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World Radio History



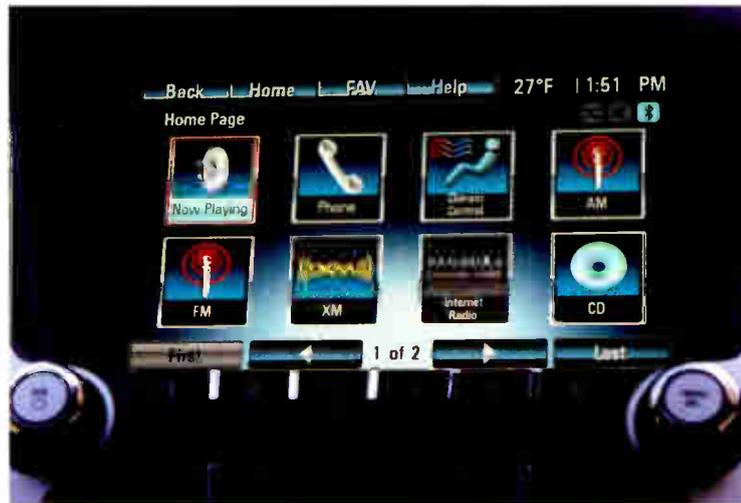
Selected content from Radio World's "The Leslie Report" by News Editor/Washington Bureau Chief Leslie Stimson.

IN-DASH ENTERTAINMENT SYSTEMS EVOLVE

OEMs increasingly are dropping CD players from their in-dash receivers. That trend is accelerating as automakers move away from including more hardware in the dash in favor of apps that can be accessed by a smartphone connected to the vehicle.

Those apps can be swapped in or out quickly depending on consumer demand, receiver manufacturer reps told me at the recent Consumer Electronics Show. It used to take some five years to get on a car platform. The proliferation of apps and other software "shortcuts" can cut that time significantly, sources tell me.

Big Three automaker General Motors has announced that the optional MyLink infotainment system on the 2013 Chevrolet Sonic RS this summer will have no CD player.



General Motors introduced the optional MyLink infotainment system in 2011. It's shown here on an Equinox. GM has announced that when it rolls out MyLink on the 2013 Chevrolet Sonic RS this summer, there will be no CD player.



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Automotive News reported the Sonic RS debuted at the Detroit Auto Show. The paper quotes a GM exec as saying Sonic customers told the automaker to drop the CD player because they don't use it and don't want to pay for it.

At the heart of MyLink is the driver's own smartphone. "Customers told us they've set up their smartphones exactly how they want them," stated Sara LeBlanc, GM's global infotainment manager. "And the ideal car radio should extend the capabilities of their smartphone rather than try to duplicate them."

Who does use CD players in the car? Aging boomers, according to automotive analyst John Canali of Stratacom. He estimates that North American sales of infotainment systems that don't contain a CD player in North America will rise from 331,000 units this year to 12.1 million units in 2018.

Meanwhile, Internet radio is gaining more ground in the dash. We've reported that Pandora personalized Internet radio is or will be in 16 automakers' brands this year, up from four last year. Slacker is gaining momentum as well.

And while Clear Channel's iHeartradio and CBS Radio's last.fm apps are or will be in more devices in 2012, sources hammered home to me that terrestrial radio needs to look better in the dash to compete with the updated look of personalized services. That means transmitting data

for images to be synched with the audio, or the so-called "Artist Experience" for HD Radio stations.

Of the umpteen demos I've recently experienced in new cars, I can't tell you how many times a terrestrial station's stream was displayed with text only, no image. That looks dull compared to the vivid imagery of a personalized Internet stream.

CE executives from all kinds of companies have recently said something to me like "Ugh, radio needs to innovate" or "Radio needs a better image in the car." That's harsh, yet the old adage is true: Perception is reality. That's their perception of traditional radio.

Young people want to bring their devices into the car. They want those to work (safely) in a moving vehicle and have told automakers to make that happen. Some automakers have been surprised at the pace of this trend, I learned.

Manufacturing and selling a car is "no longer about bending metal," a Pioneer rep told me; it's about providing a feature-rich experience.

Radio likely will still be included in the dash for several more years. But if the industry doesn't step up, traditional AM/FM may disappear from that space unless younger people find a reason to use it.

Think about that.

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TASCAM

Arcadia Plugs Into Radio History

Publisher Finds Broadcast Titles 'An Exciting Area of Growth'

Do you love radio history? Are you intimately familiar with how broadcasting developed in a given city, and enjoy sharing that with others? Arcadia Publishing may want to hear from you.

Arcadia published its first history of a radio station in 2006, focusing on WNAX(AM) in South Dakota. It was co-authored by Stan Ray — who “grew up” in the transmitter building where his father worked as an engineer — and freelance writer Marilyn Kratz.

“We quickly realized we’d hit on something special,” says Katie Kellett, Arcadia’s director of sales for the North and MidAtlantic, of that book.

These broadcast titles are an offshoot of a series of photo books about local towns. “As the success of our ‘Images of America’ series has grown, we’ve been approached by historians all across the country with new ideas,” Kellett said.

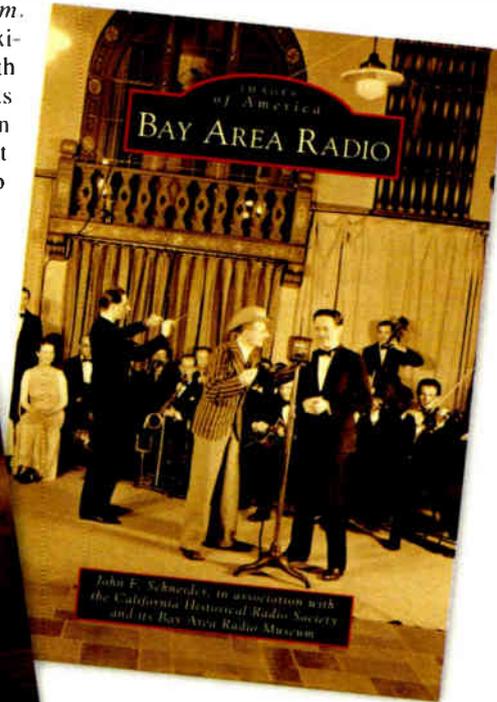
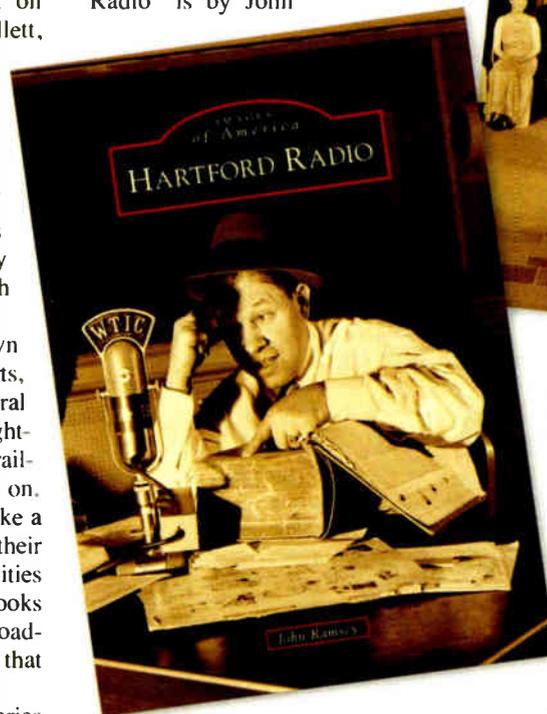
“What started as a series of town histories developed to include sports, colleges and universities, architectural landmarks, fairs and festivals, lighthouses and other maritime interests, railroads and aviation, and the list goes on. ... On a local level, these books strike a chord with residents who remember their favorite radio and television personalities from childhood. The covers of the books often showcase a beloved local broadcaster or perhaps a favorite program that aired on the station.”

I’m a fan; I’ve mentioned the series

here and on my blog at radioworld.com. Arcadia’s catalog now includes approximately 30 titles on radio and TV, with many more planned. These books essentially are photo essays, heavy on visuals and supported with brief but informative text. They’re wonderful to flip through.

A neat twist for me is that some authors have contributed to Radio World as well.

The new book “Hartford Radio” is by John



Ramsey, who grew up listening to radio in Connecticut and has worked in the industry as an engineer since 1978. He’s GM of WWUH(FM) at the University of Hartford and chief engineer of WCCC(FM); he’s also webmaster of a Hartford history website, chairman of SBE Chapter 14, president of Torrington Community Radio Foundation, licensee of WAPJ(FM) and founder of the CT Radio Alliance. Whew!

FROM THE
EDITOR



Paul McLane

John has shared tips in Radio World’s *Workbench*, and he wrote in RW in 2010 about visiting an unusual wind turbine.

Fresh out this month is “Bay Area Radio,” detailing the events and history of radio in the San Francisco region. The book covers the period 1902–1960. It has substantial coverage of NBC’s early activities on the West Coast, WWII shortwave broadcasting and the beginnings of the VOA. This is co-authored by radio historian John F. Schneider, whose historical broadcast pictures are well known to RW readers. Schneider shares the book author credit with the California Historical Radio Society and the Bay Area Radio Museum.

Whether it’s reading about “Doc” Herrold broadcasting in San Jose in 1909 or Bob Steele doing school closing announcements on WTIC in the 1950s (that’s Steele on the Hartford cover), you will enjoy these books, especially if you grew up in that city or have an appreciation for how radio has connected to its communities over the years.

Other titles feature broadcasting in Birmingham, Ala.; Nashville and Chattanooga, Tenn.; Cincinnati; Harrisburg, Pa.; Philadelphia; and Pittsburgh. I previously told you about Donna Halper’s “Boston Radio: 1920–2010.”

More cities are planned. Just in New York state, Arcadia has titles pending for Albany, Buffalo, New York City, Rochester and Syracuse. “Our next station-specific title in the works will cover KIDO in Boise, Idaho, and should be available in late 2012,” Kellett said. Stations with their own books include WLS in Chicago; WHO in Des Moines, Iowa; and KMOX in St. Louis.

RW readers often have told me that too many radio stations have forgotten their own history. If so, this series represents a lovely counter to that trend.

And yes, Kellett says Arcadia actively seeks radio and television historians, “to work with us on photographic histories of their individual stations or on a more general broadcasting history of their city. This is an exciting area of growth for us.” Authors come from a variety of backgrounds, and many are first-time writers.

“For these books in particular, we are looking for someone with a passion for broadcasting history and someone who is intimately connected to the field.” Sounds like a Radio World reader to me.

If you are interested in learning about how to write for Arcadia, visit Radio World’s links page at <http://radioworld.com/Mar-14-2012>. We’ll point you to the company’s info for potential authors.

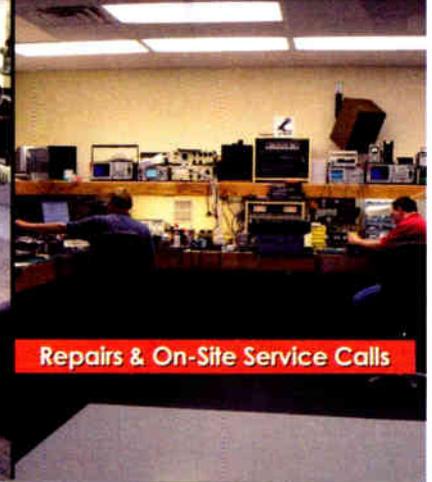
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MARCH 14, 2012

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NEWSROUNDUP

ONLINE PUBLIC FILES: The FCC's proposal to require television stations to put their political files online gained support from eight Democrats in the Senate. If enacted, observers believe, the requirement could be expanded to radio eventually. In a letter to FCC Chairman Julius Genachowski, the senators said they support the proposal because it would make it easier for the public to see who is paying for political ads. Right now, that information is required in paper form as part of a station's public file, which a person can see by going to the station or some other designated place. Under the proposal, the files would be hosted on a commission-run website. Signing the letter were Sens. Daniel Akaka of Hawaii, Mark Begich of Alaska, Michael Bennet of Colorado, Al Franken of Minnesota, Jeff Merkley of Oregon, Jon Tester of Montana, Tom Udall, N.M., and Sheldon Whitehouse, R.I.

FM CHIPS: With the nation coming off one of the worst years on record for natural disasters, NAB says its broadcast members believe it's time for a factual discussion about the merits of cellphone manufacturers and carriers embedding FM chips in their devices. Policymakers such as members of the Congressional Black Caucus and former FCC Commissioner Michael Copps agree the issue needs to be discussed, according to the trade association. NAB supports voluntary adoption of radio receivers in mobile devices. Some carriers are still claiming that consumers aren't clamoring to have FM as a feature in their phones, according to NAB Media Relations Manager Zamir Ahmed in the trade association's blog.

GMC ACADIA: HD Radio will be offered as standard equipment in a GMC vehicle for the first time, with the launch late this year of the 2013 GMC Acadia. Cadillac previously announced HD Radio would



be standard in the Cue infotainment system in the 2013 Cadillac XTS and ATS. GMC's Color Touch Radio is standard in the 2013 Acadia. Available IntelliLink allows customers to integrate their smartphones for hands-free calling through the audio system and Bluetooth streaming of Internet

NEWS

radio services Pandora and Stitcher. IntelliLink also allows voice control of USB-connected iPods for access to stored music.

HYUNDAI: HD Radio also will be standard in the Hyundai 2012 Azera and offered as an option on the 2013 Genesis Coupe. The latter arrives at dealerships this month; the Azera will be available in April. An AM/FM/HD Radio that also features XM Satellite Radio and can play MP3s and CDs is standard in the Azera, along with an iPod/USB and auxiliary input jacks. The Azera joins Equus as Hyundai vehicles with HD Radio standard.

FCC BUDGET: The FCC asked Congress to approve a fiscal 2013 budget of \$346.78 million. That compares to the actual \$339.8 million the agency received for fiscal 2012. If approved as is by Congress, there would be 141 new FCC staff members, bringing the total to 1,917 over the current 1,776; the number of full-time staffers at the Media Bureau would increase from 197 to 213. The Enforcement Bureau would go from 276 to 299 and the Office of Engineering & Technology would increase from the current 81

to 87 staffers. Some of the money would be used for new vehicles and to replace obsolete signal analysis equipment with new direction-finding and wireless monitoring gear in those vehicles, which field agents use to detect unauthorized transmissions and resolve interference issues.

APRE: Registration has opened for the 12th annual Public Radio Engineering Conference, to be held in Las Vegas on April 12-13.

This year's event is at Caesar's Palace. The theme of the confer-

PREC 2012

ence will be "Engineering in a Time of Budgetary Constraints — Doing More With Less." The Association of Public Radio Engineers expects broad topics to include data services for enhanced public service and potential revenue generation; finding ways to make the most out of limited time and budget resources; switching over to the new PRSS satellite receivers; and managing networks for audio over IP. American Public Media, Broadcast Electronics, ERI and the Public Radio Satellite System are providing material support for PREC 2012. To register, go to www.apre.us/.

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BBG*(continued from page 1)*

November to restructure its administrative operations. Those recommendations were the result of a year-long strategic review process.

"The board is ready to strengthen U.S. international broadcasting by freeing up resources locked up in inefficient and duplicative administrative structures," the board said in a January press release.

The BBG aims to "consolidate, integrate and streamline" three privately incorporated but taxpayer-funded "grantee" networks it oversees: Radio Free Europe/Radio Liberty, (RFE/RL), Radio Free Asia (RFA) and the Middle East Broadcasting Network (MBN). Two other networks, the Voice of America and Radio TV Martí to Cuba, are federal agencies. VOA is the largest BBG network and the only one with a global rather than regional target audience.

There's also been discussion by BBG to de-federalize VOA and the Office of Cuba Broadcasting/Radio TV Martí. However, International Broadcasting Bureau Director Richard Lobo recently said this possibility is no longer on the table.

The BBG also oversees the International Broadcasting Bureau, which provides program transmission services and engineering support for all BBG broadcast organizations.

SPENDING CUTS

The three private entities — RFE/RL, RFA and MBN — have combined budgets of \$240 million and approximately 2,000 full-time employees and contractors. The proposed consolidation calls for them to share a unified administrative and legal framework that could yield estimated savings of \$30 million to \$40 million over five years, according to Deloitte. The consultant examined the

BBG WORKFORCE UNHAPPY WITH CUTS

The BBG has acknowledged workforce issues at all five news organizations it oversees. The proposed cuts for FY2013 that could eliminate 244 positions will likely not ease the discord, said some observers. They fear tensions and divisiveness between employees, contractors and management will be heightened as a result of the cuts.

The American Federation of Governmental Employees Local 1812, which represents rank-and-file BBG employees, is concerned the agency is trying to privatize operations for those who perform the broadcast duties.

"When a federal employee leaves [BBG] has more often than not replaced them with a so-called contractor. We believe that the agency has acted illegally in bringing in these contractors," said Tim Shamble, president of AFGE Local 1812.

The cuts would impact approximately 200 BBG employees represented by AFGE Local 1812, Shamble said.

"We are appalled. The OMB budget reduction was reportedly only 4.2 percent of the BBG's total budget but it appears that the BBG targeted primarily the VOA and the OCB for reductions. The federal broadcasters, those that produce the product of the agency, are the ones targeted to lose their jobs," said Shamble.

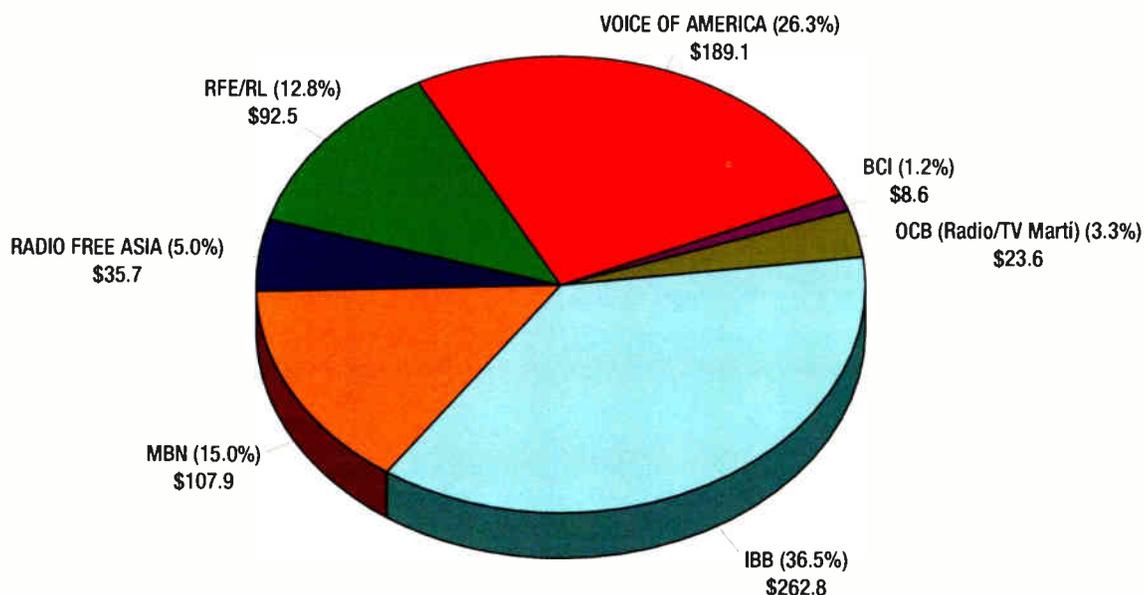
In response, BBG Spokeswoman Letitia King said, "We regularly review our use of contractors and employees, and we are confident that in this area the BBG is acting squarely within federal laws and regulations. For many years, contractors have played a vital role in enabling us to carry out our mission. Just like other government agencies, the BBG has broad authority to engage contractors to perform a variety of services as long as the assignments performed are not inherently governmental functions."

A look over the last five years shows that the number of BBG employees has been relatively stable; where VOA has increased by about 50 staff, IBB has declined by more than 200 staff, reflecting closures of overseas facilities and administrative reductions, according to King. She added: "We respect the contributions of full-time employees and contractors alike in helping the BBG achieve its mission to provide reliable news and information to audiences overseas. We work in partnership with union and non-union members on issues of mutual concern."

Approximately 35 to 40 percent of the federal workforce at BBG are independent contractors, said Richard Lobo, director of the International Broadcasting Bureau, a division of the BBG.

Broadcasting Board of Governors**FY 2013 Congressional Request — \$720.1 million****Funding by Major Element**

(\$ in millions)



*IBB funding includes Technology, Services, and Innovation funding of \$189.1 million which previously was a stand-alone entity.

plausibility of the plan on behalf of BBG. Deloitte recommended the board approve the merger of the grantees.

In its proposed FY2013 budget sent to Capitol Hill in March, BBG asked for \$720 million, a 4.2 percent decrease in current spending levels. The request includes program, transmission and staffing reductions at the VOA, Radio TV Martí, RFE/RL, RFA and MBN.

A total of three broadcast language services are proposed for elimination at RFE/RL, including Circassian,

Avar and Chechen. The VOA would discontinue broadcasting in Greek and will service Cantonese speakers with online content. The request calls for another \$21 million in cuts in administrative and technical support costs across the agency and grantee organizations.

The BBG proposes eliminating 244 positions. Some already are vacant and will not be filled in the interim, according to a BBG spokesperson, and buy-outs, early outs and other means could reduce impact on employees, it feels (see sidebar).

The budget request also contains \$9 million in increases for "elevated" social media and building out the agency's digital infrastructure, according to the BBG. It also asks for \$11.6 million in Internet anti-censorship funding.

Meanwhile, the BBG lost its board chairman in January when Walter Isaacson resigned. Board member Michael Lynton was named interim presiding governor. Brian Coniff, president of MBN, had been named earlier to lead the consolidation efforts of the three non-federal networks.

The BBG also recently proposed naming a chief executive officer, who would report to the board and oversee the day-to-day operations of the five networks.

The board already merged the administrative staffs of IBB and BBG last year. Senior administrative and management functions — including strategy, development, distribution, marketing, legal, communications, social media innovation, financial management, and research and evaluation — were consolidated into a network management operation, according to a BBG announcement.

'IT IS NOT EASY'

Some see the BBG's consolidation plan as a starting point to eliminate overlap in the administrative and management cones of the three grantee networks. "Active measures are underway to achieve operational efficiencies, increase impact and enhance cooperation and integration across the U.S. international broadcasting networks," a BBG spokesman said.

"The feeling is that they can do the same work with fewer people," said one analyst. "However, marketing

(continued on page 8)

— Randy J. Stine



1664: Just what it looks like. Two tin cups and a string. But it transmitted sound!



1876: Alexander Graham Bell's commercially viable telephone.



1900: Phones become fixtures in more well-to-do and steam-punk homes.



1920: Every home is working toward having a telephone!



1936: The advent of the dial desk phone. No more asking the operator to connect you.



1963: Push buttons usher in the thoroughly modern world. Touch tones enter pop culture.



1983: The mobile phone is a reality. Plots in all TV shows get a boost!



VoIP

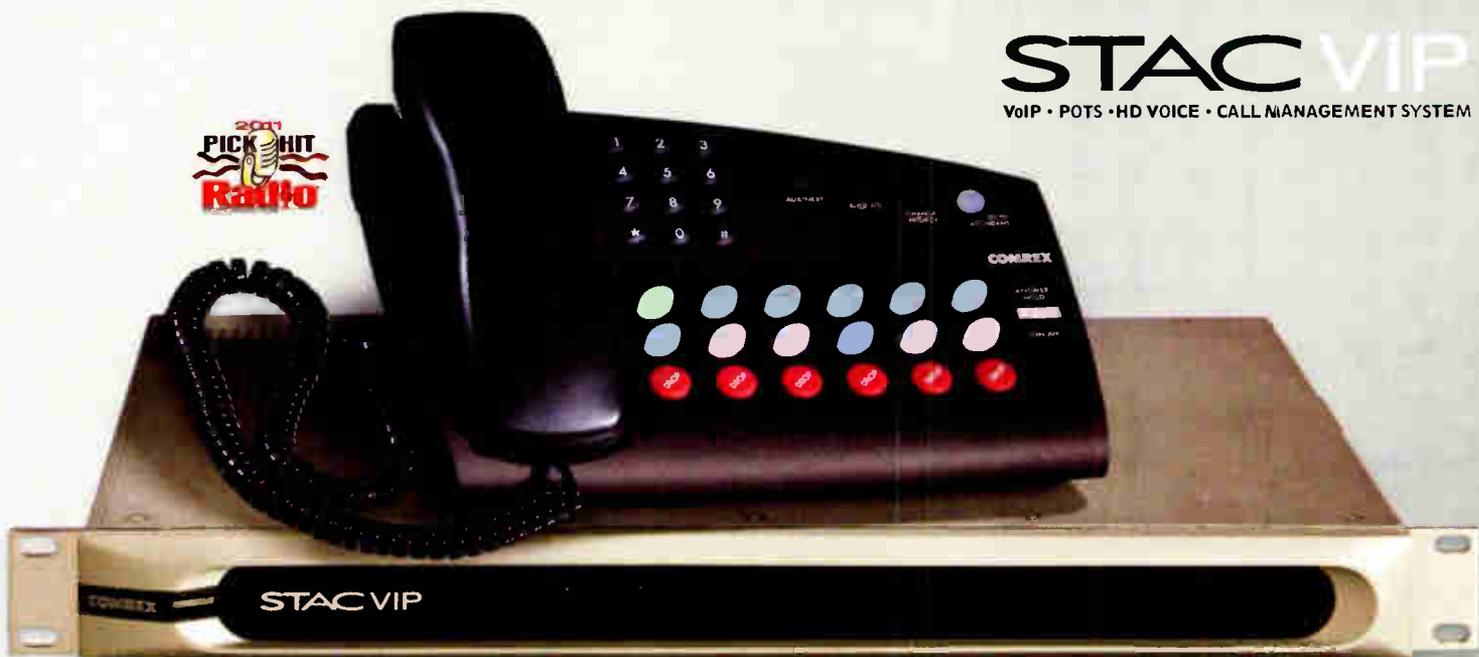
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BBG

(continued from page 6)

and research within each of those groups varies a great deal and face different geographic challenges. Whether the new streamlined administration can work as effectively is not clear.”

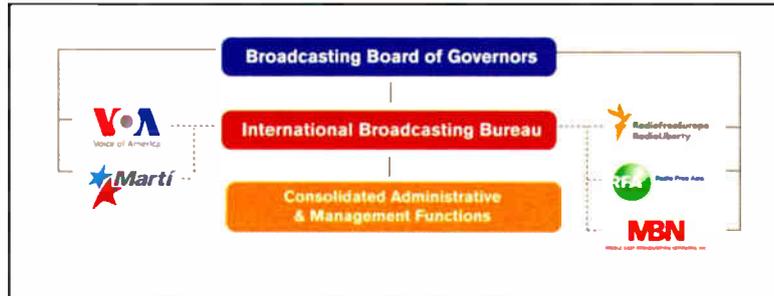
The streamlining of executive management and administrative infrastructure, which Deloitte says could begin this year, will require congressional and presidential action. The BBG is working on legislative material to formalize the strategic changes. Deloitte suggests in its report it was unclear how Congress would react to the changes.

“We are in the midst of consultation with members of Congress on the changes,” the BBG spokesperson said.

One analyst predicted support from the White House on the reconfiguration plans. Vice President Joe Biden is viewed as a longtime supporter of U.S. international broadcasting efforts.

“My assumption is that [the vice president] handles questions of broadcasting, with input from others of course, including Secretary of State Clinton,” the analyst said. “Biden’s had his hands in the broadcasting bureaucracy for a long time, understands its utility and how it works to a much greater level than most; so I am guessing he takes leadership on these questions at the White House.”

James K. Glassman, former chairman of the BBG and founding executive director of the George W. Bush Institute, said the BBG will likely not get too many chances to attempt a restructuring.



This graphic reflects the current structure, including the merger of IBB and BBG staffs and dotted-line relationships among federal and non-federal elements, the board and IBB director. The latter now has more authority to handle day-to-day management matters.

“No matter the timing, it is important to build support on the Hill and in the executive branch before embarking on a major consolidation. The BBG has, for many years, been considering a way to rationalize its structure. It is not easy. I absolutely believe that reorganization is in order, but it needs to address some thorny issues, such as the possibility of de-federalization of VOA,” Glassman said.

Several observers suggested the “snail-like pace” of an election year could slow progress and therefore delay any substantial changes this year.

“The challenge for the BBG,” according to former VOA Deputy Director Alan Heil, “will be to get attention focused on the vital role of U.S. international broadcasting in enhancing national security by conveying accurate, credible cutting edge news and by engaging a universe of audiences via new media.

“Time is of the essence,” he added, “considering the

huge growth of other international services in China, Russia, Iran and Al Jazeera in Qatar.”

Efforts to reach several members of the House Foreign Affairs Committee for comment for this story were unsuccessful.

‘PROGRAMMING IS CRUCIAL’

The move to integrate administrative duties into a single organization for the privately incorporated grantee networks, while maintaining the familiar brands during times of budget restraints, is hailed by some observers as positive news.

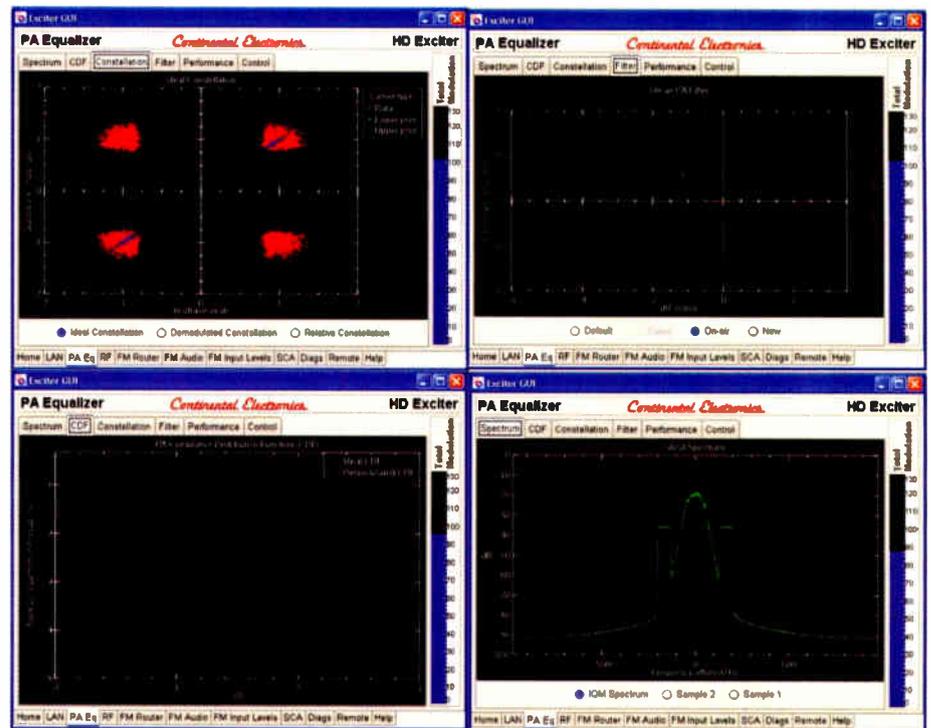
Daya Thussa, a professor of International Communication at the University of Westminster in London, said the idea of streamlining the privately incorporated networks would make them more efficient and therefore perhaps more effective.

“However, it is important to emphasize that the impact and popularity of the three networks varies considerably, with Radio Free Asia, in my view, the least effective of the three,” Thussa said. “Programming is crucial for the success of any broadcaster if its potential audience is in foreign lands, where questions of cultural and political sensitivity can be very important.”

The changes are not limited only to administration, according to the BBG. VOA Director David Ensor has spoken of developing a new global news network out of its 55 remaining language services that would incorporate the newsgathering capabilities and produced content of all five services — and even cross-promote programming — further blurring the lines between them, observers said.

(continued on page 10)

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Scalability Concept

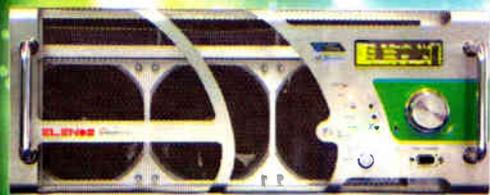
Completely scalable means lower maintenance costs for you and your custom solutions

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BBG

(continued from page 8)

In fact, RFE/RL and VOA set up a "news share site" last August, enabling enhanced cooperation on news stories in real time, according to a BBG spokesman.

However, according to the Deloitte analysis, "An unequivocal requirement for a merged organization is that the brands, mission and language services remain the same. Language services would continue to set their own editorial agendas based on their market requirements."

"In a streamlined organization, each BBG-funded broadcast network will fully leverage shared Washington-based

wave except for those targeting Cuba, China, North Korea, Burma, Iran, Tibet, Uyghur, FATA (Afghan-Pakistan border region), Pakistan, Afghanistan, Belarusian, Russian to the Caucasus, Russian, Turkmen, Khmer, and Africa, according to the BBG budget request.

Shortwave and medium wave radio broadcast reductions are proposed for 18 countries, 10 of which are places where BBG has more than one broadcaster reaching the marketplace and have other delivery avenues available. Those include FM affiliates, satellite radio, TV, mobile and online channels in place or planned, according to a BBG spokesman.

I absolutely believe that reorganization is in order, but it needs to address some thorny issues.

— James K. Glassman

and overseas resources. The FY2013 budget eliminates many redundancies in BBG broadcasts. BBG's new strategic vision consolidates broadcasts in areas where multiple networks serve the same market, so that limited resources can achieve maximum impact," according to the BBG budget request.

New media in this age of social networking will remain an area of growth for the BBG, observers said, despite concerns from some about global connectivity rates.

"The Obama administration has been more successful in investing in social media, though how effective these are in parts of the globe where broadband connectivity is low remains to be seen," Thussa said.

SHORTWAVE DRAWDOWN

Still, radio has the largest reach among media used by the BBG. U.S. government-funded radio signals (shortwave, FM and AM) reach an estimated 106 million people per week, according to estimates from BBG, while its television services reach an estimated 97 million viewers. (Users who listen to radio and view TV to the same or more than one U.S.-funded network count only once.)

Despite those statistics, radio has had a number of cuts to shortwave operations in recent years while seeing growth in medium-wave and FM signals in foreign countries. That trend continues in the FY2013 budget request as transmission reallocations include shortwave and medium-wave reductions for VOA English.

Taking all transmission and language service reductions into account, the budget request proposes to discontinue the use of shortwave and medium-

"While Facebook, Twitter, texting and smartphone delivery have gathered headlines," one observer said, "I expect there to be some growth in local FM service broadcasting downlinked material from Washington, D.C. I think the further drawdown of shortwave was inevitable."

Shawn Powers, associate director of the Center for International Media Education at Georgia State University, believes the consolidation will allow the innovation and success of any one of the networks to more easily drive success or innovation in the others, through "modeling" or enhanced competition for resources within the new structure. Part of the BBG's overall consolidation plan is to establish a global news network at its headquarters in Washington that will combine the best, in-depth reporting of all five networks under the BBG's aegis.

"Murdoch's News Corp perfected the strategy of consolidation over the past 20 years and has shown how, from a business and operational perspective, it makes sense," Powers said. "Execution of this plan will require good, transparent leadership."

DOMESTIC CONCERNS

Meanwhile, BBG also is proposing and Congress is considering a change in a decades-old law prohibiting domestic dissemination of VOA and Radio TV Martí broadcasts. A clause in the Smith-Mundt Act prohibits that now, Heil believes the legislation is outdated.

"It is long overdue. If a Somali community in Minneapolis wants to have access to the VOA Somali service it should be able to use it," Heil said.

Most VOA material is already avail-

(continued on page 23)

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DIGITAL RADIO

(continued from page 1)

to the fourth quarter 2011 RAJAR audience measurement survey. That is up from 25 percent for the same quarter of 2010. The vast majority of these listeners are tuning through DAB receivers, although radio listening through a digital television platform and via the Internet also saw growth.

STEADY PROGRESS

Elsewhere, digital radio saw steady progress in Australia, Czech Republic, Denmark, Malta, Sweden, Switzerland and other regions. In Norway, regulators have set 2017 as the year national public-service and commercial broadcasters sunset their analog operations; local radio will still have the option to operate on FM, however.

The biggest spur for digital radio in Europe, however came in August 2011 when German public and private broadcasters collaborated in a nationwide launch of DAB+ services.

DAB+ is a variant of the Eureka-147 DAB standard that uses a more efficient audio codec (HE-AAC v2) than the original DAB and more robust error



Taxi-back signs in Adelaide, South Australia, were part of a pre-Christmas campaign to promote digital radio.

correction.

With the backing of broadcasters and automakers, and a launch that coincided with the IFA international consumer electronics show in Berlin, German transmission-services provider Media Broadcast switched on a network of 27 transmitters covering some 38 million potential listeners and providing 14 new digital radio services. All major cities in Germany are covered by the DAB+ network.

"In 2010, we would have little idea that the German market would so effectively and cohesively work together to bring

digital radio to one of the largest radio markets in Europe in such a short space of time," said Jørg Jensen, president of the WorldDMB Forum, which promotes the Eureka-147 family of standards.

"The successful launch, and continued collaboration and development within Germany, has certainly had an impact on the rest of Europe."

The gains of 2011 were not universal, however. MediaCorp in Singapore stopped simulcasting its FM programs on DAB in December 2011. The broadcaster found that listeners in the city-state were making greater use of its MeRadio app for streaming audio to phones than its DAB broadcasts.

But digital radio is not synonymous with DAB. The DRM30 system for digital broadcasting below 30 MHz and the FM HD Radio system saw movement during 2011.

Public-service broadcaster All India Radio doubled the hours of DRM30 programming it broadcasts on shortwave during 2011, and is upgrading and installing new transmitters across the country to expand its DRM30 capabilities.

In June 2011, as RW has reported, Mexico expanded authorization for broadcasters to use HD Radio nationwide. Previously, AM and FM HD Radio broadcasts were only allowed within about 200 miles of the northern border.

ECONOMIC CRISIS

What makes these advances more remarkable is that they happened during a prolonged global economic crisis.

"Introducing a new digital technology globally, against the reality of a serious economic crisis, is a huge and lengthy process," said DRM Consortium Chair Ruxandra Obreja. However, "Where the benefits of digital radio are clear for all stakeholders — listeners, manufacturers, broadcasters and regulators — there is progress."

WorldDMB noted that despite the overall difficult market for consumer electronics, sales of DAB receivers seem to be doing well. For example, "In Australia in late 2011, despite one of the weakest retail markets for many years,



Cantopop singer Charmaine Fong joined an RTHK DAB Road Show event at Tsz Wan Shan Shopping Centre in November 2011 to promote the launch of DAB+ in Hong Kong.

sales of digital radios recorded their biggest quarterly jump since Christmas 2010," Jensen said.

IBiquity Digital VP International Broadcasting Business Development Scott Stull said that rolling out digital radio during the economic crisis may benefit digital radio in the long term.

"Many broadcasters are rethinking business strategies, distribution methods and listener services in order to remain relevant, and digital broadcasting is being folded into this process. Digital radio is no longer a technical decision. Instead, decisions are being based on which approach will prove most beneficial to the business of radio..." Stull said.

This careful consideration is seen in the creative ways digital radio has been used to expand options for listeners, such as the pop-up DAB-only services pioneered in Australia.

Such time-limited services began as commercial opportunities, for example to promote Australian tours by artists such as P!nk, but at the end of 2010 and in early 2011, the public-broadcaster Australian Broadcasting Corp. used the same model to help communicate during disasters. ABC QLD Floods took a local ABC channel nationwide with information about severe flooding in Queensland at the start of 2011. A few weeks later, a similar station was launched to help keep friends and relatives across the Tasman Sea informed after a 6.3 M_w earthquake in Christchurch, New Zealand.

"There is the need for broadcasters to

(continued on page 14)

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SL

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SL to LO Sync

-12.0 dB

Attack Offset

8.3

Release Offset

5.6

Gate Offset

-4.0 dB

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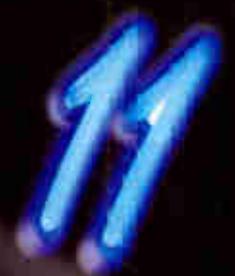
MH

HI

SH

3 kHz

7.5 kHz



Better Living Through Tower Welding

BY MARK PERSONS

Veteran AM engineers have known since the beginning: An antenna needs to be a continuous electrical conductor. Intermittent connections cause real problems, especially with solid-state transmitters that need to see something close to 50 ohms with zero reactance lest they go into VSWR protection mode.

TECHTIPS

One bad connection can throw the impedance off a little or a lot depending on where the errant connection is. This problem is not just on series-fed towers. A unipole is a "feed system" for an AM tower, and relies on the tower being a continuous radiator too.

Now is the right time to pay careful attention.

A tower is the "radiating element or antenna" for an AM signal, not a support structure as in FM. Towers typically are constructed of stacked 20-foot sections. With tons of downward pull on guy lines, you might think sections would be sufficiently connected to be thought of as a single electrical conductor. Not the case. Towers stand in rain and perhaps salt air. Crippling corrosion happens where each section joins the next.



I have seen bonding straps that go around joints to remedy the problem. Others have run a heavy copper wire from the top to bottom of a tower. Those work, but a better approach is to weld the sections

one to another. Usually this is done by a tower worker with an arc welder.

Do you have all three tower legs welded one to another? Only one good leg connection is required. I usually have the tower climber do two legs; it is convenient to do the two closest ones when he is belted in at each level of the tower. That second leg is insurance.

Welds do not need to be deep, they just need to connect sections electrically and reliably. Standard procedure is for the worker to spray cold galvanizing over the joint to protect it against rust.

Does welding make the tower incapable of being reused later? Not usually. Welds can be ground off before sections are separated.

Does welding last forever? No, tower vibration can crack the welds over time. Don't be surprised if you must weld again after 20 or 30 years.

FM stations are not immune to intermittent tower connections. With lots of RF radiating into the tower from an FM antenna, corroded connections can cause RF noise that plays havoc with STL systems, especially digital ones. Tower section to section connections are not the only players. Any intermittent cable grounding/bonding connection on the tower can cause the same symptom.

I had an interesting experience in which an AM station would not pass the annual NRSC occupied bandwidth and RF harmonic measurement tests. The sticking point was RF harmonics. Try as I may, I could not tune the transmitter or do anything to fix a second and third RF harmonic radiation problem. It simply would not meet the FCC specification of 73 dB below carrier for 1,000 watts of transmitter power. It is 80 dB for 5,000 watts or more. Section-to-section welding was the answer. After that, the station met specs just fine.

Caution: Best disconnect the AM antenna coupling unit from the tower before welding. The high voltage could damage or destroy a component in the cou-



Typical weld on a solid-leg tower.

pling network or transmitter. You're going to be off the air anyway because of RF radiation danger to the tower worker.

There is a story about a radio station in a foreign land. The station programming irritated the government; so the manager, program director and engineer all were sentenced to death by guillotine. On the appointed day, the manager was placed in the machine and the cord was pulled. The blade came down but stopped one inch from his neck — "divine intervention," according to witnesses. The manager was set free.

They tried to execute the PD but the same thing happened.

Finally the engineer was put in the machine. Just before they pulled the cord, he exclaimed, "Wait, I see the problem!"

Mark Persons, WQMH, is certified by the Society of Broadcast Engineers as a Professional Broadcast Engineer and has more than 30 years of experience. He has written numerous articles for industry publications over the years. His website is www.mwpersons.com.

DIGITAL RADIO

(continued from page 14)

looking to complete its digital television transition in 2012, and then attention will turn to digital radio, according to the Korean World DMB association. Eureka-147-based T-DMB multimedia broadcasting, including DAB audio services, is well established in the county, but further development of multimedia radio services for 2014.

In Japan a similar transition needs to be worked out; 2011 saw the end of test services launched in 2003 by Digital Radio Promotion Association in Osaka and Tokyo using the ISDB-T_{SB} standard. With the Japanese DTV transition expected to end this March, there are hopes that attention will turn to the digital radio, although no projects have been announced.

Russia and India are progressing with their DRM30 rollouts, but the DRM+ system, which is designed for operation in the VHF frequency bands, is gaining interest, too. In January 2012, the International Telecommunications Union added DRM+ to its recommendations for digital sound broadcasting

in the 30 MHz to 3 GHz range.

In late 2011, DRM+ also received backing from community broadcasters when Community Media Forum Europe [CMFE] and AMARC Europe, the European arm of the World Association of Community Radio Broadcasters, called upon E.U. officials to support and promote DRM+ as the primary digital radio standard for small-scale broadcasting.

In February, the European Commission's Information Society and Media Directorate-General replied to CMFE and AMARC stating that E.U. member states have not sought continent-wide coordination on digital radio standards and that current policy is to maintain neutrality in terms of technology.

The CMFE/AMARC call for DRM+ underscores one problem that remains for digital radio. While different standards may better suit varying broadcast needs, multi-standard receivers that make tuning across standards and bands are still needed. The European Commission noted positive signs of multiplatform support in its reply to CMFE and AMARC.

T. Carter Ross is former editor in chief of *Radio World International*.

Itching for a new console? This one's half the scratch.

So, it's time to upgrade your studio. Hey, let's be real - it's way past time. You knew those analog consoles were only good for 10 years when you bought them... 15 years ago. They need resuscitation so often, you keep a defibrillator in your tool kit.

Still, your GM says it'll cost too much to replace them. That's when you make like MacGyver and whip out your secret weapon: Radius, the new IP console from Axia. You show him the pictures. You tell him what Radius can do, with its 4 program buses, automatic mix-minus, instant-recall console snapshots, one-touch Record Mode, convenient talkback and rugged machined-aluminum construction. You show him the built-in Ethernet ports you'll use to eliminate the miles of expensive cable in your ceilings, and you can tell he's already counting the money he'll save.

Then you hit him with the haymaker: at just \$5,990, Radius costs less than you'd expect to pay for some flimsy, stripped-down, feature-free board with less brainpower than your wireless mouse. After he picks his jaw up off the floor, you get to tell the jocks about their cool new Axia consoles. And go home a bonafide money-saving, airstaff-pleasing Engineering hero, smiling with the knowledge of the envious looks you'll get at the next SBE meeting...

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WORKBENCH

(continued from page 18)

should be ready for natural disasters.

Stu Wright is the morning personality at WORG(FM) in Orangeburg, S.C. In broadcasting since 1968, Stu has experienced more than a couple emergencies. He offers additions to the list of emergency items started by contract engineer Ihor Slabicky in *Workbench* in January.

Stu recommends a small refrigerator to keep water, soft drinks and cheese cold. Sealed blocks of cheese have a long refrigerated shelf life and can provide nourishment.

Find dorm-size refrigerators in the classifieds or, if you live near a college, drive by the dorms at the end of a semester. You'll be amazed at what students throw out when faced with lugging all their room contents back home.

Stu suggests you have at least one can of wasp spray, the kind with the cone-shaped nozzle for accuracy.

Ihor mentioned toilet paper and paper towels, kept in resealable bags. Stu also suggests sealed boxes of pre-moistened baby wipes. These can be handy when your water supply is precious.

Remember that old saying "It's better

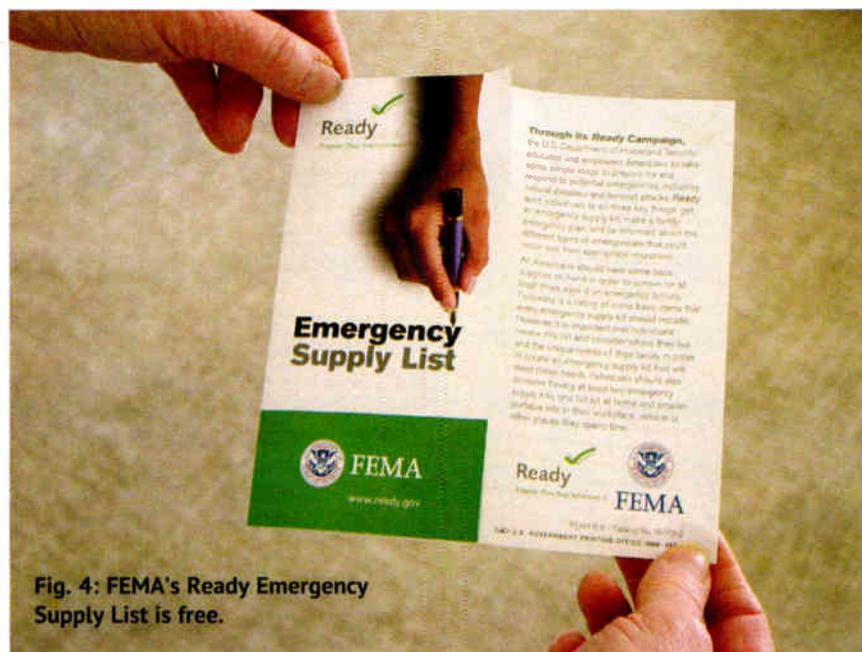


Fig. 4: FEMA's Ready Emergency Supply List is free.

to have something and not need it, than need it and not have it." In addition to cheese, stock up on foodstuffs, again in plastic bags. If you save cans of food, don't forget a can opener and cutlery. Slim Jim meat sticks are a good addition, as are chocolate and hard candy.

A well-stocked first aid kit is a priority. Add a dust mask, insect bite ointment and rubbing alcohol to the contents.

If you have a survival kit in your

vehicle, add a compass and a coach's whistle for signaling. Don't forget pen, paper and a sealable sandwich bag. Should you need to leave a note in an emergency, the baggie will protect the paper. A roll of duct tape will let you affix the baggie where it is visible.

You may find other ideas by browsing a surplus or camping supply store like REI. We hope you never have to use any of this. But preparation is your

best line of defense.

Stu Wright can be reached at rudestu@gmail.com.

FEMA has put together an emergency supply list in the form of a small tri-fold brochure. The list is free, as are other useful FEMA publications. You can order up to 500 "Ready Emergency Supply Lists" at no charge, using the FEMA Publications order form. The link to the form is saved for you at radioworld.com/Mar-14-2012. Select publication 9-0659 on the form.

Pass the brochures out to folks at your remote events, particularly if you are in an area of the country where natural disasters are a concern. It really helps tie the station to the community. The price is right — and your initiative actually may save a life.

Contribute to Workbench. You'll help your fellow engineers, and qualify for SBE recertification credit. Send Workbench tips to johnpbisset@gmail.com. Fax to (603) 472-4944.

Author John Bisset has spent 43 years in the broadcasting industry and is still learning. He is SBE Certified and is a past recipient of the SBE's Educator of the Year Award.

WHO'S BUYING WHAT

RFM is the first station in Paris to install an **Omnia.11** processor. Jean-Philippe Denac is program director. He told Omnia he acted on the recommendation of audio expert, David Perreau, who tested various processors.

"RFM is one of the major stations of the media giant Groupe Lagardère, which also operates

Europe 1 and the French stations of Virgin Radio." Omnia stated, "It is consistently one of the top-rated stations in Paris." The contemporary music station airs on 103.9

MHz from atop the Eiffel Tower. ...

OMT Technologies Inc. said Canadian media biggie **Corus Entertainment Inc.** purchased iMediaTouch automation systems for all of its 37 radio stations in 13 markets. Corus Radio Toronto Director of Engineering John Coldwell told the manufacturer this "is a step toward standardizing our libraries as well as creating increased efficiencies throughout our radio markets."

OMT said Corus uses iMediaTouch in its Winnipeg, Kitchener, Kingston and Toronto facilities. "In 2011 Corus purchased iMediaTouch for its

radio properties in Hamilton, Peterborough, Guelph, Barrie, Cornwall, London, Calgary, Edmonton and Vancouver." ...

Digital Jukebox reported purchases of Radio Spider Audio Downloading Software by **Mountain Broadcasting** in Missoula, Mont.; **Big River Public Broadcasting** in Galena, Alaska; **Next-Media** of New Bern, N.C.; **Calvary Chapel Modesto**

in Modesto, Calif.; and **WRM(FM)**, New Life 91.9 in Mathews, N.C.

Also, **KSHI Radio** in Zuni, N.M., purchased a Button Box Instant Audio Player and Cart Stack Software. **News New Mexico Network** of Las Cruces, N.M., purchased branded Radio Spider Audio Downloading Software for its affiliates; and **Talk Media Network of Michigan** ordered a Digital Jukebox Automation System. ...

KRJK(FM) in Lamont, Calif., is using a **Harris Broadcast** transmitter and **ERI** antenna from dealer **SCMS**. Terry Gaiser purchased and installed the gear, assisted by Harry Thomas. The station, which went on the air in the fall, is owned by the Buck Owens Group. Gaiser chose a **Harris ZX10000** transmitter with Flexstar



Terry Gaiser tweaks the Harris ZX10000.

exciter and a two-bay **ERI** antenna MPX-2 with pattern study. ...

AM station **KBLA** in Los Angeles is the latest to put the modulation-dependent carrier level approach to work. **Harris** said the station, owned by **Multicultural Radio Broadcasting**, would turn on a new **3DX-50** transmitter. The Spanish-language, 50 kW station airs at 1580 kHz. The transmitter

implements MDCL using **Harris Adaptive Carrier Control Plus (ACC+)** systems. MDCL helps stations reduce average power consumption and operating costs, its advocates say. Jim Glogowski is senior vice president and chief technical officer of MRBI. The MDCL algorithm in use is **Amplitude Modulation Companding**, or **AMC**; **Harris ACC+** systems also support **DCC (Dynamic Carrier Control)**, another MDCL algorithm. ...

Cameroon Radio and Television, the national broadcaster for the west central African country, has upgraded its **Netia** automation system to **Radio-Assist 8**. **CRTV** has used the **Netia**

platform since its transition from analog to digital in 2000. The upgrade will be used to improve production and operation for national and regional channels, a release said.

Timothée Metomo Eduma, post-production exploitation chief of service at **CRTV** said, "Since its installation, the **Netia** system has served us very well, and the upgrade to version 8 will provide valuable capabilities, as well as excellent ergonomics and a pleasant, intuitive GUI ..." Belgian broadcast systems integrator **Studiotech** oversaw the job. ...

WideOrbit said **South Central Media** is using **WO Traffic**, its ad sales, traffic, revenue management and billing software, in 11 radio stations in Nashville, Knoxville and Evansville. **WO Traffic** also is managing digital inventory for the broadcaster including online display advertising, search and email marketing, mobile and social marketing. ...

Dave Fennoy, the "Voice of Hulu," uses a **Neumann TLM 103**. The voiceover talent also has a **Neumann TLM 170**, **U 87** and **TLM 102** as well as a **Sennheiser MKH 416**. The manufacturer says Fennoy's "workhorse" is the **TLM 103**, while on the road he uses a **Neumann TLM 102** recording into an **iPad** running **TwistedWave** editing software.



Dave Fennoy

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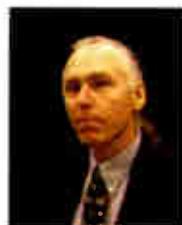
Steve Tuzeneu, CBT, joined **WYCM(FM)** as general manager and director of engineering. WYCM is a religious station in based in Charlton, Mass. He started his radio career in 1973. A former engineer for **WAY-FM Media Group** and **Salem Communications'** stations **WAVA(AM/FM)** in Washington, he also worked as station manager and



Steve Tuzeneu

group technology manager for **Blount Communications** station **WVNE(AM)** in Worcester, Mass.

David Reaves said he hopes to join or found a design group, possibly in traditional broadcast hardware or automatic audio control in personal, mobile and cloud applications. He recently left **Translantech**,



David Reaves

the audio manufacturing company he co-founded. Reaves was chief engineer of **WHTZ(FM)** in New York from 1988 to 1996, and also worked for **NBC-TV**.

Ed Milligan has joined **Communications Engineering Inc.** as an account manager. He is credited with 35 years of sales and management in "systems integration, asset financing, studio, post-production, remote production and transmissions businesses," according to the release.



Ed Milligan

CEI is based in Washington's suburbs and serves federal government and local broadcast and systems integration needs. Milligan recently was an executive for **Atlantic Video**, an video systems provider and production company. Before that he spent nine years with **Sony Electronics** and three with **Sony Financial**.

Sarah Frazier was promoted to senior vice president and market manager. **CBS Radio Houston**. She's been VP/director of sales for the Houston cluster since 2009. She'll oversee six stations; she succeeds **Brian Purdy**, who was managing both the Houston and Dallas clusters. He'll now focus on Dallas.



Sarah Frazier

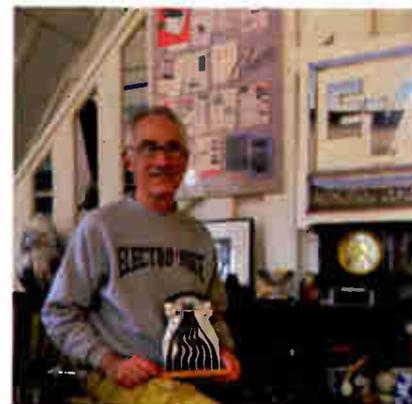
Carl Davis, CPBE, joined **Electronics Research Inc.** as eastern region account manager for radio broadcast systems. He was assistant general manager at the University of North Carolina Center for Public Television and has sales experience with the **Harris Broadcast Division**. He's based in **Raleigh, N.C.**



Carl Davis

The National Association of Shortwave Broadcasters said Secretary-Treasurer **Dan Elyea** would retire. **Jeff White** resigned as president to become secretary-treasurer. **Glen Tapley** is now president. **Brady Murray** becomes VP. **Thais White** continues as assistant secretary-treasurer.

Jim Long had a number of jobs at **Electro-Voice** during his 45 years there. He announced his retirement. Long started with **EV** in 1963 as a summer engineering technician in **Buchanan, Mich.**



Jim Long

He left the company to pursue an **MBA**, returning in 1966. Long's specialty, both with marketing and sales, was live and installation sound. Among other notable projects he was involved with was the company's "PA Bible."

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ARC-10U: \$1,599 unbalanced
ARC-10UP: \$1,999 unbal w USB
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BBG

(continued from page 10)

able online, Heil said.

Smith-Mundt was passed in 1948 shortly after World War II as a means to prevent any sitting administration from using U.S. government media to influence the American public and promote a specific political agenda, Heil added.

Powers said the fact that domestic dissemination is likely coming soon is an indication of how quickly the institutional culture of American overseas broadcasting is shifting.

“The organization seems to be moving forward with the assumption that restrictions on domestic dissemination will be removed in the near term, perhaps within the next 24 months if not sooner. Historically, this issue has been tremendously sensitive, and so the gusto with which this is moving forward, assuming that tapping into American audiences, as well as foreign audiences, is okay, is surprising,” Powers said.

Observers say leadership for the five broadcast entities during the BBG’s restructuring will be critical; losing a key leader like Isaacson in a time of transition is not ideal. But some speculated that the change will have limited impact and not slow implementation of the new strategic plan.

Isaacson, former CEO and chairman of CNN, said he was taking on another big writing project and was unable to give the BBG the time it needs and deserves.

“The board presumably will move ahead on implementing the parts of the strategic plan that the administration and Congress finally approve,” Heil said, “regardless of how quickly a new chairperson is designated.”

However, Alex Belida, a former correspondent and news executive who worked in U.S. international broadcasting for 40 years, wrote recently on the blog www.MountainRunner.us: “The departure of Walter Isaacson represents a serious journalistic loss at a time when the [BBG] is considering a reorganization. To the best of my memory, he was the *only* board member who spoke consistently about the importance of good journalism.”

The new chairman of the BBG “must be committed to true consolidation,” writes Kim Andrew Elliott, a long time U.S. international broadcasting analyst, blogger and employee of the U.S. International Broadcasting Bureau, a subsidiary of the BBG. “Only when [U.S. international broadcasting] ceases to be a dysfunctional confederacy of feudal entities can it begin to rise to its goal of becoming the world’s leading international news agency.”

Read the strategic plan and BBG budget submissions at <http://radioworld.com/> Mar-14-2012.

MARKETPLACE

Rain on My Production: Rain Computers introduced the next iteration of its LiveBook laptop computer, the LiveBook A2. Rain specializes in computers for audio and video production.

The laptop starts with an Intel Core i7 quad core processor, with speeds up to 2.5 GHz. Rain offers up to 16 GB in RAM on the LiveBook A2. There are several hard drive options: 500 GB of 7500 rpm SATA II traditional



disk drive or 256 GB or 512 GB SATA III solid-state drive. A StormDrive dual layer CD/DVD writer drive is also part of the package.

Other goodies include USB 2.0/3.0 ports, a built-in media card reader (SD, MMC and MMS), an HDMI-out, a Kensington LockPort, Wi-Fi and Bluetooth transceivers. The LCD screen is a large 15.6 inches.

On the software side it ships with Windows 7. Rain Computer configurations are test for compatibility with Avid Pro Tools and many Adobe creative package products. Price starts at \$1,599.

Info: www.raincomputers.com/products/livebook-a2/



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Museums Put Bethany Site Back on Map

Unique Facility Provides Visitors Access to Three Broadcasting Collections

BY JAMES E. O'NEAL

During the last few decades, a number of broadcast-related museums have sprung up across the country — locations in California, Connecticut, Minnesota, Maryland, New York, West Virginia and Rhode Island come to mind, just to name a few.

This interest in exhibiting older gear may in part be due to the graying of many of broadcasting's players, and perhaps the comfort level brought by being around some of the hardware that made coast-to-coast and round-the-world transmissions possible before satellites, fiber and computers. Regardless, there are a goodly number of such institutions and the number seems to be growing.

Three new entries have set up shop in an historic setting in central Ohio. These separate, but thematically connected, museums are under one roof on Tylersville Road, just down the way from Powell Crosley Jr.'s fabled WLW transmitter site with its Blaw-Knox diamond antenna and 500,000 Watt transmitter.

The site that the museums occupy was originally created by the Crosley broadcasting empire, later becoming federal property when the government took over the shortwave broadcasting operations that Crosley launched to help America counter wartime propaganda coming from Nazi Germany. The new institution is officially the National Voice of America Museum of Broadcasting and is on the former

campus of what was once the VOA's Bethany Relay Station.

THREE MUSEUMS, ONE ROOF

The museums — the Gray History of Wireless Museum, the National Voice of America Museum of Broadcasting and the Media Heritage collection — occupy a relatively small portion of a cavernous building that was constructed nearly 70 years ago and originally housed several

custom-built 200 kW HF transmitters.

The government decided to end VOA program relay operations from Bethany

Much radio (and television) history is captured in the artifacts on display in the Gray History of Wireless Museum.



The National Voice of America Museum of Broadcasting is located in this former Voice of America relay station building in Bethany, Ohio.



in 1994, and the station building and a portion of the surrounding antenna farm acreage were deeded over to the West Chester (Ohio) Township for use as a park. The shortwave station's antenna farm — numerous rhombics and curtain arrays — were toppled, but the transmitter and operations building was allowed



This 1960s vintage Collins 821A1 250 kW transmitter once powered VOA HF broadcasts from the Bethany relay station. It's on display as part of the National Voice of America Museum of Broadcasting collection.

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to remain, with the three historical organizations being given space to exhibit their artifacts.

The Gray History of Wireless Museum has been part of the greater Cincinnati landscape for several decades. It consists of a large collection of wireless artifacts amassed by one G.J. (Jack) Gray during his lifetime as a ship's radio officer in the 1910s, and later as an employee of the Crosley radio empire.

After Gray's death in 1970, the collection was relocated from his garage to the Crosley Telecommunications Center, location of Cincinnati's PBS member

(continued on page 28)

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MUSEUMS

(continued from page 26)

station WCET and public radio station WGUC. When the former VOA space became available, the Gray collection was relocated there.

It is organized, timeline fashion, into an easy-to-follow series of displays. It's not just about radio, as there are a number of television artifacts too. One of the more notable is a large power klystron that's been cut away to display its inner workings. The 430-pound tube came from Washington UHF television operation WDCA(TV) and logged nearly 48,000 hours before it was retired in 1985.

QUARTER-MEGAWATT FLAMETHROWER

From an organizational and geographic standpoint, the next entity at the site is the one that takes its name from the former government broadcast-

ing operation housed there.

It's the National Voice of America Museum, with its centerpiece exhibits being a surviving Collins 821A1 250 kW shortwave transmitter (once there were three at the facility) and the former station's master control room, which has been left largely as it was in late 1994.

Even though the antennas to the rear of the building have been demolished, the massive outdoor RF "routing switcher" — part of the original 1942 wartime installation and used to direct transmitter feeds to the facility's various antennas — is still in place, complete with creosoted



This 'board' dates from the 1920s and provides a good example of what a broadcast station's audio mixer looked like 80 or so years ago. While not totally original — VU meters didn't appear until the late 1930s — it does contain a number of components dating to the '20s. It's one of many Media Heritage Museum broadcasting artifacts.



These costumes were once worn by 'Uncle Al' and 'Captain Windy' in a long-running Cincinnati children's daily television show. The show began on WCPO in 1950 and continued until the mid-1980s. The costumes are on display at the Media Heritage Museum.

telephone pole supports and "heavy iron" contactor gear.

LIGHTS, PHOTOS, COSTUMES!

The Media Heritage museum is a combination of broadcasting hardware and informational displays about the "software" side of radio and television — its performers and programs.

Co-founder Mike Martini, the president, explained, "There are several museums dedicated to radios, microphones, and equipment; and because we're in the same building as the Gray Museum, we wanted to go beyond that and preserve the memory of the performers, the writers, the technicians, and others who helped to put the shows on the air."



While this 'mighty Wurlitzer' organ originally came from a 1920s 'movie palace' and not a radio station, in later years it was fitted with a rank of organ pipes from the WLW 'Moon River' Wurlitzer organ. The Media Heritage Museum has plans to restore it to playing condition and provide museum visitors with a taste of what live radio organ interludes sounded like.

"Most other places are into equipment, but our primary focus is on Cincinnati's radio and television history."

Even though the programming side of broadcasting is emphasized here, there's certainly enough in the collection to whet the hardware lover's appetite. Relics include an very large Ampex quadruplex videotape machine, an RCA 16 mm telecine projector and studio color camera, an early weather radar display, transcription turntables, audio consoles, and most remarkably, a very early audio control "board" that is said to have been used originally at Cleveland's WTAM.

Photos of hundreds of performers

(continued on page 31)

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World Radio History

Dear Internet: Please Talk to Me

WIRED FOR SOUND

BY STEVE LAMPEN

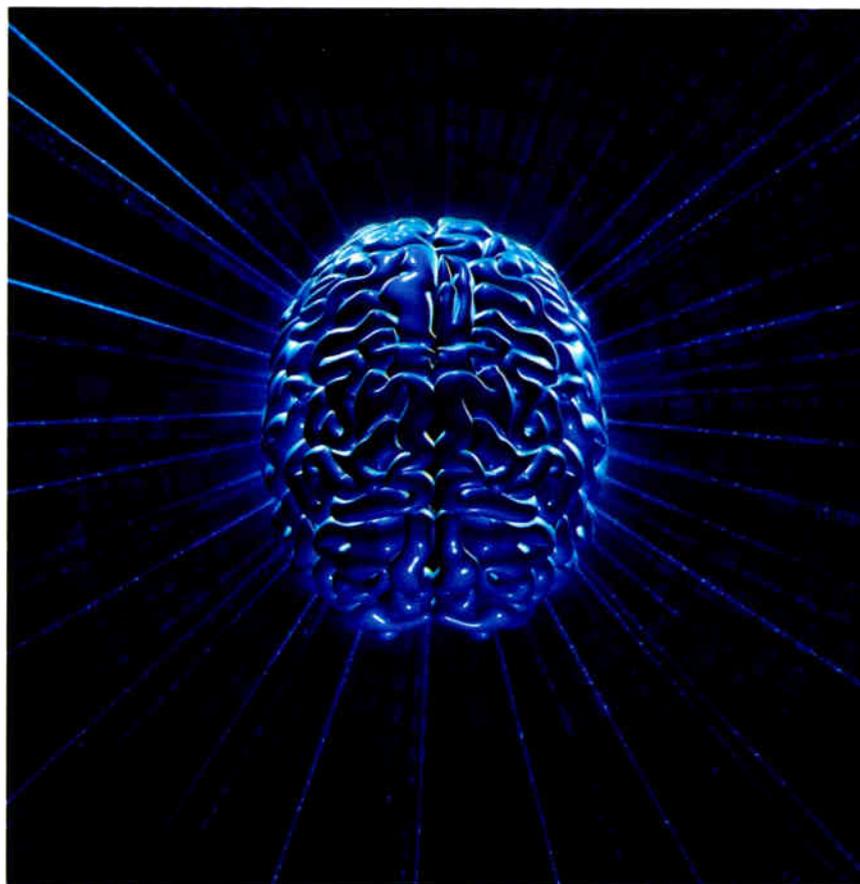
I'm just a story teller; usually my stories center on wire and cable. Today's story, boys and girls, is only slightly different.

It may surprise many of you to know that, at one time, I was actually a Broadcast Engineer. Certainly, I once had a First Class Radiotelephone License. Now I have a Lifetime General. And what a valuable piece of paper that is!

Around 1980 I found myself working at a major AM/FM facility in San Francisco. They were in the process of wiring up some beautiful Ward-Beck mixing consoles in the new control rooms. Made in Canada, these consoles had every bell and whistle that could be bought.

One of these was a small plate with a bunch of buttons that allowed users to change EQ on the announce mic. Each button had its own EQ setting. I remember a meeting in which we began to familiarize the DJs with the consoles, and we mentioned the EQ switch.

Months later, as I was working in the studio, one of the DJs mentioned this



feature. She told me how she loved one particular setting, and didn't really like the others. Another DJ heard this and begged to differ, preferring another EQ choice, another button. A third arrived, and there was a heated discussion about the EQ panel and their individual voices.

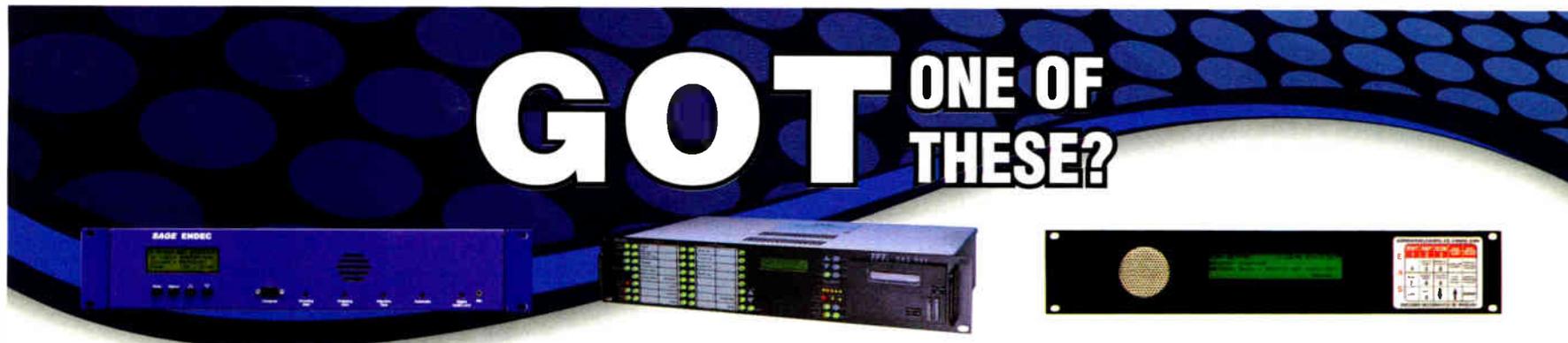
At this point I didn't have the guts to tell them the truth: We had *never hooked up this feature* and, in fact, these buttons did nothing at all.

MINO-BENOING

We so often assume that things are important when they're not — or, worse, we think we're aware when we are totally unaware. As a cable guy, I am forever reminded of this by all the people who believe you can choose a speaker cable by how it sounds.

Being human, we are dependent on our five senses. We assume we know what is going on around us, despite the fact that science continually shows us that we know *less and less*.

Just consider the spectrum, from DC to cosmic rays. What percentage is covered by what we sense, the ultra-low frequencies of our sense of touch, the audio frequencies (20 Hz to 20 kHz) of our sense of hearing, and visible light (approximately 750 nanometers to 380 nm, 400 to 790 terahertz) from our sense of sight? And what is the total of what



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we perceive? Some microscopic part of 1 percent of what is actually out there.

Ask any astrophysicist; she will tell you that the universe we see, including visible light, infrared and X-ray and other sensing frequencies, seems to be only 4 percent of what exists. Ninety-six percent of the universe is dark matter and dark energy, which we haven't found and don't understand.

And then we have string theory, which says there are 11 dimensions of which we sense three (height, width, depth) as well as time. One of the proofs is that gravity is a trillionth of a trillionth of any of the other forces (weak atomic force, strong atomic force and electromagnetism). The reason gravity is so weak is because it *doesn't originate in our dimensions*. We get a wisp of gravity from some other dimension, which is why you can pick something up (a rock, a pen) with your wimpy human muscles.

The amazing part is that we're beginning, just beginning, to understand a universe in which we actually sense very, very close to *nothing!*

MAGICAL

It's interesting that much of this realization started when we began to use electromagnetism, as radio, back in the 1880s. We have forgotten what people felt at the time, that we were sending signals to each other through something that couldn't be sensed. It was, essentially, magic. Now, almost everything we play with can't be seen or sensed, except for the end product, such as sound and picture.

I believe that's why we haven't yet talked to other creatures on other planets: We don't yet know how to tune in! They've been patiently talking to each other on their sub-dimensional network, knowing we would show up when we figure it out.

Then again, I have another theory. According to futurist Ray Kurzweil, the Internet passed the complexity of a human brain a number of years ago. Therefore, if anyone is going to know how to get on the Universal Network, it will be the Internet. Maybe it's already talking to other planets.

But if the Internet is talking to aliens, why isn't it talking to us?

Well, of course, it knows we will *freak out* when our laptop starts to talk to us; so it is thinking long and hard about *what to say, when to say it and maybe even who to say it to.*

Since this column has gone back and forth on the Net many times before appearing in print (and is archived there), please let me tell the Internet: "Dear Internet: Please talk to me! I promise not to freak out."

Steve Lampen is multimedia technology manager and product line manager of entertainment products for Belden.

MUSEUMS

(continued from page 28)

from Cincinnati broadcasting's heyday line a wall of the space, and there's a display case housing costumes worn by performers "Uncle Al" and "Captain Windy" on a local children's daily television show that enjoyed a three-and-a-half decade run.

Perhaps the most visible artifact in the Media Heritage collection is a white Wurlitzer 1787 organ console —

the "control surface" of an instrument found in hundreds of showplace movie theatres and larger radio stations and network operations during the 1930s and beyond. It's awaiting restoration and reconnection to hundreds of pipes. And although this console came from a movie house, one of the ranks of pipes acquired for the project was once part of the Crosley WLW "Moon River" organ. Martini says plans are being worked out for a computerized control system to be added to the organ so that demonstrations on demand can be part

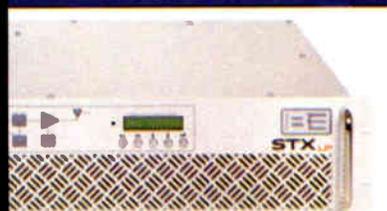
of the Media Heritage tour.

"Our goal is to give people the opportunity to hear a big Wurlitzer organ played on a regular basis, either by a live performer, or played by computer."

Hundreds of artifacts and exhibits await discovery in this unique museum setting; if your travels take you anywhere near Cincinnati, a visit should be on your must-do list. Where else can you tour a facility where a monster transmitter that beamed programming around the world coexists with performers' costumes?

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USERREPORT

BY GENE SHARP
Technician
WHVT(FM)/WHVY(FM)

COSHOCTON, OHIO — My name is Gene Sharp and it is my pleasure to help with all things technical at WHVT(FM) in Clyde, Ohio and at WHVY(FM) in Coshocton. Both stations are owned and operated by Clyde Educational Broadcasting Foundation, which is a ministry of my home church, Harvest Baptist Temple.

The two stations and our translator 94.1 FM in Findlay make up what we call the Clean Air Radio Network (www.cleanair.fm). It airs a mix of sacred and southern Gospel music and traditional Bible teaching programs.

Also heard on Clean Air is news (local and national), weather and several live call-in programs. I was the manager of WHVT about 13 years ago, but since that time I have transitioned into an international ministry that establishes radio stations for missionaries overseas called "Independent Baptist Media."

We have helped establish Christian radio stations in Papua, New Guinea, Marshall Islands, Philippines, Uganda, Rwanda, Liberia and Iraq. In addition to radio, our small group of "technical



Gene Sharp monitors his transmitter from the studio via Nautel's Advanced User Interface remote monitoring system.

missionaries" also helps local churches with audio, video and graphics. We are blessed in between our extensive travels to help out at home on the Clean Air Radio Network's projects.

COMPLETE PACKAGE

I was placed in charge of organizing, purchasing and installing the new equipment for the newest outlet of Clean Air.

In this tight economy, considerations for new equipment seem to start with the budget and from there we try and "squeeze" as many features in as possible. Some of the features that we needed on a transmitter were new to our small but growing radio network.

First, we needed remote control of some kind. Second, we were looking for multiple layers of backup audio sources. Being 100 miles from our main studio and with a limited staff, these features were supercritical for us. We half-expected to be forced to use multiple devices to accomplish all of this control and backup, but then we heard about the new Nautel VS Series. We wondered if so many features could be built into such a small box.

Well it was true and to top it off the Nautel VS Series was more affordable than several contenders in our



In early 2011 we were about to purchase the equipment for our brand-new station in Coshocton, Ohio, WHVY 89.5 FM. The hunt for a transmitter was in full swing when I stumbled across the Nautel offerings.

I have seen some remote control GUIs that look like they're from somewhere between 1979 and 1985, but not the Nautel AUI.

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decision-making process. After investigating Nautel's reputation we made the decision to purchase a VS1 transmitter in early 2011. Kandice Kerstin at Broadcasters General Store made the process a breeze.

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Installation was pretty much as you would expect. The transmitter came with straightforward instructions and every-

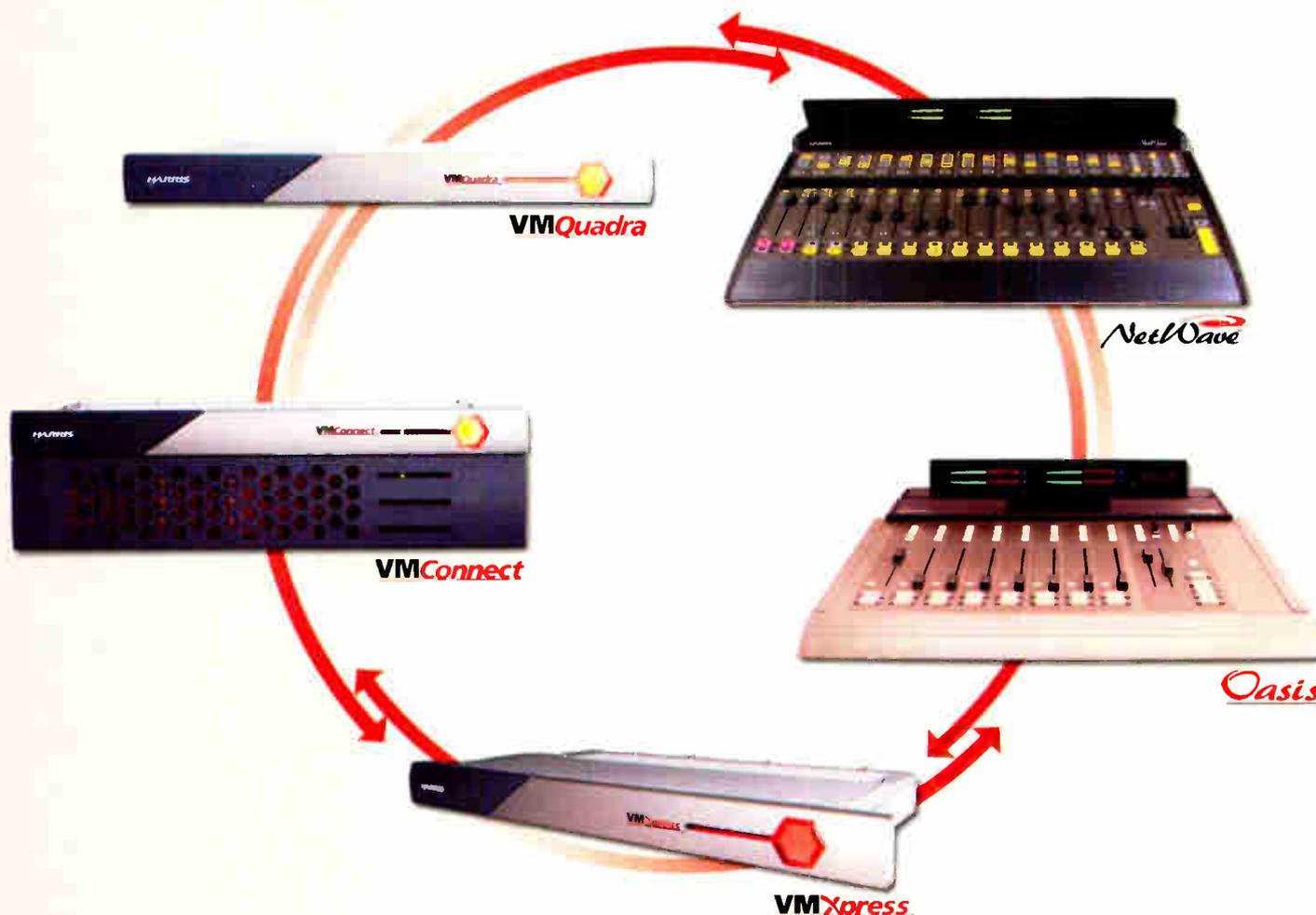
(continued on page 38)

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Harris Flexiva Raises HD Radio Sidebands

Dayton Public Radio Elevates Coverage With No Effect Upon Analog Signal

USERREPORT

BY JIM STITT
President
JMS & Associates

DAYTON, OHIO — Dayton Public Radio is a CPB-qualified nonprofit corporation and licensee of two non-commercial FM stations, WDPR(FM) and WDPG(FM). Dayton Public Radio provides the only classical music and fine arts programming to more than 1.1 million listeners in west central Ohio, including the Dayton metro (Arbitron market #63). JMS & Associates, with 30 years of experience in designing, building and maintaining state-of-the-art broadcast facilities, was retained by Dayton Public Radio to handle its technical requirements including this project.

Classical music audiences are critical of program audio quality, so WDPR became an early adopter of IBOC HD Radio in 2004 with the installation of a Harris Z6HD transmitter and Dexstar exciter. I later converted sister station WDPG to IBOC with a split-level system using their existing Harris HT-20 and a Harris Z8HD+. DPR also upgraded to accommodate multicasting and enhanced data capabilities.

LIMITED SPACE

As the initial -20 dBc IBOC levels have proven to not yield coverage parity with the FM analog signal, I closely followed the research and testing regarding elevated IBOC sideband levels being done by John Kean and NPR Labs, as well as CBS, Clear Channel and Greater Media.

It appeared that an IBOC level of -14 dBc was a good compromise for

improved IBOC coverage with tolerable levels of interference to the analog signal. The Corporation for Public Broadcasting began offering grants for stations to convert to IBOC HD Radio or improve existing facilities, so I began researching a solution.

WDPG is a 50 kW Class B with a TPO of 12 kW. WDPG utilizes a directional antenna on a leased tower, so combining was eliminated as a reasonable option, as was high-level combining due to the high cost and inefficiency.

The initial split-level system that was implemented for an IBOC level of -20 dBc, which worked quite well at that level, could not adapt to IBOC levels higher than about -18 dBc due to mask compliance challenges. Low-level combining seemed plausible, but there were other limitations at the site.

Space was limited in the existing prefab concrete shelter, and I wanted to maintain the existing HT-20 as an analog only auxiliary. The shelter could accommodate only a six-ton, wall-mounted HVAC unit for the closed system, so heat load and efficiency were factors. Reliability is always important and I wanted to avoid a tube-type transmitter to minimize site visits and lower ongoing costs.

The ideal solution would be an efficient solid-state transmitter with great performance, multiple layers of redundancy, a small footprint and compatible with existing station equipment. I spent considerable time researching new and existing products from the major transmitter manufacturers and queried other



The 20 kW model has a smaller footprint than the Z8HD+ it would replace.

station engineers.

My search ultimately led to the Harris Flexiva FAX-20 transmitter. I was familiar with the LDMOS-FET technology that Harris uses in Maxiva solid-state TV transmitters, which allowed a very high-power density in a small physical package. This technology found its way into the radio line with Flexiva. The 20 kW model has a smaller footprint than the Z8HD+ it would replace. Space problem solved.

Each power amplifier has its own power supply for 1:1 redundancy, and the transmitter will run with several failed amplifiers. When a PA or PS fails, they are hot-swappable, minimizing downtime. There are redundant fans as well. The FAX-20 is actually two combined 10 kW PA blocks (which I fed via two separate AC power feeds), so an entire PA could fail and the station would still be on the air at reduced power. Automatic restart eliminates

another potential issue.

The transmitter includes a FlexStar HDXexciter, which delivers a high-quality signal. It has grown in reliability since our first HD installation in 2004, when iBiquity was still working on the right coding recipe.

SIMPLE INSTALLATION

Another important feature is the Harris Real Time Adaptive Correction software, which maintains FCC spectral mask compliance despite varying conditions and the elevated IBOC levels. Changing modes between FM, FM+HD, and HD only, or changing the IBOC injection level from -20 dBc to -14 dBc is as simple as changing a data field. The Flexiva amplifiers change bias on-the-fly to maintain linearity and optimum efficiency for the respective mode.

Installation was straightforward. We slid the PAs and PSes into their slots and the exciter into its rails, and installed the 3-1/8-inch RF line to the antenna switch (with a Bird BPM power meter in line). Following electrical and grounding work, we connected the AES audio and exporter LAN

from the Harris Intraplex STL and tested into the dummy load. The transmitter had been tested and burned in at Harris, so the initial turn-on consisted of depressing the "on" button. Cool!

Interfacing to our Burk Systems remote control was a breeze since telemetry, status and command logic levels are standard. The ability to monitor and control the transmitter via a Web-based browser from anywhere with Internet access provides another layer of redundancy.

The Flexiva was ready to be put on the air after upgrading the software and configuring the Harris HDE-200 embedded exporter and HDI-200 importer. The new embedded exporter solves many of the problems the earlier models had due to dependency on the computer hard drives and operating system. The HDE-200 configuration and monitoring is now done via an administrative computer on the network. No changes were necessary to our Intraplex STL or other station systems. The Bird BPM power meter, Agilent spectrum analyzer and Belar FM HD-1 mod monitor verified proper operation.

WDPG is now operating at -14 dBc IBOC level. Digital coverage has increased with no discernible interference to the analog signal. So far we have not had a failure or maintenance issue and are very satisfied with the Flexiva and Harris support.

For information, contact Brian Clifford at Harris in Ohio at (513) 459-3714 or visit www.broadcast.harris.com.

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CTE Transmitters Prove Themselves

Romanian Clients Are Pleased With Ease of Operation and Reliability

USERREPORT

BY MARIUS MARIN
Senior Engineer and Owner
Laet Exim

BUCHAREST, ROMANIA — My company, Laet Exim, a broadcast systems integrator based in Romania, bought and installed for a client several CTE Digital Broadcast VL series air-cooled FM radio transmitters of 2.5 kW and 5 kW power. The VL series transmitters range from 2.5 kW up to 10 kW.

We recommended the VLs upon our technical and economic comparisons. The price that we paid was reasonable and the delivery time was two weeks from the order confirmation. The transmitters have been installed in five sites, all of them some distance away from the capital city, Bucharest, in rural areas where the reliability of the electrical grid is questionable.

EASY INSTALLATION

Prior to the decision to choose CTE, we asked the company for detailed literature about their equipment and the complete manuals for our prepurchase evaluation. We analyzed the design of these transmitters, where the smart modularity concept was the most evident feature.

To simplify maintenance operations, the RF amplifiers and the power supply unit are separated.



Installation and operation of the transmitters proved easy. The user guide was helpful, something that can't always be said. It included instructions for safe, fast and successful installation for both the 2.5 kW and 5 kW FM transmitters.

An attractive bonus for us, with no increase in the price, was the inclusion of a remote control and monitoring interface for IP networks (SNMP-compatible). This allows for the management of many operations using a simple Web browser.

CTE's excitors for the VL series offer an AES/EBU digital input, remote control and capability for n+1 systems. In the design, a special effort was devoted to achieve friendly and fast routine maintenance, a much appreciated aspect for us. Frequency and other operational parameters can be set by an intuitive menu that is controlled by four buttons and displayed by an LCD screen on the front.

To achieve power, RF stages of 1.3 kW nominal power are used. Each

of them includes four 5D2942 next-generation MOSFETs. At our lab in Bucharest, we performed tests that measured impressive high linearity. We have also found out that each module includes a control loop with a high-speed reaction time to protect the equipment against overheating or excessive SWR. These protections are independent with respect to the microprocessor.

The power supply is composed by three identical boards connected in parallel. It has the standard dimensions of 19 inches and is 2 RU.

The overall depth is 28 inches deep and just under 31 pounds in weight. Such compactness and reduced weight are sufficient to carry the unit, even by one person.

Since installation all of the equipment has been running at full power, all day long, without disruptions or inconveniences. Our customer is happy because he has noticed a 30 percent reduction in the bill for electricity compared to the previous transmitters. Power spikes and instability in the mains have had no impact on the reliability and no variations in the signal have been noted.

Upon our overall positive experiences impressions, we recommend VL series transmitters from CTE Digital Broadcast.

For information, contact Enrico Antoniazzi at CTE Digital Broadcast in Italy at 011-39-02-96738811 or visit www.ctedb.it.

WHVT

(continued from page 32)

thing was included, from screws, to sliding rails, to connectors, and ferrite toroids. The VS1 transmitter fits nicely in our rack and has been rock-solid since we flipped the switch.

What about those critical "big transmitter" features that we were looking for? They work flawlessly. I have seen some remote control GUIs that look like they're from somewhere between 1979 and 1985, but not the Nautel Advanced User Interface. The AUI looks and performs wonderfully and intuitively. The layout is logical and in a few minutes of logging on to the interface you will feel at home. In fact we think it is so cool that we have been showing it off to our friends around the world.

Also impressive is the backup audio from the USB. It sounds crystal clear and the transmitter can fail-safe to it automatically. What a blessing to a small group with an even smaller budget and staff. Our few questions were answered in expert form by Nautel's helpful and knowledgeable technical support staff.

In short, we have been evangelistically telling all of our friends about the new VS Series by Nautel.

For information, contact Chuck Kelly at Nautel in Nova Scotia at (902) 823-2233 or visit www.nautel.com.

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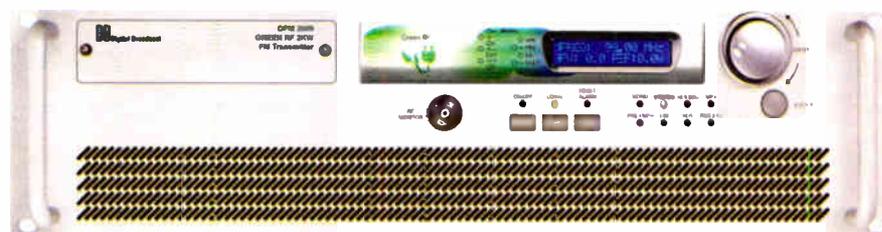
DB BROADCAST SEES GREEN

According to DB Broadcast of Italy, its new Green RF transmitter line is eco-friendly. The company says that the Green RF is the next evolution of DB Broadcast's patented COLD FET technology, based on energy-efficient LDMOS devices. It can supply transmitters up to 5 kW.

DB Broadcast says that the Green RF line includes a deviation limiter and a variety of protections such as over-voltage, load mismatch and overheating. Green RF transmitters use high-efficiency and high-output switching-mode power supplies, making them light, compact and energy-efficient.

Like many new transmitter lines, the Green RF line can be controlled via a Web application along with local control from the front panel.

According to DB Broadcast the Green RF series was designed for simplified



maintenance with easily-accessed air filters, modular components and high-MTBF RF and power modules.

Options include a digital stereo generator and an AES/EBU interface.

For information contact DB Broadcast in Italy at 011-39-049-8700588 or visit www.dbbroadcast.com.

ELENOS ETG5000 PUTS BIG POWER IN A SMALL PACKAGE

Elenos and its U.S. subsidiary 305 Broadcast have introduced the ETG5000 FM transmitter.

The company calls it a one-of-a-kind product created by engineers for engineers, especially those on conservative budgets. Elenos says



that the ETG5000 is equipped with hardware, software and features needed for efficient high-quality daily operation under stressful environmental conditions.

The company promises high efficiency at low temperatures, resulting in energy savings and increased lifespan.

Other advantages, says Elenos, are a new, clean design that highlights reduced weight and dimensions without sacrificing power or efficiency. The ETG5000 is remote-controllable via the Web by way of the "Cloud Remote Control" application. Mobile versions of the app are available for Apple and Android smart devices.

Among its technical characteristics the ETG5000 features an adjustable output nominal power of 5,000 W in a 4 RU space. Seven BLF578 ICEFET Ecosaving MOSFET modules drive the amplifier section. There are six onboard cooling fans. It has an auto-mated switch-on for handling short interruptions of main power.

For information, contact Elenos/305 Broadcast in Florida at (305) 406-3560 or visit www.305broadcast.com.

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TECHUPDATES**BW BROADCAST UPDATES TRANSMITTERS**

BW Broadcast says its TX range of FM transmitters now come with AES/EBU digital input and multiband audio processing as standard. Broadcasters with a digital signal chain can interface straight into the transmitter and onboard processor.



There is also the option of an Ethernet interface to allow instant control no matter how remote the site. This is on top of the existing frequency agile exciter and built-in stereo encoder. These "all-in-one" transmitters are available from 1 W to 1,500 W; they are standard 19-inch rack size and a maximum 2 RU high.

The FM transmitters include six preloaded processing presets and front-panel LCD control interface. The company says that the underlying architecture includes a unique dual-loop virtual VFO exciter, an ultralow distortion modulator and stereo encoder integrated into a very stable FM transmission system. Developed for global use, units are frequency agile and comply with applicable CE, FCC and EU regulations.

For information, contact BW Broadcast in England at 011-44-208-253-0290 or visit www.bwbroadcast.com.

BUYER'S GUIDE**THE 'R' RAISES THE BAR FOR CROWN**

Crown Broadcast says R Series translators now ship with a

new DSP-based CT-1 internal receiver (pictured).

R Series translators are notable for separation and sensitivity on the receiving end, the company says. Crown translators are available in power levels from 30 watts up to 600 watts; all translators have a standard five-year warranty.

Crown R Series units are able to receive both AM and FM broadcast, with no additional equipment needed. Current users are also able to send in their older Crown translators or transmitters to take advantage of an equipment renewal program in which the unit is rebuilt and sent back to the broadcaster in like-new condition, with a two-year warranty. The customer may also elect to upgrade to the CT-1 receiver at that time and also increase the power of the units.

According to Crown that means that the owner of an older Crown FM30 can send the unit to the factory for renewal and power upgrade and the customer could receive back a like-new Crown FM300 at a fraction of the cost of a new Crown transmitter.

For information, contact Crown Broadcast in Indiana at (866) 262-8972 or visit www.crownbroadcast.com.

RIZ FIDELITY OFFERS DRM

The latest from Hungary's RIZ-Transmitters Co. is the Fidelity line of solid-state digital AM/DRM transmitters.

According to RIZ the Fidelity line has an efficiency of over 90 percent and output power up to 400 kW without combining. By combining several lower-powered transmitters, higher power levels are attainable.

The Fidelity transmitters are modular in construction; the 2 kW Class D power modules are hot-swappable. The line offers an integrated DRM exciter, making DRM operation available with the push of a button.

Fidelity transmitters can be controlled locally or remotely via IP. Settings and logs can be stored on an SD card.

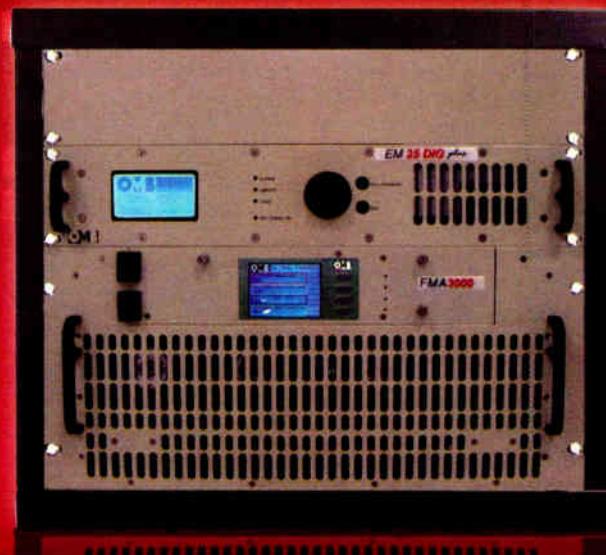
RIZ also makes shortwave transmitters with solid-state modulators and output power up to 500 kW; solid-state long-wave transmitters with up to 2,000 kW in output power; and FM transmitters with output power up to 30 kW.

For information, contact RIZ-Transmitters in Croatia at 011-385-1-2355-261 or visit www.riz.hr.

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The central image is a black Axia IP console with multiple channels and a control surface. Surrounding it are logos of various partner companies, including:

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TECHUPDATES**TRANSRADIO ADDS IPAD CONTROL**

Transradio's TRAM AM transmitters now have an iPad 2 control interface.

Transmitter functions can be supervised and monitored by the iPad-based control interface; safety functions of the transmitter are still implemented locally at the transmitter itself. Analog parameters are monitored by A/D converters for remote monitoring and integration into the GUI, based on iPad 2 technology.

The WPA2-secured Wi-Fi connection between transmitter and iPad 2, and the possibility to remove the iPad from the front panel, makes supervision more comfortable.

Even if the whole computer control system were to fail, basic functions of the transmitter are still controllable via local pushbuttons.

The WPA2-secured Wi-Fi connection between transmitter and iPad 2, and the possibility to remove the iPad from the front panel, makes supervision more comfortable.

The TRAM premium LCD offers a choice among TCP/IP, BIT bus, RS-232 or dry contacts for remote control.

The focus of the Transradio TRAM premium LCD line is to offer more comfort for local and remote control while maintaining the unmatched reliability of the TRAM line transmitters.

The line ranges in power from 5 kW to 600 kW as standalone transmitters or up to 2 MW in a combined version. All are available with the TRAM premium LCD option.

For information, contact Transradio SenderSysteme in Germany at 011-49-30-339-78-0 or visit www.transradio.eu.

CONTINENTAL ELECTRONICS SHOWS DIGITAL EXCITER

Continental Electronics' 802Ex digital FM and FM+HD Radio exciter offers advanced forward-looking, adaptive pre-correction, dual RF outputs, Ethernet IP connectivity and the ability to measure and display the latest NRSC HD test data in both text and graphical form.

Continental's "Insight" Performance Monitoring (IPM) system provides at-a-glance displays of relevant IBOC parameters including screens showing real-time frequency specific spectrum analysis, three variations of a quadrature constellation screen showing the demodulated OFDM carriers on I/Q axes, a Cumulative Distribution Function (CDF) screen displaying peak to average ratio information, as well as an Equalizer display screen to show much amplitude and phase correction is being applied to the drive signal to linearize the RF power amplifier. Additional displays are planned as the complete NRSC test requirement is finalized.

Continental also has an E2X packet alignment protocol designed to eliminate misalignment of delayed data packets as they are transferred from the 800Exp Embedded Exporter to the Exgine card within the 802Ex exciter. This packet alignment protocol eliminates the gaps and holes created by other systems and eliminating the need for external hardware to correct for alignment errors.

For information, contact Continental Electronics in Texas at (800) 733-5011 or visit www.contelec.com.

**PTEK'S GAMMA SERIES IS EFFICIENT**

PTEK says its Gamma Series transmitters can reduce an electric bill by 13,667 kilowatt hours and 10.251 tons of CO2 per year.

Based on PTEK's calculations, assuming an old 3,000 W transmitter running 24/7 or 8,760 hours per year, at a 60 percent efficiency with an overall efficiency of 54 percent (with power supply efficiency), 48,667 kWh would be used.

According to PTEK, its new HE Gamma 3,000 W transmitter is 83.3 percent efficient, overall efficiency is 75 percent (with power supply efficiency). It will use 35,000 kWh with an annual savings of 13,667 kWh.

PTEK says it achieved these power savings for the 1,500–10,000 watt Gamma series by moving from MOSFET devices to more efficient LDMOS-based amplifiers. This results in an appreciable decrease in overall cost of ownership when purchasing and operating HE Gamma transmitters.

Additionally, according to PTEK, efficiency of the LDMOS amplifiers not only reduces direct power consumed by converting AC power into RF power, but allows additional cost savings from the lower heat generation of the amplifiers. Less power is lost to generated heat and thus less power is required by HVAC systems to cool the building.

PTEK says the use of Direct Digital Synthesizer-based exciters further increases reliability and efficiency. The new-generation PTEK Gamma series exciters use a 1 gigasample-per-second DDS, which provides low noise and distortion, fast lock-up, precise frequency and modulation control and excellent low-frequency response.

For information, contact PTEK in California at (888) 889-2958 or visit www.ptekpower.com.

**NEW GENERATION OF ECRESO FM TRANSMITTERS RISES**

Ecreso says it recently launched a new FM transmitter range based on the key pillars of efficiency, quality, functionality and affordability.

Helios FM transmitters can offer up to 74 percent efficiency, the highest of any transmitter available on the market, together with the lowest heat dissipation, according to the company. Such efficiency levels can deliver power savings to a broadcaster and enable them to generate a swifter return on investment.

The Helios FM can operate as a standalone transmitter and deliver 20 W, 100 W, 350 W, 750 W, 1 kW, 1.5 kW or 2 kW supplied as a single, compact chassis: 2 RU up to 100 W and 3 RU up to 2kW. For higher modularity it can be supplied with a powerful separate amplifier(s).

At the core of all formats in the new range is an FM Band "Direct to Channel" digital modulator, which the company says offers exceptionally good signal quality and performance. The Helios offers additional features such as RDS and stereo coding, audio backup and an FM limiter, each integrated into the unit.

A front panel with LCD screen can be used for local configuration and the unit can be controlled remotely via a Web server, SNMP, RS-232 or GPIOs.

Products within the new Ecreso FM range are protected against overheating, VSWR and lightning and supplied with a five-year guarantee.

The line is competitively priced and within reach of most broadcasters' budgets, Ecreso says.

For information, contact Ecreso/WorldCast Systems in Florida at (305) 249-3110 or visit www.ecreso.com.



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LIVE AND LOCAL

(continued from page 46)

news four times a day. Each newscast is different and I don't have to re-record it every time (no one has to be sitting live at the mic for any of them).

Local obituaries are included in our local news; that fills an important gap in service in rural areas where there are only weekly newspapers. If you die on Wednesday and your funeral is on Saturday, without local radio no one will know you're dead until the following week and they'll feel bad because they missed your funeral!

PAY ATTENTION

Don't let the automation system run your life. Put in on pause once on a while and actually do some things live.

We do a live weekly question-and-answer call-in show with a local computer guy and another with a local gardening

listeners if their item is valued under \$100; we have a handling charge of \$5 to \$10 for larger items. Listeners love it and it works.

This may sound obvious; but make sure you have voice mail or at least a cheap answering machine hooked up to your phone line. It makes you accessible 24 hours a day. Larger operations will wonder why I even mention this, but it amazes me how many times I have tried to call small-market stations after hours and the phone just rings and rings. I can't help to think about how many news and sales opportunities have been lost because no one can contact them.

EMBRACE YOUR ADS

One more thing, never use the words "commercial-free" over the airwaves.

If you say this you're doing two negative things: You're telling advertisers that they are not welcome on your station (or that no one advertises with

It amazes me how many times I have tried to call small-market stations after hours and the phone just rings and rings.

shop. We air another show featuring the local veteran's service officer ... one with a local librarian ... one with the guy at the local sporting goods store to talk local hunting and fishing ... and the list goes on and on. Most of those programs are sponsored.

When you *are* running your automation, you still have to pay attention to what your radio station is doing. It amazes me how many operators apparently walk out the door at 5 o'clock on Friday afternoon and don't pay any attention to anything at station until they return on Monday morning. You'll know these stations when you hear them — or maybe I should say when you don't hear them, because they broadcast a lot of dead air.

On Sunday morning we air hour-long worship services from three local churches. One is live via the phone line, another is recorded via phone line and delayed, while the third is recorded at the church and hand delivered for later playback.

In the day of Craigslist and eBay, you should definitely be running a program allowing listeners access to some kind of radio "classifieds" to buy and sell personal stuff. We call ours the "Rummage Report." Listeners send the items to us via mail or e-mail, we record it and update it three or four times a week. The program runs twice daily with a commercial sponsor. It's free to

you); and you're telling listeners that commercials are a bad thing. The last time I checked, commercials were our main form of income. Embrace them, treat them like little local news stories that are informing your listeners what's happening in your local businesses.

Commercials are a good thing and an important part of local programming. Never apologize for them.

Well, that's how we do it with a full-time staff of four (including our office manager who does no air work) and a couple of part-timers. You don't need a full-time announcer for every shift; you don't need a full-time news director and meteorologist; you don't need John Madden to sound great. Most important, make sure your listeners know you're having fun doing what you do. Get to know them personally when possible. Buy some donuts, put the coffee pot on and invite them to stop by to help celebrate the anniversary of your station every year.

You don't need a large staff and deluxe facilities to sound live and local. You just need a little creativity and a personal touch.

Maynard Meyer is a 45-year veteran of small-market rural radio. He is co-owner, GM, program director, news director, chief engineer and morning personality at KLQP(FM) in Madison, Minn. He recently was inducted into the Minnesota Broadcasting Hall of Fame.

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Sound 'Live and Local' on a Budget

Award-Winning Broadcaster Offers Tips From Madison, Minn.

COMMENTARY

BY MAYNARD MEYER

You don't need someone sitting by the board 24 hours a day to sound "live and local." It's admirable that many small stations want to use this type of format; but it pains me to see them struggling and going out of business because of it; they just can't afford it.

Over 29 years at KLQP(FM) we have found a lot of tricks that can make you "live and local" on a shoestring budget. I hope you find some of these tips to be useful. Some of the ideas can't be used in every market, but I believe there are a few here that even major-market stations could use to offer something a bit different than the competition.

First, I'll give you the basics of our 25 kW commercial FM station.

We don't use a satellite music service, we use music on hard drive, all done in-house, and we run 24 hours a day with a Smarts Broadcasting System Skylla automation unit. We air CNN Radio News on the hour, Minnesota News Network regional news on the half-hour and ag reports regularly from the Linder Farm Network, a statewide service here in Minnesota.

Our city of license has a population of about 1,500 people (not a typo!). We serve about a half dozen towns of similar size nearby. A couple of regional shopping communities of about 20,000 population are found at the outer edges of our coverage area, which covers around seven counties in Western Minnesota and Eastern South Dakota.

A STATION, NOT A JUKEBOX

Now that you know who we are and where we are, let me tell you how we do things here.

We don't waste our time voice tracking or back-announcing songs. Our listeners seldom complain and this practice results in no direct monetary return to the station. Your time can be better spent doing things that could make some money.

We treat music as something we use for filler when we don't have enough commercials or other things to talk about. Serious music should be left to iPods and satellite radio. Remember, you're running a radio station, not a jukebox.

We will, however, take listener requests for anything from polkas to Taylor Swift to Bon Jovi! We have fun with our format, which is true variety.



The author, right, talks in the main studio with Paul Raymo, station sports director and sales rep.

Our listeners tell us they enjoy listening because they never know what they'll get next (which is more than you can say for those stations that stick to a repetitive playlist day in and day out).

Let your listeners determine what kind of music they want to listen to once in a while. Don't always decide it for them.

Take advantage of the time announcement feature in your automation system and record the times using your own announcers. It takes a while to record 720 time announcements, but people are amazed that I'm giving the time at 3 a.m. Incidentally that's 1,440 announcements to record if you differentiate between AM and PM, but I think most listeners can figure that out on their own.

People like to hear the time. It's important to have your radio station help keep them on schedule.

If you use a commercial weather service to update your forecasts automatically, be sure to use their current conditions feature if they offer it. People want to know the temperature, especially if they live in Minnesota! If you don't use their current conditions, at least get on the air yourself and give the conditions once in a while.

LOCAL TALENT

It's better to develop your own play-by-play announcers from local sources. Retired coaches, enthusiastic fans, even high school students can turn out to be

great announcers. You are better off using local announcers than you are trying to bring in "the best professionals money can buy." Local listeners don't want polished professionals, they want to have fun listening to people they know and people with whom they can identify ... people who actually know the kids out there playing.

We record the games and offer them as podcasts for those who may have missed them. We air two or three high school games every week, sometimes more, sponsored by a list of local "Sportsbooster" businesses a mile long. We don't concentrate on one specific school, we rotate several schools within about a 50-mile radius. We cover everything from football, basketball, baseball and softball to cross-country and varsity dance line.

Record several announcements for local happenings — benefit dinners, meetings, etc. Put two or three on a cut and program them to rotate periodically throughout the day. Update them daily.

Record a cut with local birthdays and anniversaries. Use it as filler periodically throughout the day. One of the best ways to show a local advertiser (or potential advertiser) how many listeners you have is to put his or her birthday on the air.

Record your local news on a variety of cut numbers and change them around a bit during each newscast. We run local

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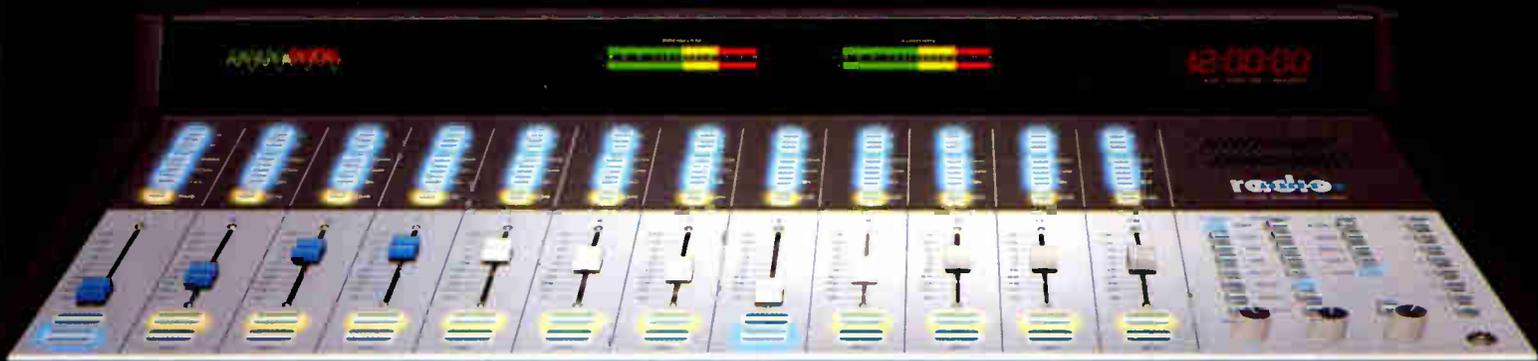
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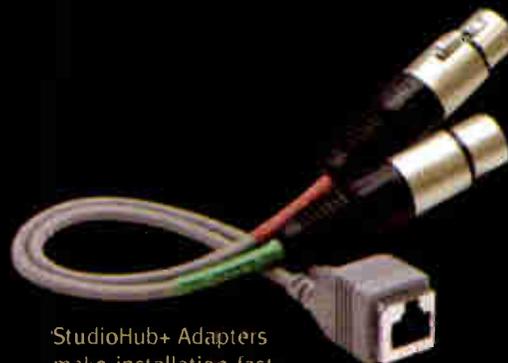


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