks, Afro-pops, SS pops, IDs. (Alexander, PA) 0602 with tribal vocals M with SS talk, ID, drums and SS news. (D'Angelo, PA)

**ERITREA**—Voice of the Broad Masses, 7175 with Pgm Two at 1955 to 2100\* with HOA music, ID and closedown by M ancr, then rustic choral anthem. Also 7210 Pgm One at 1954–2001 with pops, M with ID and close down anmt. (D'Angelo, PA) 7210 Pgm One at

## In Times Past...

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

**Cambodia**—La Voix Front National Kampuchea, 12006 heard at 1211 in Cambodian on August 30, 1971, operated by the Kampuchean National United Front. (Dexter, WI)

1930–2000 with HOA music, vernacular talk, off with anthem at 1959. (Alexander, PA)

**ETHIOPIA**—Radio Fana, 6890 at 2050 with local HOA vocals, talk in (l) Amharic, and //6110. (Alexander, PA) 2052 to 2059.\* (D'Angelo, PA) 7210 at 0515 with HOA music and talk in (p) Amharic. (Brossell, WI)

Radio Oromiya, 6030 at 0401 with M/W doing news in Oromo ending at 0413, f/by several IDs. The signal was very good after the Marti jammer left. (D'Angelo, PA)

**GERMANY**—Deutsche Welle, 5945 at 0405. (Maxant, WV) 6050 Sri Lanka Relay in GG at 2350, 6140 via Russia in CC at 1305 and 15640 Sri Lanka Relay in II at 1125. (Ng, Malaysia) 9655 Rwanda Relay in GG at 0012, 9775 via Ascension in GG at 0048, 11690 in EE at 2155 and 15640 via Russia at 0025. (MacKenzie, CA) 11690 Rwanda Relay in EE at 1833 with HOA vocals and W in Hausa. (D'Angelo, PA) 1910. (Fraser, ME) 11725 in GG at 1855. (Maxant, WV) 13780 Portugal Relay in GG at 1156. (Patterson, Philippines)

**GREECE**—Voice of Greece, 7475 at 0050 with vocals and 9420 with call-in pgm in GG at 0005. (Maxant, WV) 0059 in SS. (MacKenzie, CA)

RS Makedonias, 7450 in GG at 2100. (Brossell, WI) 9935 with lively GG vocals at 1540. (Ronda, OK)

**GUAM**—Adventist World Radio/ KSDA, 5985 in Korean at 2126. (Patterson, Philippines) 1225 in CC at 0055 and 17635 in Burmese at 0013. (MacKenzie, CA)

**GUINEA**—Radio Guinee, 7125 at 1920 with non-stop hlife vocals, M anc and FF talk, ID and news at 2000. (D'Angelo, PA) 2350 with local Afropops, FF talk to 0005 sign off. (Alexander, PA)

**HAWAII**—WWVH, 5000 at 0540 with W time anmts under and ahead of WWV's anmt. (Wood, TN)

**HONDURAS**—Radio Luz y Vida, San Luis, 3250 at 0211 with soft vocals and occasional SS. (Ronda, OK) 1132 sign on with opening SS anmts, long sign on routing featuring several IDs. Group vocals from 1139. (D'Angelo, PA) 1133 in SS, slow melancholy LA music. (Wood, TN) 3221. (Wilkner, FL)

Radio Misiones/HRMI, Comayaguela, 3340 at 1146 in SS with inspirational music. (Wood, TN)

**HUNGARY**—Radio Budapest, 3975 in HH at 0511 with M/W ancns and a telephone caller. (Parker, PA)

**INDIA**—All India Radio, 4920-Chennai at 0215 with W in vernacular at 0215. (Parker, PA) 6180 at 2102. (Maxant, WV) 2108 on Indo-Thai trade. (Gay, KY) 7550-Delhi at 2214. (Strawman, IA) 7550-Bangaluru at 1930 and opening in FF at 1945. (D'Angelo, PA) 9870-Bangaluru at 1314 in Hindi with domestic music. (Ronda, OK) 11840-Delhi in CC at 1222. (Brossell, WI) 13710-Bangaluru in Tamil at 1149. (Patterson, Philippines) 17875-Aligarh in II at 0905. (Ng, Malaysia)

**INDONESIA**—Radio Republik Indonesia, 3325-Palangkaraya (Kalimantan), at 2203 in II with Jakarta news. Into local programming at 2210 and a series of W vocals. (D'Angelo, PA) 1335 with song requests. (Ng, Malaysia) 3345-Ternate (Maluku), in II at 2152. (Patterson, Philippines) 3976-Pontianak (Kalimantan), in II at 1030. (Ng, Malaysia) 3995-Kendari (Sulawesi), in II at 2157. (Patterson, Philippines) 4750-Makassar (Sulawesi), at 1348 with pops and anmts in II. (Strawman, IA) 2157 in II with SCI at 2159 and Jakarta news at 2200. (D'Angelo, PA)

Voice of Indonesia, 9526 at 1115 with EE pgm, local pops. (Alexander, PA) 1030 with II vocals. (Maxant, WV) 1330 with pops. (Strawman, IA)

**IRAN**—IRIB, 7235 in II at 0140. (Maxant, WV) (t) 9895 in AA at 2213. (MacKenzie, CA) 9900 in CC at 1240. (Ng, Malaysia)

**IRELAND**—Radio Telefis Eireann, 6225 via South Africa at 1950 with *Sunday Forum* pgm and ID at 2029. (D'Angelo, PA)

**ISRAEL**—Galei Zahal, 15785 in HH at 1244. (Brossell, WI)

**ITALY**—Italian Radio Relay Service, 5990 via Slovakia at 0610 with M in EE with religious talk. (Parker, PA) 15650 at 1510 with vocals. (Maxant, WV)

**JAPAN**—NHK World Radio Japan, 6120 via Canada at 1205. (Maxant, WV) 9695 at 2335, 11665 at 2312, 11910 at 2140, 17605 at 2314 and 17810 at 2343, all in JJ. (MacKenzie, CA) 9695 at 1211 on



Deutschlandfunk QSLed Rich D'Angelo's reception on 6190.



A rare catch of AFRTS, Diego Garcia 4319 brought Rich D'Angelo this neat card.

boating and water safety. (Brossell, WI) 11705 at 1424 with language lesson. (Barton, AZ) 13650-Yamata with Japanese pop hits at 0018. (Ronda, OK) 2312 in Thai. (Patterson, Philippines)

Radio Nikkei, 3925 in JJ at 1154. (Brossell, WI) 1330 in JJ. (Strawman, IA) 9535 in JJ at 1535. (Barton, AZ)

**KUWAIT**—Radio Kuwait, 11990 with U.S. pops at 1956. (Yohnicki, ON) 15110 in AA at 1335. (Ng, Malaysia)

**MADAGASCAR**—Radio Madagasikara, 5010 at 0252 with a group vocal IS and choral anthem, M/W with opening ID, a bit of smooth jazz and talk in Malagasy. (D'Angelo, PA)

**MALI**—RT du Mali, 5995 at 2303 with FF pop vocals and ballads hosted by M, long FF talk at 2318. (D'Angelo, PA) 7285.9 sign on at 0800 with flute IS and opening FF anmt, local instl music and "Radio Mali" ID. Sign on times vary between 0745–0800. Also, 9635 at \*0758 with opening FF ID and flute IS, local tribal music and vernacular talk at 0800. (Alexander, PA)

**MALAYSIA**—RT Malaysia, 5030-Kuching (Sarawak), carrying Sarawak FM with ID at 2300 and into news. Also Voice of Malaysia service at 6175-Kajang in II at 1250 and RTM 7270-Kuching with news in Malay at 0400. (Ng, Malaysia) 7295-Trax FM with talk at 1220. (Maxant, WV)

**MAURITANIA**—Radio Mauritanie, Nouakchott, 4845 at 0026 with unaccompanied traditional vocals. (Ronda, OK) 0032 in vernacular with AA music. Colliding with the Brazilian. (Parker, PA)

**MEXICO**—XEQM/Candela FM, 6105, Merida, at 0720 with LA vocals with IDs after each. (D'Angelo, PA) (p) at 1212 with romantic ballads. (Strawman, IA)

Radio Transcontinental/XERTA, 4800 in SS pops heard at 0501.

(Parker, PA) 1055 with "musica romantica." (Wilkner, FL)

Radio UNAM, Mexico City, 9599 in SS and into instl music monitored at 0015. (Maxant, WV)

**MOLDOVA**—Radio PMR, 6240 with domestic news in EE. Into vernacular at 2330 and relaying Voice of Russia at 0000. (Maxant, WV)

**MYANMAR**—Radio Myanmar, 5985 at 2310 in Burmese. (Ng, Malaysia)

Myanmar Defense Force Radio, 5770 with songs in Burmese heard at 1220. (Ng, Malaysia)

**NEW ZEALAND**—Radio New Zealand Intl, 6170 at 1415 with news items, mixing with (p) Voice of Russia in Mandarin. (Strawman, IA) 1308 on politics in Indonesia. (Ronda, OK) 9675 at 1005 on Brian Wilson. (Maxant, WV)

**NETHERLANDS**—Radio Nederland, 6040 via Krasnodar, Russia, on U.S. health care at 2243. (Ronda, OK) 6120 via Singapore with M/W in II at 2340, 7425 at 2015 on war crimes in Sri Lanka and 11675 in DD at 1300. (Ng, Malaysia) 11655 at 2024 on the swine flu. (Brossell, WI) In SS at 2300. (MacKenzie, CA) 1245 with European pops at 1850. (Fraser, ME) 12075 via Singapore in II at 1220. (Patterson, Philippines) 12080 at 1910 with *Network Europe* pgm. (Maxant, WV)

**NIGERIA**—Voice of Nigeria, 9690 at 1015 on school children there. Also 15120 on the space shuttle at 1845. (Maxant, WV)

Radio Nigeria, Kaduna, 4770 at 0435 with M in vernacular. (Parker, PA)

**NORTH KOREA**—Voice of Korea, 6285 ending EE news at 1055. Also, 9335 at 1530 with M anc and march music. (Barton, AZ) 9650 in JJ at 2305 and 13760 in SS at 0000. (Ng, Malaysia) 11535-Kujang in Mandarin at 2232. (Patterson, Philippines) 11710 at 1215 with talks in KK, //11735. (Brossell, WI) 1550 with orchestra and chorus. (Strawman, IA) 1505 ID and into news. Also, 11735 at 0115 in SS. (Maxant, WV) 13650 in CC at 0044, //15100. Also 15180 in SS at 0033. (MacKenzie, CA)

**NORTHERN MARIANAS**—Adventist World Radio/KFBS, 9585 with EE ID monitored at 1230 and into VV. (Ng, Malaysia) 11650 in RR at 1330. (Brossell, WI)

Far East Broadcasting Corp, Saipan, 12090 in VV at 2245. (MacKenzie, CA)

**OPPOSITION**—Voice of Mesopotamia, 11530 (to Iran/Kurdistan), via Moldova, in (l) Pashto at 1230. (Brossell, WI)

Radio Free Afghanistan, 17530 at 0620 in Dari. (Ng, Malaysia)

Furusato no Kazi, (to North Korea), 9880 via Darwin at 1450 with W in JJ. (Ronda, OK)

Ginbot 7 (to Ethiopia), 7530 via Samara from 1701 in (l) Amharic with HOA music, //9610 under RCI. (Alexander, PA)

Radio Voice of the People (to Zimbabwe), 11610 via Madagascar at 0416 on currency inflation in Zimbabwe. (Ronda, OK)

Sound of Hope (to China), 7280 via Taiwan in CC heard at 1210. (Brossell, WI)

1220 with W in CC, //7290 was poor. (D'Angelo, PA)

IBC Tamil Radio (to Sri Lanka), 6045 with Tamil pops at 0020. (Ng, Malaysia)

Voice of China (to China), 7270 at 2300 with ID "Zhongguo Zhi San" by M/W with strong jamming. (Ng, Malaysia)

Radio Dabanga (to Sudan), 7315 via Issoudun at \*0430 with sign on anmt, ID jingles, AA talk, 13740 via Germany at \*1530 sign on, mixing with CRI via Cuba. (Alexander, PA)

**PAKISTAN**—Radio Pakistan, 11510-Islamabad in Mandarin at 1215. (Patterson, Philippines)

**PALAU**—World Harvest Radio/KHBN, 12130-Medorn in EE at 1227. (Patterson, Philippines)

**PAPUA NEW GUINEA**—Radio Central, Port Moresby (Papua), 3290 heard at 1115 with W in Tok Pisin hosting pgm of island music, news at 1200. (D'Angelo, PA)

Radio Madang, Madang, (New Guinea), 3260 at 1138 with M hosting group vocals and greetings to listeners, taking phone calls. (D'Angelo, PA) 1305 with flutes and talks in (p) Tok Pisin. (Brossell, WI) 1335 with pops. (Strawman, IA)

Radio East New Britain, Rabual (New Britain), 3385 at 1203 with W in Tok Pisin with W hosting island music which later turned into a pop pgm. Several ads in EE for Coca Cola. (D'Angelo, PA) 1329 with pops. (Strawman, IA)

**PERU** (*All in SS—gld*)—Ondas del Huallaga, Huanuco, 3329.5 at 1040 with OA music. Also noted around 2330. (Wilkner, FL)

Radio Huanta 2000, Huanta, 4747 at 2340 with talks, ID, anmts and rustic music. (D'Angelo, PA)

Radio Vision, Chiclayo, 4790 at 0353 with M preacher. (Ronda, OK) 0409 with the usual distorted "PA preacher." Also at 0505 with call-ins. (Parker, PA)

Radio Maranon, Jaen, 4835.5 at 0043 with M talk. (Parker, PA)

Radio La Hora, Cusco, 4857.4 at 2330. (Wilkner, FL)

Radio Cultura Amauta, Huanta, 4955 at 2325 with talk. W with ID and anmts, OA vocals. (D'Angelo, PA)

Radio del Pacifico, Lima, 4974.8 heard at 0227 with M talk barely above the noise. (Parker, PA)

Radio Libertad, Junin, 5039.2 at 1030. (Wilkner, FL)

Ondas del Suroriente, Quillabamba, 5120.4 at 1107. (Wilkner, FL)

Radio Bolivar, Cd. Bolivar, 5460.1 weakly at 2320. (Wilkner, FL)

**PHILIPPINES**—FEBC, 7505 at 1515 with long talk in Mandarin by M. (Ronda, OK) 9430 in CC at 1224. (Brossell, WI) 9435 in II at 2326. (MacKenzie, CA)

Radio Veritas Asia, 6115-Palauig in Mandarin at 2140. (Patterson, Philippines) 9720 in Burmese at 2340. (MacKenzie, CA)

**PIRATES**—MAC, 6924v monitored at 1627 and 1708 with Paul Starr and rock oldies, later Ultra Man show with more rock oldies, old TV themes, several IDs, and macshortwave@yahoo.com for reports. (Zeller, OH) 1630 and 1745 young boy with IDs, *Guitar Man Show*, oldies rock and pop. (Alexander, PA)

Captain Morgan, 6924.1 monitored at 2135 with blues, poor with deep fades and some poor modulation. (Zeller, OH) 2223 with blues. Much of the pgm was muffled and nearly impossible to copy. (Alexander, PA)

WNKR-3425.9 at 0257, someone broad-casting this British pirate here. British pops and ID. Also 6240.3 at 1530 very strong with '80s rock/pop and IDs as "Western North Kent Radio." And 6925 at 1645 with station promos and jingles. Also at 1810. (Alexander, PA) 6950 at 2110 as "Your Number One Radio Station, WNKR" with Beatles and British pop. //6925. (Wood, TN)

Radio Gaga, 6925u heard at 2100 with comedy and cynical songs and techno-pop. (Hassig, IL)

Outhouse Radio, 6925u heard at 1927 and 2035 with rock and techno, multiple IDs. (Zeller, OH) 1910 and 0510 with variety of country, rock and novelty things. (Alexander,

## 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](mailto: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 prizewinner is **Jim Ronda**, who is awarded a Universal Radio coffee mug as a thank you for his DX reporting efforts. Universal is your source for everything shortwave—from antennas on down through your listening or transmitting system. Get its big free catalog of neat radio stuff. An email request to them at [dx@univerwsal-radio.com](mailto:dx@univerwsal-radio.com) or a phone call to (614) 866-4267, or post card request to 6830 Americana Parkway, Reynoldsburg, OH 43068 will put a catalog in your hands poste-haste. Please mention *Pop'Comm* and the "Global Information Guide" when contacting them.

PA) 2031 ending a number and closing. (D'Angelo, PA)

WMPR, 6924.8 with rock/pop number and off at 1902. (Gay, KY) 2147 with distorted audio and techno pops. (Hassig, IL)

Ann Hoffer Radio, 6925u at 2250 playing guitar and singing. (Hassig, IL)

Radio Free Euphoria, 6925.5 at 1550 with novelty songs. (Alexander, PA)

"WBCQ" relay, 6925u at 2133 with their programming but no ID for the relaying pirate. (Zeller, OH)

Barnyard Radio, 6925u at 2219 with a tribute to Elvis, girls screaming "We want Elvis" and song clips. (Hassig, IL)

Undercover Radio, 6625u at 0028 with Dr. Benway and a pgm of rock. An cd a move to 3430 but that frequency wasn't heard here. (Zeller, OH) 6925u at 0015 poor and fading talking, one song and email as undercoverradio@gmail.com or Box 293, Merlin, ON, more songs. I emailed him and he mentioned it 10 seconds later. (Hassig, IL)

The Crystal Ship, 6876 at 1317 with Mr. Poet and '60s-70s things. Two definite IDs, one with the blue states version. (Wood, TN)

"WMLK," 6925u at 2059 with a Martin Luther King speech. IDs were sparse and no address given. (Zeller, OH)

WBNY, 6950 at 1819 with several Radio Bunny/WBNY IDs, mentions of it being a special broadcast. (Wood, TN) 2105 several bottom class songs. Said to include to 3 stamps with reports to Box 1, Belfast, NY 14711. (Hassig, IL)

WHYP, 6925u at 1425 with ID, James Brownyard, various holiday tunes. (Wood, TN) Similar at 2135. (Hassig, IL)

Radio Zero, 6950 at 0055 with rock and IDs. (Alexander, PA)

Sycko Radio, 6924.8 at 1540 complaining about the poor audio quality of some other pirates and a Commander Bunny skit. (Alexander, PA)

WEAK Radio, 6925u at 2210 with punk rock, IDs. (Alexander, PA)

Wolverine Radio, 6925u at 2127 with a Firesign theater production. (D'Angelo, PA) 6930u at 0535 with rock/pop. (Alexander, PA)

Moronic Dreams Radio, 6925u at 2145 arguing about religion and pregnancy, various legit IDs from the NYC area, new wave things. Very bizarre bits. (Hassig, IL)

CHIP, 6950 heard at 2300, said "all chipmunks all the time" chipradio@gmail.com. (Hassig, IL)

Voice of Frank, 6925u heard at 0150 with novelty songs, email as voiceoffrank@gmail.com. Closed with a Spike Jones number. (D'Angelo, PA)

Radio Amica (Euro), 7610 monitored at 0135 with light pops, IDs, II anmts. (Alexander, PA)

Radio Playback Intl (Euro), 6870 monitored at 0120 with seasonal music. (Alexander, PA)

FRS Holland (Euro), 7685.1 monitored at 0903 with pop/rock, ID, acknowledging reports. (Alexander, PA)

**POLAND**—Polish Radio, 9650 at 1835. (Maxant, WV) (*site?—gld*) 9690 via UAE at 1850 with various news items. (Fraser, ME) 11675 via Germany at 1333 discussing the current Polish government. (Brossell, WI)

**ROMANIA**—Radio Romania Intl, 6115 with sign on, then into news heard at 2130. (Gay, KY) 6130 at 0410, on the international court. Also, 11970 at 0210, on treason in that country. (Maxant, WV) 11735 at 1740 with a mailbag pgm. (Brossell, WI)

Voice of Russia, 6240 via Moldova in EE at 0127 with news from Moscow. (MacKenzie, CA) 0338. (Yohnicki, ON) 7250 at 0110 on natural resources. (Maxant, WV) 7330 at 1930 with *Christian Message from Russia*. (Fraser, ME) 9525 in SS at 0050. (MacKenzie, CA) 9840-Petropavlovsk at 0517 with comments and music. (Ronda, OK) 9900-Samara at 1358 in (I) Pashto/Dari. (Strawman, IA) 12065-Chita in VV at 1229, 13590 in CC at 1240 and 15660-Moscow in RR at 1240. (Brossell, WI)

Radio Rossii, 7320-Magadan, heard at 2310 with M/W and Russian operatic songs. (Ronda, OK)

Kamchatka Radio, Petropavlovsk-Kamchatka, 5920 and //5940 at 1200 with pre-sumed news in RR. (Brossell, WI)

**RWANDA**—Radio Rwandaise, 6055 at 2030 with Europops, FF talk, phone call. (Alexander, PA) 2044 with M and long FF talk, old pop song, more FF talk and carrier terminated in mid-sentence at 2101. (D'Angelo, PA)

**SAO TOME**—Voice of America Relay, Pinheira, 4960 at 0402 on recent kidnappings. (Parker, PA) 0449 with *VOA News Now*. Into Hausa at 0500. (D'Angelo, PA) 6080 with rock oldies at 2145. (Gay, KY) 11975 with hilife music at 2050. (Brossell, WI) 15775 with VOA ID at 1759. (MacKenzie, CA)

**SERBIA**—International Radio of Serbia, 6190 at 0135 on Serbia joining the EU. (Maxant, WV)

**SLOVAKIA**—Radio Slovakia Intl, 6040 ending EE at 0125 and into Slovak. (Maxant, WV) 7345 in FF at 2057. (Brossell, WI)

**SOLOMON ISLANDS**—SIBC, 5020 monitored at 1250 with BBC programming. Squeezed by Radio Rebelde. (D'Angelo, PA)

**SOUTH AFRICA**—Channel Africa, 7230 at 0410 on relations between African nations. (Maxant, WV) 15235 in FF at 1620. (Yohnicki, ON) 1709 in EE. (Ronda, OK)

Radio Sondergrense, 3320-Meyerton at 0320 with mix of EE and Afrikaans pops. (Ronda, OK)

**SOUTH KOREA**—KBS World Radio, 3955 via Skelton in GG at 2023. (Patterson, Philippines) 9565 via Canada in CC at 0000. (MacKenzie, CA) 9650 via Canada at 1203 with W and news. (Barton, AZ) 1225 on foreign students can get scholarships there. (Maxant, WV)

**SPAIN**—Radio Exterior de Espana, 3350 Costa Rica Relay in SS at 0553 and 11850 Costa Rica at 1937 in SS. (Parker, PA) 5965 Costa Rica in SS at 0540, 9535-Nobeljas in

Listening is only half the fun...

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Damaged antennas under repair at WMLK, Bethel, Pennsylvania. (Thanks Charles Maxant, WV)

SS at 2325 and 17850 Costa Rica in SS at 2213. (MacKenzie, CA) 6055-Nobeljas in EE at 0000 with *This, That and the Other*. (Fraser, ME) 6125 in EE at 2000 with QRM from China. (Ng, Malaysia) 7270 in AA at 2057. (Brossell, WI) 11815 Costa Rica in SS at 0304. (Patterson, Philippines) 11940-Nobeljas in SS at 1930. (Wood, TN)

**SUDAN**—Sudan RTV, 7200 at 0218 with local vocals, AA talk, Koran. (Alexander, PA)

Miraya FM, 9825 via Slovakia at \*1459 with time pips, IDs f/by news in EE. (Alexander, PA)

**SURINAME**—Radio Apinte, Paramaribo, 4990 heard at 0445 with W in EE, M taking calls in DD, mix of fast and slow pops. (Parker, PA) 0500. (Wilkner, FL) 0502 with easy listening instls, W in EE at 0517 with ID and anmts and continuous pop vocals from 0518. (D'Angelo, PA)

**SWAZILAND**—Trans World Radio 3200 at 0325 with choral music. (Ronda, OK) 4775 in (I) Lomwe at 0352, possibly a sermon. (Strawman, IA) 0433 with EE talks. (Parker, PA) 9525 at 1948 with instl, IS before carrier was cut at 1950. (D'Angelo, PA)

**SWEDEN**—Radio Sweden Intl, 6065 at 0615 in Swedish. ID at 0630 and into talk features. (D'Angelo, PA) 7405 at 1330 with *Weekend Review*. (Ng, Malaysia) 9360 with children's songs in Swedish at 1529. (Ronda, OK) 9400 with music and DJ at 1455. (Maxant, WV) 9490 via Madagascar at \*2029 with ID, theme and a more extensive ID by W before the carrier went off at 2032. Apparently I caught this when the fire occurred at the transmitter site recently. (D'Angelo, PA) 11550 via Madagascar at 0255. (Patterson, Philippines) 11600 in Swedish at 1323. (Brossell, WI)

**SYRIA**—Radio Damascus, 9330 at 1910 with FF talk. Off abruptly at 1933. Only a threshold signal on 12085. (Alexander, PA)

**TAIWAN**—Radio Taiwan Intl, 5950 via Florida at 0543; how to adopt animals from Taiwan, 9660 in CC at 0036, tentative 11655 in CC at 2255, 11850 via Florida in SS at 2316. (MacKenzie, CA)

Voice of Asia, 7445 in Thai at 2308. (MacKenzie, CA)

**TAJIKISTAN**—Tajik Radio, Yangiyul, 4765 at 0137 in Tajik with M and upbeat AA-sounding music. (Parker, PA) 0330 briefly. (Wilkner, FL)

**TANZANIA**—Radio Tanzania-Zanzibar, 11735 at 2028 with talks in Swahili. This one has been absent for the past couple of weeks. (Brossell, WI)

**THAILAND**—Radio Thailand, 7230 heard at 2233 with *Special English News*, several IDs. Also, 9720 at 1248 with EE news features hosted by M/W, ID and several anmts at 1253, TC at 1255 and ID. Gave FM frequencies just before carrier was cut at 1259. (D'Angelo, PA) 9680 at 0000 with English service and news headlines. (Strawman,

IA) 0012 with M/W and news items. (Ronda, OK) 0020 on India and Australia and how they are affecting the Thai economy. (MacKenzie, CA) 9720 at 1240 with chimes and EE talk. (Maxant, WV)

**TUNISIA**—RT Tunisienne, 7225 at 2055 with talks and songs in AA. (Brossell, WI)

**TURKEY**—Voice of Turkey, 5970-Emirler in FF monitored at 2121. (Patterson, Philippines) 6020 at 0405 on hijackings off Somalia. (Maxant, WV) 15450 at 1231 with news in EE, //15520. (Brossell, WI)

**UGANDA**—Radio Uganda, Kampala, 4976 at 0417 with Afropops. (Parker, PA)

**UKRAINE**—Radio Ukraine Intl, 5970 in UU at 0620 with W anc and chorals. Also, 7440-Lvov in EE to North America at 0156 ancng schedule. (Parker, PA) 7440 in EE at 0113. (MacKenzie, CA) 0105 and 9950 on their national debt at 1235. (Maxant, WV)

**UNITED STATES**—Voice of America, 5835 Tinang Relay at 2235 and 7220 Tinang with news at 2253. (Ronda, OK) 5835 Tinang at 2205, 7575 Thailand Relay at 1355 to 1359 close and 11905 via Wertachtal at 1840 in (I) Amharic. (D'Angelo, PA) 6140 Tinang at 1208, 9380 Thailand in (I) Pashto/Dari at 1223, 9490 Northern Marianas Relay in (I) Korean at 1202, 9700 in (I) Indonesian at 1212 and 11990 Northern Marianas in CC at 1226. (Brossell, WI) 7230 Thailand at 2220, 7460 Thailand at 2315, 9490 Tinang at 2306, 9530 Tinang at 1354 and 11985 Lampertheim at 1401. (Strawman, IA) 9325 Sri Lanka Relay in Burmese at 2320, 9490 at 2342, 9545 Tinang in CC at 0045, 9885-Greenville in SS at 0005, 11560 Tinang at 2310, 11805 Tinang in II at 0025, 13710 Thailand at 2000, 15205 Tinang at 0028, 15385 Tinang in CC at 0017, 17645 Tinang in CC at 0009. (MacKenzie, CA) 9565 Thailand at 1330 with Dewar service in Urdu, 9760 Tinang with *Jazz America* at 1320. (Ng, Malaysia) 11975-Greenville at 1942. (Wood, TN) 12080 to Africa at 1715. (Yohnicki, ON) 17895 via Bonaire in Special EE at 1945. (Parker, PA)

Radio Farda, 5860 Kuwait Relay in Farsi at 0433 and 9335 Sri Lanka Relay, 7415 Lampertheim Relay at 0124 and 15690 in Farsi at 1914 (Parker, PA) 7520 Thailand Relay in Farsi at 2206. (Ronda, OK) 7520 Sri Lanka at 2210. (Strawman, IA) 15690 in Farsi at 1242. (Brossell, WI)

Radio Free Asia, 7470 Sri Lanka Relay in Taiwanese at 1212 and 11900 Northern Marianas Relay in Mandarin at 2047, //11900. (Brossell, WI) 9355 in CC at 1921. (Parker, PA) 9930 Northern Marianas in unid Lang at 0004. (MacKenzie, CA) 15550 Tinian in CC at 2335. (Ng, Malaysia)

Radio Liberty, 5840 Biblis Relay monitored at 0427 in Tatar. (Parker, PA) 9445 Thailand Relay at 1317 in (I) Kazakh and 11700 Philippines Relay in RR at 1212. (Brossell, WI) 12015 Philippines



A 250-kW transmitter, now installed at WMLK, was previously in use by the BBC. (Thanks Charles Maxant, WV)

Relay in Turkmen monitored at 0322. (Patterson, Philippines)

Radio Free Afghanistan, 12140 Kuwait relay in Dari monitored at 1235. (Patterson, Philippines)

AFN/AFRTS-5446u via Florida at 0358. (Parker, PA) 12133u at 2003. (Wood, TN) 2246. Also, 13362u via Guam at 0645. (Patterson, Philippines)

Adventist World Radio, 11750 via Wertachtal ending AA, EE ID at 1930 and into (l) Tachelhit. (Ronda, OK) 11845 in (p) Hausa at 2042. (Brossell, WI) 11850 via South Africa at 1815. (Maxant, WV)

Trans World Radio, 7215 via South Africa at \*0329 with opening ID, IS and into Oromo pgm at 0330. (D'Angelo, PA) 0334 in Amharic, EE ID at 0344. (Ronda, OK) 0340 in (l) Amharic. Off at 0346. (Strawman, IA)

Family Radio, 6240 via Moldavia at 2147. (Patterson, Philippines) 6890 in SS at 0342. (Yohnicki, ON) 9280 via Taiwan in CC at 1156. (Brossell, WI) 9310 at 1300. (Ng, Malaysia) 9460 via Irkutsk at 1158. (Brossell, WI) 9800 via Monaco at 0310. (Maxant, WV)

WRNO, Louisiana, (t) 7505 in unid language at 0110. (MacKenzie, CA) 0310 with gospel music. (Maxant, WV)

WWCR, Tennessee, 3215 heard at 0552, 5070 at 0545, 5890 at 0541, 5935 at 0537, 12160 at 2133. (MacKenzie, CA)

WTJC, North Carolina, 9370 heard at 2255. (MacKenzie, CA)

WWRB, Tennessee, 3185 heard at 0528. (MacKenzie, CA)

WEWN, Alabama, 11520 heard at 0320. (Maxant, WV) 13830 in SS heard at 2330. (Patterson, Philippines)

WINB, Pennsylvania, 9265 heard 2336. (MacKenzie, CA)

KJES, New Mexico, 11715 heard at 1450. (Maxant, WV)

WRMI, Florida, 9955 in SS at 0000. (MacKenzie, CA) 0420. (Maxant, WV)

WBCQ, Maine, 5110 heard at 0120. (Maxant, WV)

VATICAN—Vatican Radio, 5885 in EE at 2116. (Patterson, Philippines) 7360 at 0325 on African saints. (Maxant, WV) 11625 at 2023. (Brossell, WI)

VENEZUELA—Radio Nacional, 11670 via Cuba in SS with ID and comments at 2200. (MacKenzie, CA)

VIETNAM—Voice of Vietnam, 5970 via Wooferton in RR at 2035. (Patterson, Philippines)

YEMEN—Yemen Radio TV, 9780 with vocals at 1850. (Maxant, WV) (*Not specified but assumed in AA.—gld*)

ZAMBIA—CVC, Lusaka, 4965 heard at 0409 in vernacular with M anc and music. (Parker, PA)

And, once again, order has been restored. A thousand thank-yous to those who manned the receivers for this month's logs: Richard Parker, Pennsylvania, PA; Robert Wilkner, Pompano Beach, FL; William Hassig, Mt. Prospect, IL; Jerry Strawman, Des Moines, IA; Brian Alexander, Mechanicsburg, PA; Jim Ronda, Tulsa, OK; Rich D'Angelo, Wyomissing, PA; George Zeller, Cleveland, OH; Robert Brossell, Pewaukee, WI; Charles Maxant, Hinton, WV; Joe Wood, Greenback, TN; Stewart MacKenzie, Huntington Beach, CA; Robert Fraser, Belfast, ME; Michael Yohnicki, London, ON; Rick Barton, Phoenix, AZ; T.C. Patterson, Philippines; and Chris Gay, Lexington, KY. Thanks to each of you.

Until next month, good listening!

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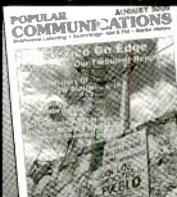
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# Springtime Means Windows Cleaning In The Shack

by Dan Srebnick, K2DLS  
k2dls.rfbits@gmail.com

Traditionally, I have not been a fan of Microsoft Windows, but I do use it in the shack, mostly out of necessity. I rely on Ham Radio Deluxe for my rig control and logging, use Trusted QSL to sign logbooks and upload to ARRL's Logbook of the World, and run my APRS iGate on UI-View 32. Some of my issues with Windows have been around security and some have been around performance. Vista seemed to close the gap on security, and with Windows 7 now in the mainstream, I decided to upgrade and see how that stacked up.

Vista definitely took some knocks from the user community on performance. In fact, some of the issues I had in getting the Flex-3000 radio going were likely attributable to Vista; and, as my review in the February 2010 issue of *Pop'Comm* shows, SP2 of Vista seemed to take care of some of those performance issues. I suspected at the time that the performance improvements might have been backported from Windows 7 Beta. Whether I was correct in my assessment I may never know, but I can tell you that upgrading the HP laptop used in my shack from Vista Home

*"...I can tell you that upgrading the HP laptop used in my shack from Vista Home Premium to Windows 7 Professional has resulted in a better user experience overall."*

Premium to Windows 7 Professional has resulted in a better user experience overall.

## "Re-Flex"

The performance gains are measurable. If you have that February issue, take a look at the DPC Latency Checker screen shot on page 22 (Figure 4); it took a lot of tuning and configuration to get me into the "yellow" zone you see there. Decreasing the latency of delayed procedure calls down to the 1000-ms (1-second) range definitely helped the stability and performance of the Flex-3000. I recently ran the DPC Latency Checker again on the same computer I used for the Flex evaluation.

Since installing Windows 7, latency is down so much that I may be safe in saying that many of my issues in using the Flex were directly attributable to the poor performance of drivers used by the Vista operating system. The folks at Flex Radio Systems suspected as much. See **Figure 1** here, and compare it to the screenshot from February—it shows a demonstrable improvement of upgrading to Windows 7.

## Faster And Cleaner Is Better

Windows 7 "feels" faster and looks cleaner. There are some nice features, such as the ability to fly the cursor over a task bar icon and have it show all open windows related to that program. This is the sort of sensibility that might convince a few Mac OS users to give Windows 7 a try. System startup and shutdown are fast and the OS uses less of a memory footprint than Vista required.

If you're using a Windows-based PC and want to upgrade to Windows 7, you first need to determine whether your hardware is Windows 7-capable. Your manufacturer may offer a way to do this, such as the HP Upgrade Advisor, or you

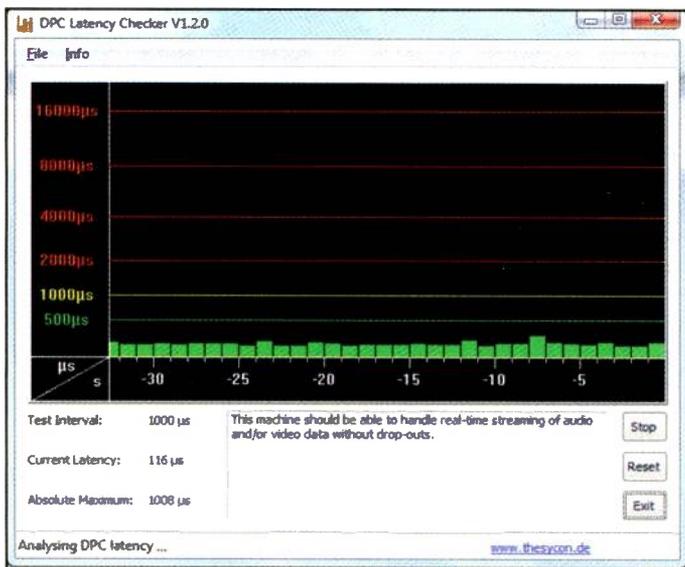


Figure 1. Compared with Vista, software latency is greatly reduced after upgrading to Windows 7. This will provide a better multimedia experience and benefit software-defined radios, such as the Perseus and Flex-3000 (see text).

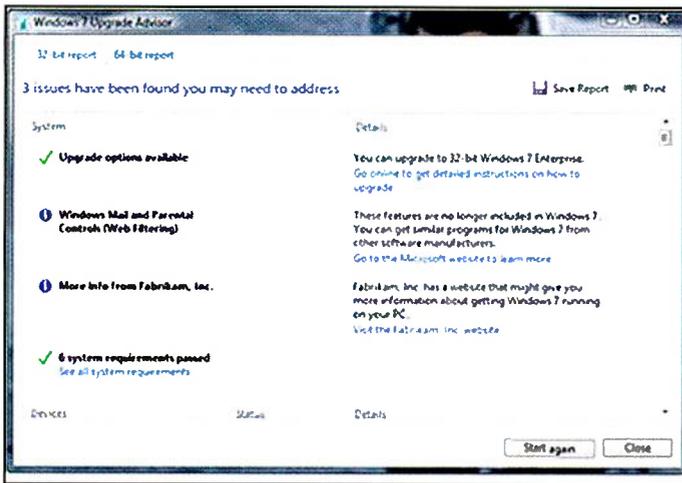


Figure 2. The Windows Upgrade Advisor will let you know in advance how compatible your system is with Windows 7.

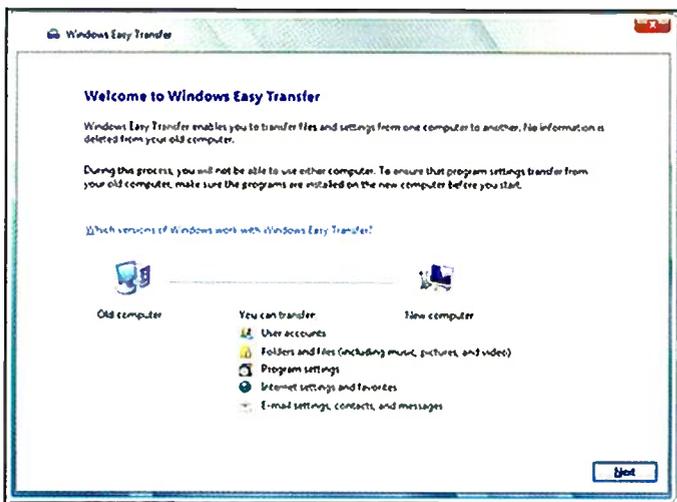


Figure 3. Windows Easy Transfer saves all your personal settings, preferences, documents, music, pictures, and video.

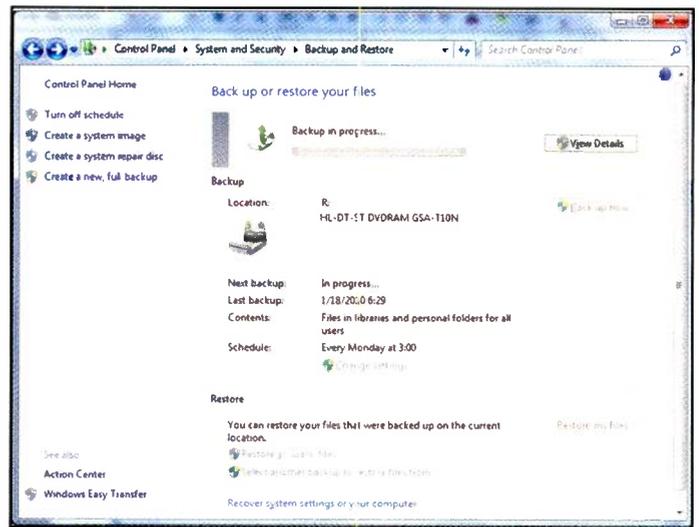


Figure 4. I cannot overemphasize the importance of setting up a backup schedule, creating a System Image, and a System Repair Disc.

purpose. You could save all your settings and files to a USB hard drive or keychain drive as your storage volume dictates. If you're upgrading between like versions, as mentioned above, you can insert the upgrade CD, follow the instructions, and in a couple of hours you'll be good to go. You should not have to restore any of the data that you backed up using Windows Easy Transfer. It will all be there for you if everything went well.

If you're not performing a like-version upgrade, such as going from Home Premium to Professional or upgrading from Windows XP, you'll not only need to save your personal files using Windows Easy Transfer, you'll also need all of your original software installation disks or files. This is because the "unlike version" upgrade is really not an upgrade, but a fresh install that's done without formatting the hard drive. All your old software is going to end up in a folder called `Windows.old`.

You'll then need to turn to the original disks or installations files and essentially rebuild your system. Be sure to have all your serial numbers available because you will need them. The `Windows.old` directory may come in handy if you're trying to find old configuration files for some of your programs, but this is an effort for the more experienced user and isn't necessary as long as you're willing to reconfigure all your software.

Once everything is working to your liking, be sure to create a System Image and a System Recovery Disc in case of a catastrophic failure, such as a dead hard drive. You might also want to get in the habit of using Windows Easy Transfer on a weekly basis to copy important files off your computer to another location. This is done from the "Control Panel / System and Security / Backup and Restore" menu. Look over on the left side of the windows for the options to create a System Image and a System Repair Disc (Figure 4).

## The Results

After reinstalling, most of my regular software worked without a hitch. Ham Radio Deluxe (v5.0 Beta, build 2356) runs just fine, as does UI-View 32, my APRS software. I save the cost of Microsoft Office by using Open Office 3.1, freely downloadable from [www.openoffice.org](http://www.openoffice.org). The Perseus software for my software-defined radio worked, and my Qatech four-port USB-

can use the Microsoft Windows Upgrade Advisor. Download and install the upgrade advisor and heed all warnings about hardware and software compatibility (Figure 2) before you proceed any further.

Next, you'll need to understand your upgrade options. The only direct upgrade path is from like versions of Vista and Windows 7. For example, you can upgrade from Vista Home Premium to Windows 7 Home Premium or from Vista Business to Windows 7 Professional, but you cannot simply upgrade from Vista Home Premium to Windows 7 Professional. It was this latter upgrade that I ended up pursuing.

You can purchase an upgrade online from the usual suspects, such as Tiger Direct, Newegg, and Best Buy. If you purchased a computer with Vista in the past few months, check the manufacturer's website. You may be entitled to a free upgrade program.

## Be Prepared

The most important thing to remember before you upgrade is to save a copy of all your settings and files. Windows Easy Transfer (Figure 3), included with Vista, can be used for this

to-serial converter worked without a hitch as well. Using my wireless LAN interface no longer slowed down the HP laptop. Many software upgrades go bad around changes to or unavailability of device drivers. Luckily, I had no problems with any of this, though I can't completely guarantee that this will be your experience, too.

The one glitch I did encounter in the whole upgrade process was when my Butel ARC996 software for my Uniden scanner failed to display some data in one of the screens. It turns out that Butel

already knew about the issue and has put out a beta upgrade to fix the problem, so there are no worries here, either.

Microsoft is also now saving you the cost of an add-on anti-virus and anti-spyware package. Home users can download and install Microsoft Security Essentials, which seems to offer decent protection at a great price: free. Install Security Essentials, run Windows Update on a regular basis, keep the Windows firewall enabled—with the default in Windows 7—and make regular backup copies of your data. This will keep you operating

securely for the immediate future, except in some unusual circumstances, such as a zero-day exploit. A zero-day exploit, by the way, is a piece of malware for which no known antidote currently exists. If you want to know how dangerous a zero-day exploit is, just ask Google.

## Let's Go On A Surfing Safari

Speaking of zero-day exploits, you may remember the news stories from last January about how China was targeting the Gmail accounts of political dissidents and hacking into them for surveillance purposes. It seems that rather than going in through the front door, a zero-day exploit made use of a then-unpatched flaw in Internet Explorer to make the intrusions possible. This was flaw was disclosed in Microsoft Security Advisory 979352, and by the end of January it had been patched. Make sure that you applied this important patch.

Germany's Office for Information Security went so far as to warn its citizens not to use Internet Explorer at all. There are alternatives to using Internet Explorer to browse the Web, as Mac and Linux users well know. Mac users have the Safari Web browser, which is very well liked by many users. Windows users who want to walk on the Mac side of the street can download the Safari for XP, Vista, or Windows 7 directly from the Apple website.

Mozilla Firefox is another very good browser, and it has a very long legacy. Firefox is an open source browser that is the successor to the Netscape browser you may have used back in the '90s. It's viewed by many as secure and fast, and runs on Windows, Linux, Mac, Solaris, or...you name it. It's regularly updated and you can download it for free. This is my everyday Web browser of choice.

There are other browsers as well that you may want to try. Chrome is fast, liked by minimalists, and brought to you for free by Google. There's also Opera, billed as the faster and safer Internet, which even will run on a smartphone. A complete listing of alternative Web browser resources and their download URLs is listed in the table of links that accompanies this column.

## What's Your Experience?

What browser do you use? Share your browser and upgrade stories with me at k2dls.rfbits at gmail.com.

### RF Bits Links

Windows Upgrade Advisor	<a href="http://www.microsoft.com/Windows/windows-7/get/upgrade-advisor.aspx">http://www.microsoft.com/Windows/windows-7/get/upgrade-advisor.aspx</a>
Microsoft Security Essentials	<a href="http://www.microsoft.com/Security_Essentials/">http://www.microsoft.com/Security_Essentials/</a>
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Chrome	<a href="http://www.google.com/chrome">http://www.google.com/chrome</a>
Opera	<a href="http://www.opera.com">http://www.opera.com</a>
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# EMP Awareness Raises Questions— For Everyone

by John Kasupski, W2PIO  
W2PIO@verizon.net

What would you do if all your electrical and electronic devices quit working? I mean everything from the stove, refrigerator, and furnace to the radios, GPS, cell phones, and even your car or truck just quit—permanently!

Earlier this month, I attended a seminar on EMP (Electromagnetic Pulse). Now, I'm fortunate, I guess, to be living here in western New York State. America's first tabletop exercise on EMP was held here, in Elma, New York, in August 2009. The first-ever national EMP Conference was held here too, in Niagara Falls, during September 2009. This month's seminar was literally right across town, about a 10-minute drive

*"...if an EMP event happened right now over the continental U.S., the resulting current and voltage surges in electrical and electronic systems could damage our electrical power grid...and of course our computers and modern ham rigs—beyond repair."*

from me. That made it rather easy to learn more about EMP and the dangers it represents. For those who aren't so strategically located, read on, and be prepared for a bit of a shock.

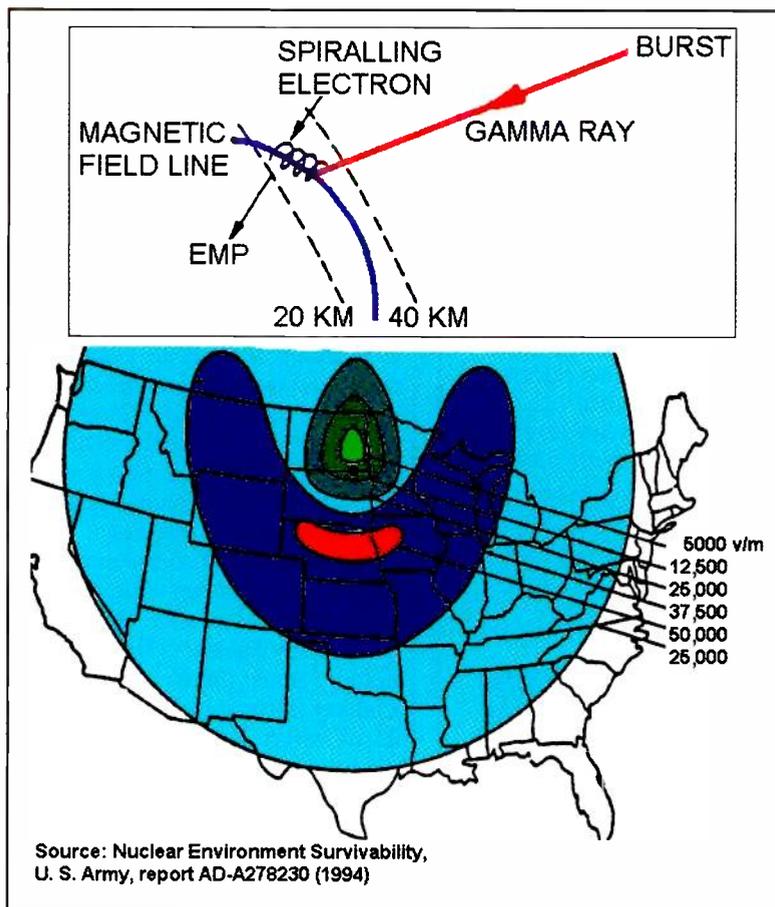
## The Dangers Of EMP

EMP is a burst of electromagnetic radiation that results from an explosion (especially a nuclear explosion), a solar storm, or possibly from a deliberate act intended to produce EMP using electrical/electronic equipment.

The EMP phenomenon was first discovered when an aerial nuclear weapon test over the Pacific Ocean affected electrical equipment in Hawaii. This test, conducted in July 1962, involved a 1.44-megaton nuclear device detonated 250 miles above the ocean and demonstrated the EMP effects of a high-altitude nuclear explosion. There was electrical damage in Hawaii, about 898 miles away from the detonation point. For instance, about 300 streetlights were knocked out, numerous burglar alarms were set off, and a telephone company microwave link was damaged.

The U.S. military took notice and began to harden and shield its electronic equipment from the gamma rays that are released by a nuclear detonation and interact with air molecules to create an energy field that disrupts electronic equipment.

Incidentally, it isn't only in the United States that the effects of an EMP have been noted. Also in 1962, the Soviet Union conducted nuclear tests over Kazakhstan. Although the weapons were much smaller 300-kiloton devices because their tests were done over a populated landmass, the collateral damage was much greater than in the American nuclear test, even resulting in an electrical current surge in an underground power line that caused a



Source: Nuclear Environment Survivability, U. S. Army, report AD-A278230 (1994)

Photo A. An illustration from a 1994 U.S. Army report depicting the effects of an EMP burst 400 kilometers over the United States. (U.S. Army graphic)



Photo B. An E-4 advanced airborne command post (AABNCP) aircraft being tested on the EMP simulator at Kirtland AFB, New Mexico. (USAF photo)



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fire in the power plant at Karaganda. This was revealed informally to U.S. scientists after the collapse of the Soviet Union.

In both instances the damage was quickly repaired because the electrical and electronic infrastructure back in the early 1960s didn't rely on EMP-sensitive microelectronics that are prevalent now. But today, solid-state electronics controls everything; if an EMP event happened right now over the continental U.S., the resulting current and voltage surges in electrical and electronic systems could damage our electrical power grid, radio and television, telephone system, commerce, motor vehicles, household appliances, and of course our computers and modern ham rigs—beyond repair. In a worst-case scenario, this could send the country back to 18th-Century technology. Since there's no way an 18th-Century infrastructure could support our 21st-Century population, millions could die of exposure, starvation, dehydration, and disease.

### Heads In The Sand

No one disputes that high-altitude nuclear detonations can cause widespread damage to the electric grid and to electronic and digital equipment (even

the U.S. Army is in on “the secret”; see **Photo A**). Some argue about the size of the nuclear weapon necessary to cause significant destruction, pointing out that the device that damaged electronic equipment in Hawaii was roughly 100 times larger than the most powerful nuclear test attributed to North Korea. They also point out that our military would be able to retaliate for such an attack. Those seeking to educate the public about the dangers of EMP (and I suppose that I’ve now joined those ranks by writing this column) are accused of being alarmists.

Well, I don’t believe in conspiracy theories, and I don’t wear a tinfoil hat, but it does occur to me that we have underestimated our enemies once before, and were rewarded with the events of September 11, 2001. Do we want to make that same mistake again? It would be cold consolation that our military retaliation would, at least, provide us with plenty of company in the Second Stone Age. And what if the EMP is the result of a naturally occurring solar storm, like the one that happened in 1859? I think a successful nuclear attack against the sun would prove counterproductive in the long run.

Especially distressing is knowing that I myself wouldn’t find it all that hard to scrounge up the necessary spare parts to build

a capacitive network to charge up, and then discharge the resulting *EMP generator* into a single-loop antenna. Such an approach could make it possible for domestic or foreign terrorists to disrupt local communications and other vital systems, while they take advantage of the opportunity to do something *really* nasty. If you think building something like this is just fantasy, think again. Our own military already has two EMP simulators, shown in **Photo B** (Air Force) and **Photo C** (Navy), and the Navy wants to build another.

## Are You Prepared?

There is an old adage that a word to the wise is sufficient, and I’ve already expended nearly 1,000 words on this subject. So I now leave it up to you to find out more about EMP and ask “The Powers That Be” what they’re doing to protect our nation’s vital infrastructure against this potential threat. Then ask yourself if you’re properly prepared. If you haven’t done so already, stock up on food, water, and batteries—now. The events depicted in *One Second After*, William Forstchen’s recent apocalyptic thriller on the dangers of EMP, could happen tomorrow!

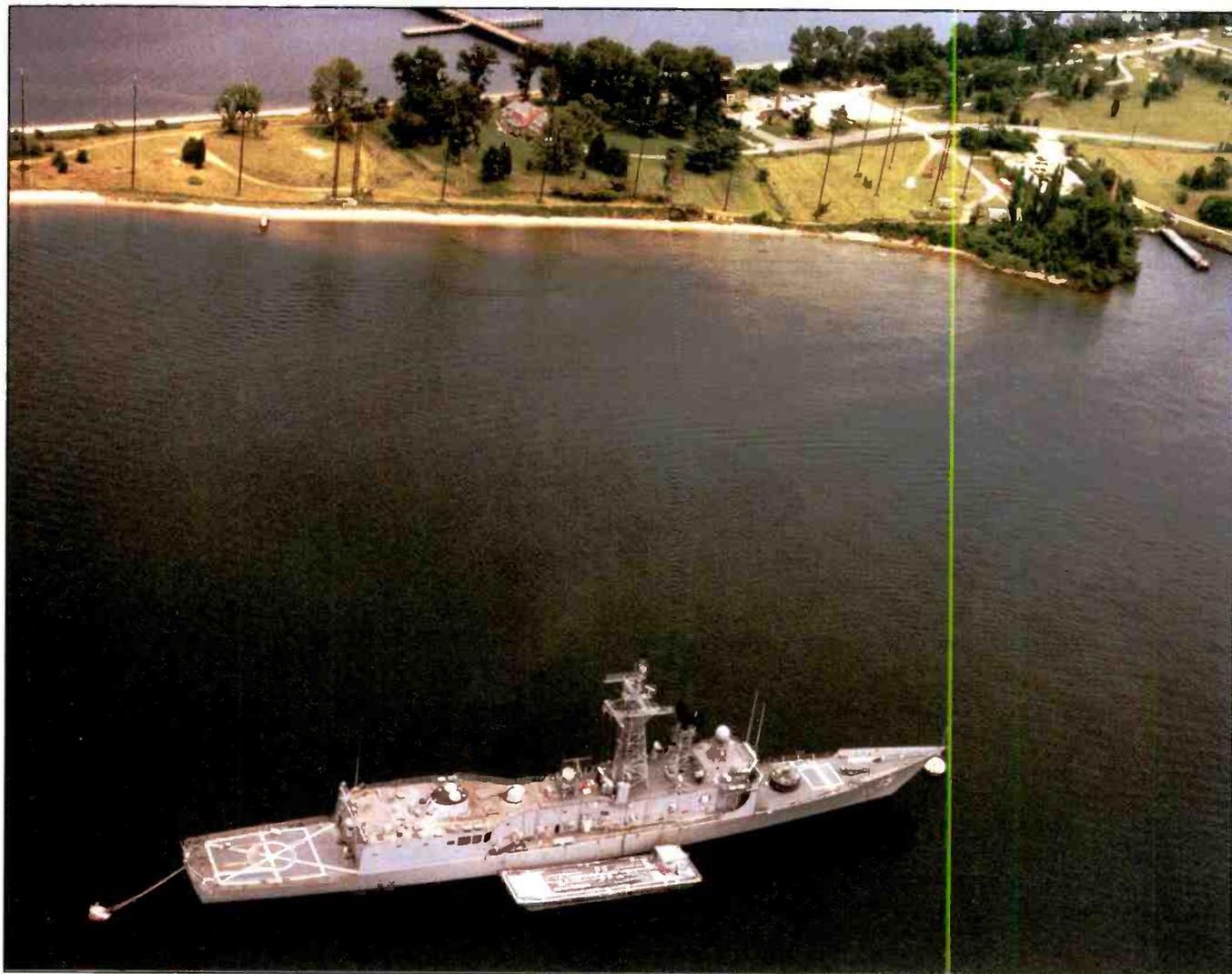


Photo C. Guided missile frigate *USS Estocin* (FFG 15) moored near the EMP Radiation Environmental Simulator for Ships (EMPRESS I) facility at Point Patience, Solomons Island, Maryland. (USN photo)

## And The Hits Just Keep On Coming!

by Tomas Hood,  
NW7US, nw7us@arrl.net

Sunspot activity over the last few years has been nearly non-existent. Certainly, the solar cycle minimum between Sunspot Cycle 23 and the new Cycle 24 is one of the longest since the early 1900s, and a great deal of speculation developed about the prolonged absence of solar activity. In 2008, there were 266 spotless days (73 percent of the year), and 2009 looked like it would follow suit. However, the last decade closed out with a welcomed sign that our nearest star was no longer inactive.

From November 2009 until press time (the end of February 2010), sunspot activity ruled the solar disc. December was a very active month, with only 10 days without official sunspots. This resulted in 2009 seeing a total of 260 spotless days (71 percent of the year). That does not seem encouraging, unless you look at the monthly activity from November onward (**Figure 1**).

Since the beginning of 2010, an amazing series of events have occurred, including some of the most intense solar flares so far in the new cycle. For several years, we've seen long periods where there were no sunspots on the sun, but since January 1, 2010, there have only been two days with zero sunspots.

The period from mid-January through February, up to press time, saw a veritable parade of active sunspot regions. By January 19, the sun became very active and produced a constant stream of x-ray flares, some of them moderately powerful (**Figure 2**). To the excitement of short-wave radio hobbyists, the 10.7-cm radio flux was 84. Conditions continued to improve, and February became a month of incredible excitement. By February 7, the official Penticton 10.7-cm radio flux was 90.

The higher end of the HF spectrum became active with DX signals, with even 12-meter activity worldwide. By February 12, solar activity ranged from low to high, and included the largest M-class flare yet recorded in Solar Cycle 24. This flare originated in Active Region 1046 and was the source of a full-halo coronal mass ejection (CME) directed toward Earth, which later produced minor aurora and geomagnetic distur-

*“By February 12, solar activity ranged from low to high, and included the largest M-class flare yet recorded in Solar Cycle 24.”*

bances. Active Region 1045 also produced a series of flares, including another M-class x-ray flare. By February 12, the 10.7-cm flux peaked at 96, just shy of 100! This level of activity was last seen in 2006.

All of this solar activity comes with a price, of course, and one downside of having an increase in sunspot activity is the risk of disturbances to shortwave radio propagation.

As sunspot regions grew larger and the number of spots increased, the sun also unleashed many flares. Often, when a flare explodes, it can unleash an associated CME toward Earth. This massively huge cloud of solar plasma (billions of tons!) arrives about three days later, and may cause geomagnetic disturbances, sometimes even “storm-level” geomagnetic activity. These geomagnetic disturbances counter any positive effect that the increased sunspot activity may have on radio signal propagation on the frequencies below 6 meters.

To the delight of VHF weak-signal enthusiasts, however, these geomagnetic storms often enable propagation of signals via “aurora-mode.” Auroral activity occurs at the *E* region of the ionosphere where regions of highly ionized “clouds” form that may reflect radio signals in the VHF and sometimes even UHF spectrum.

Another downside to increased sunspot activity is the direct impact of solar flares. An x-ray flare causes a sudden degradation in the HF propagation of radio waves, a phenomenon known as a sudden ionospheric disturbance (SID).

The term SID is used today to replace an older term, “short wave fadeout (SWF), which was coined in the 1930s when the immediate effects of a solar flare on the ionosphere were first observed and correlated. When an x-ray flare occurs (**Figure 3**), it causes a sudden large increase in the flux of solar x-ray and far extreme ultra-violet (EUV) radi-

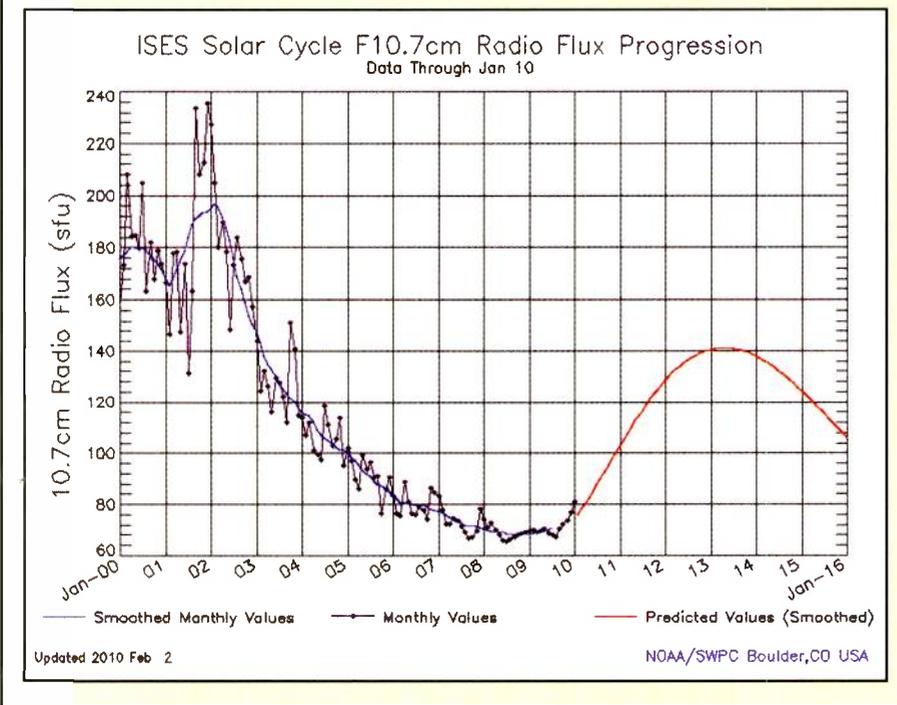
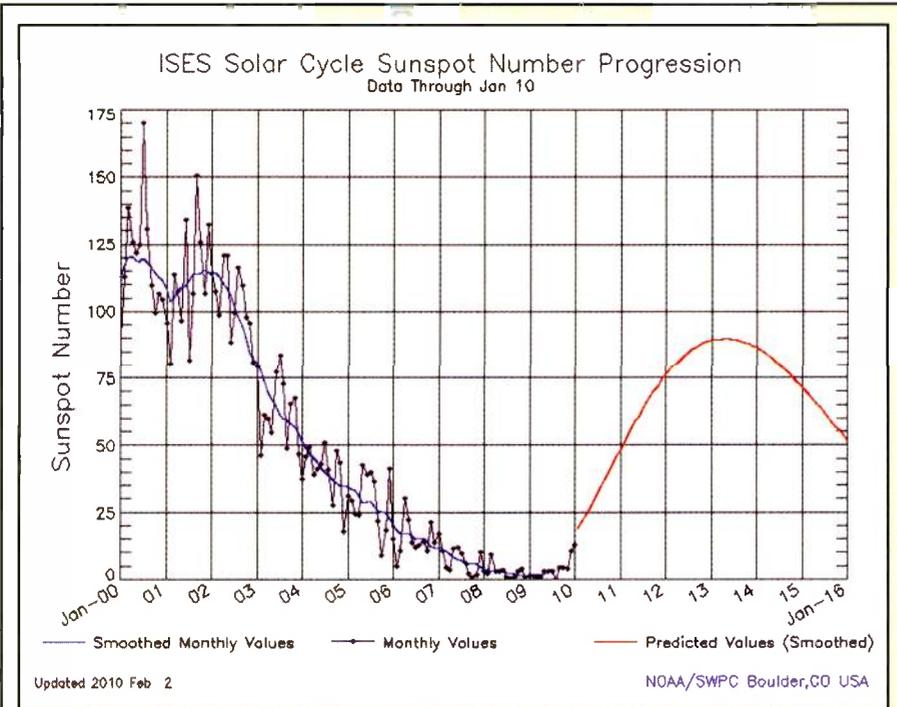
frequencies in the shortwave spectrum that are blocked. The effect can be drastic and very obvious for large flares, hence the term SID, and the HF bands can grow quiet of all signals. Those familiar with HF radio know this as a “radio blackout.” The blackouts can last anywhere from 14 minutes during a weak x-ray flare, to several hours during the most intense flares, such as those observed during Sunspot Cycle 23.

One of the reasons that the term SWF was largely dropped in favor of SID was because, apart from the HF absorption, the immediate effects of the x-ray radiation from the sun is a change in propagation of very low frequency signals via the *D* region, which can be readily monitored by the changes in amplitude and phase at a remote receiver. We used to use VLF monitors for solar flare detection at the Space Weather Prediction Center (Space Environment Services Center) in the 1950s and early 1960s before we had the x-ray monitors on the GOES (Geostationary Operational Environmental Satellite). The Stanford site <http://solar-center.stanford.edu/SID> shows how to monitor SIDs using simple VLF receiver monitors. For more information, see [http://en.wikipedia.org/wiki/Sudden\\_ionospheric\\_disturbance](http://en.wikipedia.org/wiki/Sudden_ionospheric_disturbance), [www.swpc.noaa.gov/info/Iono.pdf](http://www.swpc.noaa.gov/info/Iono.pdf), and [www.swpc.noaa.gov/info/Radio.pdf](http://www.swpc.noaa.gov/info/Radio.pdf).

During February, the arrival of those CMEs produced active geomagnetic disturbances. Also noticed during these flares were the radio blackouts associated with the numerous X-ray flares. All of this solar and geomagnetic activity provided plenty of excitement for both HF and VHF hobbyists.

## High Frequency Propagation

As we move away from the winter shortwave season into the longer days of summer, the overall trend in shortwave propagation is the opening up of the higher frequencies into many areas of the world. Some of these openings will be longer in duration than during the winter season. However, the openings occurring on the highest frequencies on the edges of ionospheric propagation of a given path can vary in strength, are subject to fading, and can be short-lived. The cause of the changes is complex, with the length of daylight over a region of the ionosphere, the intensity of the solar radiation, and the density and height of the various layers of the ionosphere all affecting the



Sunspot Cycle 24 progression charts showing the continued climb in the monthly observed sunspot counts since the last months of 2009, as well as the rise in the 10.7-cm flux monthly figures. (Source: Space Weather Prediction Center/National Oceanic and Atmospheric Administration)

ation (see [http://en.wikipedia.org/wiki/Extreme\\_ultraviolet](http://en.wikipedia.org/wiki/Extreme_ultraviolet)). This sudden “blast” of x-ray energy reaches the Earth at the speed of light.

When this radiation arrives on the sunlit-side of Earth, it is absorbed in the ionosphere at *D*-region heights (70–90 km) and produces an increase in ioniza-

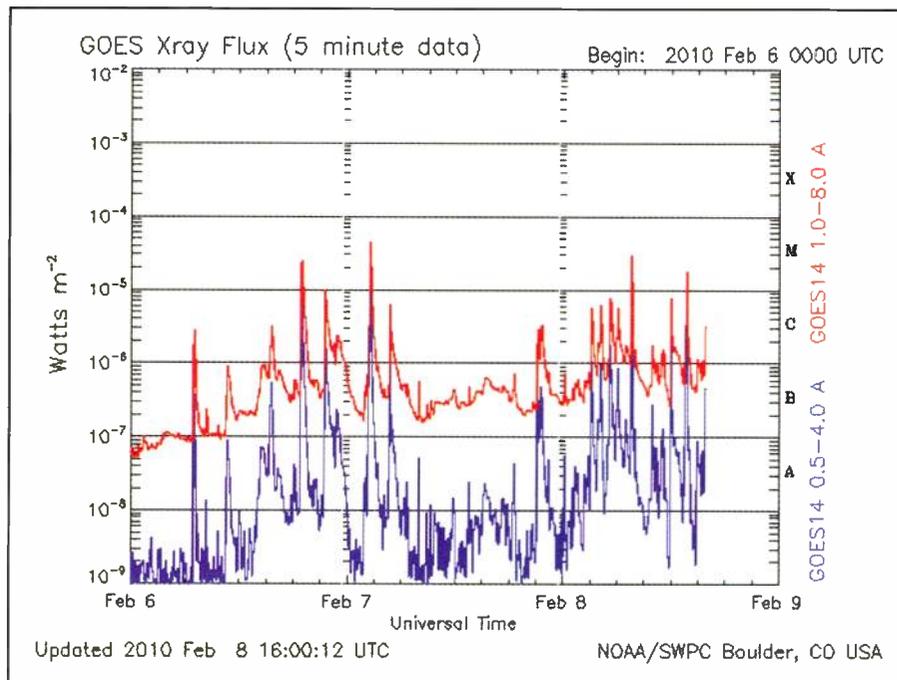
tion. Because an increase in *D*-region ionization results in the absorption of radio frequencies starting at mediumwave and extending up into the higher shortwave frequencies, signals that would otherwise be propagated via the *F*- and *E*-regions are “blocked.” The stronger the x-ray flare, the higher the

Optimum Working Frequencies (MHz) - For May 2010 - Flux = 84, Created by NW7US

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

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

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



The X-ray graph showing the steady “stream” of X-ray flares erupting from February 6 through February 9, 2010. (Source: Space Weather Prediction Center/National Oceanic and Atmospheric Administration)

propagation of the shortwave frequencies we’re interested in.

Winter daytime propagation over a given path could sustain higher frequencies than the same path during the summer daytime, while the summer nighttime frequencies will be higher than the winter nighttime frequencies on that same path (partly due to the proximity of the Earth to the sun during these two seasons; in the winter, the Earth is closer).

On the higher HF frequencies (16 through 11 meters), fairly good daytime openings should be possible on north/south paths during May. Sixteen meters will be the best bet out of the higher bands, not only because of propagation, but also because more International Broadcasters will still use this band around the clock.

Most DX signals, and the strongest signals, will be found on the middle and lower HF bands. Look for peaks in signals around the hours of sunrise, and again just before sunset, and into the late evening. Daytime paths are best when they terminate in areas where it is night. This enhances propagation to remote parts of the world and lengthens the DX window. Twenty-five and 22 meters will have more stable signals than those on 19 meters, especially on north/south paths, again around the hours of sunrise and sunset. Thirty-one meters becomes one of the strongest and most reliable bands, though

you will find it congested. Look for Europe and Africa early in the morning through late morning, then north/south openings during the day if the solar activity is low (otherwise the *D*-layer absorption will wipe out the band). As sunset approaches, look for South Pacific, then Asia as the sun sets.

During the night, 41 through 60 meters should provide good openings from Europe, Africa, and the east. Some DX should be possible on 75 through 120 meters, but signals are expected to be mainly weak and covered by seasonal noise. Static levels also increase noticeably during May, and signals may sound weaker on DX openings during the daylight hours.

### VHF Ionospheric Openings

Possible transequatorial (TE) propagation and occasional sporadic-*E* ( $E_s$ ) propagation will keep the VHF enthusiast happy. The annual summer  $E_s$  season begins around May 1, with the activity sparse during the first two weeks of May, then picking up to about 60 percent of the days by the end of May.

The date May 1 is almost like a switch in the ionosphere. Simply, the oxygen ions in the *E* region of the ionosphere become more excited by the increasing proximity of the sun, to the extent that they recombine with metallic ions also

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present in the *E* region at a higher rate than at other times of the year. This eventually leads to thin layer formations in the *E* region, off of which we can bounce VHF radio waves (the mode of propagation known as  $E_s$  propagation). Because of this  $E_s$  increase during May, we can expect that fairly frequent VHF short-skip openings will be possible. These are likely to occur over distances of approximately 1,000 to 1,400 miles. Although  $E_s$  openings can take place at just about any time, the best time to check is between 10 a.m. and 2 p.m. and again between 6 and 10 p.m. local daylight time.

A seasonal decline in TE propagation is expected during May, although an occasional opening may still be possible on VHF. The best time to check for VHF TE openings is between 9 and 11 p.m. local daylight time. These TE openings will be north-south paths that cross the geomagnetic equator at an approximate right angle.

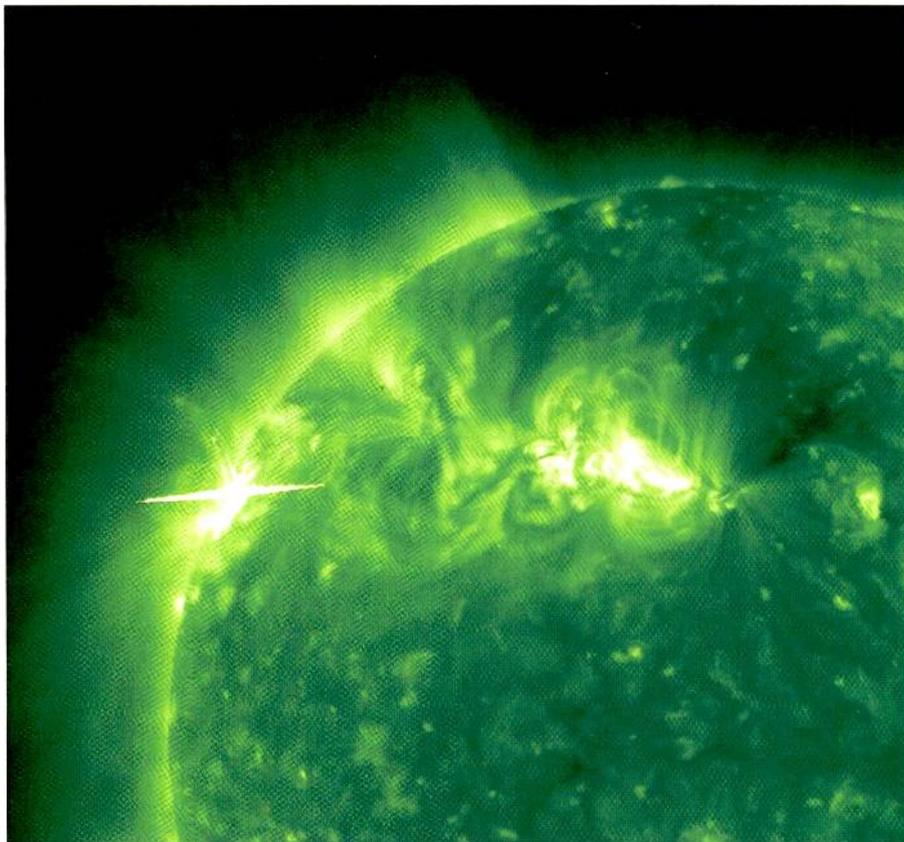
Auroral activity is generally lower now than during March and April, due to the change in the orientation and position of the Earth and magnetosphere in relation to the solar wind. Watch for the Planetary K-index ( $K_p$ ) values above 4, which occur on days when we see coronal holes affecting space weather or the arrival of CMEs a few days after any major solar flare.

One meteor shower, the Eta Aquarids, will occur in May. The Eta Aquarids start at the end of April, but peak during the beginning of May. This shower has a peak rate of up to 60 visuals per hour. Look for TV and FM broadcast pings (short bursts of signals, refracted off the ionized trails from the burning meteorites) during these events. If you're an amateur radio operator, look for 6- and 2-meter openings off the ionized meteor trails.

## Current Solar Cycle Progress

The Dominion Radio Astrophysical Observatory at Penticton, BC, Canada, reports a 10.7-cm observed monthly mean solar flux of 81.0 for January 2010, up from 76.8 for December 2009. This shows a consistent climb since August, 2009. The 12-month smoothed 10.7-cm flux centered on July 2009 is 71.0, also indicating a steady rise. The predicted smoothed 10.7-cm solar flux for May 2010 is about 84, give or take about 8 points.

The Royal Observatory of Belgium reports that the mean monthly observed sunspot number for January 2010 is 13.1,



The STEREO Ahead spacecraft kept a close eye on two active regions (bright regions in this image) on February 12, 2010. The one on the left popped off a small flare. This still image shows the bright flash of the flare in UV light at 195 Angstroms. The active region near the center shows a lot of magnetic struggles within it, and it bursts out a small coronal mass ejection (CME) after the arch of particles is seen rising up. Flares are intense explosions on the sun that blast out radiation into space. CMEs are larger and longer lasting solar storms that carry a larger cloud of particles and magnetic field into space. Both can create what we call space weather effects, such as power disruptions, satellite problems, and aurora if aimed at Earth. (Source: Solar and Heliospheric Observatory)

up from December's 10.6. The lowest daily sunspot value during January 2010 was zero, occurring on January 6, 7, and 19. The highest daily sunspot count for January was 26 on January 23 and 24. The 12-month running smoothed sunspot number centered on July 2010 is 3.6. A smoothed sunspot count of 26 is expected for May 2010, give or take about 8 points.

The observed monthly mean planetary A-Index ( $A_p$ ) for January 2010 is 2. The 12-month smoothed  $A_p$  index centered on July 2009 is 3.8. Expect the overall geomagnetic activity to be unsettled to stormy during May, triggering possible aurora. At the time of this writing, the forecast holds that May will be a quiet month, but with occasional strong geomagnetic storms due to recurring coronal holes, flares, and possible CMEs (if flaring occurs from possible sunspot activity). Visit the last minute forecast page at [http://hfradio.org/last-](http://hfradio.org/last-minute_propagation.html)

[minute\\_propagation.html](http://hfradio.org/last-minute_propagation.html) for an up-to-the-minute propagation condition forecast that incorporates the geomagnetic conditions expected based on the 27-day rotation of the sun.

## I'd Like To Hear From You

I invite you to visit my online propagation resource at <http://propagation.hfradio.org/>, where you can get the latest space data, forecasts, and more, all in an organized manner. If you are on Facebook, check out <http://tinyurl.com/fb-spacewx> and <http://tinyurl.com/fb-nw7us>.

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

Until next month, 73 de NW7US, Tomas Hood

# Transmission Line Olympics: Old Vs. New

by Kirk Kleinschmidt, NTØZ  
kirk@cloudnet.com

**T**oday's Olympic athletes—yes, I've been watching the Vancouver Games as I write this, so you're stuck with Olympic analogies this month—reach a significant part of their ever-increasing achievements because of the march of technology. They have better equipment, better training, and better nutrition compared to that available to their counterparts of decades past. Sometimes, the technology gulf is so vast that even if the best modern competitors were using the best “old-style” equipment, they wouldn't be at all competitive, despite their superior skills.

Can you imagine tennis superstar Roger Federer playing a fast-paced power match while

*“...at least one ‘antique’ ham radio technology can, under the right conditions, still crush its modern equivalent.”*

using a 1960's wooden racquet? Despite Roger's superior skills, *nobody* can handle 100-mph serves with a low-tension, wooden racquet!

The same goes for most sports. Modern bobsleds use carbon fiber aerospace technology. Even the best sledders couldn't place—or even survive a run intact—with a World War II-era wooden sled.

Ham radio—especially competitive radio—has followed a similar path. Today, unlike the '60s, you can no longer win a major contest with a 1-kW amplifier, a tri-band beam, and a pair of low dipoles! You can participate and have a lot of fun, for sure, and you might even be able to carve out a specialty niche if you live in a remote, “desirable” area or compete in an “off-brand” category (160-meter QRP, anyone?), but the Big Guns will undoubtedly prevail in the main categories of competition.

But at least one “antique” ham radio technology can, under the right conditions, still *crush* its modern equivalent. In the Average Ham category, Multiband Wire Antenna division of the Feed Line Olympic Games, open-wire line (or ladder line and sometimes even TV twinlead) can win decisively, despite being 100 years old! Now there's something you'll never see at the “real” Olympics!

## The True Cost Of Coax

Before World War II, most hams used open-wire feed lines, or even single wire feeds! After the war, however, thanks to tons of inexpensive surplus inventories of the black-jacketed stuff, coaxial cable became king. Well, convenience king, but not performance king!

Many newcomers are amazed to discover—if they ever discover it—that coax isn't all that great



Now that's funky coax! This tower-mounted dipole is fed with 600-ohm open-wire line—the kind your grandpa used to use! Prized for its extremely low RF losses, open-wire line is just what the doctor ordered for feeding a wire antenna on multiple bands. If you don't want to make your own, W7FG's high-quality line, pictured here, is available from [www.trueladderline.com](http://www.trueladderline.com) (as is this photo!).

in a great many applications, and that open-wire line, 450-ohm “ladder line,” and even good ol’ TV twinlead can work *far better* in certain common applications.

Most hams have only a vague understanding of how coax works and when to use it. And forget about stuff like impedance, velocity factor, phasing, wavelength, etc. Because coaxial cable is so handy and so readily available, and *usually* gets our radio signals from Point A to Point B, coax is often used improperly.

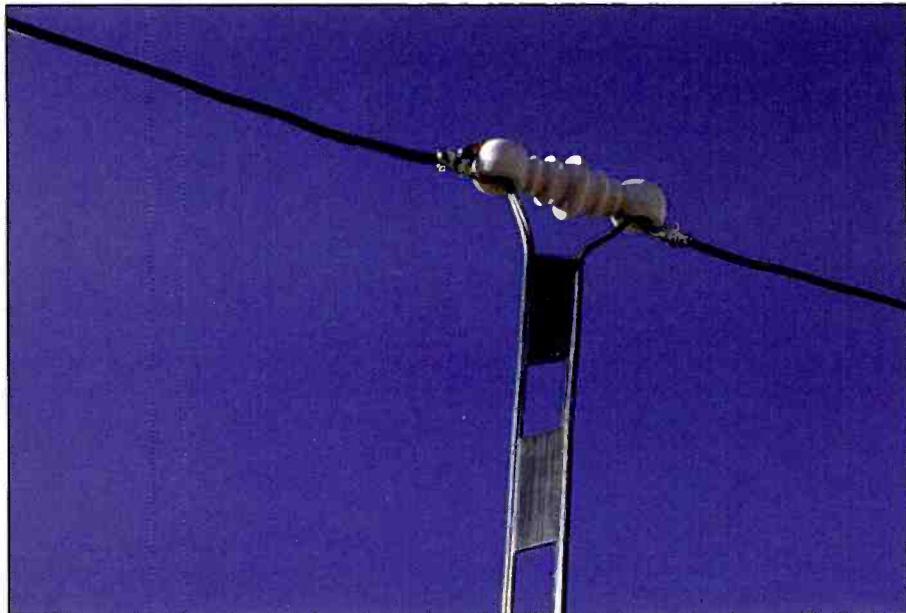
Unfortunately, the worst way to use coaxial cable feed line is typically the way it gets used the most! I’m talking about feeding a wire antenna on multiple bands (dipole, vee, loop, etc.) with the handy black stuff. Coax works best for *matched* antennas at low frequencies with relatively short cable runs. For *multiband* wire antennas—especially those “tuned” by “antenna tuners”—coaxial cable performance can be more than dismal (ranging all the way up to unbelievable bad!).

The traditional multiband dipole—the beginning ham’s standard antenna—is fed with a random length of 50-ohm coax that’s tweaked by an antenna tuner. Conventional wisdom says to put up as much wire as possible and let the tuner worry about matching the load on various bands. Even on bands where the antenna system’s SWR losses are quite high, *some* RF energy will be radiated. But not as much as you might think!

For example, a standard 40-meter dipole (66 feet) fed with 50 feet of high-quality, low-loss coaxial cable will tune up on all bands, 40 through 10 meters. Tuning on some bands will be touchy, but you can work stations, DX included. But how much power is being wasted because of high feed line SWR?

The manufacturer’s data sheet says our cable has 1.5 dB of loss per 100 feet at 100 MHz (loss increases with cable length and frequency). We’re using only 50 feet with an upper frequency limit of 30 MHz, so our losses due to SWR mismatches should be minimal, right?

Wrong. Those loss figures are for *matched, resonant antennas*. With high feed line SWR conditions, a lot of power (sometimes *most* of your power) can be lost between your antenna and antenna tuner—even with a low SWR on the run between your rig and tuner. As we’ll see, losses increase in proportion to SWR, too. Remember: a 3-dB loss represents a 50-percent reduction in transmitted signal strength!



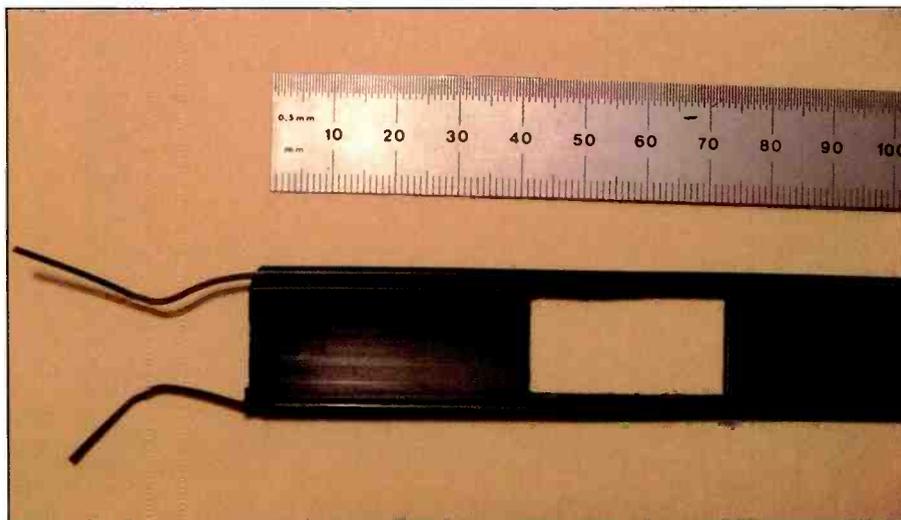
Look, Ma! No Coax! This is the simplest way to connect a ladder line feed to your antenna’s feed point. Note how the feed line wires go up and through the holes on each end of the “dog bone” center insulator. This helps to relieve strain and flexing, which can break soldered connections that aren’t protected. (Photo courtesy of Roger Wendell, WBØJNR, [www.rogerwendell.com/mystation.html](http://www.rogerwendell.com/mystation.html), of Golden Colorado)

On 40 meters, our 66-foot dipole is a great match, and the antenna system wastes only about 0.2 dB. Not bad! On 15 meters, an odd harmonic of 40 meters, the match is also pretty good, sporting an acceptable 0.8 dB loss. On 80 meters, however, feed line losses approach 14 dB. And on 160 meters, losses total a staggering 27 dB! If we start with 100-watt output, we’ll radiate about 3 watts on 80 meters and less than a 1/2 watt on 160! Instant QRP!

Under these conditions, coaxial cable sure isn’t king (and hence, not very convenient, either)!

## A Better Way

One way to reduce the feed line losses experienced while using multiband, non-resonant antennas is to ditch our “traditional” coaxial cable feed and replace it with open-wire line, ladder line or TV



Dubbed “ladder line” or “window line,” this 450-ohm transmission line easily outperforms 50-ohm coax under many conditions, especially when feeding multiband wire antennas from a single antenna tuner. (Photo courtesy of Gerry Ashton via Wikimedia Commons)

twinlead (the latter is especially useful at low power levels and for portable operation). This, ironically, is even more “traditional,” having been the feed line of choice in ham radio’s early days before the coax craze got started!

As shown in the accompanying photos, 450-ohm ladder line—parallel conductors separated by a plastic, ladder-like insulating material—replaces the coax we previously used to feed our dipole. Ladder line, also known as “450-ohm balanced line,” was the norm in the days before coaxial cable (an unbalanced line). It may not be as convenient as coaxial cable, but when used with an antenna tuner designed to handle ladder line (most are), feed line losses for our 66-foot dipole stay blissfully below 0.3 dB on all bands, 40 through 10 meters! On 80 and 160 meters—big trouble spots when fed with coax—losses total 1.5 and 8.5 dB, respectively. That’s a *tremendous* improvement!

This month’s column is a mere introduction to balanced feed lines, but a more in-depth treatment can be found in Paul Danzer’s “Open-Wire Feed Line—A Second Look,” in April 2004 *QST*. A PDF copy can be found at [www.arrl.org/tis/info/pdf/0404034.pdf](http://www.arrl.org/tis/info/pdf/0404034.pdf).

Essentially, to reap the most rewards from your backyard multiband wire antenna, simply install the longest centered dipole (or horizontal loop) that’s practical (make each dipole leg the same length) and feed it with enough ladder line to comfortably reach your station. With a decent tuner (the beefier the better), you’ll put out a nice signal on a variety of bands—and that’s something you can’t always say when using coax!

## A Balanced Approach To Balanced Lines

If balanced line feeds were magical cure-alls we’d *never* use coax. For best performance, a few ladder line fundamentals are in order.

- Be sure your antenna tuner has a sufficient voltage rating. Taming high feed line SWRs can create *very* high RF voltages inside your tuner. Resulting arcs and sparks can damage expensive equipment. (During one lab test I photographed back in the day, a tuner matching a high-SWR load actually caught on fire at the 100-watt power level!)

- When attaching balanced feeders to houses, structures, and towers, be sure to keep the ladder line several inches away from metal (or metal-containing) objects.

This can make bringing the line into the house a bit tricky, but the performance results are usually worth the effort.

- “Balanced” antenna tuners designed specifically for ladder-line feeders usually work better than their coax-oriented counterparts. MFJ makes several *balanced* antenna tuners just for feeding open-wire lines. Check out the Model 974B or, if you want to run higher power, the Model 976, which is rated for 1500 watts.

- Water, ice, and snow can affect (unbalance) ladder line. Keep things clear for best results, and be ready to tweak your tuner settings a bit if your feed line is iced up.

- If left flapping in the breeze, the soldered connection between your ladder line feeders and your dipole wires will probably fatigue and break rather quickly. Be sure to reinforce the junction with electrical tape, etc., or use a center insulator, such as the Ten-Tec Model 3003 Acro-Bat, designed for ladder line.

- Ladder line can be hard to find at local

stores. If your local ham store doesn’t stock it (or if the nearest ham store is 1,000 miles away), check the ham magazines for wire and cable suppliers. Some ops, especially QRPers, sometimes use 300-ohm TV twinlead instead of 450-ohm line. It’s a true balanced line, but reduced feeder spacing and lower-capacity insulation doesn’t always produce acceptable results. Excellent balanced line is made by W7FG. You can see the stuff at [www.trueladderline.com](http://www.trueladderline.com). The more common 450-ohm ladder line is available from [www.universal-radio.com](http://www.universal-radio.com), [www.thewireman.com](http://www.thewireman.com), and elsewhere.

## Achieve Your Own Peak Performance

If you can work around the “special needs” of balanced feed lines you’ll find that they provide excellent performance—especially for multiband wire antennas—at a very reasonable cost. Heck, you can even make your own! Although that’s no longer the Olympic Way, it’s still the Amateur’s Way!



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## A New York-Metro State Of Mind

by Tom Swisher, WA8PYR  
airscan65@gmail.com

Our aerial travels this month take us to the New York metropolitan area, home to three of the busiest airports in the United States, all managed by the Port Authority of New York and New Jersey. We're on approach to John F. Kennedy International Airport, LaGuardia Airport, and Newark Liberty International Airport.

As you can imagine, New York airspace is among the busiest in the country, and all three airports are worth a visit if you want to check out lots of aviation action in a pretty concentrated area.

### John F. Kennedy International Airport (KJFK)

Our first stop takes us to John F. Kennedy International Airport, the busiest international facility for both the New York area and the nation.

Built as Idlewild Airport in 1943 on the former Idlewild Golf Course, the facility was soon

*“Our first stop takes us to John F. Kennedy International Airport, the busiest international facility for both the New York area and the nation.”*

renamed Major General Alexander E. Anderson Airport in honor of a local resident. It was renamed New York International Airport in 1948, but continued to be commonly known as Idlewild until 1963, when it was renamed in honor of President John F. Kennedy. The airport has been managed since 1947 by the Port Authority, and has been the primary international airport for the area since regular commercial operations began in 1948.

Originally envisioned with a single terminal, the design was soon altered into a form that makes



The Eero Saarinen TWA Flight Center at JFK Airport. (Creative Commons image)

## New York-Metro Airport Frequencies

NYC Area Unicom - 122.95

### John F. Kennedy International Airport

JFK Ground - 121.9/348.6, 121.65  
 JFK Tower - 119.1, 123.9, 281.55  
 JFK Clearance - 135.05/348.6  
 JFK Class B - 125.25/281.55  
 JFK Gate Hold - 125.05  
 JFK ATIS Arrival (SW) - 115.4  
 JFK ATIS Arrival (NE) - 117.7  
 JFK ATIS Arrival - 128.725  
 JFK ATIS Departure - 115.1

### LaGuardia Airport

LGA Ground - 121.7/263.0, 121.85  
 LGA Tower - 118.7/263.0  
 LGA Approach - 128.8  
 LGA Aircraft Clearance - 121.875  
 LGA Helicopter Clearance - 135.2  
 LGA Pre-Taxi - 135.2  
 LGA Class B North - 119.95  
 LGA Class B South - 126.05  
 LGA ATIS Arrival - 125.95  
 LGA ATIS Departure - 127.05

### Newark Liberty International Airport

EWR Ground - 121.8, 126.15  
 EWR Tower - 118.3/257.6, 134.05  
 EWR Clearance Delivery - 118.85  
 EWR Class B - 127.85/257.6  
 EWR ATIS Arrival - 115.7  
 EWR ATIS South - 134.825  
 EWR Final Vector - 125.85  
 EWR Gate Hold - 132.45

JFK unique, in that the design gave the airlines space to develop their own terminals. This resulted in JFK's hosting a varied collection of architecturally significant terminal buildings, most built between 1959 and 1970.

The first of these, the International Arrivals Building, opened in 1959 and was unique in its own right for featuring narrow extensions of the building to accommodate more aircraft. The next to open, in 1959, was United's Terminal 9, which was followed shortly thereafter by Eastern Terminal 1. American opened Terminal 8 in 1960, and a short time later Pan Am opened the Worldport. A two-

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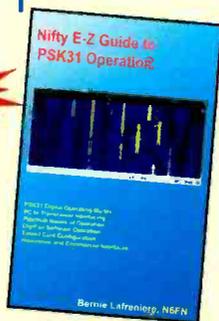
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The Marine Air Terminal at LaGuardia Airport. (Library of Congress photo by David Sharpe)

year gap followed, until the TWA Flight Center (Terminal 5) and Terminal 2 (a joint effort of Northwest, Braniff and Northeast) opened in 1962. A gap of another eight years ensued, until the National Airlines Sundrome (Terminal 6) opened in 1970.

Of these significant buildings about half remain, with many having been demolished to make room for their replacements and another structure possibly living on borrowed time. The new Terminal 4 replaced the International Arrivals Building in 2001, while the new Terminal 8 is replacing both Terminals 9 and 8, and Terminal 1 went the way of the dodo for its successor of the same name. Terminal 6, the Sundrome, still stands but it is currently closed, facing an uncertain future. Of the others, Terminals 2, 3, and 5 still exist.

Famed architect Eero Saarinen designed the most recognizable of these, Terminal 5, the TWA Flight Center. Familiar from TV and movies, the winged design was meant to capture the spirit of flight, but after the demise of TWA in 2001, the building was closed. Now partially encircled by a new Terminal 5, the Saarinen building (connected to the new terminal via the original arrival and departure tubes) is currently undergoing renovation, although its future use is uncertain. The building was added to the National Register of Historic Places in 2005.

JFK has two sets of parallel runways, for a total of four: 13R-31L, the longest at 14,572 feet, is the second-longest commercial runway in North America; 4L-22R and 13L-31R follow at 11,351 and 10,000 feet respectively; runway 4R-22L brings up the rear at 8,400 feet. The field also has four helipads, seven hangars, and various other servicing facilities and out-buildings.

With over 100 airlines and handling over 48 million passengers a year, JFK will provide lots of listening fare for the monitoring enthusiast.

### LaGuardia Airport (KLGA)

The smallest of the three metro New York airports, but probably one of the best known in the country, LaGuardia Airport has had a colorful history.

Built in 1929 on the site of an amusement park, the field began as a small private field named after famed aviator Glenn H. Curtiss, and was later renamed North Beach Airport. The facility we know today as La Guardia Airport came about at the urging former mayor Fiorello LaGuardia, who was outraged that New York did not have a commercial airport at the time, being served instead by Newark Airport.

The New York Metropolitan Airport opened in 1939, and rapidly became a big hit due to its proximity to Manhattan.



Newark Liberty International Airport's Terminal C, with the borough of Manhattan in the background. (Public domain photo)

Drawn by fascination with the new mode of travel, people flocked to the airport, paying 10 cents admission to the viewing area to watch aircraft take off and land.

LaGuardia today has four passenger terminals, the oldest of which (and the only original terminal from the early days of passenger travel still in operation) is the Marine Air Terminal. It was built in 1939 to serve the seaplane Clipper flights of Pan Am as well as the land-side flights from the runways. By the end of World War II, however, seaplanes were no longer a viable mode of long-distance travel, and the MAT served only normal land-based aircraft. While replaced for most flights by a newer terminal building across the airfield, the MAT remained in use, and is still busy today with six gates hosting the Delta Shuttle and several air taxi and commuter services.

Across the field, the newer Central Terminal Building is used for most traffic at LaGuardia. Opened in 1964 to replace an earlier building, the terminal today has 38 gates handling 12 airlines.

The other two terminals at LaGuardia are the Delta Flight Center and the US Airways Terminal (opened in 1983 and 1992 respectively). Each is dedicated to the flights of its parent airline.

LaGuardia has suffered considerable growing pains over the years. While it was a state-of-the-art facility when built, it rapidly became too small for the volume of traffic. Various methods have been instituted to limit traffic to and from LaGuardia, including limits on flight dis-

tance, exorbitant fees for general aviation aircraft, and FAA limitations on aircraft type and size.

LaGuardia has two intersecting runways, 13/31 (7,003 feet long) and 4/22 (7,001 feet long). Runway 13/31 runs parallel to the East River with water approaches at both ends, while aircraft using 4/22 must either come in over water (Runway 22) or heavily populated areas of Queens (Runway 4). The various challenges posed by tricky approaches and noise abatement requirements make LGA an interesting airport to fly in and out of, and that also makes for interesting scanning.

## Newark Liberty International Airport (KEWR)

The last (and oldest) of the three major airports in the area, Newark Liberty International Airport, opened in 1928 and served as the first airfield for the New York-metro area. The airport is owned by the City of Newark, and since 1948 has been operated by the Port Authority.

Served for the first few years by a temporary terminal and administration structure, the airport opened a new Art Deco-style terminal and administration building in 1935, with Amelia Earhart performing the dedication. Hangars and other buildings soon followed, all of which served for many years. The administration building itself was the main terminal until the opening of North Terminal in 1953, and it has recently been reno-

vated along with some of the other original airport structures.

For several years after it was first built, Newark was the busiest airport in the country, until losing that distinction after the opening of LaGuardia Airport. However, with the exception of a decline in the 1970s, Newark remained a very busy airport and is still one of the busiest in the United States.

Newark today has three terminals with 112 gates serving 32 airlines. While JFK is generally considered the international gateway, Newark hosts many international flights, including some from as far away as Malaysia.

There are three runways ranging in length from 6,800 to 11,000 feet: 11/29, the original (and shortest) runway; 4R/22L (10,000 feet); and 4L/22R, the longest. There is also one helipad and extensive cargo facilities.

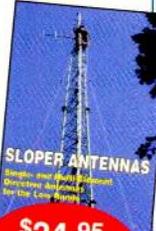
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# An Era Ends As LORAN-C Falls Silent

by John Kasupski, W2PIO,  
w2pio@verizon.net

*“Used only by a small percentage of the population... after 67 years, eight months, and 24 days, on February 8, 2010, the USCG’s domestic U.S. LORAN-C service was discontinued.”*

An era in radio-based navigation came to an end in early February when the United States Coast Guard coordinated the shutdown of the North American Long Range Navigation-C signal, terminating the signal at 19 of its 24 stations.

While Coast Guard LORAN stations Attu and Shoal Cove in Alaska and a few other stations that are bound by bilateral agreements with Russia and Canada will continue to broadcast their international signals, the shutdown concludes the transmission of the U.S. domestic LORAN-C signal. Those transmitters (**Photo A**) have now fallen silent. Interested parties can view the estimated remaining LORAN-C signal coverage areas of these international chains by downloading the document located at the following URL:

[www.navcen.uscg.gov/pubs/loran/sigspec/excerptofappenxb.pdf](http://www.navcen.uscg.gov/pubs/loran/sigspec/excerptofappenxb.pdf)

However, even this is temporary, as the Canadian government has announced that operation of Canadian LORAN chains will cease on or before October 1, 2010.

The LORAN (**L**ong **R**ange Navigation) system was born during World War II and provided Allied forces with reliable and accurate naviga-

tion at sea in any weather. After the war, its effectiveness led to the system being expanded for aircraft and merchant, as well as military, use. LORAN-C stations began to spring up throughout the world.

The idea survived the transition from the original LORAN-A and spawned several other versions of LORAN, most of which never got beyond the experimental stage. However, due to technological advancements in the last 20 years, especially the Global Positioning System (**Photo B**), LORAN had become an antiquated system. It was no longer needed by the armed forces, and with GPS devices widely available for marine, automotive, and portable use and even built into many cell phones, LORAN was no longer needed by the transportation sector either. Used only by a small percentage of the population, it was deemed an unnecessary federal program in January, fell victim to budgetary considerations, and thus after 67 years, eight months, and 24 days, on February 8, 2010, the USCG’s domestic U.S. LORAN-C service was discontinued.

Apparently, someone couldn’t bear to wait until April Fool’s Day to take advantage of the opportunity to use the shutdown of LORAN-C as fodder. A few days later, an Internet blogger wrote up a fake news story, which alleged that volunteer ham operators would be asked by the government to operate the transmitting stations and thus save the LORAN-C system. Naturally, this turned out to be a hoax, but the idea of turning over the slice of spectrum from 90 to 110 kHz where LORAN-C resided has merit. Isn’t it about time hams had a dedicated slice of those juicy long-range communications frequencies on LF, after being forced to inhabit the “useless” bands at 200 meters and below ever since the first government regulations were imposed on radio way back in 1912?



Photo A. LORAN transmitter at the Malone, Florida, station, silent as of February 8, 2010. (USCG photo)

## Atlantis To Fly This Month

Tentatively scheduled for May 14 is a liftoff of the space shuttle Atlantis (**Photo C**) from launch pad 39A at the Kennedy Space Center at Cape Canaveral, Florida. *Atlantis* will carry an integrated cargo carrier to deliver maintenance and

assembly hardware, a Russian-built research module, and spare parts to the International Space Station (ISS). The crewmembers slated to be aboard for the mission are Commander Ken Ham, Pilot Tony Antonelli, and Mission Specialists Stephen Bowen, Michael Good, Garrett Reisman, and Piers Sellers.

The tentative launch time is 2:28 p.m. EST, but as always with NASA, an actual launch depends on numerous factors, including the launch vehicle, its payload, communications, the launch pad, and of course, the weather. Problems with any of these can potentially result in what NASA refers to as an “adjusted launch window,” which means that countless TV viewers and radio monitors get their hopes up only to be disappointed when the launch is “scrubbed” and has to be rescheduled for a later date. This has happened to me on several occasions in the past where launches were scheduled. I don’t recall it ever happening with a shuttle *landing*, though—those seem to always go on as scheduled. I guess what goes up really must come down, whether NASA likes it or not!



Photo B. GPS satellites, such as the one depicted in this artist’s conception, helped make LORAN obsolete. (Image courtesy NASA)

## Reader Logs

With that, it’s time to break out another nifty collection of reader logs that have been submitted this month. By the way, I got an email from a reader just prior to press time pointing out that my call sign and email address were incorrect in a couple of places in the February issue. I wish to point out again that the correct email address for sending your logs (and yes, you *should* start sending them effectively immediately, along with shack photos, QSLs, and other neat stuff!) is w2pio@verizon.net.

Despite that brief glitch, the following gentlemen managed to get their loggings to Yours Truly in typically good order, thus earning a grateful tip of the “Utility Communications Digest” hat: Allan Stern, Satellite Beach, FL (ALS); Mark Cleary, Charleston, South Carolina (MC/SC); Glenn Valenta, Lakewood, CO (GV/CO); and Chris Gay, Lexington, KY (CG/KY). Now, let’s go to the logs!

**3016.0:** Shanwick Radio working various airliners for posreps in USB at 0338Z. (ALS)

**3308.0:** AFA5RK (OH), AFA5PL (WI), AFA5PW (MI) in USAF MARS North Central Area net in USB at 1211Z. (MC/SC)

**3315.0:** AFA3AJ (VA), AFA2NC (NY), AFF3WV (WV) in USAF MARS North East Area Net, in USB at 0108Z. (MC/SC)

**3320.5:** NNN0GBS (SC) in USN/USMC MARS South Carolina Net, in USB at 0121Z. (MC/SC)

**3390.0:** NNN0BKH in USN/USMC MARS Region 4 4F2B North Carolina Net, in USB at 2317Z. (MC/SC)

**3413.0:** Shannon VOLMET with aviation WX in USB at 0314Z. (ALS)

**3455.0:** New York Radio working American 68 for SELCAL check in USB at 0247Z. (ALS)

**3485.0:** New York VOLMET with aviation WX, notices regarding volcanic ash; in USB at 0314Z. (ALS)

**4002.9:** AAM4TN (TN), AAT4BH (TN), AAR4LB (TN), AAM4ETN (TN), AAR4CY (TN) in USA MARS Region 4 Tennessee Net in LSB at 0106Z. (MC/SC)

**4026.9:** AAV4HL net control in USA MARS Region 4 AAA4RD/B Net in USB at 1201Z. (MC/SC)

**4032.9:** AAA3VA net control in USA MARS AAA3VA/A Virginia/West Virginia Net in LSB at 1205Z. (MC/SC)

**4038.5:** NNN0JAD (FL), NNN0BMP (FL) in USN/USMC MARS Region 4 4C3B Florida Net in USB at 0003Z. (MC/SC)

**4149.0:** Tug DEFENDER WBN 3016 wkg WPE, Jacksonville with ops report in USB at 2315Z. (MC/SC)

**4372.0:** 8RP clg H4E with No Joy in USB at 0215Z. (MC/SC)

**4469.0:** FLORIDA CAP 44 net control in Florida Civil Air Patrol Net in USB at 1232Z. (MC/SC)

**4585.0:** MIDDLE EAST 34 and MIDDLE EAST 2 in Civil Air Patrol Middle East Region Net in USB at 1407Z. (MC/SC)

**4585.0:** KITTY HAWK 30, 28, 154, and

SOUTHEAST CAP 43 in North Carolina Civil Air Patrol Net in USB at 1304Z. (MC/SC)

**4625.0:** UVB-76, Povarovo, Russia, Buzzer in USB (not AM) at 2158Z. (CG/KY)

**4721.0:** 491712 (KC-10A, 305 AMW) sounding in ALE USB at 1331Z. (MC/SC)

**5550.0:** New York Radio working American 62 for posrep in USB at 0243Z; NY working JetBlue 83 for WX request in USB at 0246Z; NY working American 68 for posrep and SELCAL check in USB at 0246Z; NY working Delta 186 for SELCAL check in USB at 0230Z. (ALS)

**5505.0:** Shannon VOLMET weak but readable in USB at 0338Z. (GV/CO)

**5520.0:** New York ATC working various aircraft for SELCAL checks in USB at 0312Z. (GV/CO)

**5598.0:** Santa Maria Radio working KLM 753 for posrep in USB at 0300Z; New York Radio working KLM 736 for posrep in USB at 0301Z. (ALS); NY working Delta 186 for altitude FL380 request in USB at 0303Z. (ALS)

**5598.0:** NY working Delta 108 for posrep (44N50W), told to contact Gander Radio on 2899.0 wher at 44N30W, in USB at 0305Z. (ALS)

**5598.0:** NY working American 152, cleared to FL400, in USB at 0306Z; NY working Blue Panorama 1615 for posrep (35N50W) in USB at 0309Z; NY working United 974 for posrep and SELCAL check in USB at 0311Z; NY working Delta 216 for SELCAL check in USB at 0312Z. (ALS)

**5598.0:** Santa Maria clearing REACH 970



Photo C. Space Shuttle *Atlantis* during a 2007 piggyback ride on a modified Boeing 747. (NASA photo by Carla Thomas)

for climb to 33500 feet, in USB at 0320Z. (GV/CO)

**5616.0:** Gander Radio working an Air France flight for SELCAL check in USB at 0218Z; Gander working Delta 114 for posrep (46N40W) in USB at 0220Z. (ALS)

**5635.0:** DAKAR OAC working various aircraft in USB at 0335Z. (GV/CO)

**5696.0:** RESCUE 2117 on final to Nassau secures guard with CAMSLANT, in USB at 1359Z. (MC/SC)

**5696.0:** CAMSLANT Chesapeake in QSO with SWORDFISH 28 regarding a missing fishing vessel with 2 aboard, last seen north of Havana; in USB at 1658Z. (CG/KY)

**5708.0:** 483081 (KC-10A) ALE initiated p/p via Hickam HFGCS to TACC in USB at 0500Z. (MC/SC)

**5715.4:** PUP 35 and BELL 45 with voice comms and testing RTTY in USB and RTTY at 2258Z. (CG/KY)

**5732.0:** IKL (USCGC TAMPA WMEC 902) sounding in ALE USB at 0331Z. (MC/SC)

**5909.5:** CSK (Commsta Kodiak) clg 708 (HC-130, CGAS Kodiak) in ALE USB at 0419Z. (MC/SC)

**6133.0:** Unid simplex coms in EE, seems to be tug boat pilots chit-chatting with colorful metaphors in LSB at 0214Z. (GV/CO)

**6215.0:** USCG CAMSLANT with test counts in USB at 2231Z. (MC/SC)

**6519.0:** WLO holding traffic for overdue sailing vessel in USB at 0202Z. (GV/CO)

**6535.0:** DAKAR OAC working various airliners in USB at 0159Z. (GV/CO)

**6586.0:** New York Radio working American 163 for posrep in USB at 0252Z; NY working a CACTUS flight for posrep in USB at 0253Z; NY working CanJet 822 for posrep, hands off to Miami Center on VHF, in USB at 0255Z; NY working Europa 088 for posrep in USB at 0256Z. (ALS)

**6604.0:** New York VOLMET reciting terminal aerodrome forecasts for Bermuda, Miami in USB at 0316Z. (ALS)

**6640.0:** New York Radio working Big A 617 (Arrow Airways Boeing B-757, Miami IAP to Tocumen IAP, Panama) for posrep and SELCAL check in USB at 0655Z; NY Radio working American 918 (Boeing B-767, Jorge Chavez IAP, Lima Peru to Miami IAP) for SELCAL check in USB at 0708Z. (ALS)

**6649.0:** Atlantico Radio, Brazil working various aircraft in USB at 0331Z. (GV/CO)

**6673.0:** San Francisco Radio working American 28 for posrep in USB at 0204Z; SF working American 151 for posrep in USB at 0212Z; SF working Alaska 858 for posrep, aircraft en route from Kahului (PHOG) to Seattle-Tacoma IAP (KSEA), in USB at 0213Z. (ALS)

**6709.0:** J41 (MH-60, CGAS San Diego) sounding in ALE USB at 0415Z. (MC/SC)

**6754.0:** CANFORCE VOLMET reciting weather for Calgary, Cold Lake, etc. in USB at 0323Z. (ALS)

**6977.0:** CIW805, CIW516, CIW681 KW905 and others in CFARS net, talking about new data mode, in USB at 2235Z. (GV/CO)

**7457.0:** AFA4SW (KY) and AFA4WJ

(FL) in USAF MARS Region 4 net in USB at 1411Z. (MC/SC)

**7527.0:** J24 (MH-60J, CGAS Clearwater) clg RUF (USCGC MOHAWK) in ALE USB at 0845Z. (MC/SC)

**7632.0:** WGY9416 (FEMA Auxiliary, Ohio) checking into SHARES net in USB at 1649Z. (MC/SC)

**7633.5:** CG 6008 (MH-60J, CGAS Clearwater) via AFA4HF (FL) for M&W phone patch in USB at 1449Z. (MC/SC)

**8156.0:** C6WC (Bahamas Self Defense Forces patrol boat) ops report to CORAL HARBOUR BASE in USB at 1239Z. (MC/SC)

**8282.0:** YJVG4 (vessel *HOSACHIEVER*) radio check in USB at 1342Z. (MC/SC)

**8602.0:** CWA (Cerrito Radio) handling traffic in CW at 0034Z. (GV/CO)

**8843.0:** San Francisco Radio working United 543; unid QSO 2 OM/SS also on freq but were careful not to QRM SFR; in USB at 0136Z; SFR working Hawaii 36 in USB at 0231Z. (GV/CO)

**8888.9:** Unid simplex QSO in Spanish, in USB at 0130Z. (GV/CO)

**8918.0:** New York Radio working Air Bahamas 1155 for posrep in USB at 1821Z; NY working N904DS for posrep in USB at 1822Z; NY working TIGER 79 (Mil flight) for posrep in USB at 1824Z; NY working Air Canada 1847 for posrep and SELCAL check in USB at 1826Z. (ALS)

**8918.0:** New York Radio working CONVOY 3460 (USN C-130) for posrep, negative SELCAL, in USB at 2023Z. (ALS)

**8983.0:** USCG flight up with CASPER sensors for suspected drug interdiction; working CAMSPAC which is unintelligible here, in USB at 0031Z. (GV/CO)

**8992.0:** GOFER 03 (C-130H) p/p via Offutt HF-GCS to Homestead Metro in USB at 1459Z. (MC/SC)

**9007.0:** SCEPTER 55 via TRENTON MILITARY for attempted phone patch, aircraft could not hear and terminated, in USB at 2133Z. (CG/KY)

**9007.0:** CANFORCE 2343 p/p via TRENTON MILITARY to WING OPS with ETA to Port-au-Prince, Haiti in USB at 1722Z. (MC/SC)

**9010.0:** HALIFAX MILITARY wkg PATHFINDER 31 (CP-140) in USB at 1349Z. (MC/SC)

**9018.0:** REACH 1000 and REACH 1017 (C-130s) in Air-Air comms in USB at 2204Z. (MC/SC)

**9043.0:** BRD (Space Shuttle Booster Recovery Director) working *Freedom Star* (Solid Rocket Booster Recovery Ship) for radio check in USB at 0658Z. (ALS)

**10051.0:** Gander VOLMET with aviation WX for Ottawa, Gander, Montreal, Toronto in USB at 1722Z. (ALS)

**10493.0:** WGY9165 (FEMA Auxiliary), WGY916 (FEMA Region 6, Denton, TX), WGY903 (FEMA Region 3, Olney, MD), WGY901 (FEMA Region 1, Maynard, MA) in radio checks in USB at 1411Z. (MC/SC)

**10780.0:** CAPE RADIO working KING

70 (C-130, Patrick AFB) for radio check; then encrypted comms, in USB at 2110Z. (ALS)

**11175.0:** TAZ 51 (KC-135R, OH-ANG 121ARW, Rickenbacker ANGB) calls MAINSAIL repeatedly but no response, in USB at 1554Z. (ALS)

**11175.0:** HF-GCS Station ANDREWS working TUFF 42 (B-52H, Barksdale AFB) in USB at 2020Z; ANDREWS recites 22-character EAM in USB at 1727; same EAM repeated at 1729Z. (ALS)

**11175.0:** REACH 219 calling MAINSAIL and raising SIGONELLA for radio check in USB at 1332Z. (CG/KY)

**11196.0:** 708 (HC-130, CGAS Kodiak) sounding in ALE USB at 1906Z. (MC/SC)

**11200.0:** Chinese Mandrake jammer with annoying music in AM at 0020Z. (GV/CO)

**11217.0:** HF-GCS Station ANDREWS working CONVOY 9618 (USN C-9B) for DSN phone patch here after initial contact established on 11175.0; aircraft reports he will take off at 2200Z; in USB monitored at 1805Z. (ALS)

**11232.0:** PEACH 31 (E-8C JSTARS, Warner-Robins AFB, GA) via TRENTON MILITARY for DSN phone patch to PEACHTREE OPS at Robins AFB, passes formatted report, in USB at 1722Z. (ALS)

**11232.0:** TRENTON MILITARY working SHADOW 91 (MC-130P) for phone patch to MacDill Metro, gets 0130Z WX for KAGR (Avon Park Bombing Range, Florida), in USB at 0110Z. (ALS)

**11232.0:** HALIFAX MILITARY working CANFORCE 2324 for phone patch to TRENTON OPS, reports inbound, in USB at 1748Z. (ALS)

**11232.0:** CANFORCE 2628 en route Vancouver opening watch with TRENTON MILITARY in USB at 1417Z. (MC/SC)

**11330.0:** New York Radio working Air Canada 966 for posrep in USB at 1703Z; MNY working N388QS for posrep, FL400; in USB at 1706Z; NY working TALON 55 (Mil flight) for pcsrep, SELCAL check in USB at 1708Z. (ALS)

**11330.0:** NY Radio working JetBlue 822 for posrep, SELCAL check in USB at 1716Z; NY working CACTUS 885 for posrep and handoff to Miami Center on VHF in USB at 1719Z; NY working Westjet 265 for posrep in USB at 1800Z. (ALS)

**12133.5:** AFRTS HF feed from Saddlebunch Key, FL in USB at 0029Z. (GV/CO)

**12856.0:** Unid CW at very high speed, suspect XSG-related traffic, in CW at 0014Z. (GV/CO)

**13909.0:** U.S. Customs/Border Patrol (CBP) "16" tries air-air comms with CBP's "85" to see how well it works, as they are also chatting on VHF; they try clear mode as well as private mode, in USB at 1701Z. (ALS)

**13263.9:** Shannon VOLMET, YL/EE with aviation WX info, slightly off normal frequency, in USB at 1740Z. (CG/KY)

**13927.0:** USAFMARS Operator AFN4PP (Florida) working BLUE 81 (Coronet Mission

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## Tuning In (from page 4)

transactions, as goods and/or services are changing hands in exchange for money through the use of the radio. And yet, the amateur's participation in an emergency drill (an *emergency drill*) in which his employer is involved is off limits without a waiver first being granted.

Supposedly, the pizza order or equipment sale is permitted as long as it is not done on a regular basis. Emergency communication drills are not held on a regular basis, either, so does anyone else see some inconsistent application of the rules here?

What it boils down to is that this is a tightening of the rules by the FCC. That's fine; there are all sorts of rules broken in many communication services every day and some rules do need to be tightened, even though the Amateur Radio Service is actually one of the FCC's tighter ships, thanks to our own self-policing efforts. We can deal with that. We can even deal with the waiver business, the additional paperwork requirements laid on the sponsoring agency notwithstanding. Even so, I really think the FCC needs a reality check here.

Gordon's idea for a specific rule allowing participation in emergency drills based on the message content, rather than the message communicator, has a great deal of merit. Given a well-crafted proposal for consideration, a new rule for Part 97 could be created which would not only meet the need to prevent business communications in the Amateur Radio Service, but also meet the need for effective emergency drills with the least amount of fuss and bother.

And I just got to thinking about something else I said earlier; I've been a ham for 30 years. That sure is a long time to play radio, and it's all been a lot of fun...until the FCC comes along and gives me a headache.

tanker, 5 miles east of Nantucket) for phone patch to McGuire AFB CP, asks if they got message sent earlier; is one hour out; requests Customs and Agriculture, in USB at 1716Z. (ALS)

**13927.0:** RICAN 71 (C-130, PR-ANG, San Juan, PR) in air-air comms with MUSIC 81 (C-130H, TN-ANG, Nashville, TN); asks about WX at Volk Field WI, in USB at 1859Z. (ALS)

**13927.0:** USAF MARS Operator AFA5RS (Shelbyville, IN) working REACH 678 (30 miles north of Rockland, ME) for M&W phone patch to a Maine area code; is en route to Little Rock, AR; in USB at 1911Z. (ALS)

**13927.0:** RICAN 71 (C-130, PR-ANG, San Juan, PR, over central Florida) via USAF MARS operator for DSN phone patch to Muniz ANGB, San Juan PR; ETA to KVOK is 2000z, in USB at 1601Z. (ALS)

**13927.0:** USAF MARS Operator AFA9PF (Los Angeles, CA) working KING 79 (HC-130P #65-0979, NY-ANG I06RQW, Gabreski Airport, Long Island, NY) in USB at 1835Z. (ALS)

**13927.0:** USAF MARS Operator AFA5MH (East Liverpool, OH) working REDDICK 90 (west of Chile) for phone patch in USB at 1858Z. (ALS)

**13927.0:** USAF MARS Operator AFN4PP (Los Angeles, CA) working RICAN 72 (C-130, PR-ANG, Muniz ANGB, San Juan, PR, west of Chicago, IL) for M&W phone patch, and then DSN phone patch to PR-ANG Command Post; passes 0215Z ETA to San Juan, in USB at 1951Z. (ALS)

**13927.0:** DAWG 24 (C-130H, GA-ANG 165AW, Travis Field, Savannah IAP; 50 miles off NC coast) via USAF MARS operator for DSN phone patch to Savannah Combat Training Center CP; has maintenance issue; requests spare aircraft to continue mission, in USB at 1928Z. (ALS)

**13927.0:** AFA5RS working REACH 1032 (self-IDed C-130 over Bahamas) for M&W phone patch in USB at 1818Z. (ALS)

**13927.0:** USAF MARS Operator AFA5QW (Greenwood, IN) working REACH 1032 for DSN phone patch to Pope AFB En-Route Operations; ETA 2 hours, requests fuel, Customs; in USB at 1820Z. (ALS)

**13927.0:** AFA5QW and others working BEAR 91 (over Central Florida), aircraft says he cannot hear MARS operators; one finally contacts him; radio check only; they offer to QSY to 7633.5 or 4557.0, but he terminates; in USB at 1745Z. (ALS)

**13927.0:** USAF MARS Operator AFA9AY (California) working SUMIT 16 (C-130H, Peterson AFB 302AW) for phone patch; ETA 1600Z, accompanying flight 10 minutes later, in USB at 1725Z. (ALS)

**13927.0:** AFA9PF working REACH 555 for M&W phone patch to an Indiana area code, in USB at 1811Z; USAF MARS Operator working REACH 542 for M&W phone patch to an Alaska area code, in USB at 2110Z. (ALS)

**13927.0:** USAF MARS Operator AFA6DD (Houston, TX) working SABER 01 (unknown cargo aircraft, OH-ANG, 178FW, Springfield, OH) for DSN phone patches to Springfield ANGB regarding ETA; mentions German containers; in USB at 2240Z. (ALS)

**13927.0:** USAF MARS Operator AFA2SY (Melbourne, FL) working ground station of Hancock ANGB 174FW in Syracuse, NY for radio check, followed by official business phone patch to Hancock ANGB; explains to answering party that they have just completed field repairs of an HF radio, in USB at 2055Z. (ALS)

**13927.0:** AFA6DD working REAPER 41 (B-2A Bomber, Whiteman AFB 509BW) for M&W phone patch to a Missouri area code; ETA in 2 hours; asks party to call Whiteman AFB to arrange pickup, in USB at 2224Z. (ALS)

**14300.0:** ANDREWS on amateur net freq. with voice traffic for WA1RKT regarding troops on ground in Haiti, in USB at 1505Z. (CG/KY)

**14389.0:** AFA1RE (ME) in USAF MARS Phone Patch Admin Net on USB at 1614Z. (MC/SC)

**14389.0:** REACH 396 p/p via AFA9AY (CA) in USB at 2217Z. (MC/SC)

**15016.0:** ANDREWS HF-GCS with several EAMS "FOR BELTO" in USB at 2005Z; REACH 1033 via OFFUTT HF-GCS for phone patch to HILDA METRO in USB at 2009Z. (CG/KY)

# Unraveling The Standard Dummy Antenna Mystery

by Peter J. Bertini  
radioconnection@juno.com

I recently uncovered a mystery. While aligning a Hallicrafters S-38C receiver I noted the instructions called for using a “standard RETMA dummy antenna” between the signal generator and receiver antenna terminals. While the Hallicrafters manual included a schematic for the standard dummy antenna in the alignment section, it provided no guidance as to the purpose of doing so. The circuit was nothing special, a simple RLC circuit: a coil, a few capacitors, and a resistor—nothing more. I’ve redrawn it here as **Figure 1**.

My curiosity grew when I noticed that the literature for Heath’s AJ-30 AM/stereo receiver also noted that a “standard IRE dummy antenna” was used to determine the advertised AM sensitivity.

Why two different standard dummy antennas? Sensing that I might be onto something for a “Wireless Connection” column, I decided to investigate further.

## A Bit Of History

The IRE mentioned in the Heath literature stands for the Institute of Radio Engineers. The IRE was formed in the dawn of radio communications—1912 to be exact. In 1963 the IRE

*“The standard dummy antenna is just what its name implies: It’s one small part of several standardized methods of measuring a receiver’s performance, adapted by all the association members to ensure uniformity and fair competition between the members’ advertised performance claims.”*

merged with the AIEE (American Institute of Electrical Engineers). The lineage behind the RETMA (Radio Electronics and Television Manufacturers Association) is a bit more involved. It was originally known as the RMA, or Radio Manufacturers Association, and was the first official trade organization for radio manufacturers. In 1953 the RMA merged with other trade groups, and the RETMA was born. Later, in 1997, the name changed to the EIA (Electronics Industry Association), which is now the Electronics Industry Alliance. Whew! But now, getting back to our story.

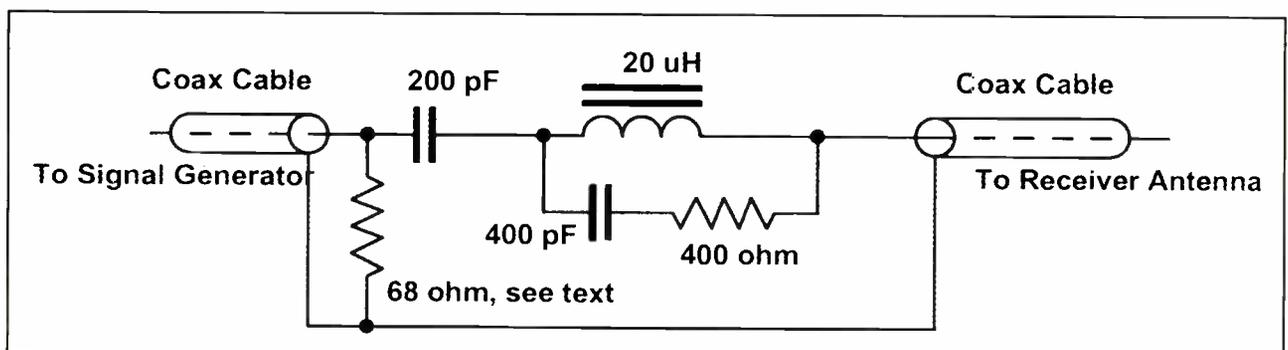


Figure 1. Only four common components are needed to construct the standard dummy antenna. The 68-ohm resistor is optional, but I recommend using it with modern signal generators that have calibrated 50-ohm or 75-ohm outputs.



Photo A. Thanks to Alan Douglas, I am now the proud owner of this handsome 188X signal generator. It's shown with my Hickok Indicating Traceometer, another gorgeous vintage instrument sporting a machine finish front panel!

Why did these associations promote the use of a standard dummy antenna in the first place? Whether it's called the IRE standard dummy antenna or the RETMA standard dummy antenna, except for a very early AM BCB version, these devices are all the same.

You're probably asking yourself, as I did, "Why is a standard dummy antenna needed between a signal generator and a receiver?" Good question. In most cases, it isn't; but that doesn't solve our mystery. However, a bit of research and digging into the pages of my copy of the *Radiotron Designers Handbook*<sup>1</sup> did solve it. In those pages can be found, in full detail, the exact procedures set forth by the IRE that members were required to follow when measuring their products' performance.

Here's the scoop. The standard dummy antenna is just what its name implies: It's one small part of several standardized methods of measuring a receiver's performance, adapted by all the association members to ensure uniformity and fair competition between the members' advertised performance claims.

## What The Standard Dummy Antenna Provides

Vintage receivers needed a good external outdoor antenna system and were designed for use with high-impedance, single-ended wire versions, which were electrically short on the broadcast band. The typical homeowner would erect what is basically an inverted L antenna: a short horizontal run of maybe 40 to 70 feet, perhaps 30 or 40 feet above the ground, with a vertical

## Table 1. Parts List For Standard Dummy Antenna

- 1 ea. 200-pF capacitor, silver mica or disc ceramic
- 1 ea. 400-pF capacitor, silver mica or disc ceramic
- 1 ea. 22- $\mu$ H inductor, molded choke (see text)
- 1 ea. 400-ohm resistor, 1/2-watt, carbon composition (use a 390-ohm)
- 1 ea. Project case, LMB, Altoids mint tin, etc.
- 2 ea. BNC chassis mount fittings, or RCA chassis mount fittings
- 1 ea. 68-ohm, 1/2-watt carbon resistor (optional; see text)

wire drop to an outside lightning arrestor before it enters the home and connects to the radio receiver. Some ran their antennas in attics; others with more property might run the horizontal element to a distant mast or garage.

While a typical signal generator of the day might have output impedance that varies between of a few ohms to hundreds of ohms, the standard dummy antenna provides a load that is a close approximation of the consumer antenna's impedance, despite variations in the signal generator output impedance. The standard dummy antenna doesn't provide an impedance transformation, which is one trick an unscrupulous manufacturer might have used to inflate the microvolt sensitivity specs for his products (for example, using a simple antenna tuner or impedance converter, perhaps an L match, would accomplish this).

The standard dummy antenna provides a few other benefits during alignment. Connecting the signal generator directly to the antenna could detune the receiver slightly and would likely reduce the RF stages' selectivity and, even worse, image rejection. The standard dummy antenna alleviates those problems.

## Building A Standard Dummy Antenna

Very few parts are needed for the standard dummy antenna and construction is easy. If you're using a generator similar to the Hickok 188X, shown in **Photo A**, you might be interested in this weekender-type project. (By the way, the handsome 188X is a recent addition to my vintage workshop, and I'm sure my more faithful readers will recognize the matching companion Hickok Indicating Traceometer! Those gorgeous machine finished panels are real eye catchers! Most of my test gear is gravitating to lab-grade surplus gear made by Hewlett Packard, Boonton, Tektronix, and others, but those two vintage Hickoks are keepers, even though they eat up a lot of bench top real estate!)

Refer again to Figure 1, the schematic for the Standard Dummy Antenna, and to **Table 1** for the parts list for a standard dummy antenna. Construction is not critical, and the parts have a permissible 10% tolerance. The 400-ohm resistor is no longer a standard value; use a 390-ohm resistor instead. The inductor can be either a standard value 22- $\mu$ H molded choke or hand-wound on a toroid core.

If you do want to wind your own toroid inductor, about 65 turns of #28 enamel wire wound on a "red" T50-2 powdered iron 0.5-inch toroid core will do fine. While I used this particular core since I have quite a few on hand and I want to use them up in my lifetime, one with a bit more permeability wouldn't need as many turns—which pretty much filled the available

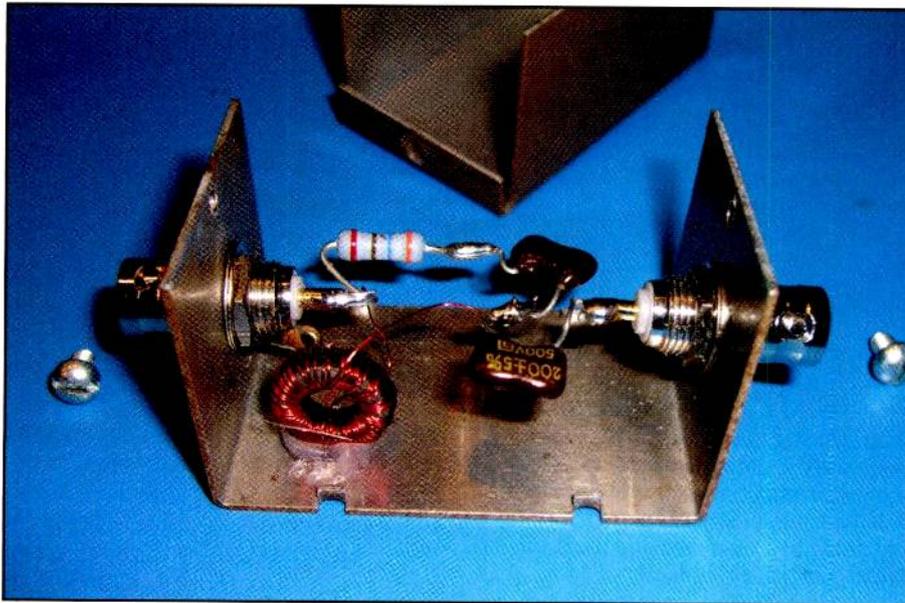


Photo B. There's nothing critical about building a standard dummy antenna. Mine is assembled using point-to-point wiring techniques and is housed in a small aluminum minibox from LMB. Again, an empty Altoids mint tin works as well, and the price is even better.

winding space in my specimen! Winding information for this, or any other toroid you may have on hand, can be calculated on the webpage found at [HTTP://Toroids.info](http://Toroids.info). I suggest verifying the actual inductance value with a grid dip meter, Q meter, or LC meter.

Or, lacking a toroid core, you can use one of the online calculators to design your own single-layer wound solenoid-style inductor. One of many websites that

offer coil-winding calculators can be found at [www.midnightscience.com/formulas-calculators.html#formulas4](http://www.midnightscience.com/formulas-calculators.html#formulas4). Most of the needed components can be ordered from Dan's Small Parts.<sup>2</sup>

Photo B shows the completed unit mounted in an LMB project box. Either BNC or RCA phono jacks can be used for the signal generator input and for the receiver antenna connections. For use with a modern 50- or 75-ohm signal gen-

erator, I'd suggest adding the optional 68-ohm resistor across the input to provide a reasonable load for the signal generator, otherwise the output voltage will be twice that shown on the instrument's calibrated RF output attenuator scales (68 ohms is a good compromise value for either impedance).

## An Auto Radio Dummy Antenna

As a special treat here's yet another simple dummy antenna project for you!

Servicing early AM automotive radios involves a few additional challenges, one of which is the antenna circuit. The entire vehicle antenna system, from the whip antenna to the coax, is all part of the radio's antenna tuned circuit. The antenna is at a very high impedance point in the RF stages tuned input circuit. Vary the length of any of these components, and the radio will be severely detuned! Attempting to connect a signal generator directly to the automobile antenna jack (usually a Motorola type) just won't work properly.

Figure 2 shows a simple circuit that will provide proper match to the car receiver. It closely mimics the car antenna system and requires only minimal retuning when the radio is reinstalled in the vehicle. Note that for most vintage-tube car radios, this is done by a small trimmer capacitor that provides the final in-place alignment to compensate for small variances in the antenna system.

The circuit is a capacitive voltage divider using two 39-pF disc ceramic or silver mica capacitors. The dummy antenna presents a capacitive load of under 20-pF to the auto radio antenna terminals. This prevents loading and detuning of the receiver's tuned antenna stage, and also permits the service technician to align the set so that only very minimal

**Table 2. Parts List For Auto Radio Dummy Antenna**

- 1 ea. Motorola antenna plug
- 1 ea. RCA phono jack
- 2 ea. 39-pF capacitors, silver mica or disc ceramic
- 1 ea. 68-ohm 1/2-watt carbon resistors (optional; see text)
- 1 length RG-59 or RG58 coax (optional; see text)
- 1 ea. Enclosure used for alternate construction (optional; see text)

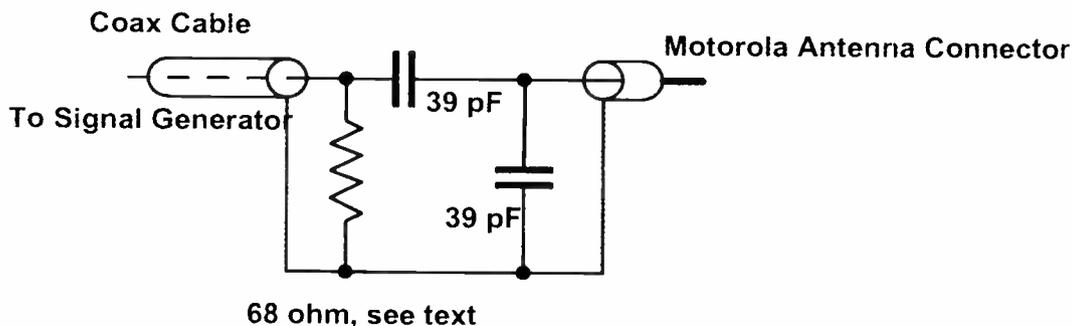


Figure 2. This simple antenna simulator is a great way to simply tuning vintage automotive radios. The capacitive divider provides a match to the radio that closely approximates the vehicle's antenna system.



Photo C. Here's a peak at how I made my auto radio dummy antenna. The two 39-pF capacitors are just small enough to fit inside the Motorola jack barrel. The edge of the barrel has been cut to permit some expansion so that the barrel nut on the phono connector can be friction-fitted to the Motorola plug. The edges are seam-soldered in a few spots. Be careful when soldering; overheating the phono connector will cause the internal plastic insulation to melt and deform.

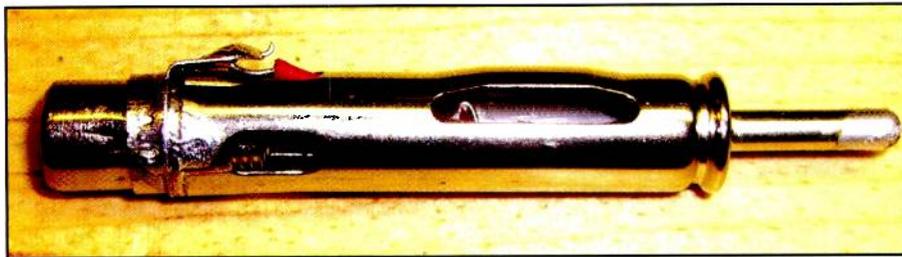


Photo D. Here's the finished product, neat and tidy and ready to use!

repeaking will be needed when the set is returned to the vehicle. Needed materials are shown in **Table 2**.

**Photos C and D** show how it went together. I was able to squeeze all the components inside the Motorola connector's barrel. It took a bit of finagling, but by cutting a few relief cuts in the outer edge of the Motorola connector's shell I was able to insert the phono connector's mounting nut firmly into the opening. At this point the two metal connectors can be carefully tack-soldered together. Use

caution here, as too much heat will damage the plastic that acts as an insulator inside the phono jack.

If you can't find two caps that are small enough to fit in the Motorola connector, or prefer more room to work with, **Figure 3** shows an optional construction method with a neat twist. In this version, the 39-pF shunt capacitor (C1 in Figure 2) seems to be missing; however, its function is being provided by the capacity of the coax center conductor to the outside shield. For example, RG-59 cable, with solid PE cen-

ter insulation, has a capacitance of about 20.5 pF per foot. RG-58, with solid PE center insulation, has a capacitance of about 28.3 pF per foot. This may vary between manufacturers, or for coax with foam center insulation, so always refer to manufacturer's specifications for exact parameters. My source for this data can be found at [www.epanorama.net/documents/wiring/coaxcable.html](http://www.epanorama.net/documents/wiring/coaxcable.html).

Since we need 39 pF (C2) for the shunt capacitor, a 1.9-foot length of RG-59 should do the job (39 divided by 20.5 = 1.9 feet). The electrical length for the coax is extremely small compared to the wavelengths for these frequencies, so the coax acts more as a capacitor and not so much as a transmission line. The series 39-pF capacitor (C2) can be housed in a small project box (empty Altoids mint tins make great project boxes!) with RCA jacks for connectors. The length of cable between the generator and matching device is not critical. A 68-ohm terminating resistor can be added to provide a load for the signal generator.

## Last Call For Twofers

With two projects to keep you busy at your bench for a while, we'll wrap things up for this month. Until next time, keep those soldering irons warm and those old tubes glowing!

### References

1. RCA's *Radiotron Designer's Handbook*, Fourth Edition, F. Langford-Smith, Editor; Amalgamated Wireless Valve Company Pty., Ltd. Chapter 37, *Receiver and Amplifier Tests and Measurements*, pgs. 1297-1311.
2. Dan's Small Parts and Kits, Box 3634, Missoula, MO 59806-3634; Phone: (406) 258-2782; Internet web catalog: [www.danssmallpartsandkits.net/](http://www.danssmallpartsandkits.net/).

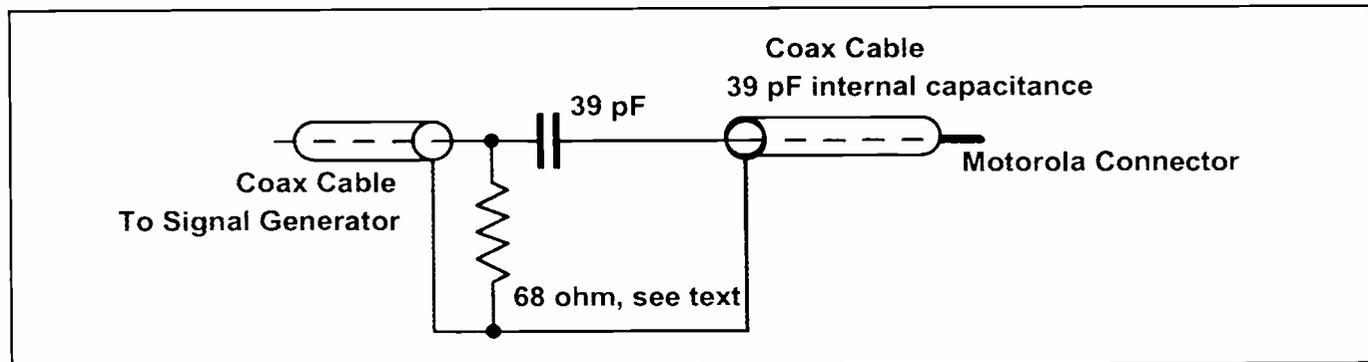


Figure 3. An alternate construction technique eliminates the shunt capacitor to ground as the properly calculated length of coax provides the capacity needed for the impedance matching circuit. The series 39-pF capacitor should be mounted in a small, shielded enclosure (a small Altoids tin is ideal). The 68-ohm resistor should be added when the device is used with a calibrated, modern 50- or 75-ohm signal generator.

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## Who's Who?

by Bill Price, N3AVY  
chrodoc@gmail.com

**M**any of you have written (O.K., so I got one email) asking if Norm is a real person. As a person myself, and one who has worked on his bus, traveled with him to Dayton, and helped haul many of his “treasures,” I can assure you that he is indeed real. He is only called “Norm” to protect the guilty, of which he is one—and a lifelong good friend.

Perhaps I should use this month to list the cast of characters who have graced this page. All of them have been real people, politely disguised until the statute of limitations in their jurisdictions expires, although I have sometimes moved a personality trait from one to another.

I'd have to go through probably 150 or more “Loose Connections” to find them all, but I'll try to work through what's left of my memory in no particular order.

**My dad:** An avid CB operator from the days when callsigns were used and sets glowed and would drain a car's battery in no time. He bought me my first shortwave receiver and supported my radio hobby. Dad was so cool he bought a '66 Charger and put our Comstat 25 under the dash. Earlier on he stifled a laugh when Fred (the evil next-door landlord; see below) called to complain that I'd shot him in the kiester with my BB gun.

**Larry the cop:** Real. He helped with one of Norm's ham radio classes at an undisclosed location on the East Coast. Discretion prevents us from disclosing contact information about law enforcement officers, even if they were gullible enough to provide it. All kidding aside, Larry is a good cop, a good friend, and an active ham. Too bad guys like him have to retire; there aren't enough of the good ones. Larry knew nothing of the BB gun incident.

The episode where the evil next-door landlord hid in the trunk of his car and scared my friend and me was quite true, but I can't find the copy and I don't remember the name I gave my cohort at the time. Suffice it to say that he was my childhood next-door neighbor and good friend, who was born the day before I was. We did a lot worse than abusing his landlord, but my topic here is communications humor, and that was the only prank I remember that involved communications (unless you want to count the one where we called some people on the telephone and had them identify a record, then told them they won a lot of money. I pity the general manager of the radio station we claimed to be representing...

**Chief Bob (of the Coast Guard):** A reader of this column, Bob wrote to me one day to tell me he had a radioman working for him back in the '60s with

*“Dad just told me ‘Don't shoot Fred anymore, dammit!’ and dropped the matter.”*

the same name as mine. We've been corresponding ever since. The man is a saint and has overlooked things that I'd have slapped me around for. He retired and became a marine police officer in Kansas. O.K., so I protect his ID by using a phony state. It was really Saskatchewan.

**Fred the evil next-door landlord:** I had to be careful with this guy because he was my next-door neighbor's landlord. It's still hard to imagine that a kid sticking a BB gun out that third-floor bedroom window could have hit him squarely in the kiester. (I've since checked the distance on Google Earth and it's obvious why he wasn't hurt at that range, but I'm still amazed I made the shot—marine sniper Carlos Hathcock would be proud. After he called my father (the neighbor, not Hathcock; see above reference), I could tell my dad didn't care for him, either. Dad just told me “Don't shoot Fred anymore, dammit!” and dropped the matter.

**Jim Miller:** He was a Coast Guard radioman so head over heels in love that he spent countless hours talking about his sweetheart, so we listened carefully and got enough details to “send” him a phony message (relayed in CW) from the ET shop next to the radio shack. This was on Chief Bob's ship. I doubt he ever reads the magazine, or he'd have been at my door years ago.

**Fred Hoffman, K3DEY:** Fred was the first ham I ever knew, and the father of one of my childhood friends. If I'd have been a little older and more serious about radio back then, he'd have been my Elmer. He was a great electrician and Cub Scout leader, and one of the neighborhood fathers that we could run to for help.

**Beezer:** Another friend who worked at “the place that shall not be named” along with Norm and me. He had a *real* friend by that name who set an astonishing record having something to do with a school bus. Beezer had a landlord more eccentric than any dozen whackos you could find. The man really did put razor wire around his bird feeders to keep pigeons away.

*Unlike these interesting characters, Bill is completely made up; a figbar of Pete Bertini's imagination. He has Bill's paychecks sent to a secret account in the Caymans where he is said to be saving up for a case of Moon Pies.—ed.*

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