

◆ NEWS WATCH ◆

CBS Radio, AOL Team Up Online

A new player developed by CBS Radio and incorporating AOL features will be launched this spring, signaling the end of a four-year deal between AOL and XM.

CBS Radio and AOL characterized their deal as a "ground-breaking partnership" whereby CBS will contribute programming to AOL Radio's Web site.

The companies will combine efforts to create product enhancements including a new player as well as complete support for the Mac, they said.

Once the AOL Radio's stations are integrated into its operations, CBS Radio will drive advertising sales for AOL's 200 or so stations in addition to its own online streams of approximately 150 stations and custom channels.

Meanwhile, XM's own Web site will now be the online home of its music channels. The channels that XM now contributes to AOL Radio will no longer be available there beginning May 1.

XM Radio Online will be available through May 30 for \$2.99 per month for the first six months and will offer some 80 channels of commercial music and other programming.

XM EVP/Chief Marketing Officer

Vernon Irvin said the AOL/XM relationship was a good way to introduce subscribers to XM's service for free.

CCR Outlines Sat Rad Deal Conditions

WASHINGTON Clear Channel opposes the proposed merger of Sirius and XM; in its most recent discussions with advisors for Chairman Martin and Commissioner Deborah Tate, the broadcaster noted that if approved, the deal would aggregate 25 MHz of spectrum to one licensee. "more than that allocated to

the entire AM and FM terrestrial radio bands combined."

In filings to the FCC, the broadcaster also argued for six conditions if the deal is approved:

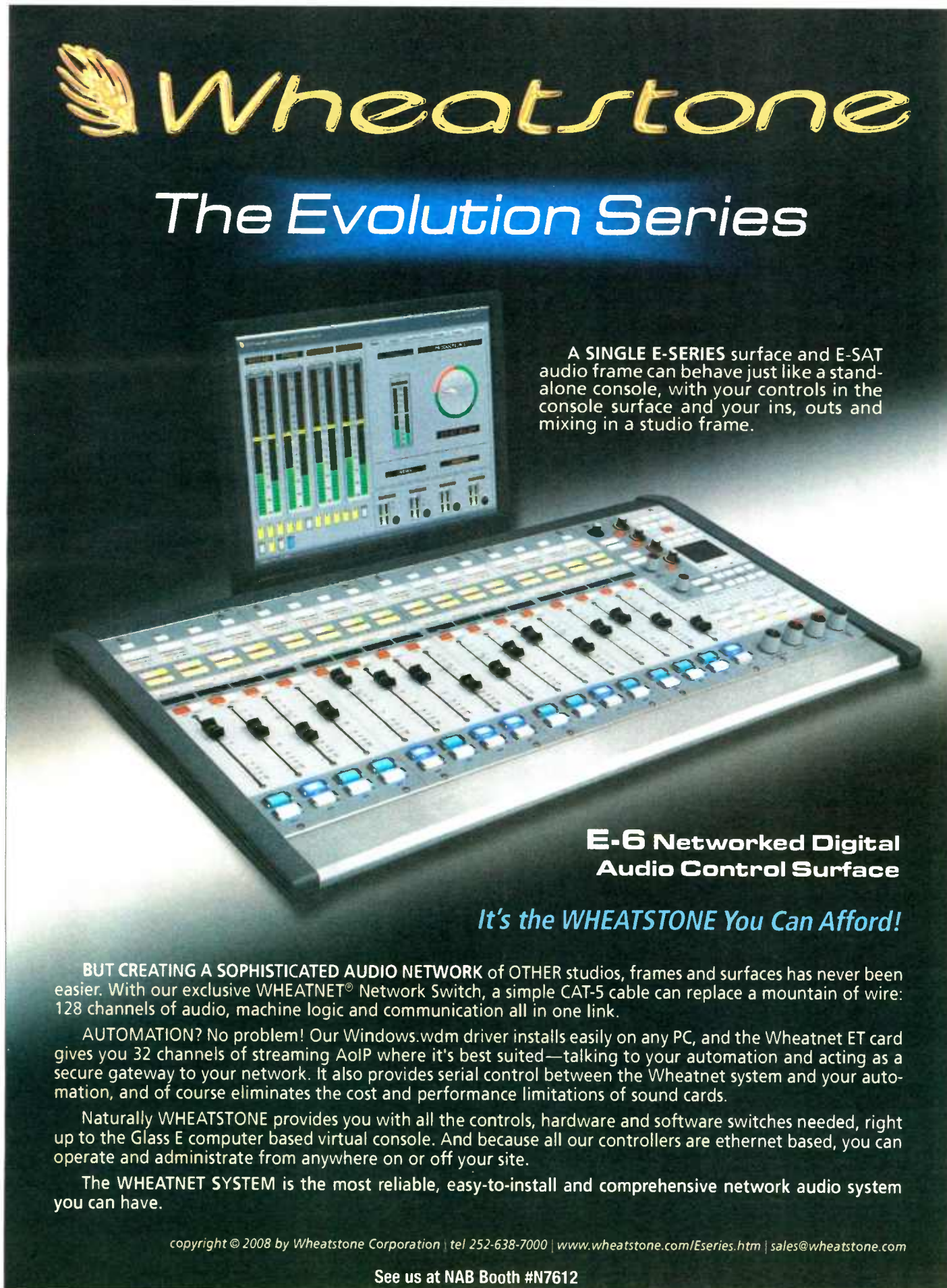
There must be "intramodel" competition within the satellite radio service which could be accomplished through a third party that leases satellite capacity from the merged entity; a public interest set-aside of no less than 5 percent of satellite capacity should be required; the merged entity should be subject to the commission's broadcast indecency rules; a combined XM-Sirius should be prohibited from transmitting local programming and from receiving local ad revenues; and HD Radio receive capability should be built into all future satellite radio tuners.

Bush Opposes Reviving Fairness Doctrine

NASHVILLE, Tenn. President Bush spoke out against efforts to reinstate the Fairness Doctrine during an address to religious broadcasters.

"This means that many programs wanting to stay on the air would have to meet Washington's definition of balance," said the president at the National Religious Broadcasters convention in March. "We know who these advocates of so-called balance really have in their sights: shows hosted by people like Rush Limbaugh or James Dobson, or many of you here today."

Rep. Matt Pence, R.-Ind., is leading the opposition against efforts to revive the Fairness Doctrine in the U.S. House.



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Dahl Shuttters Company, Sells Its Parts

Harbach Buys Dahl Ham, Broadcast Parts Business; Plans for a June Re-launch

by James G. Withers

EL PASO, Texas The amateur radio and professional broadcast pieces of the Peter W. Dahl Company will soon have new life with another amateur radio component supplier, Harbach Electronics.

Dahl said he is optimistic about the experience his customers will have with Harbach.

It's been a long road for Dahl, which occupied an exclusive niche supplying custom wound transformers and power chokes for broadcast transmitters for more than 35 years. Now it has closed shop.

As reported in the Dec. 12, 2007 issue, Peter Dahl is suffering from advanced Parkinson's disease; that forced his decision to shutter the business.

"We still have the Web page up, and some unsold inventory, but other than that," he said in early March, "we have shut it down." When he failed to get offers for the company as a whole, he was obliged to sell it off in two pieces, the building and land going to one buyer, the broadcast and ham parts and intellectual property to another.

The company's 17,000-square-foot building and several acres of land were sold to an El Paso business just after the

rights to the company name, and that is the real value," Weinberg said.

He will focus on the professional broadcast and amateur radio markets, and will market Dahl products under the Peter W. Dahl name. "Peter did some military and government work, but we are not going to pursue that work. I've got a lot of experience providing amateur radio parts and Mad Cap already builds large broadcast power supplies, so I'm going to stick with those two things."



Dahl, meanwhile, said even considering the sale of the real estate and the IP, he will absorb a serious shortfall.

"We are looking at a loss this year of around \$200,000, mostly due to missed



of Electrical Engineering in 1966.

"I started this business almost by accident," Dahl said. "Back when I got my ham license, I had some 4-1000 tubes and couldn't find the right filament transformer to go with them. Rather than throw them out, I decided to wind a transformer myself.

"Word got around and pretty soon, I was winding transformers for other hams.



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first of the year; Dahl was scheduled to vacate the property and turn it over to the purchasers in March.

Harbach Electronics

All of the intellectual property, including blueprints, designs and CAD workstations, were sold separately to Jeffery Weinberg, who owns Harbach Electronics. The Polk, Ohio-based Harbach specializes in ham radio upgrade kits and parts. Neither Dahl nor Weinberg would disclose the price.

Weinberg noted on his Web site in March that a computer crash caused a loss of data, forcing him to process his orders manually. He expected to have the issues resolved by the end of March, in time for the June re-launch of the Dahl operation to begin servicing Dahl's customer base.

Weinberg has been a ham for more than 10 years. He purchased Harbach Electronics when the previous owner died.

Of his plans for the Dahl addition to his business, Weinberg said he plans to add the Dahl product line to his offerings by June, once he has formalized a manufacturing deal with Mad Cap LLC in Canton, Mass., "for the actual winding and construction of the transformers built to Peter's original specifications."

"I lost the real estate to another buyer," he added, "but got all of the IP, even the

orders and unsold inventory, and we still have to pay a number of vendors." Underscoring the dissolution of the company's Texas operations under Dahl, its eight employees have been let go; except for the

**I think this will be
a good fit.**

— Peter Dahl

efforts to sell remaining parts stock via the Web site (www.pwdahl.com), the company is no longer doing business, he said.

Filament transformers

Dahl has been a licensed ham radio operator, K0BIT, since 1955, currently holding an Extra Class license; he's been designing specialty transformers and reactors for more than 40 years.

The Peter W. Dahl Co. originated as a sole proprietorship in Minneapolis in 1964 before Dahl graduated from the University of Minnesota with a Bachelor

From that, I started making transformers for broadcast transmitters."

In 1966, he moved the company to El Paso and ran the business out of his garage before moving it to another location and reorganizing it as a corporation in 1977.

Dahl and his wife bought the land and the building where the company has been located in 1985.

When told that this writer was an occasional customer and had been impressed with the speed with which his company could rewind and turn around a burned-out transformer to get a broadcaster back on the air, Dahl lamented that in the end, delivery had become a problem.

"It (the Parkinson's) got so bad, that we were running very late on some orders."

He continued, "It is a tough thing to be the heart and soul of the company, since when you stop, the entire company stops." Given the delivery problems caused by his health issues, Dahl said, he finally decided to try to sell, and he is optimistic that selling the designs to Weinberg will work to his customers' advantage.

"Jeffery is a ham — W8CQ — just like me," he said, "and Harbach already supplies components for amateur equipment, so I think this will be a good fit."

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Bill Ashley Turns a Career Page

Bill Ashley is one of those fellows who signs his e-mails "73" instead of "Best regards."

You might see a guy using shorthand like that and think, "Oh, OK, I know the sort Bill Ashley is: technical, meticulous to the point of nitpicky, a storyteller, a radio buff. He's a character. He makes awful puns and swoops in on the donuts. He's probably always going on to his family about op-amps or how much radio has changed and about why WTOP moved its tower site somewhere in 1967."

There you go, stereotyping those radio engineers and ham types.

Still you'd be right.

Collins and Beasley

Ashley retired from his sales position at Bradley Broadcast & Pro Audio recently. I share the news because he has touched many people through his careers as engineer, equipment salesman and manufacturer, including me.

Bill started in radio at WPAQ(AM) in Mount Airy, N.C., a town that would become famous as Mayberry RFD. He worked for and learned from the late Ralph Epperson, whom Bill describes as a gifted engineer and a legend for his knowledge of mountain string music indigenous to the Southern Appalachian highlands.

"Ralph was the first of his family to go into broadcasting, but not the last.

Youngest brother Stuart is the founder of Salem Communications; and a cousin, George Beasley, started Beasley Broadcast Group," Bill said.

"After high school, I moved to Atlanta and worked for a while doing what was then called 'top 40' radio at WAKE. My interests, though, were always more on the technical side." So he went to work in 1962 for WDBM in Statesville, N.C., half-owned by a consulting engineer from Nashville and half by a sales rep for Collins Radio Co.

"The station was a dream: it was a living catalog of Collins products," he recalled.

"After a couple of years honing my



Family members and Bradley co-workers salute Ashley on his last day in the office.

engineering skills, I was lured away by George Beasley. The next four years were spent planning, building and caring for George's expanding station group.

"Then in 1968 I decided that I wanted to come to the Washington area and try to work my way into the consulting side of broadcasting, since I really enjoyed doing AM frequency searches and allocation studies."

He took a job at pioneer all-news station WAVA and wound up liking it so much that he stayed even into its rock years of the early 1980s. Then it was on to Mutual Radio Network, where he transferred from the network side to the satellite side and wound up manager of field engineering after the network was sold to Westwood One.

"When the satellite division starting to come apart in 1987, I called my old friend Art Reed" — who had worked for Ashley at WAVA and now was running equipment dealer Bradley Broadcast — "and asked him if he'd let me sell for a few months until I could find a more stable engineering job."

Twenty years and seven months later, Ashley retired from that position.

Gentleman

Bradley Broadcast — or as Bill quipped once a day, "Broadly Broadcast" — saluted

him with a party. Owner David Matthews, General Manager Art Reed, Marketing Manager Joellen Reed, past and present co-workers, family and clients took part.

Matthews presented Bill with a plaque naming him a "certified radio god" in the art and science of "all things broadcast" (with a minor in highly annoying puns).

Bill told me he had many feel-



Bill Ashley receives a going-away present: a cartridge in a bare tree, the punch line to one of his favorite stories. Bob Eburg makes the presentation.

ings after the years at Bradley and more than 50 in the business.

"Broadcasting has been such an integral part of my life since I was a teenager, I simply cannot even imagine doing anything else."

Many people have befriended him, he said, including industry leaders on both the station and manufacturing sides.

"One memory I must pass on is the time you and I were sharing a hotel room at the Radio Show in Los Angeles and you couldn't sleep because of my snoring."

I had blocked that one out, apparently.

My memory of Bill in the office was him on the phone, pawing onto clients the same five or six puns and worn jokes with which he berated us daily in the hall. You usually could hear him spinning some long tale or shaggy dog story. His customers loved it. When something struck him as funny, you could hear him giggling —

From the Editor



Paul J. McLane

there's no other word for it — several offices away.

He also knew his stuff, was willing to impart it and generated a lot of loyalty from engineers who sensed they had a peer on the other end of the line.

Not every customer was pleasant. One from New York called wanting to return a Marantz cassette recorder.

"She claimed that I'd told her she could sync it to her 16 mm film camera. First of all, I had never told her that. Second, she didn't even buy the machine from us."

That is life as an equipment salesman.

"When I told her I couldn't take back a machine we hadn't sold her, she got very unpleasant, calling me all sorts of unprintable names. Must have been a full moon that day."

Bill would tell me about how the Washington area had changed since he moved here. He knew his history farther back too. If I wanted to know what had occupied the site of the Pentagon before it was built, he'd be the one to tell me.

I remember once during a heated sales meeting he raised his voice at me. I was stunned. You simply didn't hear that from him. He hollered, "Just let me finish!" With another person I might have taken offense. But he was right; in my eagerness I had interrupted him, and hearing that helped me learn to listen better, something I thought I already knew.

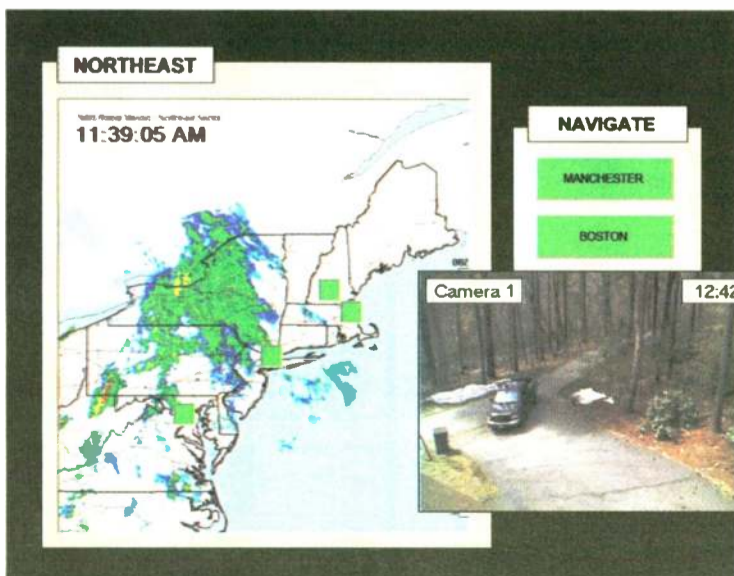
NPR's Director of Engineering Technology Bud Aiello met Ashley in the 1970s and attended the retirement party.

"Throughout all of these years I must say first Bill was always a gentleman,"

See ASHLEY, page 8 ►

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World Radio History

FM Power

► Continued from page 1
 take care of" before the spring show. He also could not say there definitely would be a request to the FCC at all.

"There are still some issues being discussed," Marino said, without disclosing details. Certainly IBOC power will be a topic of conversation at the convention, he added.

Why do this?

The impetus behind the effort came from major broadcast groups participating in the HD Radio rollout.

"It's generally acknowledged that, in many cases, the digital FM coverage is more abbreviated than analog," said Greater Media Vice President of Radio Engineering Milford Smith.

"If HD Radio will be the ultimate replacement for analog and ubiquitous, it needs to be close to what coverage we had" with analog, he said.

The digital signal at present generally is seen as delivering better than good stereo coverage but not quite as good as mono coverage. Proponents seek an up to 10 dB increase in digital power, and the hope is that for the first time since stations began transmitting both an IBOC signal in addition to the analog signal, the coverage of both signals would be equal.

A 10 dB increase is a 10 times increase in digital power. "This is like 60 kW instead of 6 kW in the analog world," said one engineer.

Existing FM stations transmitting both digital and analog are required to set the IBOC power level 20 dB below the analog power level.

One area of concern with the FM digital signal is reception on portable devices that are expected by IBOC proponents to come on the market later this year.

Portables typically have small antennas. A car or clock radio can have a long

This is a possible enhancement to HD Radio that needs a good airing.

— Milford Smith

antenna, but a portable may have an internal one that won't pick up as much signal in the same RF environment.

"In most portables, the antennas are essentially half of a dipole with no ground plane," said one expert, who added it's essentially like having half of an antenna in a moving device. Proponents said boosting digital FM power would help IBOC reception on portables.

See FM POWER, page 6 ►

FM IBOC Power Testing Stats

CBS Radio, Clear Channel Radio and Greater Media conducted several tests in the fall of 2007 to determine effects of increasing FM IBOC power levels (related story, page 1).

The first part of the testing, conducted by Ibiqity Digital and signed off on by Hammett & Edison, looked at the digital coverage increase at the higher power level, comparing digital coverage at 20 dB below analog power and 10 dB below analog power level.

Tests occurred September in three geographic areas with differing terrain characteristics: Detroit; New York, Connecticut and Rhode Island; and Los Angeles, San Diego and Santa Barbara.

Grandfathered short-spaced stations were included in testing, stations that were only 40 miles apart, rather than the required 100 miles of separation. The testing showed "significant improvement in digital coverage even in interference environments," said one engineer.

Super-powered FMs also were tested.

Though test results hadn't been released publicly as of late March, in all cases, according to documentation obtained by Radio World, the increased digital power level "significantly improved" digital coverage — such as by 26 percent in Connecticut and by 33 percent in Detroit.

Even with increased digital power levels, the FCC spectrum mask would still be maintained, according to the results.

Results reportedly show the higher power level would not cause "unacceptable interference" in most circumstances, even outside a station's protected contour.

Several papers in the Broadcast Engineering Conference during the NAB convention relate to the elevated FM digital power issue, including one by Glynn Walden of CBS Radio about building penetration.

They include "A New Approach to Peak-to-Average-Power Reduction for FM IBOC Transmission" by Philipp Schmid of Nautel; "An Improved Coverage Prediction Method for HD Radio" by John Kean of NPR Labs; "Bandwidth & Frequency Allocation Issues in International Digital Radio AM & FM broadcasting," by Chuck Kelly of Nautel; "RF Signal Performance Measurements of Consumer FM Receivers and Coverage Effects" by John Kean; "Implications of IBOC Injection Levels above -20 dB," by Gary Liebisch of Nautel; and "FM IBOC Building Penetration Tests at Elevated Digital Subcarrier Levels," by Glynn Walden of CBS Radio.

— Leslie Stimson

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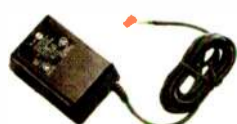
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FM Power

► Continued from page 5

A digital power increase may also help IBOC signals penetrate buildings.

"We generally see 8 to 10 dB attenuation just because of building material," like steel and concrete, one engineer said. A spectrum analyzer inside such a building typically shows a 10 dB lower reading for the digital signal, he said.

The noise floor, such as RF noise from power sources such as computers and lighting, hits the digital signal more noticeably because it's 20 dB lower than the analog signal, according to IBOC experts. And while the IBOC carriers are durable, it gets harder to recover the waveform when those RF noise sources increase.

CBS Radio, Clear Channel Radio and Greater Media — with some assistance from Iqity Digital — tested the elevated FM digital power levels in two parts on some 13 stations using experimental authorizations (see sidebar on page 5).

Testing

Public radio is studying the issue as well.

NPR Labs is studying a variety of IBOC coverage improvements, including elevated power, and will have more to say about this research at the upcoming NAB Broadcast Engineering Conference.

In March, the group said it is still evaluating the difference between analog and digital coverage, and it's premature to say how NPR Labs will come down on the power increase, according to Senior Technologist John Kean and VP/CTO/

Executive Director Mike Starling.

Although NPR Labs' investigations into this area coincided with field testing carried out by the three big commercial broadcast groups, NPR Labs was not involved in that study.

"Only when we're comfortable with our independent studies and feel confident about more fully understanding the science of the digital radio coverage improvement options and interference consequences will we adopt a position on the matter," said Starling and Kean in a statement.

"As part of our year-long research project, three basic avenues of potential HD-R improvement have been studied: (1) receiver and receiving antenna performance, which poses no risk of increased interference; (2) single-frequency networks, i.e., boosters; and (3)

increased digital sideband power.

"Given the potentially closer spacing afforded by contour protection allocations in the educational reserved FM spectrum, the second strategy poses the least risk of objectionable interference to first-adjacent analog stations, a fairly important consideration since 99 percent of our listeners are still tuned to the analog signal only."

'It's optional'

Certainly the initiative, though not yet at the level of an official FCC request, has its critics, who cite potential for increased interference as well as increased implementation costs.

One wrote on an engineering listserv: "The NAB has determined that they 'think' the increase to 10 percent will work without interference or damage to the analog. They haven't said they're sure. How do you go to the FCC without being able to document your claim?"

Another engineer said in an interview that an FM power increase would result "in a replay of the AM [interference] problem."

One technical observer said the trick is to find the appropriate higher power level and yet avoid host interference to the analog carrier from the collocated digital subcarriers — and without negatively affecting another desired improvement, digital boosters.

A digital power increase may also help IBOC signals penetrate buildings.

Some stations don't have the headroom needed to implement the power increase in their transmitters, sources said, while other stations could experience self-interference due to more strict transmission system performance requirements. Another possible shortfall is increased interference to first-adjacent-channel analog listeners.

It so happens that a 10 dB increase in the digital power is 10 times the amount of power, according to several sources, meaning a corresponding increase in power consumption. That costs.

"It's important to note that [if approved], it's optional," said Smith. "Because it costs money. Not everybody will want to do it."

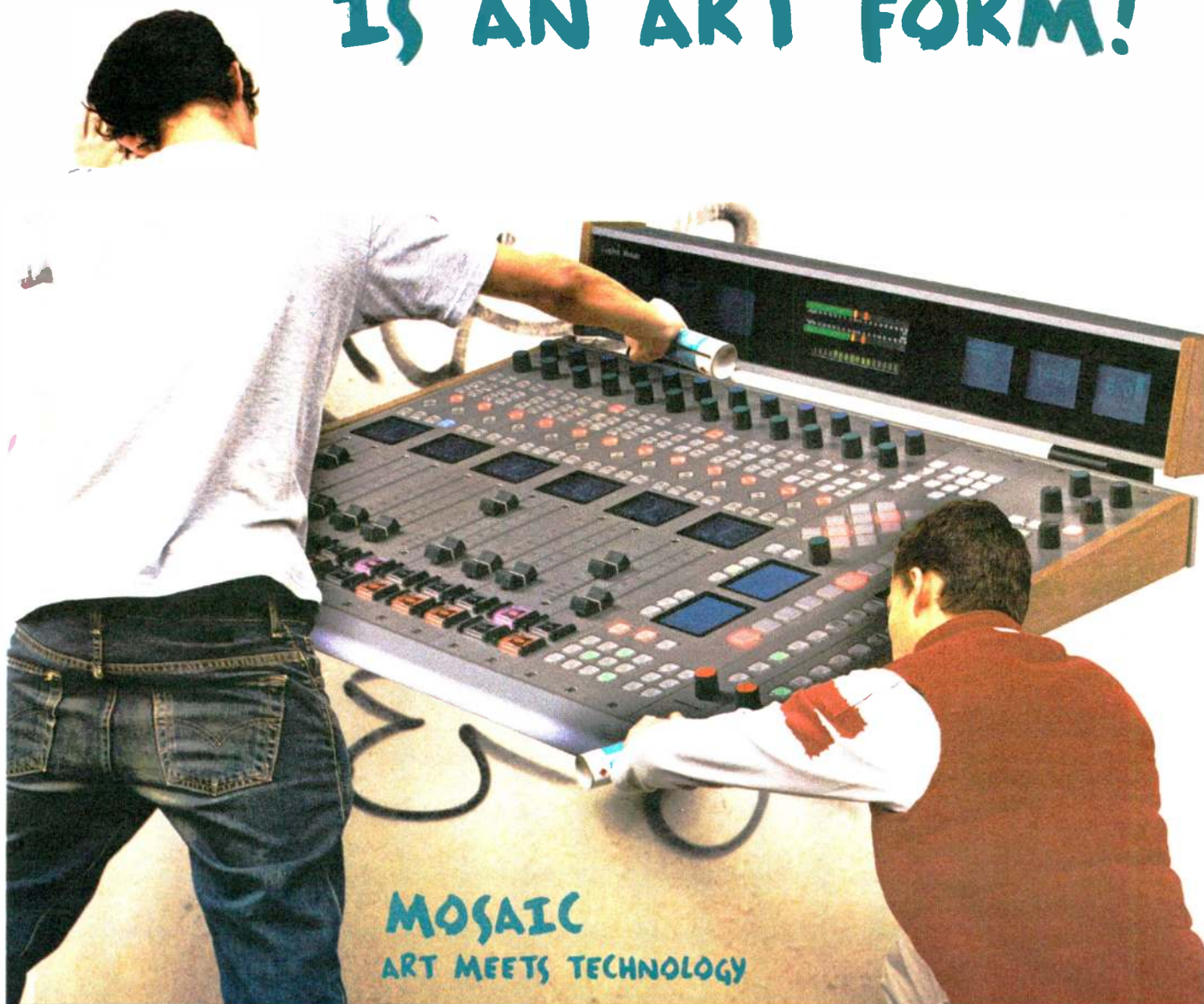
Implementation costs would depend on how a station has its IBOC system set up, he said. Low-level combining of the analog and digital signals before the power amplifier may work for this purpose using a dual-fed antenna designed for digital and analog inputs, he said.

Two efforts reportedly will be announced at the show to make HD Radio implementation more affordable.

Smith said that Greater Media would think about implementing a 10 dB increase, characterizing the net coverage improvement at his company's test stations as "very significant," both in the size of the coverage area and the robustness of the signal in that area.

The digital power increase "is an issue that needs to be out there and discussed," he said. "This is a possible enhancement to HD Radio that needs a good airing." ●

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Shark, shown interviewing BERT MCCRACKEN, lead singer for THE USED, says: "When Comrex told me that their internal code name for ACCESS was "THE NEXT BIG THING" I got it right away. This IS BIG – I was live, on the air, in places I could NEVER have gone with regular old technology. THANKS COMREX!"

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FM HD-R Implementation Options Abound

Signal Combining Choices Grow as
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by W.C. Alexander

Cris Alexander is director of engineering for Crawford Broadcasting. This is one in a series of tips about HD Radio implementation. The series is archived at radioworld.com.

Unlike AM stations, FMs considering HD Radio conversion have a lot of implementation options.

High-level combined, low-level combined (common amplification) and separate antenna are just three of the available choices. While people may tell you that one option is "best," the truth is that the most suitable option for your site is only determined by careful analysis of the situation.

Some of the variables that enter the equation are the TPO and antenna gain, age/type of existing transmitter and antenna, auxiliary antenna availability, transmitter building type and configuration, cooling/ventilation system size/type and condition, generator capacity and even headroom in the transmitter building.

The high-level combined option has the advantage of allowing a station to continue to use its existing analog transmitter, provided that it has adequate power capacity to overcome injector losses (typically 10-11 percent). The analog trans-

mitter continues to operate with its Class C (or solid-state) efficiency, without the need for a linearized power amplifier.

The disadvantage is that a 10 dB injector must be used, meaning that 90 percent of the power of the digital transmitter and 10 percent or so of the analog power are

dumped overboard into a reject load.

LLC

The low-level combined option has the advantage of simplicity — one transmitter taking care of both analog and digital signals. RF plumbing is simplified, as is audio routing, remote control, etc.

The downside is that efficiency is low because of the required linear power ampli-



A reject load is required for high-level combined FM systems. Outdoor loads like this help with costs by keeping the heat outside.

er; a linearized PA operating at 10 kW output could require 25 kW or more input power. That's a lot of additional power for the convenience and simplicity of a single FM + HD-R transmitter!

The separate antenna option offers the advantage of requiring no injector, no reject load and a much smaller digital transmitter. A 10 kW TPO station using a separate digital antenna, with gain comparable to the analog antenna, would require a digital transmitter capable of only 100 watts average.

Compare that to 13 kW TPO for an FM + HD-R transmitter and 11 kW/1 kW analog/digital for high-level combined operation. The downside is that dual-input antennas and interleaved antennas tend to be heavy. Structural analysis of the tower is almost always required and a structural upgrade may be needed.

Use of an existing, licensed, auxiliary antenna has the advantage of not requiring additional tower loading, but such antennas typically are located lower on the tower than the main antenna. As such, the digital coverage could well be considerably less than the analog coverage.

Depending on the location of the transmitter site relative to the target coverage area, this could be a big factor. In my experience, there seems to be a break point around 7 kW TPO where the low-level combined option becomes less attractive.

This is changing as manufacturers are now beginning to offer single-box transmitters capable of producing HD-R + FM power levels of up to 25 kW with 50 percent or better efficiency. But even with a transmitter capable of producing the desired HD-R + FM power level, the low-level combined approach may be more expensive, both in the short term, due to one-time capital costs, and long term, because of operating costs, than the high-level combined option.

What questions would you like addressed in this series? Write to Lstimson@nbmedia.com.

Cris Alexander is director of engineering for Crawford Broadcasting and a contributor to Radio World.

are too small to interest larger manufacturers, giving us a nice little niche." On-air phone calls at Bonneville's WTOP are routed through an Excalibur HA-1 Hybrid Adapter. For a number of years, the music and fireworks at the National 4th of July celebration on the Mall were synchronized through Excalibur HC-1 Handi-Couplers.

"A matter of pride for us is knowing that 24 Handi-Couplers were purchased a few years back by the White House Military Office for use by White House Communications." Bud Aiello says he's never had an Excalibur device fail.

It's Ashley's goal to do volunteer work for his church and get in more bicycling and hiking. He may try his hand helping Habitat for Humanity or The Wright Experience, which built replicas of the Wright brothers' airplanes.

"I've had two offers so far to buy Excalibur, but I plan to hold onto it for another year or two just so I can still have a presence in broadcasting."

And reminding me of others I know who might sign with "73," Bill also says he will probably drop in and visit radio stations during his vacations (no doubt driving his family bonkers).

His last day at Bradley was "Leap Day," Feb. 29. It somehow seems fitting for this fellow with the ticklish funny bone and quiet warmth.

fier operation. A typical Class C power amplifier may exhibit 75 percent efficiency or more, and non-linear, solid-state power amplifiers can be even more efficient.

A linearized power amplifier capable of undistorted FM + HD-R operation may exhibit efficiencies from the low 40s to the mid-50s.

By way of comparison, while a Class C power amplifier operating at 10 kW with typical Class C efficiency would require in the neighborhood of 13 kW input pow-

Ashley

► Continued from page 4

Aiello told me. "He was always willing to help you if needed — or not, sometimes!"

"In the later years he was very good at assessing your situation and helping you to select the correct equipment for your project."

In 1974, when Congress was studying the possibility of instituting winter Daylight Saving Time in response to an energy crisis, Ashley testified before the House Committee on Interstate and Foreign Commerce about the effect that winter daylight saving time would have on daytime AM broadcasters.

No photo survives, but I like to think that he worked a pun or two in there to entertain the politicians.

Gadgets

Even if you haven't done business with Ashley, you might use one of his products, which bear the brand Excalibur Electronics.

The company was started in 1976 by the late Dr. Robert L. Holland of George Washington University, Ashley and their spouses.

Excalibur makes what Bill calls "little accessory-type gadgets whose quantities

Photo by Cris Alexander


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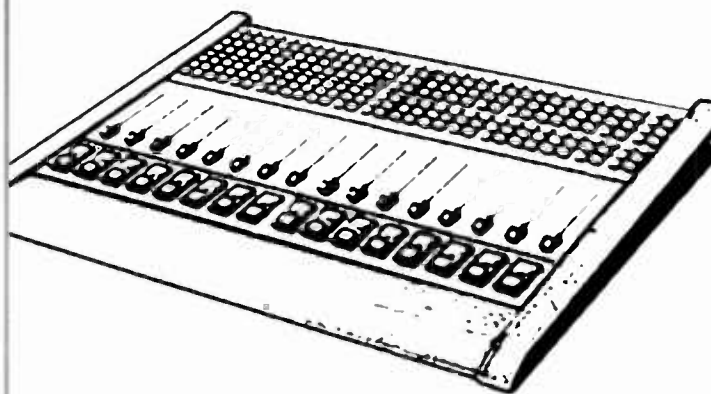
Comdial Executec® PBX phone, ca. 1996. Comdial was one of the leading PBX companies in both sales and technology, with a million-square-foot assembly facility and over \$7,000,000 in reported earnings. Comdial continued with traditional PBX tech and declining sales until filing for Chapter 11 bankruptcy protection in 2005, when all assets were acquired by **Vertical Communications**, a VoIP company.¹



Cisco® 7970 IP Phone, ca. 2006. Founded in 1984 as a manufacturer of multi-protocol routers, Cisco began, in 1998, to promote VoIP technology to Fortune 500 companies as a more cost-efficient, feature-rich alternative to PBX phone systems. In just 10 years, VoIP effectively killed the traditional PBX; VoIP revenue is projected to reach \$48 billion by the end of 2010.² Cisco annual revenue reached \$35 billion in 2007.³



Axia Element broadcast console, ca. 2008. Founded in 2003, Axia is a division of Telos Systems, worldwide leaders in broadcast audio equipment. Axia was launched with the mission of bringing proven technology from the computer world – switched Ethernet, audio routing via IP, distributed network architecture – to radio. Using open standards and bulletproof Cisco routing technology, nearly 1000 Axia consoles have been built in just 5 years, making Axia the fastest-growing console brand in radio.



Generic TDM console, ca. 200x. Some radio consoles and routing systems are still based on Time-Division Multiplexing, developed in 1962. TDM was once the basis of most (if not all) digital PBX telephone systems. Consoles and routers based on TDM employ centralized “card cages” that require all inputs and outputs to be wired to a single location. Like traditional PBXs, TDMs typically rely on closed, proprietary code, and cannot be easily or economically changed or expanded when new operating criteria arise.

Santayana famously noted “Those who cannot learn from history are doomed to repeat it.” Some people change when they feel the heat; others when they see the light. With that in mind, a quick comparison of telecom and broadcast technology reveals some common trends that broadcasters are finding hard to ignore.

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KWSO: Big Plans, Tight Budget

WARM SPRINGS, Ore. Radio stations owned and operated by Native American reservations represent many of the indigenous peoples of North America, including the Lakota, Navajo, Comanche, Chippewa, Cherokee, Arapaho and Hopi nations.

(Colorful on-air positioning statements include the one used by low-power KCIE(FM) in Dolce, N.M., with the slogan "100 Watts of Apache Power.")

Many Native stations are noncommercial entities dependent on local community fundraising and the help of volunteers to survive.

KWSO(FM) in Warm Springs, Ore., is owned and operated by the Confederated Tribes on the Warm Springs Reservation. The noncom station went on the air in 1986 and has grown to include seven full-time staff positions, said Sue Matters, the station manager.

"If there is a local event with a free meal, a fundraiser for a youth basketball team, a district Tribal Council Meeting, people across the reservation tune in because they know KWSO will have information about it," Matters said. "We carry a lot of local high school sports."

The Confederated Tribes include three tribes: the Wasco, Paiute and Warm Springs tribes. Nearly 4,000 people live on the reservation, Matters said.

The tribe's 3,000-watt station has an annual Tribal operating budget of \$180,000, but receives additional funding from Community Service Grants from the Corporation for Public Broadcasting.

The station has broken ground for a new facility with significant funding for the project provided by the Tribal Councils for all three tribes.

"We hope to begin building this year. We will share the building with the tribal newspaper, the Spilyay Tymoo Coyote News. Money is the big deal to getting the new building up," Matters added.

Despite a limited budget, she said KWSO officials have ambitious technological goals, including a new



KWSO(FM) sports announcing team at a Madras High School basketball game. From left, Ted Viramonte, Kenman Miller and Bobby Smith.

digital backbone for studio operations, streaming online and a digital conversion to go HD Radio and add additional channels.

"We are developing a five- to 10-year plan and it basically comes down to money to do all of this stuff," Matters said.

Already the station uses the iMediaTouch automation system and has 360 Systems Short/cut editors, Matter said. It successfully converted to Public Radio Satellite System's ContentDepot program delivery system last year.

KWSO's transmission facility, located on Eagle Butte at an elevation of 3,000 feet, is approximately five miles from its studios. The audio chain features a Moseley Digital two-channel STL, Harris 3.5 kW FM transmitter and ERI four-bay antenna.

KWSO employs a contract engineer to perform routine monthly maintenance and emergency response, Matters said.

The local Warm Springs economy is "horrible," Matters said, with local mills laying off workers. That likely will mean KWSO leaders will be forced to pursue more grants and underwriting for programming.



The KWSO(FM) broadcast tower on Eagle Butte in northern Oregon.

"We will need to offset any potential cutbacks in our tribal funding. It is likely the Tribal Department budgets will face reductions continuing into the years ahead," Matters said.

KWSO is a Native Voice One affiliate.

— by Randy J. Stine

Native

▶ Continued from page 1
"Native America Calling" and "Stories of Our People." It also owns KNBA(FM) in Anchorage.

NVI is considered one of the largest distributors of Native American content in the United States.

CPB awarded NVI approximately \$450,000 in startup and operational financing in 2006, according to a press release from Koahnic; NVI received a similar amount in 2007. The CPB has indicated it expects NVI to become self-sustaining over time.

NNN Podcast

Native Voice One "educates and celebrates" Native American life while pro-

viding program service from a Native point of view, said Burt Poley, its network manager.

It distributes seven Native national programs, including "Native America Calling" and "Earthsongs." Independent producers create all of the programming content carried by NVI.

"We continue to encourage production opportunities to assure a strong and growing list of offerings," Poley said.

"Content generation is the number one challenge we face."

NVI counts 31 affiliates and streams programming 24/7 online at www.nvi.org (see sidebar). It also offers "National Native News," another program it helps distribute, for podcast.



Native American program suppliers face funding challenges. Financial difficulties have sidelined several NVI shows this year alone, including "alterNative Voices" and "Wisdom of the Elders," Poley said.

"They have run out of money. Funding is always an issue. It has been down the last several years and things are extremely tight for many of the producers. The same goes for Native radio in general. A lack of funding for staff makes them desperate for content, and that means they rely on us for more programming," Poley said.

NVI operates out of office space it shares with KUNM(FM) in Albuquerque at the University of New Mexico. Poley said NVI hopes to begin raising the capital funds needed to move into its own building. Poley is assisted on technical matters by Charles Sather, chief engineer for Koahnic, who is based in Anchorage.

Poley described Native Voice One as the "portal" for program suppliers to upload their programming for distribution via the Public Radio Satellite System's ContentDepot.

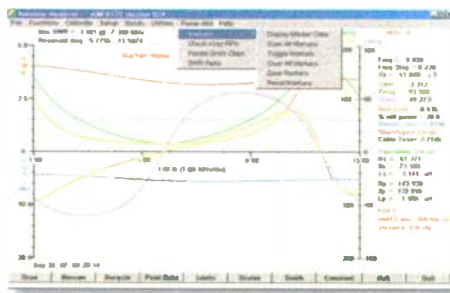
See NATIVE, page 12 ▶



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World Radio History

Native

► Continued from page 10

"Our producers upload their own programming as MP2 files from a PC or laptop. It's very simple. We just provide the pipeline to do it," Poley said.

NV1 radio affiliates then receive programming via the on-demand ContentDepot file-based system, which automatically downloads programming as IP-based audio files directly to a radio station's automation system.

ConDep

ContentDepot "allows stations to have more flexibility for programming instead of having to do things in real time or recording satellite programming," Poley said.

NV1 hopes to add new programming options this summer, Poley said, but much of NV1's growth will depend on fundraising and the ongoing support from CPB. That organization agreed to provide partial funding for two years. The agreement expires later this year. "We are still waiting to hear what CPB will award us for 2009," he said.



Burt Poley, NV1 network manager and Frank Blythe, founding executive director of Native American Public Telecommunications, shortly after his retirement visiting the NV1 offices in December 2006.

NV1 replaced American Indian Radio on Satellite (AIROS) in 2006 as the primary distributor of daily and weekly Native programming to public radio stations. AIROS was a service of Native American Public Communications.

Most of NV1's programming is in English, Poley said. However, many local tribal stations will broadcast some of its programs in native languages.

Possibly the best known and most widely heard Native program is "National

Native News," a five-minute daily newscast that covers topics of interest to Native Americans. It's heard on approximately 200 tribal and public radio stations in North America and is distributed by NV1.

"We focus on spot news, but we do feature stuff, too," said Antonia Gonzales, host and producer of the program. "We will particularly focus on topics that affect tribal people, including healthcare. Native Americans suffer some of the biggest health disparities across the country, whether it is diabetes and heart disease."

"National Native News," which celebrated its 21st anniversary earlier this year, has more than 40 stringers watching for news that will affect its listenership, Gonzales said.

The newscast, which originates from Albuquerque, is funded in part by CPB and, like NV1, is division of Koahnic Broadcast Corp.

Gonzales has seen firsthand the financial struggles of many tribal radio stations. The nation's economic woes have exacerbated the struggles of some broadcasters.

"We need to get more Native Americans involved in broadcasting and aware of our services. There are a lot of Natives in print journalism, but not radio," Gonzales said.

NEWSWATCH

GAO Criticizes FCC Enforcement

WASHINGTON The FCC processes 95 percent of complaints it receives from the public but does a poor job of tracking grievance resolution, according to congressional auditors.

The Government Accountability Office reported that most FCC investigations into consumer complaints are closed with no action and that, because of bad FCC recordkeeping, the GAO can't determine why, or even whether, some cases were closed without action.

The commission replied that it does track complaint resolution and the GAO exaggerates the number of complaints closed without action.

FCC Chairman Kevin Martin said in a statement, "Since I became chairman, the Enforcement Bureau is responding to 100 percent of consumer complaints. Additionally, under my chairmanship, the commission has collected a record amount of fines, forfeitures and consent decree payments." He added that the GAO made some "valuable recommendations in the areas of enforcement data collection and analysis and performance management practices" and that the commission was already working to address those issues.

The GAO reports that the Enforcement Bureau looked into about 46,000 complaints from 2003 through 2006; and that as of December 2006, the Enforcement Bureau had closed about 39,000 of those investigations.

About 9 percent of closed investigations resulted in enforcement action, while 83 percent resulted in no enforcement action, said the GAO.

The FCC said the GAO overstated the complaints closed without action. The FCC only 3 percent of investigations were closed with no enforcement action. Seventy-one percent were closed with compliance found, 15 percent closed after taking action and 11 percent as a result of insufficient information provided by the complainant, the agency said.

Rep. Edward Markey, D-Mass., chairman of the Telecom and Internet Subcommittee of the House Commerce Committee, initiated the GAO investigation. He said the report "makes clear that any legislation establishing national consumer protection rules for the wireless market must have meaningful, supplementary enforcement at the state level. Unfortunately, solely relying upon FCC enforcement for consumer protection is

utterly unreasonable in light of the GAO's findings."

Rep. John Dingell, D-Mich., has begun an oversight investigation into FCC operations. He said in a statement, "It appears the FCC has abdicated its duty to protect consumers."

Fritts Honored at NABA Meet

ATLANTA The North American Broadcasters Association honored Eddie Fritts during its annual meeting, held at CNN World Headquarters in Atlanta in February. Fritts received the organization's International Achievement Award.

The Toronto-based group represents North American broadcasters at the ITU and WIPO. Topics of the conference included WiMax and white spaces, the push toward hand-held devices and digital radio innovations.

Presidential leadership of the organization was passed from CBC/Radio Canada VP/CTO Ray Carnovale, to Grupo Televisa Exec. Leonardo Ramos Mateos.

NPR VP/CTO Mike Starling, also executive director of NPR Labs, was among the organizers, and Durst Organization Director of Broadcast Communications John Lyons gave a luncheon keynote about "thinking green" in facility design. NABA's board of directors includes executives from Sirius, CBS, CPB and HBO.

Kenwood VP New Digital Technologies Mike Bergman, also co-chair of the Digital Radio Subcommittee of the National Radio Systems Committee, said the group plans to vote on the update to the IBOC standard, NRSC-5-B, at its meeting at the NAB Show.



NABA Secretary General Donald Baylor and President Leonardo Ramos Mateos congratulate Eddie Fritts, who was honored at the NABA annual meeting

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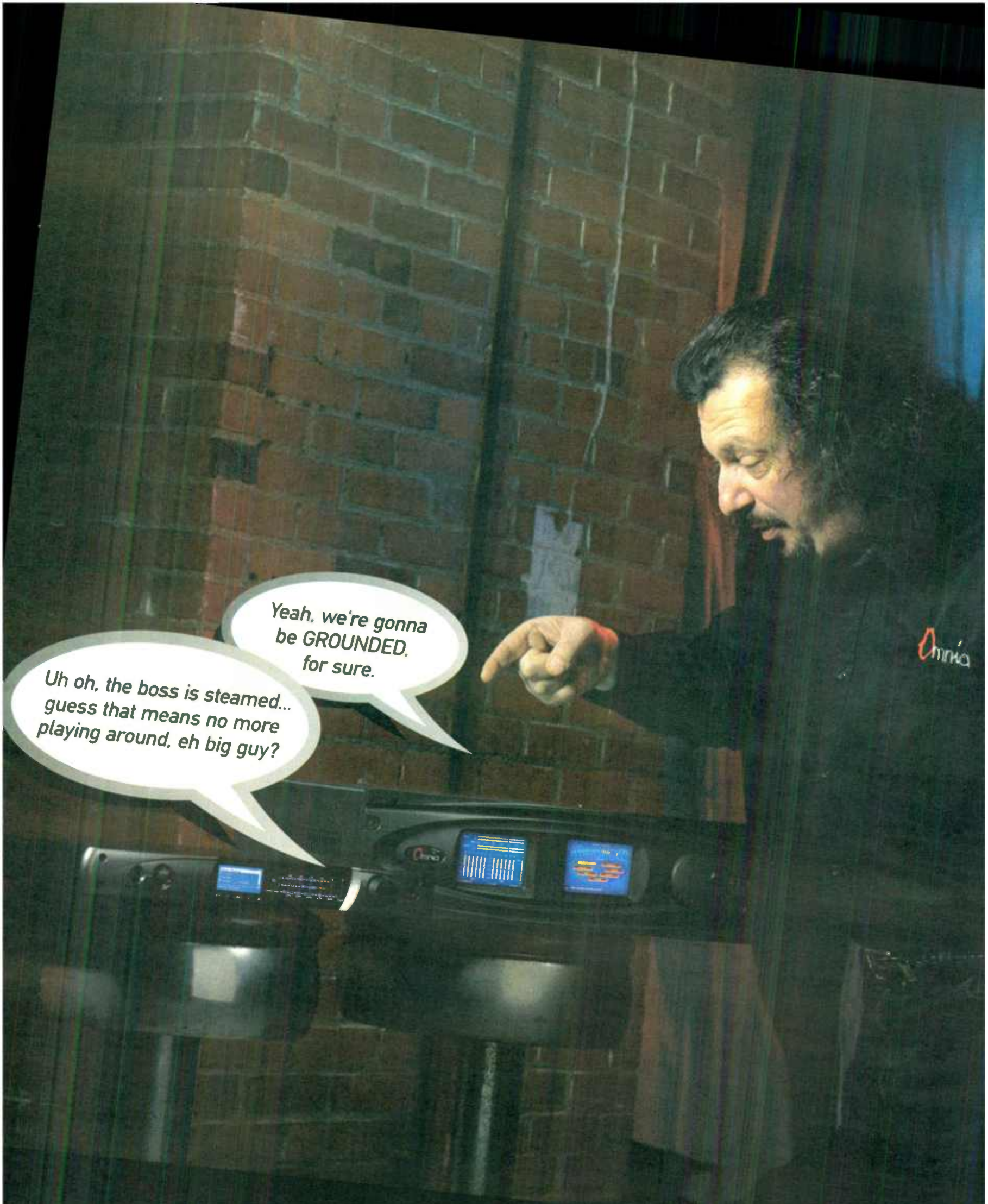
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NEWS WATCH

News Roundup

2007 SALES: U.S. commercial radio revenue fell 2 percent last year, according to the Radio Advertising Bureau, the biggest slump since 2001. Local radio ad revenue fell 2 percent, national radio was off 6 percent, network was up 4 percent and "off-air" revenue, formerly called non-spot, was up 10 percent. Overall U.S. radio revenue is estimated at \$21.31 billion.

COPYRIGHT: NAB, Bonneville and the NRB filed a brief with the D.C. Circuit Court challenging a 2007 decision

by the Copyright Royalty board that increased online royalties. The ruling instituted a per-performance, per-listener royalty instead of an annual flat fee. They argue that the CRB failed to follow statutory standards for rate-setting and adopted rates based on flawed methodology.

HD3: Citadel Broadcasting's KABC (AM), Los Angeles is producing original content that can only be heard at kabc.com or on KLOS HD3. Dodgers games will air live on 790 AM in Los Angeles, while talk radio listeners will be able to hear regular KABC talk programming simultaneously live on KLOS HD3 and online.

SENGER: The Asia-Pacific Broadcasting Union has given Digital Radio Mondiale Chairman Peter Senger a lifetime achievement award. Adilah Shek Omar of Radio Television Malaysia presented the award in March. He said DRM has the potential to bring about a "revolution" in broadcasting in the Asia-Pacific region. DRM is a digital radio standard in the lower frequency bands. Senger is stepping down after a decade as chairman of the DRM consortium.

NCE: The FCC has begun sorting through the more complicated applications for noncom spectrum. Of roughly 3,600 applications it received in the win-

dow for NCE frequencies, the FCC said it has processed about 800. Those were "singletons" that could be quickly accepted for filing, or needed to be dismissed due to settlements or because they were above the 10-application limit. The agency issued a list of 263 groups, each consisting of four or fewer mutually exclusive applications, in March.

EAS: At an EAS summit in Washington in February, Minority Media and Telecommunications Council Executive Director David Honig announced a multi-lingual EAS proposal formulated by the MMTC, Independent Spanish Broadcasters Association and the Office of Communication of the United Church of Christ. Stations ready to air emergency information in other languages would be "Designated Hitters" under the proposal, which calls for such stations to agree in advance to provide emergency alerts in whatever language the market needs. Each market coordinator, rather than a state government, would activate the emergency plan.

DIARY: Arbitron continues to update its diary surveys, introducing a "second-chance diary" intended to improve response rates for hard-to-reach demos. In continuously measured markets the company will offer a second-chance diary to respondents in households who had agreed to participate but failed to actually return completed diaries. In testing, 40 percent of households that agreed to participate for a second time returned diaries, Arbitron said. The company has also expanded incentives to 18-34 black and Hispanic males for each returned diary in markets number 10 and higher.

SBE: The society's new marketing committee is publishing an e-mailed newsletter to be distributed twice each month. The group, formed during the 2007 national meeting, is charged with increasing visibility of the society beyond the existing member base. Conrad Trautmann is chair; members include Tom Ray, Vincent Lopez, Jim Leifer and Gary Kline. "Secondary goals include fostering better communication amongst our members, assisting with our recruiting efforts to increase membership, helping to write and review press release information and to assist the national office with our advertising efforts," Trautmann wrote. The newsletter provides information about SBE programs, activities and current events.

SIRIUS BACKSEAT TV: U.S. Telematics has an affiliation and revenue sharing agreement with Sirius for Sirius Backseat TV, a live rear-seat entertainment service featuring three channels of kids' TV programming. Voyager from U.S. Telematics provides live, downloaded wireless mobile internet protocol TV (IPTV) and audio programming for rear passenger vehicle "infotainment." Voyager technology includes a mobile WiFi Internet hotspot to enable online computer use in the car as well as DVD, movies, TV, Xbox and other computer games. U.S. Telematics CEO Howard Leventhal said, "Our plan is to technically provision Voyager to output Sirius' music programming and offer Sirius subscriptions to Voyager users, so that kids in the rear car seat and parents in the front seat can all be 'piped-in.'"

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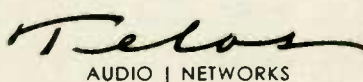
NEW "AAC-ELD" (ADVANCED AUDIO CODING-ENHANCED LOW DELAY) CODEC: Z/IP introduces a new codec technology invented by the experts at Fraunhofer Institute, the people who brought us MP3 and AAC. Optimized for interactive IP applications, AAC-ELD combines features from MPEG AAC-LD and the Spectral Band Replication technology used in AAC-Plus. It's the most powerful audio coding tech on Earth, offering outstanding bitrate efficiency, low delay, and support for packet loss concealment.

NEW TELOS ACT (AGILE CONNECTION TECHNOLOGY): Z/IP brings automatic on-the-fly bitrate adjustment to IP codecs - a first. The Z/IP constantly monitors the network and sets its bitrate to the optimum value. A dynamic adaptive receive buffer also responds automatically to network conditions, minimizing the effects of the varying bandwidth and jitter that occur on real-world networks.

EFFECTIVE PACKET LOSS CONCEALMENT: The Internet usually has packet loss on audio streams, often ranging up to a few percent. The new AAC-ELD codec combined with ACT can conceal this loss, making for smooth audio even with rough network conditions.

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HD Radio News

Radio World

Covering Radio's Digital Transition

April 9, 2008

FIRST PERSON

HD-R AM Measurement Explored

Pitfalls and Procedures of AM IBOC NRSC and Compliance Measurements

by Benjamin H. Brintzer

In the Jan. 2 issue, I covered FM HD-R measurements and the pitfalls and procedure for proper measurements; in this column, I discuss the AM measurements.

Since 1994, AM stations have been required to make spurious emissions measurements, known in the field as "NSRC measurements" after the National Radio Systems Committee that developed the standards later adopted by the FCC.

When confronted with making the AM HD-R measurements, I found that we face some of the same challenges as the standard measurements but with a lack of field-distributed test equipment.

For AM NRSC measurements, there are several alternatives ranging from a spectrum analyzer to a "splatter monitor." However, for AM HD-R compliance, there is really only one choice for now, a spectrum analyzer with the right specifications and a loop antenna with adequate sensitivity.

An example of a loop antenna is the LP-3 series standard H-Field antenna made by Chris Scott.

I have also constructed my own using a 1/2-inch aluminum conduit, a conduit bender, a PVC junction box and computer ribbon cable. I use the PVC junction box to break the metal circle. I choose the aluminum for noise rejection.

Loop antenna design

There are several sites on the Internet that describe loop design with instructions for construction. You should not use any filters for tuning unless you can verify that the bandwidth is adequate to pass the HD-R signal unattenuated.

I have not found any commercial fil-

ters that meet the requirements of passing the Ibiqumity mask for testing purposes, which is currently a bandpass of 29,433 Hz or 30 kHz. When all-digital operation is employed without the analog component, the bandwidth will reduce to 20



My test vehicle with loop antenna mounted on the roof. Any spectrum analyzer will work as long as it has the appropriate resolution bandwidth (300 Hz), 90 dB of dynamic range, PWR sampling and low noise specifications.

kHz, but for now we need the additional 10 kHz of passband.

The spectrum analyzer that Clear Channel Radio is using is an Agilent 4402B, which is no longer manufactured. However you can find the unit on the used equipment market, if you are lucky.

Any spectrum analyzer will work as

long as it has the appropriate resolution bandwidth of 300 Hz, 90 dB of dynamic range, PWR sampling and low noise specifications.

As with FM, you should *not* use the sample ports available on the transmitter. These are mostly voltage samples and are before the antenna system tuned circuits, which in some cases will affect your

results, due to the inherent filtering capabilities of these networks.

Some manufacturers recommend starting with a sample at the transmitter modulation port with the transmitter operating into a dummy load. This is a fair test to confirm the transmitter performance, but is not a valid measurement to certify

compliance with Section 73.44 of the FCC's rules and the IBOC mask.

So where and how are measurements made?

The answer varies greatly depending on what type of station you are measuring. The key points to remember:

For directional arrays, pick a location such that you are in the main lobe of your coverage pattern.

For a non-directional station, pick some location at least one wavelength from the antenna. The FCC rules state in Section 73.44 (D), "Measurements made of the emissions of an operating station are to be made at ground level 'approximately 1 kilometer' from the center of the antenna system."

Street mapping software

There is a tradeoff between finding a location far enough from your array to ensure the entire array is "blended" in the field, and having enough signal to make the measurement. In some cases 1 kilometer is too far to get enough signal to make the measurement.

I use a street mapping software and a GPS such as DeLorme Street Atlas or Microsoft Streets to locate a position no further than 1 km from the source site. The drawing tools allow you to plot a circle of 1 km radius from any location.

Most mapping software products have a database of stations already loaded so you can find your station easily. Seeing this visually allows you to locate the exact distance from the array and also easily locate "good locations" for your measurement. See the sample map shown.

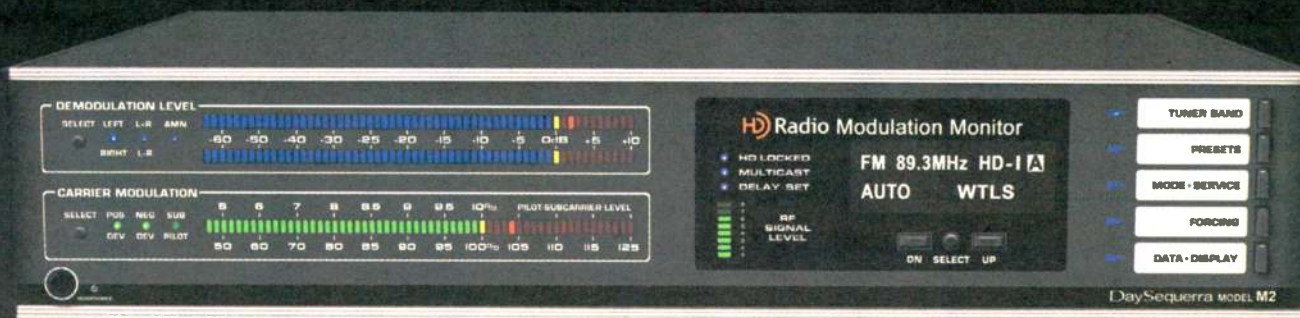
It is important to know where your main

See MEASURE, page 18 ▶

Photos by Ben Brintzer



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World Radio History

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Radio World's HD Radio™ Scoreboard

The HD Radio Scoreboard is compiled by Radio World using information supplied by iBiquity Digital Corp., the HD Digital Radio Alliance, BIA Financial Network and other sources. Data reflect best information as of mid-March. This page is sponsored by Broadcast Electronics. HD Radio is a trademark of iBiquity Digital Corp.

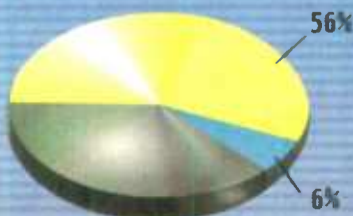
HD Radio in Seattle

Station	Frequency	Class	Format	Licensee	HD Radio	Station	Frequency	Class	Format	Licensee	HD Radio	Multicasting
KVI	570	B	Talk	Fisher Comm Inc		KPLU-FM	88.5	C	Jazz/NPR	Pacific Luth U	Yes	Yes
KCIS	630	B	Inspiration	Crista Ministries		KMIH	88.9	D	CHR	Mercer Island School		
KBRD	680	D	Nostalgia	Estate-Marrow, Skip		KAOS	89.3	A	Ecltc/Varty	Evergreen St College		
KIRO	710	A	Nws/Tlk/Spt	Bonneville Intl		KNHC	89.5	C1	Top40/Dance	Seattle Public Sch	Yes	
KTTH	770	B	Talk	Bonneville Intl		KWFJ	89.7	A	Christian	Calvary Baptist Chur		
KGNW	820	B	Chrst/Talk	Salem Comm Corp		KGHP	89.9	A	AAA	Peninsula Dist #401		
KHHO	850	B	Sports	Clear Channel	Yes	KGRG-FM	89.9	A	Modern Rock	Green River Foundatn		
KIXI	880	B	Nostalgia	Sandusky Radio		KASB	89.9	D	Alternative	Bellevue Sch Dis 405		
KGTK	920	D	Talk	Gottlieb, Alan M		KUPS	90.1	A	AOR	U of Puget Sound		
KJR	950	B	Sports	Clear Channel		KPLI	90.1	A	Jazz/NPR	Pacific Luth U		
KOMO	1000	A	News	Fisher Comm Inc		KEXP-FM	90.3	C3	Variety	University of WA		
KBLE	1050	B	Christian	Sacred Heart Radio		KSER	90.7	A	Variety	KSER Foundation	Yes	
KPTK	1090	B	Talk	CBS Radio		KVTI	90.9	C1	CHR	Clover Park Tech		
KWDB	1110	D	Adult Hits	West Beach Bcstg		KBCS	91.3	C3	Variety	Bellevue Comm Coll		
KKNW	1150	B	News/Talk	Sandusky Radio		KXOT	91.7	C2	NPR/Nws/Tlk	Public Radio Capital	Yes	
KLAY	1180	B	Nws/Tlk/Spt	Huntington, Clay		KQMV	92.5	C	Rhymc/AC	Sandusky Radio	Yes	
KTBK	1210	B	Mexican	Bustos Media Entrprs		KUBE	93.3	C	CHR	Clear Channel	Yes	Yes
KWYZ	1230	C	Korean	Suh, Jean		KMPS-FM	94.1	C	Country	CBS Radio	Yes	Yes
KGY	1240	C	AC	KGY Inc		KUOW-FM	94.9	C1	NPR Nws/Inf	University of WA	Yes	Yes
KKDZ	1250	B	Family Hits	ABC/Disney	Yes	KJR-FM	95.7	C	Clsc Hits	Clear Channel	Yes	Yes
KLDY	1280	B	Classical	Seattle Streaming		KXXO	96.1	C	Soft AC	3 Cities Inc		
KKOL	1300	B	News/Talk	Salem Comm Corp		KJAO	96.5	C	Jack	CBS Radio	Yes	
KGRG	1330	D	Altve/Oldes	Green River Foundatn		KBSG-FM	97.3	C	Clsc Hits	Bonneville Intl	Yes	Yes
KUOW	1340	C	NPR Nws/Inf	KUOW/Puget Sound	Yes	KFMY	97.7	C	Clsc Hits	South Sound Bcstg LP		
KKMO	1360	B	Mexican	Salem Comm Corp		KING-FM	98.1	C	Classical	Beethoven	Yes	Yes
KRKO	1380	B	Sports	SR Broadcasting Inc		KWJZ	98.9	C	Smooth Jazz	Sandusky Radio	Yes	Yes
KITZ	1400	C	Talk	Gottlieb, Alan M		KDDS-FM	99.3	C	Mexican	Bustos Media Entrprs		
KRIZ	1420	B	R&B Oldies	KRIZ Bcstg Inc		KISW	99.9	C	Rock	Entercom	Yes	Yes
KSUH	1450	C	Korean	Suh, Jean		KKWF	100.7	C	Country	Entercom	Yes	Yes
KARR	1460	B	Religion	Family Stations Inc		KPLZ	101.5	C	Hot AC	Fisher Comm Inc		
KNTB	1480	D	Span/Relgn	Seattle Streaming		KZOK-FM	102.5	C	Clsc Rock	CBS Radio	Yes	Yes
KBRO	1490	C	Span/Relgn	Seattle Streaming		KNBO	102.9	C	Country	Clear Channel	Yes	Yes
KXPA	1540	B	Divrs/Ethnc	MultiCultural Radio		KMTT	103.7	C	Adult Rock	Entercom	Yes	Yes
KZIZ	1560	B	Gsp/Inp/Tlk	KRIZ Bcstg Inc		KMCQ	104.5	C3	AC	First Bcstg Ptnrs		
KLFE	1590	B	Chrst/Talk	Salem Comm Corp		KFNK	104.9	C3	Rock	Clear Channel	Yes	Yes
KYIZ	1620	B	UCH/HHp/Var	KRIZ Bcstg Inc		KCMS	105.3	C1	ChrsContemp	Crista Ministries	Yes	Yes
KDOW	1680	B	Mexican	Salem Comm Corp		KBKS	106.1	C	AC	CBS Radio	Yes	Yes
						KWPZ	106.5	C	ChrsContemp	Crista Ministries	Yes	
						KRWM	106.9	C1	Soft AC	Sandusky Radio	Yes	Yes
						KNDD	107.7	C	Alternative	Entercom	Yes	Yes

Source: Data above is from BIA Financial Network's data service MEDIA Access Pro™ and also includes iBiquity information. Visit www.bia.com

HD Radio at Entercom

Total stations: 114



The HD Radio Bottom Line

Total Licensed

2,095

Last Month: 2,090

Last Year: 1,691

On the Air

1,647

Last Month: 1,615

Last Year: 1,218

FMs Multicasting

849

Last Month: 827

Last Year: 561

Measure

► Continued from page 16

lobe is located to attempt to locate a position in the center of the main lobe. If you are too close to a minima, you could get a skewed sample that will display as one set of side bands at greater amplitude than the other.

This is due to the slight difference in frequency of the digital carriers relative to the main carrier and how that is treated by the array tuning. Where there is a minima (also incorrectly called a null) in the pattern at carrier frequency, the location of the digital sideband minima will differ slightly in location.

Further description is beyond the scope of this article; however if you are interested in more information, there are white papers on the duTriel, Lundin & Rackley Web site: www.dlr.com.

Once you have chosen the location, it's time to pack up the inventory of test equipment.

You will need:

- A spectrum analyzer such as an Agilent 4402B or similar
- A 400 watt or larger inverter or a UPS with sufficient charge to power the test gear
- BNC test cables
- RF pad switchable (such as RF Industries RFA-4056-03)

- A loop antenna and tripod
- Notebook computer with map software
- GPS
- Storage device for the measurement results (pad and pen or floppy disk or USB thumb drive if your test ear supports it)
- Camera to record the location

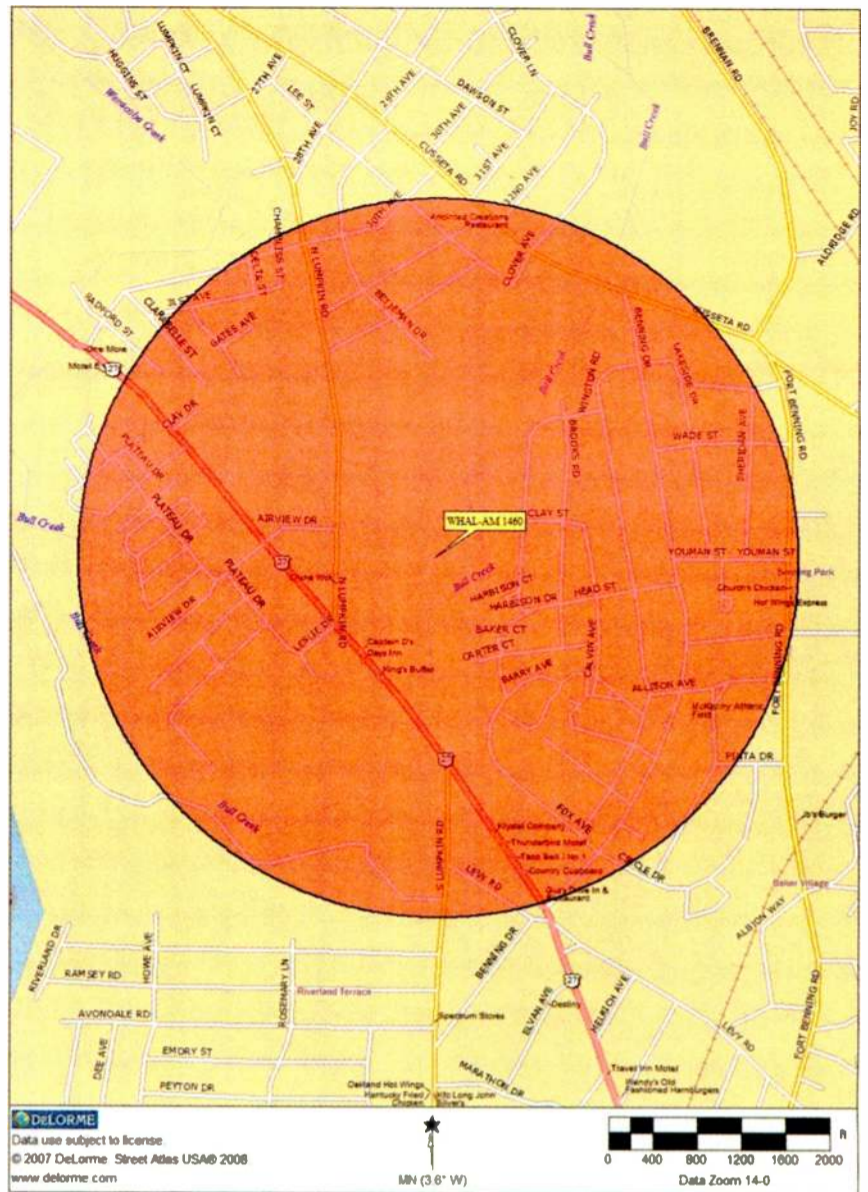
Spectrum analyzer settings

When you arrive at your chosen location, verify there are no re-radiation or noise potentials nearby such as power lines and set up the loop and tripod.

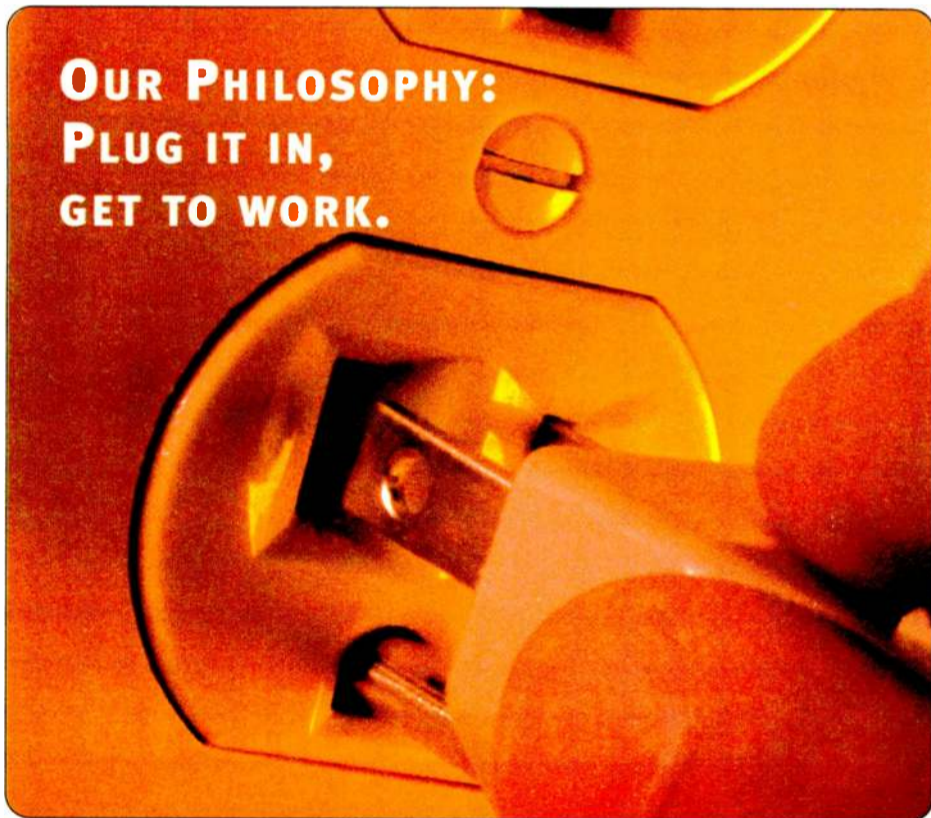
The spectrum analyzer settings for the HD measurement are:

- Resolution Bandwidth: 300 Hz
- Span 100 kHz
- Detect Peak = Off or Sample
- Average = on Minimum 100 samples (off to tune)
- Sweep: auto
- Sample points = 400 to tune 8000 to measure
- Marker set to peak delta
- Marker set to reference level
- Average type PWR

To set your reference, set the unit to detect Peak and interrupt modulation long enough to adjust the external switchable RF pad to reference the top of the display. *This must be completed with no modulation.*



I use street mapping software and a GPS to locate a position no further than 1 km from the source site. The drawing tools allow you to plot a circle of 1 km radius from any location.



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Another acceptable method is to change the resolution bandwidth to 100 kHz and reference the top of the display or 0 dBm by changing the level of the RF pad. Then switch the RBW back to 300 Hz. When you have finished setting the reference the emissions should not exceed the mask values below:

AM HD FCC Spectral Mask

Each is offset from carrier frequency level relative to un-modulated carrier

- 5 to 10 kHz -34.3 dB
- 10 to 15 kHz -26.8dB
- 15 to 15.2 kHz -28 dB
- 15.2 to 15.8 kHz [-39 - (Freq offset in kHz - 15.2) * 43.3] dB
- 15.8 to 25 kHz -65 dB
- 25 to 30.5 kHz [-65 - (Freq offset in kHz - 25) * 1.273] dB
- 30.5 to 75 kHz [-72 - (Freq offset in kHz - 30.5) * 0.292] dB
- >75 kHz -80 dB

Some manufacturers of transmitter equipment have provided limit files on their Web sites for download if you are using an Agilent 4402B.

There should be at least 80 dB difference between the measured analog carrier signal and the noise floor. If you find otherwise you will need to relocate closer to the array, or choose a larger aperture loop antenna with better sensitivity. If there is a nearby station that is interfering, see if you can position yourself so that that the loop nulls out the interference.

Most loops will exhibit about -20 to -25 dB rejection at 90 degrees from the

measured axis. If you find that you are out of mask due to noise or the noise floor is elevated, find a new location within the main lobe.

For non-directional measurements, we have been successful making the measurements at a distance of 1 wavelength from the antenna; in most cases the transmitter parking lot works well as a location to measure.

In fact, I recommend switching a DA to non-D to confirm your field measurements. In cases where the DA is 1 kW or less, you will have no choice but to make non-D or "close in" measurements in most cases, to get enough signal. When finished, you should end up with a properly aligned waveform.

If you find that you have out-of-limit emissions, you should check magnitude and phase alignment of the exciter using a digital scope.

Brintzer, CPBE, is regional vice president of engineering for Clear Channel Radio's Mid-South region.

This article includes information from a Broadcast Electronics December 2006 white paper, "Measurement Technique for Accurately Measuring the HD Radio Spectrum of an AM Transmitter."

Radio World's HD Radio Scoreboard is published in alternating issues. Selected data is from BIA's MEDIA Access Pro™; the scoreboard also uses information supplied by sources including iBiquity Digital Corp., the HD Digital Radio Alliance and RW's own research.

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Radio Q&A: What's on Managers' Minds

by Kelly Brooks

With the NAB show almost upon us, RW asked several radio managers and executives their thoughts on business issues facing the radio industry.

Comment on this or any story. Write to radioworld@nbmedia.com.

About This Section

The following pages provide a preview of sessions and themes of interest to radio managers at the 2008 NAB Show. The March 26 issue focused on sessions and topics related to engineers and technical managers.

What: NAB Show

Theme: "Where Content Comes to Life"

Where: Las Vegas Convention Center

When: April 11-17

Who: Attendance approx. 108,000 last year, including 27,000 international

How: www.nabshow.com

How much: BEC conference registration varies from \$495 for NAB members registering in advance, up to \$995 for non-members on-site. Price includes several related broadcast conferences. Students, spouses and exhibits-only rates available.



Hal Widsten
General Manager
KWED(AM) 1580
Seguin, Texas

Widsten is general manager of a stand-alone locally owned AM station in Seguin, Texas, Guadalupe County, part of the San Antonio metro.

What's your biggest challenge right now?

I'd say the biggest challenge this year is to motivate my sales staff to understand how valuable their time is and how to make the most of every minute.

How can our industry overcome its recent flat revenue performance, particularly given the current economic mood?

The "current economic mood" is the creation of the national media and I wish they'd find something else to peddle gloom and doom about.

If we're going to grow revenue we need to make retail outlets and car dealers a smaller percentage of our gross billing and do a better job with the service sector and the Internet.

What's your perception of the Portable People Meter?

I believe the People Meter will give us the first real look at how people listen to our stations, not how they vote for them.

I am hopeful that radio sales, programming and agency people will not overreact to the People Meter results, given the current sample sizes and how the base has changed. I always have believed that our cume ratings were higher than what Arbitron reported.

I have a feeling that some programming concepts that have slipped away in recent years will be revived.

Has your organization adopted HD Radio?

We're equipped all the way to the transmitter, but we have not purchased an exciter or a processor, and we have not signed an agreement for a license with Ibiquity. We're waiting for the nighttime AM problem to be adequately addressed.

Should the FCC allow AM stations to use FM translators?

Absolutely. I believe the commission should start by allowing daytimers to apply for available frequencies, then move to those AMs with nighttime power less than 250 watts, and then stations with nighttime power less than 500 watts and so forth. We have areas within our

Execs Weigh in on Localism, the 'Performance Tax,' Digital Radio, AM Translators and More

daytime 1 kW coverage that we can't serve with 253 watts at night, and they are in flood-prone areas where the emergency information we provide is needed. A full-time translator would help this immensely.

'We need to make retail outlets and car dealers a smaller percentage of our gross billing and do a better job with the service sector and the Internet.'

What about more restrictive station staffing requirements as part of the commission's localism initiative. What impact would they have on your business?

I understand and agree with the commission's desire to have stations adequately serving their markets. If we're required to have a live person in our facility 24/7, we probably will have to shut down at midnight. I see that as negatively affecting us.

What if you woke up in the middle of the night to a big storm, turned on the station you depend on for information and they were off the air? I believe that will result in listeners and advertisers discounting the value of our stations, and radio in general, as this is likely to happen in a lot of small markets. It sure doesn't do anything to preserve and improve local service.

The technology to resolve this issue exists and I believe the commission should require stations to establish the proper contacts with emergency officials as we have and then install the equipment to get emergency information on the air, perhaps from a remote location if necessary until someone can reach the studios. Most automation systems in use today have this capability.

See WIDSTEN, page 22 ►

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Tom Joyner pictured using his one of a kind red PR 40.



Karen E. Slade
 Vice President/General Manager
 KJLH(FM)
 Compton, Calif.

'I believe [the PPM] could destroy the public service or community service model of broadcasting, and promote mass-market broad-appeal vanilla formats.'

What's the biggest challenge facing you these days?

Generating revenue, controlling expenses, preparing for PPM while battling traditional and new competitors for top-of-mind awareness of our targeted listening audience.

How can radio overcome its recent flat revenue performance, given the economic mood?

This is the question of the day, month and year!

It is our job to keep pitching new business and grow existing business, which is tougher given the stagnate market and the ever-growing competitors. We are looking at growing our non-traditional revenue, offering additional marketing elements to traditional radio advertising plans and attempting to secure internet advertising dollars.

What's your perception of the Portable People Meter and its effect on business?

My concern about PPM does not involve the technology, it centers

population-to-panel count than initially planned.

The commission is talking about tightening station staffing requirements as part of its "localism" initiative. If you're aware of those proposals, what impact

would they have on your business?

I am not familiar with the proposed local aspects of the station staffing requirements you are referencing.

I am a proponent for most local initia-

tives in general. Supporting the communities in which you do business is one of the elements that keep radio relevant to the local audience: hiring from the markets you do business in, promoting national and local advertisers' products, good and services, and of course the public service elements through PSAs, news element and promotions.

Should lawmakers allow the adoption of royalties to artists, what NAB is calling a "performance tax"?

Generally speaking, additional taxation would hurt our current business model. It also could become a deterrent to our goals for expanding our current audio delivery platforms, including streaming.

Who is the radio business person you admire most?

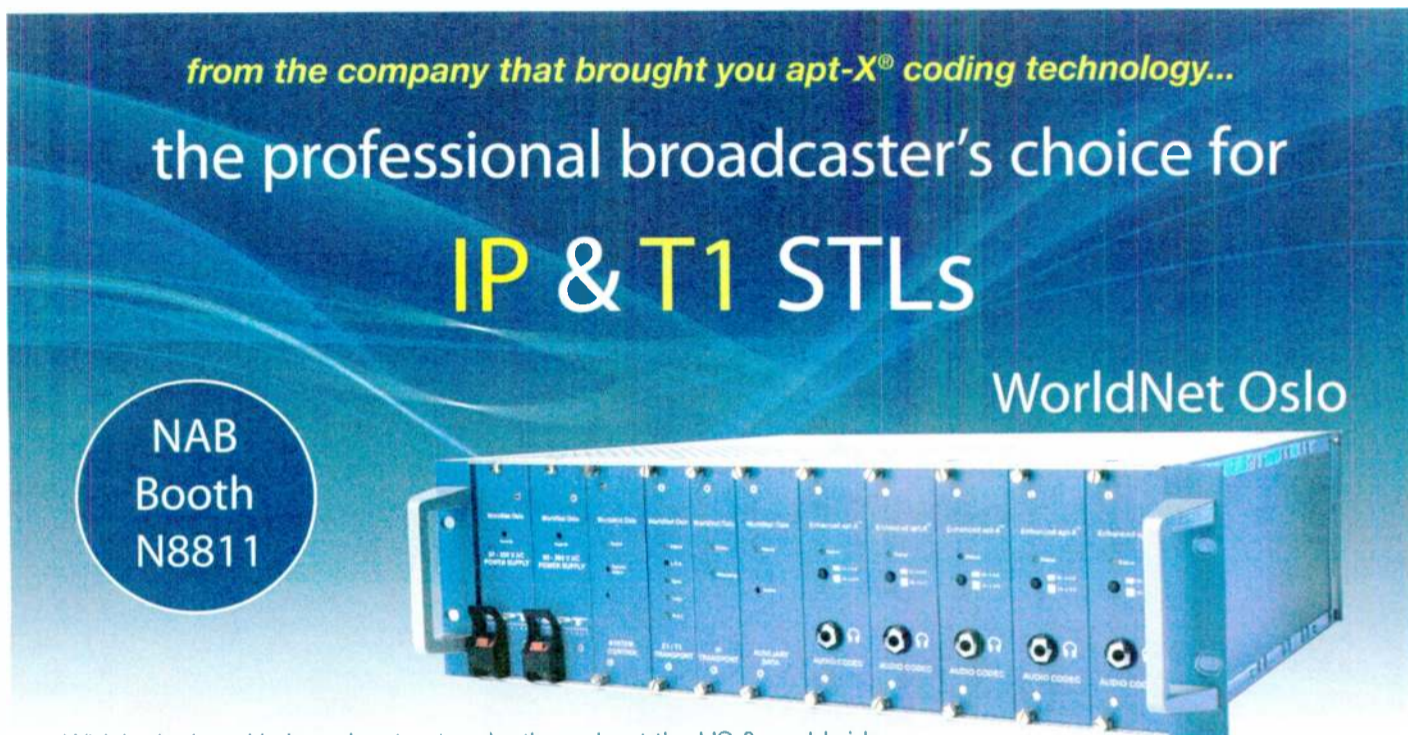
Generally, I admire the small operators for staying the course in this consolidated, big-business environment, forgoing the temptation of selling out and continuing to provide quality broadcast service to their community.

Supporting the communities in which you do business is one of the elements that keep radio relevant to the local audience.

around the impact it has had on urban-formatted stations. It eliminates the listener's "intentional listening" habits and maximizes passive broadcast contact.

As an independent broadcaster with a Class A signal targeting an ethnic audience, I believe it could destroy the public service or community service model of broadcasting, and promote mass-market broad-appeal "vanilla" formats. If my beliefs are correct, it doesn't seem exciting or very entertaining; it would seem to promote passive verse interactive programming.

It will have to be monitored closely with full participation of the selected panelist, which should mirror the community of service demographics. It also should have a higher ratio of



Widely deployed in broadcast networks throughout the US & worldwide, the WorldNet Oslo offers everything you could want from a professional STL including a flexible, upgradeable platform, high quality audio and 24/7/365 reliability.

Flexible, Upgradeable Platform

With a modular approach and a large selection of audio, data and transport options, the WorldNet Oslo can be tailored to the exact requirements of your current network and easily upgraded on-site as these requirements change. Inherent flexibility enables LAN extension, ring networks with drop and insert over T1 and unicast, multicast and multiple unicast configurations over IP.

Uncompromised Audio Quality

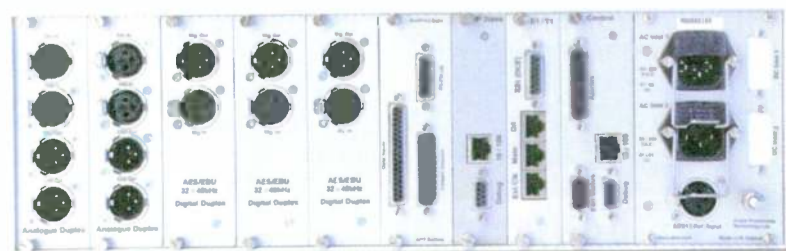
The WorldNet Oslo offers both linear PCM and Enhanced apt-X coding options. Enhanced apt-X will deliver the same audio quality as linear with under 2ms delay and at a fraction of the data rate. Other options include MPEG L2, J.57 and J.41 companding. With four channels of audio per plug-in module, up to seven audio modules per unit, and a choice of over 20 different audio modules, each WorldNet Oslo has the capacity of up to 28 mono channels / 14 stereo pairs.

Rock Solid Reliability

On the WorldNet Oslo, solid dependability comes courtesy of DSP-based architecture, hot-swappable modules, passive backplane, redundant PSUs, automatic back-up switching and a user-configurable suite of audio, link, sync and PSU alarms.

Throw your terminal screwdriver in the trash can!

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Steve Hafen
General Manager
KVIP(AM-FM) and KMWR(FM)
Pacific Cascade Communications

Hafen is general manager of KVIP and KMWR, a ministry of Pacific Cascade Communications Corp. KMWR is in Brookings, Ore., KVIP is in Redding, Calif., with 32 FM translators scattered throughout the western part of the country.

As a radio manager, what's the biggest challenge facing you this year?

To stay relevant to our listeners.

Being Christian non-commercial, we play programs from outside producers. All of these programs are available on the Internet. A listener can download the audio and listen at his or her convenience. They are no longer stuck with our set air time for the program. These providers even promote as much on our air during the program.

My aim is to introduce more local and regional content and make it available on the air, and on our Web site.

We're in the middle of a listener survey to see what programs really draw listeners, and which ones are "dead weight." That should help as we shuffle things. It's all made a little more difficult due to our coverage area. We hit more than 110 communities in parts of five states for a potential audience of more than 2 million.

Have you adopted HD Radio?

We have not yet adopted HD Radio. We have taken delivery on a new Nautel transmitter to replace the FM transmitter we bought used in the mid-'70s. We're raising needed funds for the rest of the system — STL, processing gear, air conditioning, etc. We went digital in our studios about a year ago.

I'm very pro HD for the FM, as there are a few music formats I'd like to look at for the HD2 signal. My board of

directors is not too thrilled with the idea of paying a licensing fee for the Ibiqity system, though.

Should the FCC allow AM stations to

We also have alarm systems at home that are activated too, which really makes the wives roll their eyes and grit their teeth, as they go off more often at night than during the day.

'If the FCC tightened staffing rules it would be a hardship for us.'

use FM translators?

My chief engineer, Paul Brown, and I go back and forth on the idea of AM on an FM translator. KVIP(AM) is at 540 with 2,500 watts day, but only 14 watts at night. We currently simulcast with the FM at night. If we had a translator for the AM, we could put separate programming on and offer our listeners in Shasta County a choice, like they have during the day time.

On the other hand, we operate 32 translators, and see the band in many parts of the west filling up. We have the potential for two of ours to be bumped in the near future.

What about new station staffing requirements as part of the "localism" drive?

If the FCC tightened staffing rules it would be a hardship for us. We are manned weekdays from 6 a.m. to 5 p.m. Our equipment is able to dial out to each staff member, on a list, if anything goes wrong after hours. Chief engineer first, his assistant second, me third and so on.

The rule also would mean staffing our station in Brookings, Ore. Currently, we run the station from here in Redding and it passes the KVIP(FM) signal through 100 percent. We can go on the air from Brookings if a staff member drives there. I know our board would not like to more than double our staff to cover the night here and Brookings 24 hours a day.

Who is the radio business person you admire most?

Larry Roberts of Fisher Radio in Seattle. I worked for him in Spokane, Wash. Hard-working, enthusiastic, loads of integrity. He got me out of programming and into sales, giving me a chance to grow into an area of the business that eventually led to management positions.

Will you attend the NAB Show?

I'll not attend NAB 2008. Our board only sends me or the engineer when we are ready to shop for expensive goodies. We've already got the shopping list done.

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► Continued from page 20

Should lawmakers allow the adoption of royalties to artists?

The radio industry and recording artists have had a symbiotic relationship for a long time. We play their music and they benefit greatly from the free promotion. We don't make a cent from their concerts, record sales or other income streams, and for their part they do not share in our expenses.

Radio airplay has made multi-millionaires of many artists, and the use of their music has generated listeners and profits for radio. It has been a good deal for both sides since the 1920s.

Now, foreign-owned record companies — all of the big four are controlled from overseas — are attempting to change the relationship by suggesting that radio stations pay what amounts to a performance tax on airplay. The record executives have tried to color this as a means to compensate artists.

This is happening at a time when record companies have lost control of their product due to digital duplication in many forms. They've lost a lot of sales because they've failed to control their product and embrace digital technology.

So if such a performance tax were levied, it is unclear whether the artists or the record companies would end up with the money from those fees.

The numbers I've heard are just plain frightening to a small-market operator like me, and I can't imagine what the guys in the big markets would have to pay. And for what? We already compensate the composers, authors and publishers through ASCAP, BMI and

SESAC. We make rich stars out of the artists whose music we play. What do the record companies do for them?

This is a bad idea because you can bet that most of this money would go to the companies and not to the artists, and the percentage of our revenue they'll want will always get larger.

What notable capital improvement projects do you have on the calendar for this year?

I'd like to say that we'll begin HD Radio broadcasting this year, but the answer to that isn't clear at this time. We are planning to replace some studio equipment.

Who is the radio business person you admire most? Why?

Having worked in both large and small markets in my career, I admire people in both because there are big differences between them. My big-market guy is former WLS, Chicago programmer John Rook who programmed the Big 89 when it was Chicago's number one music station. I learned a great deal working with John then, and we remain friends today.

My small-market guys are Dean Sorenson, who is well-known in the midwest as a long-time station owner and operator, and Bud Walters with the Cromwell Group. Both these guys are great operators and people who have given of their time and money to serve their industry through their leadership in the NAB, RAB and the International Broadcasters Idea Bank, of which I also am a member.

Will you attend NAB 2008?

I am planning to attend. I believe David Rehr is doing a tremendous job and that all broadcasters should support the NAB as best we can.

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World Radio History



Tom Calococci
Operations Manager/Program Director
WPOW(FM)
Beasley Broadcast Group
Miami

'Labels need to remember that we pay the electric bill to run the transmitters, and pay a staff to deliver compelling content, which largely includes information about music and the artists.'

As a radio manager, what's the biggest challenge facing you this year?

Maintain relevance and find a way to re-engage young listeners.

How can radio overcome its recent flat revenue performance and grow revenue, particularly given the current economic mood?

We have to think outside the box and do a better job in leveraging our on-site (Web) assets.

Dollars are moving from traditional media to the Internet, and there's no reason we can't be a part of that, and deliver compelling and effective promotions and marketing campaigns for our clients online.

What's your perception of the Portable People Meter and its effect on the business?

It should have been tested in small to medium markets first so that the kinks could be worked out. I think we as an industry need to embrace this; but Arbitron still has some issues delivering reasonable response rates from the 18-34 demo.

Has your organization adopted HD Radio? How's it going?

Beasley Broadcast Group is a big believer in the HD platform and we currently have three HD streams here in Miami: one for WPOW(FM) Power 96; one for Power Dash 2, which is formatted for dance music; and one for our sister AM station, WQAM.

It's been a slow go as far as adoption due to a lack of understanding amongst consumers as to exactly what HD Radio is.

The commission is talking about tightening station staffing requirements as part of its localism initiative. What impact would these have?

They would be terrible for our business. First of all, many stations in all markets across the country already do a great job in addressing local community concerns, particularly in times of crisis. The problem I have with this initiative is that it is so very subjective in terms of determining who is and isn't providing the proper level of local community support.

It also would create distractions that

would be major time-stealers. I think you'll see a lot of individuals with personal agendas harassing radio stations to bow to their viewpoints on what is and isn't the proper type and amount of local content.

Should lawmakers allow the adoption of royalties to artists, what NAB is calling a "performance tax"?

Absolutely not. And this is something I feel very strongly about.

First of all, the level of pressure and heat I feel from labels, producers and artists to play their music directly speaks to the fact that they recognize the value we bring to the table. We give an audience to their music. If you take a look at history, you'll note the direct correlation of music sales to radio airplay.

Now, of course, the times they are-a-changin' — and quite rapidly. Radio companies are laying people off, cutting expenses such as research, promotion budgets and, in some cases, the hiring of new sales people. If we get hit with a new expense, and a sizeable one at that, there will be consequences.

Stations will change format to talk radio, it'll be more difficult to break new and emerging artists and it creates an uncomfortable atmosphere between the two industries, which have worked relatively well together for years.

And consider this: the labels have been known to be less than forthcoming with artist royalties to begin with, therefore, there's a good likelihood that the bulk of this revenue would never get to the artists. The labels need to remember that we pay the electric bill to run the

transmitters, and pay a staff to deliver compelling content, which largely includes information about music and the artists.

We're also charged with "serving the public interest" and we give up a ton of commercial air-time in times of crisis and need, for example, 9/11, Hurricane Katrina, California wildfires, hurricanes, tornadoes and local flooding. Another expense would jeopardize all of this.

As it is, most radio stations are already operating on a bare-bones budget with far fewer persons than ever before. Always remember the law of unintended consequences and be careful what you wish for.

What notable capital improvement projects do you have on the calendar for this year?

Upgrading our studio facilities as well as our online platform.

Who is the radio business person you admire most? Why?

Jerry Lee, owner of WBEB in Philadelphia.

I love the way he thinks outside the box and I'm impressed by the level of success he enjoys as a stand-alone operator.

Also, I was impressed by the speech that Jeff Haley made at the RAB about moving into the future. I wasn't there, but I read about it.

I also have a great deal of respect for what Clear Channel has done with its online initiatives.

What's your full title and organization?

I'm the operations manager/program director for WPOW(FM) Miami. This and our Power Dash 2 stream are what I'm responsible for.

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Bob May
Vice President/General Manager
KDKD(AM-FM)
Legend Communications
Clinton, Mo.

'We're pushing to get low-power FM for our AM station.'

Your No. 1 challenge this year?

To over-achieve on my budget. We have really pushed the envelope for '08, but we feel pretty confident we can make it with the people we have.

How can radio grow revenue, especially in the current economic mood?

We have to continue to talk up radio and its advantages; strengths against newspaper and other media. We train on this constantly.

Has your organization adopted HD Radio? If so how's it going; if not, why not?

No HD at this time. We're pushing to get low-power FM for our AM station.

Should lawmakers allow the adoption of royalties to artists, what NAB is calling a "performance tax"? Why or why not?

Good grief. Radio makes these artists famous, we help pack the arenas they perform in, we in some cases "make" them into stars. Leave us alone.

What notable capital improvement projects do you have on the calendar for this year?

We would sure like to install generators for our transmitter and studio locations. We have been fortunate not to have had many outages with ice, snow and tornados. But to continue to be a service to our local area in these situations calls for some backup plans. I could sure use a parking lot repaving too.

Who is the radio business person you admire most? Why?

I really admire my past managers; those who helped me learn this business. David Noll, Dino Ianni, Herb James ... I also would have to include Larry Patrick in that list.

All of these gentlemen have not only given me opportunity but have taught me how to lead.

Will you attend the 2008 NAB Show?

No, but I attended the NAB Leadership Conference in Washington for the first time, the week of Feb. 25.



Free Standing AM Broadcasting Antenna

FCC Media Bureau Adopts Simplified Application Procedures for AM Nondirectional Valcom Antennas

By this Public Notice, the Media Bureau ("Bureau") announces simplified procedures for AM station construction permit applications which specify Valcom antennas. Based on its review of the Valcom field tests and internal reports submitted to the Commission for evaluation, the Bureau announces that it will not routinely require the submission of a proof of performance, current distribution measurements, or a formula for the vertical plane radiation characteristic for nondirectional AM facilities which utilize these antennas.

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Dennis Jackson
Owner/Founder
WCLX(FM)/WMEX(FM)/
WRIP(FM)/WQQQ(FM)

'You can't easily legislate honesty and you can't force true localism.'

Jackson has built eight stations from the ground up; current holdings above are in Vermont, New Hampshire, New York and Connecticut. Non-coms are in the works for North Salem, N.Y., and elsewhere.

What's your top challenge right now?

Helping clients weather the recession strongly, and surviving the "localism" initiative. The "localism" NPRM is ill-conceived when it comes to small broadcasters. Hopefully it will never be enacted, but don't count on it.

How can radio overcome its recent flat revenue performance, particularly given the economic mood?

Our small independent stations don't seem to have that problem to the extent we hear reported elsewhere. And if we're down 3 percent some quarter, we consider it a natural cycle and don't change formats or fire anyone.

In order for the large corporate conglomerates, whose numbers dominate industry averages, to overcome floundering performance, I believe the answer is to take their losses and sell to smaller, more locally focused broadcasters. These guys know what to do to return those properties to prominence in their audiences' lives, and thereby grow them.

It has to do with talent and creative freedom, which are anathema to conglomerates. Multi-platform efforts, too, should pay off in larger markets given the growth of other media and their natural synergy with the power of radio to drive traffic. We need to think convergence.

Comment on the Portable People Meter.

It will disrupt the status quo of who can expect to be 0.3 ahead of whom in the next book, and that will vary by format, demo and ethnicity.

PPM may be an improvement, but one suspects that both systems are poor estimates of reality. There are too many anomalies, and who can swear to what's real?

Some agency business will get redirected in cases

where the modus operandi is to beat down cost-per-point rather than bring about results at the cash register as we do in small markets. Some will see a small bonanza and others' oxes will be gored; but below the top tier it won't matter all that much.

Has your organization adopted HD Radio?

No, because there are almost no receivers out there, and because neither consumers nor retailers really seem to care. So why should we not wait it out? Also because we will not support a for-profit standard that charges exorbitant fees.

Should regulators allow AM stations to use FM translators?

Of course. How could making an AM, especially a daytimer or nighttime-challenged signal, available 24/7 on FM possibly not be a great use of spectrum in the public

**If these rules are imposed,
I am concerned that we will
be forced to cut back on the
many public service projects
we already undertake.**

interest? Especially when compared to the non-local programming that is on so many FM translators at present.

The problem is, how and when can an AM expect to obtain a translator if none are available for sale or that can be moved, and there's no window in sight?

Discuss your thoughts about the localism push further.

You can't easily legislate honesty and you can't force true localism. If passed as proposed, these initiatives would damage our small-market stations quite severely, and be counterproductive to the public interest.

Diminished localism in the wake of consolidation is why these initiatives are even being considered. Consolidation happened because corporate interests and their NAB were effective at lobbying Congress

and the FCC. Our independent stations never lost our local focus or community service orientation. If any of the initiatives are passed, they should be surgically directed at the large, consolidated group operators whose miserly operations constitute the problem.

If these rules are indiscriminately imposed on all stations, I am concerned that our small, hard-working staffs will be forced to cut back on the many public service projects we already undertake in order to redirect their energies to unnecessary and redundant meetings, redeploy funds to overnight babysitters and utterly disruptive studio/office moves, and other window dressing that is meaningless in the context of our operations, our community relationships and our long-standing extant localism.

We also might choose to sign off overnight instead of hiring babysitters.

Should lawmakers allow the adoption of royalties to artists?

Of course not. Artists already see financial benefits from both CD sales and digital downloads, and radio airplay drives both. Shame on conglomerate operators for taking payola, but it sure proves the value of airplay.

I think what's really going on here is that the recording industry's ability to rely on CD sales for revenue is fading fast, and RIAA hasn't figured out how to morph and survive in a digital download world. They are thrashing about and trying to tap into radio industry revenues to shore up their failing model. If lawmakers allow such royalties, we may all drown together. Incidentally, the first step in saving a thrashing drowning victim is to knock them out.

Who is the radio business person you admire most?

Dick Ferguson. Dick is a great broadcaster, a creative guy and a fine human being.

It's always win-win with Dick. He built one of the first successful broadcast groups: NewCity, a precursor to Cox Radio. An industry leader, he served as radio vice president of the NAB. He has mentored many of our tribe, myself included, and he has always given back in spades to the community and everyone he works with.

Will you attend the 2008 NAB Show?

No. There's not much that's of interest to us there compared to what isn't. For meeting up with industry friends and colleagues and new contacts, we prefer the NAB Radio Show.



Joe Cassara
Operations Manager
WDNA(FM)/Bascomb Memorial
Broadcasting Foundation
Miami

Cassara says Mel Karmazin is 'the radio industry's Steve Jobs.'

What's your biggest challenge in 2008?

You've heard it before: digital, digital, digital!

At one point, I thought HD Radio was our industry's white knight. Now I'm convinced the future is "RoIP," Radio over IP, aka "Internet radio."

My new focus: How do I get my programming onto those millions of iPhones and iPod Touches — legally? Internet radio is in a holding pattern right now, especially for music pubcasters, thanks to royalty rate uncertainty. While the gracious folks at the Corporation for Public Broadcasting hammer out the details with SoundExchange, the clock ticks on.

Anyone who doesn't see the iPhone (and competing products) as the transistor radio of the 21st century has his or her eyes closed. I hear talk of making radio "relevant" again. Part of fulfilling that goal is accepting when old technolo-

gies and methodologies have become irrelevant.

How will the PPM affect our business?

The PPM is the second most exciting development in our business.

The idea that pubcasters don't care about ratings is a myth, though numbers are important to us for reasons different from those of our commercial counterparts.

Having access to almost instantaneous audience response, the kind television has enjoyed for decades, should be every programmer's dream.

Adopting electronic ratings is a hard pill to swallow for some, as programming methodologies held onto like gospel will have to fade away in favor of new strategies, and that's a tall order for the less nimble in the biz. I have no patience for the fusty, anti-PPM rhetoric

being generated by some. Arbitron, and the Radio Research Consortium, is our partner, not our foe.

You mentioned HD Radio; have you adopted it?

Yes we have, and it's going wonderfully in terms of audio quality in areas where our signal suffered from pirates or building interference.

We're still toying with the notion of an HD2 stream. If we make such a commitment, we don't want to go the route of other stations and pipe in a satellite-delivered service. Our goal is to be live and local, unique to the community. But as I mentioned, RoIP may render this endeavor moot.

What impact would increased station staffing requirements have, as outlined in the FCC's "localism" initiative?

As a "Community Public Radio" station, our mission has been localism from the start.

I fail to see how staffing my overnights and late weekends with a board-op will make my station more locally focused. I'd be paying them to

read the newspaper and goof off on the Web, and I'd rather channel those funds to a community outreach program, station sponsored arts events or a news division — more authentic and successful localism initiatives.

One point on which I do agree with the FCC: Community Advisement Boards are not just a good idea; they are a good business decision as well. How do you best serve your city of license? Invite it to take part in your organization. Everybody wins.

Should lawmakers allow the so-called "performance tax"?

From a jazz radio perspective, I was very disappointed to learn some of the staples of our playlist were members of the MusicFirst Coalition.

In public radio, we still believe in the symbiotic and mutually beneficial relationship between artists and stations; they generate beautiful works of art, and we promote them in the community and worldwide. No study will ever convince me that dynamic is flawed or broken.

And while I understand pubcasters will not be subject to the same royalty rates as commercial outlets, I'm still hurt to know certain jazz and blues artists, and their estates, seem to no longer believe in what radio does for them. We



William J. Wolfenbarger
President
Jodesha Broadcasting Inc.
KSWW(FM)/KJET(FM)/
KANY(FM)/KBKW(AM)

Your biggest challenge?

In our small market, the biggest challenge is sufficient revenues to maintain an already slim staff. It's very difficult to cut corners when there was no fluff to begin with.

What do we need to do to turn around radio's recent flat revenue performance?

We need to be creative. We need to find alternative sources, including the dreaded "public service" campaigns. And we need to convert clients from Yellow Pages and other competing media.

We know radio works, but haven't done a good job at presenting that.

What do you think about the PPM?

Ho hum. We don't use ratings much anyway. The People Meter will tell us what station is being heard, but not whether it's on purpose. And not whether the person is actually listening.

Have you adopted HD Radio?

No. HD conversion will cost my small stations as much as major-market stations, yet my revenues to pay for the conversion are a very small fraction of the major-market station. Spending perhaps 30 percent or more of next year's revenue on something that may pay off after I'm retired doesn't excite me.

Should the commission allow AMs to use FM translators, as proposed?

Yes. Especially in the small markets, where the FMs have moved out to be

certainly don't air their works for the revenue it generates, when more lucrative formats abound.

What notable improvement projects do you have on the calendar?

We're currently moving into a new multi-million dollar facility which will enable us to serve our audience and the community in ways we couldn't imagine before, including live performances, remote broadcasts of events, new cultural programming initiatives and achieving greater visibility.

A yearly music scholarship program is in the works too, generating a buzz with local underwriting clients.

Who is the radio business person you admire most? Why?

Without a doubt: Mel Karmazin.

Look at his track record, charisma and chutzpah. He is the radio industry's Steve Jobs. Speaking of which, Apple better cozy up with him and Sirius/XM when the satcaster merger goes through — and I'm hoping it will.

Wait a second, a terrestrial broadcaster cheering on the Sirius/XM merger? You bet. Call me nuts, but I cherish, not fear, competition. It keeps us all on our toes and is as American as apple pie and jazz on the radio.

initiative.

Without exaggeration, this will put many small-market broadcasters out of business. With the challenges to the economy and the virtual disappearance of national revenues in the small mar-

'We know radio works, but haven't done a good job at presenting that.'

kets, the numbers do not work.

In our case, our four stations are licensed to separate small communities. Requiring a main studio in the city of license will kill us. Requiring an on-duty operator at each control point will kill us.

The effect on a major market operator with eight stations all licensed to Seattle, for example, will be minimal.

For us it will be a death sentence.

Should lawmakers allow the so-called "performance tax"?

No. For years, radio stations have been responsible for the success of recording groups. And at least in the major markets, the labels have been willing to provide compensation, both above and under the table, for airplay.

What notable capital improvement projects do you have on the calendar for this year?

Building out our fourth station, and then waiting so see how many shoes drop.

Will you attend NAB 2008? Why or why not?

No. Cost.

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NAB Sessions Mirror Radio's Transition

How to Manage in a World Where Everyone Totes a Phone, Not a Radio, in Their Pocket

by Ken Deutsch

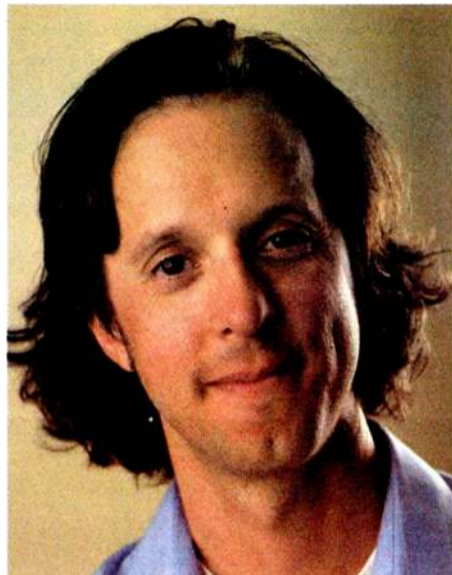
This may be radio's most confusing time since 1996, the year deregulation tore up the rulebook.

With a tsunami of competition from satellite, portable music players, the Internet and even cell phones, our industry is trying to figure out how to reconnect with our audience and its ever-changing expectations. Managers are faced with diminished human and financial resources, as well as disappointing consumer response to HD Radio.

Management sessions at the annual NAB Show provide a clear snapshot of the issues confronting the industry at any given time. Here is a preview of some of the Radio Management sessions of this year's convention in Las Vegas.

In a Sunday afternoon conference, *"The Whole Enchilada: Getting the Most Out of Your Creative,"* Doug Zanger, founder of Xhang Creative, will talk about how commercials, and the development of campaigns around them, can benefit advertiser and listener.

"We can tweak the way we say things, to make spots more casual and get away from those 30- and 60-second press releases



Doug Zanger. 'We can tweak the way we say things, to make spots more casual and get away from those 30- and 60-second press releases some of us are forced to do.'

es some of us are forced to do," he said.

"We also need to make spots more 'listener-centric,' and by that I mean a delivery style that plays well on one for-

mat may turn listeners off within the context of another format." When he worked at Portland, Ore.-based Rose City Radio, "we had a news station and a hip-hop station so I worked with two very different approaches to presenting the message. We tried to put ourselves in that specific listener's shoes."

The other challenge Zanger sees is trying to slow the process down.

"We have to work so fast these days, it's like making sausage," he said. "We are all familiar with the phenomenon of the '4 p.m. Friday spot.'"

"But taking extra time to find the right voice and the right music can make a huge difference. And sales manager and production directors could probably benefit from working more closely together. Both have tough jobs but they need to have a little more empathy for the other guy.

"We don't need to reinvent the wheel; we just need to make a better wheel."

Is anyone there?

In a Monday morning session immediately following the state of the industry address, attendees will have a chance to weigh in on a hot topic: unattended station operation.

"I think that the greater issue is the FCC notice on localism," said Bruce Goldsen, president and general manager of Jackson Radio Works, and also moderator for this session.

"I agree that radio and TV stations should do everything they can to serve the local community, but I disagree with going back to the '70s and '80s on regulation. Regulators are struggling to figure out how to accomplish their goals but they're coming



Bruce Goldsen. 'I agree that radio and TV stations should do everything they can to serve the local community, but I disagree with going back to the '70s and '80s on regulation.'

has issued a notice of proposed rule making, but no final decision has been made.

Connecting through podcasts

Holland Cooke is a 38-year radio veteran, and has been a news talk specialist for McVay Media since 1995.

His Monday afternoon session *"Producing, Positioning and Promoting Your Podcasting"* will help managers navigate a platform that didn't even exist a few years ago.

"The very term 'podcasting' is dated," said Cooke. "When it was coined, iPod was the cool new thing. Apple intended it to be a music appliance but users figured out that they could swap non-music audio files and end-run the FCC-licensed AM/FM media gatekeepers.

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People only buy radios with something else wrapped around them, like a car or an alarm clock.

— Holland Cooke

up with old-fashioned means."

Goldsen said technology has changed and legislation should reflect that.

"With computers and our ability to automate EAS, putting a minimum wage board operator on overnights (just to have someone on premises) is a worse move than making capital investments to make sure your station is covered for unattended operation," he said, echoing comments made by numerous broadcasters since the FCC proposal emerged.

"At our stations we have someone on call 24/7, so if there is an issue and we have to get information out quickly, we can do it from any location via the Internet, or we can get someone to the station within a few minutes. Just mandating that someone be sitting there doesn't mean everything will be problem-free; when you try to hire people to work those shifts you don't always get to pick from the cream of the crop."

Goldsen said one purpose of the session is to make broadcasters aware that unattended operation won't harm a station's ability to serve its community. The FCC

"Suddenly someone in Tacoma who's passionate about bonsai trees or Edsels could find someone in Terre Haute talking about them. But these users weren't just using iPod-brand players, and research estimates that roughly half aren't even listening in portable mode," Cooke continued.

"Everyone now totes a phone and nobody carries a radio in their pocket. People only buy radios with something else wrapped around them, like a car or an alarm clock. Radio is following, not leading, listeners' migration to the new platform and ditto for advertisers."

But now that we know how they came about, is anyone making money with podcasts, or whatever one wants to call them?

"Graperradio.com, a blog about wines, is selling out its avails at \$1,300," Cooke noted. "With 15,000 registered users, that's a CPM of \$86-plus. Mommycast.com did a six-figure sponsorship deal with Dixie Cups. Neither of these blogs has a transmitter. Non-station-based audio/video content is now a going concern and its biggest

See MANAGERS, page 29 ►

Rules and Regs: The Inside Story

Regulatory Conference Hears About Political Ads, Localism Implications and Other Issues

by Sharon Rae Pettigrew

Ahhhh ... it's 2008. And that — at least for broadcasters — means taking a look at political advertising rules and regs.

This is sure to be a historic year for politics. The NAB Broadcast Regulatory & Legislative Conference examines the complex ins and outs of political advertising with the April 14 session *"Political Advertising: Taming the Beast of 2008."*

Ann Bobeck, associate general counsel for NAB, will moderate a panel including Bobby Baker, head of political programming staff at the FCC; Dawn Sciarrino of Sciarrino and Associates; and Gregg Skall of Womble Carlyle Sandridge & Rice.

So what needs to be taken into consideration regarding political advertising?

Critical elements

"A radio broadcaster needs to understand and carefully apply all of the critical elements of the political broadcasting rules that stem from the Communications Act and from the Bipartisan Campaign Reform Act," said Skall.

"In a nutshell, a broadcaster must master these fundamental concepts and establish a chain of responsibility at each station for their successful implementation."

Skall outlined the following issues to be addressed at the session:

Legally Qualified Candidate: A broadcast licensee must know how to identify when a candidate is legally qualified.

Reasonable Access: A broadcast licensee must provide reasonable access to its station to all legally qualified political candidates for federal office.

Candidate "Use" and an "Exempt Program": When any legally qualified candidate makes a "use" of a broadcast facility during a "non-exempt" program, then an opposing candidate is entitled to make a request for equal opportunities.

Lowest Unit Charge: Certain candidate uses may qualify for the station's lowest unit charge.

Disclosure: Broadcasters must make full disclosure of the station's selling practices to all political advertisers.

Censorship and Sponsorship Id: All uses must be free from censorship and must bear the proper sponsorship identification.

Political File: Documentation of each request for a use of the station's facilities, together with other relevant information, must be maintained in the station's political file and access to the political file must be provided to the public.

Fairness Doctrine and Corollaries: The Fairness Doctrine and the rules governing political editorials and personal attacks have been repealed. Stations are still subject to rules regarding issue advertising and news distortion.

The session will provide an explanation of these concepts, in addition to related issues. At press time the organization of the panel was not complete, but Skall said other discussions are likely to revolve around how to make the most of the campaign season, including PACs and 527s and others non-candidate sources of



An image from Gregg Skall's presentation materials discussing compliance pitfalls. He's part of the session 'Political Advertising: Taming the Beast of 2008.'

advertising.

Attendees will take a break on Monday from the alphabet soup of political broadcasting rules with *"GM Pizza & Beer Exchange — Back to Basics."*

Hosts Lou Vito, president of Ohio stations WBLL(AM)/WPKO(FM) and Louis

Wall, president of Sagamore Hill Broadcasting, promise a fattening late-afternoon breather that focuses on the day-to-day management issues often overlooked in the new media environment.

Topics are expected to include legal costs, sales issues and time-consuming,

Managers

► Continued from page 28
problem is 'who knows it's there?'

"So it is imperative that stations transition to the new platform. Our biggest asset is also our most perishable: our existing audience and brand equity. Generally, podcast offerings are simply archived programming, which is fine for non-time-sensitive content.

"The smartest Internet-based content I'm seeing is that which never airs in long-form on AM/FM, but which is promoted by what we used to call 'spots.' These are commercials disguised as informative short-form features that invite the station's cume audience to hear/see/read/download more."

Internet's new business model

Zach Braiker is president and founder of Refine+Focus, a consultancy based in Milton, Mass. In a Tuesday session, *"How*

to Activate Your Listeners Online," he will attempt to answer one of the most pressing questions managers have: "What the heck do we do with our Web site?"

"Online isn't a separate space removed from your listeners' lives," he said.

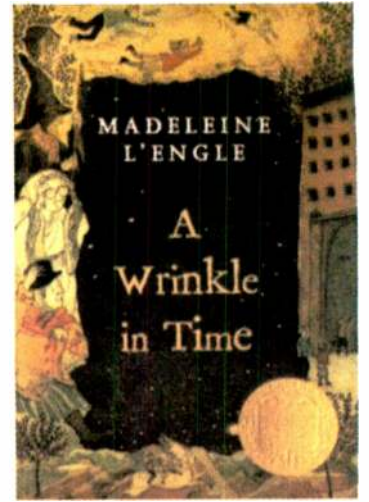
"Whether they visit WebMD for health information or MapQuest for directions or your station's site for local weather, they live on the Internet. But they don't expect you to be all things to them. They expect you to provide what they can't find elsewhere."

Braiker says that one of the biggest problems with station Web sites is that they are too static.

"Part of what makes sites like FaceBook so interesting is that they function like malls where members of a community can meet," he said. "But if you have a Web site where there is

nothing going on, it's like visiting a desolate strip mall."

And Braiker had two other urgent messages.



A continuing education event focusing on broadcast law will develop themes presented in the book 'A Wrinkle in Time.'

irritating government forms.

Who, which, whatsit

Another Broadcast Regulatory & Legislative session includes the all-day *"ABA/NAB/FCBA Continuing Legal Education Seminar"* on Sunday at the Bellagio.

This will be the 27th year for this session, with a focus on daily issues facing broadcasters and their legal counsel.

NAB says the session is based on "a unique perspective suggested by the book 'A Wrinkle in Time,' in which three children travel or 'tesseract' through time and space with the help of three unusual beings they know as Mrs. Who, Mrs. Which and Mrs. Whatsit. They must go to the planet of Camazotz to rescue their father who is being held by 'IT' who seeks to impose sameness on all."

Seriously.

This session is sponsored by Dow Lohnes; Sheppard Mullin Richter & Hampton; Wilkinson Barker Knauer; and Wiley Rein. It is produced in conjunction

See REGULATORY, page 31 ►

"The first is get an intern. There are tons of kids at universities looking for real experience, and they have a lot to teach you," said Braiker.

"And one more suggestion: If you have a bad Web site, don't bother to advertise it on the air. If visitors don't like it, they won't be back. It's like advertising for a bad store; you'll put it out of business. If you want to see an example of a great Web site, visit www.virginradio.co.uk."

Above all he tried to stress that a site is an online community where your listeners want to talk to each other and to the station.

"Encourage them to upload slide shows of their kids, their cars or their favorite concerts. You'll get more page impressions and that's good for business."

Other radio management sessions will cover the relatively new phenomenon of "radio going video," political advertising, how to sell more advertising in this changing economic environment and developing a loyal at-work audience for your Internet stream. At press time, the list of session moderators and speakers was still growing. For a description of the management track of the NAB Show, visit www.nabshow.com/2008/conferences/radiomanagement.asp.

Ken Deutsch is a former broadcaster. He says he knows how to bake squeaky reel-to-reel tapes, which gives you some idea how old he is. ●



Holland Cooke.

'Graperadio.com, a blog about wines, is selling out its avails at \$1,300. Mommycast.com did a six-figure sponsorship deal with Dixie Cups.'

LVCC Will Get an Extreme Makeover

The Convention Center to Undergo Major Renovations Through 2011

by Ken Freed

Within weeks after the NAB Show ends this year, the nearly 50-year-old Las Vegas Convention Center will start an \$890 million full-facility makeover.

Construction on the LVCC "Enhancement Program" will extend through 2011 and into 2012, affecting the next three or four NAB conventions.

Since it opened in 1959 with the World Congress of Flight, the LVCC has hosted some of the largest trade shows in the world. Along with NAB and its larger cousin, the Consumer Electronics Show, shows in other industries using the entire 2 million-square-foot facility include the International Council of Shopping Centers, the Specialty Equipment Market Association, the National Association of Home Builders and the massive triennial Conexpo construction equipment show.

The project is being directed by the Las Vegas Convention and Visitors Authority, which operates the LVCC and the Cashman Center exhibition facility and AAA baseball field near downtown.

According to LVCVA Vice President of facilities Mark Haley, enhancements will include:



A new transportation system along the front of the LVCC will reorganize entry and exit operations.

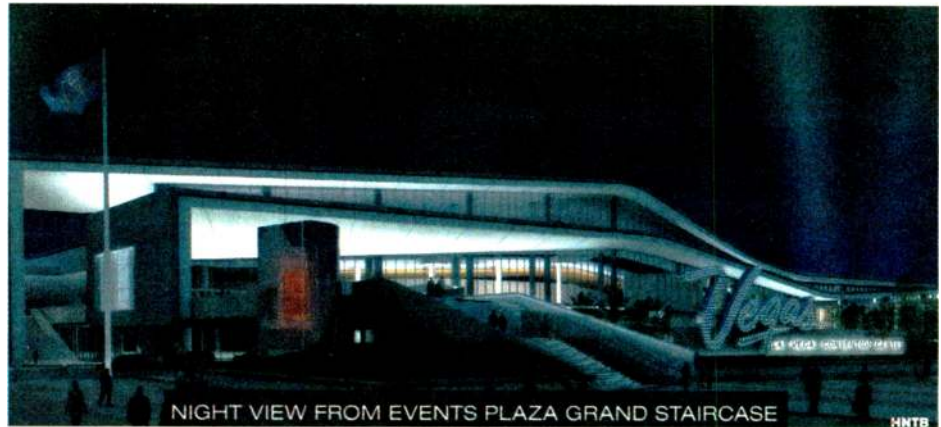
- Construction of a "grand lobby" that connects all three halls of the convention center behind a new street façade;
- A new meeting room concourse in the South Hall that expands on the existing 144 meeting rooms in the LVCC

- Upgraded "way finding" signage
- Enhanced video and communication technology in all meeting rooms
- Many more restrooms and "aesthetic enhancements" throughout the LVCC.

When complete, the LVCC will contain 3.8 million square feet overall with 1.9 million square feet devoted to exhibit space.

In and out

Planning for the program began in 2005, said Haley, and featured a focus group with representatives from the full-facility trade shows, such as Chris Brown from NAB.



When completed in 2012, the new LVCC will contain 3.8 million square feet, with 1.9 million of that devoted to exhibit space.

"We asked what they wanted to see changed at the convention center, and that morphed into developing a plan for how to proceed."

All of the discussions pointed toward the same basic issues, he said.

"A lot of the conversation involved ingress and egress, getting in and out of the LVCC more effectively, such as confusion with taxi cabs, buses and private vehicles all using the same common areas." Other shared concerns included improved food services and more restrooms.

The one critical planning element that emerged, Haley said, "was the need to have something new in place before something old is taken out of inventory, such as meeting rooms and restrooms." Another element was making sure that the convention center gives as much advance notice as possible to event planners about when and where construction

will be happening.

"A lot of bright people have brought a lot of good ideas to the table," said Haley. "We've anticipated as many of the majority of challenges ahead as possible, and we've communicated these to clients like NAB, so we address any concerns that they may have."

To guide the process, the LVCVA contracted for project management with MWH Global, based in Broomfield, Colo. Design duties were accepted by HNTB Architecture in Kansas City. The Chicago office of Turner Construction Co., headquartered in New York City, will handle the actual construction.

"We expect to be done with new construction of the grand lobby and meeting rooms by April 2011," said Haley. "But the entire project may not be done until early in 2012. We hope to have everything finished before NAB 2012, but when looking that long ahead, it's hard to be definitive."

HNTB Design Principal Todd Achelpohl said he's focused chiefly on improving convention center capacity and the total customer experience.

"We've responded to the need for more meeting rooms in association with trade show events, such as addressing major deficiencies in the South Hall," he said. "Another big focus is improving the front-of-the-house experience, so a grand concourse will connect all of the venues in the convention center, from the North Hall to the South Hall."

Get there from here

A new transportation system along the front of the LVCC will reorganize all entry and exit operations, Achelpohl said.

"Instead of having to go all the way to the far end of the North Hall or the South Hall to catch a cab, there will be a single point in the middle for taxis, and we've

worked with the taxi commission to get more cabs in and out faster. Shuttle buses also will have a central location. The pedestrian traffic will have a separate route from the vehicular traffic. And all of it will be in front of the Central Hall, so [the] entrance is convenient to all of the venues."

Once inside the lobby, a new video signage system will direct people to where they need to go.

"This way-finding system will extend to video screens outside each meeting room," said Achelpohl. "The video network will support sponsored content, like a planned NAB Channel, including video projection on the huge lobby walls that will be far more effective than a static banner."

The older areas of the LVCC will enjoy a "significant renovation," Achelpohl said.

"All the meeting rooms are going to be

See LVCC, page 32 ►

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Regulatory

► Continued from page 29

with the American Bar Association and Federal Communications Bar Association, and is aimed at broadcast attorneys.

This year's featured sessions include "Year in Review (Return of Regulation) — Life in Camazotz"; "Content Regulation — Where is the Happy Medium?"; "Transactions in the New Era — Tesser-acting for Fun and Profit"; "First Amendment/Newsgathering — Who Which and Whosit"; and "Making the Digital and Online/Mobile (DTV, HD Radio and Online/Mobile) — Like and Equal are Not the Same Thing."

This daylong session is broken up with an hour-and-a-half midday luncheon that is a session in itself: "Public Interest — What Is 'It'?" will examine how broadcasters can best serve their local communities in today's world.

"This full-day event has become one of the preeminent broadcast law conferences in the U.S., bringing together broadcast lawyers to discuss and learn more about the regulatory issues facing the communications industry," said the NAB's Dennis Wharton.

The big guys

An FCC breakfast on April 15 will address trends and topics of concern to broadcasters as well. David K. Rehr, president and CEO of NAB, moderates.

"We've extended an invitation to FCC Chairman Kevin J. Martin and look forward to having him at the NAB Show," said the Wharton.

"Needless to say, this is an important time for all broadcasters from a regulatory perspective. The localism proceeding is one that we are watching very closely, and all television broadcasters have a vested interest in a successful conclusion to the DTV transition." The breakfast gives attendees an opportunity to ask questions and hear directly from the chairman.

Later that day, "The Regulatory Face-Off" continues a look at "inside Washington" issues with top policy-makers.

"This session will allow face-to-face discussion with FCC commissioners on all of our issues — from content regulation to LPFM stations to interference caused by unlicensed personal-portable devices in the digital television band," said Wharton.

He called it a chance for broadcasters to "really take the measure of the FCC commissioners" and to get a better understanding of how challenging and complex the issues are that come before the FCC.

To follow, the NAB Associate General Counsel Suzanne Head moderates the session "Coping With Copyright: From Performance Tax to Internet Streaming."

This workshop will examine what panelist David Oxenford, partner, Davis Wright Tremaine, describes as the two biggest issues for broadcasters, "the proposals for a 'performance tax' on broadcasters and the royalties for the streaming of music on the Internet."

Royalty rates

According to Oxenford, radio broadcasters need to follow "the performance tax issue that would impose a royalty that would go to the artists and record labels, in addition to the royalties that already go to ASCAP, BMI and SESAC for the composers.

"And, using the standard proposed in the legislation that was introduced in Congress at the very end of last year, the royalty could several multiples of the amount paid to the composers."

He stressed that radio broadcasters should be informed, and be prepared to lobby their representatives on this "very bottom-line issue."

Oxenford addressed the streaming royalty issue that was decided by the Copyright Royalty Board last year.

"Between now and 2010, the rates will be two-and-a-half times what they were in 2005. Legislative and appellate efforts are underway to overturn this decision. Broadcasters who are streaming need to follow this issue, make sure that they are in compliance with the new rules and participate in lobbying efforts

to undo the royalty."

Oxenford contends the record companies and artists are trying to get a significant piece of broadcasters' revenues, "perhaps as much as 20 percent of gross revenues, which would significantly change the economics of the broadcasting industry."

Other issues and trends Oxenford and fellow panelist Jennifer Tatel, associate at Sidley Austin, expect to discuss include the use of music in various digital formats by broadcasters "in podcasts, downloads and other digital devices. All present lots of questions over obtaining the proper rights when music is used," said Oxenford. "There may be some discussion of other royalty issues, such as SESAC's new royalty on multicast HD channels."

The second-to-last session of the conference is an all-encompassing "Everything You Want to Know About FCC Regulation But Have Been Afraid to Ask."

Moderator Jerianne Timmerman of NAB joins panelists Jack Goodman, Wilmer Cutler Pickering Hale and Dorr; Frank Jazzo, Fletcher Heald and Hildreth; and Marissa Repp, Hogan and Hartson.

The group is prepared to address issues including new regulatory initiatives and the FCC's enforcement practices, as well as zoning, localism and public interest obligations.

The full agenda for the three-day conference is at www.nabshow.com.

The author can be reached via e-mail at rovernewsservices@yahoo.com.

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LVCC

► Continued from page 30
modernized with new technology, which includes new video projection systems, new lighting and much better acoustics. There will be a wireless network through the building, including all the public areas, and all the exhibit halls will have easier access to the telecommunication backbone, which already is very robust. The challenges to electronics in the South Hall will be greatly improved.”

The entire project may not be done until early in 2012. We hope to have everything finished before NAB 2012.

— Mark Haley, Las Vegas Convention and Visitors Authority

Aramark will expand the food service operations, he said. This will include a full-service club restaurant with a sophisticated menu, an upscale “multi-station venue” akin to the hotel buffets and “grab-and-go” box lunch vendors on the exhibit floor. “The convention center will continue to be the most expensive place in Las Vegas to get a hot dog,” he said.

HNTB has completed the overall facility design. “And we’re about halfway through the detailed facility design,” Achelpohl said. “Construction will start with the onsite utility work this coming fall, well after NAB, and site mobilization will be fully under way by NAB 2009. We will be doing the excavation, construction and renovation in phases, such as building only one section of the new front entrance at a time, so the facility remains as fully functional as possible at all times.”

“The key thing is that the authority is taking extraordinary measures to maintain operations during construction, so campus events do not seem significantly different than they currently are.”

Watch Vegas Grow

Although renovations of the Las Vegas Convention Center will not begin until after the NAB Show, curious NAB visitors with time on their hands can look for other construction projects in the vicinity.

Construction has begun on a new Metro Police Substation and a Clark County Fire Station, according to Mark Haley, vice president of facilities for the Las Vegas Convention and Visitors Authority. Serving the LVCC and the northern end of the Strip, both units will feature state-of-the-art equipment for the Central Area Command. Currently at the steel and concrete stage, this construction project may affect the bus route to the east entrance of the South Hall.

These LVCVA projects are a direct response to a citywide boom in hotel and casino construction slated for completion by the end of 2012 and valued at more than \$40 billion. Some of the largest are near the convention center.

Catercorner from the Hilton Hotel adjacent to the LVCC, construction continues on the \$2.2 billion Encore expansion of the Wynn Las Vegas on Las

Vegas Boulevard. The Encore is set for completion in December.

Three blocks away, across from Circus Circus on Las Vegas Boulevard, is one of the larger hotel-casino projects in the city’s history. Scheduled for opening in late 2009 is the Fontainebleau, a \$2.9 billion project that will add 3,800 hotel rooms and 400,000 square feet of meeting space to the existing city inventory of more than 133,000 guest rooms and 9.5 million square feet of convention and exhibit space.

Dwarfing this venture, however, is the new Echelon Place on the former Stardust Hotel site on Las Vegas Boulevard and Convention Center Drive. With completion set for the third quarter of 2010, this \$4.8 billion hotel and casino project features the Hotel Echelon, The Suites at Echelon, The Meeting Center, the Shangri-La, the Delano and the Mondrian.

“This project may cause some traffic obstruction on the Strip,” Haley noted.

Even more massive is the MGM Mirage “Project CityCenter” on 76 acres between the Bellagio and the Monte



Construction continues on the massive MGM Mirage City Center, the largest construction project ever in Las Vegas, according to the LVCVA.

Carlo. Aiming for completion in November 2009, this \$8 billion project will boast a 4,000 room resort hotel along with the Mandarin Oriental and Harmon hotel and residences, each with 400 units, plus the new Vdara Condo Hotel.

“The CityCenter project,” said Haley, “is the largest construction project ever in Las Vegas.”

— Ken Freed

More at NAB Show 2008

The stories in this issue focus on topics of interest to radio within the Radio Management and Broadcast Law and Regulatory Conferences. For a full agenda see www.nabshow.com.

Registration provides access to sessions in the Broadcast Engineering and Television Management Conferences as well.

Here are selected other events of interest at the show:

SUNDAY

✓ 8 a.m.–1 p.m.
“Focus on Leadership”

Rob Curley of Washington Post Newsweek Interactive on how broadcasters can take advantage of

their online space and other platforms “to create hyper-local content to drive audience, viewers and advertisers.”



Rob Curley

MONDAY

✓ 9–10:15 a.m.
State of the Industry Address and NAB Distinguished Service Award Presentation

David Rehr speaks. Charles Osgood is honored.



Charles Osgood

✓ 11:30 a.m.–12:20 p.m.

“Radio Goes Video: The New Business Model of Monetizing Online Video” Features Thom Callahan of the Radio Division of the Associated Press

and Dan Halyburton of Emmis.

✓ 3:30–5 p.m.
“Social Networking and

the Democratization of Broadcasting.” Super Session Peggy Miles of Intervox moderates, John Gage of Sun Microsystems keynotes, others discuss.

TUESDAY

✓ 12:15–2 p.m.

Radio Luncheon
Crystal Radio Award winners are announced; Larry Lujack is inducted into NAB Broadcasting Hall of Fame. Robert W. Pittman speaks. NAB gives the first Crystal Heritage Award for long-term commitment to community service to WUSL (FM) in Philadelphia.

✓ 4:15–5:30 p.m.
“Regulatory Face-Off”

FCC Commissioners Tate and Adelstein.

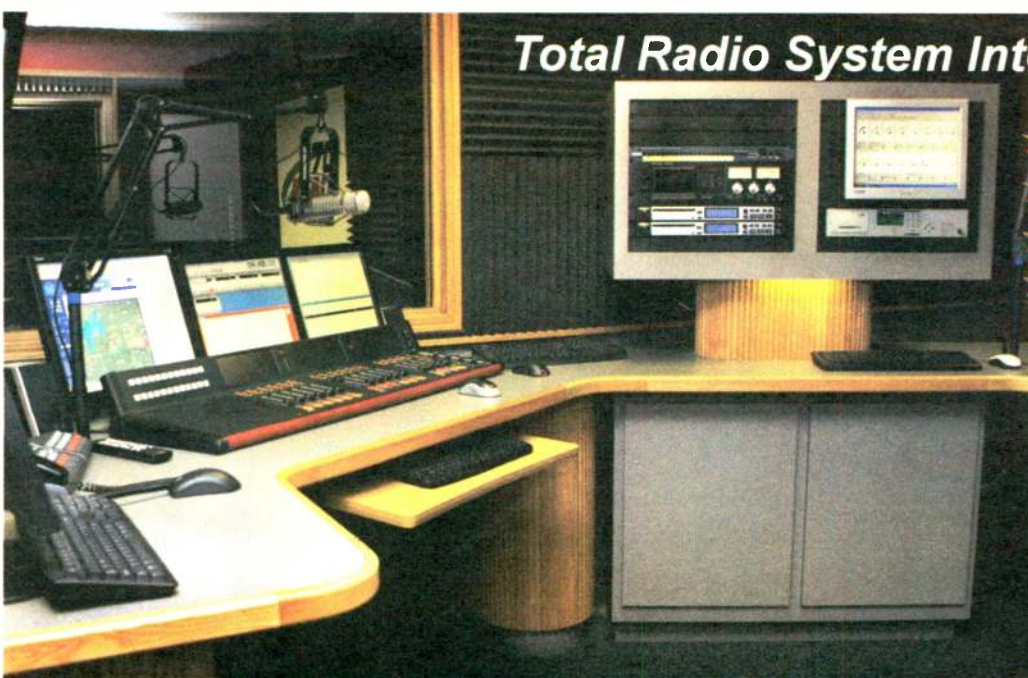


Deborah Taylor Tate

WEDNESDAY

✓ 7 a.m.
Broadcasters Foundation of America Pioneers Breakfast
Now named the Ward L. Quaal Pioneer Awards, they’ll be given to Ed Christian, Robert “Doc” Fuller, Bruce Morrow, Larry Bentson, Stanley S. Hubbard and Tom Oakley. RSVP to ghhbcast@aol.com

✓ 9–10 a.m.
“Conversation with Alvin Toffler — The Future of Digital Media,” with the author of “Future Shock”



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World Radio History

Rack Shelf Adds a Second Pair of Hands

by John Bisset

Keith Jentoft is president of RSI Video Technologies in White Bear Lake, Minn. He has been following the comments about copper theft at transmitter sites and writes that his company has developed an affordable solution that is being used by Duke Energy, AT&T and many homeowners.

The solution is a wireless portable video security system that runs on batteries.

When an intruder trips the motion sensor, the integrated camera takes a 10 second video and sends it over the cell network to a monitoring station. Police respond faster to a crime in progress.

You can see actual apprehensions on www.coppertheft.info if you click on "Catching a Copper Thief in the Act." You can also see a rooftop AC unit being saved in "Videos of Actual Incidents."

The site has 14 video clips of various types of theft or vandalism. My favorite is the "storage container" showing someone hammering away at the lock. You'll find the video clips fascinating.

It's obvious the system works and has a proven track record. This is certainly not the only solution to trans-

mitter site vandalism and theft, but it is one with many applications.

★ ★ ★

Have you ever found yourself having to replace a heavy piece of equipment, like a processor or as shown in Fig. 1, a heavy CCA exciter by yourself?

Sometimes, just getting the old part out is as hard as putting the new one in. Some time ago Winston Hawkins discovered a way to make this a much easier job.

Winston carries a standard rack shelf with him in his truck. Whenever he needs to change out a piece of equipment, he installs the rack shelf, upside down, in the rack just under the old piece of gear, as seen in Fig. 2.

Using the shelf as a brace, the heavy equipment is unscrewed. With the shelf bearing the weight, the old equipment can be taken out of the rack easily, as shown in Fig. 3. The new equipment can just as easily be installed.

No more balancing equipment with one hand, and trying to unscrew rack bolts with the other. Best of all, no more cross-threaded bolts, since both hands can be used to remove or insert rack bolts. Simple, and it works.

Winston Hawkins is the technical director for Personal Achievement Radio and can be reached at winhawk@parfm.com.

★ ★ ★

Contract Engineer John Ragsdale had an experience where diagnosing the problem with his client's STL meant looking beyond the STL.

Collocated on the tower with KQSS(FM) in Globe, Ariz., is a pager company, with an antenna about 75 feet away from the STL antenna. The pager transmitter had quit, so John met their tech to let him into the site.

The final PA module failed on the pager transmitter and was replaced. On the way back to the studio, John noticed the station modulation going up and down in level. John couldn't really diagnose the problem from his digital STL meters, but then it dawned on him that the problem occurred after the pager tech left the site.

On a hunch, John pulled the AC plug to the pager transmitter; the problem went away. Plugged back in, the audio level began fluttering again. John switched to his backup analog STL, which wasn't affected, and called

See FILTER, page 37 ▶



Fig. 1: A tricky job — removing a heavy exciter by yourself.



Fig. 2: Screwing the shelf below the heavy equipment provides support.



Fig. 3: Rack shelf in place after the exciter is removed.

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Model 525

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The Big Picture



Photo: Gary Hayes, BBC

by Skip Pizzi

With continuing concern over relatively slow IBOC receiver sales, it's important to understand a relatively new element in consumer equipment deployment.

It involves the process by which devices are developed and sold, and how this process differs between broadcast receivers and other new consumer hardware classes today.

The key distinction centers on the vertical vs. horizontal business models that both exist, and how this dichotomy affects the landscape in which these types of services currently try to compete with each other.

Think of it this way: Radio (and over-the-air TV) is received "the old-fashioned way" — on receivers you can buy anywhere, over a broad spectrum of price points, including a wide range of features (or included on devices that combine the receiver with other functions, from clocks to cars), limited only by the offerings of hardware manufacturers. Let's

Polarizing the Receiver Marketplac

call these "horizontal" receivers.

On the other hand, a growing number of competitive devices, like satellite radios and multifunction cellular phones, have their design, features and pricing strictly dictated by the service provider with which the device is purpose-built to receive.

Even though these devices may be made by some of the same manufacturers that make the old-school receivers, their development process differs markedly. So we'll call these "vertical" receivers.

(Some might say that this distinction might be better served by calling these "open" and "closed" receivers, respectively, but these terms carry some additional baggage that muddies the specific architectural discussion here.)

The deployment to consumers of these two types of devices also follows divergent paths.

Horizontal receivers are sold by any store that wants to do so, and consumers simply buy them, turn them on and tune in a channel.

Vertical receivers generally are distributed on a more controlled or otherwise limited basis, and they require a subscription to be established with the service that the devices are designed to receive. (Some limited functionality may be provided as a baseline by the device without a service account, such as 911 calling from an unsubscribed cell phone.)

Often the service sign-up is done con-

Horizontal and Vertical Have New Meaning in the Development, Deployment of Consumer Receivers

currently at the point of sale, but in some cases it can be done independently by the consumer in a separate step. Once the subscription is initialized, the receiver must be authenticated and associated with the subscriber's account, and then it can be used to tune in and enjoy the services offered.

Also unlike horizontal receivers, the vertical device typically is of an *addressable* variety, meaning that each unit has a unique identity.

This is primarily to allow "deauthorization" of an individual device if a subscription expires, but it can be used for other personalized service delivery, as well.

This makes them inherently more expensive than horizontal devices, but these and other cost differentials often are absorbed by the service provider through subsidies — to device developers and to consumers — that are part of the cost of doing business in the vertical device environment.

Golden rule

We're all pretty familiar with the horizontal receiver, but the vertical receiver is a relatively new animal — and one

that is confusing, if not antithetical, to broadcasters.

Why is this seemingly counterintuitive strategy becoming so popular? Who would want to have to pay directly for development, deployment and promotional costs for receiver hardware, on top of the costs for creating/providing service?

The answer may lie deep within the DNA of broadcasters and telcos.

Although these sectors share much genetic material in common, there is one place in which they substantially differ: Broadcasters have always lived by the "if you build it, they will come" premise, in that if you begin to offer adequately compelling service, consumers will find their own way to receive it.

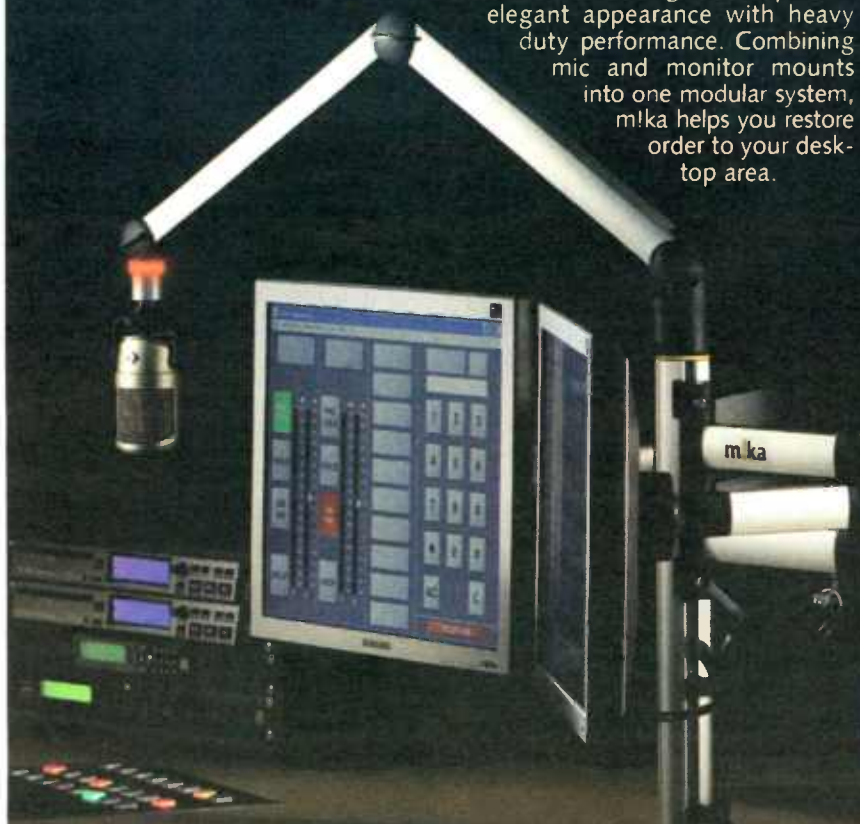
Another view of this approach is the chicken-and-egg argument, in which one party has to start the process with speculative investment, hoping that a second party eventually will reward the first's proactive step by matching the buy-in.

Telcos typically avoid such "faith-based initiatives," preferring to invest in new services that have a much more defined response rate. In other words,

See VERTICAL, page 37 ▶

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Vertical

► Continued from page 36

when a telco fires up a new cellular tower, for example, it can start collecting revenue based on the new service directly, on day one.

(Some of the device subsidies mentioned above that are offered to consumers often are accompanied by long-term contract agreements, so further revenue assurances are gained by service providers in the process.)

The horizontal service model has a longer and less direct incubation process before net-positive revenue appears. While the ultimate profitability of this approach may eventually be greater, it is a riskier proposition.

In the old days, this risk was fairly slight, given that scarce spectrum meant competition among licensed broadcasters was relatively low and well defined.

But in today's multi-platform world of greatly increased competitiveness and uncertainty, returns on the speculative investment model are less assured. Thus the traditional telco approach, with a vertical (i.e., end-to-end, or "managed") transmission/reception model are of increased value within a rich service-provider world.

Perhaps the greatest advantage to the service provider of the vertical model arises from the unilateral ability it provides to determine what services will be available on the device.

In a corollary of the new Golden Rule ("He who has the gold makes the rules"), if the service provider is footing the bill for the device development, deployment and promotion, that provider can also dictate which services will be receivable on the device, and perhaps more important, which services will *not* be.

The latter proviso may allow the service provider to require the purveyors of certain content or services to "pay to play," meaning that these third parties will have to work out a deal with the service provider in order to get their wares aboard a particular device or platform.

This could particularly affect broadcasters if they wish to have AM/FM receivers (analog or IBOC digital) included on multifunction devices like satellite radios or wireless phones and PDAs.

Changing times

The conventional wisdom for broadcasters has long favored the horizontal market, where no cost or promotional burden for deployment of receivers is borne by service providers.

We are now moving to an era in which this notion may become outdated. Competitive services are pushing hard to deploy dedicated, standalone receivers for their services, and/or have their receiver chips embedded in new converged devices, in hopes that such short-term, front-end loading of costs will reap long-term revenue benefits.

So the new spin on the old premise tells us that in terms of new service-deployment success, you get what you pay for. In other words, if broadcasters continue to rely on zero investment in receiver deployment (i.e., remaining with a pure horizontal strategy), they may end up with a dwindling base of new users.

It's a new world, and one in which the old rules may no longer apply.

Skip Pizzi is contributing editor of Radio World.

Filter

► Continued from page 34

the pager company. The backup analog STL worked fine, which kept the station on the air until the errant PA module was replaced.

After discussing the issue with Moseley, the station invested in a bandpass filter, to further protect the digital STL input. In talking with Moseley's Bill Gould, he recommends the bandpass filter on their digital STLs, especially as more tenants occupy space on towers.

Bill Gould of Moseley can be reached at bgould@moseleysb.com.

Buc Fitch writes that the best ideas usually are the simplest.

Take Fig. 4. Buc used 25 cents' worth of GE clear silicon caulk to cover some bare AC connections on a terminal strip to guard against electric shock.

The silicon guards against a hot wire popping out of a crimp lug, or someone



Fig. 4: Use clear silicon caulk to safeguard bare AC terminals.

with a screwdriver accidentally shorting the terminal to ground. Fortunately, most new equipment uses an AC power cord to feed the AC, but you may still encounter the bare terminal block on older gear.

Note the little overrun of caulk on the left — if you ever have to get access to the screws, this little "grab" section on the caulk helps to lift off the useful mess in one motion. This little blob of clear silicon caulk can really save you from a close encounter of the AC kind, in the

back of a dark rack at 3 in the morning.

John Bisset has worked as a chief engineer and contract engineer for 39 years. He is the northeast regional sales manager for Broadcast Electronics and in 2007 received the SBE's Educator of the Year Award. Reach him at (571) 217-9386 or jbisset@bdcast.com. Faxed submissions can be sent to (603) 472-4944.

Submissions for this column are encouraged and qualify for SBE recertification credit.

Rocky Mountain Redundancy

KVOD(FM) and Harris recently completed the install of a parallel ZD32HD+ transmitter system for the classical music station for Denver.

The site is on Lookout Mountain in the front-range of the Rockies in Golden, Colo.

The public station had been using a single Z16 with high-level combining to an old CSI transmitter. Now it is developing full power with parallel solid-state transmitters (14 kW TPO analog + HD Radio) from 8,000 feet above sea level. Harris provided the second transmitter and the combining equipment. The design leaves the station headroom from a maximum rating of 16 kW in the event of an HD Radio carrier level increase authorization by the FCC.

The CSI remains as a working standby and can be placed on-air with a coaxial switch. Hal Kneller, then with Harris, was on-site for the project; he called the CSI backup "a god-

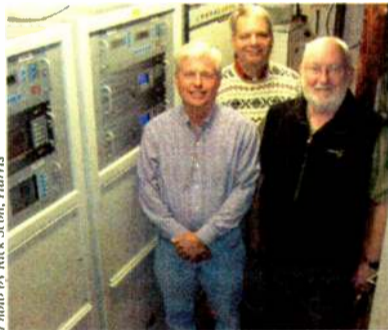


Photo by Rick Scott, Harris


send during the installation — no night-time hours were required to accomplish this upgrade."

The new system is highly redundant, with two exciters, two boost amplifiers (used to drive a second transmitter from a single FlexStar exciter) and two independent transmitters. Exciters and boost amplifiers have automatic switching in case of failure.

The station also had placed the first Exgine system on the air in late 2005 when it installed the FlexStar HDx exciter.

Bob Hensler, left, is vice president of engineering for Colorado Public Radio; Al Stewart, right, is director of RF engineering. Kneller is at rear; he subsequently went to work in a business development post at Ibiqity Digital.

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Radio Catskill Benefits From Micropower

By a Dam Site, WJFF Calls Itself the Nation's Only Hydro-Powered Station

by Tom Vernon

Lake Jefferson in the Catskill Mountains of New York has long been a popular recreation area for area residents.

It is also the source of electricity for the only hydro-powered radio station in

er facility according to U.S. Department of Energy standards. More colloquially, this is known simply as micropower, part of a growing trend.

The facility went online in 1986 and sells excess power back to New York State Electric & Gas. When running at

maximum capacity, the turbines can provide enough power for 20 to 25 homes.

Annoyed by the lack of independent public radio in the mountainous Catskill area, Brown next turned his attentions to starting WJFF.

He organized the community to get involved with the project, and the station was constructed almost entirely by volunteer labor, and connected to the turbines from the outset.



the country, WJFF(FM), Radio Catskill.

The story of hydro power in the Catskills, however, begins long before the advent of the radio station.

Powering up

In 1922, a dam was built near Jeffersonville by the Clark Water & Power Company, with the intent of developing a regional hydro-power distribution facility. The dam was completed, but plans for water-powered turbines eventually were abandoned in favor of coal-generated power on the site.

In 1984, Malcom Brown, a former philosophy professor turned renewable energy activist, bought the generating plant and dam and installed 45 and 25 KW turbines to provide 70 KW of clean energy.

This is considered a micro-hydro pow-

Since its sign-on in 1990, the studio building has been entirely hydro-powered and off the grid for most of the year. The only exception usually is during the month of August.



25 and 45 KW turbines in the powerhouse generate electricity to power the studio building. Excess power is sold to a utility.

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WJFF signed on in February of 1990 at 90.5 MHz. Brown sold the dam and powerhouse in 2005 and left the area to spearhead the HullWind community wind power project in Hull, Mass.

Volunteer

According to station manager Mike D'Antonio, he and two others are the only paid staff at WJFF. Station operations, including on-air announcing, are managed by volunteers.

"We currently have over 100 volunteers who bring a great deal of passion to



their work at the station."

Musical programming runs the spectrum from rock to classics, and most programs are produced locally by volunteers, although syndicated programs "Art of the Song" and "E-town" are aired during the overnight hours. The station also airs NPR news, plus several local news and public affairs programs.

"Many programs have an environmental emphasis," said D'Antonio, "including one hosted by a man who operates the local wind farm." Recently, the station aired reports about proposals to drill for natural gas in nearby Damascus, Pa., a strong concern of area residents.

Localism at WJFF includes airing school closings as well as lost cat and dog reports. "Community responsibility is one of our guiding principles," adds D'Antonio.

Ups and downs

The community supports WJFF in turn. During a recent seven-day fund drive the station was able to raise over \$30,000. Notes D'Antonio, "People are excited to be involved with WJFF."

Since its sign-on in February of 1990, the studio building has been entirely hydro-powered and off the grid for most of the year.

The only exception is usually during the month of August, when water levels are at their lowest. Then the turbines must be turned off to avoid draining the lake too low.

While not enough water can be a problem, so can too much. During times of flooding there is a danger that the powerhouse may be submerged, and the tur-

See CATSKILL, page 39 ►

Catskill

► Continued from page 38

bines must be shut down. Such was the case during a flood in June of 2006, when the powerhouse was under six feet of water. There was no permanent damage, and power generation resumed once everything was dried out.

Floods can also damage the dam itself. D'Antonio adds that the high waters of 2006 spilled over the top of the dam's corewall, eroding the earth embankment on the opposite side and threatened the powerhouse.

The force of the water also caused damage to the concrete facing of the spillway. The earth bank was refilled, and the dam judged to be safe for the short-

term by federal inspectors. Repairs to the spillway are pending.

WJFF occupies a unique niche in the realm of green broadcasters. Its on-air slogan is "the only hydro-powered station in the nation." One of the few other water-powered facilities in the Americas is HCJB, Quito Ecuador, which has dammed headwaters of the Amazon to power its shortwave and medium-wave transmitter site.

While its studios are off-grid most of the year, the WJFF transmitter building remains on the grid — for now.

"We're looking into wind power for that site, but the project is still in the early stages."

Articles in the Green Radio series are archived at radioworld.com. Tom Vernon wrote about Clear Channel's KKGN(AM) in February.



A 'penstock' at the base of the dam delivers water to the turbines in the powerhouse.

The Micropower Revolution

Say "power generation" and most people envision large nuclear or coal-driven plants owned by huge utility companies.

That vision may be changing. The new philosophy of power generation is leaning away from the monopoly of large utilities towards the open, competitive marketplace with smaller plants generating power locally: micropower. This can take the form of wind, solar, microturbines or hydro.

Several forces are combining to drive the adoption of micropower. These systems are gaining favor in the green community because they have a much smaller carbon footprint than fossil-fuel based installations.

Micropower can be adjusted to match demands, and installed more quickly than central systems. It is usually more reliable than the grid, being immune from blackouts on an aging infrastructure, either from accident or sabotage.

IT-intensive companies demand reliable, clean power and are discovering that micropower is easier to generate locally than to filter out spikes and noise from the power grid. At the same time, technology advances are making solar and wind power more affordable, and improving reliability.

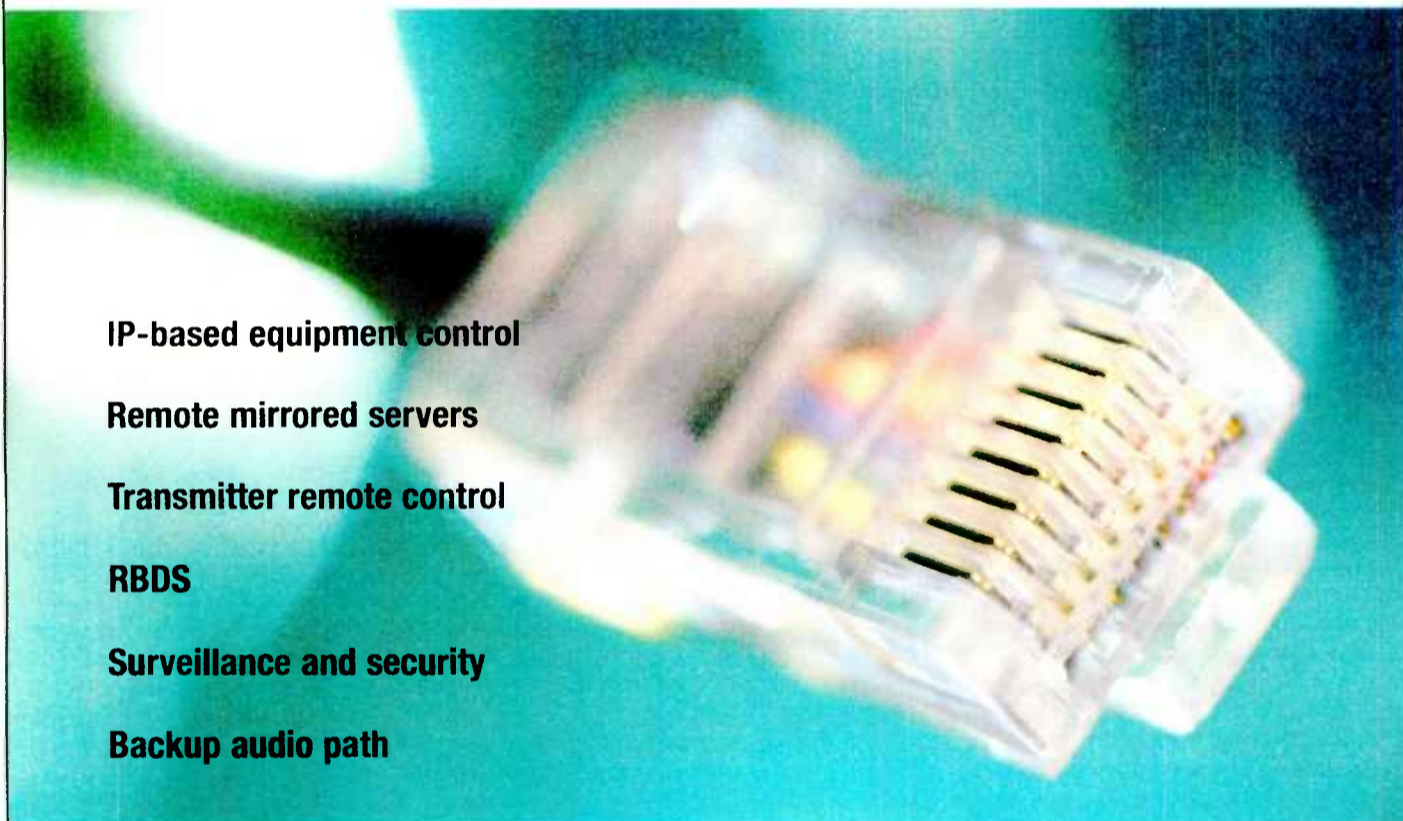
Some experts predict a tipping point as soon as costs are competitive with fossil fuel-delivered electricity — without subsidies.

Micropower really is the second coming for locally generated power. When electrical power distribution was in its infancy in the 19th century, founders such as Thomas Edison envisioned a highly decentralized system, with individual businesses generating their own electricity. Early systems such as the dam and powerhouse at Jeffersonville bore out this idea. Eventually, however, the concept of centralized power generation run by large utilities won out.

Some analysts view micropower as a disruptive technology, meaning they feel its potential is greatly underestimated at the outset but it will quickly reach critical mass, toppling unprepared companies and taking many observers by surprise.

— Tom Vernon

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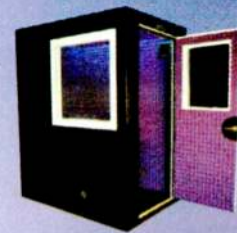


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Studio Sessions

Product
Guide
Inside



Radio World

Resource for Radio On-Air, Production and Recording

April 9, 2008

PRODUCT EVALUATION

Kowa PX-10 Ideal for the Busy Studio

Portable Flash Player Offers Audio Editing, 'Makes Good Use' of USB Drives

by Forrest Yingling

At the 2007 NAB Show, Radio World's panel of broadcast engineers awarded Kowa a Radio World "Cool Stuff" Award for the PX-10, the company's new flash memory hotkey audio player. The PX-10 is a smart, compact and dependable machine that eliminates problems caused by faulty and unreliable hard drives.

The unit plays back audio files that have been previously saved via an inserted USB flash drive or CompactFlash memory card. It is virtually impossible for the PX-10 or a USB flash drive to malfunction because neither have any moving parts like hard drives or fans.

The PX-10 is ideal for any busy studio environment, and would be useful in live settings as well. On-air talent and production staff can share the PX-10 as long as they have their own USB drive containing their cuts.

It would be easy and convenient for all station employees to have their own USB flash drive, which they could take from the studio to home to their PC to the PX-10. USB flash drives are straightforward, widely available and tiny enough to fit on a keychain or lanyard.

When I first received the PX-10, I was thinking I would need a huge capacity flash drive to save an entire show's worth of audio. However, this was not necessary — a 2 GB drive should be an ample size for the amount of audio you can allocate to the PX-10.

Both MP3 and WAV file formats are supported by the Kowa PX-10 at frequencies of either 48 kHz or 44.1 kHz. Each

of the 50 numbered buttons on the front panel of the unit will play a corresponding audio file when pushed. There are six page keys and each page can store up to 50 files, giving the user a total of

300 audio files at their fingertips.

Compact, efficient

The PX-10 includes stereo and mono RCA and XLR outputs as well as a digital output and a convenient 1/4 inch stereo headphone jack. The large and brightly illuminated rubber buttons are easy to see and push. Weighing in at 7.5 lbs., the unit is portable and efficient.

The display screen of the PX-10 is bright and clear and contains a VU meter, playback counter, the filename being played and the filename on standby. The coolest element of the PX-10's display screen is the playback position bar, which clearly illustrates on a line the head and tail points, fade-ins and outs and current position of the file.

Another notable feature is the variable four-speed rewind and fast forward. This allows you to rewind or fast-forward at up to eight times the normal speed.

Additionally, the jog dial allows the user to fine tune the audio by frame advancing at 25 milliseconds per click. This is especially useful for setting head and tail points and fades.

Head and tail points as well as fade-ins and -outs can be set using



the jog dial or by using the PC software. Using the software's edit screen to change these parameters is easier because the waveform can be viewed.

The PX-10 software program shows the front panel of the unit. To assign audio files to any of the 50 buttons, the user must simply drag an MP3 or WAV file onto the corresponding button on the PC screen. It doesn't get much easier.

A downside is that all files on a page must be of the same format and sampling frequency. For instance, all files on Page 1 must be 44.1 kHz MP3s. It would be much simpler if you could mix and match various file formats and frequencies on the same page.

Product Capsule:

Kowa PX-10 Flash Memory Audio Player

Thumbs Up

- ✓ Excellent use of USB flash drives
- ✓ Affordable, practical for busy studios
- ✓ Unit, software interface well and are user-friendly
- ✓ Uses MP3 and WAV file formats
- ✓ Lightweight and portable
- ✓ Backup USB slot on rear panel in case of malfunction

Thumbs Down

- ✓ Windows only; doesn't run on Mac OS
- ✓ A bit more expensive than the competition
- ✓ Can't mix file formats on same page
- ✓ Display looks slightly outdated; could be more modern

PRICE: \$3,500

CONTACT: Kowa Optimed at (310) 327-4177 or visit www.kowa-usa.com.

At \$3,500 the Kowa PX-10 is fairly priced. While there are similar pieces of gear on the market selling for under \$3,000, the Kowa PX-10 is in a league of its own when it comes to the notion of not having any moving parts. I think having the peace of mind that comes with the knowledge of owning a quality piece of gear is worth the extra money.

This would be a welcome addition to a radio studio. Kowa has put USB flash drives to excellent use with this product and it is perfect for the modern broadcast world.

The PX-10 is a high-quality, easy-to-use, dependable machine. It is obvious why Japanese TV and radio stations use the Kowa line. To see the PX-10 as displayed at the 2007 NAB Show, check out the video "Coolcast" at www.rwonline.com/coolcasts.

Forrest Yingling is a freelance writer, producer and musician based in Washington. Reach him via e-mail at forrest.yingling@gmail.com.

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World Radio History

TOP STUDIO BUILDOUTS

INSIDE Associated Press in Washington

by Tom Vernon

Some buildouts require quick turn-around times, others force designers to think out of the box. In this series of articles, RW profiles facilities that caught our eye due to their size, complexity or innovation.

A desire to efficiently leverage its multimedia assets led the Associated Press to consolidate its Washington operations under one roof.

The new facility contains AP radio, TV, Internet, wire and photo services. It occupies 82,314 square feet across four floors, including 55,000 square feet of raised flooring. Four hundred forty-seven people work in the new building; the move was complete around the end of 2007.

Steve Kuhn, director of broadcast engineering, said key equipment was supplied by SAS, which provided control surfaces and routing; with Netia delivering control and production software.

The radio side consists of two on-air

mechanical piping and more than 1,200 miles of data cable," Kuhn said.

Backup power comes from a generator with more than 24 hours of fuel capacity, along with two UPS systems. The AP complex has its own AC feed, separate from that used by the rest of the building. The generator was set on the roof using the largest mobile crane available on the east coast.

While the amount of equipment and infrastructure in a facility this size is See AP, page 43 ▶



Associated Press Newsroom



Master Control Room

studios, two production rooms and a tracking booth. On the two news floors are more than 70 video and audio workstations and 34 networked full-resolution digital editing stations, which also can contribute audio. AP engineers have done the studio configurations, while Professional Products of Gaithersburg, Md., was the systems integrator.

The satellite antenna farm on the roof is impressive. Included is a full-arc Simulsat-5 C/Ku antenna, one of the biggest in downtown Washington, capable of receiving simultaneous transmissions from dozens of satellites, along with three other large dishes.

The IT center for the complex is a 1,000 square foot area with 100 equipment racks. To this center are more than 400 multi-screen desktops connected via gigabit Ethernet. More than 1,000 television monitors are scattered throughout the building.

Although a TDM routing system such as the SAS greatly simplifies wiring, the cabling infrastructure for the AP facility is still enormous.

There are more than three miles of 4 inch conduit, more than four miles of electrical cable, more than a mile of

KLOTZ DIGITAL

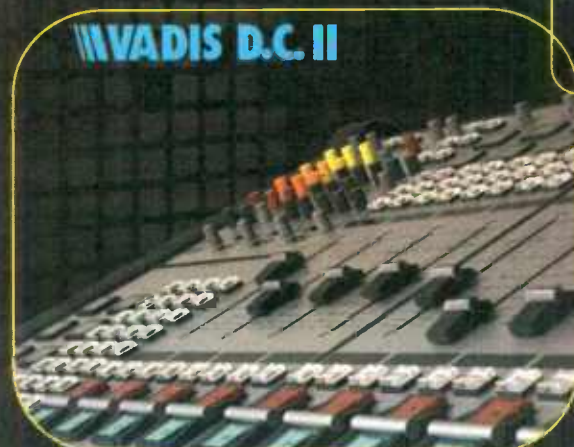
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World Radio History

PRODUCT EVALUATION

Built to Last and ... Made in China?

Sound Quest R-601PW Is Big, Sensitive and Takes Listeners Back to a 'Golden Era'

by Frank Beacham

For too many years, Stephen Monte's shop in Pennsylvania repaired old radios for its customers. It was not a great business because refurbishing an old radio never meant replacing every part, and sooner or later another transformer or capacitor would break.

So a couple of years ago at CES in Las Vegas, Monte met representatives from V.A.L. Audio, a Chinese company that makes tuners and speakers with built-in amplifiers. The discussion soon turned to high-quality table radios. From that conversation, perhaps the finest line of modern day table radios in America was born.

"We talked with them about building new tube radios with superb sound that

looked like vintage sets," Monte said.

"We came up with a design between the two of us and they sent samples back and we sent samples back. And, lo and behold, this was the baby."

Sold by Quest for Sound in Bensalem, Pa., Monte's Sound Quest radios are a remarkable example of Chinese manufacturing at its absolute best. We were sent the Sound Quest R-601PW mono tube radio, one of three basic models and five radios that Monte and V.A.L. now manufactures.

The R-601PW ("W" for solid walnut case) sells for

\$369, a fairly standard price for a high-end tabletop AM/FM radio. However, when the box arrived and one lifts this 15 pound behemoth out of the dual car-



the feeling we got."

There are three versions of the Sound Quest R601 mono tube radio, ranging in price from \$299 to \$369. Then there are a couple of models of the R601S stereo radio for \$369 and \$429, depending on case.

And finally, there's the R801, the top-of-the-line \$849 stereo tube radio that looks like a big Grundig. It picks up AM, FM and shortwave frequencies and includes an 18 watt stereo amplifier and range of inputs and outputs.

Warm and mellow

"All the radios are made of wood. They come in bakelite color, cherry and walnut," said Monte. "I must say that customers like these radios very much."

Not only are the radios a sensual delight, but they work very well. In the R-601PW radio we tested, the GaAs MES-FET cell-based design and high-quality components give the radio

sensitive reception, good channel selection and strong anti-jamming capability.

The radio received all of our hard-to-reach test stations superbly in New York, and outperformed virtually any radio we put against it. Not only did it pick up stations well, but the sound is amazing. The bass and midrange are excellent performers, probably the best table radio we've heard at any price.

The unit has quality written all over it. The sound is warm and mellow. The amplifier has a frequency response of 70 Hz to 16 kHz. The wooden cabinet

tons, you know immediately it is no ordinary radio.

It's a new-old radio'

At 8.5 inches high, 12 inches wide and eight inches deep, this is no tiny contender for a corner. Simply put, it's big, beautiful and built to last. It's a showstopper.

Plug in the grounded, heavy-duty electrical cord in an outlet and turn on this gorgeous radio. Then tune the massive, silky-smooth, back-lit dial, using the "magic eye" on the front panel to lock in the station. The sound you receive through

Stephen Monte and V.A.L. Audio have done something no one else in this country has done: recreate radio as it once was and should be.

the big 4 inch speaker and 10 watt amplifier tells you this radio is very special, like no modern radio you've ever heard.

Now, for a moment, forget the recent Bose, Tivoli, Polk or Boston Acoustics high-end radio you may have tried. Nice, new products, all of them — but Monte's radios pay tribute to the Zenith and Grundig designs of the past. In a way, it's a new-old radio.

"Basically we decided that instead of refurbishing all of these old radios that we'd come up with a little newer design," Monte said. "So rather than put money into an old radio and six months down the line a transformer goes dead or a cap goes bad on it, we offer our customers a new radio."

Monte said customer reaction, which has been fantastic from the beginning, is letting him know the radios are the best now sold in America.

"We get a lot of e-mail and letters that have said the same thing to us," Monte said. "We had a nice gentleman who sent us an e-mail from Virginia who said 'I really enjoy eating breakfast now. I come down and turn this on and then go upstairs and take a shower and then come down and this thing warms the whole kitchen up — music-wise and everything. I then just sit down and enjoy my breakfast.'"

"That was the feeling we wanted and

design is solid as a rock, and the "magic eye" and tuning circuits are precise. A front knob turns on the radio and adjusts the volume. A second knob selects between AM, FM or the Aux input.

On the back of the cabinet is an Aux mono input, a headphone output and a record output that can be used to drive a small subwoofer. AC power can be switched between 230 and 115 volts. There are built-in AM and FM antennas, and a switchable outboard jack for an included FM antenna.

The tubes can be seen glowing through slits in the side of the cabinet. There are dual 6P14 triodes and a 6F2 is used as a rectifier.

Stephen Monte and V.A.L. Audio have done something no one else in this country has done: recreate radio as it once was and should be. Yes, cheap radios are fine and newer solid-state radios have opened a new generation to radio quality. But these Sound Quest radios take us back to a golden era that gives new life to radio and great audio receivers. We've gone back to a time that allows us to focus on how much difference a great receiver can make.

Frank Beacham also writes for Radio World's sister publication TV Technology.

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AP

► Continued from page 41

impressive, Kuhn emphasized that it takes more than hardware to keep AP running.

Software is a vital component of the new AP facility. The one-stop front end for AP news editors and producers working on PCs is its ENPS, or Electronic Newsroom Production System. Jason Smith, ENPS project manager, said, "This software

Smith said that while ENPS fully integrates different media, archives are scattered across the globe, with AP having video archives in London, New York and Washington.

Smith added that ENPS has an 11-year history, and was developed by AP in response to a request from the BBC. Now the program has more than 50,000 users in more than 50 countries. Users include the BBC, ESPN, CBS and NPR.

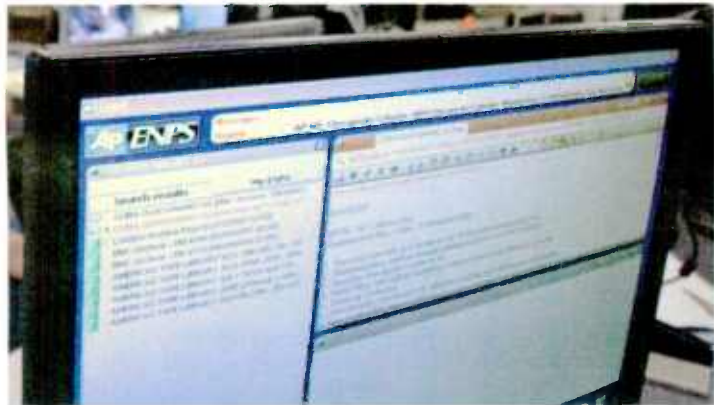
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Radio Studio 52

serves as a common point for all media, not just audio. With ENPS, journalists can read and write stories, and look at audio files without having to switch applications."

Added flexibility comes through using ENPS with MOS. Media Object Server Communications Protocol is an open-standard protocol for communications between newsroom computer systems and media object servers such as video servers, audio servers, still stores and character generators. In the case of AP, MOS connects ENPS to Netia, allowing AP producers to browse automation and edit assets in the database.



AP says more than 500 newsrooms in 48 countries use its ENPS production software to create, manage and broadcast news content.



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 - modulation level.
 - pilot signal (19 KHz) sampling while in transmission.



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- Fold back SWR protection.

PRODUCT GUIDE

Auralex Foam Among VocalBooth.com Upgrades

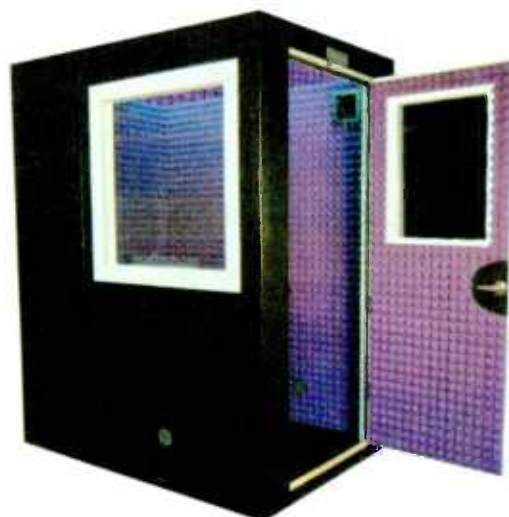
VocalBooth.com says it has added upgrade options to its line of custom booths.

They include Auralex acoustic foam available in 10 colors, hardwood floors with sound dampening sub-floors, fabric-wrapped acoustic foam wall sound absorbers and quiet ventilation systems. Other customizations include interior and exterior colors, foams, fabrics, windows, floors and industrial casters.

The company also is offering products like amplifier enclosures in four sizes, and turnkey packages that include recording interfaces, microphones, monitors, ceiling mount booms, headphones and cabling.

VocalBooth.com rooms are enclosed systems with active ventilation, lighting, cable passage and optional windows. Standard sizes range from 4 feet by 4 feet, up to 16 feet by 16 feet. VocalBooth.com also manufactures pentagonal-shaped booths for easy corner placement. The diamond-shaped series is available in four sizes.

For more information, visit www.vocalbooth.com.



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Buyer's Guide

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Radio World

Microphones & Audio Monitors

April 9, 2008

USER REPORT

'Voice Guy' Touts Heil Sound PR 30, 40

by Dave Hines
Asst. Program Director/
Music Director
KXUS(FM)
Clear Channel Radio
Springfield

SPRINGFIELD, Mo. I use two different models of Heil microphones in three different situations. I use a PR 30 for on-air on a classic rock station, KXUS(FM), "US 97." I use the PR 40 in the production studio at the station, and also in my personal studio at home. If you tried to take them away from me, you'd have a fight on your hands.

I'm a voice guy, not an engineer. So, immediately, I was happy when I looked at the PR 30 and 40 and found the absence of modification switches. All I had to do was plug them in and start talking; literally. The sound was so clean it caught me off guard.

These mics have a real "eyebrow-raising" factor the first time you use one. My first thought was, there's no way I can afford this for my studio. Imagine my amazement when I found out that these mics cost less than the EVs I was using.

No need to push

I chose the PR 30 for on-air because it's not as "boomy" on the low end as the PR 40. The PR 30 drops off at about 40 Hz, while the PR 40 drops around 28 Hz. With the way the station EQ is set, the PR 30 cuts right through but still delivers that "warm" sound I want. I also found that these mics require little processing, if any.

I'm much more prone to "less than perfect" mic technique on-air, and the PR 30 is pretty forgiving. I can work it nice and close with far less risk of pop than I've gotten from other studio dynamics. The clarity is so good that I never



Dave Hines and His Heil Sound PR 30 and 40.

feel the need to push, which helps maintain solid fundamentals.

The rear rejection is outstanding. Simply put, it's not picking up what I don't want it to pick up, such as a noisy piece of equipment or a guest's errant cellphone on the other side of the studio.

Speaking of guests, the pickup pattern is top-notch. I almost never have to remind guests to "scoot in" to the mic. As long as they're pointed at it, and reasonably close, they'll be heard.

Also, as you move off the axis away from the "sweet spot," you only lose gain as opposed to the EQ thinning out. This is actually the first mic where I've had a guest comment on how good they thought they sounded. If I have to move the mic boom, I don't get that distracting rumble.

This thing is "battle-ready" for the studio, so you can concentrate on your content rather than tech problems. I've had

In my production studio at the station, it's running through a few thousand dollars' worth of preamps and processors into a Digi-002 rack for ProTools. In my home studio, it's running directly into an M-Box for ProTools.

The finished product from either studio is interchangeable. I know it sounds far-fetched, but I've actually done "punch-in" revisions at home for sessions I voiced at work.

The PR 40 has the capability to produce that huge, rich, "voice of God" sound that you rarely can get from a dynamic mic. I'm able to work it in many different ways to have the large palate I need when producing spots or doing imaging voice work.

A danger I've found in having this mic in the studio is that it's like using an RE-20 with the training wheels off. I guess that's also a blessing, but what I mean is that it's easy to over-process if you start playing around with the audio in post-production. The PR 40 does have a tendency to pop if you work it too close. For me, that's a fair opportunity cost for

In my production studio at the station, the PR 40 is running through a few thousand dollars' worth of preamps and processors into a Digi-002 rack for ProTools. In my home studio, it's running directly into an M-Box for ProTools.

the Heil PR 30 in the on-air studio for about a year, and I haven't found any negatives. I put the old RE-27 in an extra production studio and haven't looked back.

I use the Heil PR 40 in two very different setups for the same purpose.

the clarity and vast range I get.

Bottom line: For the price, you can't put a better mic in your studio than the Heil PR 40.

For more information, contact Heil Sound at (618) 257-3000 or visit www.heilsound.com.



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USER Q & A

ATC Moves in At WGBH

John Voci, director of radio stations for WGBH, Boston, comments on his experience with Acoustic Transducer Co.'s SCM50ASL and SCM100ASL monitors.

Tell us about WGBH.

Boston's WGBH is a national producer and distributor of programs, operates a local broadcast service and records and broadcasts live acoustic music, typically classical and jazz. WGBH produces more of the PBS prime-time lineup and Web content than any other source.

What prompted WGBH to purchase ATC's SCM100ASL midfield speakers?

WGBH recently completed the relocation of its radio and television facilities into new premises. WGBH Radio seized the opportunity to expand its complement of reference monitors, adding two new pairs of active three-way SCM100ASL midfield speakers to the two existing pairs of SCM50ASL units that were moved over from the previous broadcast studio location.

Where did you purchase them from?

LasVegasProAudio.com (ATC's U.S. distributor, a division of TransAudio Group).

Where did you put the SCM100s?

Those are now in both our music recording facility and in our mastering suite. We imagine tracking happening in the music performance control room and then projects can migrate to the mastering suite. Those two rooms also are surround rooms.

When did you begin using ATC monitors?

WGBH began using ATC SCM20 monitors more than 13 years ago at its studios at Boston's Symphony Hall, adding two pair of ATC SCM50s.

When we did our last renovation, in 1995, we went through a big speaker shootout. We listened to a lot of different types of speakers. The engineering staff really liked the ATC 50s. We had two pairs of those, one pair in the music recording room and one in another of our production facilities.

How did the SCM50s cater to your format?

Given the fact that we do a lot of acoustic music, the engineers liked the tonal quality of the SCM50s. They seemed to be a speaker that did not color the sound in a particular way, which some others did. That was a very important factor for the engineers. They felt the ATCs were true to what was going on. They weren't presenting a different picture, whether it was something that was too bright, or coloring the sound in a way that was unrealistic.

What are some of the preferred features of ATC speakers among staff?

[Audio engineer] Jim Donahue thinks ATC speakers are designed with great electronics and amplifiers, and that they are very accurate and natural-sounding. He also has always been impressed with their superb imaging. They can be listened to for hours without fatigue after a long day at



WGBH Control Room 1

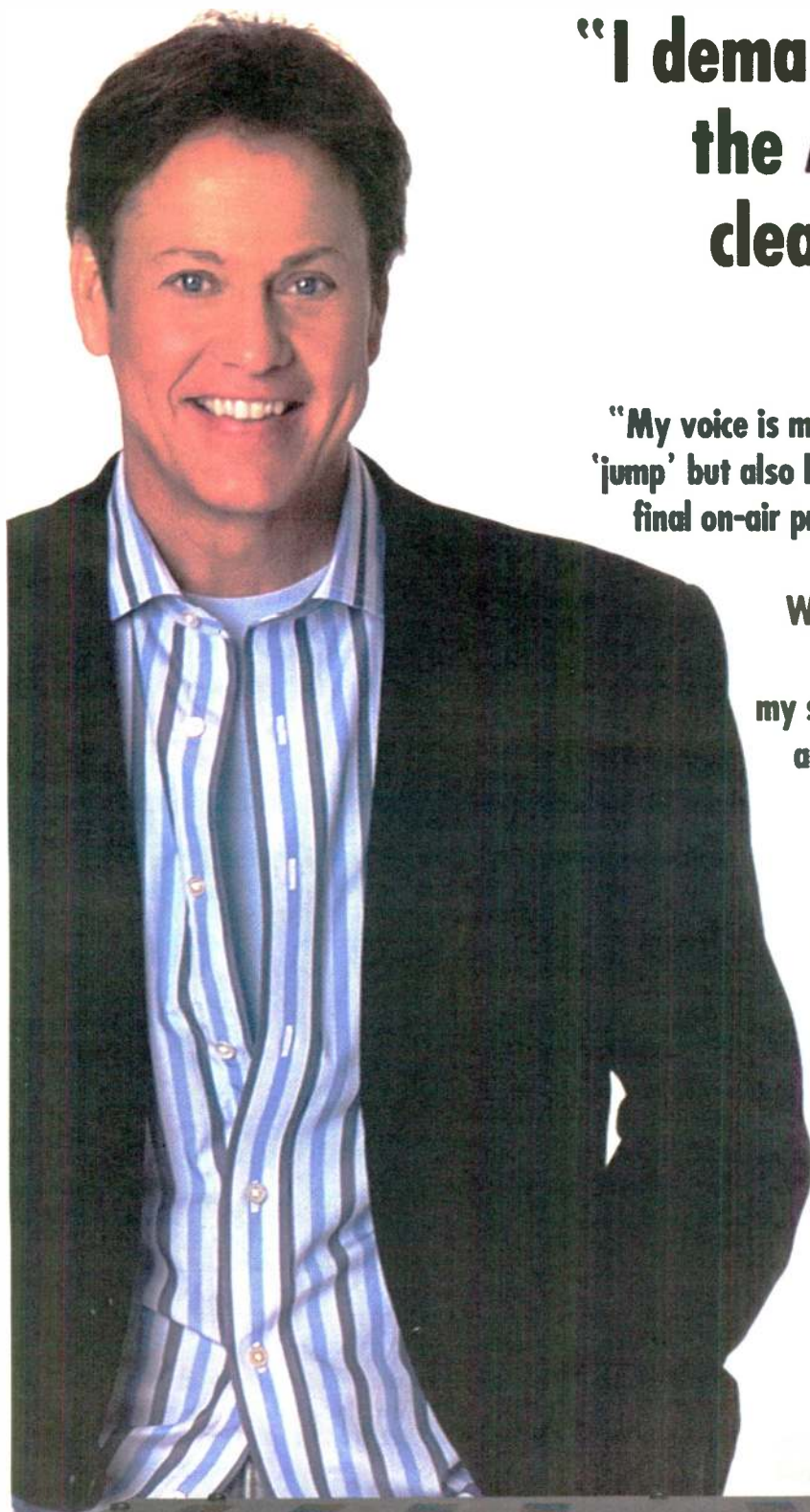
Symphony Hall or in the studio.

For this most recent move, what were some of your must-have features for the new monitors?

Maintaining the sonic signature of the SCM50 monitors so that projects would translate between rooms was an important criterion when selecting additional speakers for the new studios. When we were thinking about what to do in our additional control rooms at the new location for the production operations that support our local broadcast operation, where we would be taking projects from room to room, we wanted to try and have the speakers match as well as possible.

For more information, including pricing, contact Las Vegas Pro Audio at (702) 307-2700 or visit www.atc.gb.net.

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TECH UPDATES

RMC, HiQnet Ease 5.1 Setup for LSR4300

JBL Professional says its LSR4300 series 5.1 studio monitor systems incorporate Room Mode Correction technology and Harman HiQnet network functionality for accuracy and to ease setup of 5.1 surround sound monitoring.

Each speaker and the LSR4312SP subwoofer has an analyzer that measures and automatically compensates for low-frequency problems caused by the room's standing waves and boundaries.

Calibration of the system is accomplished by connecting a supplied calibration microphone to the speaker and pressing a button. The RMC system can be calibrated and settings can be viewed on the computer desktop using LSR4300 Control Center Software.

JBL says the LSR4300 system is designed to be "surround smart." The Harman HiQnet network, along with LSR4300 Control Center software, eases setup and control of large surround systems with up to eight LSR4326P or LSR4328P monitors (with 6-inch and 8-inch woofers, respectively) and two LSR4312SP subwoofers in a single system.

Additional highlights include a tri-color meter display on the speaker's front panel that lets broadcasters monitor system levels.

For more information, including pricing, contact (818) 894-8850 or visit www.jblpro.com.



QuietPoint Headphones Use Mini Mic to Monitor Noise

Audio-Technica's ATH-ANC7 QuietPoint active noise-canceling headphones use a miniature recording microphone in each earpiece that monitors ambient noise, and creates a sound-canceling signal that reduces distracting background noise by up to 85 percent.

Suitable for use with MP3, CD and DVD, the ATH-ANC7 QuietPoint headphones offer comfort in a closed-neck, streamlined design, according to the company. They feature large-aperture 40 mm drivers with neodymium magnet systems for deeper bass and extended treble, and have a frequency response of 10–25,000 Hz.

Audio-Technica's ATH-ANC7 headphones retail for \$219.95.

For more information, contact Audio-Technica at (330) 686-2600 or visit www.audio-technica.com.



MXL V88 Studio Mic Captures Human Voice

MXL Microphones, the audio division of Marshall Electronics, introduced its V88 studio microphone.

The large-diaphragm, pressure-gradient condenser microphone offers a fully balanced transformerless input; the company says it creates a warm, open sound that captures the human voice in addition to being suitable for other acoustic sources.

Internally wired with Mogami cable for clean signal transfer, the V88 features a large 32 mm capsule with a gold-sputtered diaphragm. The cardioid polar pattern enables off-axis instruments to remain natural sounding, and the capsule provides feedback suppression during the recording of live performances where loudspeaker playback may be a factor.

The V88's capsule delivers frequency response from 20 Hz to 20 kHz. Highlights include a nickel-plated finish and a low-profile form factor of less than 6 inches in overall height. The V88 ships with a protective aluminum flight case. A shock-mount adapter also is included as part of the package.

The MXL V88 carries an MSRP of \$349, and is now shipping.

For more information, contact Marshall Electronics at (310) 333-0606 or visit www.mxlms.com.



Holophone, Rycote Collaborate on Windscreens

Surround microphone manufacturer Holophone, and Rycote, provider of audio windshielding and shockmounting systems, have developed windscreen systems for Holophone's line of surround microphones: H2-Pro, H3-D and H4 SuperMini.

The Rycote windshield systems are available in stand-alone fuzzy and fuzzy/windscreen pairs, providing 10–12 dB extra protection for Holophone's surround microphones compared to a standard windshield. Holophone says the windscreens are made from special materials that offer virtually no adverse effect on sound level or quality. To allow for a snug fit, the windscreens feature a draw-string and toggle.

Holophone recommends that the fuzzy shield be used in conjunction with the windscreen for optimal sound quality. The H2-Pro fuzzy retails for \$150, the H3-D for \$150 and the H4 SuperMini for \$100. The H2-Pro fuzzy/windscreen set retails for \$475, H3-D \$475 and H4 SuperMini for \$275. The windscreens will be sold through Holophone and its dealers.

For more information, contact Holophone at (416) 362-7790 or visit www.holophone.com.



USER Q & A

Clear Channel Minneapolis Taps EV for Upgrade

Rob Goldberg, chief engineer for Clear Channel Minneapolis, and Brian Thomas, performance recording engineer, comment on their experience with Electro-Voice sound systems. The Twin Cities cluster recently upgraded its "Studio C" performance theatre.

Tell us about Studio C's new sound system.

QRx153/75 mains are mounted over QRx218 subs, along with four SxA250 stage monitors, all powered by CP-series amplifiers. EV RE410, N/D767a and Raven microphones handle the input end of the signal chain. It adds up to provide a comfortable space for hassle-free, high-quality live performance and recording.

What prompted the upgrade?

Rather than an improvised studio on the fourth floor of an office building, we wanted the studio to be a welcoming space with an intimate vibe and warm sound quality, suitable for everything from a rap performance to a political discussion.

Why did you select Electro-Voice?

We knew we wanted high-end equipment for the best possible live performance and recording experience. EV was the brand of choice for a number of reasons. Their broadcast industry-standard RE-20 microphones are installed at more than 1,200 of our stations; and all the engineers here were familiar with EV sound from clubs and live venues.

The EV system is equipped with tons of headroom



Studio C

and sonic power, and lends a warm, transparent sound to all performances, whatever the genre. Listeners feel like they're in the same room with the artist. The sound quality is so good that Trisha Yearwood actually used a couple of tracks recorded right here for a CD release, which reaffirmed we did it right.

Which stations in the cluster use this space?

Each of the six stations broadcasting out of the building take advantage of this production space.

For KTCZ(FM) "Cities 97," a AAA format, there are more than 100 interviews and performances annually in

"Studio C." For KEEY(FM) "KK102," which is country, the room becomes re-branded "The Roadhouse."

For KFAN(AM), sports, it becomes "The Press Box." For KDWB(FM), it becomes the "Sky Room."

Do you think listeners can hear the difference?

Our listeners love hearing and participating in the live performances, and the intimate setting and hi-fi audio quality translate well across the airwaves. Rather than just hearing a track from a CD, they hear a real live performance, which goes back to the roots of radio — something unique and exciting.

And obviously, it's a great promotional resource for visiting artists, a real added value that steers them toward the Twin Cities when planning their promo tours.

Other thoughts about your EV-outfitted Studio C?

Our annual Cities 97 sampler CD is sounding better than ever. Almost everything on it is recorded here. A better-sounding room invariably yields a better-sounding performance from the artist and a better response from the audience; this room can accommodate an audience of around 100. The applause you hear on-air is for the sound quality as well as for the show.

Studio C has quickly become an important resource for all our stations.

For more information, including pricing, contact Bosch Communications Systems at (952) 736-3935 or visit www.boschcommunications.com.

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TECH UPDATES

ADAM Expands Series With Smaller Monitors, Sub

ADAM Audio is expanding its A series with the A5 powered monitor, which offers compact size and \$699 retail price.

The A5 is, technically, a smaller version of the A7, according to the company, and can be used either in stereo or to fill out a 5.1 surround system.

Powered by two 25 W on-board amplifiers, the A5 combines ADAM's Accelerated Ribbon Technology folded ribbon tweeter with a 5 inch woofer constructed of a carbon fiber and Rohacell sandwich. The front of the A5 sports dual ports for low frequency response down to 55 Hz (this can be extended to 30 Hz with the addition of the compact Sub7 subwoofer), and metal grills for added durability, as well as power and gain controls.

The rear includes balanced XLR jacks, unbalanced RCA jacks and ADAM's Stereolink technology, which connects speakers with input and output jacks allowing the user to control the overall volume of the system from a speaker's gain control, making the A5 suitable for desktop recording systems.

The A5 comes in traditional ADAM matte black (\$699) or glossy "piano" finishes in black or white (\$769). Optional wedge-like stands allow the A5 to be positioned at an upward angle.

ADAM Audio also is introducing the Sub7 (\$479 matte black, \$529 glossy black/white), a compact subwoofer to match the A5. It is capable of extending the frequency reproduction of the A5 down to 30 Hz.

Features include multiple inputs (both XLR and RCA) and controls that allow the system to be fine-tuned to various listening environments; and a wireless remote control for adjusting the volume and crossover frequency from the listening position.

For more information, contact ADAM Audio USA in California at (818) 991 3800 or visit www.adam-audio.com.



ADAM A5

VXT Series Cabinet, Faceplate Widen 'Sweet Spot'

KRK Systems released its VXT series of studio monitors, saying they are suitable for use by engineers, musicians and DJs.

The VXT series has proprietary woofers and tweeters, a curved faceplate for imaging, a cabinet design that provides low resonance, improved structural integrity and extended low-end and slotted ports that reduce port turbulence, according to KRK.

The curved cabinet and faceplate provide imaging characteristics and a wider "sweet spot." The use of ABS structural foam as the cabinet material provides damping characteristics and extended low end due to more internal volume. The ABS foam also absorbs shocks so the cabinet is impact-resistant.

The tweeter's dome is made of silk as opposed to cloth, which the company says translates to fast transient response, excellent imaging and extended frequency response. The woofer inside the VXT series has improved transient response by using a stiffer, lighter cone that provides low distortion and extended low end.

Additional highlights include tamper-resistant switch covers to protect against others changing personal settings; integrated Omnimount support for wall or corner mounting; ground lift; defeatable limiter and auto mute controls; and high- and low- frequency adjust switches on the VXT6 and VXT8.

The KRK Systems VXT series monitors will be in stores in late May, and retail for: \$399 (VXT4); \$599 (VXT6); and \$799 (VXT8).

For more information, contact KRK Systems at (954) 316-1580 or visit www.krksys.com.



AKG MKII Headphones Add Varimotion Diaphragm

AKG says it decided to incorporate diaphragm and cosmetic improvements into its studio headphones, and developed the MK II model.

MK II studio headphones use the Varimotion diaphragm. The design features a molded diaphragm that is very thin at its edge to give it good excursion capability for solid low-end response; and is increasingly thick toward its voice coil for resonance-free, low-distortion mids and highs, according to the company.

The line consists of two closed-back models, the around-ear K271 MKII and the on-ear K171 MKII; as well as two semi-open models, the around-ear K240 MKII and the on-ear K141 MKII.

The K271 MKII also features an automatic on/off switch that mutes the audio when it's taken off.

AKG says it wanted to give the MK II user more custom options, so all models feature detachable input cables with a locking mini-XLR connector, and come with a 10-foot straight cable and a 16.5-foot coiled cable so the user can pick the best one for their application.

MK II models also come with leatherette ear pads as well as an extra set of soft velour pads.

Additionally, each model features high sensitivity and 55 ohm impedance for compatibility with any output device; and is backed by a two-year warranty.

For more information, including pricing, contact AKG Acoustics in California at (818) 920-3212 or visit www.akgusa.com.



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Band Scanner

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The Band Scanner is a tool to evaluate FM broadcast band congestion and to log station identification parameters. The system is powered by the USB port of any Windows PC. Supplied free of charge Windows software sweeps the receiver across the FM band, logging every carrier and generating a spectrum display of carrier level vs. frequency. It then analyzes each carrier and creates a station list. Stations with an RDS presence are further refined to show all the radio data groups being transmitted. Its interface is like a portable radio: It may be tuned manually through the receiver screen or by double-clicking a point on the spectrum plot or an entry on the station list. Spectrum plots may be saved as jpg or bmp files. The RDS data error level is graphed in a separate window on the receiver screen. The program can be monitored with headphones plugged into a standard 1/8" jack.

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37	AudEssence, Ltd	www.audessence.com
18	AudioScience Inc.	www.audioscience.com
9	Axia - A Telos Company	www.axiaaudio.com
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47	Dayton Industrial Corp	www.daytonindustrial.com
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31	Google Inc.	www.google.com/ads/asaudio
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56	Vorsis	www.vorsis.com
2	Wheatstone Corporation	www.wheatstone.com
55	Wheatstone Corporation	www.wheatstone.com/W12.htm

◆ READER'S FORUM ◆

Get It Right

In reading your Feb. 22 online news item referencing the Engineering Achievement Awards announced by NAB, I was struck by the inaccuracy of your comments concerning ERI and the antenna systems at the Conde-Nast building, 4 Times Square: "ERI antenna and combining systems are used at major sites around the country including the recent Four Times Square installation in New York City."

I know Tom Silliman well and he would be the first to admit, I am sure, that there are no ERI master antenna/combiner systems at 4 Times Square. The new tower structure was designed by ERI, but the master antenna systems were collectively supplied by Dielectric Communications (TV) and Shively Labs (FM). There are no ERI channel combining systems at this site; rather they were supplied by Myat Inc. (UHF TV) and Shively Labs (FM). Ironically, the previous master radio antenna systems installed at 4 Times Square prior to the 2003 upgrade were not supplied by ERI either.

I applaud Tom's varied antenna-related accomplishments but you should be aware that in printing inadequately fact-checked articles, you effectively negate previous advertisements featuring 4 Times Square placed in your magazine by Shively Labs, among others.

Fact must be separated from perception; otherwise the latter becomes the former and for many, the latter is then reality.

Martyn Gregory
Shively Labs,
div. Howell Laboratories Inc.
Bridgton, Maine

The article in question repeated wording from the NAB newsletter that announced the awards and was posted briefly using NAB's wording on the Radio World Web site.

Tom Silliman of ERI confirms that the wording in the announcement contained an error, one that did not originate with ERI.

"ERI designed and built the tower that Mr. Durst had installed on that building, but the antennas were designed and manufactured by Andrew, Dielectric and Shively," Silliman said. "ERI designed the support structure, the feed line layout and the install plan and supplied the gin pole. I supervised the install and continue to work for John Lyons on inspections and analysis of the tower for new tenants. Myat supplied most if not all of the TV filters in the building. Shively supplied the FM combiners, the FM main antenna and the FM aux antenna. Dielectric supplied the two UHF TV antennas, the high-band VHF TV antenna and feed line. Andrew supplied the Channel 68 UHF top-mounted TV antenna and a run of cylindrical waveguide."

Silliman said that ERI has notable combiner projects in Miami, at Senior Road, Empire, Tiger Mountain, Chicago Hancock, Boston Pru and others but that 4TS is not an ERI combined system site, though he described the latter as "one of the best projects that I have had the pleasure of working on" thanks to the cooperation among Dielectric, Tishman, Andrew, Shively, ERI and 4TS management. "Shively had to custom-design the

FM master antenna in order to allow access for feed lines and climbing, and Andrew required custom mechanical beam tilt (I designed custom shims for that antenna) as well as custom elbows (I used vector cross products of unity vectors to come up with the special design of that feed)."

Making the List

It's no surprise that the ARRL Handbook is considered a required book on the broadcast engineer's bookshelf ("Engineering Books You Can't Live Without," Feb. 13). I was an engineer for a number of stations beginning with KPFT(FM) in Houston. Later at KBOR(AM) in Brownsville, Texas, and built KDUV(FM) and KMBS in Brownsville and Harlingen, respectively as chief engineer. The ARRL Handbook was always on my bench, usually open to the section I was currently referring to.

Other well-read books include the "ARRL Antenna Book," one the best antenna references around; The "ARRL Electronics DataBook," for the wealth of data it contained that made plowing through a mass of other data books unnecessary; and a book titled "Radio Communications" that I studied for my second and first phone tests as well as my radar endorsement.

I also subscribed at that time to QST from the ARRL, 73 Magazine and CQ. Between these three and the books mentioned above, I built a good deal of my own test equipment for use at the stations and in my ham shack. Hams are a resourceful lot and although most of my rigs are now store-bought, I still get on occasionally with some of the old QRP rigs I've built over the years.

Again, no surprises on the Handbook making the list. Mine is always on the desk near where I am building projects.

Dr. Richard Price
RCP Consulting
Atlanta


Pass It On

I had to chuckle as I read with interest John Bisset's article regarding the incorrectly installed Austin Ring Transformer ball gaps (*Workbench*, Jan. 2). To old timers like myself, the problem was immediately evident. Unfortunately, to many a young engineer it certainly would not be so evident.

Having been in the business for more than 43 years, and operated some of the largest transmitters (1 million watt AMs in the Philippines and Thailand) in the world for Voice of America, it is always interesting to reflect on the vast amount of technical knowledge that individuals such as John and I possess.

It's always heartening to see someone such as him attempting to pass it along to the younger generation so they too will know that there is more to broadcasting than CPUs, LANs and Internet streaming.

Walt Konetsky
Deputy Manager
Greenville Transmitting Station
International Broadcasting Bureau
Greenville, N.C.




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GUEST COMMENTARY

Free Local Radio: Time to Get Tough

Instead of Panicking about Satellite, Work Together to Make Signals Available Online

by Dave Wilson

Satellite radio is here to stay. Those who think they can throw enough regulatory obstacles in its way to make it fail and disappear are mistaken.

Even if free local radio were to succeed in driving one or both of the satellite radio companies into bankruptcy, which I don't predict, the only people who would suffer would be satellite radio's investors and creditors. The service would live on. Free local radio should be using the time and money it is spending to fight satellite radio on making its own service more valuable to modern consumers instead.

Not only is satellite radio service going to live on, but I predict it's going to become an even more direct competitor to free local radio as time goes on. As more and more vehicles roll out onto America's highways with factory-installed satellite receivers, there is going to come a day when it will be more profitable for the satellite radio companies to make a number of their channels available for free, using an advertising-based business model.

If I were a satellite radio company and 100 million receivers that could receive my service were on the road, but only 30 million of them were subscribers, I would activate the other 70 million with advertiser-supported programming. I might keep 60 commercial-free channels available for subscribers, and make 60 advertising-supported channels available to everyone. Then where would free local radio be?

There is nothing that free local radio can do to stop this scenario from happening. It's just a matter of time. And at some point there could be enough people listening to free satellite radio that automakers decide to make AM/FM receivers optional equipment. That would be the end of free local radio.

Free local radio should be focusing its energy on strengthening itself for the future, when satellite radio will be an even more formidable competitor. Instead it seems obsessed with its futile effort to drag satellite radio backwards. Just imagine what free local radio could do if it were to spend as much time and as many resources advocating in favor of its own future, as it wastes lobbying against satellite radio's future.

Show your stuff

It is incredible that, this far into the Internet Age with each satellite radio company offering more than 100 channels, free local radio hasn't banded together on the Internet to fight back. Every spring the broadcast industry migrates to Las Vegas for the NAB Show. The business model for the show is one where exhibitors rent floor space from NAB to present their products and services to show attendees.

The radio industry should apply this same model to "exhibiting" its programming to consumers over the Internet. It should band together to form a common Website where streams from all free local radio stations can be found. Were an organization like NAB to do this it might charge members one rate and non-mem-

bers a higher rate, thus making it available to all AM and FM radio stations. The end result would be an easy-to-use Web site that lets consumers tune in to thousands of free local radio stations.

I recognize that there are services that try to do this now, but I'm talking about a service focused specifically on making the content provided by AM and FM broadcasters available online so consumers know exactly where to go to find free local radio content. And I'm talking about a service controlled by AM and FM broadcasters that emphasizes their own

Not only is satellite radio service going to live on, but I predict it's going to become an even more direct competitor to free local radio as time goes on.

content, not a service that throws free local radio programming in with that from thousands of Internet-only radio stations.

There are roughly 14,000 free local radio stations in the United States. Instead of panicking about the possibility that two satellite radio companies, each with 100+ channels, might become one satellite radio company with 200+ channels, they should be working together to make their 14,000 signals easily available to consumers in one place. Fourteen thousand channels shouldn't be afraid of 200.

Over the past year or two I've heard it said repeatedly that free local radio needs to get "a tuner in every portable device." As I see it, the only reason there aren't portable handheld devices with 14,000 easily tunable free local radio stations on them is that the free local radio industry hasn't done its part. The industry in general seems obsessed with trying to block competition from satellite radio, and is paying far too little attention to strengthening its own competitive position.

If only the industry as a whole acted like WFMU(FM). WFMU makes it very easy to tune into its live program feed with an iPhone.

Every radio broadcaster with an iPhone should go to iPhone.WFMU.org and check it out. Instead of complaining about there not being enough free local radio tuners in portable media devices, why doesn't the radio industry pool its online streaming resources to create a single site where consumers can go today to get their streams? Any free local radio station that's frustrated about its signal not being available on iPhones and other wireless devices has only itself to blame.

By banding together and using a common codec at a single Web site free local radio could instantly put itself on millions of portable media players. Such a Web site would almost certainly have such widespread appeal that portable device manufacturers would want to make it easily reachable from the main screens of their devices. I would imagine

that companies like Apple and AT&T would love this, for it would encourage people to buy wireless enabled devices instead of more basic media players with no connectivity.

So what role would AM and FM signals play if everyone were listening to free local radio over the Internet? They would play a very important role. These signals are what give free local radio a competitive advantage over other Internet radio stations. Spectrum is limited, and people who are not within range of a broadband wireless access point have to listen to Internet radio over one of the wireless networks.

The number of simultaneous listeners that can be served by these networks is



Dave Wilson

try is even thinking about them.

To more effectively compete with satellite radio for listeners who are not connected to the Internet, free local radio needs to dramatically increase its over-the-air offerings. It should consider the possibility of re-farming the FM band and creating 50 channels spaced 400 kHz apart instead of 100 channels spaced 200 kHz apart.

Up the ante

These channels would be identical to the channels that exist today. There would just be fewer of them and more space between adjacent channels. This could enable collocation of every signal in the band at each transmitter site. If this were coupled with single frequency network technology, it would be possible to provide 50 HD Radio signals to every receiver, everywhere.

Each HD Radio signal is capable of easily carrying at least two audio streams, so this would mean a minimum of 100 audio streams available on each receiver, providing consumers with an attractive alternative to satellite radio.

See ONLINE, page 54 ▶

◆ READER'S FORUM ◆

'Mystery' Delano Technicians

The two unknown VOA technicians shown in a photo from my article, "Last of VOA Wartime Stations Goes Dark," (March 1) have been identified. According to John Perkins, a Delano retiree, the person seated behind the console wearing glasses is J.T. Burgess. Jack Quinn identified the tech seated in front of the console as Jimmy Russell.

*James O'Neal
Alexandria, Va.*

have been the dream job, to work at a facility like that instead of sitting in front of a computer all day like we do now? Thanks again for the fantastic story.

*Tim Moore
Biloxi, Miss.*

James, thank you for a great story in history. You should put this in [ARRL's monthly journal] QST also. This is very important history and should not be lost in time and forgotten.

Thank you.

*Ed Valentine, W2YPM
New Bern, N.C.*

The Dream Job

Mr. O'Neal, thank you for the fantastic story on the Delano facility. What a shame to see this wonderful site fall to the wayside of "modern technology."

I think this has to be one of the most informative articles I have ever read on the history of Delano. Wouldn't that

Just a terrific article — and so well researched! I hope there is a place in the Smithsonian, or perhaps a more specialized museum, for your work and some of the Delano memorabilia.

Thanks so much for your article.

*Ned Rubin, N3SGD
Baltimore*

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Arrested Development

A Speedy Settlement in the Royalty Fight Would Benefit All Parties

NAB has recently upped the ante in the music royalty game, with a filing that challenges the Copyright Royalty Board's judgment on performance royalty rates for online streaming of music.

That's likely just the opening act on this stage, with a real battle over possible new terrestrial-radio broadcast royalties looming.

Some legal observers expect that radio's addition of digital delivery via IBOC will be pivotal in this proceeding, and a possible outcome might involve a pro-rata royalty schedule somehow extrapolated from the current conversion of broadcasters and consumers to digital radio.

Under such a scheme, as more stations and listeners convert to digital radio, or simply over time, levies on broadcasters for digital transmission rights would increase.

Consumer electronics manufacturers may also be involved here. There are statutory and voluntary precedents (in the U.S. and elsewhere) for the payment of music royalties by device or storage-media manufacturers, specifically when those devices can capture and store published musical content.

The storage-equipped IBOC receiver (i.e., a TiVo-like, radio + digital recorder) has been discussed for years, yet it has failed to reach the American market in earnest to date.

We wonder how much unsettled royalty questions are to blame for this. Such devices have been popular for some time in the U.K. DAB marketplace, but in the United States, even a radio with a pause-buffer remains hard to find.

We also worry that uncertainty over possible levies associated with IBOC services or devices may have a chilling effect on U.S. radio's digital transition in general. While it's not the only factor holding things back, it has piled on, and may continue to discourage participation from parties considering their entrance or expansion into the IBOC field, further stifling innovation there — much-needed innovation.

This problem could only worsen as the terrestrial-radio royalty proceedings escalate, which they no doubt will in the coming months.

Regardless of the outcome of those proceedings, we implore those involved to seek a speedy settlement, so that the U.S. transition to digital radio is not held hostage in the process.

There have been enough obstacles and delays placed on IBOC's path already — don't let the quest for an equitable solution to the performance-royalty issue add yet another.

— RW

Online

▶ Continued from page 53

Yes, this would require a good bit of work, both technical and regulatory. However, unless it starts thinking outside the box and building an improved service for modern consumers, free local radio faces a slow, steady decline.

With or without re-farmed spectrum, radio also should be working toward implementing technology that enables listeners to customize their experiences. It should consider abandoning the real-time audio stream in favor of targeted packets of audio content.

A radio station with a real-time audio stream might do a one-minute "traffic and weather" segment every 10 minutes. That's six minutes of traffic and weather every hour. But each one-minute report has to cover an entire metro area, so the information provided is very limited, and a lot of it is of no interest to a large part of the audience because people generally don't care about the traffic on any road except for the one they're on.

If free local radio were to abandon the real-time audio stream, stop trying to compete with the content on portable media players and instead start complementing the content on portable media players, both it and its customers could benefit immensely. Instead of spending just six minutes an hour on traffic and weather, a station could spend all 60.

However, it wouldn't be 60 minutes of real-time audio. Instead it would be 60 one-minute updates broadcast to receivers in the form of audio files, each with header information indicating for whom the file is intended. Listeners who have indicated a preference for receiving files of that type would have the content automatically loaded onto their devices. Other consumers' devices would simply ignore the content.

For example, listeners who travel home on the southbound interstate in the evening would have their devices programmed to receive traffic updates for that road. Listeners who commute home on the westbound interstate, however, would have their devices programmed to

receive updates for that road. This sort of customized experience where consumers get the information they want without having to listen to a lot of other information they don't want would be more in line with what people have come to expect in the Internet Age.

what its path forward will be.

I believe its future is all-digital HD Radio, and specifically digital radio broadcasts that deliver small, locally focused audio packages to targeted audiences. I believe its future is programming that complements the other content cor-

At some point there could be enough people listening to free satellite radio that automakers decide to make AM/FM receivers optional equipment. That would be the end of free local radio.


While I used traffic as an example, the same concept works well for any type of information. A system like this would dramatically improve free local radio's ability to provide timely programming that is personally relevant to its listeners. A system like this would enable consumers to personalize their connection with free local radio, making the relationship more valuable for the consumer and the broadcaster alike.

The bottom line is this: it's obvious to everyone that the media landscape has changed dramatically since radio first developed its traditional way of doing business. The rate of change has accelerated in the past 10 years. Free local radio needs to step back, look at the world today and develop a clearer picture of

sumers have on their portable media players, not programming that tries to compete with the content on these players. And I also believe its future is one where free local radio super serves its local communities to better distinguish itself from satellite radio.

I can see a very bright future for free local radio, but it's a future that requires radio to let go of the past and take some bold steps forward.

If you'd like to hear more on this subject I'll be presenting a paper titled, "The Future of Radio in a Changing World" on April 13 as part of the Broadcast Engineering Conference at the NAB Show.

Dave Wilson is director, technology and standards, Consumer Electronics Association. 

Letters to the Editor

Radio World welcomes your point of view on any topic related to the U.S. radio broadcast industry.

Letters should be 100 to 300 words long; the shorter the letter, the better chance it will be published in full. We reserve the right to edit material for space. Longer commentaries are welcome but may not reach print as quickly.

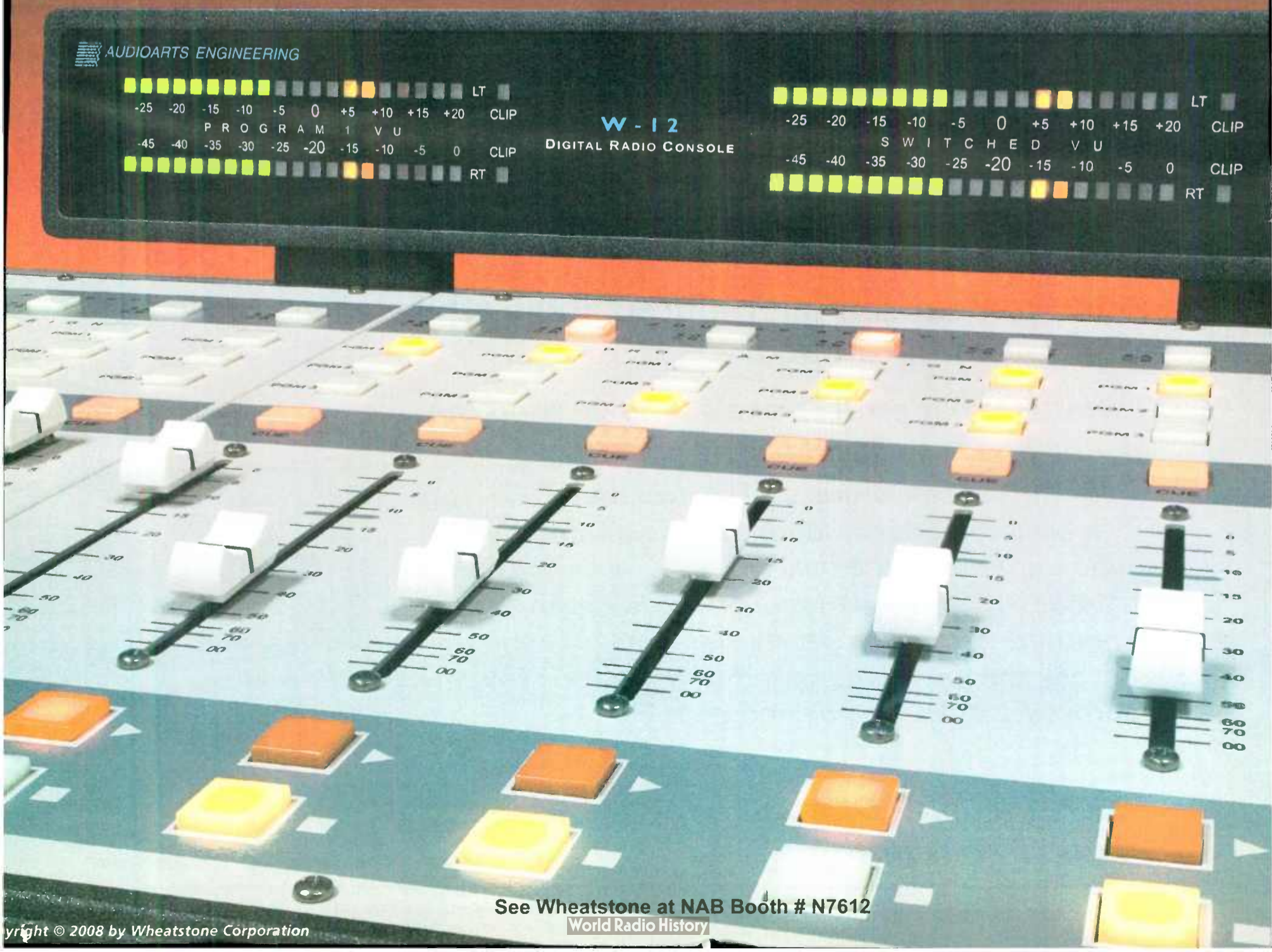
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